DATA SUMMARY
and
SITE CHARACTERIZATION WORKPLAN

104, 106 and 110 Puckett Street
Crystal Springs, Mississippi

Prepared for

BorgWarner Inc.

April 2005

GeoEnvironmental Associates, LLC | MARTIN & SLAGLE

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Prepared by
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April 2005

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1.0 INTRODUCTION

The Kuhlman Electric Corporation (KEC) plant in Crystal Springs, Mississippi was constructed and has been owned and operated as a transformer manufacturing plant since the 1950s by KEC or its predecessors (collectively "KEC"). KEC continued to own and operate the plant in March 1999 when BorgWarner Inc. purchased the stock of Kuhlman Corporation, the parent of KEC, and thereafter as well. Seven months later, on October 5, 1999, Kuhlman Corporation sold KEC's stock to KEC Acquisition Corporation. BorgWarner and Kuhlman Corporation indemnified KEC, KEC Acquisition Corporation and their affiliates for historic contamination at the site and have, under the purchase agreement, exercised their right to control any remediation of such contamination.

Previous environmental assessments conducted at the KEC plant site indicated that soil contaminated with polychlorinated biphenyl (PCB) Aroclor 1260 was present on-site. PCB impacted soil was reportedly transported and deposited on the property located at 106 Puckett Street in Crystal Springs, Mississippi.

On August 28, 2001 3TM International, Inc. collected twenty soil samples at 106 Puckett Street (Figure 1). One of the samples had a concentration of PCBs as Aroclor 1260 at 1.83 milligrams per kilogram (mg/Kg), above the 1 mg/Kg residential standard established by the Mississippi Department of Environmental Quality (MDEQ). The 3TM International, Inc. (3TM) report was submitted to MDEQ with a cover letter dated October 18, 2004. Upon receipt of the 3TM report MDEQ, on October 25, 2004, requested that BorgWarner investigate the soils at the 106 Puckett Street property. At MDEQ's request, on January 17, 2005 BorgWarner began soil sampling activities at 106 Puckett Street.

1.1 Summary of Soil Sampling Activities

On January 17 and 18, 2005, a total of 36 soil samples were collected and analyzed for PCBs from 106 Puckett Street. Laboratory results indicated that nine samples had PCB concentrations greater than 1 mg/Kg.

On February 25, and 26, 2005 the assessment was expanded to include samples from the side yards of 104 and 110 Puckett Street, as well as the backyard of 106 Puckett Street north to the fence line. A total of 84 soil samples were collected during this second sampling event. Soil samples were collected at depths ranging from 0-1 foot below ground surface (bgs) and 1-2 feet bgs. Analytical results from the expanded assessment indicated that of the 84 samples collected, 19 samples had PCB concentrations exceeding the MDEQ regulatory limit of 1 mg/Kg. Of the samples that exceeded 1 mg/Kg, one sample had a PCB concentration in excess of 50 mg/Kg with a concentration of 51 mg/Kg. All samples with PCB concentrations greater than 1 mg/Kg were collected from 0-1 foot bgs except one sample collected at 106 Puckett Street. Sample locations and corresponding analytical results are presented on Figure 2. Summaries of the analytical results are presented in Tables 1, 2, and 3. Laboratory reports are included in Appendix 1, and the Data Evaluation Report is included in Appendix 2.

1.2 Assessment Objectives

The site characterization objective for the Puckett Street properties is to determine the horizontal and vertical extent of impacted soil. Soil samples will be collected along the roadside ditch located on the south side of the property. Samples will also be collected to the west and north of the areas previously sampled and at depth until the horizontal and vertical extent of impacted soil is delineated. Results from this assessment will be used to prepare a remediation work plan. The following sections of this work plan include a sampling plan, sampling protocols, and quality assurance and quality control procedures.

2.0 FIELD SAMPLING PLAN

During soil sampling activities at the 106, 104, and 110 Puckett Street properties, a total of 120 soil samples were collected from 60 locations in January and February 2005. Sampling results indicate that the soils at these three properties have PCB concentrations in excess of the 1.0 mg/Kg residential standard established by MDEQ. This work plan describes proposed sampling activities necessary to delineate the extent of PCB impacted soil at 106 Puckett Street and surrounding properties.

This site characterization plan was prepared in accordance with the US Environmental Protection Agency (USEPA), *Environmental Investigations Standard Operating Procedure and Quality Assurance Manual,* November 2001 (EISOPQAM).

2.1 Regional Geology

Sediments consisting of fine-grained sands with local lenses of clay and gravel underlie Crystal Springs and the surrounding area. These red and orange sediments comprise the Citronelle Formation. The Citronelle Formation covers approximately 30 percent of Copiah County and is present at ground surface in the vicinity of Crystal Springs. Gravel, mainly consisting of chert and quartz is present throughout the formation near Crystal Springs and is heavily mined in the surrounding area. The thickness of this formation ranges from a few feet to a maximum of 100 feet with average depths ranging from 20 to 80 feet. Thickness of the unit is controlled by erosion of surface soils. The thinner segments are located in washes and drainage channels, while the thicker portions are located on topographically high areas. The Citronelle formation lies unconformably over the Catahoula Formation in the vicinity of Crystal Springs with the base elevations of the Citronelle ranging from 375 feet mean sea level (msl) to about 430 msl.

According to published literature, the uppermost aquifer in the area of Crystal Springs exists under phreatic conditions (unconfined) and rises into the Citronelle Formation.

Groundwater generally exists near the base of the Citronelle. Since the surficial aquifer is under phreatic conditions, no extensive clay confining units are anticipated above this first aquifer. Depth to groundwater ranges from 20 to greater than 100 feet with more than half of the water levels measured in wells deeper than 50 feet. Average rainfall totals 57.2 inches per year in the Copiah County area, of which approximately 44 inches evaporate. Precipitation that does not evaporate or does not run off into streams and drainages recharges the surficial aquifer.

Eight municipal water supply wells are currently in operation in within 1.5 miles of the Puckett Street properties. Seven of the municipal wells are used for drinking water and one is used as a water supply for the municipal pool. These wells are screened in the upper aquifer (Citronelle Formation). The municipal wells supply water to the City of Crystal Springs. A survey is currently underway to identify any existing private drinking water wells located within a 0.5 mile radius of the KEC plant site.

2.2 Sampling of the 106 Puckett Street Site and Adjacent Properties

Sampling results indicate that the horizontal extent of impacted soil is defined to the east of 106 Puckett Street. Impacted soil extends approximately 3 to 10 feet into the property at 104 Puckett Street. The horizontal extent of impact to the north and west has not yet been defined. Samples have been collected at 110 Puckett Street to the west and results indicate that site soils have PCB concentrations in excess of 1.0 mg/Kg. Samples have not been collected to the north of 106 Puckett Street pending identification of land owners and gaining access to those properties.

The sampling grid will be horizontally expanded beyond 106 Puckett Street property onto 110 Puckett Street and the northern adjacent properties until the edge of impacted soil is identified. Sampling will proceed laterally until PCB concentrations detected in soil samples are below the MDEQ limit of 1.0 mg/Kg. Properties to the south across Puckett

Street have not been sampled. The roadside drainage ditch on the south side of 106, 104, 110 Puckett Street intercepts runoff and channels flow to the west toward McPherson Street and the North Drainage Channel and acts as a boundary to southern migration of PCBs.

To complete the assessment, samples will be collected with depth at each new sample location, and at sample location MWP-HA-027 previously sampled, to identify the depth of impacted soil. The previously mentioned sample location has 12 mg/kg at a depth of 2 feet and the depth of impacted soil has not been defined at this location. The depth of impacted soil has been identified at all other locations sampled to date.

The horizontal and vertical extent of PCB contamination will be determined by:

- Collecting surface and subsurface soil samples;
- Analyzing samples by the on-site laboratory; and,
- Analyzing at least 10% of the soil samples by the off-site laboratory to confirm the results of the on-site laboratory.

Sample points will be located on a grid with collection points no greater than 20 feet apart. The grid will be extended on all sides of each sample point when analytical results indicate that the sample from that location exceeds 1.0 mg/Kg. The grid will be extended horizontally until the PCB concentrations in soil collected from outermost points are less than 1.0 mg/Kg. Approximate sampling point locations are presented in Figure 2.

Samples will be collected by the field geologist using a direct-push sampling rig with GeoProbe® and MacroProbe™ equipment using a hydraulically driven hammer to advance a hollow stainless steel sampler to the desired depth. The sampler contains an acetate liner in which a sample of the cored soil is retained. The MacroProbe™ corer

retains a 1.25-inch diameter continuous core 4 feet in length. In areas inaccessible to the direct push sampling rig samples will be collected using a hand auger.

Prior to the beginning of sampling activities, boundary line surveys will be conducted on the properties within the study area. Samples will be located within each property and given a unique sample designation that identifies the sample with the specific property. Sample location control will be conducted by a registered land surveyor using a robotic total station. Each sample will be mapped on the state plane coordinate system.

2.3 Soil Sample Handling and Analysis

All soil samples will be collected and managed in accordance with USEPA Region IV EISOPQAM protocols. Samples will be collected using clean sampling equipment. Equipment rinseate samples will be collected and analyzed to confirm the effectiveness of the decontamination procedures.

Each sample will be assigned a unique sample identification designation in accordance with the labeling requirements under section 3.2.1 of Environmental Investigation Standard Operating Procedure and Quality Assurance Manual (EISOPQAM). Field records will be kept in accordance with procedures specified in section 3.5 of EISOPQAM. The sample identification designation, date, and time of collection will be recorded in the field book and on the chain of custody for cross-referencing.

Upon collection, samples will be placed in 4-ounce amber glass jars, and the jars transferred to a sample cooler. Field personnel will deliver samples to the on-site lab several times each day. Upon arrival at the on-site lab, the samples will be transferred to the sample custodian who will log each sample on the chain of custody form. Each sample will be assigned a unique on-site laboratory internal ID number for tracking purposes. After analysis, the samples will be transferred to either a sample refrigerator in

the on-site lab or stored in coolers until, either sent to the off-site lab for confirmation analysis or designated for disposal. Chain of custody forms will be completed for all samples packaged and shipped to the off-site laboratory for confirmation analysis.

2.4 Analytical Procedures

For analysis of samples in the on-site lab, EPA method 8082m, modified for the mini-extraction will be used. The off-site laboratory will use EPA method 8082 for quantitation of PCBs. The Quality Assurance/Quality Control Project Plan is included in Section 3.0.

2.5 Investigation Derived Waste

Management of investigation derived waste (IDW) will be the responsibility of the Field Manager. IDW includes but is not limited to, soil cuttings, acetate sampling tubes, decontamination solutions and water, personal protective clothing, gloves, and any other material to be discarded that has come in contact with PCBs.

All daily IDW will be placed in labeled, open-top drums in a secure location at the point of use. At the end of each day the IDW will be transferred to a designated roll-off box located in a secure location on the KEC plant site until removal to an appropriate disposal facility. Prior to disposal, IDW will be profiled either by direct sampling and analysis of the material or by using current, existing analytical data from the assessment activities. The roll-off box containing the IDW will be manifested under the KEC EPA I.D. Number and transported to a disposal facility within 90 days of final IDW accumulation.

2.6 Regulatory Involvement

MDEQ is the lead regulatory agency in charge of this assessment. The responsible parties and MDEQ currently hold monthly meetings to receive updates on activities related to the PCB cleanup in Crystal Springs, MS. These meetings will continue throughout this assessment. Additionally, MDEQ representatives periodically visit the various sites where assessment and/or remediation are taking place to observe operations and split samples for state laboratory confirmation. A notification will be made to MDEQ three days prior to the beginning of the assessment to allow for an MDEQ representative to observe the sampling activities and obtain split samples.

2.7 Permitting

Based on the assessment activities presented in this work plan, no permits are required to initiate or complete the sampling.

3.0 QUALITY ASSURANCE /QUALITY CONTROL PLAN

As established by the Mississippi Department of Environmental Quality (MDEQ) guidelines, all work related to the site characterization of the 106 Puckett Street and adjacent properties will be performed in accordance with the *Environmental Protection Agency (EPA), Region IV "Environmental Investigations, Standard Operating Procedures and Quality Assurance Manual", November 2001 (EISOPQAM).* Copies of relevant and applicable portions of the EISOPQAM will be maintained on site during all field activities and all field personnel will be trained in its implementation.

3.1 Sampling Objectives

The sampling objective for this characterization work is to determine the horizontal and vertical extent of PCBs in soils, specifically Aroclor 1260. Soil samples will be collected from direct push tubes or hand augers by the field geologist at the locations and frequencies prescribed in Section 2 of this work plan.

3.2 Analytical Methods

Samples will be analyzed for PCBs by the on-site laboratory, Environmental Chemistry Consulting Services (ECCS) of Madison, Wisconsin. Soil samples will be screened by the on-site laboratory to quantify PCB concentrations in soils. At least 10% of all samples will be split and sent to the off-site laboratory, Paradigm Analytical Laboratories, Inc. (PAL) in Wilmington, North Carolina for analysis of the same parameters analyzed by the on-site laboratory. This measure is taken to corroborate the results of on-site laboratory analyses.

The on-site laboratory will analyze the soil samples using a mini-extraction procedure based on EPA Method 8082/8141 for PCBs. The procedure incorporates all the quality

control rigors of the full 8082 method, including quantification based on 6-point calibration with continuing calibration verification, surrogate method performance monitoring, method blanks, laboratory control samples (LCS), and matrix spike/matrix spike duplicate (MS/MSD) samples.

The off-site laboratory will analyze all soil samples using EPA method 8082 for PCBs.

3.3 Key Personnel

The following is the list of key personnel dedicated to this project:

Project Manager:	Robert Martin, Martin & Slagle GeoEnvironmental Associates, LLC
Duties:	Responsible for overall management of project, including all field coordination efforts.
Field Manager:	Charles Peel, Peel Consulting, PLLC
Duties:	Field oversight of remedial activities. Collection of samples. Maintenance of all field logs and records.
On-Site Laboratory Manager:	Richard Johnson, ECCS
Duties:	Responsible for accepting custody of samples from the field personnel. Maintenance of laboratory records. Analyze samples.
QA/QC Coordinator:	Christine Slagle, Martin & Slagle GeoEnvironmental Associates, LLC

Duties: Review daily sample logs. Confirm that QC samples are collected and sampling protocols are met. Assure that data quality objectives are met.

3.4 Quality Assurance Objectives for Data

The data quality objectives are pre-defined for the ECCS data in that Mississippi considers all on-site lab data screening level data. ECCS uses the same equipment and methodology as the off-site lab, with the exception of the mini-extraction modification. A total of 10% of the samples collected will be split and submitted to Paradigm Analytical for confirmation analysis. Following this procedure, the data will qualify as screening data with definitive confirmation under EPA Region IV EISOPQAM guidelines.

Samples designated for further analysis by Paradigm will be delivered to the on-site lab where ECCS personnel will take their aliquot for analysis following thorough mixing of the sample in the sample container. Due to the limited sample volume required by the ECCS mini-extraction and the low volatility of the contaminants of concern, the sample container will be resealed, refrigerated, and then sent to the off-site (Paradigm) laboratory for analysis. Therefore, Paradigm will be analyzing the exact same sample as the on-site (ECCS) laboratory.

Equipment rinsates will be collected, preserved and analyzed for evaluation of cross-contamination potential. Equipment rinsates will be prepared by pouring distilled water over the sampling equipment after its decontamination.

Field blanks will be collected by filling sampling containers, which have been kept in the transition zone with distilled water.

Blind duplicate samples will be collected for analysis and sent to both the on-site and off-site labs. Blind duplicate samples will be prepared by splitting the homogenized sample into 2 separate sample containers. After the on-site lab (ECCS) retains its aliquot the remainder of the sample will be sent to the off-site (Paradigm) lab for analysis.

3.5 Sample Control and Field Records

3.5.1 Sample Identification

Each sample will be assigned a unique alpha-numeric identifier that will be clearly recognizable by both laboratories. Sample labels will conform to the labeling requirements under section 3.2.1 of the EISOPQAM.

3.5.2 Chain of Custody Procedures

The field geologist will record the sample ID, date, and time sampled in the field logbook at the time of collection. Samples will be placed in a cooler and transferred by the field geologist to the on-site laboratory. Upon arrival at the on-site lab, the samples will be transferred to the ECCS laboratory manager who will log each sample on ECCS chain of custody forms. Each sample will be assigned a unique ECCS internal ID for tracking purposes. After analysis, the samples will be transferred to a sample refrigerator in the on-site lab until they are either sent to Paradigm for confirmation analysis or disposed of. For samples sent to Paradigm, a new chain of custody form will be filled out by the field geologist for the sample transfer.

3.5.3 Field Records

Field records will be kept in accordance with procedures specified in section 3.5 of EISOPQAM.

3.6 Laboratory QA/QC

QA/QC for both labs is identical. Summaries of each lab's procedures follow.

On-site Laboratory, ECCS:

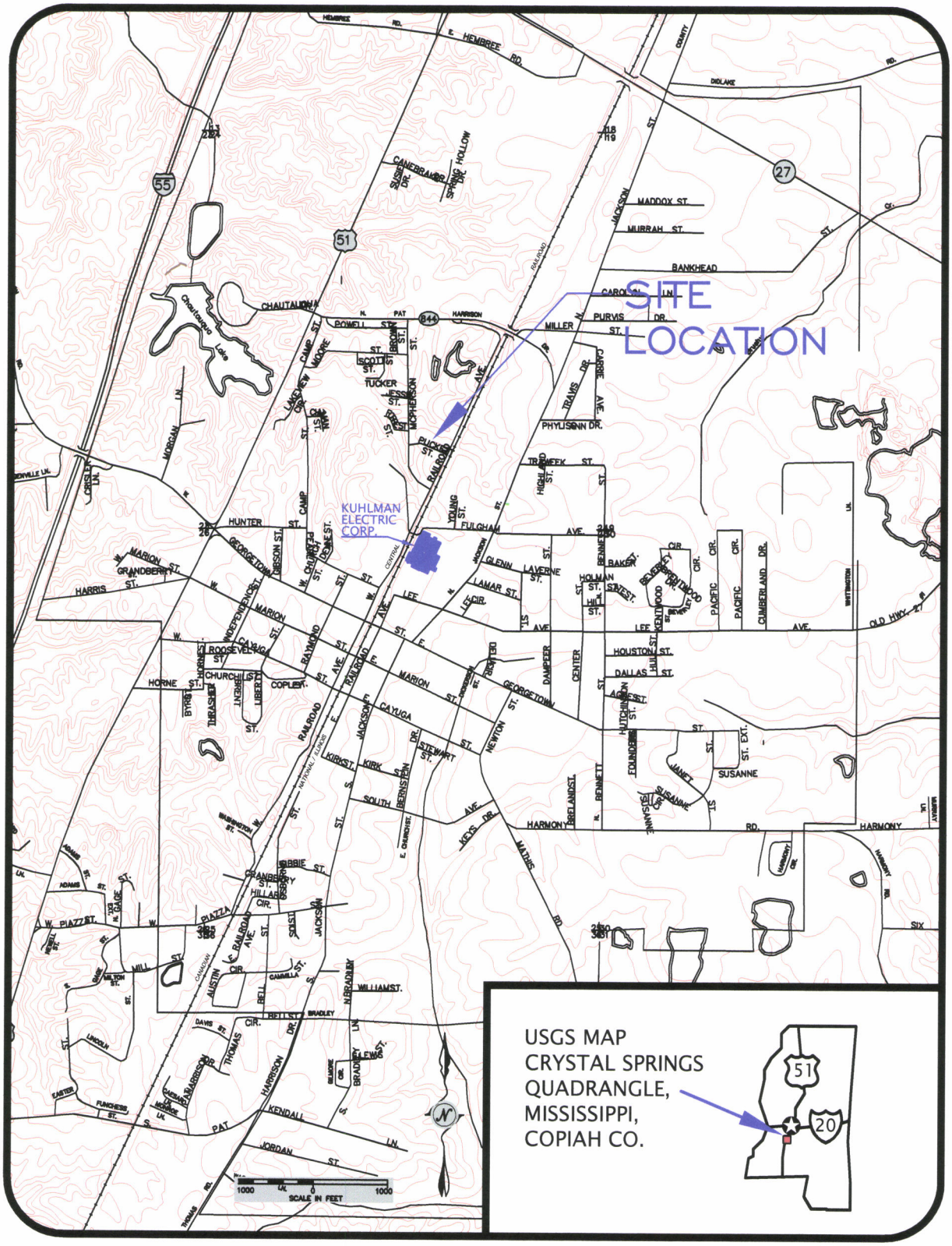
- Continuing calibration standards will be analyzed every ten samples or less and at the end of a run.
- Blank and LCS samples will be analyzed every twenty samples or less with a minimum of one per day.
- MS/MSD samples will be analyzed every twenty samples or less with a minimum of one per day.

Off –Site Laboratory, Paradigm:

- Continuing calibration standards will be analyzed at least once every 12-hour shift plus a minimum of every 20 samples (GC/MS criteria follows method specific tuning requirements per EPA 8270).
- Blank and LCS samples will be analyzed every twenty sample or less with a minimum of one per day.
- MS/MSD samples will be analyzed every twenty samples or less with a minimum of one per day.

3.7 Data Review and Validation

All laboratory reports will be reviewed for reporting accuracy and consistency with laboratory QA/QC protocols. The primary validation of the on-site lab data will be accomplished through comparison with the data from the off-site lab. The relative percent difference (RPD) between the laboratory's results for split samples will be calculated and compared to a 100 % RPD acceptability threshold.



MARTIN&SLAGLE GeoEnvironmental Associates, LLC PO Box 1023 Black Mountain NC 28711 828.669.3929 828.669.5289	SCALE = 1":2000' REV: 0 DATE: 04/14/05 DR: DGR CHK: RLM	VICINITY MAP 106 PUCKETT STREET CRYSTAL SPRINGS, MS
	PREPARED FOR: **BorgWarner Inc.**	FIGURE 1

T 1
Summary of Analytical Results
Maggie Williams Property
Puckett Street
Crystal Springs, Mississippi

Sample ID				Depth	Split	Date Collected	Time Collected	On-site Laboratory		Off-site Laboratory		
								Date Analyzed	Concentration PCB mg/kg	Date Extracted	Date Analyzed	Concentration PCB mg/Kg
MWP	HA	001	001	0-12"	Yes	1/17/2005	10:10	01/17/2005	**2.1**	01/30/05	01/31/05	2.2
MWP	HA	001	002	12-24"		1/17/2005	10:31	01/17/2005	0.32			
MWP	HA	002	001	0-12"		1/17/2005	10:43	01/17/2005	**3.6**			
MWP	HA	002	002	12-24"		1/17/2005	11:09	01/17/2005	0.18			
MWP	HA	003	001	0-12"		1/17/2005	11:21	01/17/2005	**15**			
MWP	HA	003	002	12-24"		1/17/2005	11:55	01/17/2005	<0.1			
MWP	HA	004	001	0-12"		1/17/2005	13:10	01/18/2005	**3.6**			
MWP	HA	004	002	12-24"		1/17/2005	13:22	01/18/2005	0.24			
MWP	HA	005	001	0-12"	Yes	1/17/2005	13:34	01/18/2005	**7.7**	01/30/05	02/03/05	3.55
MWP	HA	005	002	12-24"		1/17/2005	13:43	01/18/2005	<0.1			
MWP	HA	006	001	0-12"	Yes	1/17/2005	13:56	01/18/2005	**19**	01/30/05	02/03/05	12.7
MWP	HA	006	002	12-24"		1/17/2005	14:04	01/18/2005	0.95			
MWP	HA	007	001	0-12"		1/17/2005	14:23	01/18/2005	**4.5**			
MWP	HA	007	002	12-24"		1/17/2005	14:33	01/18/2005	0.13			
MWP	HA	008	001	0-12"		1/17/2005	14:43	01/18/2005	0.12			
MWP	HA	008	002	12-24"		1/17/2005	14:52	01/18/2005	<0.1			
MWP	HA	009	001	0-12"		1/17/2005	15:08	01/18/2005	0.16			
MWP	HA	009	002	12-24"		1/17/2005	15:15	01/18/2005	<0.1			
MWP	HA	010	001	0-12"		1/17/2005	15:28	01/18/2005	<0.1			
MWP	HA	010	002	12-24"		1/17/2005	15:35	01/18/2005	<0.1			
MWP	HA	011	001	0-12"	Yes	1/17/2005	15:46	01/18/2005	0.23	01/30/05	01/31/05	0.288
MWP	HA	011	002	12-24"		1/17/2005	15:55	01/18/2005	<0.1			
MWP	HA	012	001	0-12"	Yes	1/18/2005	08:24	01/18/2005	0.33	01/30/05	01/31/05	0.366
MWP	HA	012	002	12-24"		1/18/2005	08:37	01/18/2005	<0.1			
MWP	HA	013	001	0-12"		1/18/2005	08:48	01/18/2005	0.28			
MWP	HA	013	002	12-24"		1/18/2005	08:58	01/18/2005	<0.1			
MWP	HA	014	001	0-12"		1/18/2005	09:07	01/18/2005	0.35			
MWP	HA	014	002	12-24"		1/18/2005	09:16	01/18/2005	<0.1			
MWP	HA	015	001	0-12"		1/18/2005	09:55	01/18/2005	**2.0**			
MWP	HA	015	002	12-24"		1/18/2005	10:09	01/18/2005	0.36			
MWP	HA	016	001	0-12"	Yes	1/18/2005	10:19	01/18/2005	**2.1**	01/30/05	02/01/05	1.82

T 1
Summary of Analytical Results
Maggie Williams Property
Puckett Street
Crystal Springs, Mississippi

Sample ID				Depth	Split	Date Collected	Time Collected	On-site Laboratory		Off-site Laboratory		
								Date Analyzed	Concentration PCB mg/kg	Date Extracted	Date Analyzed	Concentration PCB mg/Kg
MWP	HA	016	002	12-24"		1/18/2005	10:32	01/18/2005	0.11			
MWP	HA	017	001	0-12"		1/18/2005	10:41	01/18/2005	<0.1			
MWP	HA	017	002	12-24"		1/18/2005	10:50	01/18/2005	<0.1			
MWP	HA	018	001	0-12"		1/18/2005	10:58	01/18/2005	<0.1			
MWP	HA	018	002	12-24"		1/18/2005	11:07	01/18/2005	<0.1			
MWP	HA	019	001	0-12"	Yes	2/25/2005	12:34	02/25/2005	**6.8**	03/12/05	03/12/05	4.14
MWP	HA	019	002	12-24"		2/25/2005	12:45	02/25/2005	0.24			
MWP	HA	020	001	0-12"		2/25/2005	12:54	02/25/2005	**1.1**			
MWP	HA	020	002	12-24"		2/25/2005	13:03	02/25/2005	0.12			
MWP	HA	021	001	0-12"		2/25/2005	13:12	02/25/2005	0.20			
MWP	HA	021	002	12-24"		2/25/2005	13:20	02/25/2005	<0.1			
MWP	HA	022	001	0-12"		2/25/2005	13:32	02/25/2005	**1.6**			
MWP	HA	022	002	12-24"		2/25/2005	13:40	02/25/2005	<0.1			
MWP	HA	023	001	0-12"	Yes	2/25/2005	16:12	02/25/2005	**2.6**	03/10/05	03/12/05	1.7
MWP	HA	023	002	12-24"		2/25/2005	16:18	02/25/2005	<0.1			
MWP	HA	024	001	0-12"		2/25/2005	17:05	02/25/2005	<0.1			
MWP	HA	024	002	12-24"		2/25/2005	17:12	02/25/2005	<0.1			
MWP	HA	025	001	0-12"		2/25/2005	17:23	02/25/2005	0.42			
MWP	HA	025	002	12-24"		2/25/2005	17:31	02/25/2005	<0.1			
MWP	HA	026	001	0-12"	Yes	2/26/2005	17:21	02/26/2005	**2.0**	03/10/05	03/12/05	2.28
MWP	HA	026	002	12-24"		2/26/2005	17:26	02/26/2005	0.35			
MWP	HA	027	001	0-12"		2/26/2005	17:30	02/26/2005	**51**			
MWP	HA	027	002	12-24"		2/26/2005	17:35	02/26/2005	**12**			
MWP	HA	028	001	0-12"		2/26/2005	17:41	02/26/2005	**4.2**			
MWP	HA	028	002	12-24"		2/26/2005	17:47	02/26/2005	0.74			

Table 2
Summary of Analytical Results
Zedie Wilson Property
104 Puckett Street
Crystal Springs, Mississippi

Sample ID				Depth	Split	Date Collected	Time Collected	On-site Laboratory		Off-site Laboratory		
								Date Analyzed	Concentration PCB mg/Kg	Date Extracted	Date Analyzed	Concentration PCB mg/Kg
ZWP	HA	001	001	0-12"	Yes	2/25/2005	08:50	02/25/2005	<0.1	03/10/05	03/12/05	<.122
ZWP	HA	001	002	12-24"		2/25/2005	09:03	02/25/2005	<0.1			
ZWP	HA	002	001	0-12"		2/25/2005	09:10	02/25/2005	<0.1			
ZWP	HA	002	002	12-24"		2/25/2005	09:20	02/25/2005	<0.1			
ZWP	HA	003	001	0-12"		2/25/2005	09:30	02/25/2005	<0.1			
ZWP	HA	003	002	12-24"		2/25/2005	09:40	02/25/2005	<0.1			
ZWP	HA	004	001	0-12"		2/25/2005	09:50	02/25/2005	0.15			
ZWP	HA	004	002	12-24"		2/25/2005	09:58	02/25/2005	<0.1			
ZWP	HA	005	001	0-12"		2/25/2005	10:08	02/25/2005	<0.1			
ZWP	HA	005	002	12-24"		2/25/2005	10:15	02/25/2005	<0.1			
ZWP	HA	006	001	0-12"		2/25/2005	10:26	02/25/2005	<0.1			
ZWP	HA	006	002	12-24"		2/25/2005	10:34	02/25/2005	<0.1			
ZWP	HA	007	001	0-12"		2/25/2005	10:43	02/25/2005	<0.1			
ZWP	HA	007	002	12-24"		2/25/2005	10:53	02/25/2005	<0.1			
ZWP	HA	008	001	0-12"	Yes	2/25/2005	11:02	02/25/2005	0.78	03/10/05	03/12/05	0.394
ZWP	HA	008	002	12-24"		2/25/2005	11:08	02/25/2005	<0.1			
ZWP	HA	009	001	0-12"	Yes	2/25/2005	16:27	02/25/2005	**2.4**	03/10/05	03/12/05	1.94
ZWP	HA	009	002	12-24"		2/25/2005	16:36	02/25/2005	0.56			
ZWP	HA	010	001	0-12"		2/25/2005	16:45	02/25/2005	0.53			
ZWP	HA	010	002	12-24"		2/25/2005	16:53	02/25/2005	<0.1			

Table 3
Summary of Analytical REsults
Gregory Turner Property
110 Puckett Street
Crystal Springs, Mississippi

Sample ID				Depth	Split	Date Collected	Time Collected	On-site Laboratory		Off-site Laboratory		
								Date Analyzed	Concentration PCB mg/Kg	Date Extracted	Date Analyzed	Concentration PCB mg/Kg
GTP	HA	001	001	0-12"	Yes	2/25/2005	14:10	02/25/2005	0.11			<.105
GTP	HA	001	002	12-24"		2/25/2005	14:20	02/25/2005	<0.1			
GTP	HA	002	001	0-12"		2/25/2005	14:32	02/25/2005	0.37			
GTP	HA	002	002	12-24"		2/25/2005	14:39	02/25/2005	<0.1			
GTP	HA	003	001	0-12"		2/25/2005	14:45	02/25/2005	**1.6**			
GTP	HA	003	002	12-24"		2/25/2005	14:52	02/25/2005	<0.1			
GTP	HA	004	001	0-12"		2/25/2005	15:04	02/25/2005	**2.2**			
GTP	HA	004	002	12-24"		2/25/2005	15:10	02/25/2005	<0.1			
GTP	HA	005	001	0-12"	Yes	2/26/2005	08:52	02/26/2005	0.18	03/10/05	03/12/05	0.162
GTP	HA	005	002	12-24"		2/26/2005	09:03	02/26/2005	<0.1			
GTP	HA	006	001	0-12"		2/26/2005	09:15	02/26/2005	0.32			
GTP	HA	006	002	12-24"		2/26/2005	09:22	02/26/2005	<0.1			
GTP	HA	007	001	0-12"		2/26/2005	09:30	02/26/2005	<0.1			
GTP	HA	007	002	12-24"		2/26/2005	09:37	02/26/2005	<0.1			
GTP	HA	008	001	0-12"		2/26/2005	09:47	02/26/2005	0.22			
GTP	HA	008	002	12-24"		2/26/2005	09:56	02/26/2005	<0.1			
GTP	HA	009	001	0-12"		2/26/2005	10:03	02/26/2005	**1.2**			
GTP	HA	009	002	12-24"		2/26/2005	10:13	02/26/2005	<0.1			
GTP	HA	010	001	0-12"		2/26/2005	10:38	02/26/2005	**1.3**			
GTP	HA	010	002	12-24"		2/26/2005	10:46	02/26/2005	0.22			
GTP	HA	011	001	0-12"	Yes	2/26/2005	10:53	02/26/2005	**1.3**	03/10/05	03/12/05	1.25
GTP	HA	011	002	12-24"		2/26/2005	11:00	02/26/2005	<0.1			
GTP	HA	012	001	0-12"		2/26/2005	11:08	02/26/2005	0.7			
GTP	HA	012	002	12-24"		2/26/2005	11:15	02/26/2005	<0.1			
GTP	HA	013	001	0-12"		2/26/2005	11:24	02/26/2005	0.18			
GTP	HA	013	002	12-24"		2/26/2005	11:34	02/26/2005	<0.1			
GTP	HA	014	001	0-12"		2/26/2005	13:19	02/26/2005	**1.8**			
GTP	HA	014	002	12-24"		2/26/2005	13:26	02/26/2005	0.12			
GTP	HA	015	001	0-12"		2/26/2005	13:35	02/26/2005	0.19			
GTP	HA	015	002	12-24"		2/26/2005	13:43	02/26/2005	<0.1			
GTP	HA	016	001	0-12"	Yes	2/26/2005	13:55	02/26/2005	**4.1**	03/10/05	03/12/05	2.67
GTP	HA	016	002	12-24"		2/26/2005	14:00	02/26/2005	0.14			

Table 3
Summary of Analytical REsults
Gregory Turner Property
110 Puckett Street
Crystal Springs, Mississippi

Sample ID				Depth	Split	Date Collected	Time Collected	On-site Laboratory		Off-site Laboratory		
								Date Analyzed	Concentration PCB mg/Kg	Date Extracted	Date Analyzed	Concentration PCB mg/Kg
GTP	HA	017	001	0-12"		2/26/2005	14:10	02/26/2005	**3**			
GTP	HA	017	002	12-24"		2/26/2005	14:21	02/26/2005	0.15			
GTP	HA	018	001	0-12"		2/26/2005	14:33	02/26/2005	<0.1			
GTP	HA	018	002	12-24"		2/26/2005	14:40	02/26/2005	<0.1			
GTP	HA	019	001	0-12"		2/26/2005	15:40	02/26/2005	**3.6**			
GTP	HA	019	002	12-24"		2/26/2005	15:45	02/26/2005	0.33			
GTP	HA	020	001	0-12"		2/26/2005	15:50	02/26/2005	0.46			
GTP	HA	020	002	12-24"		2/26/2005	15:54	02/26/2005	<0.1			
GTP	HA	021	001	0-12"	Yes	2/26/2005	15:58	02/26/2005	**2.4**	03/10/05	03/12/05	2.25
GTP	HA	021	002	12-24"		2/26/2005	16:02	02/26/2005	0.36			
GTP	HA	022	001	0-12"		2/26/2005	16:06	02/26/2005	0.38			
GTP	HA	022	002	12-24"		2/26/2005	16:10	02/26/2005	<0.1			

April 7, 2005

Robert Martin
Martin & Slagle, LLC
P.O. Box 1023
Black Mountain, NC 28711

Dear Mr. Martin,

Enclosed is the Technical Memorandum for work completed at the former Borg Warner and current Kuhlman Electric facility in Crystal Springs, Mississippi during the month of January. If you have any questions concerning this information, please give me a call.

