SITE CHARACTERIZATION REPORT

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Mid South Lease and Sales Property
115 Brent Street
Crystal Springs, Mississippi

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Prepared for

BorgWarner Inc.

May 2005

GeoEnvironmental Associates, LLC | MARTIN&SLAGLE

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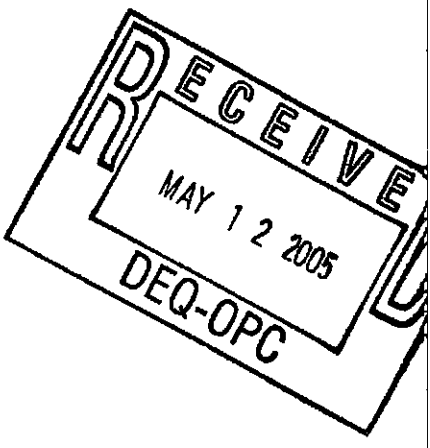

Prepared for

BorgWarner Inc.

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MARTIN & SLAGLE GEOENVIRONMENTAL ASSOCIATES, L.L.C.

May 2005

Christine E. Slagle
Principal Scientist

Robert L. Martin
Principal Geologist

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1.0 EXECUTIVE SUMMARY

Kuhlman Electric Corporation (KEC) owns and operates a transformer manufacturing plant in Crystal Springs, Mississippi (Figure 1). Previous environmental assessments conducted at the KEC plant site indicated that soil contaminated with the polychlorinated biphenyl (PCB) Aroclor 1260 was present on-site. During the course of performing grading work on the KEC plant site and adjacent properties, soil, brick, and other construction/demolition debris containing PCB were reportedly transported and deposited by L. M. & R. Service, Inc. on property located at 112 and 114 Brent Street in Crystal Springs, Mississippi, which was formerly owned by Mr. David Rodgers, President of L. M. & R. Service, Inc.

MidSouth Lease & Sales (MidSouth) of Crystal Springs, MS, currently owns the 112 and 114 Brent Street properties. As a result of the placement of PCB containing soil on these properties, the Mississippi Department of Environmental Quality (MDEQ) issued an Order to David Rodgers and KEC to assess and remediate the resultant PCB contamination. After obtaining key information from Mr. David Rodgers, BorgWarner, on behalf of KEC, began the site assessment activities at the 112 and 114 Brent Street properties. At the request of MidSouth, surface soil samples were also collected on the 115 Brent Street property. The 115 Brent Street property was also previously owned by Mr. David Rodgers, but is currently owned by MidSouth. Based on the analytical results the 115 Brent Street property has been impacted by PCB.

On September 27, 2004 MDEQ issued an Order to Mr. David Rodgers and KEC to assess and remediate the resultant PCB contamination at the 115 Brent Street property. BorgWarner, on behalf of KEC, has completed the site characterization of the property located at 115 Brent Street pursuant to the Mississippi Commission on Environmental Quality Order No. 4877-04.

An initial environmental assessment of the surface soil on the 115 Brent Street property was conducted in March and May 2004. Analysis of these soil samples indicated that PCB concentrations exceeded the MDEQ regulatory limit of 1 mg/Kg at multiple locations on the property.

A site characterization workplan was prepared and submitted to MDEQ for approval in November 2004 to complete the assessment of the vertical and horizontal extent of contamination at the MidSouth property located at 115 Brent Street. This detailed site characterization was conducted in accordance with the *Site Characterization Work Plan, MidSouth Leasing Property 115 Brent Street* dated November 2004 and approved by the MDEQ in December 2004.

Based on the information gathered during previous investigations and this site characterization assessment, it is determined that:

1. The 115 Brent Street Property is impacted by PCB to a maximum depth of 10 feet below ground surface (bgs) and to a maximum concentration of 370 mg/Kg;
2. PCB concentrations above the MDEQ regulatory threshold of 1 mg/Kg were not detected in the adjacent properties located to the north, northeast, and east of the 115 Brent Street property.
3. The vertical and horizontal extent of PCB contamination is fully delineated at the 115 Brent Street and adjacent properties.

2.0 INTRODUCTION

2.1 Site Description

The MidSouth property is located at 115 Brent Street, Crystal Springs, Copiah County, MS 39059, at latitude N 31° 59' 04" and longitude W 90° 21' 48". The site is located within the town limits of Crystal Springs. The town center is located approximately 0.3 miles northeast of 115 Brent Street property. The property is owned by MidSouth and is a residential property containing an unoccupied single-family, single story frame house situated on a concrete block pier foundation.

