

June 13, 2012

Mr. Tony Russell, Chief
Assessment Remediation Branch
Mississippi Department of Environmental Quality
515 East Amite Street
Jackson, Mississippi 39201

Re: Kuhlman Electric Corporation
Lake Chautauqua Sampling Work Plan
Crystal Springs, Mississippi

Dear Mr. Russell:

Environmental Management Services, Inc. (EMS) has amended the Lake Chautauqua Sediment and Soil Sampling Work Plan for the Kuhlman Electric Corporation in Crystal Springs, Mississippi dated May 15, 2012. The plan has been amended to include the following comments in the Mississippi Department of Environmental Quality (MDEQ) letter dated June 6, 2012.

- 1. Section 2.0 – The correct USEPA Science and Ecosystem Support Division procedure manual for Sediment Sampling is SESDPROC-200-R2. All sampling containers should be kept out of the sun until time to collect sample.**

Response: The reference to the procedure for sediment sampling has been amended to SESDPROC-200-R2. The statement “All sampling containers will be kept out of the sun until time to collect the sample” has been added to Section 2.0.

- 2. Section 2.3 – Step one for decontamination of sampling equipment should be removal of gross material prior to washing in a detergent solution.**

Response: The first step for decontamination of sampling equipment in section 2.3 is now “Removing obvious, loose material.”

- 3. Section 2.4 – The following two USEPA Science and Ecosystem Support Division procedures have been updated: Field Equipment Cleaning and Decontamination is now SESDPROC-205-R2 and Field Sampling Quality Control is now SESDPROC-011-R3.**

Response: The procedures for Field Equipment Cleaning and Decontamination and Field Sampling Quality Control have been updated to SESPROC-205-R2 and SESPROC-011-R3 respectively.

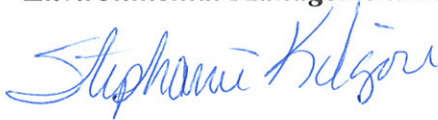
4. Section 4.0 – Reporting – MDEQ requests that the final report be submitted within 60 days of receipt of the final analytical data reports. Please include a cross section of the area investigated.

Response: The final reporting time frame is now 60 days within receipt of the final analytical data reports. Also the report will include a cross section of the area investigated.

Please find attached the updated plan with the amendments listed above. Please contact EMS at (601) 544-3674 if you should have any question or comments concerning the enclosures.

Sincerely,

Environmental Management Services, Inc.



Stephanie Kilgore, P.E.
Senior Engineer

Enclosure: Lake Chautauqua Sediment and Soil Sampling Work Plan

cc: Phillip James, KEC
Allen Gearhart, KEC
Melody Christopher, ABB, Inc.
Virginia Munford, CMS

LAKE CHAUTAUQUA SEDIMENT AND SOIL SAMPLING WORK PLAN

KUHLMAN ELECTRIC CORPORATION
CRYSTAL SPRINGS, MISSISSIPPI

Prepared by:



P.O. Box 15369
Hattiesburg, Mississippi 39404

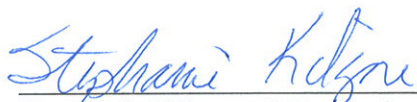
Submitted: May 15, 2012

Revised: June 13, 2012

EMS Project No: KUH0-12-005

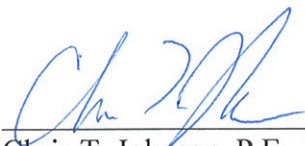
The report contained herein has been prepared by Environmental Management Services, Inc. (EMS) under the direct supervision of the environmental professionals indicated below. To the best of our knowledge all appropriate standards of care and practices were utilized to collect and report the data contained within this document. Services performed by EMS were conducted in a manner consistent with that degree of care and skill ordinarily exercised by reputable members of the same profession as EMS practicing in the same locality under similar conditions as exists at the time the service was provided. No other representation, express or implied, and no warranty or guarantee is included or intended in this proposal, or any report, opinion, document or otherwise as a result of, or part of the work by EMS, its subcontractors, or vendors.

Prepared By:



Stephanie Kilgore, P.E., Senior Engineer
Environmental Management Services, Inc.

Date: 6/13/12



Chris T. Johnson, P.E., P.S., Engineering Manager
Environmental Management Services, Inc.