Sincerely,

Kari-Ann Killian

for Richard Johnson

Enclosure

Environmental Chemistry Consulting Services, Inc.
2525 Advance Road • Madison, WI 53718 • Phone (608) 221-8700 • FAX (608) 221-4889

Technical Memorandum

Borg Warner / Kuhlman Electric

Crystal Springs, Mississippi

TECHNICAL MEMORANDUM

April 7, 2005

To: Robert Martin
Martin Slagle Inc.

From: Richard Johnson
ECCS, Inc.

Re: Field Analytical Methods – QC Summary
Borg Warner – Kuhlman Electric Facility
Crystal Springs, Mississippi

INTRODUCTION

This Technical Memorandum provides documentation of the field analytical test methods used to analyze soil and water samples collected from MWP-HA samples during January 2005 during an accelerated site investigation episode around the former Borg Warner and current Kuhlman Electric facility in Crystal Springs, Mississippi. Soil and water samples were analyzed for polychlorinated biphenyls (PCBs) and chlorinated benzenes by gas chromatography (GC) in accordance with ECCS's Polychlorinated Biphenyl (PCB) Mini Extraction Screening Procedure. A summary of test results is provided in Table 1 for soils and Table 2 for waters. A summary of method blanks, laboratory control samples and matrix spike/matrix spike duplicate data is provided in Table 3 for the soils and Table 4 for the waters.

In addition copies of the chain of custody sheets and shipping sheets can be found in appendix A through C.

A) Chain of custody sheets for mobile lab PCB analysis for Excavation samples
B) FEDEX shipping label for Paradigm Labs
C) Chain of custody sheets for samples sent to Paradigm Labs

The PCB mini-extraction procedure is based on the existing EPA SW846 methods 8082/8141. The procedure incorporates all the quality control rigors of the full 8082/8141 methods including quantification based on 6-point calibration with continuing calibration verification, surrogate method performance monitoring, method blanks, laboratory control samples (LCS), and matrix spike/matrix spike (MS/MSD) duplicate samples. As such, you should consider these test results as comparable to what you would get from a fixed-based laboratory using the more-widely accepted extraction procedure.

The primary project objective of the sampling and testing episode was to delineate the PCB contamination at and around the site using the accelerated site characterization approach. The mobile laboratory was required to provide data as quickly as possible to keep the accelerated site investigation process on track while trying to maintain a goal of level three data quality.

CASE NARRATIVE

During the episode, all samples collected were analyzed. To maintain rapid turnaround and to meet the project objective, three GCs were operated on a nearly continuous basis.

Quality control including proper calibration, continuing calibration verification, surrogates, method blanks, laboratory control samples and matrix spike/matrix spike duplicate samples was performed at the method-specified intervals. Overall quality of the data is very good. The following quality related issues should be noted:

1. All surrogate recoveries were within acceptable ranges with the exception of two samples (DD005 and DD037). Method states that 1 of the 2 required surrogates must be within range.

2. All LCS recoveries were within acceptable ranges. See Table 3 and 4.

3. All MS/MSD recoveries were within acceptable ranges. Percent repeatability was also within acceptable ranges. See Table 3 and 4.

4. Since electron capture of detectors tend to have a very narrow linear range, many sample extracts required dilution. Dilutions were accurately done.

METHOD SUMMARY

This method employs a mini-extraction procedure and gas chromatography analysis for the detection of PCBs and chlorinated benzenes. Reporting limits are provided in the results Tables. Four grams of sample are dried with anhydrous sodium sulfate and extracted with eight mLs of 80/20 iso-octane/acetone. The extract is then analyzed by Gas Chromatography-Electron Capture Detector (GC-ECD).

Procedure

1. Standards Preparation - Primary standards are prepared from a solution purchased from various vendors at Certified concentrations. Stock standards are prepared in suitable solvents and stored in a freezer when not in use. Secondary standards are prepared in 80/20 iso-octane/acetone and stored in a freezer when not in use. Standard curve mixes for this project was prepared at six concentrations: PCBs – 0.05, 0.10, 0.20, 0.50, 1.0 and 2.0 ug/m; chlorinated benzenes – 0.005, 0.01, 0.02, 0.05, 0.10 and 0.20 ug/ml.

2. Sample Preparation - SOILS: Each sample or quality control sample is prepared in identical fashion. Approximately four grams of silica sand (blanks and control spikes) or sample is transferred into a clean scintillation vial. Ten grams of anhydrous sodium sulfate are added to the vial and mixed well. Extra sodium sulfate is added when necessary to assure the sample is dried. A surrogate, spike compound mix (if necessary) and eight mLs of 80/20 iso-octane/acetone are added to the vial. The vial is shaken for 30 seconds, allowed to settle for 2 minutes, shaken again for 30 seconds, and allowed to settle for 10 minutes. An aliquot of the extract is transferred to an autosampler vial for injection into the GC-ECD.

3. WATER Samples: 200 grams of water was weighed into a clean jar containing 50 grams of sodium chloride. The samples were spiked with a surrogate in addition the LCS/MS/MSD were spiked with PCB's and chlorinated benzenes. Added 10 ml of isooctane to each and shake 3 times for 2 minutes each time. Samples were allowed to settle for approximately 5 minutes between each shake. Isooctane was decanted into a scintillation vial and then an aliquot was transferred to an autosampler vial. Then extracts were injected into a GC-ECD.

4. GC-ECD Analysis - A sample aliquot is injected into an HP5890 GC with an ECD equipped with an HP ChemStation for data processing. PCBs were identified by matching retention times of standards to the same retention time in the sample. Regression analysis was performed on each of the selected peak's height verses concentration of the standard using a LN/LN transformed linear regression. For PCBs nine peaks were selected for quantification. The ug/mL value for each peak was added together and divided by the number of peaks selected to obtain the total PCB ug/mL result. If interference occurred at any of the peaks, these peaks were not included in the total, and the divisor was reduced accordingly.

5. Quality Control - Quality control consisted of the following items:
   - Continuing calibration standards analyzed every ten samples or less and at the end of a run.
   - Blank and LCS samples analyzed every twenty sample or less with a minimum of one per day.
   - MS/MSD samples analyzed every twenty samples or less with a minimum of one per day.
   - Information is documented in logbook 45 and January run sheets.

6. Instrument Conditions - Two HP5890 gas chromatographs were equipped with RTX-35 capillary columns. Each system had a Leap Technologies A200S auto-sampler and an HP ChemStation for data handling.

Table 1

Soil Sample Results – January

Table 1
Kuhlman Electric
Crystal Springs, Mississippi
PCB Concentrations as Aroclor 1260 Detected

						Field Laboratory			
Field Lab Sample ID	Sample ID	Sample Depth	Date Collected	Time Collected	Date Analyzed	Concentration (mg/kg)	Surrogate TCMX(%)	Surrogate DCBP(%)	Rinse
DD001	MWP-HA-001-001	0-12"	17-Jan-05	10:10	17-Jan-05	**2.1**	97.8	94.5	
DD002	MWP-HA-001-002	12-24"	17-Jan-05	10:31	17-Jan-05	**0.32**	96.0	90.0	
DD003	MWP-HA-002-001	0-12"	17-Jan-05	10:43	17-Jan-05	**3.6**	96.3	85.2	
DD004	MWP-HA-002-002	12-24"	17-Jan-05	11:09	17-Jan-05	**0.18**	96.2	91.8	
DD005	MWP-HA-003-001	0-12"	17-Jan-05	11:21	17-Jan-05	**0.15**	119	64.0	A
DD006	MWP-HA-003-002	12-24"	17-Jan-05	11:55	17-Jan-05	< 0.10	97.5	96.3	
DD007	MWP-Duplicate	-	17-Jan-05	-	17-Jan-05	**1.9**	95.5	88.6	
DD008	MWP-HA-004-001	0-12"	17-Jan-05	13:10	18-Jan-05	**3.6**	117	82.9	A
DD009	MWP-HA-004-002	12-24"	17-Jan-05	13:22	18-Jan-05	**0.24**	94.7	89.5	
DD010	MWP-HA-005-001	0-12"	17-Jan-05	13:34	18-Jan-05	**7.7**	130	79.5	A
DD011	MWP-HA-005-002	12-24"	17-Jan-05	13:43	18-Jan-05	< 0.10	95.2	78.7	
DD012	MWP-HA-006-001	0-12"	17-Jan-05	13:56	18-Jan-05	**19**	95.3	77.7	
DD013	MWP-HA-006-002	12-24"	17-Jan-05	14:04	18-Jan-05	**0.95**	97.1	91.0	
DD014	MWP-HA-007-001	0-12"	17-Jan-05	14:23	18-Jan-05	**4.5**	98.2	84.6	
DD015	MWP-HA-007-002	12-24"	17-Jan-05	14:33	18-Jan-05	**0.13**	101	92.9	
DD016	MWP-HA-008-001	0-12"	17-Jan-05	14:43	18-Jan-05	**0.12**	90.4	74.5	
DD017	MWP-HA-008-002	12-24"	17-Jan-05	14:52	18-Jan-05	< 0.10	95.8	90.0	
DD018	MWP-HA-009-001	0-12"	17-Jan-05	15:08	18-Jan-05	**0.16**	98.8	79.8	
DD019	MWP-HA-009-002	12-24"	17-Jan-05	15:15	18-Jan-05	< 0.10	95.6	82.5	
DD020	MWP-HA-010-001	0-12"	17-Jan-05	15:28	18-Jan-05	< 0.10	92.9	81.8	
DD021	MWP-HA-010-002	12-24"	17-Jan-05	15:35	18-Jan-05	< 0.10	94.2	78.1	
DD022	MWP-HA-011-001	0-12"	17-Jan-05	15:46	18-Jan-05	**0.23**	94.1	81.6	
DD023	MWP-HA-011-002	12-24"	17-Jan-05	15:55	18-Jan-05	< 0.10	98.8	96.4	
DD024	MWP-HA-012-001	0-12"	18-Jan-05	08:24	18-Jan-05	**0.33**	91.9	72.6	
DD025	MWP-HA-012-002	12-24"	18-Jan-05	08:37	18-Jan-05	< 0.10	97.7	88.8	
DD026	MWP-HA-013-001	0-12"	18-Jan-05	08:48	18-Jan-05	**0.28**	90.1	75.8	
DD027	MWP-HA-013-002	12-24"	18-Jan-05	08:58	18-Jan-05	< 0.10	92.1	95.8	
DD028	MWP-HA-014-001	0-12"	18-Jan-05	09:07	18-Jan-05	**0.35**	95.9	70.7	
DD029	MWP-HA-014-002	12-24"	18-Jan-05	09:16	18-Jan-05	< 0.10	92.3	82.8	
DD030	MWP-Duplicate	-	18-Jan-05	-	18-Jan-05	**0.35**	96.0	82.1	
DD031	MWP-HA-015-001	0-12"	18-Jan-05	09:58	18-Jan-05	**2.0**	89.7	75.8	
DD032	MWP-HA-015-002	12-24"	18-Jan-05	10:09	18-Jan-05	**0.36**	92.4	95.0	
DD033	MWP-HA-016-001	0-12"	18-Jan-05	10:19	18-Jan-05	**2.1**	91.3	74.4	
DD034	MWP-HA-016-002	12-24"	18-Jan-05	10:32	18-Jan-05	**0.11**	100	95.0	
DD035	MWP-HA-017-001	0-12"	18-Jan-05	10:41	18-Jan-05	< 0.10	92.4	76.0	
DD036	MWP-HA-017-002	12-24"	18-Jan-05	10:50	18-Jan-05	< 0.10	91.8	81.1	
DD037	MWP-HA-018-001	0-12"	18-Jan-05	10:58	18-Jan-05	< 0.10	123	56.2	A
DD038	MWP-HA-018-002	12-24"	18-Jan-05	11:07	18-Jan-05	< 0.10	91.7	81.5	

NOTES:
= Acid Treated.
Surrogate recoveria criteria 60-140% unless sample is acid treated.
Surrogate recoveria criteria 75-175% if sample is acid treated.

Table 2

Water Sample Results – January

Table 2
Kuhlman Electric
Crystal Springs, Mississippi
PCB Concentrations as Aroclor 1260 Detected

					Field Laboratory			
Field Lab Sample ID	Sample ID	Sample Depth	Date Collected	Time Collected	Date Analyzed	Concentration (ug/L)	Surrogate TCMX(%)	Surrogate DCBP(%)
W1061	MWP-FB-001	-	17-Jan-05	13:15	20-Jan-05	< 0.25	98.2	106

Table 3

Soil QC Samples - January

Table 3
QC Results

Lab # associated with qc samples: DD001 through DD002

	Matrix Spike DD003	Matrix Spike Duplicate DD003		Blank 816	LCS 816
Date Analyzed:	1/17/05	1/17/05		1/17/05	1/17/05

Compound	% Rec		% Rec		% RPD	mg/kg	% Rec
PCB as 1260	107		91.3		16%	< 0.10	101

Table 3
QC Results

Lab # associated with qc samples: DD021 through DD023

	Matrix Spike DD023		Matrix Spike Duplicate DD023			Blank 817	LCS 817
Date Analyzed:	1/18/05		1/18/05			1/18/05	1/18/05
Compound	% Rec		% Rec		% RPD	mg/kg	% Rec
PCB as 1260	97.8		103		-5%	< 0.10	95.3

Table 3
QC Results

Lab # associated with qc samples: DD024 through DD038

	Matrix Spike DD038	Matrix Spike Duplicate DD038	Blank 818	LCS 818
Date Analyzed:	1/18/05	1/18/05	1/18/05	1/18/05

Compound	% Rec		% Rec		% RPD	mg/kg	% Rec
PCB as 1260	92.4		93.7		-1%	< 0.10	93.4

Table 4

Water QC Samples - January

Table 4
QC Results

Lab # associated with qc samples: W1061

	Matrix Spike W1061		Matrix Spike Duplicate W1061			Blank	LCS
Date Analyzed:	1/20/05		1/20/05			1/20/05	1/20/05
Compound	% Rec		% Rec		% RPD	ug/L	% Rec
PCB as 1260	109		120		-10%	< 0.25	120

Appendix A

Chain of Custody Sheets for mobile lab PCB analysis Samples

Environmental Chemistry Consulting Services, Inc.

2525 Advance Road Madison, WI 53718
Phone 608-221-8700 FAX 608-221-4889

CHAIN OF CUSTODY

No. 008831 *

Page 1 of 2

MAGGIE WILLIAMS 1-17-05

Project Number:	Mail Report To:
Project Name: Kuhlman Electric	Company: Martin & Slagle
Project Location: Crystal Springs MI	Address:
Sampled By (Print): Chuck Reel	

Turn Around (circle one) Normal Rush	
Report Due:	
Invoice To:	
Company:	
Address:	
P.O. No.: Quote No.:	

Sample Description	Collection Date	Collection Time	Matrix	Total Bottles	Preserv*	Analysis Requested	Depth Comments	Laboratory Number
MWP-HA001-001	1/17/05	1010	S	1	HCl	PCB's	0-1'	DD001
MWP-HA001-002		1031	S	1			1-2'	DD002
MWP-HA002-001		1043	S	1			0-1'	DD003
MWP-HA002-002		1109	S	1			1-2'	DD004
MWP-HA003-001		1121	S	1			0-1'	DD005
MWP-HA003-002		1155	S	1			1-2'	DD006
MWP-DUP		—	S	1			—	DD007
MWP-HA004-001		1310	S	1			0-1'	DD008
MWP-HA004-002		1322	S	1			1-2'	DD009
MWP-HA005-001		1334	S	1			0-1'	DD010
MWP-HA005-002		1343	S	1			1-2'	DD011
MWP-HA006-001		1356	S	1			0-1'	DD012

*Preservation Code
A=None B=HCL C=H2SO4
D=HNO3 E=EnCore F=Methanol
G=NaOH O=Other(Indicate)

Relinquished By:	Date/Time: 1/17/05 1200	Received By:	Date/Time: 1/17/05 1200
Relinquished By:	Date/Time:	Received By:	Date/Time:

Custody Seal: Present/Absent Intact/Not Intact Seal #'s

Shipped Via:

Receipt Temp:
Temp Blank Y N

WHITE - REPORT COPY YELLOW - LABORATORY COPY PINK - SAMPLER/SUBMITTER

Environmental Chemistry Consulting Services, Inc.
2525 Advance Road Madison, WI 53718
Phone 608-221-8700 FAX 608-221-4889

CHAIN OF CUSTODY

MAGGIE WILLIAMS 1-17-05

No. 008828 *

Page 2 of 2

Project Number:	Mail Report To:	Turn Around (circle one) Normal Rush
Project Name: KUHLMAN ELECTRIC	Company: MARTIN & SLABAUGH	Report Due:
Project Location: CRYSTAL SPRINGS, MS	Address:	Invoice To:
Sampled By (Print): CHUCK POOL		Company:
		Address:
		P.O. No.: Quote No.:

Sample Description	Collection Date	Collection Time	Matrix	Total Bottles	Preserv*	Analysis Requested	DEPTH Comments	Laboratory Number
MWP-HA006-002	1/17/05	1404	S	1	ICE	PCB's	1-2'	DD013
MWP-HA007-001		1423					0-1'	DD014
MWP-HA007-002		1433					1-2'	DD015
MWP-HA008-001		1443					0-1'	DD016
MWP-HA008-002		1452					1-2'	DD017
MWP-HA009-001		1508					0-1'	DD018
MWP-HA009-002		1515					1-2'	DD019
MWP-HA010-001		1528					0-1'	DD020
MWP-HA010-002		1535					1-2'	DD021
MWP-HA011-001		1546					0-1'	DD022
MWP-HA011-002		1555					1-2'	DD023

*Preservation Code
A=None B=HCL C=H2SO4
D=HNO3 E=EnCore F=Methanol
G=NaOH O=Other(Indicate)

Relinquished By:	Date/Time: 1/17/05 16:15	Received By:	Date/Time: 1/17/05 16:15
Relinquished By:	Date/Time:	Received By:	Date/Time:

Custody Seal: Present/Absent Intact/Not Intact Seal #'s
Shipped Via:
Receipt Temp:
Temp Blank Y N

WHITE - REPORT COPY YELLOW - LABORATORY COPY PINK - SAMPLER/SUBMITTER

Environmental Chemistry Consulting Services, Inc.

2525 Advance Road Madison, WI 53718
Phone 608-221-8700 FAX 608-221-4889

CHAIN OF CUSTODY

MAGGIE WILLIAMS
HF05

No. 008829 *

Page 1 of 2

Project Number:	Mail Report To:
Project Name: KUHLMAN ELECTRIC	Company: MARTIN B SLAGLE
Project Location: CRYSTAL SPRINGS, MS	Address:
Sampled By (Print): CHUCK POOL	

Turn Around (circle one) Normal Rush	
Report Due:	
Invoice To:	
Company:	
Address:	
P.O. No.:	Quote No.:

Sample Description	Collection Date	Collection Time	Matrix	Total Bottles	Preserv*	Analysis Requested	DEPTH Comments	Laboratory Number
MWP-HA012-001	11/18/05	0824	S	1	ICE	PCB's	0-1'	DD024
↓ -002		0837					1-2'	DD025
HA013-001		0848					0-1'	DD026
↓ -002		0858					1-2'	DD027
HA014-001		0907					0-1'	DD028
↓ -002		0916					1-2'	DD029
DUPLICATE		—					—	DD030
HA015-001		0958 ~~1005~~					0-1'	DD031
↓ -002		1009					1-2'	DD032
HA16-001		1019					0-1'	DD033
↓ -002		1032					1-2'	DD034
↓ HA17-001	↓	1041	↓	↓	↓	↓	0-1'	DD035

@ ENVIROCORE 86 11/18/05

*Preservation Code A=None B=HCL C=H2SO4 D=HNO3 E=EnCore F=Methanol G=NaOH O=Other(Indicate)	Relinquished By:	Date/Time: 11/18/05 1130	Received By:	Date/Time: 11/18/05 1130
	Relinquished By:	Date/Time:	Received By:	Date/Time:
Custody Seal: Present/Absent	Intact/Not Intact	Seal #'s	Receipt Temp:	
Shipped Via:			Temp Blank Y N	

WHITE - REPORT COPY YELLOW - LABORATORY COPY PINK - SAMPLER/SUBMITTER

Environmental Chemistry Consulting Services, Inc.

2525 Advance Road Madison, WI 53718
Phone 608-221-8700 FAX 608-221-4889

CHAIN OF CUSTODY

MAGGIE WILLIAMS 1-17-05

No. 008830 *

Page 2 of 2

Project Number:		Mail Report To:	Turn Around (circle one) Normal Rush
Project Name: KUHLMAN ELECTRIC		Company: MARTIN & SCHMIDT	Report Due:
Project Location: CRYSTAL SPRINGS, MS		Address:	Invoice To:
Sampled By (Print): CHUCK POOL			Company:
			Address:
			P.O. No.: Quote No.:

Sample Description	Collection Date	Collection Time	Matrix	Total Bottles	Preserv*	Analysis Requested	DEPTH Comments	Laboratory Number
MWP-HA17-002	11/14/05	1050	S	1	ICE	PCB's	1-2'	DD036
HA18-001		1054					0-1'	DD037
-002		1107					1-2'	DD038

*Preservation Code
A=None B=HCL C=H2SO4
D=HNO3 E=EnCore F=Methanol
G=NaOH O=Other(Indicate)

Relinquished By: Chuck O.R. Pool	Date/Time: 1/18/05 1130	Received By:	Date/Time: 1/18/05 1130
Relinquished By:	Date/Time:	Received By:	Date/Time:

Custody Seal: Present/Absent Intact/Not Intact Seal #'s
Shipped Via:
Receipt Temp:
Temp Blank Y N

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2525 Advance Road Madison, WI 53718
Phone 608-221-8700 FAX 608-221-4889

CHAIN OF CUSTODY

1/17/05

MISC

No. 008833 *

Page 1 of 1

Turn Around (circle one) Normal Rush

Report Due:

Project Number:	Mail Report To:	Invoice To:
Project Name: KUHLMAN ELECTRIC	Company: MARTIN & SLAGLE	Company:
Project Location: CRYSTAL SPRINGS, MS	Address:	Address:
Sampled By (Print): CHUCK POOL		P.O. No.: Quote No.:

Sample Description	Collection Date	Collection Time	Matrix	Total Bottles	Preserv*	Analysis Requested	Comments	Laboratory Number
MWP-FB-001	1/17/05	1315	W	1	N/A	PCB†		W1061

*Preservation Code
A=None B=HCL C=H2SO4
D=HNO3 E=EnCore F=Methanol
G=NaOH O=Other(Indicate)

Relinquished By: Chuck O M. Pool	Date/Time: 1/17/05 1530	Received By:	Date/Time: 1/17/05 1330
Relinquished By:	Date/Time:	Received By:	Date/Time:

Custody Seal: Present/Absent Intact/Not Intact Seal #'s

Shipped Via:

Receipt Temp:

Temp Blank Y N

WHITE - REPORT COPY YELLOW - LABORATORY COPY PINK - SAMPLER/SUBMITTER

Appendix B

FEDEX shipping label for Paradigm Labs

FedEx Express **US Airbill**

FedEx Tracking Number **8469 0347 2545**

Form ID No. 0215 — Sender's Copy

From *Please print and press hard.*

Date 01/24/05 — Sender's FedEx Account Number

Name Chuck Peel — Phone (601) 829-2712

Company Peel Consulting

Address 140 Chapel Lane — Dept./Floor/Suite/Room

City Madison — State MS — ZIP 39110

Your Internal Billing Reference — First 24 characters will appear on invoice. MARTIN & SWAGLE OPTIONS

To

Recipient's Name SAMPLE CUSTODIAN — Phone (910) 350-1903

Company PARADIGM ANALYTICAL LABS

Recipient's Address 5500 BUSINESS DR — We cannot deliver to P.O. boxes or P.O. ZIP codes. — Dept./Floor/Suite/Room

Address — To request a package be held at a specific FedEx location, print FedEx address here.

City WILMINGTON — State NC — ZIP 28405-8446

4a Express Package Service — *Packages up to 150 lbs.* * To most locations

- [X] FedEx Priority Overnight — Next business morning*
- [ ] FedEx Standard Overnight — Next business afternoon*
- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations*
- [ ] FedEx 2Day — Second business day*
- [ ] FedEx Express Saver — Third business day*

FedEx Envelope rate not available. Minimum charge: One-pound rate

4b Express Freight Service — *Packages over 150 lbs.* ** To most locations

- [ ] FedEx 1Day Freight* — Next business day**
- [ ] FedEx 2Day Freight — Second business day**
- [ ] FedEx 3Day Freight — Third business day**

* Call for Confirmation: _____

5 Packaging — * Declared value limit $500

- [ ] FedEx Envelope*
- [ ] FedEx Pak* — Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak
- [ ] FedEx Box
- [ ] FedEx Tube
- [X] Other

6 Special Handling — Include FedEx address in Section 3.

- [ ] SATURDAY Delivery — Available ONLY for FedEx Priority Overnight, FedEx 2Day, FedEx 1Day Freight, and FedEx 2Day Freight to select ZIP codes
- [ ] HOLD Weekday at FedEx Location — NOT Available for FedEx First Overnight
- [ ] HOLD Saturday at FedEx Location — Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations

Does this shipment contain dangerous goods? One box must be checked.

- [X] No
- [ ] Yes — As per attached Shipper's Declaration
- [ ] Yes — Shipper's Declaration not required
- [ ] Dry Ice — Dry Ice, 9, UN 1845 _____ x _____ kg

Dangerous goods (including Dry Ice) cannot be shipped in FedEx packaging.

- [ ] Cargo Aircraft Only

7 Payment *Bill to:* — Enter FedEx Acct. No. or Credit Card No. below.

- [ ] Sender — Acct. No. in Section 1 will be billed.
- [X] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check

FedEx Acct. No. / Credit Card No. 1811-4189-1 — Exp. Date

Total Packages	Total Weight	Total Declared Value†
		$ .00

†Our liability is limited to $100 unless you declare a higher value. See back for details.

FedEx Use Only

8 Sign to Authorize Delivery Without a Signature

By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting claims.

466

Try online shipping at fedex.com.

By using this Airbill you agree to the service conditions on the back of this Airbill and in our current Service Guide, including terms that limit our liability.

Questions? Visit our Web site at fedex.com or call 1.800.GoFedEx 1.800.463.3339.

0282993908

SRF • Rev. Date 11/03 • Part #158279 • ©1994–2003 FedEx • PRINTED IN U.S.A.

Appendix C

Chain of Custody Sheets for samples sent to Paradigm Labs

PARADIGM ANALYTICAL LABORATORIES, INC.
5500 Business Drive, Wilmington, NC 28405
Phone: (910)-350-1903 FAX: (910)-350-1557

Chain-of-Custody Record & Analytical Request

COC# 44[illegible]41

Page 1 **of** 1

Client: Martin & Slagle
Address:
Address: Black Mountain NC
Quote #:

Project ID: Kuhlman Electric
Contact: Christine Spindel
Phone:
Fax:

Date: 01/24/05
Turnaround: STD
Job Number:
P.O. Number:

Report To: SAME
Invoice To: SAME

Sample ID	Date	Time	Matrix	Preservatives: NA	Analyses: PCBs	Comments: Please specify any special reporting requirements (Mineral Lab #)	Depth
MWP-HA-001-001	01/17/05	1010	S	X	X	DD001	0-1'
MWP-DUPLICATE	01/17/05	—	S	X	X	DD007	—
MWP-HA-005-001	01/17/05	1324	S	X	X	DD010	0-1'
MWP-HA-006-001	01/17/05	1356	S	X	X	DD012	0-1'
MWP-HA-011-001	01/17/05	1546	S	X	X	DD022	0-1'
MWP-HA-012-001	01/18/05	0824	S	X	X	DD024	0-1'
MWP-DUPLICATE	01/18/05	—	S	X	X	DD030	—
MWP-HA-016-001	01/18/05	1019	S	X	X	DD033	0-1'

Relinquished By	Date	Time	Received By	Date	Time	Temperature
[illegible signature]	01/24/05	1500				

State Certification Requested
NC ____ SC ____ Other ____

SEE REVERSE FOR
TERMS AND CONDITIONS

CLIENT COPY

PARADIGM ANALYTICAL LABORATORIES, INC.
5500 Business Drive, Wilmington, NC 28405
Phone: (910)-350-1903 FAX: (910)-350-1557

Chain-of Custody Record & Analytical Request

COC# 44639

Page 1 of 2

Client: Martin & Slagle
Address:
Address: Black Mountain, NC
Quote #:

Project ID: Kinkman Electric
Contact: Robert Martin
Phone:
Fax:

Date: 01/24/05
Turnaround: STD
Job Number:
P.O. Number:

Report To: Same
Invoice To: Same

Sample ID	Date	Time	Matrix	Preservatives: N/A				Analyses										Comments: Please specify any special reporting requirements
								Extract on 8081/8082 and hold for notification										Mobil Lab #
MWAHA-002-001	01/12/05	1043	S	X														DD003
003-001	↓	1121	↓	X														DD005
004-001	↓	1310	↓	X														DD008
007-001	↓	~~1334~~ 1423	↓	X														DD014
008-001	↓	1443	↓	X														DD016
009-001	↓	1504	↓	X														DD018
010-001	↓	1528	↓	X														DD020
013-001	01/18/05	0848	↓	X														DD026
014-001	↓	0907	↓	X														DD028
015-001	↓	0955	↓	X														DD031

Hold for notification from Robert Martin for analysis to be performed (extract)

Relinquished By	Date	Time	Received By	Date	Time	Temperature
[illegible signature]	[illegible]	[illegible]				

State Certification Requested

NC ____ SC ____ Other ____

SEE REVERSE FOR TERMS AND CONDITIONS

PARADIGM ANALYTICAL LABORATORIES, INC.
5500 Business Drive, Wilmington, NC 28405
Phone: (910)-350-1903 FAX: (910)-350-1557

Chain-of Custody Record & Analytical Request

COC# 44040

Page 2 **of** 2

Client: Martin & Slagle
Address:
Address: Black Mountain, NC
Quote #:

Project ID: Kullman Electric
Contact: Robert Martin
Phone:
Fax:

Date: 01/24/05
Turnaround:
Job Number:
P.O. Number:

Report To: Same
Invoice To: Same

Sample ID	Date	Time	Matrix	Preservatives: N/A				Analyses: Extract in Feb 1/2005 and hold for notification / RM										Comments: Please specify any special reporting requirements
MWP-HA-017-001	1/18/05	1041	S	X														DD035
MWP-HA-018-001	1/18/05	1058	S	X														DD037

Extract / Hold for notification from Robert Martin for analysis to be performed

Relinquished By	Date	Time	Received By	Date	Time	Temperature	State Certification Requested
[illegible signature]	1/24/05	[illegible]					NC ___ SC ___ Other ___

SEE REVERSE FOR TERMS AND CONDITIONS

CLIENT COPY

April 13, 2005

Robert Martin
Martin & Slagle, LLC
P.O. Box 1023
Black Mountain, NC 28711

Dear Mr. Martin,

Enclosed is the Technical Memorandum for work completed at the former Borg Warner and current Kuhlman Electric facility in Crystal Springs, Mississippi during the month of February. If you have any questions concerning this information, please give me a call.

Sincerely,

Kari Ann Killian

for Richard Johnson

Enclosure

Environmental Chemistry Consulting Services, Inc.
2525 Advance Road • Madison, WI 53718 • Phone (608) 221-8700 • FAX (608) 221-4889

Technical Memorandum

Borg Warner / Kuhlman Electric

Crystal Springs, Mississippi

TECHNICAL MEMORANDUM

April 13, 2005

To: Robert Martin
Martin Slagle Inc.

From: Richard Johnson
ECCS, Inc.

Re: Field Analytical Methods – QC Summary
Borg Warner – Kuhlman Electric Facility
Crystal Springs, Mississippi

INTRODUCTION

This Technical Memorandum provides documentation of the field analytical test methods used to analyze soil and water samples collected from MWP-HA samples during February 2005 during an accelerated site investigation episode around the former Borg Warner and current Kuhlman Electric facility in Crystal Springs, Mississippi. Soil and water samples were analyzed for polychlorinated biphenyls (PCBs) and chlorinated benzenes by gas chromatography (GC) in accordance with ECCS's Polychlorinated Biphenyl (PCB) Mini Extraction Screening Procedure. A summary of test results is provided in Table 1 for soils and Table 2 for waters. A summary of method blanks, laboratory control samples and matrix spike/matrix spike duplicate data is provided in Table 3 for the soils and Table 4 for the waters.

