February 9, 2012

Mr. Dennis Aloia  
Grand Traverse County  
Governmental Center  
400 Boardman Avenue  
Traverse City, Michigan  49684  

Subject: Hazardous Materials Building Survey  
Sabin Dam Powerhouse  
Garfield Township, Grand Traverse County, Michigan  
AMEC Project Number: 3310110028

Dear Mr. Aloia:

AMEC Environment & Infrastructure, Inc. (AMEC) was retained by the Boardman River Dams Settlement Agreement Implementation Team (IT) to perform a hazardous materials building survey (building survey) at the Sabin Dam powerhouse located on the Boardman River in Garfield Township, Grand Traverse County, Michigan (Site). The powerhouse is a one-story brick structure formerly used for the generation of hydroelectric power. AMEC understands the powerhouse will be partially razed during the breaching of the dam. Prior to demolition, AMEC performed a limited asbestos survey, a lead-based paint evaluation and a hazardous materials inventory to identify materials that may need to be removed and/or properly managed as part of proposed dam removal activities. The building survey was conducted on October 31, November 1 and November 8, 2011 by Mr. R. Scott Rought, Certified Hazardous Materials Manager (CHMM) and accredited State of Michigan Asbestos Inspector, and Mr. Jeffrey Doerr of AMEC (October 31 and November 1, 2011).

AMEC personnel conducted the building survey in a systematic manner on the interior and exterior of the powerhouse; however, due to safety concerns (close proximity of overhead electric wires and nearby steep dam embankments), an inspection of the structure’s roof was not performed. In addition, AMEC personnel did not assess any areas of the dam embankment located in close proximity to the spillway or behind fenced areas and/or railings adjacent to the spillway, including the mechanical equipment currently located in the spillway (e.g., trash racks, etc.) or any areas beneath the powerhouse due to associated safety concerns. Although AMEC personnel made a good faith effort to assess these areas as part of the building survey, these areas may require further inspection once the water level is lowered as part of the proposed dam removal activities. Access to the property was provided by Mr. George Champlin of the Grand Traverse County (County) Department of Public Works.

The following sections provide a summary of the scope of work, field observations and a summary of the analytical laboratory results.

SCOPE OF WORK

AMEC’s scope of work consisted of the following:

- Conduct a National Emission Standards for Hazardous Air Pollutants (NESHAPs) pre-demolition asbestos survey of the building with sampling and analysis of suspect asbestos-containing materials (ACM).
- Conduct a lead-based paint evaluation of the building with sampling and analysis of interior and exterior painted surfaces.
- Conduct a hazardous material inventory for the presence of equipment/building components that may contain polychlorinated biphenyls (PCBs), mercury, chlorofluorocarbons (CFCs), refrigerants and other potentially hazardous materials.
- Prepare a letter report summarizing the field observations, sampling locations and analytical results of the aforementioned work including AMEC’s conclusions.

NESHAPS ASBESTOS SURVEY

Observations
AMEC personnel conducted a NESHAPs pre-demolition asbestos survey of the powerhouse structure in general accordance with 40 CFR 61, Subpart M, to identify and sample any suspect ACM. The powerhouse construction consists of a brick exterior and has a main room that is finished with a concrete floor, painted brick interior walls and a concrete ceiling. This area of the powerhouse consists of the main operating room along with a secondary room located on the east end of the powerhouse, over the spillway. The secondary room is finished with plywood flooring, a plywood ceiling and painted brick walls. A mezzanine/storage area is located above the secondary room. Several windows were observed with window panes; window putty/caulk was observed around the perimeter of each pane. Several wall-mounted electric heating units were observed in the main room near ceiling height. The heating units are attached to the wall and AMEC did not observe any associated reflective panels (i.e., transite panels) in association with the heating units or other suspect ACM. AMEC did not observe the presence of any insulation materials. Piping observed within the powerhouse was not insulated. As previously discussed, AMEC personnel did not assess the building’s roof. Mr. Champlin reports that the roof is of concrete construction, is not shingled and contains a rubber membrane with a stone surface.

Suspect ACM identified in association with the powerhouse included interior/exterior window putty/caulking material, a white powdery residue on portions of the interior brick wall, and brick mortar (“new” and “old”). A survey of the building’s exterior suggests that several windows have been removed from the building and their openings enclosed with brick (“new” mortar). In addition, a powdery residue was identified on several areas of the interior brick walls. The source of the powdery material is not known, but it appeared at some locations to have been sprayed onto the interior walls of the powerhouse. No suspect ACM was identified in association with any other construction materials or equipment (i.e., railings, fencing or operating equipment) located immediately adjacent to the powerhouse. Four bulk samples were collected and identified as sample numbers S-1 through S-4. A description of each sample location is included in Table 1 – Sabin Dam Powerhouse Asbestos Sample Results

Analytical Results
Bulk samples of the aforementioned suspect ACM were collected and submitted to AMEC’s in-house asbestos laboratory located in Atlanta, Georgia for asbestos fiber analysis using United States Environmental Protection Agency (EPA) Method 600, Polarized Light Microscopy (PLM). AMEC’s laboratory is an accredited laboratory in the National Voluntary Laboratory Accreditation Program (NVLAP). The analytical laboratory results did not detect the presence of asbestos fibers in the samples submitted for laboratory analysis at concentrations greater than 1% (concentration at which EPA regulates the material as asbestos-containing); therefore, all samples submitted for analysis were non-detect for asbestos. Table 1 provides a summary of the materials sampled, their location within the powerhouse and the analytical laboratory result. The analytical laboratory results and chain-of-custody form are provided as Attachment A.
LEAD-BASED PAINT EVALUATION