Date: 6/13/2012

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1.0 INTRODUCTION

In a letter dated March 21, 2012, attached in Appendix A, the Mississippi Department of Environmental Quality (MDEQ) notified Borg Warner, Inc. (BW) and Kuhlman Electric Corporation (KEC) that an assessment of the extent of polychlorinated biphenyl (PCB) contaminated sediments between the upper end of Lake Chautauqua and U.S. Highway 51 would be required. The letter specifically directed that a workplan be submitted by May 15, 2012. Environmental Management Services, Inc. (EMS) has prepared this work plan on behalf of KEC to comply with this directive. A Site Map for the area of interest is included as Figure 1.

Background

A primary source of storm water entering Lake Chautauqua is from a drainage area to the east/southeast of the lake and includes storm water runoff from the KEC facility at 101 Kuhlman Drive and surrounding residential areas. Stormwater flows through this drainage area and eventually empties to Lake Chautauqua. This drainage area was subject to investigation by BW consultants resulting in remedial activities from 2004 through 2011, including excavation of residual PCB contamination within the soil and sediments along the drainage pathways. The investigation and remediation activities began at the northern property boundary of the KEC plant and followed the drainage pathway down gradient from the plant, ending at the culvert on the east side of MS Highway 51 prior to discharge into Lake Chautauqua. The North Drainage Channel Remediation Final Report by Peel Consulting, PLLC is included in Appendix B.

Two previous investigations of the sediments (Arcadis 2010 and Martin and Slagle 2008) within the lake focused on sediments from the shallow benthic zone in selected portions of the flooded lake area. The sample locations reported in the final Human Health and Ecological Risk Assessment, prepared by Arcadis on behalf of BW, are shown in the figures contained in Appendix C.

Area of Interest

This work plan will focus on the area referenced by MDEQ, considered to be the area not previously investigated, between the previous upstream soil investigation and the sediment investigations contained within the lake footprint. Both submerged and adjacent exposed depositional areas will be investigated. In order to define the extent of contaminated sediments as required, EMS has estimated the sediment accumulation area as a basis for determining sampling locations. In the absence of the 100 year floodplain establishment, the elevation of the lake's overflow pipe plus an additional one foot of elevation will be used to establish the floodplain boundary. Using this established flood plain

boundary, perimeter sample locations will be designated onshore outside of the target zones indicated.

Documentation of the precise locations of the samples collected during the two previous events conducted by Borg Warner was not available, however; correlation of the stated locations with natural land and lake features and historical photographs produces an approximate downstream boundary within the lake. To be conservative in establishing the investigation boundaries, overlap to the estimated previous sampling locations may occur.

Examination of historical photographs dating from 1996 to 2011 (included in Appendix D) indicates visual changes to the configuration of the currently visible delta and at least one area adjoining the current stream pathway. These changes are considered in the proposed area designated for initial sampling.

Investigation Strategy

The area to be evaluated under this work plan consists of the area of and immediately adjacent to the existing inlet to Lake Chautauqua directly downstream from the former remediation activities, beginning at the downstream side of the Hwy 51 culvert crossing and extending into the lake to include an observed subsurface delta. Figure 2 shows the area of concern to be investigated. Both submerged sediments and soil immediately adjacent to the inlet will be sampled. This sampling event is comprised of twenty eight (28) samples. The results will be evaluated to determine if additional data collection efforts are warranted.

2.0 TECHNICAL APPROACH

The environmental sampling activities will entail using standard, regulatory-approved procedures for sample collection and shipment, as well as the laboratory analysis of the samples. Procedures developed by the EPA, Region 4, Science and Ecosystem Support Division (SESD), located in Athens, Georgia, will be used to guide field personnel during the implementation of this project. These procedures, known as the Field Branches Quality System and Technical Procedures, may be found at <http://www.epa.gov/region4/sesd/fbqstp/>. Sediment and soil sampling will be completed in general accordance with EPA operating procedure numbers SESDPROC-200-R2, Sediment Sampling and SESDPROC-300-R2, Soil Sampling. All sampling containers will be kept out of the sun until time to collect the sample.

The proposed sampling and analysis will follow the referenced guidelines as applicable. Details of the technical approach, methods and procedures follow.