In addition copies of the chain of custody sheets and shipping sheets can be found in appendix A through C.

A) Chain of custody sheets for mobile lab PCB analysis for Excavation samples
B) FEDEX shipping label for Paradigm Labs
C) Chain of custody sheets for samples sent to Paradigm Labs

The PCB mini-extraction procedure is based on the existing EPA SW846 methods 8082/8141. The procedure incorporates all the quality control rigors of the full 8082/8141 methods including quantification based on 6-point calibration with continuing calibration verification, surrogate method performance monitoring, method blanks, laboratory control samples (LCS), and matrix spike/matrix spike (MS/MSD) duplicate samples. As such, you should consider these test results as comparable to what you would get from a fixed-based laboratory using the more-widely accepted extraction procedure.

The primary project objective of the sampling and testing episode was to delineate the PCB contamination at and around the site using the accelerated site characterization approach. The mobile laboratory was required to provide data as quickly as possible to keep the accelerated site investigation process on track while trying to maintain a goal of level three data quality.

CASE NARRATIVE

During the episode, all samples collected were analyzed. To maintain rapid turnaround and to meet the project objective, three GCs were operated on a nearly continuous basis.

Quality control including proper calibration, continuing calibration verification, surrogates, method blanks, laboratory control samples and matrix spike/matrix spike duplicate samples was performed at the method-specified intervals. Overall quality of the data is very good. The following quality related issues should be noted:

1. All surrogate recoveries were within acceptable ranges.

2. All LCS recoveries were within acceptable ranges. See Table 3 and 4.

3. All MS/MSD recoveries were within acceptable ranges. Percent repeatability was also within acceptable ranges. See Table 3 and 4.

4. Since electron capture of detectors tend to have a very narrow linear range, many sample extracts required dilution. Dilutions were accurately done.

METHOD SUMMARY

This method employs a mini-extraction procedure and gas chromatography analysis for the detection of PCBs and chlorinated benzenes. Reporting limits are provided in the results Tables. Four grams of sample are dried with anhydrous sodium sulfate and extracted with eight mLs of 80/20 iso-octane/acetone. The extract is then analyzed by Gas Chromatography-Electron Capture Detector (GC-ECD).

Procedure

1. Standards Preparation - Primary standards are prepared from a solution purchased from various vendors at Certified concentrations. Stock standards are prepared in suitable solvents and stored in a freezer when not in use. Secondary standards are prepared in 80/20 iso-octane/acetone and stored in a freezer when not in use. Standard curve mixes for this project was prepared at six concentrations: PCBs – 0.05, 0.10, 0.20, 0.50, 1.0 and 2.0 ug/m; chlorinated benzenes – 0.005, 0.01, 0.02, 0.05, 0.10 and 0.20 ug/ml.

2. Sample Preparation - SOILS: Each sample or quality control sample is prepared in identical fashion. Approximately four grams of silica sand (blanks and control spikes) or sample is transferred into a clean scintillation vial. Ten grams of anhydrous sodium sulfate are added to the vial and mixed well. Extra sodium sulfate is added when necessary to assure the sample is dried. A surrogate, spike compound mix (if necessary) and eight mLs of 80/20 iso-octane/acetone are added to the vial. The vial is shaken for 30 seconds, allowed to settle for 2 minutes, shaken again for 30 seconds, and allowed to settle for 10 minutes. An aliquot of the extract is transferred to an autosampler vial for injection into the GC-ECD.

3. WATER Samples: 200 grams of water was weighed into a clean jar containing 50 grams of sodium chloride. The samples were spiked with a surrogate in addition the LCS/MS/MSD were spiked with PCB's and chlorinated benzenes. Added 10 ml of isooctane to each and shake 3 times for 2 minutes each time. Samples were allowed to settle for approximately 5 minutes between each shake. Isooctane was decanted into a scintillation vial and then an aliquot was transferred to an autosampler vial. Then extracts were injected into a GC-ECD.

4. GC-ECD Analysis - A sample aliquot is injected into an HP5890 GC with an ECD equipped with an HP ChemStation for data processing. PCBs were identified by matching retention times of standards to the same retention time in the sample. Regression analysis was performed on each of the selected peak's height verses concentration of the standard using a LN/LN transformed linear regression. For PCBs nine peaks were selected for quantification. The ug/mL value for each peak was added together and divided by the number of peaks selected to obtain the total PCB ug/mL result. If interference occurred at any of the peaks, these peaks were not included in the total, and the divisor was reduced accordingly.

5. Quality Control - Quality control consisted of the following items:
   - Continuing calibration standards analyzed every ten samples or less and at the end of a run.
   - Blank and LCS samples analyzed every twenty sample or less with a minimum of one per day.
   - MS/MSD samples analyzed every twenty samples or less with a minimum of one per day.
   - Information is documented in logbook 45 and February run sheets.

6. Instrument Conditions - Two HP5890 gas chromatographs were equipped with RTX-35 capillary columns. Each system had a Leap Technologies A200S auto-sampler and an HP ChemStation for data handling.

Table 1

Soil Sample Results – February

Table 1
Kuhlman Electric
Crystal Springs, Mississippi
PCB Concentrations as Aroclor 1260 Detected

					Field Laboratory				
Field Lab Sample ID	Sample ID	Sample Depth	Date Collected	Time Collected	Date Analyzed	Concentration (mg/kg)	Surrogate TCMX(%)	Surrogate DCBP(%)	Rinse
DD039	MWP-HA-019-001	0-12"	25-Feb-05	12:34	25-Feb-05	**6.8**	104	98.8	
DD040	MWP-HA-019-002	12-24"	25-Feb-05	12:45	25-Feb-05	**0.24**	107	97.9	
DD041	MWP-HA-020-001	0-12"	25-Feb-05	12:54	25-Feb-05	**1.1**	95.2	84.4	
DD042	MWP-HA-020-002	12-24"	25-Feb-05	13:03	25-Feb-05	**0.12**	96.2	90.6	
DD043	MWP-HA-021-001	0-12"	25-Feb-05	13:12	25-Feb-05	**0.20**	101	90.9	
DD044	MWP-HA-021-002	12-24"	25-Feb-05	13:20	25-Feb-05	< 0.10	96.3	80.9	
DD045	MWP-Duplicate	-	25-Feb-05	-	25-Feb-05	**5.7**	100	98.0	
DD046	MWP-HA-022-001	0-12"	25-Feb-05	13:32	25-Feb-05	**1.6**	96.0	81.9	
DD047	MWP-HA-022-002	12-24"	25-Feb-05	13:40	25-Feb-05	< 0.10	96.6	89.8	
DD048	MWP-HA-023-001	0-12"	25-Feb-05	16:12	25-Feb-05	**2.6**	90.6	93.7	
DD049	MWP-HA-023-002	12-24"	25-Feb-05	16:18	25-Feb-05	< 0.10	97.9	95.5	
DD050	MWP-HA-024-001	0-12"	25-Feb-05	17:05	25-Feb-05	< 0.10	101	98.5	
DD051	MWP-HA-024-002	12-24"	25-Feb-05	17:12	25-Feb-05	< 0.10	91.1	71.4	
DD052	MWP-HA-025-001	0-12"	25-Feb-05	17:23	25-Feb-05	**0.42**	93.4	88.1	
DD053	MWP-HA-025-002	12-24"	25-Feb-05	17:31	25-Feb-05	< 0.10	94.8	92.4	
DD054	MWP-HA-026-001	0-12"	26-Feb-05	17:21	26-Feb-05	**2.0**	102	98.9	
DD055	MWP-HA-026-002	12-24"	26-Feb-05	17:26	26-Feb-05	**0.35**	103	92.2	
DD056	MWP-HA-027-001	0-12"	26-Feb-05	17:30	26-Feb-05	**51**	138	104	A
DD057	MWP-HA-027-002	12-24"	26-Feb-05	17:35	26-Feb-05	**12**	102	94.6	
DD058	MWP-HA-028-001	0-12"	26-Feb-05	17:41	26-Feb-05	**4.2**	101	93.6	
DD059	MWP-HA-028-002	12-24"	26-Feb-05	17:47	26-Feb-05	**0.74**	108	89.2	
DD060	MWP-Duplicate	-	26-Feb-05	-	26-Feb-05	**1.4**	99.2	92.5	

NOTES:
A = Acid Treated.
Surrogate recoveria criteria 60-140% unless sample is acid treated.
Surrogate recoveria criteria 75-175% if sample is acid treated.

Table 2

Water Sample Results – February

Table 2
Kuhlman Electric
Crystal Springs, Mississippi
PCB Concentrations as Aroclor 1260 Detected

					Field Laboratory			
Field Lab Sample ID	Sample ID	Sample Depth	Date Collected	Time Collected	Date Analyzed	Concentration (ug/L)	Surrogate TCMX(%)	Surrogate DCBP(%)
W1081	MWP-FB-002	-	25-Feb-05	12:27	03/03/2005	< 0.25	114	98.8

Table 3

Soil QC Samples - February

Table 3
QC Results

Lab # associated with qc samples: DD039 through DD053

	Matrix Spike DD044	Matrix Spike Duplicate DD044	Blank 823	LCS 823
Date Analyzed:	2/25/05	2/25/05	2/25/05	2/25/05

Compound	% Rec		% Rec		% RPD	mg/kg	% Rec
PCB as 1260	86.4		86.8		0%	< 0.10	98.6

Table 3
QC Results

Lab # associated with qc samples: DD054 through DD060

	Matrix Spike DD059	Matrix Spike Duplicate DD059	Blank 827	LCS 827
Date Analyzed:	2/26/05	2/26/05	2/26/05	2/26/05

Compound	% Rec		% Rec		% RPD	mg/kg	% Rec
PCB as 1260	93.5		102		-9%	< 0.10	89.4

Table 4

Water QC Samples - February

Table 4
QC Results

Lab # associated with qc samples: W1081

	Matrix Spike W1082		Matrix Spike Duplicate W1082			Blank	LCS
Date Analyzed:	3/3/05		3/3/05			3/3/05	3/3/05
Compound	% Rec		% Rec		% RPD	ug/L	% Rec
PCB as 1260	107		102		5%	< 0.25	103

Appendix A

Chain of Custody Sheets for mobile lab PCB analysis Samples

Environmental Chemistry Consulting Services, Inc.

2525 Advance Road Madison, WI 53718
Phone 608-221-8700 FAX 608-221-4889

CHAIN OF CUSTODY

02/25/05

No. 008854 *

Page 1 of 2

Project Number:		Mail Report To:	Turn Around (circle one) Normal Rush
Project Name:	K4 HUMAN ELECTRIC	Company: MARTIN & SCHMIDT	Report Due:
Project Location:	CRYSTAL SPRINGS	Address:	Invoice To:
Sampled By (Print):	Chuck Pace		Company:
			Address:
			P.O. No.: Quote No.:

Sample Description	Collection Date	Collection Time	Matrix	Total Bottles	Preserv*	Analysis Requested	Depth	Comments	Laboratory Number
MWP-HA-019-001	02/25/05	1234	S	1	NA	PCBs	0-1		DD039
MWP-HA-019-002		1245					1-2		DD040
MWP-HA-020-001		1254					0-1		DD041
MWP-HA-020-002		1303					1-2		DD042
MWP-HA-021-001		1312					0-1		DD043
MWP-HA-021-002		1320					1-2		DD044
MWP-DUPLICATE		—					—		DD045
MWP-HA-022-001		1332					0-1		DD046
MWP-HA-022-002		1340					1-2		DD047
MWP-HA-023-001		1612					0-1		DD048
MWP-HA-023-002		1618					1-2		DD049
MWP-HA-024-001		1705					0-1		DD050

*Preservation Code
A=None B=HCL C=H2SO4
D=HNO3 E=EnCore F=Methanol
G=NaOH O=Other(Indicate)

Relinquished By: Chuck Pace	Date/Time: 2/25/05 1340	Received By:	Date/Time: 02/25/05 1800
Relinquished By:	Date/Time:	Received By:	Date/Time:

Custody Seal: Present/Absent Intact/Not Intact Seal #'s

Shipped Via:

Receipt Temp:

Temp Blank Y N

WHITE - REPORT COPY YELLOW - LABORATORY COPY PINK - SAMPLER/SUBMITTER

Environmental Chemistry Consulting Services, Inc.

2525 Advance Road Madison, WI 53718
Phone 608-221-8700 FAX 608-221-4889

CHAIN OF CUSTODY

02/25/05

No. 008856 *

Page 2 of 2

Project Number:		Mail Report To:	Turn Around (circle one) Normal Rush
Project Name:	KUHLMAN ELECTRIC	Company:	MARTIN & SLAGLES	Report Due:
Project Location:	CRYSTAL SPRINGS	Address:	Invoice To:
Sampled By (Print):	Chuck Peel		Company:
			Address:
			P.O. No.: Quote No.:

Sample Description	Collection Date	Collection Time	Matrix	Total Bottles	Preserv*	Analysis Requested	Depth Comments	Laboratory Number
MWP-HA-024-002	02/25/05	1712	S	1	NA	PCB	1-2'	DD051
MWP-HA-025-001	↓	1723	S	1	NA	PCB	0-1'	DD052
MWP-HA-025-002	↓	1731	S	1	NA	PCB	1-2'	DD053

*Preservation Code
A=None B=HCL C=H2SO4
D=HNO3 E=EnCore F=Methanol
G=NaOH O=Other(Indicate)

Relinquished By: Charles Peel	Date/Time: 2/25/05 1830	Received By: Joseph Hubal	Date/Time: 02/25/05 1830
Relinquished By:	Date/Time:	Received By:	Date/Time:

Custody Seal: Present/Absent Intact/Not Intact Seal #'s

Shipped Via:

Receipt Temp:
Temp Blank Y N

WHITE - REPORT COPY YELLOW - LABORATORY COPY PINK - SAMPLER/SUBMITTER

Environmental Chemistry Consulting Services, Inc.

2525 Advance Road Madison, WI 53718
Phone 608-221-8700 FAX 608-221-4889

CHAIN OF CUSTODY

02/26/05

No. 008858 *

Page 1 of 1

Project Number:	Mail Report To:
Project Name: KUHLMAN ELECTRIC	Company: MARTIN + KLAGES
Project Location: CRYSTAL SPRINGS	Address:
Sampled By (Print): Chuck Peel	

Turn Around (circle one) Normal Rush	
Report Due:	
Invoice To:	
Company:	
Address:	
P.O. No.: Quote No.:	

Sample Description	Collection Date	Collection Time	Matrix	Total Bottles	Preserv*	Analysis Requested	Depth Comments	Laboratory Number
MWP-HA-026-001	02/26/05	1771	S	1	NA	PCBs	0-1	DD054
MWP-HA-026-002		1726					1-2	DD055
MWP-HA-027-001		1730					0-1	DD056
MWP-HA-027-002		1735					1-2	DD057
MWP-HA-028-001		1741					0-1	DD058
MWP-HA-028-002		1747					1-2	DD059
MWP-DUPLICATE		—					—	DD060

*Preservation Code
A=None B=HCL C=H2SO4
D=HNO3 E=EnCore F=Methanol
G=NaOH O=Other(Indicate)

Relinquished By: Charles O. Martel	Date/Time: 2/26/05 1815	Received By: [signature] Date/Time: 02/26/05 1815
Relinquished By:	Date/Time:	Received By: Date/Time:

Custody Seal: Present/Absent Intact/Not Intact Seal #'s

Shipped Via:

Receipt Temp:

Temp Blank Y N

WHITE - REPORT COPY YELLOW - LABORATORY COPY PINK - SAMPLER/SUBMITTER

Environmental Chemistry Consulting Services, Inc.

2525 Advance Road Madison, WI 53718
Phone 608-221-8700 FAX 608-221-4889

CHAIN OF CUSTODY

MISC

No. 008850 *

Page 1 of 1

Project Number:	Mail Report To:	Turn Around (circle one) Normal Rush
Project Name: Kuhlman Electric	Company: Martin + Schley	Report Due:
Project Location: Elkhorn Springs	Address:	Invoice To:
Sampled By (Print): Chuck Peel		Company:
		Address:
		P.O. No.: Quote No.:

Sample Description	Collection Date	Collection Time	Matrix	Total Bottles	Preserv*	Analysis Requested	Comments	Laboratory Number
Rinsate 1	02/25/05	0720	W	1	NA	PCBs	MIL-RS-045	LW1076
Rinsate 2		0722					-046	LW1077
Rinsate 3		0724					-047	LW1078
Rinsate 4		0726					-048	LW1079
ZWP-FB-001	02/25/05	0845	W	1	NA	PCB		LW1080
MWP-FB-002		1227						LW1081
GTP-FB-001		1424						LW1082

*Preservation Code
A=None B=HCL C=H2SO4
D=HNO3 E=EnCore F=Methanol
G=NaOH O=Other(Indicate)

Relinquished By: Chuck Peel	Date/Time: 2/25/05 1500	Received By:	Date/Time: 02/27/05 1500
Relinquished By:	Date/Time:	Received By:	Date/Time:

Custody Seal: Present/Absent Intact/Not Intact Seal #'s

Shipped Y

Receipt Temp:

Temp Blank Y N

WHITE - REPORT COPY YELLOW - LABORATORY COPY PINK - SAMPLER/SUBM ER

Appendix B

FEDEX shipping label for Paradigm Labs

FedEx Express **US Airbill**

FedEx Tracking Number **8469 0347 2410**

MUR23

0215

1 Sender's Copy

From Please print and press hard.

Date 03/02/05 Sender's FedEx Account Number

Sender's Name Chuck Peel Phone (601) 798-2792

Company Peel Consulting

Address 140 Chapel Lane Dept./Floor/Suite/Room

City Madison State MS ZIP 39110

Your Internal Billing Reference (first 24 characters will appear on invoice) MARTIN + SLAGLE (OPTIONAL)

To

Recipient's Name SAMPLE CUSTODIAN Phone (910) 350-1903

Company PARADIGM ANALYTICAL LABS

Recipient's Address 5500 BUSINESS DR (We cannot deliver to P.O. boxes or P.O. ZIP codes.) Dept./Floor/Suite/Room

Address (To request a package be held at a specific FedEx location, print FedEx address here.)

City WILMINGTON State NC ZIP 28405-8446

4a Express Package Service — Packages up to 150 lbs. (* To most locations)

- [X] FedEx Priority Overnight — Next business morning*
- [ ] FedEx Standard Overnight — Next business afternoon*
- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations*
- [ ] FedEx 2Day — Second business day*
- [ ] FedEx Express Saver — Third business day*

FedEx Envelope rate not available. Minimum charge: One-pound rate

4b Express Freight Service — Packages over 150 lbs. (** To most locations)

- [ ] FedEx 1Day Freight* — Next business day**
- [ ] FedEx 2Day Freight — Second business day**
- [ ] FedEx 3Day Freight — Third business day**

* Call for Confirmation: _____

5 Packaging (* Declared value limit $500)

- [ ] FedEx Envelope*
- [ ] FedEx Pak* — Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak
- [ ] FedEx Box
- [ ] FedEx Tube
- [X] Other

6 Special Handling — Include FedEx address in Section 3.

- [ ] SATURDAY Delivery — Available ONLY for FedEx Priority Overnight, FedEx 2Day, FedEx 1Day Freight, and FedEx 2Day Freight to select ZIP codes
- [ ] HOLD Weekday at FedEx Location — NOT Available for FedEx First Overnight
- [ ] HOLD Saturday at FedEx Location — Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations

Does this shipment contain dangerous goods? One box must be checked.

- [X] No
- [ ] Yes — As per attached Shipper's Declaration
- [ ] Yes — Shipper's Declaration not required
- [ ] Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg

Dangerous goods (including Dry Ice) cannot be shipped in FedEx packaging.

- [ ] Cargo Aircraft Only

7 Payment Bill to: — Enter FedEx Acct. No. or Credit Card No. below.

- [ ] Sender — Acct. No. in Section 1 will be billed.
- [X] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check

FedEx Acct. No. / Credit Card No. 1811-4189-1 Exp. Date

Total Packages	Total Weight	Total Declared Value†	FedEx Use Only
		$ .00	

†Our liability is limited to $100 unless you declare a higher value. See back for details.

8 Sign to Authorize Delivery Without a Signature

By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting claims.

466

Try online shipping at fedex.com

By using this Airbill you agree to the service conditions on the back of this Airbill and in our current Service Guide, including terms that limit our liability.

Questions? Visit our Web site at fedex.com or call 1.800.GoFedEx 1.800.463.3339.

0282993908

SRF•Rev. Date 11/03•Part #156279•©1994–2003 FedEx•PRINTED IN U.S.A.

Appendix C

Chain of Custody Sheets for samples sent to Paradigm Labs

PARADIGM ANALYTICAL LABORATORIES, INC.
5500 Business Drive, Wilmington, NC 28405
Phone: (910)-350-1903 FAX: (910)-350-1557

Chain-of Custody Record & Analytical Request

COC# 44646

Page 1 **of** 1

Client: MARTIN + SLACLE **Project ID:** KUHLMAN ELECTRIC **Date:** 03/02/05 **Report To:** SAME
Address: **Contact:** ROBERT MARTIN **Turnaround:** STD
Address: BLACK MOUNTAIN NC **Phone:** **Job Number:**
Quote #: **Fax:** **P.O. Number:** **Invoice To:** SAME

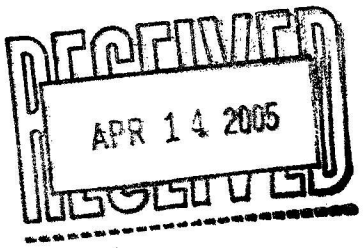
Sample ID	Date	Time	Matrix	Preservatives				Analyses										Comments: Please specify any special reporting requirements
				NA				PCB										MOBILE LAB # Depth
MWP-HA-019-001	02/25/05	1234	S	X				X										DD039 0-1'
MWP-DUPLICATE	02/25/05	—	S	X				X										DD045 —
MWP-HA-023-001	02/25/05	1612	S	X				X										DD048 0-1'
MWP-HA-026-001	02/26/05	1721	S	X				X										DD054 0-1'
MWP-DUPLICATE	02/26/05	—	S	X				X										DD060 —

Need hold time 14 day extract 40 day analysis

Relinquished By	Date	Time	Received By	Date	Time	Temperature	State Certification Requested
Chuck A. H [signature]	3/2/05	1415					NC ___ SC ___ Other ___
							SEE REVERSE FOR TERMS AND CONDITIONS

CLIENT COPY

April 13, 2005



Robert Martin
Martin & Slagle, LLC
P.O. Box 1023
Black Mountain, NC 28711

Dear Mr. Martin,

Enclosed is the Technical Memorandum for work completed at the former Borg Warner and current Kuhlman Electric facility in Crystal Springs, Mississippi during the month of February. If you have any questions concerning this information, please give me a call.

Sincerely,

Kari Ann Killian

for Richard Johnson

Enclosure

Environmental Chemistry Consulting Services, Inc.
2525 Advance Road • Madison, WI 53718 • Phone (608) 221-8700 • FAX (608) 221-4889

Technical Memorandum

Borg Warner / Kuhlman Electric

Crystal Springs, Mississippi

TECHNICAL MEMORANDUM

April 13, 2005

To: Robert Martin
Martin Slagle Inc.

From: Richard Johnson
ECCS, Inc.

Re: Field Analytical Methods – QC Summary
Borg Warner – Kuhlman Electric Facility
Crystal Springs, Mississippi

INTRODUCTION

This Technical Memorandum provides documentation of the field analytical test methods used to analyze soil and water samples collected from GTP-HA samples during February 2005 during an accelerated site investigation episode around the former Borg Warner and current Kuhlman Electric facility in Crystal Springs, Mississippi. Soil and water samples were analyzed for polychlorinated biphenyls (PCBs) and chlorinated benzenes by gas chromatography (GC) in accordance with ECCS's Polychlorinated Biphenyl (PCB) Mini Extraction Screening Procedure. A summary of test results is provided in Table 1 for soils and Table 2 for waters. A summary of method blanks, laboratory control samples and matrix spike/matrix spike duplicate data is provided in Table 3 for the soils and Table 4 for the waters.

In addition copies of the chain of custody sheets and shipping sheets can be found in appendix A through C.

A) Chain of custody sheets for mobile lab PCB analysis for Excavation samples
B) FEDEX shipping label for Paradigm Labs
C) Chain of custody sheets for samples sent to Paradigm Labs

The PCB mini-extraction procedure is based on the existing EPA SW846 methods 8082/8141. The procedure incorporates all the quality control rigors of the full 8082/8141 methods including quantification based on 6-point calibration with continuing calibration verification, surrogate method performance monitoring, method blanks, laboratory control samples (LCS), and matrix spike/matrix spike (MS/MSD) duplicate samples. As such, you should consider these test results as comparable to what you would get from a fixed-based laboratory using the more-widely accepted extraction procedure.

The primary project objective of the sampling and testing episode was to delineate the PCB contamination at and around the site using the accelerated site characterization approach. The mobile laboratory was required to provide data as quickly as possible to keep the accelerated site investigation process on track while trying to maintain a goal of level three data quality.

CASE NARRATIVE

During the episode, all samples collected were analyzed. To maintain rapid turnaround and to meet the project objective, three GCs were operated on a nearly continuous basis.

Quality control including proper calibration, continuing calibration verification, surrogates, method blanks, laboratory control samples and matrix spike/matrix spike duplicate samples was performed at the method-specified intervals. Overall quality of the data is very good. The following quality related issues should be noted:

1. All surrogate recoveries were within acceptable ranges.

2. All LCS recoveries were within acceptable ranges. See Table 3 and 4.

3. All MS/MSD recoveries were within acceptable ranges. Percent repeatability was also within acceptable ranges. See Table 3 and 4.

4. Since electron capture of detectors tend to have a very narrow linear range, many sample extracts required dilution. Dilutions were accurately done.

METHOD SUMMARY

This method employs a mini-extraction procedure and gas chromatography analysis for the detection of PCBs and chlorinated benzenes. Reporting limits are provided in the results Tables. Four grams of sample are dried with anhydrous sodium sulfate and extracted with eight mLs of 80/20 iso-octane/acetone. The extract is then analyzed by Gas Chromatography-Electron Capture Detector (GC-ECD).

Procedure

1. Standards Preparation - Primary standards are prepared from a solution purchased from various vendors at Certified concentrations. Stock standards are prepared in suitable solvents and stored in a freezer when not in use. Secondary standards are prepared in 80/20 iso-octane/acetone and stored in a freezer when not in use. Standard curve mixes for this project was prepared at six concentrations: PCBs – 0.05, 0.10, 0.20, 0.50, 1.0 and 2.0 ug/m; chlorinated benzenes – 0.005, 0.01, 0.02, 0.05, 0.10 and 0.20 ug/ml.

2. Sample Preparation - SOILS: Each sample or quality control sample is prepared in identical fashion. Approximately four grams of silica sand (blanks and control spikes) or sample is transferred into a clean scintillation vial. Ten grams of anhydrous sodium sulfate are added to the vial and mixed well. Extra sodium sulfate is added when necessary to assure the sample is dried. A surrogate, spike compound mix (if necessary) and eight mLs of 80/20 iso-octane/acetone are added to the vial. The vial is shaken for 30 seconds, allowed to settle for 2 minutes, shaken again for 30 seconds, and allowed to settle for 10 minutes. An aliquot of the extract is transferred to an autosampler vial for injection into the GC-ECD.

3. WATER Samples: 200 grams of water was weighed into a clean jar containing 50 grams of sodium chloride. The samples were spiked with a surrogate in addition the LCS/MS/MSD were spiked with PCB's and chlorinated benzenes. Added 10 ml of isooctane to each and shake 3 times for 2 minutes each time. Samples were allowed to settle for approximately 5 minutes between each shake. Isooctane was decanted into a scintillation vial and then an aliquot was transferred to an autosampler vial. Then extracts were injected into a GC-ECD.

4. GC-ECD Analysis - A sample aliquot is injected into an HP5890 GC with an ECD equipped with an HP ChemStation for data processing. PCBs were identified by matching retention times of standards to the same retention time in the sample. Regression analysis was performed on each of the selected peak's height verses concentration of the standard using a LN/LN transformed linear regression. For PCBs nine peaks were selected for quantification. The ug/mL value for each peak was added together and divided by the number of peaks selected to obtain the total PCB ug/mL result. If interference occurred at any of the peaks, these peaks were not included in the total, and the divisor was reduced accordingly.

5. Quality Control - Quality control consisted of the following items:
   - Continuing calibration standards analyzed every ten samples or less and at the end of a run.
   - Blank and LCS samples analyzed every twenty sample or less with a minimum of one per day.
   - MS/MSD samples analyzed every twenty samples or less with a minimum of one per day.
   - Information is documented in logbook 45 and February run sheets.

6. Instrument Conditions - Two HP5890 gas chromatographs were equipped with RTX-35 capillary columns. Each system had a Leap Technologies A200S auto-sampler and an HP ChemStation for data handling.

Table 1

Soil Sample Results – February

Table 1
Kuhlman Electric
Crystal Springs, Mississippi
PCB Concentrations as Aroclor 1260 Detected

					Field Laboratory				
Field Lab Sample ID	Sample ID	Sample Depth	Date Collected	Time Collected	Date Analyzed	Concentration (mg/kg)	Surrogate TCMX(%)	Surrogate DCBP(%)	Rinse
GG001	GTP-HA-001-001	0-12"	25-Feb-05	14:10	25-Feb-05	**0.11**	94.6	97.9	
GG002	GTP-HA-001-002	12-24"	25-Feb-05	14:20	25-Feb-05	< 0.10	99.2	102	
GG003	GTP-HA-002-001	0-12"	25-Feb-05	14:32	25-Feb-05	**0.37**	79.0	72.8	
GG004	GTP-HA-002-002	12-24"	25-Feb-05	14:39	25-Feb-05	< 0.10	103	97.5	
GG005	GTP-HA-003-001	0-12"	25-Feb-05	14:45	25-Feb-05	**1.6**	93.9	92.6	
GG006	GTP-HA-003-002	12-24"	25-Feb-05	14:52	25-Feb-05	< 0.10	98.9	85.8	
GG007	GTP-Duplicate	-	25-Feb-05	-	25-Feb-05	**0.12**	96.1	96.1	
GG008	GTP-HA-004-001	0-12"	25-Feb-05	15:04	25-Feb-05	**2.2**	140	106	A
GG009	GTP-HA-004-002	12-24"	25-Feb-05	15:10	25-Feb-05	< 0.10	94.0	89.8	
GG010	GTP-HA-005-001	0-12"	26-Feb-05	08:52	26-Feb-05	**0.18**	146	108	A
GG011	GTP-HA-005-002	12-24"	26-Feb-05	09:03	26-Feb-05	< 0.10	99.4	111	
GG012	GTP-HA-006-001	0-12"	26-Feb-05	09:15	26-Feb-05	**0.32**	149	114	A
GG013	GTP-HA-006-002	12-24"	26-Feb-05	09:22	26-Feb-05	< 0.10	102	90.9	
GG014	GTP-Duplicate	-	26-Feb-05	-	26-Feb-05	**0.24**	143	106	A
GG015	GTP-HA-007-001	0-12"	26-Feb-05	09:30	26-Feb-05	< 0.10	108	98.0	
GG016	GTP-HA-007-002	12-24"	26-Feb-05	09:37	26-Feb-05	< 0.10	101	103	
GG017	GTP-HA-008-001	0-12"	26-Feb-05	09:47	26-Feb-05	**0.22**	102	101	
GG018	GTP-HA-008-002	12-24"	26-Feb-05	09:56	26-Feb-05	< 0.10	104	100	
GG019	GTP-HA-009-001	0-12"	26-Feb-05	10:03	26-Feb-05	**1.2**	139	105	A
GG020	GTP-HA-009-002	12-24"	26-Feb-05	10:13	26-Feb-05	< 0.10	101	93.4	
GG021	GTP-HA-010-001	0-12"	26-Feb-05	10:38	26-Feb-05	**1.3**	105	97.4	
GG022	GTP-HA-010-002	12-24"	26-Feb-05	10:46	26-Feb-05	**0.22**	103	106	
GG023	GTP-HA-011-001	0-12"	26-Feb-05	10:53	26-Feb-05	**1.3**	98.6	91.7	
GG024	GTP-HA-011-002	12-24"	26-Feb-05	11:00	26-Feb-05	< 0.10	102	86.8	
GG025	GTP-HA-012-001	0-12"	26-Feb-05	11:08	26-Feb-05	**0.70**	96.6	92.3	
GG026	GTP-HA-012-002	12-24"	26-Feb-05	11:15	26-Feb-05	< 0.10	100	95.1	
GG027	GTP-HA-013-001	0-12"	26-Feb-05	11:24	26-Feb-05	**0.18**	116	99.0	A
GG028	GTP-HA-013-002	12-24"	26-Feb-05	11:34	26-Feb-05	< 0.10	92.2	64.4	
GG029	GTP-HA-014-001	0-12"	26-Feb-05	13:19	26-Feb-05	**1.8**	103	100	
GG030	GTP-HA-014-002	12-24"	26-Feb-05	13:26	26-Feb-05	**0.12**	100	95.5	
GG031	GTP-HA-015-001	0-12"	26-Feb-05	13:35	26-Feb-05	**0.19**	94.6	95.0	
GG032	GTP-HA-015-002	12-24"	26-Feb-05	13:43	26-Feb-05	< 0.10	98.6	87.1	
GG033	GTP-HA-016-001	0-12"	26-Feb-05	13:55	26-Feb-05	**4.1**	97.5	96.0	
GG034	GTP-HA-016-002	12-24"	26-Feb-05	14:00	26-Feb-05	**0.14**	95.0	83.0	
GG035	GTP-HA-017-001	0-12"	26-Feb-05	14:10	26-Feb-05	**3.0**	136	110	A
GG036	GTP-HA-017-002	12-24"	26-Feb-05	14:21	26-Feb-05	**0.15**	100	89.9	
GG037	GTP-HA-018-001	0-12"	26-Feb-05	14:33	26-Feb-05	< 0.10	102	94.1	
GG038	GTP-HA-018-002	12-24"	26-Feb-05	14:40	26-Feb-05	< 0.10	97.7	92.2	
GG039	GTP-HA-019-001	0-12"	26-Feb-05	15:40	26-Feb-05	**3.6**	95.4	92.5	

NOTES:
A Acid Treated.
Surrogate recoveria criteria 60-140% unless sample is acid treated.
Surrogate recoveria criteria 75-175% if sample is acid treated.