During the initial assessments in May and June 2004, the property was grassed. After these preliminary investigations, areas of the site that had PCB concentrations exceeding the MDEQ maximum allowable limit of 1 mg/Kg were covered with an impervious low-density polyethylene liner to prevent contact with contaminated soils by humans/animals and to eliminate off site transport of PCB-containing soils through wind erosion and stormwater runoff. This impervious liner was installed prior to conducting the additional site characterization activities detailed in this report. An area with trees and vegetative undergrowth is situated in the northeast corner of the site. The property slopes southwest toward Brent Street. The stormwater runoff from the property flows to the south and southwest.

The property is bordered to the east and northeast by single story frame houses, to the north by a single-wide mobile home, to the west by the 112 Street and 114 Brent Street properties and to the south by drainage ditches, Brent Street, and undeveloped wooded properties. The predominant land-use in the surrounding area is residential.

2.2 Background

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.

On April 19, 2000, BorgWarner Inc. received notification from KEC, in accordance with the purchase agreement, that areas of contaminated soil had been found in Crystal Springs, Mississippi. BorgWarner responded by sending a representative to meet with KEC plant representatives and a representative from Mississippi Department of Environmental Quality (MDEQ), Eric Dear, on April 25, 2000. During this meeting all parties were briefed on the existing situation at the plant and MDEQ's expectations regarding assessment of the site.

Assessments conducted on the KEC property and surrounding residential properties confirmed the presence of PCB Aroclor 1260 in soils.

During the course of separate PCB investigations at 112 and 114 Brent Street, David Rodgers acknowledged that, in the mid-1990s, L. M. & R Service, Inc. transported truckloads of demolition debris, including soil, concrete, rebar and dust removed from the KEC plant site as well as loads of demolition debris from the post-fire clean-up of the former ice house at Fulgham Avenue. Debris from the ice house property included bricks, wood, sawdust and soil. In addition to the ice house debris, David Rodgers also

confirmed that L. M. & R. Service, Inc. transported sawdust from the Gem Plant, a manufacturer of furniture in Crystal Springs and deposited that material on the 112 and 114 Brent Street properties. David Rodgers owned the 112, 114, and 115 Brent Street properties until December 2000 at which time the properties were sold to MidSouth. Following sale of these properties by David Rodgers to MidSouth, MidSouth relocated a house from elsewhere onto the 115 Brent Street property.

2.3 Summary of Previous Work Performed at 115 Brent Street Property

From March through May 2004 a detailed assessment of the MidSouth properties at 112 and 114 Brent Street was conducted to determine the horizontal and vertical extent of PCB impacted soil. At the request of MidSouth, surface soil samples were also collected on the 115 Brent Street property. Two grab samples were collected at a depth of 0-6 inches from a depression in the southwestern portion of the 115 Brent Street property on March 31, 2004. Laboratory results indicated that PCB was present in the samples above the MDEQ regulatory limit of 1 mg/Kg.

The investigation at 115 Brent Street was expanded in May 2004 to include the collection of a total of 35 soil samples from 34 separate locations. Shallow soil samples were collected with a hand auger at depths ranging from 0-6 inches. The horizontal distribution of the samples collected did not extend beyond the 115 Brent Street property boundary. Analytical results indicated that of the 35 samples collected, 23 samples had PCB concentrations exceeding the MDEQ regulatory limit of 1 mg/Kg. Of the samples that exceeded 1 mg/Kg, samples collected at two locations had PCB levels in excess of 50 mg/Kg with the highest concentration being 370 mg/Kg. Sample locations and corresponding analytical results are presented on Figure 2. Summaries of the analytical results of the sampling performed in March and May 2004 are included in Table 1. Analytical data reports are included in Appendix 1.

On June 30, 2004, five subsurface direct push borings were installed in locations where the surface samples previously collected had PCB concentrations exceeding 1 mg/Kg. The borings were advanced until the PCB levels did not exceed the on-site laboratory detection limit of 0.10 mg/Kg. A total of 30 soil samples were collected from the five borings. Analytical results indicated that of the 30 samples collected, a total of nine samples from three separate borings had PCB concentrations exceeding the MDEQ regulatory limit of 1 mg/Kg. Samples with PCB concentrations greater than 1 mg/Kg were observed to a depth of 4 to 6 feet in two of these three borings, of the samples that had PCB levels exceeding 1 mg/Kg, five samples collected in the three borings had PCB levels greater than 50 mg/Kg. PCB levels ranged from the laboratory detection limit of less than 0.10 mg/Kg to a maximum concentration of 150 mg/Kg. A summary of the analytical results is presented in Table 2.

