ANALYSIS OF BROWNFIELDS CLEANUP ALTERNATIVES
1512 Washington Street
Manitowoc, Wisconsin

Prepared for:
City of Manitowoc
900 Quay Street
Manitowoc, Wisconsin 54220

October 7, 2016
Stantec Project No. 193702757

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1.0 EXECUTIVE SUMMARY

Stantec Consulting Services Inc. (Stantec) has completed this Analysis of Brownfields Cleanup Alternatives (ABCA) for the vacant former industrial Brownfield property located at 1512 Washington Street in Manitowoc, Wisconsin (herein referred to as the "Site" or "Property") utilizing the outline provided in ch. NR 722 Wisconsin Administrative Code (WAC) for a Remedial Action Options Report (RAOR). This ABCA was completed utilizing brownfields revolving loan fund (RLF) grant funding provided to the City of Manitowoc by the United States Environmental Protection Agency (USEPA).

The Property consists of approximately 3.72 acres of former industrial land occupied by multiple partially-demolished former-industrial buildings. The Property is zoned Heavy Industrial I-2. Surrounding properties are a mix of commercial, industrial, and residential land uses. The Property, along with local topography, is illustrated on Figure 1. A map illustrating the main features of the Property is provided as Figure 2.

To facilitate demolition, remediation, and redevelopment of this large brownfield, the Community Development Authority of the City of Manitowoc acquired the Site on June 29, 2016. Plans have been developed to abate the remaining asbestos, remove remaining hazardous materials, and raze the multi-story industrial buildings to complete phase two of the cleanup originally agreed to between EJ Spirtas Manitowoc, LLC (the previous Site owner) and the USEPA. A pre-demolition inspection for asbestos containing materials completed by Stantec (2016n) identified a significant quantity of building materials requiring abatement prior to building demolition. The presence of friable or potentially friable asbestos is a significant barrier to completion of the demolition project as the asbestos materials must be removed/managed/disposed of appropriately prior to demolition.

The selected remedial approach includes:

- Abatement of friable asbestos containing material as well as non-friable asbestos containing material that would likely be made friable by the intended mechanical demolition processes. Asbestos will be removed by a licensed contractor and transported offsite for direct disposal in a licensed landfill.
- Non-friable asbestos materials in good condition will remain on cementitious and wood substrates. Comingled demolition debris will require proper transportation offsite for landfill disposal.

2.0 BACKGROUND INFORMATION

2.1 GENERAL SITE AND PROJECT INFORMATION

1. Project Title and Purpose	
Project Title	Asbestos Abatement 1512 Washington Street Manitowoc, Wisconsin
Purpose	Satisfy the requirements of a brownfields RLF subgrant application
2. Key Site Contact Information	
Owner Representative:	Nicolas Sparacio, AICP; Community Development Director Community Development Authority of the City of Manitowoc 900 Quay Street; Manitowoc, Wisconsin Phone: (920) 686-6931 nsparacio@manitowoc.org
3. Regulatory Agency Contact Information	
Wisconsin Department of Natural Resources	Tauren Beggs, Project Manager Remediation and Redevelopment Program 2984 Shawano Ave Green Bay, Wisconsin 54313 Phone: (920) 662-5178 tauren.beggs@wisconsin.gov
	Mark Davis, Asbestos Coordinator Bureau of Air Management, Asbestos Program Phone: (262) 574-2118; Cell: (608) 219-4251 mark.davis@wisconsin.gov
	Mark Chamberlain, Air Management Specialist Bureau of Air Management, Asbestos Program 625 East County Road Y, Suite 700 Oshkosh WI 54901-9731 Phone: (920) 424-7898; Cell: (608) 575-5634 mark.chamberlain@wisconsin.gov
USEPA	Jon W. Peterson, Project Officer Brownfields & NPL Reuse Section 77 West Jackson Boulevard (Mail Code SE-7) Chicago, IL 60604-3507 Phone: 312-353-1264 peterson.jon@epa.gov
4. Site Information	
Address:	1512 Washington Street; Manitowoc, Wisconsin
Tax Parcel:	052-000-246-000.00
Open BRRTS No:	02-36-545108
Closed BRRTS Nos:	03-36-274209, 02-36-216391, 03-36-000085, 04-36-049803, 04-36-223347, and 04-36-046037

2.2 SITE DESCRIPTION

The general location of the Site and local topography are illustrated on Figure 1. The general location of the Site and an orthophotograph from 2014 are provided on Figure 2. The Site is approximately 3.72 acres in size. Prior Site operations and Site ownership are detailed in the Stantec (2016b) Phase I ESA and Stantec (2016m) National Register of Historic Places (NRHP)Determination of Eligibility. The following provides a summary of industrial development/operation and property ownership.