Table 1
Kuhlman Electric
Crystal Springs, Mississippi
PCB Concentrations as Aroclor 1260 Detected

					Field Laboratory				
Field Lab Sample ID	Sample ID	Sample Depth	Date Collected	Time Collected	Date Analyzed	Concentration (mg/kg)	Surrogate TCMX(%)	Surrogate DCBP(%)	Rinse
GG040	GTP-HA-019-002	12-24"	26-Feb-05	15:45	26-Feb-05	**0.33**	101	90.4	
GG041	GTP-HA-020-001	0-12"	26-Feb-05	15:50	26-Feb-05	**0.46**	98.2	95.8	
GG042	GTP-HA-020-002	12-24"	26-Feb-05	15:54	26-Feb-05	< 0.10	102	96.4	
GG043	GTP-HA-021-001	0-12"	26-Feb-05	15:58	26-Feb-05	**2.4**	98.0	93.3	
GG044	GTP-HA-021-002	12-24"	26-Feb-05	16:02	26-Feb-05	**0.36**	99.8	96.4	
GG045	GTP-HA-022-001	0-12"	26-Feb-05	16:06	26-Feb-05	**0.38**	102	94.8	
GG046	GTP-HA-022-002	12-24"	26-Feb-05	16:10	26-Feb-05	< 0.10	104	107	

NOTES:
A = Acid Treated.
Surrogate recoveria criteria 60-140% unless sample is acid treated.
Surrogate recoveria criteria 75-175% if sample is acid treated.

Table 2

Water Sample Results – February

Table 2
Kuhlman Electric
Crystal Springs, Mississippi
PCB Concentrations as Aroclor 1260 Detected

					Field Laboratory			
Field Lab Sample ID	Sample ID	Sample Depth	Date Collected	Time Collected	Date Analyzed	Concentration (ug/L)	Surrogate TCMX(%)	Surrogate DCBP(%)
W1082	GTP-FB-001	-	25-Feb-05	14:24	03-Mar-05	< 0.25	112	95.2

Table 3

Soil QC Samples - February

Table 3
QC Results

Lab # associated with qc samples: GG001 through GG009

	Matrix Spike GG009	Matrix Spike Duplicate GG009	Blank 824	LCS 824
Date Analyzed:	2/25/05	2/25/05	2/25/05	2/25/05

Compound	% Rec		% Rec		% RPD	mg/kg	% Rec
PCB as 1260	111		102		8%	< 0.10	99.3

Table 3
QC Results

Lab # associated with qc samples: GG010 through GG029

	Matrix Spike GG013	Matrix Spike Duplicate GG013	Blank 825	LCS 825
Date Analyzed:	2/26/05	2/26/05	2/26/05	2/26/05

Compound	% Rec		% Rec		% RPD	mg/kg	% Rec
PCB as 1260	93.2		100		-7%	< 0.10	98.3

Table 3
QC Results

Lab # associated with qc samples: GG030 through GG046

	Matrix Spike GG032		Matrix Spike Duplicate GG032			Blank 826	LCS 826
Date Analyzed:	2/26/05		2/26/05			2/26/05	2/26/05
Compound	% Rec		% Rec		% RPD	mg/kg	% Rec
PCB as 1260	84.9		99.5		-16%	< 0.10	105

Table 4

Water QC Samples - February

Table 4
QC Results

Lab # associated with qc samples: W1082

	Matrix Spike W1082		Matrix Spike Duplicate W1082			Blank	LCS
Date Analyzed:	3/3/05		3/3/05			3/3/05	3/3/05
Compound	% Rec		% Rec		% RPD	ug/L	% Rec
PCB as 1260	107		102		5%	< 0.25	103

Appendix A

Chain of Custody Sheets for mobile lab PCB analysis Samples

Environmental Chemistry Consulting Services, Inc.

2525 Advance Road Madison, WI 53718
Phone 608-221-8700 FAX 608-221-4889

CHAIN OF CUSTODY

02/25/05

No. 008855 *

Page 1 of 1

Turn Around (circle one) Normal Rush	
Report Due:	
Project Number:	Mail Report To:
Project Name: KUHLMAN ELECTRIC	Company: MARTIN & SLAGLE
Project Location: CRYSTAL SPRINGS	Address:
Sampled By (Print): Chuck Peel	
Invoice To:	
Company:	
Address:	
P.O. No.: Quote No.:	

Sample Description	Collection Date	Collection Time	Matrix	Total Bottles	Preserv*	Analysis Requested	Depth Comments	Laboratory Number
GTP-HA-001-001	02/25/05	1410	S	1	NA	PCBs	0-1	66001
GTP-HA-001-002		1420					1-2	66002
GTP-HA-002-001		1432					0-1	66003
GTP-HA-002-002		1439					1-2	66004
GTP-HA-003-001		1445					0-1	66005
GTP-HA-003-002		1452					1-2	66006
GTP-DUPLICATE		—					—	66007
GTP-HA-004-001		1504					0-1	66008
GTP-HA-004-002		1510					1-2	66009

*Preservation Code
A=None B=HCL C=H2SO4
D=HNO3 E=EnCore F=Methanol
G=NaOH O=Other(Indicate)

Relinquished By: Chuck Peel	Date/Time: 2/25/05 1510	Received By:	Date/Time: 02/25/05 1510
Relinquished By:	Date/Time:	Received By:	Date/Time:
Custody Seal: Present/Absent	Intact/Not Intact	Seal #'s	Receipt Temp:
Shipped Via:			Temp Blank Y N

WHITE - REPORT COPY YELLOW - LABORATORY COPY PINK - SAMPLER/SUBMITTER

Environmental Chemistry Consulting Services, Inc.
2525 Advance Road Madison, WI 53718
Phone 608-221-8700 FAX 608-221-4889

CHAIN OF CUSTODY

02/26/05

No. 008857 *

Page 1 of 4

Project Number:	Mail Report To:	Turn Around (circle one) Normal Rush
Project Name: KUHLMAN ELECTRIC	Company: MARTIN + SCAGLE	Report Due:
Project Location: CRYSTAL SPRINGS	Address:	Invoice To:
Sampled By (Print): Chuck Peel		Company:
		Address:
		P.O. No.: Quote No.:

Sample Description	Collection Date	Collection Time	Matrix	Total Bottles	Preserv*	Analysis Requested	Depth Comments	Laboratory Number
GTP-HA-005-001	02/26/05	0852	S	1	NA	PCBs	0-1	GG010
GTP-HA-005-002		0903					1-2	GG011
GTP-HA-006-001		0915					0-1	GG012
GTP-HA-006-002		0922					1-2	GG013
GTP-DUPLICATE		—					—	GC014
GTP-HA-007-001		0930					0-1	GC015
GTP-HA-007-002		0937					1-2	GG016
GTP-HA-008-001		0947					0-1	GG017
GTP-HA-008-002		0956					1-2	GG018
GTP-HA-009-001		1003					0-1	GC019
GTP-HA-009-002		1013					1-2	GG020
GTP-HA-010-001		1038					0-1	GC021

*Preservation Code A=None B=HCL C=H2SO4 D=HNO3 E=EnCore F=Methanol G=NaOH O=Other(Indicate)	Relinquished By: Chuck O. Peel	Date/Time: 2/26/05 1110	Received By:	Date/Time: 02/26/05 1110
	Relinquished By:	Date/Time:	Received By:	Date/Time:
Custody Seal: Present/Absent	Intact/Not Intact	Seal #'s	Receipt Temp:	
Shipped Via:			Temp Blank Y N	

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CHAIN OF CUSTODY

02/26/05

No. 008860 *

Page 2 of 4

Turn Around (circle one) Normal Rush
Report Due:
Invoice To:
Company:
Address:
P.O. No.: Quote No.:

Project Number:
Project Name: KUHLMAN ELECTRIC
Project Location: CRYSTAL SPRINGS
Sampled By (Print): Chuck Peel

Mail Report To:
Company: MARTIN + SLAGLE
Address:

Sample Description	Collection Date	Collection Time	Matrix	Total Bottles	Preserv*	Analysis Requested	Dup Comments	Laboratory Number
GTP-HA-010-002	02/26/05	1046	S	1	NA	PCBs	1-2'	66022
GTP-HA-011-001		1053					0-1	66023
GTP-HA-011-002		1100					1-2	66024
GTP-HA-012-001		1108					0-1	66025
GTP-HA-012-002		1115					1-2	66026
GTP-HA-013-001		1124					0-1	66027
GTP-HA-013-002		1134					1-2	66028
GTP-HA-014-001		1319					0-1	66029
GTP-HA-014-002		1326					1-2	66030
GTP-HA-015-001		1335					0-1	66031
GTP-HA-015-002		1343					1-2	66032
GTP-HA-016-001		1355					0-1	66033

*Preservation Code
A=None B=HCL C=H2SO4
D=HNO3 E=EnCore F=Methanol
G=NaOH O=Other(Indicate)

Relinquished By: Chuck O.K. Peel
Date/Time: 2/26/05 1430

Relinquished By:
Date/Time:

Received By:
Date/Time: 02/26/05 1430

Received By:
Date/Time:

Custody Seal: Present/Absent Intact/Not Intact Seal #'s
Shipped Via:

Receipt Temp:
Temp Blank Y N

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CHAIN OF CUSTODY

02/26/05

No. 008861 *

Page 3 of 4

Project Number:	Mail Report To:	Turn Around (circle one) Normal Rush
Project Name: KUHLMAN ELECTRIC	Company: MARTIN + SLAGLE	Report Due:
Project Location: CRYSTAL SPRINGS	Address:	Invoice To:
Sampled By (Print): Chuck Paul		Company:
		Address:
		P.O. No.: Quote No.:

Sample Description	Collection Date	Collection Time	Matrix	Total Bottles	Preserv*	Analysis Requested	Depth Comments	Laboratory Number
GTP-HA-016-002	02/26/05	1400	S	1	NA	PCBs	1-2	GC034
GTP-HA-017-001		1410					0-1	GC035
GTP-HA-017-002		1421					1-2	GC036
GTP-HA-018-001		1433					0-1	GC037
GTP-HA-018-002		1440					1-2	GC038
GTP-HA-019-001		1540					0-1	GC039
GTP-HA-019-002		1545					1-2	GC040
GTP-HA-020-001		1550					0-1	GC041
GTP-HA-020-002		1554					1-2	GC042
GTP-HA-021-001		1558					0-1	GC043
GTP-HA-021-002		1602					1-2	GC044
GTP-HA-022-001	↓	1606	↓	↓	↓	↓	0-1	GC045

*Preservation Code
A=None B=HCL C=H2SO4
D=HNO3 E=EnCore F=Methanol
G=NaOH O=Other(Indicate)

Relinquished By: Chuck A. M. Paul	Date/Time: 2/26/05 1630	Received By:	Date/Time: 02/26/05 16:30
Relinquished By:	Date/Time:	Received By:	Date/Time:

Custody Seal: Present/Absent Intact/Not Intact Seal #'s
Shipped Via:
Receipt Temp:
Temp Blank Y N

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CHAIN OF CUSTODY

02/26/05

No. 008862 *

Page 4 of 4

Turn Around (circle one) Normal Rush

Report Due:

Invoice To:

Company:

Address:

P.O. No.: Quote No.:

Project Number:

Project Name: KUHLMAN ELECTRIC

Project Location: CRYSTAL SPRINGS

Sampled By (Print): Chuck Paul

Mail Report To:

Company: MARTIN + SLAGLE

Address:

Sample Description	Collection Date	Collection Time	Matrix	Total Bottles	Preserv*	Analysis Requested	Depth Comments	Laboratory Number
GTP-HA-022-002	02/26/05	1610	S	1	NA	PCB's	1-2	66046

*Preservation Code
A=None B=HCL C=H2SO4
D=HNO3 E=EnCore F=Methanol
G=NaOH O=Other(Indicate)

Relinquished By: Chuck Paul — Date/Time: 2/26/05 1815

Received By: — Date/Time: 02/26/05 1815

Relinquished By: — Date/Time:

Received By: — Date/Time:

Custody Seal: Present/Absent Intact/Not Intact Seal #'s

Shipped Via:

Receipt Temp:

Temp Blank Y N

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CHAIN OF CUSTODY

MISC

No. 008850 *

Page 1 of 1

Project Number:		Mail Report To:	Turn Around (circle one) Normal Rush
Project Name:	KUHLMAN ELECTRIC	Company: MARTIN & STAGG	Report Due:
Project Location:	ELKHORN SPRINGS	Address:	Invoice To:
Sampled By (Print):	Chuck Peel		Company:
			Address:
			P.O. No.: Quote No.:

Sample Description	Collection Date	Collection Time	Matrix	Total Bottles	Preserv*	Analysis Requested	Comments	Laboratory Number
Rinsate 1	02/25/05	0720	W	1	NA	PCBs	MIL-KS-045	LW1076
Rinsate 2		0722					-046	LW1077
Rinsate 3		0724					-047	LW1078
Rinsate 4		0726					-048	LW1079
ZWP-FB-001	02/25/05	0845	W	1	NA	PCB		LW1080
MWP-FB-002		1227						LW1081
GTP-FB-001		1424						LW1082

*Preservation Code
A=None B=HCL C=H2SO4
D=HNO3 E=EnCore F=Methanol
G=NaOH O=Other(Indicate)

Relinquished By: Chuck Peel — Date/Time: 2/25/05 1500

Relinquished By: — Date/Time:

Received By: — Date/Time: 02/25/05 1500

Received By: — Date/Time:

Custody Seal: Present/Absent Intact/Not Intact Seal #'s

Shipped Via:

Receipt Temp:

Temp Blank Y N

WHITE - REPORT COPY YELLOW - LABORATORY COPY PINK SAMPLER/SUBMITTER

Appendix B

FEDEX shipping label for Paradigm Labs

FedEx Express **US Airbill**

FedEx Tracking Number **8469 0347 2410**

0215

From Please print and press hard.

Date 03/02/05 Sender's FedEx Account Number

Sender's Name Chuck Peel Phone (601) PEP-2792

Company Peel Consulting

Address 140 Chapel Lane Dept./Floor/Suite/Room

City Madison State MS ZIP 39110

Your Internal Billing Reference First 24 characters will appear on invoice. MARTIN + SLAGLE

To

Recipient's Name SAMPLE CUSTODIAN Phone (910) 350-1903

Company PARADIGM ANALYTICAL LABS

Recipient's Address 5500 BUSINESS DR Dept./Floor/Suite/Room

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address To request a package be held at a specific FedEx location, print FedEx address here.

City WILMINGTON State NC ZIP 28405-8446

4a Express Package Service — Packages up to 150 lbs. * To most locations

- [X] FedEx Priority Overnight — Next business morning*
- [ ] FedEx Standard Overnight — Next business afternoon*
- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations*
- [ ] FedEx 2Day — Second business day*
- [ ] FedEx Express Saver — Third business day*

FedEx Envelope rate not available. Minimum charge: One-pound rate

4b Express Freight Service — Packages over 150 lbs. ** To most locations

- [ ] FedEx 1Day Freight* — Next business day**
- [ ] FedEx 2Day Freight — Second business day**
- [ ] FedEx 3Day Freight — Third business day**

* Call for Confirmation:

5 Packaging * Declared value limit $500

- [ ] FedEx Envelope*
- [ ] FedEx Pak* — Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak
- [ ] FedEx Box
- [ ] FedEx Tube
- [X] Other

6 Special Handling — Include FedEx address in Section 3.

- [ ] SATURDAY Delivery — Available ONLY for FedEx Priority Overnight, FedEx 2Day, FedEx 1Day Freight, and FedEx 2Day Freight to select ZIP codes
- [ ] HOLD Weekday at FedEx Location — NOT Available for FedEx First Overnight
- [ ] HOLD Saturday at FedEx Location — Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations

Does this shipment contain dangerous goods? One box must be checked.

- [X] No
- [ ] Yes — As per attached Shipper's Declaration
- [ ] Yes — Shipper's Declaration not required
- [ ] Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg
- [ ] Cargo Aircraft Only

Dangerous goods (including Dry Ice) cannot be shipped in FedEx packaging.

7 Payment Bill to: Enter FedEx Acct. No. or Credit Card No. below.

- [ ] Sender — Acct. No. in Section 1 will be billed.
- [X] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check

FedEx Acct. No. or Credit Card No. 1811-4189-1 Exp. Date

Total Packages	Total Weight	Total Declared Value†
		$ .00

†Our liability is limited to $100 unless you declare a higher value. See back for details.

FedEx Use Only

8 Sign to Authorize Delivery Without a Signature

By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting claims.

466

By using this Airbill you agree to the service conditions on the back of this Airbill and in our current Service Guide, including terms that limit our liability.

Questions? Visit our Web site at fedex.com or call 1.800.GoFedEx 1.800.463.3339.

0282993908

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Appendix C

Chain of Custody Sheets for samples sent to Paradigm Labs

PARADIGM ANALYTICAL LABORATORIES, INC.
5500 Business Drive, Wilmington, NC 28405
Phone: (910)-350-1903 FAX: (910)-350-1557

Chain-of Custody Record & Analytical Request

COC# 44647

Page 1 of 1

Client: MARTIN + SLAGLE
Address:
Address: BLACK MOUNTAIN NC
Quote #:

Project ID: KUHLMAN ELECTRIC
Contact: ROBERT MARTIN
Phone:
Fax:

Date: 7/02/05
Turnaround: STD
Job Number:
P.O. Number:

Report To: SAME
Invoice To: SAME

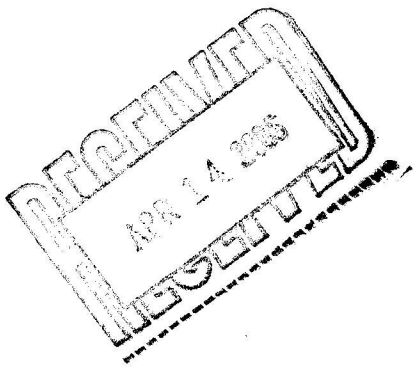
Sample ID	Date	Time	Matrix	Preservatives: NA	Analyses: PB	Comments: Please specify any special reporting requirements — Mobile Lab #	Depth
GTP-HA-001-001	02/25/05	1410	S	X	X	66001	0-1'
GTP-DUPLICATE	02/25/05	—	S	X	X	66007	—
GTP-HA-005-001	02/26/05	0852	S	X	X	66010	0-1'
GTP-DUPLICATE	02/26/05	—	S	X	X	66014	—
GTP-HA-011-001	02/26/05	1053	S	X	X	66023	0-1'
GTP-HA-016-001	02/26/05	1355	S	X	X	66033	0-1'
GTP-HA-021-001	02/26/05	1558	S	X	X	66043	0-1'

Relinquished By	Date	Time	Received By	Date	Time	Temperature
[signature]	3/4/05	1425				

State Certification Requested
NC ____ SC ____ Other ____

SEE REVERSE FOR TERMS AND CONDITIONS

April 13, 2005



Robert Martin
Martin & Slagle, LLC
P.O. Box 1023
Black Mountain, NC 28711

Dear Mr. Martin,

Enclosed is the Technical Memorandum for work completed at the former Borg Warner and current Kuhlman Electric facility in Crystal Springs, Mississippi during the month of February. If you have any questions concerning this information, please give me a call.

Sincerely,

Kari Ann Killian
for Richard Johnson

Enclosure

Environmental Chemistry Consulting Services, Inc.
2525 Advance Road • Madison, WI 53718 • Phone (608) 221-8700 • FAX (608) 221-4889

Technical Memorandum

Borg Warner / Kuhlman Electric

Crystal Springs, Mississippi

TECHNICAL MEMORANDUM

April 13, 2005

To: Robert Martin
Martin Slagle Inc.

From: Richard Johnson RJK for
ECCS, Inc.

Re: Field Analytical Methods – QC Summary
Borg Warner – Kuhlman Electric Facility
Crystal Springs, Mississippi

INTRODUCTION

This Technical Memorandum provides documentation of the field analytical test methods used to analyze soil and water samples collected from ZWP-HA samples during February 2005 during an accelerated site investigation episode around the former Borg Warner and current Kuhlman Electric facility in Crystal Springs, Mississippi. Soil and water samples were analyzed for polychlorinated biphenyls (PCBs) and chlorinated benzenes by gas chromatography (GC) in accordance with ECCS's Polychlorinated Biphenyl (PCB) Mini Extraction Screening Procedure. A summary of test results is provided in Table 1 for soils and Table 2 for waters. A summary of method blanks, laboratory control samples and matrix spike/matrix spike duplicate data is provided in Table 3 for the soils and Table 4 for the waters.

In addition copies of the chain of custody sheets and shipping sheets can be found in appendix A through C.

A) Chain of custody sheets for mobile lab PCB analysis for Excavation samples
B) FEDEX shipping label for Paradigm Labs
C) Chain of custody sheets for samples sent to Paradigm Labs

The PCB mini-extraction procedure is based on the existing EPA SW846 methods 8082/8141. The procedure incorporates all the quality control rigors of the full 8082/8141 methods including quantification based on 6-point calibration with continuing calibration verification, surrogate method performance monitoring, method blanks, laboratory control samples (LCS), and matrix spike/matrix spike (MS/MSD) duplicate samples. As such, you should consider these test results as comparable to what you would get from a fixed-based laboratory using the more-widely accepted extraction procedure.

The primary project objective of the sampling and testing episode was to delineate the PCB contamination at and around the site using the accelerated site characterization approach. The mobile laboratory was required to provide data as quickly as possible to keep the accelerated site investigation process on track while trying to maintain a goal of level three data quality.

CASE NARRATIVE

During the episode, all samples collected were analyzed. To maintain rapid turnaround and to meet the project objective, three GCs were operated on a nearly continuous basis.

Quality control including proper calibration, continuing calibration verification, surrogates, method blanks, laboratory control samples and matrix spike/matrix spike duplicate samples was performed at the method-specified intervals. Overall quality of the data is very good. The following quality related issues should be noted:

1. All surrogate recoveries were within acceptable ranges.

2. All LCS recoveries were within acceptable ranges. See Table 3 and 4.

3. All MS/MSD recoveries were within acceptable ranges. Percent repeatability was also within acceptable ranges. See Table 3 and 4.

4. Since electron capture of detectors tend to have a very narrow linear range, many sample extracts required dilution. Dilutions were accurately done.

METHOD SUMMARY

This method employs a mini-extraction procedure and gas chromatography analysis for the detection of PCBs and chlorinated benzenes. Reporting limits are provided in the results Tables. Four grams of sample are dried with anhydrous sodium sulfate and extracted with eight mLs of 80/20 iso-octane/acetone. The extract is then analyzed by Gas Chromatography-Electron Capture Detector (GC-ECD).

Procedure

1. Standards Preparation - Primary standards are prepared from a solution purchased from various vendors at Certified concentrations. Stock standards are prepared in suitable solvents and stored in a freezer when not in use. Secondary standards are prepared in 80/20 iso-octane/acetone and stored in a freezer when not in use. Standard curve mixes for this project was prepared at six concentrations: PCBs – 0.05, 0.10, 0.20, 0.50, 1.0 and 2.0 ug/m; chlorinated benzenes – 0.005, 0.01, 0.02, 0.05, 0.10 and 0.20 ug/ml.

2. Sample Preparation - SOILS: Each sample or quality control sample is prepared in identical fashion. Approximately four grams of silica sand (blanks and control spikes) or sample is transferred into a clean scintillation vial. Ten grams of anhydrous sodium sulfate are added to the vial and mixed well. Extra sodium sulfate is added when necessary to assure the sample is dried. A surrogate, spike compound mix (if necessary) and eight mLs of 80/20 iso-octane/acetone are added to the vial. The vial is shaken for 30 seconds, allowed to settle for 2 minutes, shaken again for 30 seconds, and allowed to settle for 10 minutes. An aliquot of the extract is transferred to an autosampler vial for injection into the GC-ECD.

3. WATER Samples: 200 grams of water was weighed into a clean jar containing 50 grams of sodium chloride. The samples were spiked with a surrogate in addition the LCS/MS/MSD were spiked with PCB's and chlorinated benzenes. Added 10 ml of isooctane to each and shake 3 times for 2 minutes each time. Samples were allowed to settle for approximately 5 minutes between each shake. Isooctane was decanted into a scintillation vial and then an aliquot was transferred to an autosampler vial. Then extracts were injected into a GC-ECD.

4. GC-ECD Analysis - A sample aliquot is injected into an HP5890 GC with an ECD equipped with an HP ChemStation for data processing. PCBs were identified by matching retention times of standards to the same retention time in the sample. Regression analysis was performed on each of the selected peak's height verses concentration of the standard using a LN/LN transformed linear regression. For PCBs nine peaks were selected for quantification. The ug/mL value for each peak was added together and divided by the number of peaks selected to obtain the total PCB ug/mL result. If interference occurred at any of the peaks, these peaks were not included in the total, and the divisor was reduced accordingly.

5. Quality Control - Quality control consisted of the following items:
   - Continuing calibration standards analyzed every ten samples or less and at the end of a run.
   - Blank and LCS samples analyzed every twenty sample or less with a minimum of one per day.
   - MS/MSD samples analyzed every twenty samples or less with a minimum of one per day.
   - Information is documented in logbook 45 and February run sheets.

6. Instrument Conditions - Two HP5890 gas chromatographs were equipped with RTX-35 capillary columns. Each system had a Leap Technologies A200S auto-sampler and an HP ChemStation for data handling.

Table 1

Soil Sample Results – February

Table 1
Kuhlman Electric
Crystal Springs, Mississippi
PCB Concentrations as Aroclor 1260 Detected

					Field Laboratory				
Field Lab Sample ID	Sample ID	Sample Depth	Date Collected	Time Collected	Date Analyzed	Concentration (mg/kg)	Surrogate TCMX(%)	Surrogate DCBP(%)	Rinse
FF001	ZWP-HA-001-001	0-12"	25-Feb-05	08:50	25-Feb-05	< 0.10	98.0	80.2	
FF002	ZWP-HA-001-002	12-24"	25-Feb-05	09:03	25-Feb-05	< 0.10	101	96.9	
FF003	ZWP-HA-002-001	0-12"	25-Feb-05	09:10	25-Feb-05	< 0.10	105	94.8	
FF004	ZWP-HA-002-002	12-24"	25-Feb-05	09:20	25-Feb-05	< 0.10	96.6	93.8	
FF005	ZWP-HA-003-001	0-12"	25-Feb-05	09:30	25-Feb-05	< 0.10	99.0	86.2	
FF006	ZWP-HA-003-002	12-24"	25-Feb-05	09:40	25-Feb-05	< 0.10	98.9	103	
FF007	ZWP-HA-004-001	0-12"	25-Feb-05	09:50	25-Feb-05	**0.15**	104	91.9	
FF008	ZWP-HA-004-002	12-24"	25-Feb-05	09:58	25-Feb-05	< 0.10	98.9	101	
FF009	ZWP-Duplicate	-	25-Feb-05	-	25-Feb-05	< 0.10	101	74.1	
FF010	ZWP-HA-005-001	0-12"	25-Feb-05	10:08	25-Feb-05	< 0.10	98.1	98.8	
FF011	ZWP-HA-005-002	12-24"	25-Feb-05	10:15	25-Feb-05	< 0.10	103	105	
FF012	ZWP-HA-006-001	0-12"	25-Feb-05	10:26	25-Feb-05	< 0.10	99.4	96.6	
FF013	ZWP-HA-006-002	12-24"	25-Feb-05	10:34	25-Feb-05	< 0.10	97.2	82.8	
FF014	ZWP-HA-007-001	0-12"	25-Feb-05	10:43	25-Feb-05	< 0.10	101	102	
FF015	ZWP-HA-007-002	12-24"	25-Feb-05	10:53	25-Feb-05	< 0.10	96.7	83.8	
FF016	ZWP-HA-008-001	0-12"	25-Feb-05	11:02	25-Feb-05	**0.78**	99.1	99.9	
FF017	ZWP-HA-008-002	12-24"	25-Feb-05	11:08	25-Feb-05	< 0.10	102	101	
FF018	ZWP-HA-009-001	0-12"	25-Feb-05	16:27	25-Feb-05	**2.4**	97.0	99.4	
FF019	ZWP-HA-009-002	12-24"	25-Feb-05	16:36	25-Feb-05	**0.56**	102	98.9	
FF020	ZWP-HA-010-001	0-12"	25-Feb-05	16:45	25-Feb-05	**0.53**	99.7	98.8	
FF021	ZWP-HA-010-002	12-24"	25-Feb-05	16:53	25-Feb-05	< 0.10	102	100	

NOTES:
A = Acid Treated.
Surrogate recoveria criteria 60-140% unless sample is acid treated.
Surrogate recoveria criteria 75-175% if sample is acid treated.

Table 2

Water Sample Results – February

Table 2
Kuhlman Electric
Crystal Springs, Mississippi
PCB Concentrations as Aroclor 1260 Detected

					Field Laboratory			
Field Lab Sample ID	Sample ID	Sample Depth	Date Collected	Time Collected	Date Analyzed	Concentration (ug/L)	Surrogate TCMX(%)	Surrogate DCBP(%)
W1080	ZWP-FB-001	-	25-Feb-05	08:45	03-Mar-05	< 0.25	114	99.5

Table 3

Soil QC Samples - February

Table 3
QC Results

Lab # associated with qc samples: FF001 through FF020

	Matrix Spike FF002	Matrix Spike Duplicate FF002		Blank 822	LCS 822
Date Analyzed:	2/25/05	2/25/05		2/25/05	2/25/05

Compound	% Rec		% Rec		% RPD	mg/kg	% Rec
PCB as 1260	95.6		85.4		11%	< 0.10	94.5

Table 3
QC Results

Lab # associated with qc samples: FF021

	Matrix Spike GG009	Matrix Spike Duplicate GG009	Blank 824	LCS 824
Date Analyzed:	2/25/05	2/25/05	2/25/05	2/25/05

Compound	% Rec		% Rec		% RPD	mg/kg	% Rec
PCB as 1260	111		102		8%	< 0.10	99.3

Table 4

Water QC Samples - February

Table 4
QC Results

Lab # associated with qc samples: W1080

	Matrix Spike W1082	Matrix Spike Duplicate W1082	Blank	LCS
Date Analyzed:	3/3/05	3/3/05	3/3/05	3/3/05

Compound	% Rec		% Rec		% RPD	ug/L	% Rec
PCB as 1260	107		102		5%	< 0.25	103

Appendix A

Chain of Custody Sheets for mobile lab PCB analysis Samples

Environmental Chemistry Consulting Services, Inc.

2525 Advance Road Madison, WI 53718
Phone 608-221-8700 FAX 608-221-4889

CHAIN OF CUSTODY

02/25/05

No. 008851 *

Page 1 of 2

Turn Around (circle one) Normal Rush	
Report Due:	
Project Number:	Mail Report To:
Project Name: KUHLMAN ELECTRIC	Company: MARTIN + SLAGLE
Project Location: CAPITAL SPRINGS	Address:
Sampled By (Print): Chuck Peel	
	P.O. No.: Quote No.:

Sample Description	Collection Date	Collection Time	Matrix	Total Bottles	Preserv*	Analysis Requested	Depth Comments	Laboratory Number
ZWP-HA-001-001	02/25/05	0850	S	1	NA	PCBs	0-1	FF001
ZWP-HA-001-002		0903					1-2	FF002
ZWP-HA-002-001		0910					0-1	FF003
ZWP-HA-002-002		0920					1-2	FF004
ZWP-HA-003-001		0930					0-1	FF005
ZWP-HA-003-002		0940					1-2	FF006
ZWP-HA-004-001		0950					0-1	FF007
ZWP-HA-004-002		0958					1-2	FF008
ZWP-DUPLICATE		—					—	FF009
ZWP-HA-005-001		1008					0-1	FF010
ZWP-HA-005-002		1015					1-2	FF011
ZWP-HA-006-001	↓	1026	↓	↓	↓	↓	0-1	FF012

*Preservation Code
A=None B=HCL C=H2SO4
D=HNO3 E=EnCore F=Methanol
G=NaOH O=Other(Indicate)

Relinquished By: Chuck Peel	Date/Time: 2/25/05 1030	Received By:	Date/Time: 02/25/05 11:30
Relinquished By:	Date/Time:	Received By:	Date/Time:

Custody Seal: Present/Absent Intact/Not Intact Seal #'s
Shipped Via:

Receipt Temp:
Temp Blank Y N

WHITE - REPORT COPY YELLOW - LABORATORY COPY PINK - SAMPLER/SUBMITTER

Environmental Chemistry Consulting Services, Inc.

2525 Advance Road Madison, WI 53718
Phone 608-221-8700 FAX 608-221-4889

CHAIN OF CUSTODY

02/25/05

No. 008852 *

Page 2 of 2

Turn Around (circle one)	Normal Rush
Report Due:	
Invoice To:	
Company:	
Address:	
P.O. No.:	Quote No.:

Project Number:	
Project Name:	KUHLMAN ELECTRIC
Project Location:	CRYSTAL SPRINGS
Sampled By (Print):	Chuck Peel
Mail Report To:	
Company:	MARTIN & SCHALL
Address:	

Sample Description	Collection Date	Collection Time	Matrix	Total Bottles	Preserv*	Analysis Requested	Depth Comments	Laboratory Number
ZWP-HA-006-002	02/25/05	1034	S	1	NA	PCBs	1-2	FF013
ZWP-HA-007-001		1043					0-1	FF014
ZWP-HA-007-002		1053					1-2	FF015
ZWP-HA-008-001		1102					0-1	FF016
ZWP-HA-008-002		1108					1-2	FF017
ZWP-HA-009-001	02/25/05	1627	S	1	NA	PCBs	0-1	FF018
ZWP-HA-009-002		1636					1-2	FF019
ZWP-HA-010-001		1645					0-1	FF020
ZWP-HA-010-002		1653					1-2	FF021

*Preservation Code
A=None B=HCL C=H2SO4
D=HNO3 E=EnCore F=Methanol
G=NaOH O=Other(Indicate)

Relinquished By:	Chuck Peel	Date/Time:	2/25/05 1200
Relinquished By:		Date/Time:	
Received By:		Date/Time:	02/25/01 1200
Received By:		Date/Time:	

Custody Seal: Present/Absent Intact/Not Intact Seal #'s
Shipped Via:

Receipt Temp:
Temp Blank Y N

WHITE - REPORT COPY YELLOW - LABORATORY COPY PINK - SAMPLER/SUBMITTER

Environmental Chemistry Consulting Services, Inc.
2525 Advance Road Madison, WI 53718
Phone 608-221-8700 FAX 608-221-4889

CHAIN OF CUSTODY

MISC

No. 008850 *

Page 1 of 1

Turn Around (circle one) Normal Rush	
Report Due:	
Project Number:	Mail Report To:
Project Name: Kuhlman Electric	Company: Martin + Schley
Project Location: Crystal Springs	Address:
Sampled By (Print): Chuck Peel	
	P.O. No.: Quote No.:

Sample Description	Collection Date	Collection Time	Matrix	Total Bottles	Preserv*	Analysis Requested	Comments	Laboratory Number
Rinsate 1	02/25/05	0720	W	1	NA	PCBs	MSL-KS-045	W1076
Rinsate 2	↓	0722	↓	↓	↓	↓	-046	W1077
Rinsate 3	↓	0724	↓	↓	↓	↓	-047	W1078
Rinsate 4	↓	0726	↓	↓	↓	↓	-048	W1079
ZWP-FB-001	02/25/05	0845	W	1	NA	PCB		W1080
MWP-FB-002	↓	1227	↓	↓	↓	↓		W1081
GTP-FB-001	↓	1424	↓	↓	↓	↓		W1082

*Preservation Code
A=None B=HCL C=H2SO4
D=HNO3 E=EnCore F=Methanol
G=NaOH O=Other(Indicate)

Relinquished By: Chuck Peel	Date/Time: 2/25/05 1500	Received By:	Date/Time: 02/21/05 1500
Relinquished By:	Date/Time:	Received By:	Date/Time:

Custody Seal: Present/Absent Intact/Not Intact Seal #'s

Shipped Via:

Receipt Temp:
Temp Blank Y N

WHITE - REPORT COPY YELLOW - LABORATORY COPY PINK - SAMPLER/SUBMITTER

Appendix B

FEDEX shipping label for Paradigm Labs

FedEx Express **US Airbill**

FedEx Tracking Number **8469 0347 2410**

0215 — Sender's Copy

From Please print and press hard.