After the preliminary investigations in May and June 2004, areas of the site that had PCB concentrations exceeding the MDEQ maximum allowable limit of 1 mg/Kg were covered with a low-density polyethylene impervious liner to prevent contact with contaminated soils by humans/animals and to eliminate off site transport of PCB-containing soils through wind erosion and stormwater runoff. This impervious liner was installed prior to conducting the site characterization activities detailed in this report.

2.4 Site Characterization Objectives

Based on the results of the initial site investigations performed at 115 Brent Street, further site characterization activities were conducted. The objectives of the additional site characterization activities included:

1. Determination of the horizontal and vertical extent of PCB impacted soil; and
2. Determination of the extent, if any, the potential migration of PCB contaminated soil to properties adjacent to the north and east of the 115 Brent Street site.

3.0 ASSESSMENT ACTIVITIES

3.1 Summary of Work Performed

The assessment activities conducted at the 115 Brent Street site were performed in accordance with the *Site Characterization Work Plan – Mid South Leasing Property, 115 Brent Street, November 2004*, that was submitted to MDEQ and approved December 21, 2004. The final assessment activities were performed from January 5 to January 25, 2005 and April 21, 2005. The assessment activities described in the site characterization work plan and conducted in the field included:

1. Completion of the delineation of the vertical and horizontal extent of PCB impacted soils on the 115 Brent Street property using direct push and hand auger sampling methods; and,

2. Delineation of the extent, if any, of migration of PCB impacted soils on adjacent properties located north, northeast and east of the 115 Brent Street site using direct push and hand auger sampling methods.

3.2 Direct Push and Hand Auger Soil Sampling

Samples were collected on the 115 Brent Street with depth at locations previously determined to have PCB concentrations exceeding 1 mg/Kg at the surface using direct-push sampling techniques. Sampling continued vertically until the detectable PCB concentrations were less than 1 mg/Kg. Additionally, samples were collected on the adjacent properties located north, northeast, and east of 115 Brent Street to determine if PCB was present in the soil and to determine the vertical and horizontal extent of contamination, if any.

The samples were collected, by the field geologist, between January 5 and January 25, 2005 and on April 21, 2005 with a direct-push sampling rig and hand auger. The direct push rig utilizes GeoProbe® and MacroProbe™ equipment that uses a hydraulically driven hammer to advance a hollow stainless steel sampler to the desired depth. The sample is retained in an acetate sleeve from which the sample is taken at the desired depth interval. In January and April 2005, a total of 183 samples were collected from 40 locations on the 115 Brent Street and 113 Brent Street (the property adjacent to the north of 115 Brent Street). Eleven samples were collected from 11 locations on the property located at 314 Liberty Street (the adjacent property to the east of 115 Brent Street) and, 12 samples were collected from three locations on the property located at 312 Liberty Street (the adjacent property to the northeast of 115 Brent Street).

Each sample location was surveyed utilizing a robotic total station to locate each sample point that was then mapped on the state plane coordinate system. A registered land surveyor laid out all of the necessary baselines for control.

Each sample point was assigned a unique location number based on the survey. The vertical extent of PCB-impacted soil was determined by collecting samples vertically through the sub-grade at each location where PCB concentrations were greater than 1 mg/Kg at the surface. Vertical sampling continued at each location until the PCB concentration was less than the regulatory limit of 1 mg/Kg. Prior to sample collection on the 115 Brent Street property, an opening was made in the impervious polyethylene liner sufficient enough in size to allow for proper collection of soil using direct push or hand auger methods. After completion of sampling activities at locations where the liner material had been disturbed, the polyethylene sheeting was replaced and thermally repaired.

Sample point locations were determined on a 20-foot grid to delineate the lateral extent of contamination to the north, northeast, and east of 115 Brent Street. Samples collected from 113 Brent Street (north) and 312 Liberty Street (northeast) were advanced to a

maximum depth of 12 feet below ground surface (bgs). Samples collected from 314 Liberty Street were collected with a hand auger at a depth of 0-6 inches bgs. It should be noted that the samples collected on the 314 Liberty Street property were taken with a hand auger at a depth of 0-6 inches as stipulated by the landowner as a requirement for gaining access to the property. The landowner would not allow samples to be collected deeper than 6 inches using direct push methods to prevent damage to a serpentine field line on their septic system.