2.1 Proposed Sample Locations

Previous sampling locations performed by others are estimated due to the lack of sample coordinates. This sampling event will conservatively attempt to encompass the area not sampled previously. A combination of targeted location samples and random location samples will be collected initially to determine PCB concentrations in the sediments and adjoining soils.

Targeted sampling will be performed on 25-foot spacing along the center of the pathway of the current drainage channel and along the channel banks. Six (6) targeted sediment sample locations will be based upon the specific footprint of the visible drainage pathway. Eleven (11) targeted soil samples will be collected adjacent to and on each side of the drainage pathway. Two (2) additional targeted locations have been chosen along the anticipated floodplain perimeter.

Nine (9) random locations will be placed in the logical deposition area near the end of the drainage pathway. The random sampling area was overlain by a 25-ft x 25-ft grid. The grid cells were numbered, and a random number generator was used to select nine (9) cells for sampling. Coordinates of the selected cells were computed to determine the approximate sample locations for field placement.

The targeted and randomly selected sample locations are shown on Figure 2.

At each selected sediment sample location, the profile of the sediment layer or layers will be determined and documented. Representative samples will be obtained from the upper 0-6 inches at all designated locations for chemical and geotechnical analysis. In addition, samples will be collected at each designated location for chemical and geotechnical analysis at the interface of the sediment layer(s) and the observed native soil type, or at a maximum depth of one 4' sampler tube, based upon the project geologist classification and determination. Borings will be advanced until the native soil type is noted or refusal is reached using the hand techniques planned for this phase. All bore holes will be logged by the project geologist.

2.2 Sample Collection Techniques

Submerged sediment samples will be collected using the following sampling devices: The AMS Multi-Stage Sediment Core Sampler (Multi-Stage Sampler) and/or a Ponar sampler and/or vibracore technique and/or hand driven Macrocore[®] samplers.

The Multi-Stage Sampler includes a check valve in the core head and a “core catcher” in the bottom of the sampler to improve sample recovery. The AMS Multi-Stage Sampler is an all stainless steel sampler designed to extend the sampler in twelve-inch sections up to 36-inches. It uses a disposable plastic core catcher that fits on the end of a 2-inch diameter by 12-inch long plastic liner. Once the core catcher and liner are placed on the core tip, they are loaded into a standard multi-stage base section and screwed together. The Flap Check Cap is a modified multi-stage cap with 4 holes machined completely through it and a rubber check flap stretched and fitted over the holes. During deployment of the sampler, the flap check cap opens and allows excess air and water to escape through the top of the sampler. The sampler is driven into the sediments using a slide hammer for 36-inches or until refusal. When the sampler is lifted, the rubber flap check cap closes over these holes and creates suction to assist the core catcher in retaining the sample.

The Ponar type grab sampler has center hinged jaws that release when the sampler contacts the surface to be sampled. The top of the sampler has a stainless steel screen with neoprene flaps to allow water to flow through the sampler during decent and reduces disturbance of the sample. Sampler construction is stainless steel with zinc plated steel arms and weights.

The vibracore sampling apparatus consists of a 3-inch diameter thin walled aluminum tube that is advanced into sediments by a modified concrete vibrator. The vibrator is clamped onto the aluminum tubing. The vibrations result in the aluminum tube being advanced into the sediments. After the tubing is advanced to the desired sampling depth or until refusal (which varies depending on sediment consistency), the tube is filled with water and capped to seal the tube. The tube is then pulled from the sediment, transported to shore and cut open with snips to reveal the collected sediments.

The Macrocore[®] sampler consists of a 2.25-inch diameter tube with a removable liner. The tube is driven into the soil or sediment layer by hand to the desired sampling level. The sample core is then removed with the liner.

Sediment cores will be logged and described by an on-site geologist. Sample locations may be adjusted in the field based on visual observations and in-field physical constraints.

Soil samples will be collected utilizing the following sampling devices; hand auger, hand driven macro core samplers, and/or vibracore samplers. A site specific EMS health and safety plan will be followed for all sampling activities.

2.3 Decontamination and Cross Contamination Control Procedures

This project will use mainly disposable equipment for collecting and processing samples; however, decontamination procedures are provided for any non-disposable equipment used. All reusable equipment will be decontaminated before and in-between samples. Equipment used for collecting and processing samples for analysis will be stainless steel, anodized aluminum, glass, polytetrafluoroethylene (PTFE) or ceramic. Decontamination of sampling and sample preparation equipment will be accomplished by the following procedures:

- Removing obvious, loose material,
- Washing in a detergent solution of Liquinox™;
- Triple rinsing with clean deionized water; and
- Air drying.