Industrial Development and Operation. As described in the Stantec (2016b) Phase I ESA, the property appears undeveloped in 1835. By 1878, the property was platted as 18 contiguous parcels within lot 246; however, development had not yet occurred. A plat map published in 1878 indicates Sherman Creek bisected the far northwestern portion of the property and the creek flows north to the Manitowoc River. Initial development of the property appears to have occurred between 1878 and 1893, at which time, the property was occupied by a tannery and 6 apparent residential structures. By 1906, the property consisted of 13 individual residential dwellings and associated automobile garages, a tannery, and a small aluminum manufacturing plant. By 1921, Sherman Creek had been contained within a culvert, residential structures removed, and most the property occupied by a large industrial facility utilized for the manufacturing of aluminum goods. Significant development of the property for industrial use as a multi-story aluminum goods manufacturing facility occurred between 1906 and 1912 and again between 1912 and 1927. The last multi-story building was constructed at the property adjacent to Washington Street by 1929. Industrial operations ceased at the Site in 1986; however, the Mirro Aluminum Company corporate and engineering offices remained on the 6th and 7th floors of the building until 2001.

Property Ownership. The property was purchased from Newell Holdings Delaware, Inc. by Union Street Partners, LLC on March 26, 2004 who sold the property to Kenneth J. Lemberger, Sr. on November 18, 2005. The property was transferred to Mirro Building, LLC on March 23, 2006 and EJ Spirtas Manitowoc, LLC purchased the property from Mirro Building, LLC on June 2, 2006. EJ Spirtas Manitowoc, LLC razed the 3-story facility previously located on the northeast corner of the property and several smaller buildings in March 2014. Ownership of the property was transferred to the Community Development Authority of the City of Manitowoc on June 29, 2016.

2.3 PRIOR ENVIRONMENTAL SITE INVESTIGATIONS

Multiple phases of due diligence have occurred at the Site. A Phase I ESA was completed on behalf of the Community Development Authority of the City of Manitowoc on June 28, 2016 by Stantec (2016b) utilizing USEPA Brownfield Assessment grant funding provided to the City of Manitowoc. Subsequent phases of due diligence completed by Stantec (2016a-2016n) are presented in reports referenced in Section 5 of this ABCA.

With respect to asbestos containing materials, the following table from Stantec (2016n) summarizes the type, quantity, and location of friable asbestos containing material as well as non-friable asbestos containing material that would likely be made friable by the intended mechanical demolition of the buildings:

Material	Quantity	Comment/Condition
Square D or GE Electrical Panel: Transite Electrical Panels	71 each	Cat. II non-friable (some contain a friable paper)
Cutler Hammer / AB: Push Button Panels	63 each	Cat. II non-friable
Cutler Hammer: Motor Control Panels	23 each	Cat. II non-friable (some contain a friable paper)
GE Slate Electrical Panels	3 each	Cat. II non-friable (some contain a friable paper)
Transformer Box: Black Electrical Isolator	1 each	Cat. II non-friable (room 126, ground floor, 6 story)
Square D Panel: Small Black Isolators	25 each	Cat. II non-friable
Cutler Hammer: White Electrical Isolator	21 each	Cat. II non-friable (some contain a friable paper)
Large Transformer: Black Box Electrical Isolators	1 square foot	Cat. II non-friable (room 221, second floor, 6 story)
Gray Fiberglass Window Sill Wrap	15,250 square feet	Friable (window sills &north building exterior)
Westinghouse: Black Compressed Board	1 each	Cat. II non-friable (room 426, fourth floor, 6 story)
Black Window Glazing (in metal divider wall)	12 square feet	Cat. II non-friable (room 619, sixth floor, 6 story)
Kiln Gasket	2 square feet	Cat. II non-friable 4-foot diameter
Red Brick Debris	64 square feet	Friable / in pit
12" Tan Floor Tile & Black Adhesive (on wood)	1,440 square feet	Friable (floor tile)/Cat. II non-friable (Adh) (room 205, second floor, 7
White Ceiling Board	36 square feet	Friable / (room 508 closet, fifth floor, 7 story)
White Panel (loose on Floor)	8 square feet 2 square feet	Friable / (room 603 closet, 6th floor, 7 story) (room 701 closet, seventh floor, 7
White Cloth Vibration Joint	2 square feet	Friable / (room 716, seventh floor, 7 story)
Pipe Insulation & Pipe Fittings	233 linear feet 45 each	Friable / Assumed (multiple areas, small quantities)
Pipe Insulation & Pipe Fittings	1,050 linear feet	Friable (tunnels)
Transite Debris	120 cubic feet	Cat. II non-friable / Assumed (room 116, first
Elevator Electrical Components (transite, slate, brake pads)	not quantified	Cat. II non-friable / Assumed (elevator
Electrical Isolators (debris pile)	25 square feet	Cat. II non-friable (room 221, second floor, 6 story)