Observations
A visual survey of the interior and exterior of the powerhouse and apparatus (i.e., safety railings, fencing, etc.) was performed to provide general information regarding the presence of lead-based paint to facilitate contractor compliance with the Occupational Safety and Health Administration (OSHA) Standard 29 CFR Part 1926.62 (Lead in Construction) during the demolition of the powerhouse during dam removal. Observations of the various representative surface coatings were documented and representative paint chip samples were collected. A total of 13 paint chip samples (LS-1 through LS-13) were collected from various interior and exterior locations of the powerhouse. A description of the samples and their representative locations are presented in Table 2 – Sabin Dam Powerhouse Paint Sample Results. The paint chip samples were submitted to EMSL Analytical, Inc. (EMSL) of Indianapolis, Indiana for lead analysis using Atomic Absorption Spectroscopy (AAS) in accordance with EPA Method SW 846, 3050B/7040B. EMSL is accredited through the American Industrial Hygiene Association (AIHA) Environmental Lead Laboratory Approval Program (ELLAP).

As previously discussed, AMEC did not assess the areas beneath the powerhouse or any areas of the dam embankment located in close proximity to the spillway or behind fenced areas and/or railings adjacent to the spillway. Aside from water control equipment, Mr. Champlin indicated that he is not aware of any painted surfaces beneath the water level or powerhouse.

Analytical Results
The analytical results identified an elevated concentration of lead in one (LS-7) of the thirteen samples collected and submitted for laboratory analysis. Lead was identified in sample number LS-7 (Table 2) at a concentration of 0.78% by weight, which is above the lead concentration (0.5 % by weight) that renders a surface coating lead-based paint, as defined under the Department of Housing and Urban Development (HUD) Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing and the EPA’s Requirements for Lead-Based Paint Activities in Target and Child-Occupied Facilities (40 CFR Part 745). Based on the analytical results, the dark gray paint on the vertical beams located on the northern and southern walls of the building (total of four stripes per wall) are coated with lead-based paint. None of the remaining surface coatings sampled were identified as containing lead-based paint.

Table 2 provides a summary of the analytical results. The analytical laboratory results and the chain-of-custody form are provided as Attachment B.

HAZARDOUS MATERIALS INVENTORY

Observations
AMEC conducted a visual survey of the interior and exterior areas of the powerhouse to identify potential sources of equipment that may contain PCBs, CFCs and other potential hazardous materials. Table 3 contains a summary of materials observed during the building survey.

One thermostat was identified on the interior north wall of the powerhouse. No ampoules of mercury were observed; however, AMEC did not remove the thermostat from the wall. As such, the thermostat should be considered a source of mercury until proven otherwise. One emergency alarm lamp (located on the east side of the exterior of the powerhouse) and three high intensity lamps (north, south and east sides of powerhouse’s exterior) were observed during the building survey. These lamps should be considered mercury-containing until proven otherwise. Additionally, 12 fluorescent lamps (tubes) were identified in association with six fluorescent fixtures (two lamps per fixture) affixed to the ceiling of the powerhouse.
It should be noted that these lamps appeared to be “older” lamps and are not part of EPA’s “Green Lights” program which consists of newer tubes that contain less mercury and are identified by green painted metal ends or green writing/etching on each tube. No other mercury-containing sources were identified during the building survey.

Each fluorescent light fixture also contains light ballasts (total of six) which have the potential to contain PCBs. AMEC was unable to access the ceiling-mounted fixtures to inspect them to determine if they were labeled to their PCB-content. However, due to the age of the fluorescent light fixtures, it is assumed that the ballasts contain PCBs. One pad-mounted electrical transformer is located approximately 100 feet west-southwest of the powerhouse. Utility flagging and surface markings were noted between the transformer and a nearby power pole (located approximately 25 feet northwest of the transformer) suggesting that the transformer is associated with the overhead power lines which run east-west over the dam’s embankment. Based on this information and the distance of the transformer to the powerhouse, the transformer does not appear to be associated with the former generation of electricity at Sabin Dam.

AMEC collected one sample of caulk from an exterior window pane located on the west side of the powerhouse to determine whether the caulk contains PCBs. The sample collected is representative of the caulk used on the exterior and interior portions of each window and elsewhere in the powerhouse. The sample was submitted to Brighton Analytical, Inc. of Brighton, Michigan for the presence of PCBs using EPA Method 8081. The analytical laboratory results did not identify the presence of PCBs at concentrations above their respective laboratory detection limits. A copy of the analytical laboratory report and chain-of-custody form is provided as Attachment C.

The only materials observed being stored inside the powerhouse was a bag of salt and a bag of quick setting hydraulic cement (water plug).

CONCLUSIONS

AMEC conducted a NESHAP asbestos survey, lead-based paint evaluation and hazardous materials inventory of the Site on October 31, November 1 and November 8, 2011. Laboratory PLM test results did not detect the presence of asbestos fibers in the samples submitted for analysis at a concentration greater than 1%; therefore, all suspect materials sampled are non-detect for asbestos. It is important to note that although no asbestos was identified in the samples collected, a Notification of Intent to Renovate/Demolish form must be submitted to the Michigan Department of Environmental Quality (MDEQ) Air Quality Division and the Michigan Department of Labor and Economic Growth – Asbestos Program at least 10 working days prior to demolition activities.