4.0 SITE CHARACTERISTICS

4.1 Source Area

Based on information provided by Mr. David Rogers, owner of L. M. & R. Service, Inc., the principal source of PCB at 115 Brent Street appears to be soil removed from the KEC plant site and the Fulgham Avenue ice house property. During the course of performing grading work on the KEC plant site over a period of years, L. M. & R. Service, Inc. reportedly transported and deposited soil that contained PCB onto the property located at 115 Brent Street in Crystal Springs, Mississippi.

4.2 Regional Geology

According to published data, Copiah County lies within the Piney Woods District of the Gulf Coastal Plain Physiographic Province of southern Mississippi. Elevations of most of the upland part of the Copiah County ranges from 300 to 500 feet above sea level. Most of Copiah County consists of upland areas with topographic features ranging from rolling plains to rugged hills. A prominent ridge extends north and south through the central part of the county on which the city of Crystal Springs is situated. The ridge is the hydrologic divide between the Pearl River drainage basin on the east side of the county and the Bayou Pierre drainage basin on the northeast (Bicker, 1969).

Sedimentary rocks that range from unconsolidated to poorly consolidated clastic rocks underlie the region. The oldest Coastal Plain rocks are Jurassic in age and are deeply buried in the subsurface. A thick and extensive salt layer of Jurassic age composes the lower part of the Coastal Plain sequence in the Gulf Coast Basin (Renken, 1998).

Near surface geology exposed in the vicinity of Crystal Springs consists of Miocene, Pleistocene, and Recent sediments. The uppermost recent sediments are composed of alluvium deposits occurring in major drainage channels. The Pleistocene age sediments,

also exposed at the surface are identified as the Citronelle Formation. The Citronelle Formation consists of red to orange fine to coarse-grained sands, abundant chert and quartz gravels with discontinuous clay lenses. Miocene sediments include the Catahoula Formation consisting of gray to tan clay, fine to coarse-grained sand, and white to gray silt (Bicker, 1969). 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. The Citronelle and Catahoula formations are productive and well used aquifers in the vicinity of Crystal Springs.

4.3 Regional Hydrogeogeology

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. Depth to groundwater ranges from 20 to greater than 100 feet in wells throughout the region with a majority being deeper than 50 feet. Since the surficial aquifer is under phreatic conditions, no extensive clay confining units are anticipated above this first aquifer.

Average rainfall totals 57.2 inches per year in the Copiah County area. Precipitation that does not evaporate (approximately 44 inches evaporation per year) or run off into streams and drainages recharges the surficial aquifer. Precipitation infiltrates vertically through the upper sediments to a saturated zone near the bottom of the Citronelle Formation. The groundwater then occupies the voids or pore spaces between sand grains. Groundwater moves either vertically into the lower aquifer in the Catahoula Formation or moves horizontally, discharging from springs and into streams, or is stored in the aquifer.

The region surrounding Crystal Springs is situated in a recharge zone of the Coastal Low Lands Aquifer System. Average recharge into the aquifer system ranges from 0.17 to 0.66 inches per year while discharge rates range from 0 to 0.17 inches per year. The

discharge deficit is the result of large water well withdrawals used to meet agricultural demands.

4.4 Study Area Geology

The Citronelle Formation covers approximately 30 percent of Copiah County and is present at ground surface in Crystal Springs. The formation is characterized by red and orange sediments. 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 ditches/channels, while the thicker portions are located on topographically elevated areas.

4.5 Study Area Hydrogeology

Based on subsurface investigations conducted in Crystal Springs, the depth to the water table beneath upland areas is approximately 60-65 feet bgs. Localized perched groundwater exists at numerous areas above small clay lenses deposited within the Citronelle Formation. The depth to perched groundwater ranges from just beneath ground surface to approximately 20 feet. During site assessment activities, Geoprobe™ direct push soil borings were advanced to a maximum depth of 12 feet bgs, and ground water was not encountered.

No groundwater monitoring wells have been installed on either MidSouth property or adjacent properties discussed in the report.

5.0 NATURE AND EXTENT OF CONTAMINATION

The constituent of concern in the soil at the 115 Brent Street and adjacent properties is polychlorinated biphenyl (PCB). PCB is a mixture of many biphenyls with varying degrees of chlorination. The variety used as an insulator fluid by KEC in the transformer manufacturing process was "Aroclor 1260." Aroclor 1260, in its pure form, is a sticky soft resin with a light yellow color and weak odor. It is relatively insoluble in water (0.0020 to 0.080 mg/l) but is soluble in most organic solvents (Montgomery, 1990). PCB is immobile in ground water. It attaches to soil particles; particularly soils with high organic content, and can become mobile in the environment through wind and water erosion of contaminated soil.