The Stantec (2016n) pre-demolition survey identified weathered lead paint in each building on multiple porous building surfaces (primarily floors, walls, columns, and ceilings). Due to the deteriorated condition of the paint, recycling of porous building materials (i.e. concrete, brick, wood) is not feasible during planned demolition. Therefore, non-metal demolition debris will be transported offsite for disposal at a Wisconsin-licensed landfill. As such, the following non-friable asbestos containing material identified by Stantec (2016n) can remain in place during mechanical demolition and comingled demolition debris will require proper transportation for disposal in a licensed landfill:

Material on Cementitious Substrate	Quantity	Comment/Condition
Black Window Sill Tar and/or White Window Caulk	1,358 square feet (679 openings)	Cat. II non-friable
Black Roof Flashing	not quantified	Cat. I non-friable / rubble pile 3-story building
Black Roofing Felt	not quantified	Cat. I non-friable / rubble pile 3-story building
Black Tar (on foam / conc. block)	1,402 square feet	Cat. II non-friable / previous sampling (Mirro tower)

Material on Wood Substrate	Quantity	Comment/Condition
Joint Compound	800 square feet	Cat. II non-friable /total wall surface area (room 424, fourth floor, 6 story)
12" Brown Floor Tile & Black Adhesive (on wood, two locations)	112 square feet	Cat. I & II non-friable / (room 314, third floor, 7 story)
9" Brown Floor Tile (on wood, under carpet, adh. non-acm)	160 square feet	Cat. I non-friable / (room 704 east, seventh floor, 7 story)
12" Orange Floor Tile (on wood, adh. non-acm)	400 square feet	Cat. I non-friable / (room 718, seventh floor, 7 story)
Roofing Materials / Roof Flashings	not quantified	Cat. I non-friable

2.4 NATURE AND EXTENT OF IMPACTS

As noted above, Stantec (2016n) identified multiple asbestos containing materials remaining at the Site which must be removed prior to building demolition. A copy of the report is provided in Attachment A of this document. The locations of the asbestos containing materials are illustrated on figures contained in the report and photographic documentation of each material type is provided in Appendix C of the report.

3.0 REMEDIAL ACTION OPTIONS EVALUATION

3.1 PROPOSED SITE REDEVELOPMENT

The remaining buildings at the property pose a risk to the community and are a significant impediment to redevelopment. Increased site access following abatement and building demolition will facilitate completion of the subsurface investigation.

Although redevelopment plans remain fluid, the target property is located along Washington Street, which is the primary transportation/commercial corridor leading to downtown Manitowoc. Tentative redevelopment scenarios for the property include a combination of commercial/residential mixed-use buildings interspersed with green space.

3.2 WDNR EVALUATION CRITERIA

As discussed in Stantec (2016k), the structural integrity of the buildings is compromised due to previous demolition activities. Additionally, the interior of the buildings has fallen into significant decay due to water damage and weathering, and the ubiquitous presence of severely weathered lead paint on nearly every porous surface makes remodeling of the interior of the buildings impractical. Further, the presence of a significant quantity of weathered lead paint dust makes recycling of porous building materials impractical. As such, demolition of the remaining buildings and offsite disposal of demolition debris is the only practical way to facilitate redevelopment at the Site. Therefore, an evaluation of three remedial options was conducted utilizing criteria presented in ch. NR 722.07(4) WAC to address asbestos containing materials prior to building demolition. The remedial options evaluated included the following three options:

1. Natural attenuation (no action and adaptive reuse)
2. Abatement of friable asbestos containing material as well as non-friable asbestos containing material that would likely be made friable by the intended mechanical demolition processes. Removed asbestos will be transported offsite for direct disposal in a licensed landfill. Non-friable asbestos materials in good condition will remain on cementitious and wood substrates; comingled demolition debris will require proper transportation offsite for landfill disposal.
3. Leave all asbestos containing materials in place and comingle all asbestos with demolition debris during mechanical demolition. Comingled debris will require proper transportation offsite for landfill disposal.

Although the cost to implement Remedial Alternative 1 is the least of the three options, under Remedial Alternative 1, the overall exposure risk, magnitude, mobility, and toxicity of impacts would not decrease within a reasonable timeframe, and impacts would remain in close proximity to sensitive receptors. The long-term effectiveness of encapsulating impacted building materials (a slight alternative to Remedial Alternative 1, should adaptive reuse be considered) is unreliable and depends on the integrity of encapsulating material.