The lead-based paint evaluation identified the eight interior columnar strips (covered with dark gray paint) located on the north and south walls of the building as being covered with lead-based paint. No other surface coverings containing lead-based paint were identified on the interior or exterior of the powerhouse. Based on the presence of lead-based paint, contractors performing work that could impact (i.e., sand, abrade, chip, etc.) these surface coatings during building demolition activities must take appropriate precautions to comply with the federal lead construction standard (29 CFR 1926.62) which have been adopted by Michigan and referenced as Rule 325.51992 of the Michigan Administrative Code, Part 603 Lead Exposure in Construction Standards (MIOSHA-STD-1403 dated August 2005).

The hazardous and non-hazardous materials (i.e., mercury-containing lamps, fluorescent bulbs and thermostat) observed at the Site should be removed, permitted and disposed by a licensed industrial/hazardous waste transporter and/or recycled and/or disposed in accordance with all federal,
state and local regulations. In addition, the fluorescent light ballasts should be visually inspected for labels/markings indicating their PCB-content and disposed accordingly in accordance with all federal, state and local regulations.

CLOSING

The hazardous materials building survey was limited to accessible materials observed during the building survey. If during demolition previously unidentified ACM, lead-based paint or other hazardous and non-hazardous materials are observed, additional investigation (sampling and analysis), notifications and removal may become necessary.

AMEC appreciates the opportunity to provide these environmental services to the IT. If you have any questions, please do not hesitate to contact Sandra Sroonian at (231) 922-9050.

Sincerely,

AMEC Environment & Infrastructure, Inc.

[Signatures]

R. Scott Rought, CHMM
Senior Scientist

Sandra Sroonian
Senior Principal Engineer

Attachments:
Table 1 – Sabin Dam Powerhouse Asbestos Sample Results
Table 2 – Sabin Dam Powerhouse Paint Sample Results
Table 3 – Sabin Dam Powerhouse Hazardous and Non-Hazardous Survey Results
Attachment A – Asbestos Analytical Laboratory Report and Chain-of-Custody Form
Attachment B – Lead-Based Paint Analytical Laboratory Report and Chain-of-Custody Form
Attachment C – PCB Analytical Laboratory Report and Chain-of-Custody Form
### Table 1
Sabin Dam Asbestos Sample Results
AMEC Project Number: 3310110028

<table>
<thead>
<tr>
<th>Sample Number</th>
<th>Location/Description</th>
<th>Asbestos Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>S-1</td>
<td>Interior of powerhouse; gray/white caulk on windows; sample collected from windows on north side of building (third set of windows from west end of building, center window on lower set of window panes).</td>
<td>None Detected</td>
</tr>
<tr>
<td>S-2</td>
<td>Interior of powerhouse; white powder residue beneath paint; sample collected from north wall above east (secondary) room.</td>
<td>None Detected</td>
</tr>
<tr>
<td>S-3</td>
<td>Exterior of powerhouse; brick mortar (“older” in appearance); sample collected from southeast corner of building approximately four feet above ground.</td>
<td>None Detected</td>
</tr>
<tr>
<td>S-4</td>
<td>Exterior of powerhouse; brick mortar (“newer” in appearance); sample collected from southwest corner of building approximately four feet above ground.</td>
<td>None Detected</td>
</tr>
</tbody>
</table>

**Note:** Samples collected on October 31 and November 1, 2011.
# Table 2
## Sabin Dam Powerhouse Paint Sample Results
### AMEC Project Number: 3310110028

<table>
<thead>
<tr>
<th>Sample Number</th>
<th>Location/Description</th>
<th>Lead Result (% weight)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LS-1</td>
<td>Interior of powerhouse on north wall, sample collected beneath center window/white paint.</td>
<td>0.15</td>
</tr>
<tr>
<td>LS-2</td>
<td>Interior of powerhouse on east wall, sample collected near northwest corner of room adjacent to brick wall/white paint.</td>
<td>0.34</td>
</tr>
<tr>
<td>LS-3</td>
<td>Interior of powerhouse on south wall, sample collected beneath fourth window from west end of building/white paint.</td>
<td>&lt;0.010</td>
</tr>
<tr>
<td>LS-4</td>
<td>Interior of powerhouse on west wall, sample collected south of door (above door)/white paint.</td>
<td>&lt;0.010</td>
</tr>
<tr>
<td>LS-5</td>
<td>Interior of powerhouse on floor, sample collected from southeast quadrant of floor/dark gray paint.</td>
<td>&lt;0.010</td>
</tr>
<tr>
<td>LS-6</td>
<td>Interior of powerhouse from floor, sample collected from northeast quadrant of floor/light gray paint.</td>
<td>&lt;0.010</td>
</tr>
<tr>
<td>LS-7</td>
<td>Interior of powerhouse on south wall (vertical beam embedded in concrete wall)/dark gray paint.</td>
<td>0.78</td>
</tr>
<tr>
<td>LS-8</td>
<td>Interior of powerhouse on south wall pipe run, sample collected near center of south wall/white paint.</td>
<td>&lt;0.010</td>
</tr>
<tr>
<td>LS-9</td>
<td>Exterior of powerhouse from main door, sample collected from west side of door/multiple layers of paint.</td>
<td>0.4</td>
</tr>
<tr>
<td>LS-10</td>
<td>Interior of powerhouse from main door, sample collected from west side of door/multiple layers of paint.</td>
<td>0.050</td>
</tr>
<tr>
<td>LS-11</td>
<td>Exterior of powerhouse from west side of building south of door, paint stripe over brick/white paint.</td>
<td>&lt;0.010</td>
</tr>
<tr>
<td>LS-12</td>
<td>Exterior of powerhouse, raling near northwest corner of powerhouse overlooking river, sample collected from east end of top rail/gray paint over red paint.</td>
<td>&lt;0.010</td>
</tr>
<tr>
<td>LS-13</td>
<td>Interior of powerhouse, railing on east end of powerhouse, sample collected from northeast corner of top rail/gray paint.</td>
<td>&lt;0.010</td>
</tr>
</tbody>
</table>