Date 03/02/05 — Sender's FedEx Account Number

Sender's Name Chuck Peel — Phone (601) 856-2792

Company Peel Consulting

Address 140 Chapel Lane — Dept./Floor/Suite/Room

City Madison — State MS — ZIP 39110

Your Internal Billing Reference First 24 characters will appear on invoice. MARTIN + SLAGLE OPTIONAL

To

Recipient's Name SAMPLE CUSTODIAN — Phone (910) 350-1903

Company PARADIGM ANALYTICAL LABS

Recipient's Address 5500 BUSINESS DR — We cannot deliver to P.O. boxes or P.O. ZIP codes. — Dept./Floor/Suite/Room

Address — To request a package be held at a specific FedEx location, print FedEx address here.

City WILMINGTON — State NC — ZIP 28405-8446

4a Express Package Service — Packages up to 150 lbs. * To most locations

- [X] FedEx Priority Overnight — Next business morning*
- [ ] FedEx Standard Overnight — Next business afternoon*
- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations*
- [ ] FedEx 2Day — Second business day*
- [ ] FedEx Express Saver — Third business day*

FedEx Envelope rate not available. Minimum charge: One-pound rate

4b Express Freight Service — Packages over 150 lbs. ** To most locations

- [ ] FedEx 1Day Freight* — Next business day**
- [ ] FedEx 2Day Freight — Second business day**
- [ ] FedEx 3Day Freight — Third business day**

* Call for Confirmation:

5 Packaging * Declared value limit $500

- [ ] FedEx Envelope*
- [ ] FedEx Pak* — Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak
- [ ] FedEx Box
- [ ] FedEx Tube
- [X] Other

6 Special Handling — Include FedEx address in Section 3.

- [ ] SATURDAY Delivery Available ONLY for FedEx Priority Overnight, FedEx 2Day, FedEx 1Day Freight, and FedEx 2Day Freight to select ZIP codes
- [ ] HOLD Weekday at FedEx Location NOT Available for FedEx First Overnight
- [ ] HOLD Saturday at FedEx Location Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations

Does this shipment contain dangerous goods? One box must be checked.

- [X] No
- [ ] Yes — As per attached Shipper's Declaration
- [ ] Yes — Shipper's Declaration not required
- [ ] Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg

Dangerous goods (including Dry Ice) cannot be shipped in FedEx packaging.

- [ ] Cargo Aircraft Only

7 Payment Bill to: — Enter FedEx Acct. No. or Credit Card No. below.

- [ ] Sender — Acct. No. in Section 1 will be billed.
- [X] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check

FedEx Acct. No. or Credit Card No. 1811-4189-1 — Exp. Date

Total Packages — Total Weight — Total Declared Value* $ .00

*Our liability is limited to $100 unless you declare a higher value. See back for details.

FedEx Use Only

8 Sign to Authorize Delivery Without a Signature

By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting claims.

466

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Try online shipping at fedex.com

By using this Airbill you agree to the service conditions on the back of this Airbill and in our current Service Guide, including terms that limit our liability.

Questions? Visit our Web site at fedex.com or call 1.800.GoFedEx 1.800.463.3339.

0282993908

Appendix C

Chain of Custody Sheets for samples sent to Paradigm Labs

PARADIGM ANALYTICAL LABORATORIES, INC.
5500 Business Drive, Wilmington, NC 28405
Phone: (910)-350-1903 FAX: (910)-350-1557

Chain-of Custody Record & Analytical Request

COC# 44645

Page 1 of 1

Client: MARTIN & SCALLY
Address:
Address: BLACK MOUNTAIN NC
Quote #:

Project ID: HUTCHMAN ELECTRIC
Contact: ROBERT MARTIN
Phone:
Fax:

Date: 03/02/05
Turnaround: STD
Job Number:
P.O. Number:

Report To: SAME
Invoice To: SAME

Sample ID	Date	Time	Matrix	Preservatives: NA	Analyses: PCB	Comments: Please specify any special reporting requirements
						MOBIL LAB # Dry HL
ZWP-HA-001-001	02/25/05	0850	S	X	X	FF001 0-1'
ZWP-DUPLICATE	02/25/05	—	S	X	X	FF009 —
ZWP-HA-008-001	02/25/05	1102	S	X	X	FF016 0-1'
ZWP-HA-009-001	02/25/05	1627	S	X	X	FF018 0-1'

Relinquished By	Date	Time	Received By	Date	Time	Temperature
[illegible]	3/2/05	1421				

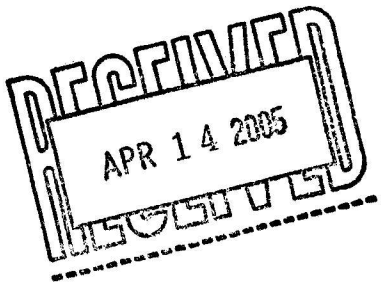
State Certification Requested

NC ____ SC ____ Other ____

SEE REVERSE FOR TERMS AND CONDITIONS

CLIENT COPY

April 7, 2005



Robert Martin
Martin & Slagle, LLC
P.O. Box 1023
Black Mountain, NC 28711

Dear Mr. Martin,

Enclosed is the Technical Memorandum for work completed at the former Borg Warner and current Kuhlman Electric facility in Crystal Springs, Mississippi during the month of January. If you have any questions concerning this information, please give me a call.

Sincerely,

Karin Ann Killian
for Richard Johnson

Enclosure

Environmental Chemistry Consulting Services, Inc.
2525 Advance Road • Madison, WI 53718 • Phone (608) 221-8700 • FAX (608) 221-4889

Technical Memorandum

Borg Warner / Kuhlman Electric

Crystal Springs, Mississippi

TECHNICAL MEMORANDUM

April 7, 2005

To: Robert Martin
Martin Slagle Inc.

From: Richard Johnson
ECCS, Inc.

Re: Field Analytical Methods – QC Summary
Borg Warner – Kuhlman Electric Facility
Crystal Springs, Mississippi

INTRODUCTION

This Technical Memorandum provides documentation of the field analytical test methods used to analyze rinsate samples collected during January 2005 at an accelerated site investigation episode around the former Borg Warner and current Kuhlman Electric facility in Crystal Springs, Mississippi. Water samples were analyzed for polychlorinated biphenyls (PCBs) and chlorinated benzenes by gas chromatography (GC) in accordance with ECCS's Polychlorinated Biphenyl (PCB) Mini Extraction Screening Procedure. A summary of test results is provided in Table 1. A summary of method blanks, laboratory control samples and matrix spike/matrix spike duplicate data is provided in Table 2.

In addition copies of the chain of custody sheets can be found in appendix A.

A) Chain of custody sheets for samples

The PCB mini-extraction procedure is based on the existing EPA SW846 methods 8082/8141. The procedure incorporates all the quality control rigors of the full 8082/8141 methods including quantification based on 6-point calibration with continuing calibration verification, surrogate method performance monitoring, method blanks, laboratory control samples (LCS), and matrix spike/matrix spike (MS/MSD) duplicate samples. As such, you should consider these test results as comparable to what you would get from a fixed-based laboratory using the more-widely accepted extraction procedure.

The primary project objective of the sampling and testing episode was to delineate the PCB contamination at and around the site using the accelerated site characterization approach. The mobile laboratory was required to provide data as quickly as possible to keep the accelerated site investigation process on track while trying to maintain a goal of level three data quality.

CASE NARRATIVE

During the episode, all samples collected were analyzed. To maintain rapid turnaround and to meet the project objective, three GCs were operated on a nearly continuous basis.

Quality control including proper calibration, continuing calibration verification, surrogates, method blanks, laboratory control samples and matrix spike/matrix spike duplicate samples was performed at the method-specified intervals. Overall quality of the data is very good. The following quality related issues should be noted:

1. All surrogate recoveries were within acceptable ranges.

2. All LCS recoveries were within acceptable ranges. See Table 2.

3. All MS/MSD recoveries were within acceptable ranges. Percent repeatability was also within acceptable ranges. See Table 2.

METHOD SUMMARY

This method employs a mini-extraction procedure and gas chromatography analysis for the detection of PCBs and chlorinated benzenes. Reporting limits are provided in the results Tables. Four grams of sample are dried with anhydrous sodium sulfate and extracted with eight mLs of 80/20 iso-octane/acetone. The extract is then analyzed by Gas Chromatography-Electron Capture Detector (GC-ECD).

Procedure

1. Standards Preparation - Primary standards are prepared from a solution purchased from various vendors at Certified concentrations. Stock standards are prepared in suitable solvents and stored in a freezer when not in use. Secondary standards are prepared in 80/20 iso-octane/acetone and stored in a freezer when not in use. Standard curve mixes for this project was prepared at six concentrations: PCBs – 0.05, 0.10, 0.20, 0.50, 1.0 and 2.0 ug/m; chlorinated benzenes – 0.005, 0.01, 0.02, 0.05, 0.10 and 0.20 ug/ml.

2. WATER Samples: 200 grams of water was weighed into a clean jar containing 50 grams of sodium chloride. The samples were spiked with a surrogate in addition the LCS/MS/MSD were spiked with PCB's and chlorinated benzenes. Added 10 ml of isooctane to each and shake 3 times for 2 minutes each time. Samples were allowed to settle for approximately 5 minutes between each shake. Isooctane was decanted into a scintillation vial and then an aliquot was transferred to an autosampler vial. Then extracts were injected into a GC-ECD.

3. GC-ECD Analysis - A sample aliquot is injected into an HP5890 GC with an ECD equipped with an HP ChemStation for data processing. PCBs were identified by matching retention times of standards to the same retention time in the sample. Regression analysis was performed on each of the selected peak's height verses concentration of the standard using a LN/LN transformed linear regression. For PCBs nine peaks were selected for quantification. The ug/mL value for each peak was added together and divided by the number of peaks selected to obtain the total PCB ug/mL result. If interference occurred at any of the peaks, these peaks were not included in the total, and the divisor was reduced accordingly.

4. Quality Control - Quality control consisted of the following items:
   - Continuing calibration standards analyzed every ten samples or less and at the end of a run.
   - Blank and LCS samples analyzed every twenty sample or less with a minimum of one per day.
   - MS/MSD samples analyzed every twenty samples or less with a minimum of one per day.
   - Information is documented in logbook 45 and January run sheets.

5. Instrument Conditions - Two HP5890 gas chromatographs were equipped with RTX-35 capillary columns. Each system had a Leap Technologies A200S auto-sampler and an HP ChemStation for data handling.

Table 1

Sample Results – January

Table 1
Kuhlman Electric
Crystal Springs, Mississippi
PCB Concentrations as Aroclor 1260 Detected in Rinsates

					Field Laboratory			
Field Lab Sample ID	Sample ID	Sample Database Number	Date Collected	Time Collected	Date Analyzed	Concentration (ug/L)	Surrogate TCMX(%)	Surrogate DCBP(%)
W1046	Rinsate 1	MSL-RS-026	04-Jan-05	13:00	06-Jan-05	< 0.25	114	113
W1047	Rinsate 2	MSL-RS-027	04-Jan-05	13:03	06-Jan-05	< 0.25	116	119
W1048	Rinsate 3	MSL-RS-028	04-Jan-05	13:06	06-Jan-05	< 0.25	116	117
W1049	Rinsate 4	MSL-RS-029	04-Jan-05	13:08	06-Jan-05	< 0.25	121	124
W1052	Rinsate 1	MSL-RS-030	10-Jan-05	10:10	12-Jan-05	< 0.25	101	106
W1053	Rinsate 2	MSL-RS-031	10-Jan-05	10:12	12-Jan-05	< 0.25	96.9	102
W1054	Rinsate 3	MSL-RS-032	10-Jan-05	10:15	12-Jan-05	< 0.25	101	107
W1055	Rinsate 4	MSL-RS-033	10-Jan-05	10:18	12-Jan-05	< 0.25	99.0	108
W1058	Rinsate 1	MSL-RS-034	17-Jan-05	08:30	20-Jan-05	< 0.25	98.0	94.2
W1059	Rinsate 2	MSL-RS-035	17-Jan-05	08:32	20-Jan-05	< 0.25	98.7	86.2
W1060	Rinsate 3	MSL-RS-036	17-Jan-05	08:35	20-Jan-05	< 0.25	98.7	86.2
W1062	Rinsate 1	MSL-RS-037	24-Jan-05	13:25	25-Jan-05	< 0.25	105	110
W1063	Rinsate 2	MSL-RS-038	24-Jan-05	13:29	25-Jan-05	< 0.25	111	120
W1064	Rinsate 3	MSL-RS-039	24-Jan-05	13:32	25-Jan-05	< 0.25	113	119
W1065	Rinsate 4	MSL-RS-040	24-Jan-05	13:35	25-Jan-05	< 0.25	102	123

Table 2

QC Samples - January

Table 2
Rinsate Samples
QC Results

Lab # associated with qc samples: W1046 through W1049

	Matrix Spike W1046		Matrix Spike Duplicate W1046			Blank	LCS
Date Analyzed:	1/6/05		1/6/05			1/6/05	1/6/05
Compound	% Rec		% Rec		% RPD	ug/L	% Rec
PCB as 1260	116		118		-2%	< 0.25	(1)

(1) = Sample ran as blank - no LCS recovery.

Table 2
Rinsate Samples
QC Results

Lab # associated with qc samples: W1052 through W1055

	Matrix Spike W1056	Matrix Spike Duplicate W1056		Blank	LCS
Date Analyzed:	1/12/05	1/12/05		1/12/05	1/12/05

Compound	% Rec		% Rec		% RPD	ug/L	% Rec
PCB as 1260	121		114		6%	< 0.25	121

Table 2
Rinsate Samples
QC Results

Lab # associated with qc samples: W1058 through W1060

	Matrix Spike W1061		Matrix Spike Duplicate W1061			Blank	LCS
Date Analyzed:	1/20/05		1/20/05			1/20/05	1/20/05
Compound	% Rec		% Rec		% RPD	ug/L	% Rec
PCB as 1260	109		120		-10%	< 0.25	120

Table 2
Rinsate Samples
QC Results

Lab # associated with qc samples: W1062 through W1065

	Matrix Spike W1066		Matrix Spike Duplicate W1066			Blank	LCS
Date Analyzed:	1/25/05		1/25/05			1/25/05	1/25/05
Compound	% Rec		% Rec		% RPD	ug/L	% Rec
PCB as 1260	137		139		-1%	< 0.25	129

Appendix A

Chain of Custody Sheets for Samples

04JA05

Environmental Chemistry Consulting Services, Inc.
2525 Advance Road, Madison, WI 53718
Phone 608-221-8700 FAX 608-221-4889

CHAIN OF CUSTODY

MISC

No. 008806 *

Page 1 of 1

Turn Around (circle one)	Normal Rush
Report Due:	
Invoice To:	
Company:	
Address:	
P.O. No.:	Quote No.:

Project Number:	
Project Name:	RUHLOHN ELECTRIC
Project Location:	CRYSTAL SPRINGS, MS
Sampled By (Print):	
Mail Report To:	
Company:	MARTIN & SCAGLE
Address:	

Sample Description	Collection Date	Collection Time	Matrix	Total Bottles	Preserv*	Analysis Requested	Comments	Laboratory Number
RINSATE #1	04 JA 05	1300	H2O	1	NA	PCB	MSL-RS-~~027~~ 026	W1046
RINSATE #2	↓	1303	↓	↓	↓	↓	MSL-RS-~~028~~ 027	W1047
RINSATE #3	↓	1306	↓	↓	↓	↓	MSL-RS-~~027~~ 028	W1048
RINSATE #4	↓	1308	↓	↓	↓	↓	MSL-RS-~~027~~ 029	W1049

(1) wrong designation [initials] 1/20/05

*Preservation Code
A=None B=HCL C=H2SO4
D=HNO3 E=EnCore F=Methanol
G=NaOH O=Other(Indicate)

Relinquished By:	Date/Time:	Received By:	Date/Time:
[signature]	1/4/05 1400	R [signature] 04JA05	1400
Relinquished By:	Date/Time:	Received By:	Date/Time:

Custody Seal: Present/Absent Intact/Not Intact Seal #'s

Receipt Temp:
Temp Blank Y N

Shipped Via:

WHITE - REPORT COPY YELLOW - LABORATORY COPY PINK - SAMPLER/SUBMITTER

Environmental Chemistry Consulting Services, Inc.
2525 Advance Road Madison, WI 53718
Phone 608-221-8700 FAX 608-221-4889

CHAIN OF CUSTODY

No. 008815 *

Page 1 of 1

Turn Around (circle one) Normal Rush
Report Due:

Project Number:
Project Name: Kuhlman Electric
Project Location: Crystal Springs
Sampled By (Print): Chuck Peel

Mail Report To:
Company: Martin + Slagle
Address:

Invoice To:
Company:
Address:
P.O. No.: Quote No.:

Sample Description	Collection Date	Collection Time	Matrix	Total Bottles	Preserv*	Analysis Requested	Comments	Laboratory Number
Rinsate 1	01/10/05	1010	W	1	NA	PCBs	MSL-RS-030	W1052
2	↓	1012	↓	↓	↓	↓	MSL-RS-031	W1053
3	↓	1015	↓	↓	↓	↓	MSL-RS-032	W1054
4	↓	1018	↓	↓	↓	↓	MSL-RS-033	W1055

*Preservation Code
A=None B=HCL C=H2SO4
D=HNO3 E=EnCore F=Methanol
G=NaOH O=Other(Indicate)

Relinquished By: Chuck O. M. Peel
Date/Time: 1/10/05 1200
Received By: [signature]
Date/Time: 01/10/05 1200

Relinquished By:
Date/Time:
Received By:
Date/Time:

Custody Seal: Present/Absent Intact/Not Intact Seal #'s
Shipped Via:
Receipt Temp:
Temp Blank Y N

WHITE - REPORT COPY YELLOW - LABORATORY COPY PINK - SAMPLER/SUBMITTER

Environmental Chemistry Consulting Services, Inc.
2525 Advance Road Madison, WI 53718
Phone 608-221-8700 FAX 608-221-4889

1/17/01

CHAIN OF CUSTODY

No. 008832 *

MSL

Page 1 of 1

Turn Around (circle one) Normal Rush	
Report Due:	
Invoice To:	
Company:	
Address:	
P.O. No.:	Quote No.:
Project Number:	Mail Report To:
Project Name: KUHLMAN ELECTRIC	Company: MARTIN & SLATER
Project Location: CRYSTAL SPRINGS, MS	Address:
Sampled By (Print): CHUCK BEBL	

Sample Description	Collection Date	Collection Time	Matrix	Total Bottles	Preserv*	Analysis Requested	Comments	Laboratory Number
RINSATE #1	1/17/05	0830	W	1	N/A	PCB's	MSL-RS-034	W1058
RINSATE #2	↓	0832	↓	↓	↓	↓	MSL-RS-035	W1059
RINSATE #3	↓	0835	↓	↓	↓	↓	MSL-RB-036	W1060

*Preservation Code
A=None B=HCL C=H2SO4
D=HNO3 E=EnCore F=Methanol
G=NaOH O=Other(Indicate)

Relinquished By:	Date/Time: 1/17/05 1130	Received By:	Date/Time: 1/17/05 1130
Relinquished By:	Date/Time:	Received By:	Date/Time:

Custody Seal: Present/Absent Intact/Not Intact Seal #'s

Shipped Via:

Receipt Temp:

Temp Blank Y N

WHITE - REPORT COPY YELLOW - LABORATORY COPY PINK - SAMPLER/SUBMITTER

Environmental Chemistry Consulting Services, Inc.

2525 Advance Road Madison, WI 53718
Phone 608-221-8700 FAX 608-221-4889

CHAIN OF CUSTODY No. 008835 *

MSL - MISC

Page 1 of 1

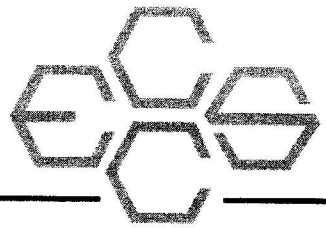
Project Number:		Mail Report To:	Turn Around (circle one) Normal Rush
Project Name: KUHLMAN ELECTRIC		Company: MARTIN + SCHEIL	Report Due:
Project Location: CRYSTAL SPRINGS		Address:	Invoice To:
Sampled By (Print): Chuck Paul			Company:
			Address:
			P.O. No.: Quote No.:

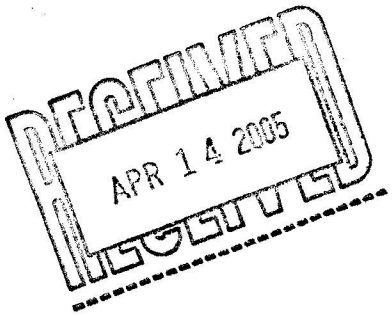
Sample Description	Collection Date	Collection Time	Matrix	Total Bottles	Preserv*	Analysis Requested	Comments	Laboratory Number
Rinsate 1	01/24/05	1325	W	1	NA	PCBs	MSL-RS-037	W1062
2		1329					MSL-RS-038	W1063
3		1332					MSL-RS-039	W1064
4		1335					MSL-RS-040	W1065
MSL-FB-010	01/24/05	1407	W	1	NA	PCB		W1066

*Preservation Code
A=None B=HCL C=H2SO4
D=HNO3 E=EnCore F=Methanol
G=NaOH O=Other(Indicate)

Relinquished By:		Date/Time: 1/24/05 1600	Received By:	Date/Time: 01/24/05 1600
Relinquished By:		Date/Time:	Received By:	Date/Time:
Custody Seal: Present/Absent	Intact/Not Intact	Seal #'s	Receipt Temp:	
Shipped Via:			Temp Blank Y N	

WHITE - REPORT COPY YELLOW - LABORATORY COPY PINK - SAMPLER/SUBMITTER





April 13, 2005

Robert Martin
Martin & Slagle, LLC
P.O. Box 1023
Black Mountain, NC 28711

Dear Mr. Martin,

Enclosed is the Technical Memorandum for work completed at the former Borg Warner and current Kuhlman Electric facility in Crystal Springs, Mississippi during the month of February. If you have any questions concerning this information, please give me a call.

Sincerely,

for Richard Johnson

Enclosure

Environmental Chemistry Consulting Services, Inc.
2525 Advance Road • Madison, WI 53718 • Phone (608) 221-8700 • FAX (608) 221-4889

Technical Memorandum

Borg Warner / Kuhlman Electric

Crystal Springs, Mississippi

TECHNICAL MEMORANDUM

April 13, 2005

To: Robert Martin
Martin Slagle Inc.

From: Richard Johnson
ECCS, Inc.

Re: Field Analytical Methods – QC Summary
Borg Warner – Kuhlman Electric Facility
Crystal Springs, Mississippi

INTRODUCTION

This Technical Memorandum provides documentation of the field analytical test methods used to analyze rinsate samples collected during February 2005 at an accelerated site investigation episode around the former Borg Warner and current Kuhlman Electric facility in Crystal Springs, Mississippi. Water samples were analyzed for polychlorinated biphenyls (PCBs) and chlorinated benzenes by gas chromatography (GC) in accordance with ECCS's Polychlorinated Biphenyl (PCB) Mini Extraction Screening Procedure. A summary of test results is provided in Table 1. A summary of method blanks, laboratory control samples and matrix spike/matrix spike duplicate data is provided in Table 2.

In addition copies of the chain of custody sheets can be found in appendix A.

A) Chain of custody sheets for samples

The PCB mini-extraction procedure is based on the existing EPA SW846 methods 8082/8141. The procedure incorporates all the quality control rigors of the full 8082/8141 methods including quantification based on 6-point calibration with continuing calibration verification, surrogate method performance monitoring, method blanks, laboratory control samples (LCS), and matrix spike/matrix spike (MS/MSD) duplicate samples. As such, you should consider these test results as comparable to what you would get from a fixed-based laboratory using the more-widely accepted extraction procedure.

The primary project objective of the sampling and testing episode was to delineate the PCB contamination at and around the site using the accelerated site characterization approach. The mobile laboratory was required to provide data as quickly as possible to keep the accelerated site investigation process on track while trying to maintain a goal of level three data quality.

CASE NARRATIVE

During the episode, all samples collected were analyzed. To maintain rapid turnaround and to meet the project objective, three GCs were operated on a nearly continuous basis.

Quality control including proper calibration, continuing calibration verification, surrogates, method blanks, laboratory control samples and matrix spike/matrix spike duplicate samples was performed at the method-specified intervals. Overall quality of the data is very good. The following quality related issues should be noted:

1. All surrogate recoveries were within acceptable ranges.

2. All LCS recoveries were within acceptable ranges. See Table 2.

3. All MS/MSD recoveries were within acceptable ranges. Percent repeatability was also within acceptable ranges. See Table 2.

METHOD SUMMARY

This method employs a mini-extraction procedure and gas chromatography analysis for the detection of PCBs and chlorinated benzenes. Reporting limits are provided in the results Tables. Four grams of sample are dried with anhydrous sodium sulfate and extracted with eight mLs of 80/20 iso-octane/acetone. The extract is then analyzed by Gas Chromatography-Electron Capture Detector (GC-ECD).

Procedure

1. Standards Preparation - Primary standards are prepared from a solution purchased from various vendors at Certified concentrations. Stock standards are prepared in suitable solvents and stored in a freezer when not in use. Secondary standards are prepared in 80/20 iso-octane/acetone and stored in a freezer when not in use. Standard curve mixes for this project was prepared at six concentrations: PCBs – 0.05, 0.10, 0.20, 0.50, 1.0 and 2.0 ug/m; chlorinated benzenes – 0.005, 0.01, 0.02, 0.05, 0.10 and 0.20 ug/ml.

2. WATER Samples: 200 grams of water was weighed into a clean jar containing 50 grams of sodium chloride. The samples were spiked with a surrogate in addition the LCS/MS/MSD were spiked with PCB's and chlorinated benzenes. Added 10 ml of isooctane to each and shake 3 times for 2 minutes each time. Samples were allowed to settle for approximately 5 minutes between each shake. Isooctane was decanted into a scintillation vial and then an aliquot was transferred to an autosampler vial. Then extracts were injected into a GC-ECD.

3. GC-ECD Analysis - A sample aliquot is injected into an HP5890 GC with an ECD equipped with an HP ChemStation for data processing. PCBs were identified by matching retention times of standards to the same retention time in the sample. Regression analysis was performed on each of the selected peak's height verses concentration of the standard using a LN/LN transformed linear regression. For PCBs nine peaks were selected for quantification. The ug/mL value for each peak was added together and divided by the number of peaks selected to obtain the total PCB ug/mL result. If interference occurred at any of the peaks, these peaks were not included in the total, and the divisor was reduced accordingly.

4. Quality Control - Quality control consisted of the following items:
   - Continuing calibration standards analyzed every ten samples or less and at the end of a run.
   - Blank and LCS samples analyzed every twenty sample or less with a minimum of one per day.
   - MS/MSD samples analyzed every twenty samples or less with a minimum of one per day.
   - Information is documented in logbook 45 and February run sheets.

5. Instrument Conditions - Two HP5890 gas chromatographs were equipped with RTX-35 capillary columns. Each system had a Leap Technologies A200S auto-sampler and an HP ChemStation for data handling.

Table 1

Sample Results – February

Table 1
Kuhlman Electric
Crystal Springs, Mississippi
PCB Concentrations as Aroclor 1260 Detected in Rinsates

					Field Laboratory			
Field Lab Sample ID	Sample ID	Sample Database Number	Date Collected	Time Collected	Date Analyzed	Concentration (ug/L)	Surrogate TCMX(%)	Surrogate DCBP(%)
W1070	Rinsate 1	MSL-RS-041	15-Feb-05	08:15	15-Feb-05	< 0.25	107	105
W1071	Rinsate 2	MSL-RS-042	15-Feb-05	08:17	15-Feb-05	< 0.25	102	122
W1072	Rinsate 3	MSL-RS-043	15-Feb-05	08:19	15-Feb-05	< 0.25	104	111
W1073	Rinsate 4	MSL-RS-044	15-Feb-05	08:21	15-Feb-05	< 0.25	111	119
W1076	Rinsate 1	MSL-RS-045	25-Feb-05	07:20	03-Mar-05	< 0.25	112	92.6
W1077	Rinsate 2	MSL-RS-046	25-Feb-05	07:22	03-Mar-05	< 0.25	112	93.8
W1078	Rinsate 3	MSL-RS-047	25-Feb-05	07:24	03-Mar-05	< 0.25	116	98.9
W1079	Rinsate 4	MSL-RS-048	25-Feb-05	07:26	03-Mar-05	< 0.25	112	94.3

Table 2

QC Samples - February

Table 2
Rinsate Samples
QC Results

Lab # associated with qc samples: W1070 through W1073

	Matrix Spike W1073		Matrix Spike Duplicate W1073			Blank	LCS
Date Analyzed:	2/15/05		2/15/05			2/15/05	2/15/05
Compound	% Rec		% Rec		% RPD	ug/L	% Rec
PCB as 1260	98.8		104		-5%	< 0.25	99.3

Table 2
Rinsate Samples
QC Results

Lab # associated with qc samples: W1076 through W1079

	Matrix Spike W1082		Matrix Spike Duplicate W1082			Blank	LCS
Date Analyzed:	3/3/05		3/3/05			3/3/05	3/3/05
Compound	% Rec		% Rec		% RPD	ug/L	% Rec
PCB as 1260	107		102		5%	< 0.25	103

Appendix A

Chain of Custody Sheets for Samples

Environmental Chemistry Consulting Services, Inc.
2525 Advance Road Madison, WI 53718
Phone 608-221-8700 FAX 608-221-4889

CHAIN OF CUSTODY

No. 008844 *

Page ____ of ____

MISC

Project Number:	Mail Report To:
Project Name: KUHLMAN ELECTRIC	Company: MARTIN + SCHALL
Project Location: CRYSTAL SPRINGS	Address:
Sampled By (Print): Chuck Peel	

Turn Around (circle one) Normal Rush	
Report Due:	
Invoice To:	
Company:	
Address:	
P.O. No.: Quote No.:	

Sample Description	Collection Date	Collection Time	Matrix	Total Bottles	Preserv*	Analysis Requested	Comments	Laboratory Number
RINSATE 1	2/15/05	0815	W	1	N/A	PCB	MSL-RS-041	W1070
RINSATE 2	↓	0817	↓	↓	↓	↓	MSL-RS-042	W1071
RINSATE 3	↓	0819	↓	↓	↓	↓	MSL-RS-043	W1072
RINSATE 4	↓	0821	↓	↓	↓	↓	MSL-RS-044	W1073

*Preservation Code
A=None B=HCL C=H2SO4
D=HNO3 E=EnCore F=Methanol
G=NaOH O=Other(Indicate)

Relinquished By: Charles O. M. Peel	Date/Time: 2/15/05 0830	Received By:	Date/Time: 2/15/05 0830
Relinquished By:	Date/Time:	Received By:	Date/Time:

Custody Seal: Present/Absent Intact/Not Intact Seal #'s
Shipped Via:
Receipt Temp:
Temp Blank Y N

WHITE - REPORT COPY YELLOW - LABORATORY COPY PINK - SAMPLER/SUBMITTER

Environmental Chemistry Consulting Services, Inc.

2525 Advance Road Madison, WI 53718
Phone 608-221-8700 FAX 608-221-4889

CHAIN OF CUSTODY

MISC

No. 008850 *

Page 1 of 1

Project Number:	Mail Report To:
Project Name: KUHLMAN ELECTRIC	Company: MARTIN + SLAGLE
Project Location: CRYSTAL SPRINGS	Address:
Sampled By (Print): Chuck Peel	

Turn Around (circle one) Normal Rush	
Report Due:	
Invoice To:	
Company:	
Address:	
P.O. No.: Quote No.:	

Sample Description	Collection Date	Collection Time	Matrix	Total Bottles	Preserv*	Analysis Requested	Comments	Laboratory Number
Rinsate 1	02/25/05	0720	W	1	NA	PCBs	MSL-KE-045	W1076
Rinsate 2		0722					-046	W1077
Rinsate 3		0724					-047	W1078
Rinsate 4		0726					-048	W1079
ZWP-FB-001	02/25/05	0845	W	1	NA	PCB		W1080
MWP-FB-002		1227						W1081
GTP-FB-001		1424						W1082

*Preservation Code
A=None B=HCL C=H2SO4
D=HNO3 E=EnCore F=Methanol
G=NaOH O=Other(Indicate)

Relinquished By: Chuck Peel	Date/Time: 2/25/05 1500	Received By:	Date/Time: 02/25/05 1500
Relinquished By:	Date/Time:	Received By:	Date/Time:

Custody Seal: Present/Absent Intact/Not Intact Seal #'s

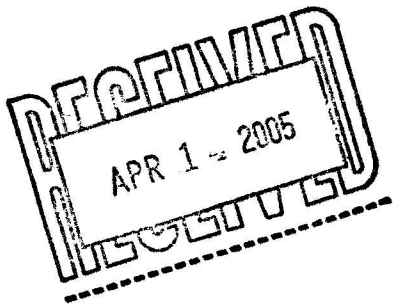
Shipped Via:

Receipt Temp:
Temp Blank Y N

WHITE - REPORT COPY YELLOW - LABORATORY COPY PINK - SAMPLER/SUBMITTER

PARADIGM ANALYTICAL LABORATORIES, INC.
5500 Business Drive
Wilmington, North Carolina 28405
(910) 350-1903
Fax (910) 350-1557

Mr. Robert Martin
Martin & Slagle
Box 1023
Black Mountain NC 28711



Report Number: G442-309

Client Project: Kuhlman Electric

Dear Mr. Martin:

Enclosed are the results of the analytical services performed under the referenced project. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of five years in the event they are required for future reference. Any samples submitted to our laboratory will will be retained for a maximum of thirty (30) days from the date of this report unless other arrangements are requested.

