



## Testing Engineers & Consultants, Inc.

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TEC Report Number: 55390-02  
Date Issued: March 20, 2015

Mr. Ben Smith  
Lincoln Hancock Restoration, LLC  
471 Third Street  
Excelsior, MN, 55331

Re: Lead-Containing Paint Survey Report. Project: Building D of Kingstowne Manor located at 2540 Kingstowne Drive, Commerce Township, MI 48390.

Dear Mr. Smith:

Enclosed please find our report of a lead-containing paint survey at the above referenced location. We hope that you find this report complete and self-explanatory.

We are pleased to provide this service. Should you have any questions regarding this report or require additional information, please contact this office at your convenience.

Respectfully Yours,  
**TESTING ENGINEERS & CONSULTANTS, INC.**

A handwritten signature in blue ink that reads "Scott M. Chandler".

Scott M. Chandler, CIH, LEED AP  
Manager  
Industrial Hygiene Services

A handwritten signature in blue ink that reads "Anthony R. Smykla".

Anthony Smykla  
Lead Inspector/Risk Assessor  
Certification Number: P-06221

SMC/ars  
Enclosure

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All services undertaken are subject to the following policy. Reports are submitted for exclusive use of the clients to whom they are addressed. Their significance is subject to the adequacy and representative character of the samples and the comprehensiveness of the tests, examinations and surveys made. No quotation from reports or use of TEC's name is permitted except as expressly authorized by TEC in writing.

CONSULTING ENGINEERS & FULL-SERVICE PROFESSIONAL TESTING AND INSPECTION  
OFFICES IN ANN ARBOR, DETROIT, AND TROY  
FOUNDED IN 1966

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## **Testing Engineers & Consultants, Inc.**

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### **EXECUTIVE SUMMARY**

Testing Engineers & Consultants, Inc. (TEC) was retained by Lincoln Hancock Restoration, LLC to conduct a lead-containing paint survey of Building D at Kingstowne Manor located at 2540 Kingstowne Drive, Commerce Township, MI, 48390. Painted surfaces may be disturbed during upcoming renovation or demolition activities, as communicated to TEC by Lincoln Hancock Restoration, LLC. The scope of work involves activities that may disturb floor, wall, ceiling, and exterior surfaces at Building D.

Painted surfaces were analyzed for lead content using an X-ray fluorescence (XRF) analyzer. XRF survey results are found in Appendix B. Paint films with XRF results less than detection limit were further evaluated for lead content by laboratory analysis of representative samples. Paint chip test results are found in Appendix C.

Lead-based paint ( $\geq 1.0 \text{ mg/cm}^2$  or 0.5% lead by weight) was identified in the survey area. Lead-containing paint (greater than instrument detection limit but less than  $1.0 \text{ mg/cm}^2$ ) was identified in the survey area. The paint condition throughout the survey area was intact to deteriorated (non-intact).

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### **Introduction**

On March 11, 2015, Anthony Smykla, a State of Michigan Licensed Lead Inspector/ Risk Assessor (P06221) conducted a lead-containing paint survey of Building D at Kingstowne Manor located at 2540 Kingstowne Drive, Commerce Township, MI, 48390. The work scope involved collecting lead content data for all paint/component/substrate combinations that were encountered throughout the survey area.

This report establishes lead concentrations in painted surfaces as a general guidance tool for the purpose of conducting safe maintenance, renovation, or demolition activities in the building.

This report was prepared for the express use and benefit of Lincoln Hancock Restoration, LLC, its agents and employees. The information in this report or portions thereof may be required to be included in notifications to the residents, employees, contractors, or other visitors to the building. This report is not intended to be used by the owner or its agents as a specification or work plan for any of the work suggested or recommended herein.

The survey did not include areas behind walls and/or columns, beneath flooring, under carpeting, above solid ceilings, underground or in any other inaccessible areas. Please note that due to the deteriorated condition of certain condo units, many areas were inaccessible to the surveyor.

### **Survey Methodology**

TEC performed the lead-containing paint survey of accessible surfaces within the survey area. The survey involved collecting lead content data for painted surfaces of building components of varying color and substrate composition.

The lead content of painted surfaces was determined using a Niton XLp300A x-ray fluorescence (XRF) analyzer. XRF instruments irradiate the paint on a given surface causing the lead in the paint, if present, to emit a characteristic frequency of x-ray radiation. The analyzer identifies and counts these x-rays to instantaneously determine the concentration in the paint film. The intensity of this radiation is measured by the detector and is proportional to the amount of lead in the paint. The results are reported in milligrams of lead per square centimeter of surface area ( $\text{mg}/\text{cm}^2$ ).

The instrument is a direct-read device, does not require substrate correction and does not report inconclusive results. The limit of detection is approximately  $0.1 \text{ mg}/\text{cm}^2$ .

For surfaces with multiple layers of paint, the instrument provides the operator with additional information regarding their relative ages. These are reported separately as “K-

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shell” (high energy) and “L-shell” (low energy) lead concentrations. The “K-shell” reading reflects the amount of lead present in the older layers of paint, and the “L-shell” reading reflects the amount of lead present in the surface layers of the paint.

Quality control for the analyzer involves on-site calibration. For each project, the analyzer is calibrated at the beginning and the end of the survey. In the event that a battery change is required during the survey, an additional calibration is taken before the battery is replaced. The lead analyzer calibration check readings were taken on a Standard Reference Material (SRM) paint film from the National Institute of Standards and Technology (NIST).

In order to obtain a reading, the face of the instrument is pressed flush against the surface to be tested. It is then held in place for the duration of the test. The test is complete when the measurement has reached an acceptable range of accuracy.

All calibration and test data are stored on board the instrument and later downloaded into a spreadsheet.