5.1 Direct Push and Hand Auger Soil Sampling

During this assessment, a total of 273 direct push or hand auger soil samples were collected from 95 separate locations. Of these, 37 samples were collected from 36 locations on the 115 Brent Street property in March and May 2004, and 30 samples were collected from 5 locations on the 115 Brent Street property in June 2004. In January and April 2005, 183 samples were collected from 40 locations on the 115 and 113 Brent Street properties; 11 samples were collected from 11 locations on the 314 Liberty Street property (east); and 12 samples were collected from 3 locations on the 312 Liberty Street property (northeast).

5.1.1 115 Brent Street

Laboratory results from the analysis of soil samples collected in March, May, and June 2004 indicated that PCB concentrations exceeded the MDEQ maximum allowable limit of 1.0 mg/Kg in 34 of the 67 samples collected on the 115 Brent Street property. In January and April 2005, with one exception, soil samples were collected vertically in each location where the PCB concentration exceeded 1.0 mg/Kg, until on-site laboratory

analysis of the samples confirmed that the PCB concentration was below the regulatory threshold. At sample location MSL-110 samples could not be collected deeper than six feet due to auger refusal. Analytical results are summarized in Tables 1, 2, and 3.

5.1.2 113 Brent Street

In January 2005, 61 samples were collected from 17 locations north of the initial sampling locations to include 113 Brent Street. Samples were collected to a maximum depth of 12 feet bgs. PCB was not detected above the regulatory threshold in any of these samples. Analytical results are summarized in Table 3.

5.1.3 312 Liberty Street

In January 2005, 12 samples were collected from three locations at 312 Liberty Street, northeast of the 115 Brent Street Property. These samples were collected to a maximum depth of 8 feet bgs. PCB was not detected in any of the samples collected from 312 Liberty Street. Analytical results are summarized in Table 4.

5.1.4 314 Liberty Street

In January 2005, 11 samples were collected from 11 locations at 314 Liberty Street, east of the115 Brent Street property. These samples were collected from 0 – 6 inches bgs. PCB was not detected in any of the samples collected from 314 Liberty Street. Samples were not collected deeper than six inches bgs due to the presence of a septic field drain line. Analytical results are summarized in Table 5.

5.2 Summary of Delineation

The initial investigation and subsequent site characterization assessment utilizing hand auger and direct push sampling methods confirm that the soil that was placed on the 115

Brent Street property contains PCB at concentrations greater than the MDEQ maximum allowable limit of 1.0 mg/Kg. PCB concentrations above the MDEQ regulatory threshold of 1 mg/Kg were not detected in the adjacent properties located to the north, northeast, and east of 115 Brent Street.

No PCB was detected above the regulatory threshold in samples collected greater than 10 feet bgs. Sample locations MSL-106, MSL-111, MSL-121 and MSL-127 had PCB concentrations above 1.0 mg/Kg at 8 – 10 feet bgs. Sample locations MSL-122 and MSL125 had concentrations near the regulatory threshold at 0.9 mg/Kg and 0.88 mg/Kg respectively. The deepest contamination appears to be south of the house located on the 115 Brent Street property.

Laboratory analyses indicated that a total of 10 samples collected over the course of the investigation of the 115 Brent Street property have concentrations of PCB greater than 50 mg/Kg. The maximum depth to which PCB was detected at a concentration above 50 mg/Kg is 4 – 6 feet in sample location MSL-110. Samples could not be collected below 6 feet in this location due to auger refusal. The vertical extent of contamination has been determined in sample locations surrounding sample location MSL-110.

6.0 CONTAMINANT FATE AND TRANSPORT

6.1 Potential Migration Routes

Potential migration routes, for the PCB impacted soil deposited as fill on the 115 Brent Street property include:

- Airborne dust with adsorbed PCB,
- Surface and stormwater runoff and soil erosion into drainage ditches and streams, and
- Deposition by mechanical means.

Airborne dust is not considered a significant concern under the current conditions. The 115 Brent Street property is covered with a low-density polyethylene impervious liner. Air monitoring data collected during liner installation and other site assessment activities did not indicate the presence of dust in the work area or downwind of the work zone at concentrations at or above regulatory standards for inhalation.

Surface water runoff and soil erosion are the primary transport mechanisms for PCB from the 115 Brent Street property to adjacent and down gradient properties. PCB was detected in surface soil samples throughout the southern portion of the 115 Brent Street property. However, the installation of the low-density polyethylene impervious liner prevents runoff and soil erosion.