Sample jars and bottles will be kept in limited-access areas or locked storage until they are used and delivered to the laboratory. Nitrile gloves will be worn during all sampling activities and changed between sampling locations. Clean sampling equipment will be double bagged in sealable plastic bags prior to use. All wash water, discarded gloves, etc. will be properly disposed.

2.4 Analytical Procedures

Sediment and soil samples will be analyzed for Polychlorinated Biphenyls (PCBs) using EPA Method 8082. Ten (10) of the soil/sediment samples will also be analyzed for Total Organic Carbon (TOC) using EPA Lloyd Khan method. Columbia Analytical Services, Inc. will perform the laboratory analytical work as part of this project.

Geotechnical samples will be collected for grain-size analysis using ASTM D422-63 (1998). The geotechnical analytical work will be performed by Burns Cooley Dennis, Inc.

2.4.1 Polychlorinated Biphenyls

The primary constituents of concern observed previously are polychlorinated biphenyls. The PCBs to be analyzed in sediment and soil samples are as follows:

Aroclor 1016	Aroclor 1221	Aroclor 1232
Aroclor 1242	Aroclor 1248	Aroclor 1254
Aroclor 1260	Aroclor 1262	Aroclor 1268

The sample extraction will be performed in accordance with the EPA-approved methodology. Once extracted, the samples will be analyzed using SW-846 Method 8082.

2.4.2 QA/QC Samples

QA/QC samples (aside from those required by the analytical methods) will consist of equipment blanks. To ensure adequate equipment decontamination procedures are implemented and the field equipment does not impact the sample results, at least one field equipment rinsate blank will be collected per day of sampling and submitted for analysis of PCBs (EPA Method 8082).

Field equipment will be decontaminated and rinsate samples collected as outlined in procedures SESDPROC-205-R2 (Field Equipment Cleaning and Decontamination) and SESDPROC-011-R3 (Field Sampling Quality Control).

2.4.3 Analytical Data Review

The laboratory reports will be reviewed for reporting accuracy and consistency with laboratory Quality Assurance/Quality Control (QA/QC) protocols.

The criteria upon which the data will be reviewed include:

- Sample Integrity
- Holding Times
- Blanks
- Method Blanks
- Laboratory Control Samples
- Matrix Spike/Matrix Spike Duplicates
- Surrogate Recoveries
- Blind Duplicate Analysis
- Split Sample Analysis

2.5 Documentation

The following sections provide procedures to ensure samples are adequately described and identified and field conditions documented.

2.5.1 Field Documentation

All field observations and information pertinent to sampling will be recorded (in waterproof ink) in a

bound field log notebook or daily field report form. In addition, photographs will be taken of typical field operations, items of interest, etc. A log of these photographs will be maintained. All sample locations will be located by a licensed Mississippi Surveyor and critical site features located for reference. Field notes will include the following information, if applicable:

- Site, date and sampling personnel
- Sketches of sample locations
- Number of samples collected
- Description of sampling point location
- Date and time of sample collection event
- Sample identification number(s)
- Sample handling and preservation
- Weather conditions
- Other pertinent field observations

2.5.2 Chain-Of-Custody Procedures

Each sample sent off-site for analysis will be recorded on a Chain-of-Custody form. Chain-of-Custody forms will become the permanent records of all sample handling and shipment. Chain-of-Custody documentation will include the following information:

- Sample identification number
- Site name and project number
- Date of sample collection
- Date sample was submitted to the laboratory
- Sample collector's signature
- Preservation used
- Number and type of shipping containers
- Signature of persons relinquishing and obtaining custody of samples
- Analyses to be performed
- Indication of sample disposition

With each transfer of sample custody, the persons involved will verify sample numbers and condition and document the sample acquisition and transfer. Upon arrival at the laboratory, the laboratory sample custodian will sign for custody and return a copy of the completed Chain-of-Custody form to the person completing the delivery.

2.6 Sample Packing and Shipping

All samples on a particular Chain-of-Custody form will be packed in the laboratory-supplied cooler or coolers along with sealed plastic bags of ice. The Chain-of-Custody forms will be double sealed in plastic bags and taped to the inside of the cooler lid. The cooler will then be sealed with Chain-of-Custody tape. Samples will be shipped via overnight courier to the laboratory.