Proper abatement of friable or potentially friable asbestos containing material as required under state and federal law is the most pertinent approach to prepare the buildings for demolition. Removal of asbestos from the Site will eliminate the short-term and long-term exposure risk and reduce the mobility, toxicity, and magnitude of existing impacts. However, implementation of Remedial Alternative 2 poses several challenges. Proper asbestos abatement engineering/institutional controls (i.e. contained/negative pressure work spaces, adequate wetting, signage, waste handling/management/transportation/direct disposal) must be

maintained during work to prevent unintended releases of asbestos fibers to the surrounding neighborhood. Remedial Alternative 2 requires physical/mechanical removal of the material, which could lead to unintentional worker and community exposure if the work is performed improperly. In addition, building structural liabilities (i.e. holes in flooring, confined spaces, etc.) must be addressed appropriately with engineering/institutional controls during work. Removal of asbestos material from the exterior of the northwest building will pose additional challenges due to vehicle traffic and fall hazards due to working at significant heights. Allowing non-friable asbestos to remain onsite and comingled with building material during mechanical demolition will provide a small cost savings compared to complete removal of all asbestos containing materials prior to demolition. However, if the demolition contractor is able to find a beneficial reuse for cementitious building debris (and pending WDNR approval), removal of non-friable asbestos may be warranted (a supplemental approach to Remedial Alternative 2) to reduce the overall landfill footprint of the project and potentially result in a cost savings during demolition.

Although the cost to implement Remedial Alternative 3 is less than Remedial Alternative 2, by federal and state law, without significant extenuating circumstances, buildings cannot be mechanically demolished without abatement of friable or potentially friable asbestos containing materials. Therefore, Remedial Alternative 3 is not practical nor permissible under the law. Further, mechanical demolition of the buildings containing friable (or potentially friable) asbestos could lead to a significant release of asbestos fibers to the surrounding neighborhood. Therefore, Remedial Alternative 3 would likely increase the short-term and long-term exposure risk and increase the mobility, toxicity, and magnitude of existing impacts.

3.3 SUSTAINABILITY EVALUATION

The remedial alternatives were evaluated per the requirements of ch. NR 722.09(2m) WAC. Remedial Alternative 1 is the least sustainable of the proposed alternatives as the remedial objective will not be reached.

Remedial Alternative 2 relies on utilizing proper asbestos abatement techniques and maintaining proper engineering/institutional controls during abatement. Multiple landfills located throughout Wisconsin are licensed to accept asbestos waste; however, using a local licensed landfill will significantly reduce trucking distances thereby reducing the amount of fuel utilized in the project. Debris will be placed in lined roll-off dumpsters appropriate for transportation of friable asbestos waste, which will be taken to the landfill only when full. Transporting fully loaded dumpsters will minimize the number of unnecessary trips to the landfill thereby further lowering fuel consumption and decreasing the carbon footprint of the project. Low sulfur diesel can be used and a no-idle policy will further reduce the carbon footprint. By removing friable and potentially friable asbestos, Remedial Alternative 2 will facilitate the recycling of steel during building demolition. If the demolition contractor is able to find a beneficial reuse for cementitious building debris (and pending WDNR approval), removal of non-friable asbestos may be warranted (a supplemental approach to Remedial Alternative 2) to reduce the landfill footprint of the overall project.

Similar to Remedial Alternative 2, the asbestos containing material will end up in a landfill as comingled demolition debris under Remedial Alternative 3. However, cleanup from unintended asbestos fiber releases likely to occur during mechanical demolition under Remedial Alternative 3 could be significant and result in extraordinary carbon inputs to completely clean the surrounding neighborhood of fugitive asbestos dust. Remedial Alternative 3 is not considered sustainable.

3.4 CLIMATE CHANGE CONSIDERATIONS

The property is located in the City of Manitowoc and is not located within the 100-year floodplain.

Authoritative Resources. The WDNR Surface Water Data Viewer and National Flood Insurance Rate Maps from the National Flood Insurance Program were consulted for the project area. The USEPA website for Climate Impacts for the Midwest area was consulted (USEPA website: http://www.epa.gov/climatechange/). The website noted that the summers in the Midwest are hot and humid, and winters are cold, since the region is far from the temperature-moderating effect of the oceans. Therefore, variations in climate will tend to be expressed without moderation in the project area.