6.2 Contaminant Concentrations

PCB concentrations in the soil on the 115 Brent Street property range from a low of non-detect (<0.1 mg/kg) to a high of 370 mg/Kg. The occurrence of PCB concentrations above the MDEQ maximum allowable limit of 1 mg/Kg extends across the property except for the north and northeast perimeter. Twenty-five (25) of 36 surface soil samples collected across the site in May 2004 had PCB concentrations above 1 mg/Kg. During

the direct push sampling phase of the assessment, PCB concentrations above 1 mg/Kg were detected at a maximum depth of 8 to 10 feet bgs.

PCB concentrations above 50 mg/Kg were detected in the soils primarily on the south side of the property. In one sample location on the east side of the house PCB was detected at 66 mg/Kg at a depth of 2 – 4 feet bgs. PCB concentrations above 50 mg/Kg were detected at depths up to six feet bgs.

PCB concentrations varied with depth on the 115 Brent Street property. Some sample locations show PCB concentrations greater than 1 mg/Kg only at the surface, while some locations show PCB concentrations increasing with depth. PCB concentrations above 1 mg/Kg were detected at a maximum depth of 10 feet bgs.

6.3 Contaminant Migration

The 115 Brent Street Property slopes gently from the northeast to the southwest. The site relief is approximately five feet. Stormwater runoff flows generally toward the southwest and pools in the street. No storm drain was located during the assessment; however, a drainage ditch on the southwest side of Brent Street is the most likely ultimate discharge point for stormwater leaving the 115 Brent Street property. PCB contamination has been fully delineated on the southwest side of Brent Street as part of the 112 and 114 Brent Street Assessment. Samples collected south of Brent Street in May 2004 (MSL-135 and MSL-136) do not indicate the presence of PCB in concentrations greater than the regulatory threshold.

7.0 QUALITY ASSURANCE/QUALITY CONTROL RESULTS

As established by the MDEQ guidelines, all work related to the characterization of the MidSouth property at 115 Brent Street and adjacent properties assessed during this investigation was performed in accordance with the *Environmental Protection Agency (EPA), Region IV "Environmental Investigations, Standard Operating Procedures and Quality Assurance Manual", May 1996* (EISOPQAM). Copies of relevant and applicable portions of the EISOPQAM were maintained on site during all field activities. All field personnel were trained in EISOPQAM implementation.

7.1 Site Characterization Assessment Objectives

BorgWarner, on behalf of KEC, engaged Martin & Slagle GeoEnvironmental Associates, L.L.C. to prepare a work plan for review and approval by the MDEQ to achieve the following general site characterization objectives using a phased approach:

1. Fill data gaps from previous site characterizations utilizing investigation and sampling methods to determine the vertical and horizontal extent to which soil was impacted by PCB at 115 Brent Street.

2. Conduct soil sampling on the 115 Brent Street property and adjacent properties to the north, northeast, and east utilizing GeoProbe™ direct push and hand auger methods to determine the potential for PCB migration and, if applicable, the extent of vertical and horizontal contamination.

Soil samples were collected by the field geologist at the locations and frequency described in Section 2.2 of the *Site Characterization Workplan,* dated November 2004, approved by MDEQ in December 2004.

7.2 Analytical Methods

Samples were analyzed for PCB by the on-site laboratory, Environmental Chemistry Consulting Services (ECCS) of Madison, Wisconsin. At least 10% of all samples were split and sent to an off-site laboratory, Paradigm Analytical Laboratories, Inc. (PAL) in Wilmington, North Carolina for analysis of PCB. This measure was taken to confirm the results of the on-site laboratory analyses.

The on-site laboratory analyzed the soil samples using a mini-extraction procedure followed by gas chromatography based on EPA Method 8082 for PCB. 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 (MS)/matrix spike duplicate (MSD) samples.

The off-site laboratory analyzed all soil samples for PCB using EPA Method 8082.

7.3 Key Personnel

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

Project Manager: Robert Martin, L.G. Martin & Slagle GeoEnvironmental Associates, L.L.C.

Duties: Responsible for overall management of project including all field coordination efforts.

Field Manager: Charles Peel, P.G. Peel Consulting, P.L.L.C.

Duties: Overall management of field investigation and remedial activities. Collection of samples. Maintenance of all field logs and records.

Sr. Associate: Richard Beale, C.E.P, Martin & Slagle GeoEnvironmental Associates, L.L.C

Duties: Sample collection of grab samples in March 2004. Sample collection during the initial assessment in May 2004. Maintenance of field logs and records. Report preparation.