2.7 Investigative Derived Waste

Any investigative derived waste will be containerized and transported to the KEC facility for temporary storage. After analysis and waste profile determination, the waste will be properly handled according to state and federal guidelines. Investigative derived waste will be manifested under KEC's EPA I.D. number.

3.0 PROJECT SCHEDULE

It is estimated that this initial phase of collection of sediment and soil samples from the upper end of the lake will require approximately one week to complete. Normal turnaround time for completion of laboratory analysis and reporting is 15 days. KEC will provide the laboratory results to MDEQ within 30 days of receipt.

4.0 REPORTING

A summary report will be prepared which will include a brief description of sampling techniques, pertinent sample location conditions encountered, deviations from this sampling plan, if applicable, and drawings plotting the surveyed locations of all samples collected, including a representation of the cross section of the area investigated. The sediment and soil analytical results will be evaluated and summarized and recommendations/conclusions included based upon the findings.

A final report will be produced within 60 days of receipt of the final analytical data reports.

APPENDICES

APPENDIX A



STATE OF MISSISSIPPI

PHIL BRYANT
GOVERNOR

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

TRUDY D. FISHER, EXECUTIVE DIRECTOR

March 21, 2012

Ms. Anastasia Hamel, Director
Environmental Programs
BorgWarner, Inc.
3850 Hamlin Road
Auburn Hills, Michigan 48326

Mr. Phillip K. James
General Manager
ABB Kuhlman - SPT Division
101 Kuhlman Drive
Crystal Springs, MS 39059

Re: Lake Chautauqua
Crystal Springs, Mississippi

Dear Ms. Hamel and Mr. James:

The Mississippi Department of Environmental Quality (MDEQ) will require assessment of the sediments in the upper end of Lake Chautauqua for polychlorinated biphenyl compounds (PCBs). Therefore, MDEQ requires a detailed work plan and schedule to define the extent of PCB contaminated sediments in the upper end of the Lake between the Lake and Highway 51. MDEQ will use the data generated from the assessment for final remedy determination for the Lake.

Please submit the required work plan and schedule by May 15, 2012 for MDEQ review and approval. Please call with any questions you may have regarding this matter.

Sincerely,

Tony Russell, Chief
Assessment Remediation Branch

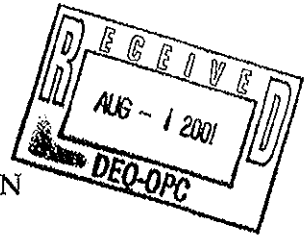
CC:
Jerry Banks GARD [VIA EMAIL ONLY]
Henry Folmar FSD [VIA EMAIL ONLY]

OFFICE OF POLLUTION CONTROL

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APPENDIX B

DRAINAGE CHANNEL
PCB ASSESSMENT WORK PLAN



Kuhlman Electric Corporation
Crystal Springs, Mississippi

FILE COPY

Prepared for

BorgWarner Inc.

Prepared by

MARTIN&SLAGLE GeoEnvironmental Associates, LLC
PO Box 1023
Black Mountain, North Carolina

August 2001

A handwritten signature in cursive script, appearing to read "Robert L. Martin".

Robert L. Martin, L.G.
Project Manager

A handwritten signature in cursive script, appearing to read "Christine E. Slagle".

Christine E. Slagle
Senior Scientist

KUHL_007811

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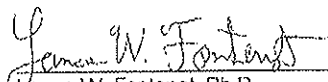
APPENDIX C

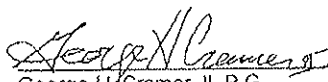
**Human Health and
Ecological Risk
Assessment**

Lake Chautauqua
Crystal Springs, Mississippi

29 September 2010

ARCADIS


Lance W. Fontenot, Ph.D.
Principal Scientist/Toxicologist


George H. Cramer, II, P.G.
Associate Vice President/Principal Hydrogeologist

**Human Health and Ecological
Risk Assessment**

Lake Chautauqua
Crystal Springs, Mississippi

Prepared for:
Phelps Dunbar, LLP

Prepared by:
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Our Ref.:
LA002889.0001.00002