Site Specific Risk Factors. Based on the physiographic location of the Site, some major climatic risk factors do not apply to the project area. For instance, since Manitowoc is in a municipal area, wildfires or forest fires are not a risk factor. The primary climatic risk factors are the following:

- Changing dates for ground thaw/freezing – deceases in average temperatures long term will shorten the already narrow window of the Wisconsin growing season. Increases in average temperature will increase the length of the Wisconsin growing season. These factors could affect infiltration at the Site. Stormwater infrastructure added during redevelopment could mitigate some of the potential challenges.

- Changing the environmental/ecological zones – Will depend on the decrease or increase in average temperatures and future variations in precipitation. These factors are interrelated with the changing dates for ground thaw/freezing. Variations in the growing season will result in changes in bird nesting and migration ranges and dates and be expressed in changes in the ecological diversity.

- Changing the air quality index - decreases in average temperature long term will result in less heat index days, while increases in average temperature long term will result in more heat index days, causing increased ozone formation in urban areas. This will make it more challenging to meet air quality standards and will increase the risks of health effects in these areas.

Accommodation of Identified Climate Risk Factors. The evaluated remediation alternatives are expected to have no effect on climate risk factors. Based on the information above, climate change is not anticipated to significantly affect the effectiveness of the alternatives evaluated.

4.0 SELECTED REMEDIAL ACTION OPTION

4.1 SELECTED REMEDIAL ACTION OPTION

Remedial Alternative 2 is the selected remedial alternative based on its short-term and long-term effectiveness, implementability, restoration time frame, economic feasibility, and sustainability. The selected remedial action option includes elements described below:

Remedial Alternative 2. Abatement of friable asbestos containing material as well as non-friable asbestos containing material that would likely be made friable by the intended mechanical demolition processes; removed asbestos will be transported offsite for direct disposal in a licensed landfill. Non-friable asbestos materials in good condition will remain on cementitious and wood substrates; comingled demolition debris will require proper transportation offsite for landfill disposal.

A performance-based bid specification and request for proposals for the abatement of friable and potentially friable asbestos containing materials was issued by the City on September 30, 2016. Contractor responses to the request for proposal will determine the means and methods used for removal. However, the selected abatement contractor must remove and dispose of asbestos containing materials in compliance with 40 CFR 61 NESHAP and ch. NR 447 WAC and in accordance with 40 CFR Part 763 and OSHA 29 CFR 1926.1101. The selected contractor will have at least one on-site representative that is trained and has current Wisconsin DHS 159 Asbestos Supervisor certification at all times during asbestos-related operations. All abatement personnel will have current Wisconsin DHS 159 Asbestos Worker or Supervisor certification.

The selected abatement contractor will be responsible for developing the following plans for review/approval by the City and/or their authorized agents, USEPA, and WDNR:

- Dust Control Plan
- Site Safety Plan
- City Demolition Permit
- Asbestos Abatement Plan (to include the following)
    - Description of the layout and construction of decontamination enclosure systems and barriers for isolation of the asbestos abatement work area.
    - A copy of handling procedures and list of protective equipment utilized for asbestos abatement on the project site.
    - Description of the equipment to be used in abatement activities, storage of asbestos waste on site and to transport abatement waste.
    - Location and name of the landfill to be used for disposal of the asbestos waste from this project site.
    - Documentation of appropriate staff training, medical monitoring, and licensure.
- Respiratory Protection Plan

All activities of the selected contractor or their employees shall conform to the following regulations, and any other applicable federal, state, or local regulations:

1. Code of Federal Regulations, 29 CFR & 40 CFR, including but not limited to:

   - 29 CFR 1910.1020 Access to Employee Exposure and Medical Records
   - 29 CFR 1910.145 Specifications for Accident Prevention Signs and Tags
   - 29 CFR 1910.134 Respiratory Protection
   - 29 CFR 1910.1000ffToxic and Hazardous Substances (Subpart 2)
   - 29 CFR 1910.1200 Hazard Communication/GHS
   - 29 CFR 1926.1101 Asbestos (Construction)
   - 29 CFR 1926.1-.1051 Construction Industry Safety & Health Standards (US OSHA)
   - 40 CFR PART 61 General Provisions Subpart A & B
   - 40 CFR PART 61 National Emission Standard for Asbestos Subpart M
   - 40 CFR 241 Guidelines for the Land Disposal of Solid Wastes
   - 40 CFR 257 Criteria for Classification of Solid Waste Disposal Facilities and Practices
   - CFR Title 49 Hazardous Material Regulations Parts 172.101 & 173.1090

2. American National Standards Institute

   - Z9.2-79 Fundamentals Governing the Design and Operation of Local Exhaust Systems
   - Z88.2-80 Practices for Respiratory Protection