If there are any questions about the report or the services performed during this project, please call Paradigm at (910) 350-1903. We will be happy to answer any questions or concerns which you may have.

Thank you for using Paradigm Analytical Labs for your analytical services. We look forward to working with you again on any additional analytical needs which you may have.

Sincerely,
Paradigm Analytical Laboratories, Inc.

2/4/2005
Laboratory Director Date
J. Patrick Weaver

Results for PCBs
by EPA 8082

Client Sample ID: MWP-HA-001-001
Client Project ID: Kuhlman Electric
Lab Sample ID: G442-309-1B
Lab Project ID: G442-309
Matrix: Soil %SOLIDS: 78.6
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected: 01/17/2005 10:10
Date Received: 1/25/2005
Date Analyzed: 1/31/2005
Date Extracted: 1/30/2005
Dilution: 1

Compound	Quantitation Limit ug/KG	Result ug/KG
Aroclor-1016	124	BQL
Aroclor-1221	124	BQL
Aroclor-1232	124	BQL
Aroclor-1242	124	BQL
Aroclor-1248	124	BQL
Aroclor-1254	124	BQL
Aroclor-1260	124	**2200**
Aroclor-1262	124	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
TCMX	100	88	88

*Sample was quantitated as Aroclor 1260, but may contain a mixture of Aroclor 1260 and Aroclor 1262.

Comments:
BQL = Below Quantitation Limit
NA = Not applicable, surrogate diluted out.

Reviewed By:

Results for PCBs
by EPA 8082

Client Sample ID: MWP-Duplicate-DD007
Client Project ID: Kuhlman Electric
Lab Sample ID: G442-309-2B
Lab Project ID: G442-309
Matrix: Soil %SOLIDS: 79.6
Report Basis: Dry Weight

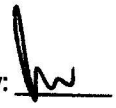
Analyzed By: CLP
Date Collected: 01/17/2005 00:00
Date Received: 1/25/2005
Date Analyzed: 1/31/2005
Date Extracted: 1/30/2005
Dilution: 1

Compound	Quantitation Limit ug/KG	Result ug/KG
Aroclor-1016	116	BQL
Aroclor-1221	116	BQL
Aroclor-1232	116	BQL
Aroclor-1242	116	BQL
Aroclor-1248	116	BQL
Aroclor-1254	116	BQL
Aroclor-1260	116	1960
Aroclor-1262	116	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
TCMX	100	70	70

*Sample was quantitated as Aroclor 1260, but may contain a mixture of Aroclor 1260 and Aroclor 1262.

Comments:
BQL = Below Quantitation Limit
NA = Not applicable, surrogate diluted out.

Reviewed By: 

Results for PCBs
by EPA 8082

Client Sample ID: MWP-HA-005-001
Client Project ID: Kuhlman Electric
Lab Sample ID: G442-309-3B
Lab Project ID: G442-309
Matrix: Soil %SOLIDS: 76.5
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected: 01/17/2005 13:34
Date Received: 1/25/05
Date Analyzed: 2/3/05
Date Extracted: 1/30/05
Dilution: 2

Compound	Quantitation Limit ug/KG	Result ug/KG
Aroclor-1016	255	BQL
Aroclor-1221	255	BQL
Aroclor-1232	255	BQL
Aroclor-1242	255	BQL
Aroclor-1248	255	BQL
Aroclor-1254	255	BQL
Aroclor-1260	255	**3550**
Aroclor-1262	255	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
TCMX	100	54	54

*Sample was quantitated as Aroclor 1260, but may contain a mixture of Aroclor 1260 and Aroclor 1262.

Comments:
BQL = Below Quantitation Limit
NA = Not applicable, surrogate diluted out.

Reviewed By: RNP

Results for PCBs
by EPA 8082

Client Sample ID: MWP-HA-006-001
Client Project ID: Kuhlman Electric
Lab Sample ID: G442-309-4B
Lab Project ID: G442-309
Matrix: Soil %SOLIDS: 76.7
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected: 01/17/2005 13:56
Date Received: 1/25/05
Date Analyzed: 2/3/05
Date Extracted: 1/30/05
Dilution: 10

Compound	Quantitation Limit ug/KG	Result ug/KG
Aroclor-1016	1210	BQL
Aroclor-1221	1210	BQL
Aroclor-1232	1210	BQL
Aroclor-1242	1210	BQL
Aroclor-1248	1210	BQL
Aroclor-1254	1210	BQL
Aroclor-1260	1210	**12700**
Aroclor-1262	1210	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
TCMX	100	N/A	N/A

*Sample was quantitated as Aroclor 1260, but may contain a mixture of Aroclor 1260 and Aroclor 1262.

Comments:
BQL = Below Quantitation Limit
NA = Not applicable, surrogate diluted out.

Reviewed By: _____

Results for PCBs
by EPA 8082

Client Sample ID: MWP-HA-011-001
Client Project ID: Kuhlman Electric
Lab Sample ID: G442-309-5B
Lab Project ID: G442-309
Matrix: Soil %SOLIDS: 75.8
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected: 01/17/2005 15:46
Date Received: 1/25/05
Date Analyzed: 1/31/05
Date Extracted: 1/30/05
Dilution: 1

Compound	Quantitation Limit ug/KG	Result ug/KG
Aroclor-1016	124	BQL
Aroclor-1221	124	BQL
Aroclor-1232	124	BQL
Aroclor-1242	124	BQL
Aroclor-1248	124	BQL
Aroclor-1254	124	BQL
Aroclor-1260	124	**288**
Aroclor-1262	124	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
TCMX	100	80	80

*Sample was quantitated as Aroclor 1260, but may contain a mixture of Aroclor 1260 and Aroclor 1262.

Comments:
BQL = Below Quantitation Limit
NA = Not applicable, surrogate diluted out.

Reviewed By: RW

Results for PCBs
by EPA 8082

Client Sample ID: MWP-HA-012-001
Client Project ID: Kuhlman Electric
Lab Sample ID: G442-309-6B
Lab Project ID: G442-309
Matrix: Soil %SOLIDS: 80.9
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected: 01/18/2005 08:24
Date Received: 1/25/05
Date Analyzed: 1/31/05
Date Extracted: 1/30/05
Dilution: 1

Compound	Quantitation Limit ug/KG	Result ug/KG
Aroclor-1016	120	BQL
Aroclor-1221	120	BQL
Aroclor-1232	120	BQL
Aroclor-1242	120	BQL
Aroclor-1248	120	BQL
Aroclor-1254	120	BQL
Aroclor-1260	120	**366**
Aroclor-1262	120	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
TCMX	100	77	77

*Sample was quantitated as Aroclor 1260, but may contain a mixture of Aroclor 1260 and Aroclor 1262.

Comments:
BQL = Below Quantitation Limit
NA = Not applicable, surrogate diluted out.

Reviewed By: _____

Results for PCBs
by EPA 8082

Client Sample ID: MWP-Duplicate-DD030
Client Project ID: Kuhlman Electric
Lab Sample ID: G442-309-7B
Lab Project ID: G442-309
Matrix: Soil %SOLIDS: 79.0
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected: 01/18/2005 00:00
Date Received: 1/25/2005
Date Analyzed: 2/1/2005
Date Extracted: 1/30/2005
Dilution: 1

Compound	Quantitation Limit ug/KG	Result ug/KG
Aroclor-1016	117	BQL
Aroclor-1221	117	BQL
Aroclor-1232	117	BQL
Aroclor-1242	117	BQL
Aroclor-1248	117	BQL
Aroclor-1254	117	BQL
Aroclor-1260	117	366
Aroclor-1262	117	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
TCMX	100	65	65

*Sample was quantitated as Aroclor 1260, but may contain a mixture of Aroclor 1260 and Aroclor 1262.

Comments:
BQL = Below Quantitation Limit
NA = Not applicable, surrogate diluted out.

Reviewed By:

Results for PCBs
by EPA 8082

Client Sample ID: MWP-HA-016-001
Client Project ID: Kuhlman Electric
Lab Sample ID: G442-309-8B
Lab Project ID: G442-309
Matrix: Soil %SOLIDS: 79.6
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected: 01/18/2005 10:19
Date Received: 1/25/05
Date Analyzed: 2/1/05
Date Extracted: 1/30/05
Dilution: 1

Compound	Quantitation Limit ug/KG	Result ug/KG
Aroclor-1016	103	BQL
Aroclor-1221	103	BQL
Aroclor-1232	103	BQL
Aroclor-1242	103	BQL
Aroclor-1248	103	BQL
Aroclor-1254	103	BQL
Aroclor-1260	103	**1820**
Aroclor-1262	103	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
TCMX	100	48	48

*Sample was quantitated as Aroclor 1260, but may contain a mixture of Aroclor 1260 and Aroclor 1262.

Comments:
BQL = Below Quantitation Limit
NA = Not applicable, surrogate diluted out.

Reviewed By: RNP

Results for PCBs
by EPA 8082

Client Sample ID: Method Blank
Client Project ID:
Lab Sample ID: PB2279
Lab Project ID:
Matrix: SOIL %SOLIDS: 100.0
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected:
Date Received:
Date Analyzed: 1/31/2005
Date Extracted: 1/30/2005
Dilution: 1

Compound	Quantitation Limit ug/KG	Result ug/KG
Aroclor-1016	100	BQL
Aroclor-1221	100	BQL
Aroclor-1232	100	BQL
Aroclor-1242	100	BQL
Aroclor-1248	100	BQL
Aroclor-1254	100	BQL
Aroclor-1260	100	BQL
Aroclor-1262	100	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
TCMX	100	87	87

Comments:
BQL = Below Quantitation Limit
NA = Not applicable, surrogate diluted out.

Reviewed By:

PARADIGM ANALYTICAL LABORATORIES, INC.

QC Results for PCBs
by EPA 8082

Client Sample ID: Batch QC
Lab Sample ID: G442-309-1B
Batch ID: 2279

Analyzed By: CLP
Matrix: Soil

MS/MSD

Analyte	Sample ug/KG	Spiked ug/KG	MS ug/KG	REC %	Spiked ug/KG	MSD ug/KG	REC %	RPD %
Aroclor-1260	2200	1210	3440	102	1260	3340	90.5	11.9

LCS

Analyte		Spiked ug/KG	Result ug/KG	REC %	Limits	
					Lower	Upper
Aroclor-1260		1000	1100	110	70	130

Comments:

= Outside Control Limits

Reviewed by:

List of Reporting Abbreviations and Data Qualifiers

B = Compound also detected in batch blank

BQL = Below Quantitation Limit

DF = Dilution Factor

Dup = Duplicate

E = Estimated concentration, exceeds calibration range.

J = Estimated concentration, below calibration range and above MDL

LCS(D) = Laboratory Control Spike (Duplicate)

MDL = Method Detection Limit

MS(D) = Matrix Spike (Duplicate)

PQL = Practical Quantitation Limit

RL = Reporting Limit

RPD = Relative Percent Difference

mg/kg = milligram per kilogram, ppm, parts per million

ug/kg = micrograms per kilogram, ppb, parts per billion

mg/L = milligram per liter, ppm, parts per million

ug/L = micrograms per liter, ppb, parts per billion

% Rec = Percent Recovery

% solids = Percent Solids

Special Notes:

1) Metals and mercury samples are digested with a hot block, see the standard operating procedure document for details.

2) Uncertainty for all reported data is less than or equal to 30 percent.

MI34.011404.1

PARADIGM ANALYTICAL LABORATORIES, INC.
5500 Business Drive, Wilmington, NC 28405
Phone: (910)-350-1903 FAX: (910)-350-1557

Chain-of Custody Record & Analytical Request

COC# 44641

Page 1 of 1

Client: MARTIN & SLAGLE
Address:
Address: BLACK MOUNTAIN NC
Quote #:

Project ID: KUHLMAN ELECTRIC
Contact: CHRISTIE SPRINGS
Phone:
Fax:

Date: 01/24/05
Turnaround: STD
Job Number:
P.O. Number:

Report To: SAME
Invoice To: SAME

Sample ID	Date	Time	Matrix	Preservatives (NA)	Analyses (PCBs)	Comments: Please specify any special reporting requirements
						MOBIL LABS ID: Depth 6442-309
MWP-HA-001-001	01/17/05	1010	S	X	X	DD001 0-1'
MWP-DUPLICATE	01/17/05	—	S	X	X	DD007 —
MWP-HA-005-001	01/17/05	1324	S	X	X	DD010 0-1'
MWP-HA-006-001	01/17/05	1256	S	X	X	DD012 0-1'
MWP-HA-011-001	01/17/05	1546	S	X	X	DD022 0-1'
MWP-HA-012-001	01/18/05	0824	S	X	X	DD024 0-1'
MWP-DUPLICATE	01/18/05	—	S	X	X	DD030 —
MWP-HA-016-001	01/18/05	1019	S	X	X	DD033 0-1'

Relinquished By	Date	Time	Received By	Date	Time	Temperature
Chris O. & Paul	1/24/05	1500	Julie Adams	1/25/05	0945	0.2°C

State Certification Requested
NC ____ SC ____ Other ____

SEE REVERSE FOR TERMS AND CONDITIONS

ORIGINAL

PARADIGM ANALYTICAL LABORATORIES, INC.

N.C. CERTIFICATION #481

PARADIGM ANALYTICAL LABORATORIES, INC.
5500 Business Drive
Wilmington, North Carolina 28405
(910) 350-1903
Fax (910) 350-1557

Mr. Robert Martin
Martin & Slagle
Box 1023
Black Mountain NC 28711

Report Number: G442-313

Client Project: Kuhlman Electric

Dear Mr. Martin:

Enclosed are the results of the analytical services performed under the referenced project. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of five years in the event they are required for future reference. Any samples submitted to our laboratory will will be retained for a maximum of thirty (30) days from the date of this report unless other arrangements are requested.

If there are any questions about the report or the services performed during this project, please call Paradigm at (910) 350-1903. We will be happy to answer any questions or concerns which you may have.

Thank you for using Paradigm Analytical Labs for your analytical services. We look forward to working with you again on any additional analytical needs which you may have.

Sincerely,
Paradigm Analytical Laboratories, Inc.

3/22/05

Laboratory Director Date
J. Patrick Weaver

Results for PCBs
by EPA 8082

Client Sample ID: MWP-HA-019-001
Client Project ID: Kuhlman Electric
Lab Sample ID: G442-313-1B
Lab Project ID: G442-313
Matrix: Soil %SOLIDS: 76.5
Sample Wt/Vol: 10.86 g ColumnID: STX-CLPest
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected: 2/25/05 12:34
Date Received: 3/3/05
Date Analyzed: 3/12/05
Date Extracted: 3/10/05
Dilution: 1

Compound	Quantitation Limit ug/KG	Result ug/KG
Aroclor-1016	120	BQL
Aroclor-1221	120	BQL
Aroclor-1232	120	BQL
Aroclor-1242	120	BQL
Aroclor-1248	120	BQL
Aroclor-1254	120	BQL
Aroclor-1260	120	**4140**
Aroclor-1262	120	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
TCMX	100	92	92

*Sample was quantitated as Aroclor 1260, but may contain a mixture of Aroclor 1260 and Aroclor 1262.

Comments:
BQL = Below Quantitation Limit
NA = Not applicable, surrogate diluted out.

Reviewed By: _____
8082_LIMS_v1 4

Results for PCBs
by EPA 8082

Client Sample ID: MWP-Duplicate-DD045
Client Project ID: Kuhlman Electric
Lab Sample ID: G442-313-2B
Lab Project ID: G442-313
Matrix: Soil %SOLIDS: 74.7
Sample Wt/Vol: 11.23 g ColumnID: STX-CLPest
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected: 2/25/05 0:00
Date Received: 3/3/05
Date Analyzed: 3/12/05
Date Extracted: 3/10/05
Dilution: 1

Compound	Quantitation Limit ug/KG	Result ug/KG
Aroclor-1016	119	BQL
Aroclor-1221	119	BQL
Aroclor-1232	119	BQL
Aroclor-1242	119	BQL
Aroclor-1248	119	BQL
Aroclor-1254	119	BQL
Aroclor-1260	119	**4490**
Aroclor-1262	119	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
TCMX	100	108	108

*Sample was quantitated as Aroclor 1260, but may contain a mixture of Aroclor 1260 and Aroclor 1262.

Comments:
BQL = Below Quantitation Limit
NA = Not applicable, surrogate diluted out.

Reviewed By: 

8082_LIMS_v1 4

Results for PCBs
by EPA 8082

Client Sample ID: MWP-HA-023-001
Client Project ID: Kuhlman Electric
Lab Sample ID: G442-313-3B
Lab Project ID: G442-313
Matrix: Soil %SOLIDS: 76.1
Sample Wt/Vol: 11.12 g ColumnID: STX-CLPest
Report Basis: Dry Weight

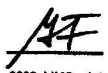
Analyzed By: CLP
Date Collected: 2/25/05 16:12
Date Received: 3/3/05
Date Analyzed: 3/12/05
Date Extracted: 3/10/05
Dilution: 1

Compound	Quantitation Limit ug/KG	Result ug/KG
Aroclor-1016	118	BQL
Aroclor-1221	118	BQL
Aroclor-1232	118	BQL
Aroclor-1242	118	BQL
Aroclor-1248	118	BQL
Aroclor-1254	118	BQL
Aroclor-1260	118	**1700**
Aroclor-1262	118	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
TCMX	100	91	91

*Sample was quantitated as Aroclor 1260, but may contain a mixture of Aroclor 1260 and Aroclor 1262.

Comments:
BQL = Below Quantitation Limit
NA = Not applicable, surrogate diluted out.

Reviewed By: 
8082_LIMS_v1 4

Results for PCBs
by EPA 8082

Client Sample ID: MWP-HA-026-001
Client Project ID: Kuhlman Electric
Lab Sample ID: G442-313-4B
Lab Project ID: G442-313
Matrix: Soil %SOLIDS: 75.6
Sample Wt/Vol: 10.59 g ColumnID: STX-CLPest
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected: 2/26/05 17:21
Date Received: 3/3/05
Date Analyzed: 3/12/05
Date Extracted: 3/10/05
Dilution: 1

Compound	Quantitation Limit ug/KG	Result ug/KG
Aroclor-1016	125	BQL
Aroclor-1221	125	BQL
Aroclor-1232	125	BQL
Aroclor-1242	125	BQL
Aroclor-1248	125	BQL
Aroclor-1254	125	BQL
Aroclor-1260	125	**2280**
Aroclor-1262	125	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
TCMX	100	95	95

*Sample was quantitated as Aroclor 1260, but may contain a mixture of Aroclor 1260 and Aroclor 1262.

Comments:
BQL = Below Quantitation Limit
NA = Not applicable, surrogate diluted out.

Reviewed By:

8082_LIMS_v1 4

Results for PCBs
by EPA 8082

Client Sample ID: MWP-Duplicate-DD060
Client Project ID: Kuhlman Electric
Lab Sample ID: G442-313-5B
Lab Project ID: G442-313
Matrix: Soil %SOLIDS: 75.7
Sample Wt/Vol: 10.20 g ColumnID: STX-CLPest
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected: 2/26/05 0:00
Date Received: 3/3/05
Date Analyzed: 3/12/05
Date Extracted: 3/10/05
Dilution: 1

Compound	Quantitation Limit ug/KG	Result ug/KG
Aroclor-1016	130	BQL
Aroclor-1221	130	BQL
Aroclor-1232	130	BQL
Aroclor-1242	130	BQL
Aroclor-1248	130	BQL
Aroclor-1254	130	BQL
Aroclor-1260	130	**1480**
Aroclor-1262	130	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
TCMX	100	78	78

*Sample was quantitated as Aroclor 1260, but may contain a mixture of Aroclor 1260 and Aroclor 1262.

Comments:
BQL = Below Quantitation Limit
NA = Not applicable, surrogate diluted out.

Reviewed By: _____
8082_LIMS_v1 4

Results for PCBs
by EPA 8082

Client Sample ID: Method Blank
Client Project ID:
Lab Sample ID: PB2499
Lab Project ID:
Matrix: SOIL %SOLIDS: 100.0
Sample Wt/Vol: 10.0 g ColumnID: STX-CLPest
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected:
Date Received:
Date Analyzed: 3/12/05
Date Extracted: 3/10/05
Dilution: 1

Compound	Quantitation Limit ug/KG	Result ug/KG
Aroclor-1016	100	BQL
Aroclor-1221	100	BQL
Aroclor-1232	100	BQL
Aroclor-1242	100	BQL
Aroclor-1248	100	BQL
Aroclor-1254	100	BQL
Aroclor-1260	100	BQL
Aroclor-1262	100	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
TCMX	100	86	86

Comments:
BQL = Below Quantitation Limit
NA = Not applicable, surrogate diluted out.

Reviewed By:

8082_LIMS_v1 4

PARADIGM ANALYTICAL LABORATORIES, INC.

QC Results for PCBs
by EPA 8082

Client Sample ID: Batch QC
Lab Sample ID: G442-313-1B
Batch ID: 2499

Analyzed By: CLP
Matrix: Soil

MS/MSD

Analyte	Sample ug/KG	Spiked ug/KG	MS ug/KG	REC %		Spiked ug/KG	MSD ug/KG	REC %		RPD %
Aroclor-1260	3810	1260	8600	380	#	1300	9080	405	#	6.37

LCS

Analyte		Spiked ug/KG	Result ug/KG	REC %	Limits	
					Lower	Upper
Aroclor-1260		1000	839	83.9	70	130

Comments:

= Outside Control Limits

Reviewed by: AF

List of Reporting Abbreviations and Data Qualifiers

B = Compound also detected in batch blank

BQL = Below Quantitation Limit

DF = Dilution Factor

Dup = Duplicate

E = Estimated concentration, exceeds calibration range.

J = Estimated concentration, below calibration range and above MDL

LCS(D) = Laboratory Control Spike (Duplicate)

MDL = Method Detection Limit

MS(D) = Matrix Spike (Duplicate)

PQL = Practical Quantitation Limit

RL = Reporting Limit

RPD = Relative Percent Difference

mg/kg = milligram per kilogram, ppm, parts per million

ug/kg = micrograms per kilogram, ppb, parts per billion

mg/L = milligram per liter, ppm, parts per million

ug/L = micrograms per liter, ppb, parts per billion

% Rec = Percent Recovery

% soilds = Percent Solids

Special Notes:

1) Metals and mercury samples are digested with a hot block, see the standard operating procedure document for details.

2) Uncertainty for all reported data is less than or equal to 30 percent.

PARADIGM ANALYTICAL LABORATORIES, INC.
5500 Business Drive, Wilmington, NC 28405
Phone: (910)-350-1903 FAX: (910)-350-1557

Chain-of Custody Record & Analytical Request

COC# 44646

Page 1 of 1

Client: MARTIN & SLACLE
Address:
Address: BLACK MOUNTAIN NC
Quote #:

Project ID: KUHLMAN ELECTRIC
Contact: ROBERT MARTIN
Phone:
Fax:

Date: 03/02/05
Turnaround: STD
Job Number:
P.O. Number:

Report To: SAME

Invoice To: SAME

Sample ID	Date	Time	Matrix	Preservatives: NA	Analyses: PCB	Comments: Please specify any special reporting requirements
						MOBILE LAB ID: Depth
MWP-HA-019-001	02/25/05	1234	S	X	X	DD039 0-1'
MWP-DUPLICATE	02/25/05	—	S	X	X	DD045 —
MWP-HA-023-001	02/25/05	1612	S	X	X	DD04P 0-1'
MWP-HA-026-001	02/24/05	1721	S	X	X	DD054 0-1'
MWP-DUPLICATE	02/24/05	—	S	X	X	DD060 —
						G442-313

14 days extraction
40 days analysis

Need workup time

Relinquished By	Date	Time	Received By	Date	Time	Temperature
Mark O.M. Ford	3/2/05	1415	Julie Johnson	3/3/05	1010	3.7°C

State Certification Requested

NC ____ SC ____ Other ____

SEE REVERSE FOR TERMS AND CONDITIONS

ORIGINAL

PARADIGM ANALYTICAL LABORATORIES, INC.
5500 Business Drive
Wilmington, North Carolina 28405
(910) 350-1903
Fax (910) 350-1557

Mr. Robert Martin
Martin & Slagle
Box 1023
Black Mountain NC 28711

Report Number: G442-314

Client Project: Kuhlman Electric

Dear Mr. Martin:

Enclosed are the results of the analytical services performed under the referenced project. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of five years in the event they are required for future reference. Any samples submitted to our laboratory will will be retained for a maximum of thirty (30) days from the date of this report unless other arrangements are requested.

If there are any questions about the report or the services performed during this project, please call Paradigm at (910) 350-1903. We will be happy to answer any questions or concerns which you may have.

Thank you for using Paradigm Analytical Labs for your analytical services. We look forward to working with you again on any additional analytical needs which you may have.

Sincerely,
Paradigm Analytical Laboratories, Inc.

3/22/05

Laboratory Director Date
J. Patrick Weaver

Results for PCBs
by EPA 8082

Client Sample ID:	ZWP-HA-001-001	Analyzed By:	CLP
Client Project ID:	Kuhlman Electric	Date Collected:	2/25/05 8:50
Lab Sample ID:	G442-314-1B	Date Received:	3/3/05
Lab Project ID:	G442-314	Date Analyzed:	3/12/05
Matrix:	Soil %SOLIDS: 76.5	Date Extracted:	3/10/05
Sample Wt/Vol:	10.73 g ColumnID: STX-CLPest	Dilution:	1
Report Basis:	Dry Weight		

Compound	Quantitation Limit ug/KG	Result ug/KG
Aroclor-1016	122	BQL
Aroclor-1221	122	BQL
Aroclor-1232	122	BQL
Aroclor-1242	122	BQL
Aroclor-1248	122	BQL
Aroclor-1254	122	BQL
Aroclor-1260	122	BQL
Aroclor-1262	122	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
TCMX	100	107	107

Comments:
BQL = Below Quantitation Limit
NA = Not applicable, surrogate diluted out.

Reviewed By: AF

8082_LIMS_v1 4

Results for PCBs
by EPA 8082

Client Sample ID:	ZWP-Duplicate-FF009	Analyzed By:	CLP
Client Project ID:	Kuhlman Electric	Date Collected:	2/25/05 0:00
Lab Sample ID:	G442-314-2B	Date Received:	3/3/05
Lab Project ID:	G442-314	Date Analyzed:	3/12/05
Matrix:	Soil %SOLIDS: 76.3	Date Extracted:	3/10/05
Sample Wt/Vol:	10.33 g ColumnID: STX-CLPest	Dilution:	1
Report Basis:	Dry Weight		

Compound	Quantitation Limit ug/KG	Result ug/KG
Aroclor-1016	127	BQL
Aroclor-1221	127	BQL
Aroclor-1232	127	BQL
Aroclor-1242	127	BQL
Aroclor-1248	127	BQL
Aroclor-1254	127	BQL
Aroclor-1260	127	BQL
Aroclor-1262	127	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
TCMX	100	93	93

Comments:
BQL = Below Quantitation Limit
NA = Not applicable, surrogate diluted out.

Reviewed By: _____
8082_LIMS_v1 4

Results for PCBs
by EPA 8082

Client Sample ID:	ZWP-HA-008-001	Analyzed By:	CLP
Client Project ID:	Kuhlman Electric	Date Collected:	2/25/05 11:02
Lab Sample ID:	G442-314-3B	Date Received:	3/3/05
Lab Project ID:	G442-314	Date Analyzed:	3/12/05
Matrix:	Soil %SOLIDS: 78.7	Date Extracted:	3/10/05
Sample Wt/Vol:	10.46 g ColumnID: STX-CLPest	Dilution:	1
Report Basis:	Dry Weight		

Compound	Quantitation Limit ug/KG	Result ug/KG
Aroclor-1016	122	BQL
Aroclor-1221	122	BQL
Aroclor-1232	122	BQL
Aroclor-1242	122	BQL
Aroclor-1248	122	BQL
Aroclor-1254	122	BQL
Aroclor-1260	122	**394**
Aroclor-1262	122	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
TCMX	100	117	117

*Sample was quantitated as Aroclor 1260, but may contain a mixture of Aroclor 1260 and Aroclor 1262.

Comments:
BQL = Below Quantitation Limit
NA = Not applicable, surrogate diluted out.

Reviewed By: AF

8082_LIMS_v1 4

Results for PCBs
by EPA 8082

Client Sample ID: ZWP-HA-009-001
Client Project ID: Kuhlman Electric
Lab Sample ID: G442-314-4B
Lab Project ID: G442-314
Matrix: Soil %SOLIDS: 78.2
Sample Wt/Vol: 10.04 g ColumnID: STX-CLPest
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected: 2/25/05 16:27
Date Received: 3/3/05
Date Analyzed: 3/12/05
Date Extracted: 3/10/05
Dilution: 1

Compound	Quantitation Limit ug/KG	Result ug/KG
Aroclor-1016	127	BQL
Aroclor-1221	127	BQL
Aroclor-1232	127	BQL
Aroclor-1242	127	BQL
Aroclor-1248	127	BQL
Aroclor-1254	127	BQL
Aroclor-1260	127	**1940**
Aroclor-1262	127	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
TCMX	100	98	98

*Sample was quantitated as Aroclor 1260, but may contain a mixture of Aroclor 1260 and Aroclor 1262.

Comments:
BQL = Below Quantitation Limit
NA = Not applicable, surrogate diluted out.

Reviewed By: AF

8082_LIMS_v1 4

Results for PCBs
by EPA 8082

Client Sample ID:	Method Blank			Analyzed By:	CLP
Client Project ID:				Date Collected:	
Lab Sample ID:	PB2499			Date Received:	
Lab Project ID:				Date Analyzed:	3/12/05
Matrix:	SOIL	%SOLIDS:	100.0	Date Extracted:	3/10/05
Sample Wt/Vol:	10.0 g	ColumnID:	STX-CLPest	Dilution:	1
Report Basis:	Dry Weight				

Compound	Quantitation Limit ug/KG	Result ug/KG
Aroclor-1016	100	BQL
Aroclor-1221	100	BQL
Aroclor-1232	100	BQL
Aroclor-1242	100	BQL
Aroclor-1248	100	BQL
Aroclor-1254	100	BQL
Aroclor-1260	100	BQL
Aroclor-1262	100	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
TCMX	100	86	86

Comments:
BQL = Below Quantitation Limit
NA = Not applicable, surrogate diluted out.

Reviewed By: AF

8082_LIMS_v1 4

PARADIGM ANALYTICAL LABORATORIES, INC.

QC Results for PCBs
by EPA 8082

Client Sample ID: Batch QC
Lab Sample ID: G442-313-1B
Batch ID: 2499

Analyzed By: CLP
Matrix: Soil

MS/MSD

Analyte	Sample ug/KG	Spiked ug/KG	MS ug/KG	REC %		Spiked ug/KG	MSD ug/KG	REC %		RPD %
Aroclor-1260	3810	1260	8600	380	#	1300	9080	405	#	6.37

LCS

Analyte		Spiked ug/KG	Result ug/KG	REC %	Limits Lower	Limits Upper
Aroclor-1260		1000	839	83.9	70	130

Comments:

= Outside Control Limits

Reviewed by: [signature]

List of Reporting Abbreviations and Data Qualifiers

B = Compound also detected in batch blank

BQL = Below Quantitation Limit

DF = Dilution Factor

Dup = Duplicate

E = Estimated concentration, exceeds calibration range.

J = Estimated concentration, below calibration range and above MDL

LCS(D) = Laboratory Control Spike (Duplicate)

MDL = Method Detection Limit

MS(D) = Matrix Spike (Duplicate)

PQL = Practical Quantitation Limit

RL = Reporting Limit

RPD = Relative Percent Difference

mg/kg = milligram per kilogram, ppm, parts per million

ug/kg = micrograms per kilogram, ppb, parts per billion

mg/L = milligram per liter, ppm, parts per million

ug/L = micrograms per liter, ppb, parts per billion

% Rec = Percent Recovery

% soilds = Percent Solids

Special Notes:

1) Metals and mercury samples are digested with a hot block, see the standard operating procedure document for details.

2) Uncertainty for all reported data is less than or equal to 30 percent.

PARADIGM ANALYTICAL LABORATORIES, INC.
5500 Business Drive, Wilmington, NC 28405
Phone: (910)-350-1903 FAX: (910)-350-1557

Chain-of Custody Record & Analytical Request

COC# 44645

Page 1 of 1

Client: MARTIN + SLAGLE
Address:
Address: BLACK MOUNTAIN NC
Quote #:

Project ID: KUHLMAN ELECTRIC
Contact: ROBERT MARTIN
Phone:
Fax:

Date: 03/02/05
Turnaround: STD
Job Number:
P.O. Number:

Report To: SAME
Invoice To: SAME

Sample ID	Date	Time	Matrix	Preservatives: NA				Analyses: PCB										Comments: Please specify any special reporting requirements — MOBIL LAB #	Depth
ZWP-HA-001-001	02/25/05	0850	S	X				X										FF001	0-1'
ZWP-DUPLICATE	02/25/05	—	S	X				X										FF009	—
ZWP-HA-008-001	02/25/05	1102	S	X				X										FF016	0-1'
ZWP-HA-009-001	02/25/05	1627	S	X				X										FF018	0-1'
																		G442-314	

14 days extra. 40 days analysis. Need hold time —

Relinquished By	Date	Time	Received By	Date	Time	Temperature
[signature]	3/2/05	[illegible]	[signature]	3/3/05	1010	3.9°C

State Certification Requested

NC ____ SC ____ Other ____

SEE REVERSE FOR TERMS AND CONDITIONS

ORIGINAL

PARADIGM ANALYTICAL LABORATORIES, INC.
5500 Business Drive
Wilmington, North Carolina 28405
(910) 350-1903
Fax (910) 350-1557

Mr. Robert Martin
Martin & Slagle
Box 1023
Black Mountain NC 28711

Report Number: G442-315

Client Project: Kuhlman Electric

Dear Mr. Martin:

Enclosed are the results of the analytical services performed under the referenced project. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of five years in the event they are required for future reference. Any samples submitted to our laboratory will will be retained for a maximum of thirty (30) days from the date of this report unless other arrangements are requested.