Date:
29 September 2010

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25	Summary of Calculated Human Health Risk and Hazards for the Recreational Fisherman, Reasonable Maximum Exposure Scenario
26	Ecological Receptor-Specific Exposure Parameters
27	Toxicological Benchmark Values For Great Blue Heron
28	Toxicological Benchmark Values For Raccoon
29	Toxicological Benchmark Values For Mink
30	Calculation of Refined Sediment Quality Criteria for PCBs
31	Comparison of Maximum Detected Concentrations in Sediment to Sediment Quality Criteria
32	Comparison of Maximum Detected Concentrations in Fish Tissue to Tissue Screening Values
33	Risk Calculations for Great Blue Heron using Average Concentrations
34	Risk Calculations for Raccoon using Average Concentrations
35	Risk Calculations for Mink using Average Concentrations
36	Summary of Ecological Risk Characterization

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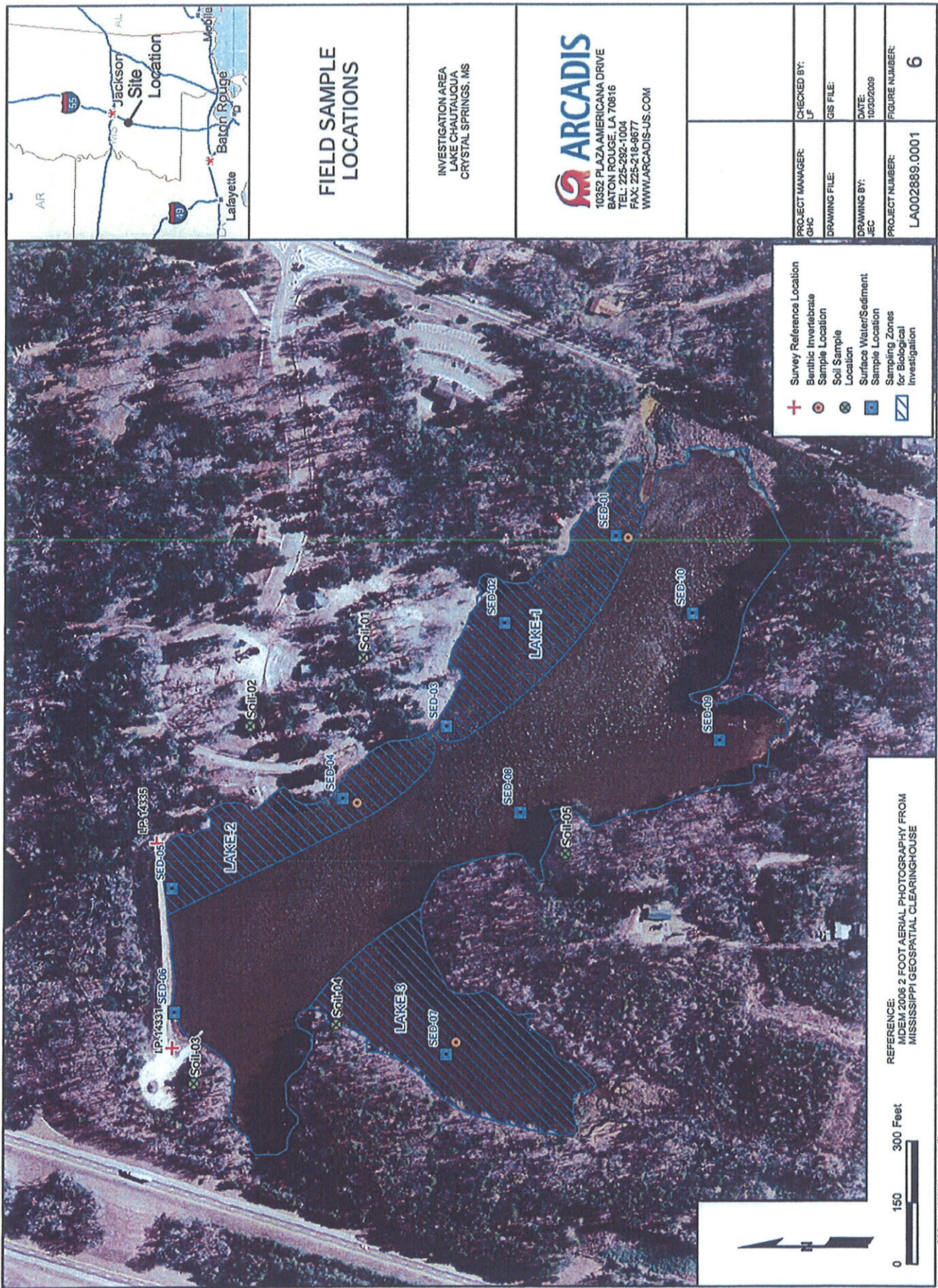
Figures