3. National Institute of Occupational Safety and Health

   - Manual of Analytical Methods, 2nd Ed., Vol. 1, Physical and Chemical Analysis Method (P&CAM):
   - Method 7400 Fibers (N1, 3rd Ed., Vol.1)
   - Respiratory Protection - An Employer's Manual & Respiratory Protection - A Guide for the Employee

4. USEPA

   - EPA560/5-83-002 Guidance for Controlling Friable ACM in Buildings

5. Underwriters Laboratories, Inc. Publication

   - 586-77 Test Performance of High Efficiency, (R 1982) Particulate, Air Filter Units

6. Wisconsin Administrative Code

   - Ch. NR 447 WAC - Control of Asbestos Emissions
   - Ch. NR 500 WAC - General Solid Waste Management

- Ch. DHS159 WAC – Certification and Training Course Requirements for Asbestos Activities

7. Other Regulations: All other federal, state, county, municipal, and local statutes, ordinances, regulations, or rules pertaining to asbestos, including its abatement, storage, transportation and disposal; construction safety and health and hazard communication (worker right-to-know), and contractor or other licensure, certification and regulation, which are now in effect or which may come into effect prior to project completion.

A NRHP Determination of Eligibility report was prepared by Stantec (2016m) and submitted to the Wisconsin Historical Society, Division of Historic Preservation for review. In their response letter (provided in Attachment B), the agency agreed that no historic properties will be affected by the proposed work.

The following outlines the permits/approvals likely to be required to implement Remedial Alternative 2:

- WDNR Form 4500-113 or use of the Asbestos Renovation and Demolition Notification System in accordance with 40 CFR Part 61.146 of Subpart M, ch. DHS 159 WAC, and ch. NR 477 WAC
- Landfill disposal approval

4.2 SCHEDULE

A performance-based bid specification and request for proposals for abatement of friable and potentially friable asbestos containing materials was issued by the City on September 30, 2016. Pre-bid meetings will be held on October 6th and 10th. Bids are due on October 14. The City anticipates selecting the abatement contractor on October 17th with abatement work starting by late October 2016, pending execution of a subgrant from the City's brownfields revolving loan fund. The following provides a conceptual schedule for the project:

- Mobilization
- Asbestos and hazardous materials removal permitting and approval of plans described in Section 4.1
- Permit submittals for erosion control
- Install erosion control measures, as necessary
- Asbestos abatement
- Visual inspection
- Final cleanup / project closeout
- Demobilization

4.3 ESTIMATED COST

The most expensive portion of the project is likely to be abatement of the grey fiberglass wrap from the exterior of the northwest building. Due to the complexity of the work, initial abatement estimates range from $300,000 to $500,000. Abatement of the remaining friable and potentially friable asbestos materials is estimated to cost between $100,000 and $150,000.

The performance-based bid specification and request for proposals for abatement of friable and potentially friable asbestos containing materials was issued by the City on September 30, 2016. Contractor responses to the request for proposals will determine the actual cost for implementing Remedial Alternative 2.

4.4 RESTORATION TIME FRAME

As described in Section 4.2, removal of the friable and potentially friable asbestos containing materials will be completed between October and December 2016.

4.5 PERFORMANCE MEASURES

Post-abatement visual inspection by the City and/or their authorized representative and WDNR staff will confirm abatement objectives are achieved. If warranted, clearance samples may be collected to further document abatement results and confirm residual asbestos fibers are removed from the Site.

The selected abatement contractor will perform personal air sampling as required under OSHA 29 CFR 1910.1000, 1926.1101 and 29 CFR 1926.62. Results of air sampling will confirm the controls are appropriate for the project.

4.6 TREATMENT RESIDUALS

Removed friable and potentially friable asbestos containing materials transported offsite for direct disposal in a licensed landfill. Non-friable asbestos materials in good condition will remain on cementitious and wood substrates; comingled demolition debris will require proper transportation offsite for landfill disposal.

5.0 REFERENCES

Stantec, 2016a, Property-Specific Determination of Eligibility Request for USEPA Community-Wide Brownfields Assessment Grant for Hazardous Substances. June 14, 2016.

Stantec, 2016b, Phase I ESA, June 28, 2016.

Stantec, 2016c, Site-Specific Sampling and Analysis Plan, July 6, 2016.

Stantec, 2016d, Mirro Buildings Structural Condition Assessment, July 25, 2016.

Stantec, 2016e, Photographic Documentation of Former Mirro Building Current Ground Floor Features, July 28, 2016.