**Notes:**
Shading indicates result exceeds the Department of Housing and Urban Development Guidelines for the evaluation and Control of Lead-Based Paint Hazards in Housing and the United States Environmental Protection Act definition of lead-based paint (0.5% by weight).

Samples collected on October 31 and November 1, 2011.
### Table 3
Sabin Dam Powerhouse Hazardous and Non-Hazardous Survey Results
AMEC Project Number: 3310110028

<table>
<thead>
<tr>
<th>Hazard Category</th>
<th>Material</th>
<th>Location/Description</th>
<th>Approximate Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other Hazardous Materials</td>
<td>Lead-based paint</td>
<td>Powerhouse interior/dark gray paint/painted vertical stripe (beam) on wall.</td>
<td>Unknown quantity</td>
</tr>
<tr>
<td></td>
<td>Water plug</td>
<td>Powerhouse interior/quick setting hydraulic cement.</td>
<td>One, 50-pound bag</td>
</tr>
<tr>
<td></td>
<td>Salt</td>
<td>Powerhouse interior.</td>
<td>One, 20-pound bag (half full)</td>
</tr>
<tr>
<td>PCB Sources</td>
<td>Fluorescent light ballasts</td>
<td>Powerhouse interior/ceiling (six light fixtures).</td>
<td>Six ballasts (one ballast per fixture)</td>
</tr>
<tr>
<td>Mercury Sources</td>
<td>Fluorescent tubes (lamps)</td>
<td>Powerhouse interior/ceiling (total of six fixtures).</td>
<td>12 lamps (two lamps per fixture)</td>
</tr>
<tr>
<td></td>
<td>Thermostat</td>
<td>Powerhouse interior.</td>
<td>One wall thermostat/rheostat</td>
</tr>
<tr>
<td></td>
<td>Mercury lamps</td>
<td>Powerhouse exterior/north, south and west sides of the building.</td>
<td>Three lamps</td>
</tr>
<tr>
<td></td>
<td>Emergency alarm lamp</td>
<td>Powerhouse exterior/emergency alarm light located on east side of building.</td>
<td>One lamp</td>
</tr>
</tbody>
</table>

**Notes:**
PCB = polychlorinated biphenyl

Building survey performed on October 31, November 1 and November 8, 2011.
### PLM REPORT SUMMARY

**AMEC E&I, Inc.**  
396 Plasters Ave. NE  
Atlanta, GA 30324  
(404) 873-4761  

**NVLAP Lab Code 101066-0**  
**TDH License No. 30-0306**  

<table>
<thead>
<tr>
<th>Client</th>
<th>Amec - Traverse City, MI</th>
<th>AMEC Job No.</th>
<th>3310-10-0028.009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project</td>
<td>Sabin Dam</td>
<td>Report Date</td>
<td>11/8/2011</td>
</tr>
<tr>
<td>Client Project No.</td>
<td>N/A</td>
<td>Sample Date</td>
<td>10/31/11</td>
</tr>
</tbody>
</table>
| Identification | Asbestos, Bulk Sample Analysis | Test Method | Polarized Light Microscopy / Dispersion Staining (PLM/DS)  
EPA Method 600/R-93/116 |

On 11/7/2011, four (4) bulk material samples were submitted by Scott Rough for asbestos analysis by PLM/DS.

<table>
<thead>
<tr>
<th>Lab Sample No.</th>
<th>Sample Description / Location</th>
<th>Asbestos Content</th>
</tr>
</thead>
</table>
| 224431 | Window Caulk  
COC# 10256  
S-1 | None Detected-Caulking |
| 224432 | Powder  
COC# 10256  
S-2 | None Detected-Powder |
| 224433 | Brick Mortar "Old"  
COC# 10256  
S-3 | None Detected-Mortar |
| 224434 | Brick Mortar "New"  
COC# 10256  
S-4 | None Detected-Mortar |

These samples were analyzed by layers. The first percentage is the overall asbestos content for the sample. Specific layer or component asbestos content is indicated when relevant. The EPA considers a material to be asbestos containing only if it contains more than one percent asbestos by Calibrated Visual Area Estimation (CVAB). EPA regulations also state that Regulated Asbestos Containing Materials (RACM) — materials which are friable or may become friable — be further analyzed by point counting when the results indicate less than ten percent asbestos by CVAB. Our laboratory utilizes CVAB on a routine basis and does not include point counting unless specifically requested. These reports may not be reproduced except in full. Any unauthorized use or distribution of these reports shall be at the client’s and recipient’s sole risk and without liability to AMEC E&I, Inc.
PLM REPORT SUMMARY