- 1 Site Location Map
- 2 Vicinity Location Map
- 3 2006 Aerial Photography & Elevations
- 4 National Wetlands Inventory
- 5 Conceptual Site Model
- 6 Field Sample Locations
- 7 Lake Copiah Sample Locations

Appendices

- A Bathymetry Map for Lake Chautauqua
- B Lake Chautauqua Sediment Sample Results and Location Map, October 2008
- C Fish Analytical Results and Advisories from Lake Chautauqua
- D Analytical Laboratory Reports
- E Field Sampling Logs
- F Checklist for Ecological Assessment/Sampling
- G USEPA-Recommended Target Species for Inland Fresh Waters
- H Benthic Invertebrate Community Laboratory Report

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FIELD SAMPLE LOCATIONS

INVESTIGATION AREA
LAKE CHAUTAUQUA
CRYSTAL SPRINGS, MS

ARCADIS
10352 PLAZA AMERICANA DRIVE
BATON ROUGE, LA 70816
TEL: 225-282-1004
FAX: 225-218-9677
WWW.ARCADIS-US.COM

PROJECT MANAGER: GHC	CHECKED BY: LP
DRAWING FILE:	GIS FILE:
DRAWING BY: JEC	DATE: 10/30/2009
PROJECT NUMBER: LA002889.0001	FIGURE NUMBER: 6