If there are any questions about the report or the services performed during this project, please call Paradigm at (910) 350-1903. We will be happy to answer any questions or concerns which you may have.

Thank you for using Paradigm Analytical Labs for your analytical services. We look forward to working with you again on any additional analytical needs which you may have.

Sincerely,
Paradigm Analytical Laboratories, Inc.

3/22/05

Laboratory Director — Date
J. Patrick Weaver

Results for PCBs
by EPA 8082

Client Sample ID: GTP-HA-001-001
Client Project ID: Kuhlman Electric
Lab Sample ID: G442-315-1B
Lab Project ID: G442-315
Matrix: Soil %SOLIDS: 84.5
Sample Wt/Vol: 11.30 g ColumnID: STX-CLPest
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected: 2/25/05 14:10
Date Received: 3/3/05
Date Analyzed: 3/12/05
Date Extracted: 3/10/05
Dilution: 1

Compound	Quantitation Limit ug/KG	Result ug/KG
Aroclor-1016	105	BQL
Aroclor-1221	105	BQL
Aroclor-1232	105	BQL
Aroclor-1242	105	BQL
Aroclor-1248	105	BQL
Aroclor-1254	105	BQL
Aroclor-1260	105	BQL
Aroclor-1262	105	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
TCMX	100	92	92

Comments:
BQL = Below Quantitation Limit
NA = Not applicable, surrogate diluted out.

Reviewed By: 

8082_LIMS_v1 4

Results for PCBs
by EPA 8082

Client Sample ID: GTP-Duplicate-GG007
Client Project ID: Kuhlman Electric
Lab Sample ID: G442-315-2B
Lab Project ID: G442-315
Matrix: Soil %SOLIDS: 87.3
Sample Wt/Vol: 10.53 g ColumnID: STX-CLPest
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected: 2/25/05 0:00
Date Received: 3/3/05
Date Analyzed: 3/12/05
Date Extracted: 3/10/05
Dilution: 1

Compound	Quantitation Limit ug/KG	Result ug/KG
Aroclor-1016	109	BQL
Aroclor-1221	109	BQL
Aroclor-1232	109	BQL
Aroclor-1242	109	BQL
Aroclor-1248	109	BQL
Aroclor-1254	109	BQL
Aroclor-1260	109	BQL
Aroclor-1262	109	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
TCMX	100	75	75

Comments:
BQL = Below Quantitation Limit
NA = Not applicable, surrogate diluted out.

Reviewed By: [signature]

8082_LIMS_v1 4

Results for PCBs
by EPA 8082

Client Sample ID:	GTP-HA-005-001	Analyzed By:	CLP
Client Project ID:	Kuhlman Electric	Date Collected:	2/26/05 8:52
Lab Sample ID:	G442-315-3B	Date Received:	3/3/05
Lab Project ID:	G442-315	Date Analyzed:	3/12/05
Matrix:	Soil %SOLIDS: 91.5	Date Extracted:	3/10/05
Sample Wt/Vol:	10.45 g ColumnID: STX-CLPest	Dilution:	1
Report Basis:	Dry Weight		

Compound	Quantitation Limit ug/KG	Result ug/KG
Aroclor-1016	104	BQL
Aroclor-1221	104	BQL
Aroclor-1232	104	BQL
Aroclor-1242	104	BQL
Aroclor-1248	104	BQL
Aroclor-1254	104	BQL
Aroclor-1260	104	**162**
Aroclor-1262	104	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
TCMX	100	96	96

*Sample was quantitated as Aroclor 1260, but may contain a mixture of Aroclor 1260 and Aroclor 1262.

Comments:
BQL = Below Quantitation Limit
NA = Not applicable, surrogate diluted out.

Reviewed By: _____
8082_LIMS_v1 4

Results for PCBs
by EPA 8082

Client Sample ID:	GTP-Duplicate-GG014	Analyzed By:	CLP
Client Project ID:	Kuhlman Electric	Date Collected:	2/26/05 0:00
Lab Sample ID:	G442-315-4B	Date Received:	3/3/05
Lab Project ID:	G442-315	Date Analyzed:	3/12/05
Matrix:	Soil %SOLIDS: 91.3	Date Extracted:	3/10/05
Sample Wt/Vol:	10.22 g ColumnID: STX-CLPest	Dilution:	1
Report Basis:	Dry Weight		

Compound	Quantitation Limit ug/KG	Result ug/KG
Aroclor-1016	107	BQL
Aroclor-1221	107	BQL
Aroclor-1232	107	BQL
Aroclor-1242	107	BQL
Aroclor-1248	107	BQL
Aroclor-1254	107	BQL
Aroclor-1260	107	**139**
Aroclor-1262	107	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
TCMX	100	98	98

*Sample was quantitated as Aroclor 1260, but may contain a mixture of Aroclor 1260 and Aroclor 1262.

Comments:
BQL = Below Quantitation Limit
NA = Not applicable, surrogate diluted out.

Reviewed By: JF

8082_LIMS_v1 4

Results for PCBs
by EPA 8082

Client Sample ID: GTP-HA-011-001
Client Project ID: Kuhlman Electric
Lab Sample ID: G442-315-5B
Lab Project ID: G442-315
Matrix: Soil %SOLIDS: 82.9
Sample Wt/Vol: 10.28 g ColumnID: STX-CLPest
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected: 2/26/05 10:53
Date Received: 3/3/05
Date Analyzed: 3/12/05
Date Extracted: 3/10/05
Dilution: 1

Compound	Quantitation Limit ug/KG	Result ug/KG
Aroclor-1016	117	BQL
Aroclor-1221	117	BQL
Aroclor-1232	117	BQL
Aroclor-1242	117	BQL
Aroclor-1248	117	BQL
Aroclor-1254	117	BQL
Aroclor-1260	117	**1250**
Aroclor-1262	117	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
TCMX	100	98	98

*Sample was quantitated as Aroclor 1260, but may contain a mixture of Aroclor 1260 and Aroclor 1262.

Comments:
BQL = Below Quantitation Limit
NA = Not applicable, surrogate diluted out.

Reviewed By: AF

8082_LIMS_v1 4

Results for PCBs
by EPA 8082

Client Sample ID: GTP-HA-016-001
Client Project ID: Kuhlman Electric
Lab Sample ID: G442-315-6B
Lab Project ID: G442-315
Matrix: Soil %SOLIDS: 82.2
Sample Wt/Vol: 11.45 g ColumnID: STX-CLPest
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected: 2/26/05 13:55
Date Received: 3/3/05
Date Analyzed: 3/12/05
Date Extracted: 3/10/05
Dilution: 1

Compound	Quantitation Limit ug/KG	Result ug/KG
Aroclor-1016	106	BQL
Aroclor-1221	106	BQL
Aroclor-1232	106	BQL
Aroclor-1242	106	BQL
Aroclor-1248	106	BQL
Aroclor-1254	106	BQL
Aroclor-1260	106	**2670**
Aroclor-1262	106	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
TCMX	100	80	80

*Sample was quantitated as Aroclor 1260, but may contain a mixture of Aroclor 1260 and Aroclor 1262.

Comments:
BQL = Below Quantitation Limit
NA = Not applicable, surrogate diluted out.

Reviewed By:

8082_LIMS_v1 4

Results for PCBs
by EPA 8082

Client Sample ID: GTP-HA-021-001
Client Project ID: Kuhlman Electric
Lab Sample ID: G442-315-7B
Lab Project ID: G442-315
Matrix: Soil %SOLIDS: 75.5
Sample Wt/Vol: 10.01 g ColumnID: STX-CLPest
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected: 2/26/05 15:58
Date Received: 3/3/05
Date Analyzed: 3/12/05
Date Extracted: 3/10/05
Dilution: 1

Compound	Quantitation Limit ug/KG	Result ug/KG
Aroclor-1016	132	BQL
Aroclor-1221	132	BQL
Aroclor-1232	132	BQL
Aroclor-1242	132	BQL
Aroclor-1248	132	BQL
Aroclor-1254	132	BQL
Aroclor-1260	132	**2250**
Aroclor-1262	132	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
TCMX	100	77	77

*Sample was quantitated as Aroclor 1260, but may contain a mixture of Aroclor 1260 and Aroclor 1262.

Comments:
BQL = Below Quantitation Limit
NA = Not applicable, surrogate diluted out.

Reviewed By: AF

8082_LIMS_v1 4

Results for PCBs
by EPA 8082

Client Sample ID: Method Blank
Client Project ID:
Lab Sample ID: PB2499
Lab Project ID:
Matrix: SOIL %SOLIDS: 100.0
Sample Wt/Vol: 10.0 g ColumnID: STX-CLPest
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected:
Date Received:
Date Analyzed: 3/12/05
Date Extracted: 3/10/05
Dilution: 1

Compound	Quantitation Limit ug/KG	Result ug/KG
Aroclor-1016	100	BQL
Aroclor-1221	100	BQL
Aroclor-1232	100	BQL
Aroclor-1242	100	BQL
Aroclor-1248	100	BQL
Aroclor-1254	100	BQL
Aroclor-1260	100	BQL
Aroclor-1262	100	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
TCMX	100	86	86

Comments:
BQL = Below Quantitation Limit
NA = Not applicable, surrogate diluted out.

Reviewed By:

8082_LIMS_v1 4

PARADIGM ANALYTICAL LABORATORIES, INC.

QC Results for PCBs
by EPA 8082

Client Sample ID: Batch QC
Lab Sample ID: G442-313-1B
Batch ID: 2499

Analyzed By: CLP
Matrix: Soil

MS/MSD

Analyte	Sample ug/KG	Spiked ug/KG	MS ug/KG	REC %		Spiked ug/KG	MSD ug/KG	REC %		RPD %
Aroclor-1260	3810	1260	8600	380	#	1300	9080	405	#	6.37

LCS

Analyte		Spiked ug/KG	Result ug/KG	REC %	Limits	
					Lower	Upper
Aroclor-1260		1000	839	83.9	70	130

Comments:

= Outside Control Limits

Reviewed by: [signature]

List of Reporting Abbreviations and Data Qualifiers

B = Compound also detected in batch blank

BQL = Below Quantitation Limit

DF = Dilution Factor

Dup = Duplicate

E = Estimated concentration, exceeds calibration range.

J = Estimated concentration, below calibration range and above MDL

LCS(D) = Laboratory Control Spike (Duplicate)

MDL = Method Detection Limit

MS(D) = Matrix Spike (Duplicate)

PQL = Practical Quantitation Limit

RL = Reporting Limit

RPD = Relative Percent Difference

mg/kg = milligram per kilogram, ppm, parts per million

ug/kg = micrograms per kilogram, ppb, parts per billion

mg/L = milligram per liter, ppm, parts per million

ug/L = micrograms per liter, ppb, parts per billion

% Rec = Percent Recovery

% soilds = Percent Solids

Special Notes:

1) Metals and mercury samples are digested with a hot block, see the standard operating procedure document for details.

2) Uncertainty for all reported data is less than or equal to 30 percent.

PARADIGM ANALYTICAL LABORATORIES, INC.
5500 Business Drive, Wilmington, NC 28405
Phone: (910)-350-1903 FAX: (910)-350-1557

Chain-of Custody Record & Analytical Request

COC# 44647

Page 1 of 1

Client: MARTIN + SLAGLE
Address:
Address: BLACK MOUNTAIN NC
Quote #:

Project ID: KUHLMAN ELECTRIC
Contact: ROBERT MARTIN
Phone:
Fax:

Date: 03/02/05
Turnaround: STD
Job Number:
P.O. Number:

Report To: SAME
Invoice To: SAME

Sample ID	Date	Time	Matrix	Preservatives: NA				Analyses: PCB										Comments: MOBIL LAB #	Depth
GTP-HA-001-001	02/25/05	1410	S	X				X										66001	0-1'
GTP-DUPLICATE	02/25/05	—	S	X				X										66007	—
GTP-HA-005-001	02/26/05	0852	S	X				X										66010	0-1'
GTP-DUPLICATE	02/26/05	—	S	X				X										66014	—
GTP-HA-011-001	02/26/05	1053	S	X				X										66023	0-1'
GTP-HA-016-001	02/26/05	1355	S	X				X										66033	0-1'
GTP-HA-021-001	02/26/05	1558	S	X				X										66043	0-1'

Comments: Please specify any special reporting requirements
Need hold time - 14 days extraction, 40 days analysis
G442-3/5

Relinquished By	Date	Time	Received By	Date	Time	Temperature
[signature]	3/2/05	1425	[signature]	3/3/05	1010	3.9°C

State Certification Requested
NC ____ SC ____ Other ____

SEE REVERSE FOR TERMS AND CONDITIONS

ORIGINAL

Evaluation of On-Site Analytical PCB Determinations Supporting 106 Puckett Street

Crystal Springs, MS

Prepared for
Martin & Slagle
P.O. Box 1023
118 F Cherry Street
Black Mountain, NC 28711

Prepared by
Gradient Corporation
238 Main Street
Cambridge, MA 02142

April 13, 2005

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Executive Summary

An on-site laboratory, Environmental Chemistry Consulting Services, Inc. (ECCS), successfully analyzed soil samples for polychlorinated biphenyls (PCBs) in support of sampling activities performed at 106 Puckett Street in Crystal Springs Mississippi. Approximately 10 percent of the soil samples collected during the program were split in the field and sent to an off-site laboratory, Paradigm Analytical Laboratories, Inc. (Paradigm), for confirmatory analysis. The on-site laboratory successfully implemented an extensive Quality Assurance/Quality Control (QA/QC) program, a program essentially as comprehensive and strict as those of off-site laboratories (see Appendix 1 for on-site laboratory reports). A careful examination of the on-site laboratory QA/QC results and the results of the split soil samples analyzed by both the on-site (ECCS) and the off-site confirmatory (Paradigm) laboratories demonstrated the outstanding consistency and accuracy of the on-site laboratory. Comparison of results of the split samples analyzed by both laboratories showed excellent agreement across the full range of encountered Aroclor 1260 concentrations, including those near the PCB action level of 1.0 mg/kg, confirming the suitability of the on-site measurements for site characterization and future decision-making.

- Both laboratories consistently met internal QA/QC criteria. Analytical systems were under control with regard to calibration, surrogate recoveries, matrix spikes, matrix spike duplicates, laboratory control samples, and blanks.
- Overall, 100% of split samples (*i.e.*, on-site *vs.* off-site laboratory) fell within the range of acceptable Relative Percent Differences (RPDs) for split soil samples.
- 100% of the duplicate sample pairs analyzed by the on-site laboratory fell within the acceptable range for RPDs for duplicate soil samples.
- 100% of the duplicate sample pairs analyzed by the off-site laboratory fell within the acceptable range for RPDs for duplicate soil samples.
- 100% of on-site laboratory results of <1.0 mg/kg and > 10 mg/kg were confirmed by the off-site laboratory.
- The precision, accuracy, selectivity, and sensitivity of the on-site laboratory were excellent throughout the program.

During the initial phase of the 2002 Drainage Channel Remediation program, comparability issues were revealed for some of the split samples. However, the comparability issues were resolved by modifying the off-site laboratory's sample preparation procedures, and the comparability demonstrated subsequently confirmed the strong performance of the on-site laboratory throughout the entire program.

1 On-Site Laboratory Method Procedures

The use of the on-site laboratory was approved by MDEQ and USEPA Region IV for assessment and confirmation of remediation on this project as discussed in Section 7.0 of this report. Both laboratories have consistently performed well during previous phases of assessment and remediation associated with the Kuhlman Electric project. In accordance with the approved QA/QC plan, ten percent of samples collected were split and sent to the off-site laboratory, Paradigm, to confirm the on-site laboratory results and applicability of these results to the assessment and remediation programs

The on-site method used for the determination of PCBs during this program was an abbreviated, modified version of approved methods (a mini-extraction modifying EPA Method 3500B for sample extraction, EPA Method 3665A for extract cleanup, and EPA Method 8082 for determination of PCBs). The method was very sophisticated for an on-site analysis protocol: surrogates were added to each sample to monitor extraction performance; analysis was carried out on a gas chromatograph using capillary columns and an electron capture detector (ECD); and quantitation was based on comparison to standards using daily 6-point calibration curves. Through the use of the gas chromatograph and ECD, the selectivity and sensitivity of the on-site method was equivalent to that of the off-site laboratory. The method was also similar to one previously demonstrated to be successful for PCBs by the EPA (USEPA, 1995).

1.1 On-Site Laboratory Sample Preparation and Extraction

For each sample, the on-site laboratory received a 9 oz. sample jar filled with soil that had been homogenized by the sample collectors. After processing the sample, as described below, on-site laboratory staff transferred soil from the original 9 oz. jar into a 4 oz. jar which was shipped to the off-site laboratory for confirmatory analysis. The on-site laboratory retained the balance of sample in the 9 oz. jar.

In the on-site laboratory, approximately 4 grams of each sample were weighed into a 20 mL scintillation vial. Approximately 10 grams of sodium sulfate were added to the vial and mixed with the soil until the mixture was free flowing. Surrogate solution containing decachlorobiphenyl [DCBP] and tetrachlorometaxylene [TCMX] was added, followed by addition of 8 mLs of solvent (80:20, isooctane:acetone). The container was then sealed and shaken for 3 thirty-second intervals. If the extract

exhibited color following the shaking step, it was treated with sulfuric acid to remove interferants. Otherwise, the extract was decanted into injection vials and subsequently injected onto a gas chromatograph equipped with an electron capture detector.

1.2 On-Site Laboratory Analysis

Sample analysis was performed on an RTX-35, 30 m X 0.53mm ID X 0.5-micron film capillary column. Based on site history and prior analyses (and confirmed by this program), the PCBs were quantified as Aroclor 1260. Up to 9 Aroclor 1260 peaks were used to quantify the concentration of PCBs present, based on a 6-point calibration curve, which was generated each day. Continuing Calibration Verification (CCV) samples were also run regularly. Allowable surrogate recoveries were 60-140 % for both DCPB and TCMX (75-175% for acid treated samples). The nominal reporting limit was approximately 0.100 mg/kg, well below the target action level of 1.0 mg/kg.

1.3 On-Site Laboratory QA/QC

The QA/QC parameters of the on-site methodology are described in the on-site laboratory reports (Appendix 1). The on-site laboratory consistently met its QA/QC criteria, ensuring that the analytical system was under control with regard to calibrations, matrix spikes, matrix spike duplicates, laboratory control samples, and blanks. Sample surrogate recoveries were calculated on a real-time basis and re-extractions and re-analyses were performed on the infrequent occasions that allowable recoveries were not achieved.

2 Off-Site Laboratory Method Procedures

The confirmatory off-site laboratory, Paradigm, used approved EPA methods, including EPA Method 3545 for extraction, EPA Method 3665A for cleanup of the extract, and EPA Method 8082 for analysis of the extract for PCBs.

2.1 Off-Site Laboratory Sample Preparation and Extraction

EPA Method 3545, Accelerated Solvent Extraction (or, Pressurized Solvent Extraction), was used to extract PCBs from the split samples sent to the off-site laboratory. Approximately 10 grams of soil were mixed and dried with approximately 20 grams of drying agent (sodium sulfate), then extracted in a pressurized, heated extraction device. Two extraction cycles were used.

2.2 Off-Site Laboratory Analysis

The off-site laboratory used EPA Method 8082 for the analysis of samples (USEPA, 1997). The method was virtually the same as that of the on-site laboratory with regard to equipment and methodology.

2.3 Off-Site Laboratory QA/QC

The off-site laboratory consistently met its QA/QC criteria, ensuring that the analytical system was under control with regard to calibrations, surrogate recoveries, matrix spikes, matrix spike duplicates, laboratory control samples, and blanks (See Appendix 1).

3 Comparison of On-Site Laboratory and Off-Site Laboratory Results

3.1 Split Samples

The PCB (Aroclor 1260) data for all split samples are presented in Table 1. Other information regarding these samples, such as collection dates, depth of sample, *etc.*, are presented in Appendix 1.

Throughout this document we use the on-site laboratory results directly (expressed on an as received, or wet weight basis) to compare with the off-site laboratory results. This comparison is most appropriate for evaluating the performance of the on-site laboratory because it coincides exactly with how the on-site laboratory results were used on a real-time basis and in generating a conceptual site model. Also, for all calculations and plotting, all nondetects were set to values equal to the reporting limit.

A comparison of all on-site and off-site laboratory results for January – February 2005 is illustrated in Figure 1. Figures 2 and 3 present the data by month. The regression line, its equation, and the coefficient of determination (R^2, [Zar, 1984]) are also presented in the figure (and is presented in all similar figures in this report). The on-site laboratory results correlated strongly with the off-site laboratory results. The on-site results tended to be greater than the off-site laboratory results.

To evaluate precision and accuracy further, the Relative Percent Difference (RPD; RPD =([on-site-off-site]/{[on-site + off-site]/2} X 100%)) was calculated for each pair of split samples (see Table 1). For this data analysis, we evaluated the split sample data against an RPD criterion of 100%. This criterion was used by EPA Region IV at the Anniston, Alabama site (CHMM, 2000; USEPA Region IV, 2000). Unfortunately, USEPA Region IV's data validation guidance does not specify a criterion for split sample precision, other than to note whether precision was acceptable, provisional, or unacceptable; based on our analysis the precision is acceptable (USEPA Region IV, 1999). For the purposes of our evaluation, nondetects were set to detected values equal to the reporting limit.

Figure 4 plots the RPD *versus* the off-site laboratory concentration (Paradigm). In general, we would expect the magnitude of the RPDs to be greater and more variable as one approaches zero

concentration simply because a given absolute difference in concentration constitutes a larger percentage difference. However, these data do not exhibit this trend. Figure 5 presents the median RPD along with percentile information, for split samples within the concentration ranges $\leq$ 10 mg/kg. There were too few results between 10 and 100 mg/kg to perform an evaluation within that concentration range, and there were no results detected > 100 mg/kg.

Poor precision can be caused by a number of things, including poor instrument performance or inconsistent analysis methods, but, especially in the case of soils, a difficult, heterogeneous sample matrix is often the reason. Soil contamination is prone to heterogeneity for semivolatile organics like PCBs because PCBs adhere to soil particles and do not generally get mixed well in the environment. This trait of soil contamination is recognized by regulatory agencies and is reflected in the larger RPD tolerances for soil samples relative to aqueous samples (USEPA Region I, 1996). However, the precision and accuracy of the 106 Puckett Street on-site data as reflected in the RPD determinations were excellent (see Table 1). There were no instances where the RPDs of split samples exceeded 100%.

3.2 Duplicate Samples

Table 2 presents the data for each duplicate sample pair analyzed by both the on-site laboratory and the off-site laboratory. On-site and off-site duplicate pair results were evaluated for precision using criteria presented for non-aqueous matrices in USEPA's Region I data validation guidelines (USEPA Region I, 1996). Region I's precision criterion is RPD $\leq$ 50% for non-aqueous duplicate results that are greater than 2 times the quantitation limit. For results less than 2 times the quantitation limit, if the difference between the results was less than the quantitation limit, the results were deemed to have demonstrated acceptable precision. This allows for evaluation of the results, taking into consideration the increased variability of data near the sample quantitation limit (USEPA Region I, 1996). For the on-site laboratory 7 out of 7 duplicate pair analyses (100%) met RPD criteria. For the off-site laboratory, 7 out of 7 pairs (100%) also met RPD criteria.

A comparison of each sample and its duplicate (January – February 2005) is presented in Figure 6 (on-site laboratory) and Figure 7 (off-site laboratory). Note that generally, the precision achieved by the on-site laboratory was marginally better to that of the off-site laboratory (as seen by a slightly higher R^2 and smaller y-intercept), although both laboratories performed exceptionally well in this regard.

Figure 8 presents the RPD of the field duplicate analyses *versus* the average concentration for the pair (January – February 2005). In general, the magnitude of the RPD tends to increase at low concentrations, but this is inconsistently true for these data. Figure 9 presents the equivalent information for the off-site laboratory.

In the majority of the figures described above, RPDs were allowed to be either positive or negative in order to evaluate data trends (*e.g.*, if either the bonafide sample or its duplicate were consistently higher or lower). The RPDs were positive when the field sample result was greater than the duplicate result and negative when the field sample result was less than the duplicate result. For Figure 10, however, we present the mean of the absolute value of the RPDs (*e.g.*, an RPD of –18% becomes 18%) for the duplicate analyses for both the on-site laboratory and the off-site laboratory. Figure 10 demonstrates that the precision of the on-site laboratory compares quite favorably with that of the off-site laboratory (RPDs were 15.1% *versus* 12.2%, respectively).

3.3 Action Level Decisions

An important aspect of on-site chemistry programs relates to the reliability of real-time decisions based on on-site laboratory results. The performance of the on-site chemistry program with respect to the action level of 1.0 mg/kg was excellent in this regard. Tables 3 and 4 summarize our findings. The off-site laboratory confirmed the on-site finding of < 1.0 mg/kg 6 times out of 6 (100%), and also confirmed findings of ≥ 1 mg/kg 11 out of 11 times.

3.4 Summary

Overall, the agreement between the results of the on-site laboratory and the off-site laboratory was excellent. This conclusion is based on the high correlations achieved in the regressions of on-site results *versus* off-site laboratory results; the near 100% accuracy in determining PCBs near the action level of 1.0 mg/kg; the high precision attained by the on-site laboratory; and the virtual absence of significant QA/QC issues in the on-site laboratory throughout the program.

4 References

CHMM. 2000. "Split Sampling Guideline for the Anniston PCB Site. Anniston, Calhoun County, Alabama." Prepared for USEPA Region IV. April 21.

U.S. Environmental Protection Agency (USEPA). 1995. "Field Analytical Screening Program: PCB Method." EPA/540/R-95/521. National Risk Management Research Laboratory (Cincinnati) and National Exposure Research Laboratory (Las Vegas), Office of Research and Development, USEPA. 37 p.

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U.S. Environmental Protection Agency Region I (USEPA Region I). 1996. "Region I, EPA-New England Data Validation Functional Guidelines for Evaluating Environmental Analyses." July, Revised December.

U.S. Environmental Protection Agency Region IV (USEPA Region IV). 1999. "Data Validation Standard Operating Procedures for Contract Laboratory Program Routine Analytical Services. Revision 2.1." July.

U.S. Environmental Protection Agency Region IV (USEPA Region IV). 2000. "Quality Assurance Project Plan for the Anniston PCB Site, Calhoun County, Aniston, Alabama. Region IV." January.

Zar, J.H. 1984. *Biostatistical Analysis*. Prentice-Hall, Inc., Englewood Cliffs, NJ. 718pp.

Table 1

Comparison of All On-Site and Off-Site Laboratory PCB (Aroclor 1260) Results for 106 Puckett Street Samples Collected Jan . - Feb. 2005
Crystal Springs, MS

Sample Name	Mobile #	Sample Date	Field Result (mg/kg)[a]		Paradigm Result (mg/kg)[b]		Relative % Difference[c]
MWP-HA-001-001	DD001	1/17/2005	2.1		2.2		-4.7
MWP-HA-006-001	DD012	1/17/2005	19		12.7		39.7
MWP-HA-005-001	DD010	1/17/2005	7.7		3.55		73.8
MWP-HA-011-001	DD022	1/17/2005	0.23		0.288		-22.4
MWP-HA-012-001	DD024	1/18/2005	0.33		0.366		-10.3
MWP-HA-016-001	DD033	1/18/2005	2.1		1.82		14.3
GTP-HA-001-001	GG001	2/25/2005	0.11		0.105	U	4.7
ZWP-HA-009-001	FF018	2/25/2005	2.4		1.94		21.2
ZWP-HA-008-001	FF016	2/25/2005	0.78		0.394		65.8
ZWP-HA-001-001	FF001	2/25/2005	0.1	U	0.122	U	-19.8
MWP-HA-019-001	DD039	2/25/2005	6.8		4.14		48.6
MWP-HA-023-001	DD048	2/25/2005	2.6		1.7		41.9
GTP-HA-016-001	GG033	2/26/2005	4.1		2.67		42.2
GTP-HA-005-001	GG010	2/26/2005	0.18		0.162		10.5
GTP-HA-021-001	GG043	2/26/2005	2.4		2.25		6.5
MWP-HA-026-001	DD054	2/26/2005	2		2.28		-13.1
GTP-HA-011-001	GG023	2/26/2005	1.3		1.25		3.9

NOTES:

U - Not detected at the reported quantitation limit.

a) Field laboratory results expressed in wet weight on an 'as received' basis.

b) Fixed laboratory results expressed on a dry weight basis.

c) In instances where one result in the duplicate pair is nondetected and the other result is detected, if the difference between results is within 2x the quantitation limit, precision criteria are considered to be met.

Table 2
Comparison of PCB (Aroclor 1260) Results between Sample and Duplicate Pair for 106 Puckett Street Samples Collected Jan - Feb. 2005, Crystal Springs, MS
Crystal Springs, MS

Sample Name	Field Duplicate	Mobile #	Duplicate Mobile #	Field Result (mg/kg)[a]	Duplicate Field Result (mg/kg)[a]	Relative % Difference, Field Results[c]	Paradigm Result (mg/kg)[b]	Duplicate Paradigm Result (mg/Kg)[b]	Relative % Difference, Paradigm Results[c]
MWP-HA-001-001	DUPLICATE-01/17/05-0-0	DD001	DD007	2.1	1.9	10.0	2.2	1.96	11.5
MWP-HA-012-001	DUPLICATE-01/18/05-0-0	DD024	DD030	0.33	0.35	-5.9	0.366	0.366	0.0
MWP-HA-019-001	DUPLICATE-02/25/05-002-0	DD039	DD045	6.8	5.7	17.6	4.14	4.49	-8.1
GTP-HA-001-001	DUPLICATE-02/25/05-003-0	GG001	GG007	0.11	0.12	-8.7	0.105 U	0.109 U	-3.7
ZWP-HA-001-001	DUPLICATE-02/25/05-001-0	FF001	FF009	0.1 U	0.1 U	0.0	0.122 U	0.127 U	-4.0
MWP-HA-026-001	DUPLICATE-02/26/05-002-0	DD054	DD060	2	1.4	35.3	2.28	1.48	42.6
GTP-HA-005-001	DUPLICATE-02/26/05-001-0	GG010	GG014	0.18	0.24	-28.6	0.162	0.139	15.3

NOTES:
U - Not detected at the reported quantitation limit.
a) Field laboratory results expressed in wet weight on an 'as received' basis.
b) Fixed laboratory results expressed on a dry weight basis.
c) In instances where one result in the duplicate pair is nondetected and the other result is detected, if the difference between results is within 2x the quantitation limit, precision criteria are considered to be met.