AMEC E&I, Inc.
396 Plasters Ave. NE
Atlanta, GA 30324  (404) 873-4761

AMEC Job No. : 3310-10-0028.0009
Report Date : 11/8/2011
Sample Date : 10/31/11

Client : Amec - Traverse City, MI
Project : Sabin Dam
Client Project No.: N/A
Identification : Asbestos, Bulk Sample Analysis
Test Method : Polarized Light Microscopy/ Dispersion Staining (PLM/DS)
EPA Method 600/R-93/116

STATEMENT OF LABORATORY ACCREDITATION

These samples were analyzed at the Atlanta Branch of AMEC E&I, Inc. in the Asbestos Laboratory at 396 Plasters Ave. NE, Atlanta, GA, 30324. The laboratory holds accreditation from the National Institute of Standards and Technology (formerly National Bureau of Standards) under the National Voluntary Laboratory Accreditation Program (NVLAP). This laboratory also is licensed and authorized to perform as an Asbestos Laboratory in the State of Texas within the purview of Texas Civil Statutes, Article 4477-3a, as amended, so long as this license is not suspended or revoked and is renewed according to the rules adopted by the Texas Board of Health.

The samples were analyzed by polarized light microscopy in general accordance with the procedures described in the Method for the Determination of Asbestos in Bulk Building Materials, EPA/600/R-93/116. The results of each bulk sample analysis relate only to the material tested. This report shall not be used to claim product endorsement by NVLAP or any agency of the U.S. Government.

Specific questions concerning bulk sample results shall be directed to the PLM Laboratory Manager.

Analyst : Chris DuBour

PLM Laboratory Manager : Christopher DuBour

Approved Signatory :  

NVLAP
LAB CODE 101066-0
<table>
<thead>
<tr>
<th>Sample Identification</th>
<th>Collection</th>
<th>Sample Container</th>
<th>Sample Matrix</th>
<th>Preservative</th>
<th>Field Filtered?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>51</td>
<td>WINNOW</td>
<td>BDOC</td>
<td>UNWEEDED CREEK</td>
<td></td>
<td>×</td>
<td></td>
</tr>
<tr>
<td>52</td>
<td>FEUER</td>
<td>BDOC</td>
<td>POWDER</td>
<td></td>
<td>×</td>
<td></td>
</tr>
<tr>
<td>53</td>
<td>BLACK HUMAN</td>
<td>BDOC</td>
<td></td>
<td></td>
<td></td>
<td>POWDER ON WALL</td>
</tr>
<tr>
<td>54</td>
<td>BLUE HUMAN</td>
<td>BDOC</td>
<td></td>
<td></td>
<td></td>
<td>ELEMENTS</td>
</tr>
</tbody>
</table>

If questions, please call 23-409-4588 cell phone.

STANDARD TAT.
ATTACHMENT B

LEAD-BASED PAINT ANALYTICAL LABORATORY REPORT AND CHAIN-OF-CUSTODY FORM
Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B*/7000B)

<table>
<thead>
<tr>
<th>Lab ID</th>
<th>Analyzed</th>
<th>RDL</th>
<th>Lead Concentration</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>0001</td>
<td>11/17/2011</td>
<td>0.010 % wt</td>
<td>0.15 % wt</td>
<td></td>
</tr>
<tr>
<td>0002</td>
<td>11/17/2011</td>
<td>0.010 % wt</td>
<td>0.34 % wt</td>
<td></td>
</tr>
<tr>
<td>0003</td>
<td>11/17/2011</td>
<td>0.010 % wt</td>
<td>&lt;0.010 % wt</td>
<td></td>
</tr>
<tr>
<td>0004</td>
<td>11/17/2011</td>
<td>0.010 % wt</td>
<td>&lt;0.010 % wt</td>
<td></td>
</tr>
<tr>
<td>0005</td>
<td>11/17/2011</td>
<td>0.010 % wt</td>
<td>&lt;0.010 % wt</td>
<td></td>
</tr>
<tr>
<td>0006</td>
<td>11/17/2011</td>
<td>0.010 % wt</td>
<td>&lt;0.010 % wt</td>
<td></td>
</tr>
<tr>
<td>0007</td>
<td>11/17/2011</td>
<td>0.010 % wt</td>
<td>0.78 % wt</td>
<td></td>
</tr>
<tr>
<td>0008</td>
<td>11/17/2011</td>
<td>0.010 % wt</td>
<td>&lt;0.010 % wt</td>
<td></td>
</tr>
<tr>
<td>0009</td>
<td>11/17/2011</td>
<td>0.010 % wt</td>
<td>0.40 % wt</td>
<td></td>
</tr>
<tr>
<td>0010</td>
<td>11/17/2011</td>
<td>0.010 % wt</td>
<td>0.050 % wt</td>
<td></td>
</tr>
<tr>
<td>0011</td>
<td>11/17/2011</td>
<td>0.010 % wt</td>
<td>&lt;0.010 % wt</td>
<td></td>
</tr>
</tbody>
</table>

Initial report from 11/18/2011 07:50:22

Doug Wiegand, Laboratory Manager
or other approved signatory

Reporting limit is 0.01 % wt. The QC data associated with these sample results included in this report meet the method quality control requirements, unless specifically indicated otherwise. Unless noted, results in this report are not blank corrected. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities.