Stantec, 2016f, Addendum 1 to the July 6, 2016 Site-Specific Sampling and Analysis Plan, July 28, 2016.

Stantec, 2016g, Geophysical Survey Results and Site Survey, August 15, 2016.

Stantec, 2016h, Inventory of Floor Stains and Photographic Documentation of the Former Mirro Building, August 17, 2016.

Stantec, 2016i, Site and Property Owner/Borrower Eligibility Determination Request for USEPA Brownfield Revolving Loan Fund Subgrant for Hazardous Substances. August 29, 2016.

Stantec, 2016j, Inspection of Subsurface Service Tunnel Network, August 31, 2016.

Stantec, 2016k, Mirro Building Structural Condition Assessment, September 13, 2016.

Stantec, 2016l, Site-Specific Sampling and Analysis Plan for Phase II ESA – Characterization of Floor Stains and Delineation of PCB Impacts to Concrete, September 15, 2016.

Stantec, 2016m, National Register of Historic Places Determination of Eligibility, September 20, 2016.

Stantec, 2016n, Asbestos and Lead Based Paint Pre-Demolition Survey, September 21, 2016.

FIGURES

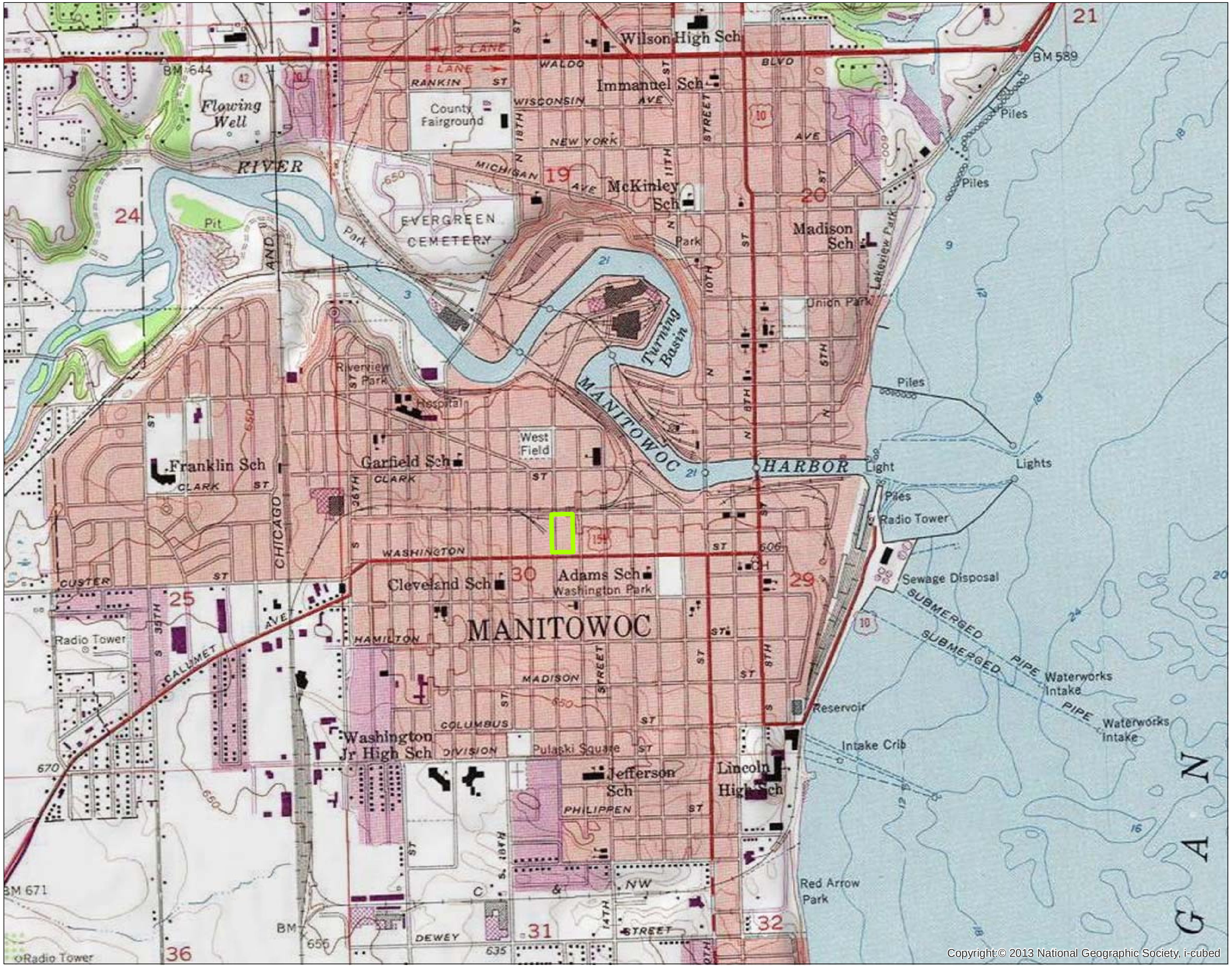


Figure No.
1

Title

Figure 1
Site Location and Local Topography

Client/Project

City of Manitowoc
USEPA Brownfield Assessment Grant
Hazardous Substances

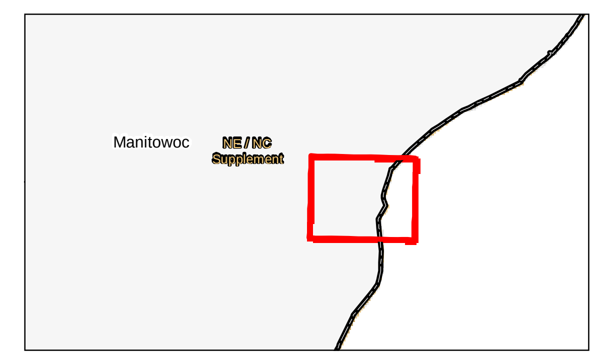
193703931
Prepared by HLB on 5-24-16

0 1,050 2,100 Feet

N

Legend

Target Site



Notes

1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
2. Data Sources Include:
   Topo Map: USGS/National Geographic Society

Stantec

Figure No.
2

Title
Figure 2
Site Location and 2014 Ortho

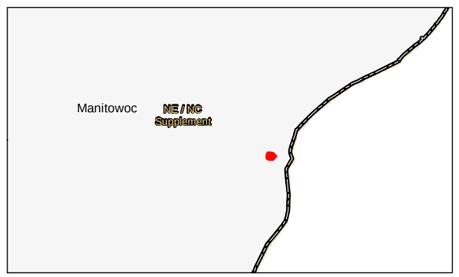
Client/Project
City of Manitowoc
USEPA Brownfield Assessment Grant
Hazardous Substances

0 65 130 Feet

193703931
Prepared by HLB on 5-24-16

Legend
- Target Site
- Parcels

N



Notes
1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803
2. Feet
3. Data Sources Include:
   Orthophotography: 2015 City of Mantiowoc

Stantec

ATTACHMENT A
Pre-Demolition Inspection for Asbestos and Lead Paint

Stantec Consulting Services Inc.
12075 Corporate Parkway, Suite 200 Mequon WI 53092

September 21, 2016
File: 193703931

Attention: Nicolas Sparacio, AICP