For paint films that were less than the XRF limit of detection ( $0.1 \text{ mg/cm}^2$ ), representative paint chip samples were collected. The samples were submitted to an AIHA-accredited laboratory for analysis by flame atomic absorption spectrophotometry (AAS). The results are summarized in Table Two (Appendix C). The laboratory report is found in Appendix D.

For this survey, TEC designated the South side of the building as side A, the West side as side B, North side as side C and the East side as side D.

## Survey Results

A layout of the survey area is found in Appendix A. The survey findings are summarized in Table One, Appendix B. The “LBP?” column in the table indicates whether the paint on the particular building component meets the regulatory definition of lead-based paint (i.e.,  $1.0 \text{ mg/cm}^2$ ). The actual value recorded for the paint is found in the next column (Lead;  $\text{mg/cm}^2$ ).

Lead error represents the amount of statistical uncertainty associated with the result calculated by the instrument’s software. This uncertainty is computed and reported as two standard deviations ( $2\sigma$ ) of the mean (average) value as determined by the instrument. Taking the sum of the reported lead value and the lead error ( $\pm 2\sigma$ ) yields the range of values for which there is a 95% probability that the true lead concentration will be found.

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Table Two (Appendix C) presents a summary version of the paint chip data provided by the laboratory. The table identifies sample locations, paint color, XRF index number and reported lead concentration in percent by weight. The index number allows for a cross reference of sample results obtained by XRF and by paint chip analysis.

### Discussion and Conclusions

Lead-based paint was identified on building components in the survey area. This is limited to painted exterior brick on the west and north exposures. Lead-containing paint was identified on one or more building components in the survey area. Activities involving the disturbance of painted building materials at this site may entail compliance with one or more of the following Standards, depending upon the scope and intent of work to be performed as well as the eventual occupant population.

The Construction Industry Standard for Lead (29 CFR 1926.62) applies to employers whose construction activities involve disturbance of lead-containing materials. It establishes a permissible exposure limit (PEL) of 50 micrograms per cubic meter of air ( $50 \text{ ug/m}^3$ ) averaged over an eight-hour period. An action level (AL) of  $30 \text{ ug/m}^3$  has also been established.

The quantity of lead found in the paint has no bearing on an employer's compliance requirement with the Standard. This is because the Standard requires compliance with an occupational exposure to *airborne* lead concentrations, regardless of the quantity of lead in the paint. Occupational overexposures may occur when using certain work practices on surfaces that contain lead in quantities less than  $1.0 \text{ mg/cm}^2$ .

Other requirements, such as preliminary exposure assessment, written compliance plan, worker training and medical evaluation are also included in the Standard. An employer may be exempt from many of the Standard's requirements if objective data is available demonstrating that employee exposures for a given activity will not exceed the action limit.

We note that demolished building components with lead-containing paint can be disposed at a facility licensed to accept construction debris.

The State of Michigan Lead Abatement Act and Lead Hazard Remediation Rules establish requirements for performing lead abatement activities. Work must be performed by certified lead abatement workers and certified lead abatement supervisors if the work is determined to constitute a lead abatement activity. Lead abatement is defined as "any measure or set of measures designed to permanently remove or cover lead-based paint or lead-based paint hazards. Abatement includes, but is not limited to: (1) The removal of paint and dust, the permanent enclosure or encapsulation of lead-based paint,

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the replacement of painted surfaces or fixtures, or the removal or permanent covering of soil, when lead-based paint hazards are present in such paint, dust or soil; and (2) all preparation, cleanup, disposal, and post-abatement clearance testing activities associated with such measures”.

Abatement does not include renovation, remodeling, landscaping or other activities, when such activities are not designed to permanently eliminate lead-based paint hazards, but are designed to repair, restore, or remodel a given structure or dwelling, even though these activities may incidentally result in a reduction or elimination of lead-based paint hazards. Furthermore, abatement does not include interim controls, operations and maintenance activities, or other measures and activities designed to temporarily, but not permanently, reduce lead-based paint hazards.

Firms performing work that disturbs lead-based paint in target housing or child-occupied facilities must be certified and use lead-safe work practices during renovations (EPA Renovation, Repair and Painting Rule). Target housing is defined as a home or residential unit built on or before December 31, 1977. A child occupied facility is a pre-1978 building that meets the following criteria:

- Visited regularly by the same child, 6 years of age or younger.
- The visits are on at least two different days within any week (Sunday through Saturday period), provided that each day’s visit lasts at least 3 hours.
- Combined weekly visits last at least 6 hours, and the combined annual visits last at least 60 hours.

Child occupied facilities may be located in a public or commercial building or in target housing. These facilities include schools, child care facilities and daycare centers.

## Appendix A

### Building Layout Depicting Survey Area



## Appendix B

### Lead-Containing Paint Survey Results (XRF)

Appendix C

Paint Chip Results Summary Table

**Table Two**  
**Summary of Paint Chip Laboratory Results**  
**Building D**  
**Kingstowne Manor**  
**2540 Kingstowne Drive; Commerce Township, MI 48390**

Sample Number	Sample Location/Room Designation	Corresponds to XRF Index Number	Paint Color	Result (% Pb by weight)
1	Stairwell Wall, B Side / 2639 Hall	77	Brown	<0.010%
2	Living Room Wall, A Side / 2637 Living Room	132	Tan	<0.010%
3	Stairwell Wall, B Side / 2627 Hall	236	Beige	<0.010%
4	Basement Wall / 2625	298	Beige	<0.010%

See Appendix A for Site Layout with Room Designations  
See Appendix B for XRF Survey Index Numbers  
See Appendix D for Paint Chip Samples Laboratory Report

## Appendix D

### Laboratory Report for Paint Chip Samples