* slight modifications to methods applied Samples received in good condition unless otherwise noted. Quality Control Data associated with this sample set is within acceptable limits, unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Indianapolis, IN AIHA/LAP, LLC--ELLAP 157245, OH E10040
# Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B*/7000B)

<table>
<thead>
<tr>
<th>Lab ID</th>
<th>Analyzed</th>
<th>RDL</th>
<th>Lead Concentration</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>0012</td>
<td>11/17/2011</td>
<td>0.010 % wt</td>
<td>&lt;0.010 % wt</td>
<td>Collected:</td>
</tr>
<tr>
<td>Client Sample LS-12</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0013</td>
<td>11/17/2011</td>
<td>0.010 % wt</td>
<td>&lt;0.010 % wt</td>
<td>Collected:</td>
</tr>
<tr>
<td>Client Sample LS-13</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Initial report from 11/18/2011 07:50:22

Doug Wiegand, Laboratory Manager
or other approved signatory

Reporting limit is 0.01 % wt. The QC data associated with these sample results included in this report meet the method quality control requirements, unless specifically indicated otherwise. Unless noted, results in this report are not blank corrected. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities.

* Slight modifications to methods applied. Samples received in good condition unless otherwise noted. Quality Control Data associated with this sample set is within acceptable limits, unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Indianapolis, IN AHA-LAP, LLC--ELLAP 157245, OH E10040
**Chain of Custody**

**EMSL Order Number (Lab Use Only):**

**EMSL-Bill to:**

**Bill to Same □ Different □**

If Bill to is different, please include Instructions in Comments*

**Third Party Billing requires written authorization from third party**

**Company:** AEC E&I

**Street:** 41 Hughes Rd

**City:** Timesvile

**Zip/Postal Code:** 49666

**State:** IN

**Country:** USA

**Report To (Name):** Scott Rought

**Fax #:** 331-922-9055

**Telephone #:** 331-922-9055

**Email Address:** NSKboughte@macotec.com

**Project Name/Number:** EMAN DAM - 380810028 - 35492

**Please Provide Results:** □ Fax □ Email □ Purchase Order: U.S. State Samples Taken: NSK

**Turnaround Time (TAT) Options**

- 3 Hour
- 6 Hour
- 24 Hour
- 48 Hour
- 72 Hour
- 96 Hour
- 1 Week
- 2 Week

*For RUSH TAT's, please call ahead to confirm Lab Hours and Availability. Not all TAT options are valid for every test. Materials Science and IAQ TATs are in Business Days rather than hours (i.e., 24 Hour = End of Next Business Day)

**Asbestos**

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NIOSH 7400</td>
<td>Bulk</td>
</tr>
<tr>
<td>w/ 8hr TWA</td>
<td></td>
</tr>
<tr>
<td>AHERA 40 CFR, Part 763</td>
<td></td>
</tr>
<tr>
<td>EPA Level II</td>
<td></td>
</tr>
<tr>
<td>ISO 10312</td>
<td></td>
</tr>
</tbody>
</table>

**PLM - Air**

- PLM EPA 800-R/93-116
- NYS 198.1 (Frigida-NT)
- NYS 188.6 (non-Frigida-NT)

**PLM - Bulk**

- PLM EPA 800/R/93-116
- NYS 198.1 (Frigida-NT)
- NYS 188.6 (non-Frigida-NT)
- Point Count 400 (<0.25%) 1000 (<0.1%)
- Point Count w/ gravimetric 400 (<0.25%) 1000 (<0.1%)

**TEM - Air**

- 4-4.5 hr TAT (AHERA ONLY)
- AHERA 40 CFR Part 763

**TEM - Water**

- Microvac - ASTM D 5756
- Wipe - ASTM D 6480

**Lead (Pb)**

- Chips SW846-7000B or AOAC 574.02
- Soil SW846-7000B/7420
- Air NIOSH 7002

**ICP**

- Air NIOSH 7300 Modified
- Non ASTM Wipe SW846-6010B or C
- ASTM Wipe SW846-6010B or C
- Soil SW846-6010 B or C
- Waste Water SW846-6010B or C

**Graphite Furnace Atomic Absorption**

- Soil SW846-7421 - Wastewater EPA 200.9
- Air NIOSH 7105 - Drinking Water EPA 200.9

**Microbiology**

- Wipe and Bulk Samples
  - Mold & Fungi - Direct Examination
  - Mold & Fungi Culture (Genus Only)
  - Mold & Fungi Culture (Genus & Species)
  - Bacterial Count & ID (Up to Three Types)
  - Bacterial Count & ID (Up to Five Types)
  - MRSA
  - Pseudomonas aeruginosa

- Water Samples
  - Total Coliform & E. coli (P/A)
  - Fecal Coliform (SM 9222D)
  - Sewage Screen
  - Heterotrophic Plate Count (SM 9215)

**Air Samples**

- Mold & Fungi (Spore Trap)
- Mold & Fungi Culture (Genus Only)
- Mold & Fungi Culture (Genus & Species)
- Bacterial Culture & ID (Up to Three Types)
- Bacterial Culture & ID (Up to Five Types)
- Endotoxin Testing