On-site laboratory

Manager: Richard Johnson, Environmental Chemistry Consulting Services, Inc.

Duties: Responsible for accepting custody of samples from the field personnel. Laboratory records maintenance. Sample analysis.

QA/QC Coordinator: Christine Slagle, Martin & Slagle GeoEnvironmental Associates, L.L.C.

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

7.4 Quality Assurance Objectives for Data

The data quality objectives were pre-defined for the ECCS data in that MDEQ considers all on-site laboratory data as screening level data. ECCS uses the same equipment and

methodology as the off-site laboratory with the exception of the mini-extraction modification. Ten percent of the samples collected were split and submitted to Paradigm Analytical for confirmation analysis. Following this procedure, the data were qualified as screening data with definitive confirmation under EPA Region IV EISOPQAM guidelines.

Samples designated for further analysis by Paradigm were mixed thoroughly by the sample collectors (in a zip lock bag and/or stainless steel bowl) and delivered to the on-site laboratory where ECCS took its aliquot for analysis. After the analysis, ECCS reserved some sample for contingency purposes and sent the remainder to Paradigm for analysis. Paradigm therefore, analyzed the exact same sample as ECCS.

Equipment rinsates were collected for evaluation of cross-contamination potential. These were prepared by pouring distilled water over the sampling equipment after decontamination of equipment, and collecting, preserving, and analyzing the rinsates generated.

Field blanks were collected. These were prepared by filling sample containers, kept in the transition zone, with distilled water.

Blind duplicate soil samples were collected for analysis and sent to both laboratories. Blind duplicates were collected by homogenizing an aliquot of sample and splitting the homogenized sample into 2 separate containers. After ECCS retained their aliquot of the sample, the remainder of the sample was sent to Paradigm for analysis.

7.5 Sample Control and Field Records

7.5.1 Sample Identification

Each sample was assigned a unique alpha-numeric identifier, based on location and depth of collection point that was clearly recognizable by both laboratories. Sample labels conformed to the labeling requirements under Section 3.2.1 of the EISOPQAM.

7.5.2 Chain of Custody Procedures

The field environmental scientist recorded the sample ID, date, and time sampled in the field logbook at the time of collection. Samples were placed on ice in a cooler and transferred, under proper chain of custody, to the on-site laboratory. Upon arrival at the laboratory, the samples were transferred to the ECCS laboratory manager who logged each sample on ECCS chain of custody forms. Each sample was assigned a unique ECCS internal ID number for tracking purposes. After analysis, the samples were transferred to a sample refrigerator in the on-site laboratory until they were either sent to Paradigm for confirmation analysis or disposed of. For samples sent to Paradigm, a new chain of custody was filled out prior to the sample transfer.

7.5.3 Field Records

Field records were kept in accordance with procedures specified in Section 3.5 of EISOPQAM.

7.6 Laboratory Quality Assurance/ Quality Control

QA/QC for both laboratories was identical. Summaries of each laboratory's procedures follow:

ECCS (On-site Laboratory):

- Continuing calibration standards analyzed every ten samples or less and at the end of a run.
- Blank and LCS samples analyzed every twenty samples 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.

Paradigm (Off-site Laboratory):

- Continuing calibration standards analyzed at least once every 12-hour shift plus a minimum of every 20 samples.
- 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.

7.7 Data Review and Validation

All laboratory reports were reviewed for reporting accuracy and consistency with laboratory QA/QC protocols. The primary validation of data was accomplished through comparison of the data from the on-site laboratory versus the off-site laboratory. The relative percent differences (RPDs) between the on-site and the off-site laboratory results for split samples were calculated for each pair of split samples and compared to a 100 % RPD acceptability threshold. The RPDs for duplicate samples analyzed by the on-site and off-site laboratories were calculated and compared to a 50% acceptability threshold. A detailed discussion of the comparability of the on-site and off-site laboratory results and data validation calculations is included in Appendix 2.

8.0 SUMMARY AND CONCLUSIONS

The vertical and horizontal extent of PCB impact has been delineated at the MidSouth property at 115 Brent Street and adjacent properties to the north, northeast, and east to the MidSouth property. The site characterization activities confirmed that there has been no impact to the adjacent properties located at 113 Brent Street, 312 Liberty Street and 314 Liberty Street.