APPENDIX D

1/24/1996
1996 2011



© 2012 Google

Image U.S. Geological Survey

Google earth



© 2012 Google
Image Mississippi GIS Coordinating Council

Chatmon St

Google earth

9/19/2007
1996 2011

N



© 2012 Google
Image USDA Farm Service Agency

4/25/2010
1996 2011



© 2012 Google

Google earth

Imagery Date: 4/25/2010 1996

31°59'48.47" N 90°21'45.35" W elev 397 ft

Eye alt 1138 ft

9/29/2010
1996 2011

Chautauqua Lake

N

Boore St

Lakeview St

51

Chatmon St

© 2012 Google
Image USDA Farm Service Agency

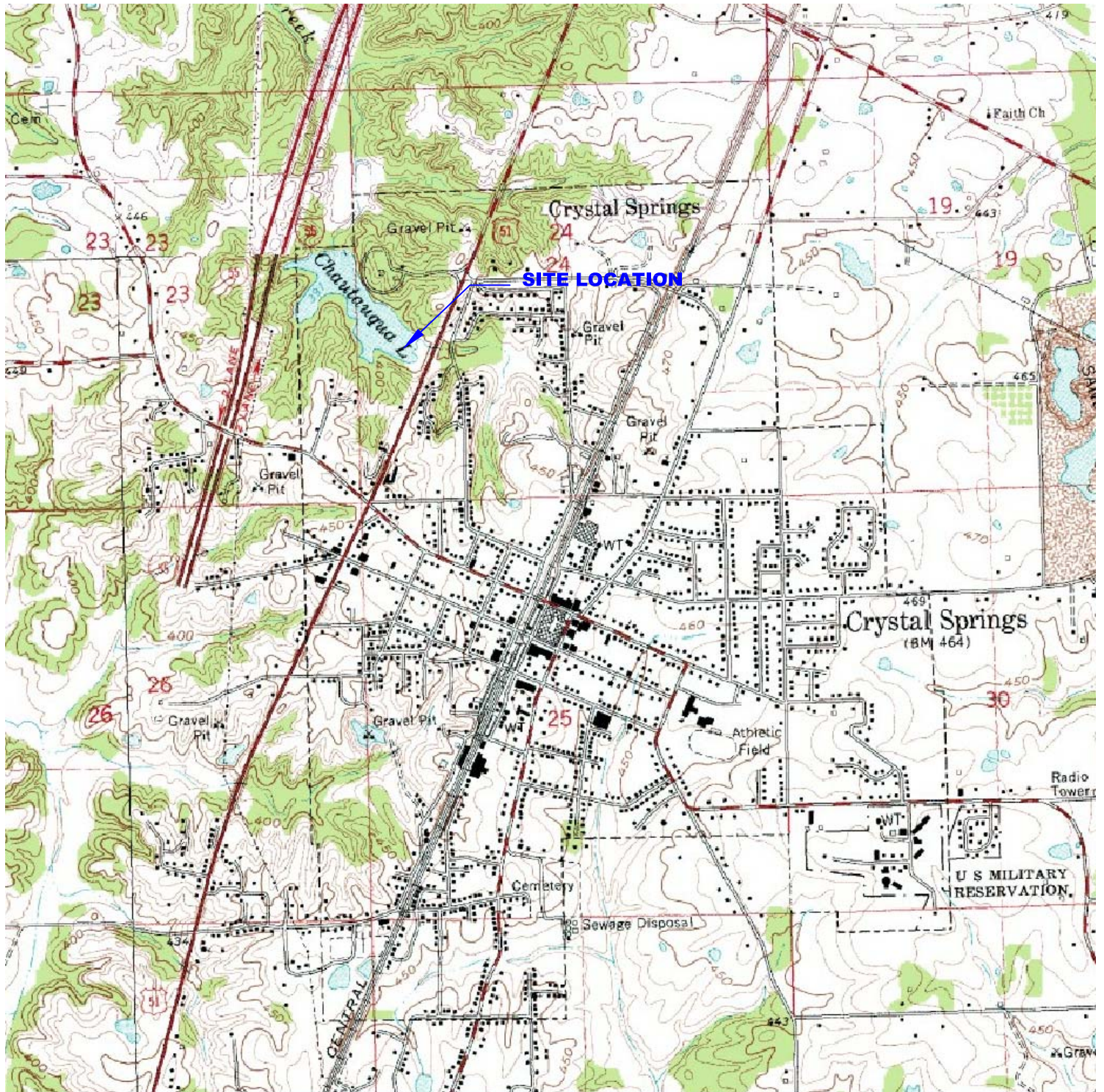
Google earth

Imagery Date: 9/2/2010 1996

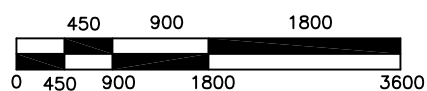
31°59'48.33" N 90°21'45.35" W elev 397 ft

Eye alt 1756 ft

FIGURES



SCALE 1 INCH = 1800 FEET



NOTE: PROPERTY BOUNDARIES AND SCALE ARE APPROXIMATE.

REFERENCE: U.S.G.S. TOPOGRAPHIC MAP
1963 - CRYSTAL SPRINGS
7.5 MINUTE SERIES
LINCOLN COUNTY, MS

SITE LOCATION MAP

UPPER LAKE CHAUTAUQUA INVESTIGATION

KUHLMAN ELECTRIC CORPORATION
CRYSTAL SPRINGS, MS

DATE: 5/10/2012

APPROVED:

DRAWN BY: TRB

SCALE: 1" = 1800'

BY: _____
DATE: _____

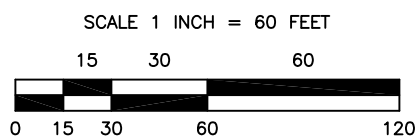
CAD NO. _____
SITE LOCATION

ENVIRONMENTAL
MANAGEMENT SERVICES, INC.



FIGURE

1



NOTE: PROPERTY BOUNDARIES AND SCALE ARE APPROXIMATE.

LEGEND:

	2008 SEDIMENT SAMPLES
	2009 SEDIMENT SAMPLES
	2012 PROPOSED SOIL SAMPLES
	2012 PROPOSED SEDIMENT SAMPLES

REFERENCE: GOOGLE EARTH
NOVEMBER 2011 AERIAL

PROPOSED SAMPLING LOCATIONS

Upper Lake Chautauqua Investigation
KUHLMAN ELECTRIC BUILDING
CRYSTAL SPRINGS, MS

DATE: 05/10/2012	APPROVED: _____	DRAWN BY: T.R.B.
SCALE: 1" = 60'	BY: _____	PROJECT NO. KUH0-12-005
		FIGURE 2