**Real Time Q-PCR**

- L. Leptotena
  - Level 1
  - Level 2
  - Level 3

**Materials Science**

- Common Particle ID (Large particles)
- Full Particle ID (Environmental dust)
- Basic Material ID (Solids)
- Advanced Material ID
- Physical Testing (Tensile, Compression)
- Combustion-by-products (Soil, char, etc.)
- X-ray Fluorescence (elemental analysis)
- X-ray Diffraction (Crystalline Particles)
- MMVF's (Fibrous glass, RCF's)
- Particle Size (Laser/Scanning electron microscopy)
- Combustible Dust
- Petrographic Examination

**IAQ**

- Nuisance Dust NIOSH 0500 0600
- Airborne Dust PM10 TSP
- Silica Analysis: All Species
- Silica Analysis - Single Species
- Alpha Quartz Crystoballite Tridymite
- HVAC Efficiency
- Carbon Black
- Airborne Oil Mist
- Radon Testing: Call for Kit and COC

**IAQ**

- **Comments/Special Instructions:** 1 week TAT - 331-922-9588 (Ken Phillips)

**Analysis Completed in Accordance with EMSL's Terms and Conditions located in the Analytical Price Guide**

**Controlled Document - One Chain**

**Certi
date:** 2/1/2013

**Client Sample #:** 12 - 13.1

**Total # of Samples:** 13

**Received (Lab):** 2/23/11

**Time:** 9:46 AM 801

**Relinquished (Client):** 2/24/11

**Time:** 10:46 AM 801
<table>
<thead>
<tr>
<th>Sample #</th>
<th>Sample Description</th>
<th>Volume/Area (Air)</th>
<th>Date/Time Sampled</th>
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</thead>
<tbody>
<tr>
<td>LS-1</td>
<td>Interior - North Wall Breast Window - White</td>
<td>HA # (Bulk)</td>
<td></td>
</tr>
<tr>
<td>LS-2</td>
<td>Interior - East Wall NR NW Corner - White</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LS-3</td>
<td>Interior - South Wall West End White</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LS-4</td>
<td>Interior - West Wall South of Door - White</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LS-5</td>
<td>Interior - Floor SE Quadrant - Dr. Gray</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LS-6</td>
<td>Interior - Floor NE Quadrant - Lt. Gray</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LS-7</td>
<td>Interior - S. Wall Dr. Gray Beam</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LS-8</td>
<td>Interior - S. Wall Pipe - White</td>
<td></td>
<td></td>
</tr>
<tr>
<td>US-9</td>
<td>Exterior - West Side Main Door - Colors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LS-10</td>
<td>Interior - West Side Main Door - Dr.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LS-11</td>
<td>Exterior - South Of Door - White 2nd Floor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LS-12</td>
<td>Exterior - NW Corner - R生气 Gray</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LS-13</td>
<td>Interior - East Side - R生气 Gray</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Comments/Special Instructions:
One week TAT. - Call me @ 231-409-4886. (Cell) DF Questions.

Analysis Completed in Accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.
ATTACHMENT C

PCB ANALYTICAL LABORATORY REPORT AND CHAIN-OF-CUSTODY FORM
December 09, 2011

AMEC Environment & Infrastructure
41 Hughes Drive
Traverse City, MI 49686

Subject: Sabin Dam
3310110028-009

Dear Mr. Rought:

Thank you for making Brighton Analytical, L.L.C. your laboratory of choice. Enclosed are the results for the samples submitted on 12/08/2011 for the above mentioned project. Duplicate copies can be supplied at your request for a fee of $20.00 per copy.

The invoice for this project will be mailed with copy of report. If you have any questions concerning the invoice or the data, please don’t hesitate to contact our office. Please reference Brighton Analytical, L.L.C. project ID 17427 when calling with any questions regarding this project.

Sincerely,
Brighton Analytical, L.L.C.
To: AMEC Environment & Infrastructure  
41 Hughes Drive  
Traverse City, MI  49686