Table 3

Comparison of Number of Samples Reported by On-Site Laboratory and Confirmed by Off-Site Laboratory with Concentrations < 1 mg/kg and ≥1mg/kg
106 Puckett Street Samples Collected Jan. - Feb. 2005
Crystal Springs, MS

PCB (Aroclor 1260) Field Result	# Reported by Field	# Confirmed By Paradigm
<1mg/kg	6	6
≥1 mg/kg	11	11

Table 4

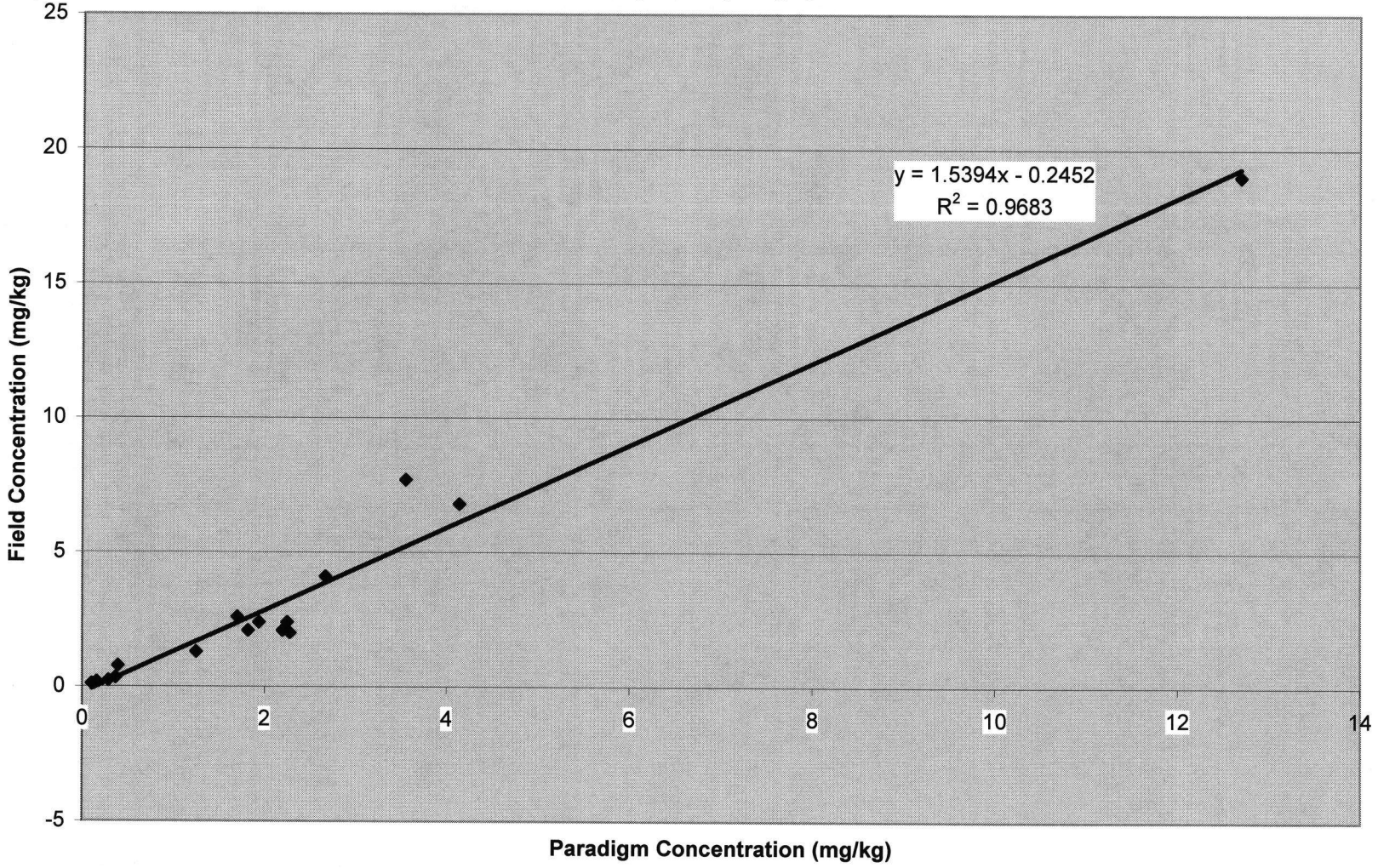
Summary of On-Site Laboratory Samples < 1mg/kg and Off-Site Laboratory Samples ≥ 1mg/kg (Jan. - Feb. 2005), 106 Puckett Street (Jan. - Feb. 2005), Crystal Springs, MS

Sample Name	Mobile #	Sample Date	PCB (Aroclor 1260) Field Result (mg/kg)[a]	PCB (Aroclor 1260) Paradigm Result (mg/kg)[b]	Relative % Difference

No samples fell into this category

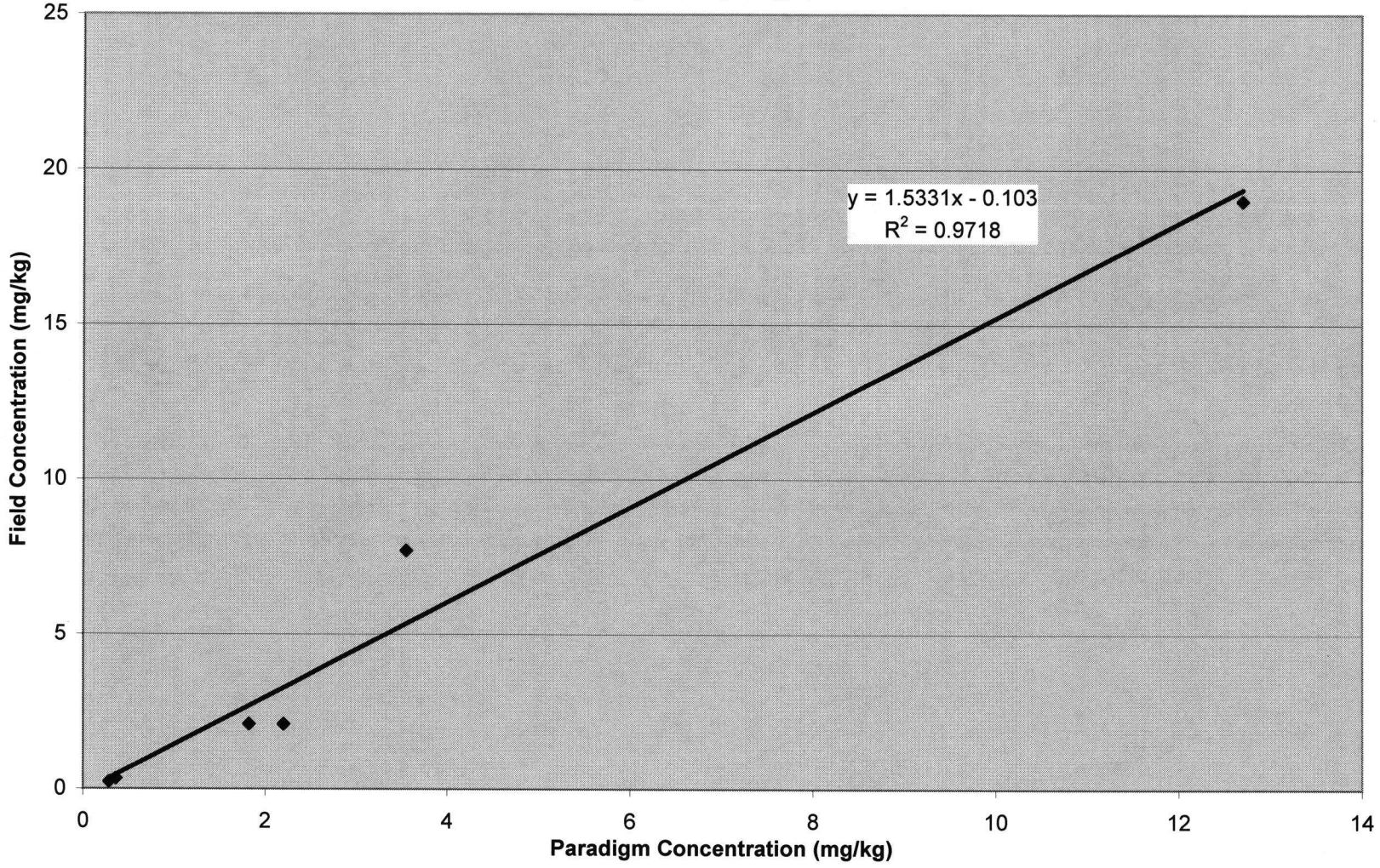
Notes:
a) Results expressed on an 'as received' basis.
b) Results expressed on a dry weight basis.

Figure 1
Comparison of Off-Site and On-Site PCB (Aroclor 1260) Results for 106 Puckett Street
Samples Collected January - February 2005
Crystal Springs, MS



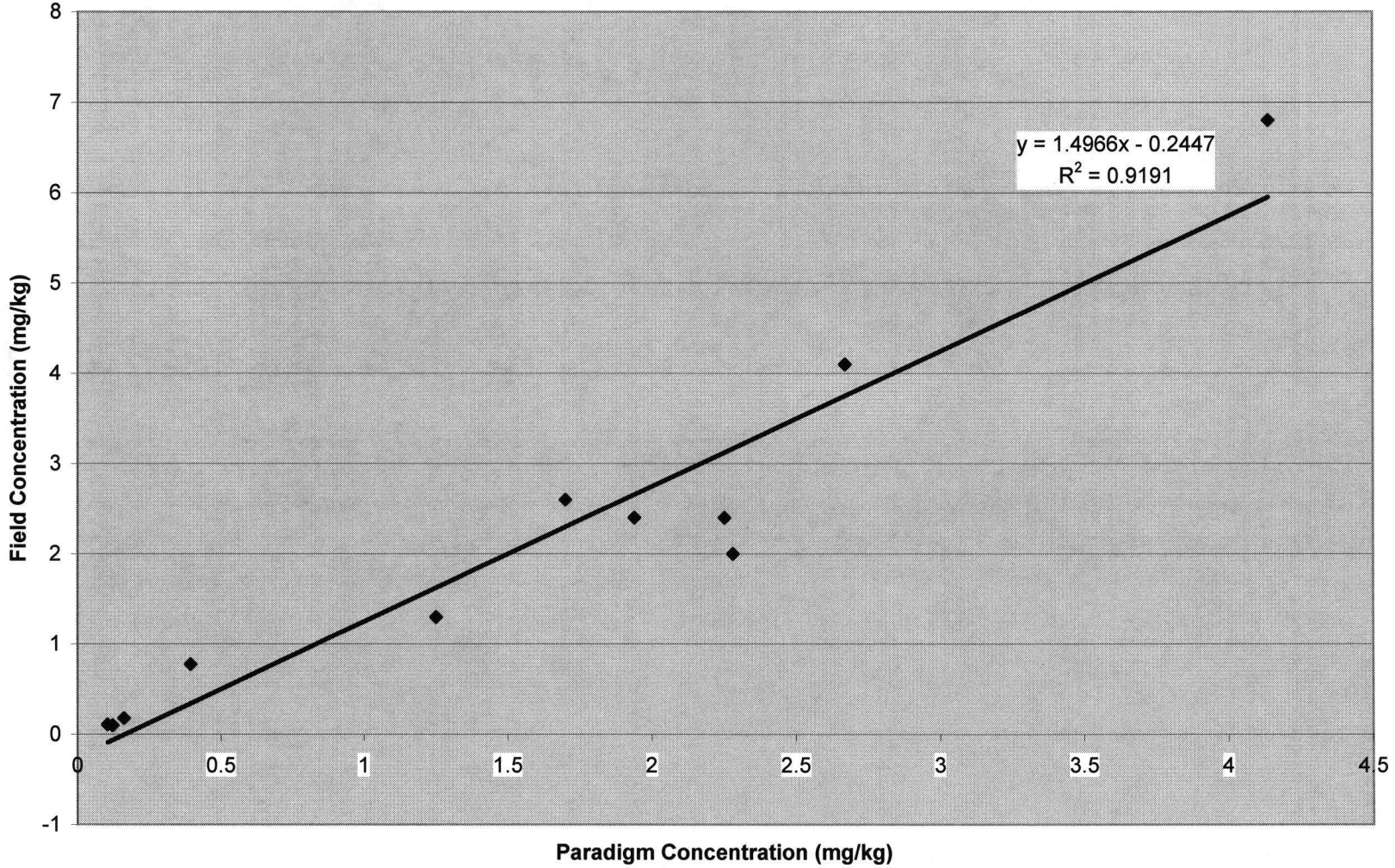
\201062\DataComparisonPuckettNew\Figure 1 Field vs Paradigm
4/14/2005

Figure 2
Comparison of Off-Site and On-Site PCB (Aroclor 1260) Results for 106 Puckett Street
Samples Collected January 2005
Crystal Springs, MS



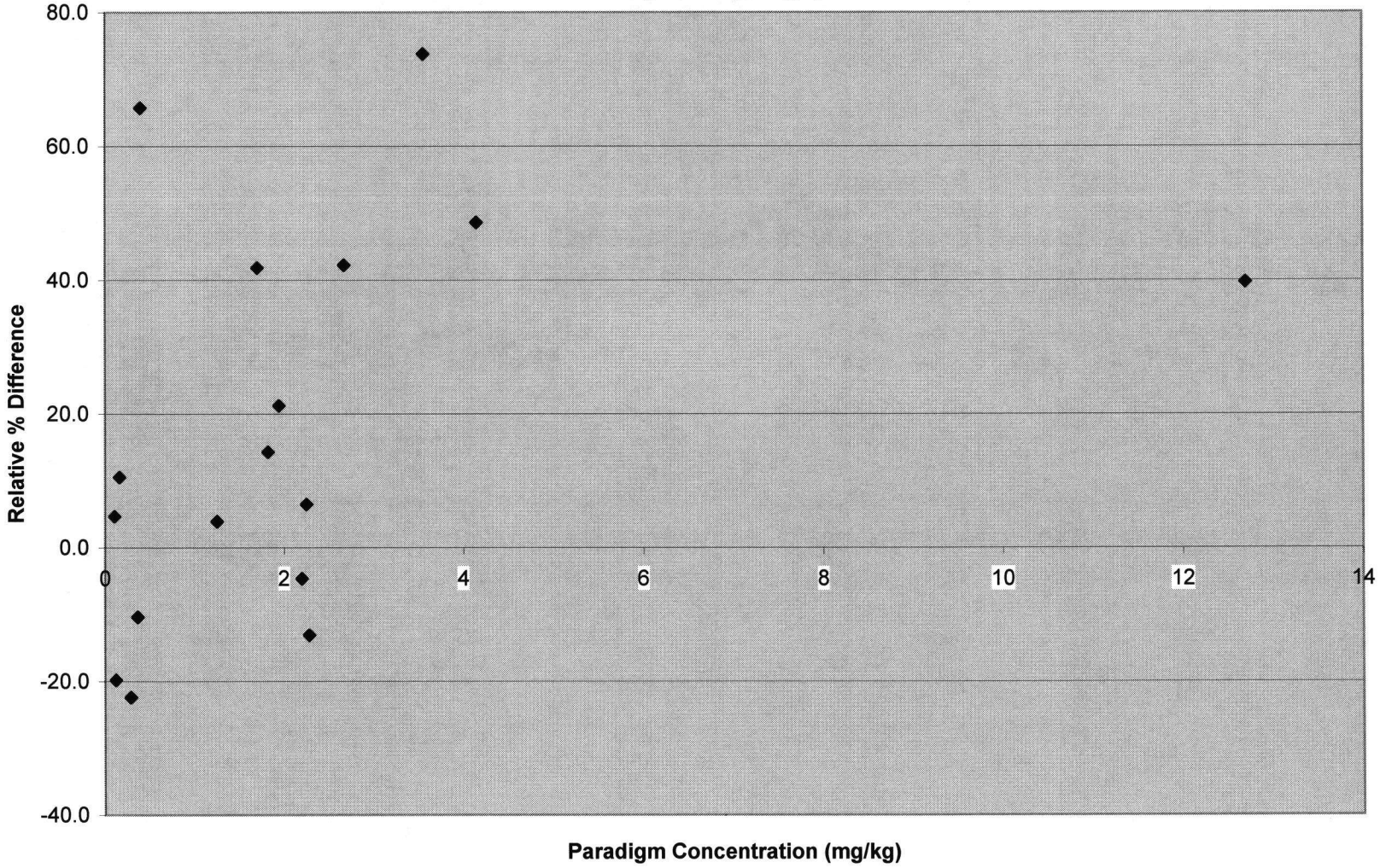
\201062\DataComparisonPuckettNew\Figure 2 Field vs Paradigm 0105
4/14/2005

Figure 3
Comparison of Off-Site and On-Site PCB (Aroclor 1260) Results for 106 Puckett Street
Samples Collected February 2005
Crystal Springs, MS



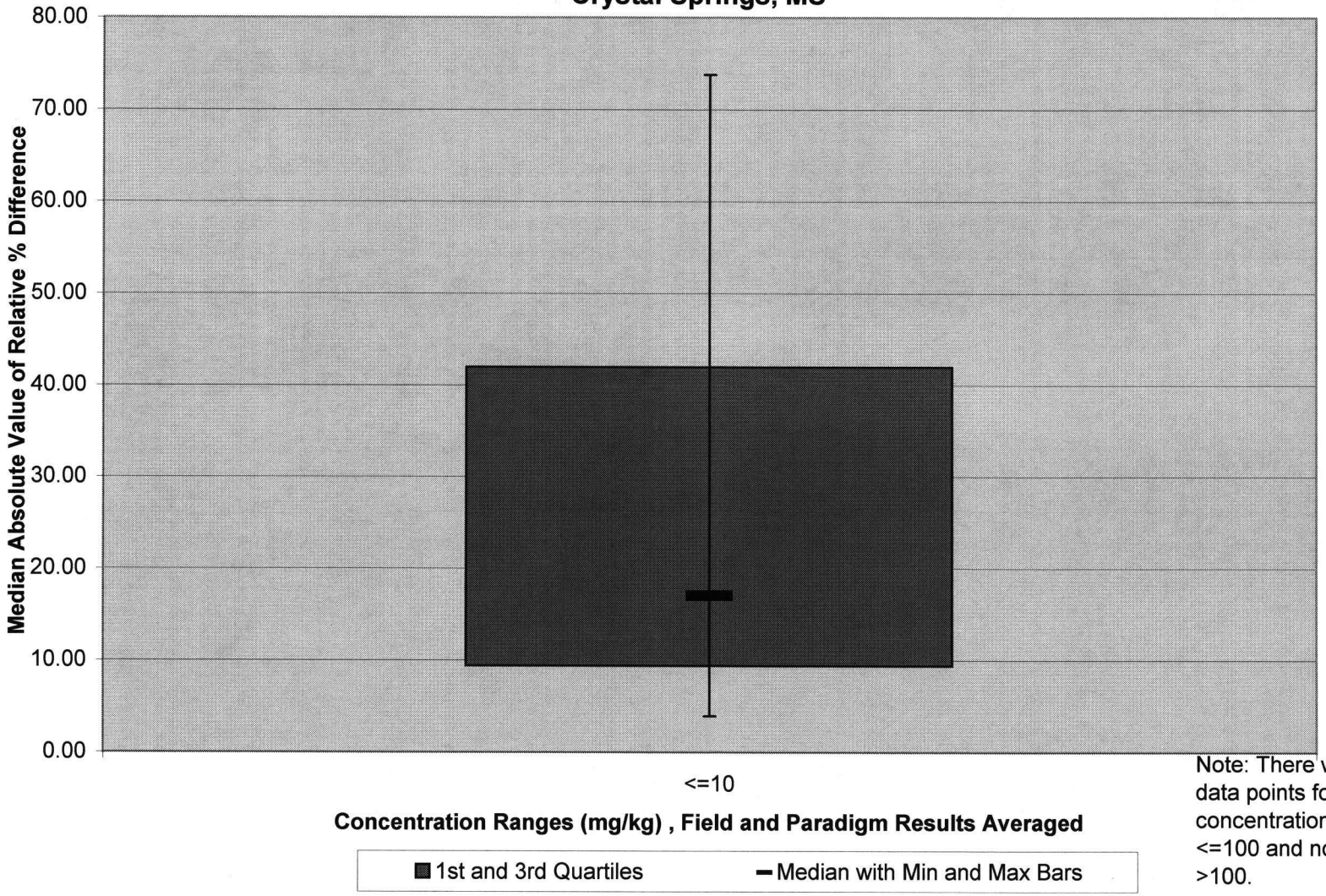
\201062\DataComparisonPuckettNew\Figure 3 Field vs Paradigm 0205
4/14/2005

Figure 4
Comparison of Relative % Difference and Off-Site PCB (Aroclor 1260) Concentration for 106 Puckett Street Samples Collected January - February 2005
Crystal Springs, MS



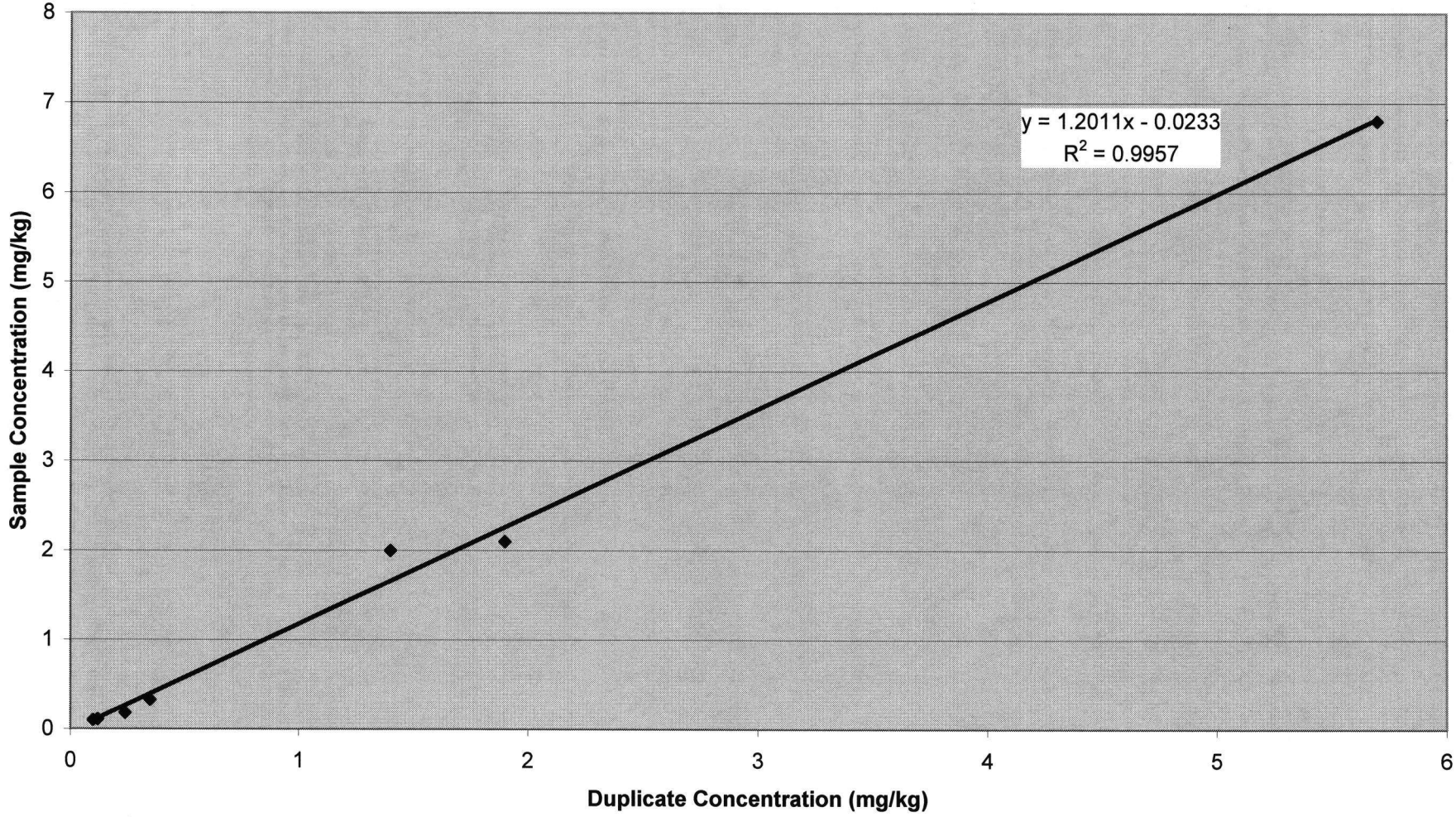
\201062\DataComparisonPuckettNew\Figure 4 RPD vs Para Overall
4/14/2005

Figure 5
Comparison of Median Absolute Value of Relative % Difference by Average PCB (Aroclor 1260) Concentration Ranges for 106 Puckett Street Samples Collected Jan. - Feb. 2005
Crystal Springs, MS



Note: There were too few data points for concentrations >10 and <=100 and no data points for >100.

Figure 6
Comparison of On-Site Laboratory Sample and Duplicate Pair PCB (Aroclor 1260) Results
106 Puckett Street Samples Collected January - February 2005
Crystal Springs, MS



\201062\DataComparisonPuckettNew\Figure 6 Field vs Duplicate
4/14/2005

Figure 7
Comparison of Off-Site Sample and Duplicate Pair PCB (Aroclor 1260) Results for 106 Puckett Street Samples Collected January - February 2005
Crystal Springs, MS

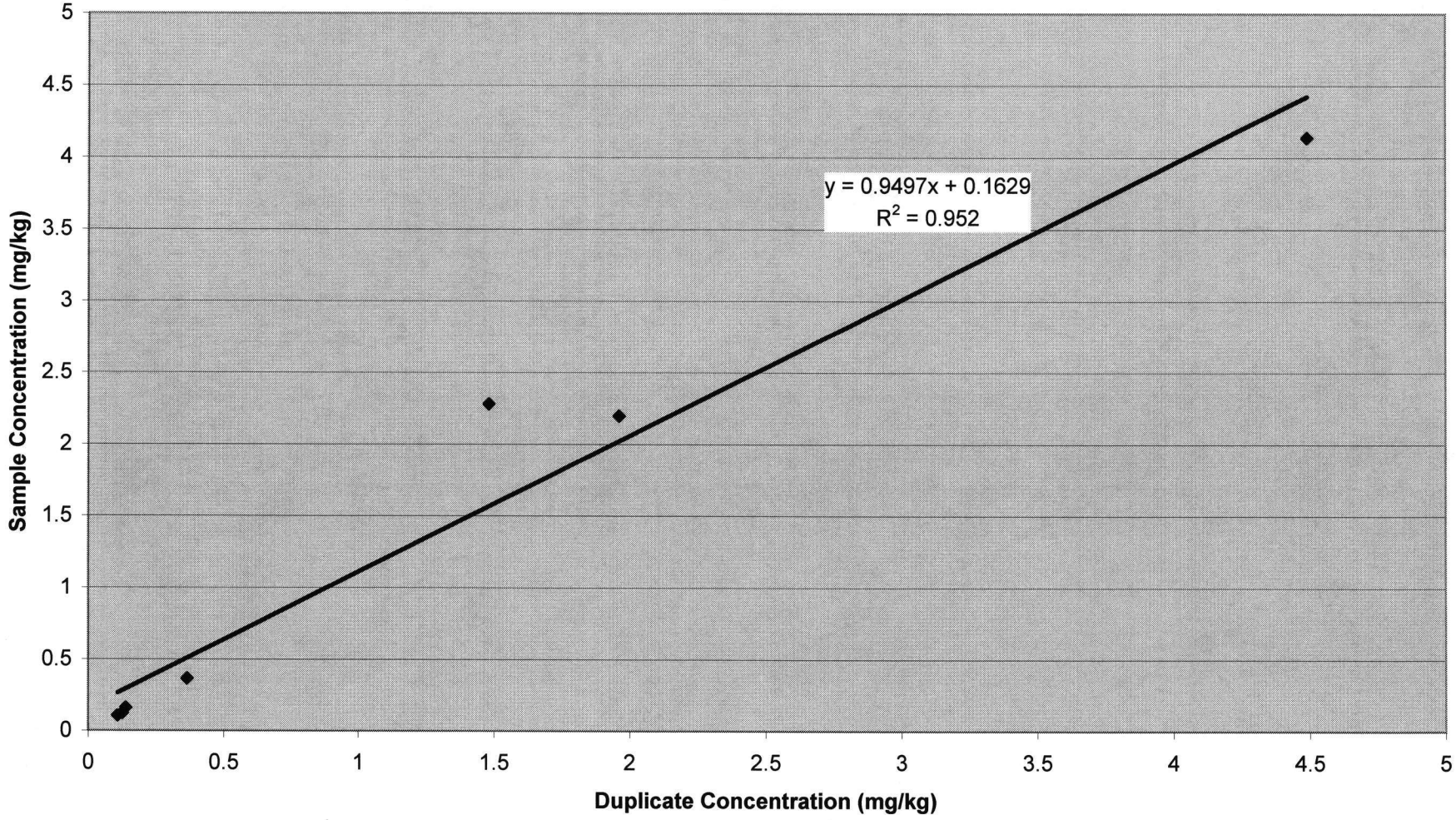


Figure 8
Comparison of Relative % Difference and Average PCB (Aroclor 1260) Concentration for 106 Puckett Street On-Site Laboratory Duplicate Pairs Collected Jan. - Feb. 2005
Crystal Springs, MS

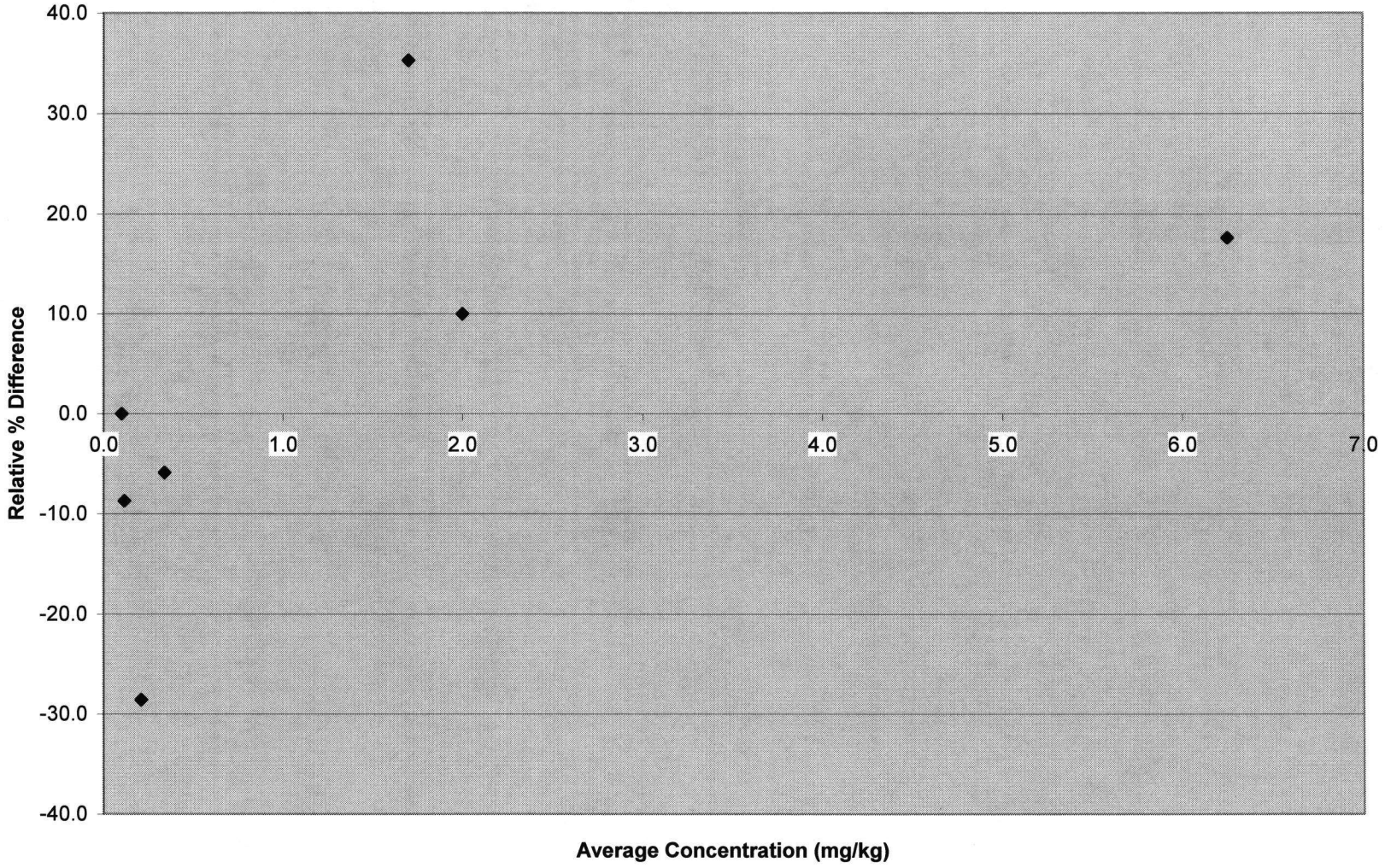


Figure 9
Comparison of Relative % Difference and Average PCB (Aroclor 1260) Concentration for 106 Puckett Street Off-Site Laboratory Duplicate Pairs Collected Jan. - Feb. 2005
Crystal Springs, MS

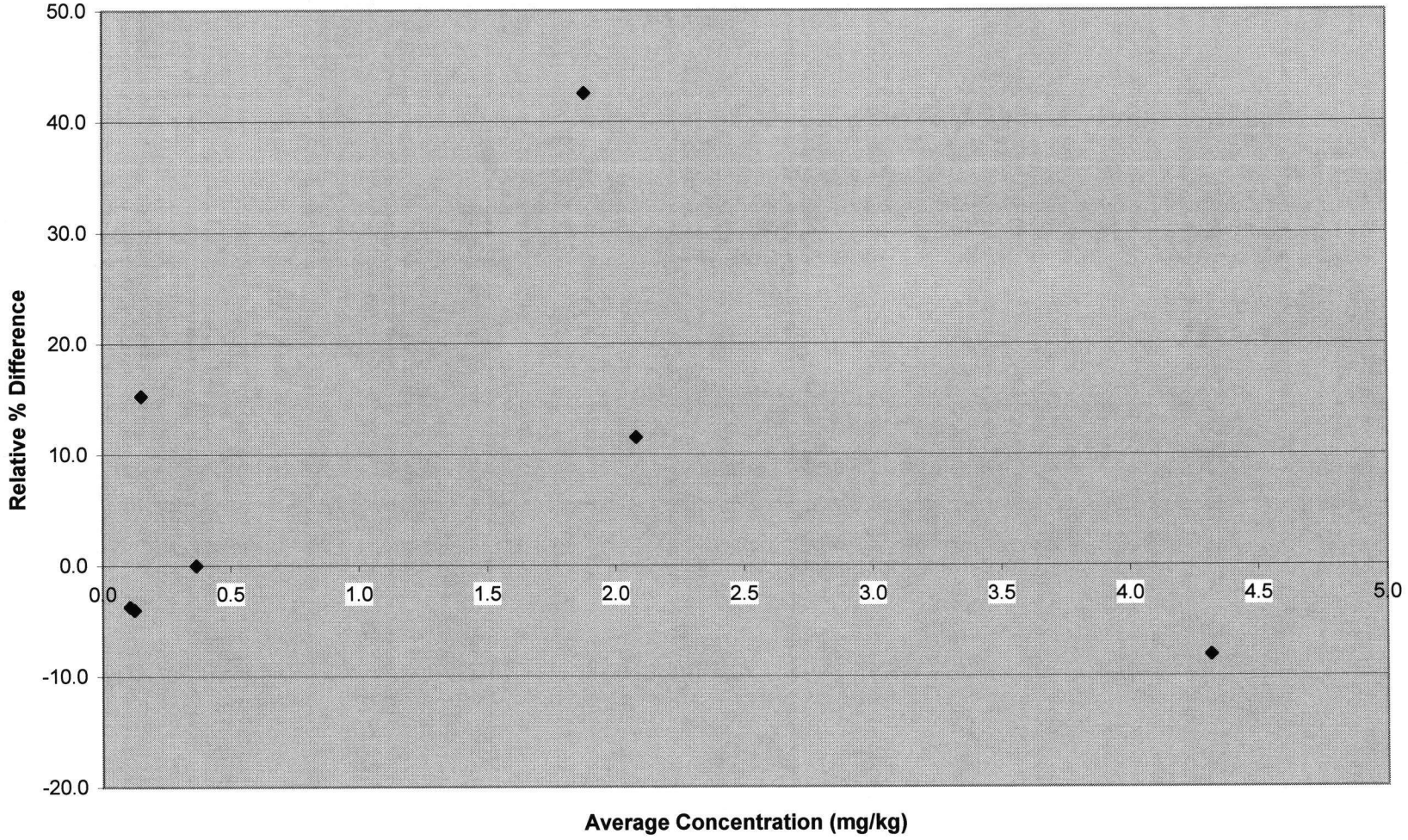


Figure 10
Comparison of Mean Absolute Value of Relative % Difference of Samples and Duplicate Pairs for PCBs (Aroclor 1260), 106 Puckett Street Samples Collected Jan. - Feb. 2005
Crystal Springs, MS