Analytical data, generated from initial assessments conducted in March, May and June 2004, indicated the presence of materials with PCB concentrations exceeding the MDEQ maximum allowable limit of 1 mg/Kg in multiple locations on the 115 Brent Street property. Two surface soil samples were collected in March 2004. Both samples had PCB concentrations in excess of 1 mg/Kg. In May 2004, 35 shallow soil samples were collected from 34 separate locations. From those, 23 samples had PCB concentrations in excess of 1 mg/Kg. Of the samples collected in May 2004 that had PCB concentrations exceeding 1 mg/Kg, two samples had PCB concentrations greater than 50 mg/Kg. In June 2004, 30 subsurface soil samples were collected from five locations where the shallow samples previously collected had PCB concentrations greater than 1 mg/Kg. Of the 30 subsurface samples collected, nine samples from three separate locations had PCB concentrations that exceeded 1 mg/Kg. Of the samples that had PCB concentrations exceeding 1 mg/Kg, five samples collected from three separate locations had PCB concentrations greater than 50 mg/Kg.

Based on information obtained from the initial assessments, further site characterization activities were conducted. BorgWarner, on behalf of Kuhlman Electric Corporation (KEC), engaged Martin & Slagle GeoEnvironmental Associates, L.L.C. to prepare the *Site Characterization Work Plan – Mid South Leasing Property, 115 Brent Street*, dated November 2004, for MDEQ review and approval. The work plan was approved by

MDEQ on December 21, 2004. The following are the general site characterization objectives as stated in the work plan:

1. Determination of the horizontal and vertical extent of PCB impacted soil on the MidSouth property at 115 Brent Street; and

2. Determination of the extent, if any, the migration of PCB contaminated soil to properties adjacent to the north and east of the 115 Brent Street property.

Final site characterization activities were conducted from January 5 through 25, 2005 and April 21, 2005.

8.1 Direct Push and Hand Auger Soil Sampling

The areas assessed during the additional characterization activities as stated in the work plan included the following:

- Property at 115 Brent Street owned by MidSouth.

- Property at 113 Brent Street. This property is adjacent to the 115 Brent Street site to the north.

- Property at 314 Liberty Street. This property is adjacent to the 115 Brent Street site to the east.

- Property at 312 Liberty Street. This property is adjacent to the 115 Brent Street site to the northeast.

The soil sampling of the 115 Brent Street and adjacent properties by direct push and hand auger methods was conducted during the period of January 5 through 25, 2005 and April

21, 2005. This phase of the assessment involved the collection of a total of 183 soil samples on the 115 and 113 Brent Street properties, 11 samples from the 314 Liberty Street property and 12 samples from the 312 Liberty Street property. Samples were collected by either direct push or hand auger methods.

Analytical results for soil samples obtained on the 115 Brent Street property during the assessment activities presented in this report indicate that multiple locations on the property have been impacted with PCB concentrations in excess of the MDEQ regulatory limit of 1 mg/Kg. In six separate locations, PCB concentrations that exceeded 50 mg/Kg were observed. Vertical delineation indicates that subsurface soils in some locations up to a depth of 10 feet bgs have PCB concentrations in excess of 1 mg/Kg.

Analytical results for soil samples obtained on the property adjacent to 115 Brent Street to the north (113 Brent Street) indicate that none of the samples collected had PCB concentrations exceeding the MDEQ regulatory limit of 1 mg/Kg.

Analytical results for soil samples obtained on the property adjacent to 115 Brent Street to the east (314 Liberty Street) indicate that none of the samples collected had PCB concentrations exceeding the MDEQ regulatory limit of 1 mg/Kg. It should be noted that the samples collected on the 314 Liberty Street property were taken with a hand auger at a depth of 0-6 inches as stipulated by the landowner as a requirement for gaining access to the property. The landowner would not allow samples to be collected deeper than 6 inches using direct push methods to prevent damage to a serpentine field line on their septic system.

Analytical results for soil samples obtained on the property adjacent to 115 Brent Street to the northeast (312 Liberty Street) indicate that none of the samples collected had PCB concentrations exceeding the MDEQ regulatory limit of 1 mg/Kg.

8.2 Conclusions

The following conclusions are based on the information gathered during the investigations at the 115 Brent Street and surrounding properties:

1. Multiple locations on the MidSouth 115 Brent Street property have soils that are impacted with PCB concentrations above the MDEQ maximum allowable limit of 1 mg/Kg. Soils with PCB concentrations greater than 1 mg/Kg are present from the surface to a maximum observed depth of 10 feet bgs. Six areas with PCB concentrations greater than 50 mg/Kg are present to a maximum observed depth of six feet.

2. PCB concentrations above the MDEQ regulatory threshold of 1 mg/Kg were not detected in the adjacent properties located to the north, northeast, and east of 115 Brent Street property.