Sample Date: 12/7/2011  
Submit Date: 12/8/2011  
Report Date: 12/9/2011

BA Report Number: 17427  
BA Sample ID: BW01681

Project Name: Sabin Dam  
Project Number: 3310110028-009  
Sample ID: S-1 Caulk

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Results</th>
<th>Units</th>
<th>DL</th>
<th>Method Reference</th>
<th>Analyst</th>
<th>Analysis Date</th>
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<tbody>
<tr>
<td>ARO 1016</td>
<td>Not detected</td>
<td>ug/Kg</td>
<td>330</td>
<td>SW846 8082</td>
<td>BY</td>
<td>12/8/2011</td>
</tr>
<tr>
<td>ARO 1221</td>
<td>Not detected</td>
<td>ug/Kg</td>
<td>330</td>
<td>SW846 8082</td>
<td>BY</td>
<td>12/8/2011</td>
</tr>
<tr>
<td>ARO 1232</td>
<td>Not detected</td>
<td>ug/Kg</td>
<td>330</td>
<td>SW846 8082</td>
<td>BY</td>
<td>12/8/2011</td>
</tr>
<tr>
<td>ARO 1242</td>
<td>Not detected</td>
<td>ug/Kg</td>
<td>330</td>
<td>SW846 8082</td>
<td>BY</td>
<td>12/8/2011</td>
</tr>
<tr>
<td>ARO 1248</td>
<td>Not detected</td>
<td>ug/Kg</td>
<td>330</td>
<td>SW846 8082</td>
<td>BY</td>
<td>12/8/2011</td>
</tr>
<tr>
<td>ARO 1254</td>
<td>Not detected</td>
<td>ug/Kg</td>
<td>330</td>
<td>SW846 8082</td>
<td>BY</td>
<td>12/8/2011</td>
</tr>
<tr>
<td>ARO 1260</td>
<td>Not detected</td>
<td>ug/Kg</td>
<td>330</td>
<td>SW846 8082</td>
<td>BY</td>
<td>12/8/2011</td>
</tr>
<tr>
<td>ARO 1262</td>
<td>Not detected</td>
<td>ug/Kg</td>
<td>330</td>
<td>SW846 8082</td>
<td>BY</td>
<td>12/8/2011</td>
</tr>
<tr>
<td>ARO 1268</td>
<td>Not detected</td>
<td>ug/Kg</td>
<td>330</td>
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<tr>
<td>Total PCB</td>
<td>Not detected</td>
<td>ug/Kg</td>
<td>330</td>
<td>SW846 8082</td>
<td>BY</td>
<td>12/8/2011</td>
</tr>
<tr>
<td>PCB soil extraction</td>
<td>Extracted</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>%Solid</td>
<td>100</td>
<td>%</td>
<td></td>
<td>ASTM D2216</td>
<td>MB</td>
<td>12/8/2011</td>
</tr>
</tbody>
</table>

All soil results based on dry weight.

DL=Reported detection limit for analytical method requested. Some compounds require special analytical methods to achieve MDNR designated target detection limits (TDL).

Released by: 
Date: 12/8/2011
BRIGHTON ANALYTICAL, LLC

QUALITY ASSURANCE/QUALITY CONTROL
## REPRESENTATIVE BATCH QUALITY CONTROL

### Accuracy & Precision

<table>
<thead>
<tr>
<th>Analyst:</th>
<th>BY</th>
<th>Parameter:</th>
<th>PCB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analysis Date:</td>
<td>12/8/11</td>
<td>Method Reference:</td>
<td>EPA 608</td>
</tr>
<tr>
<td>Matrix:</td>
<td>Soil</td>
<td>Batch:</td>
<td>12/08/11MB</td>
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</tbody>
</table>

### SPIKE - ACCURACY

<table>
<thead>
<tr>
<th>Laboratory ID</th>
<th>Spike Conc. (µg/mL)</th>
<th>Background (µg/mL)</th>
<th>% Recovery</th>
<th>Acceptable Range (%)</th>
<th>Method Blank Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>LCS's</td>
<td>DCB (Surrogate)</td>
<td>0.5</td>
<td>ND</td>
<td>83 / 99</td>
<td>60 - 130</td>
</tr>
<tr>
<td></td>
<td>Arochlor 1260</td>
<td>1.0</td>
<td>ND</td>
<td>87 / 93</td>
<td>60 - 130</td>
</tr>
</tbody>
</table>

### SPIKE - PRECISION

<table>
<thead>
<tr>
<th>Laboratory ID</th>
<th>Observed A (µg/mL)</th>
<th>Observed B (µg/mL)</th>
<th>RPD</th>
<th>Acceptable Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>LCS's</td>
<td>DCB (Surrogate)</td>
<td>0.42</td>
<td>0.50</td>
<td>17.7</td>
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<tr>
<td></td>
<td>Arochlor 1260</td>
<td>0.87</td>
<td>0.93</td>
<td>6.2</td>
</tr>
</tbody>
</table>

### MISCELLANEOUS

<table>
<thead>
<tr>
<th>Standard ID #</th>
</tr>
</thead>
<tbody>
<tr>
<td>DCB (Surrogate)</td>
</tr>
<tr>
<td>Arochlor 1260</td>
</tr>
</tbody>
</table>

### COMMENTS: LCS's due to sample matrix
<table>
<thead>
<tr>
<th>Sample Identification</th>
<th>Collection Time</th>
<th>Sample Container Size</th>
<th>Sample Matrix</th>
<th>Preservative</th>
<th>Field Filtered?</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1 CAULK</td>
<td>12-7-11</td>
<td>40 ml, Glass</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Analysis / Method:**

- 1 Day TAT
- RUSH

**Comments:**

- PO is in process - will run with PO number for proper billing.
- Standard TAT - 2 days
- Call Scott Raught with questions
  - 231-922-9056 Ext 212
  - 231-409-4588 (Cell)

**Sample Results:**

- Yes
- No

**Fax Results:**

- Yes
- No

**Email Results:**

- Yes
- No

**Sample Matrix:**

- Water
- Soil
- Plant

**Project Name:**

- Saben Dam

**Project Number:**

- 3316110028-009

**Sampler's Signature:**

- [Signature]

**Lab:**

- Environmental Analysis

**Send Results To:**

- Scott Raught

**Received by:**

- [Signature]

**Relinquished by:**

- [Signature]

**Cooler Temp:**

- Date:
- Time:

**POI:**

- [POI #]

**COC #:**

- 10297

**Tracking #:**

- [Tracking #]

**Date:**

- 12-8-11

**Time:**

- 11:30 AM

**Company:**

- MACTEC Engineering and Consulting, Inc.
  - 41 Hughes Dr., Traverse City, MI 49686