Community Development Director
City of Manitowoc
900 Quay Street
Manitowoc, WI 54220-4543

Dear Mr. Sparacio:

Reference: Pre-Demolition Inspection for Asbestos and Lead Paint
1512 Washington Street Manitowoc, Wisconsin
USEPA Cooperative Agreement No. BF-00E01529-0
Stantec Project No. 193703931

On behalf of the City of Manitowoc (City), Stantec Consulting Services Inc. (Stantec) has conducted a pre-demolition inspection at the vacant former commercial Brownfield property located at 1512 Washington Street in Manitowoc, Wisconsin (herein referred to as the "Site"). The location of the Site relative to adjacent streets is illustrated on Figure 1. This inspection was completed utilizing Brownfield site assessment grant funds provided to the City by the United States Environmental Protection Agency (USEPA) in 2015 under cooperative agreement no. BF-00E01529-0. This work was completed in compliance with the Site-Specific Sampling and Analysis Plan prepared by Stantec on July 6, 2016 and approved by USEPA on July 11, 2016.

BACKGROUND AND PROBLEM STATEMENT

To facilitate investigation, remediation, demolition, and redevelopment of this large brownfield, the Community Development Authority of the City of Manitowoc acquired the Site by condemnation and is beginning the planning process to abate the remaining asbestos, remove remaining hazardous materials, and raze the multi-story industrial buildings to complete phase two of the cleanup originally agreed to between EJ Spirtas Manitowoc, LLC (the previous Site owner) and the USEPA.

A building inspection report was completed in December 2009 by STN Environmental JV (STN) under the Targeted Brownfields Assistance (TBA) program from USEPA. The report identified a variety of building materials requiring special handling and disposal prior to building demolition activities. Documentation suggests some of these materials have been removed; however, recent unpublished work suggests a release of asbestos (and potentially lead paint) to the building, soil, and/or the adjacent rights-of-way. The Stantec (2016) Phase I Environmental Site Assessment recommended an updated pre-demolition lead paint, asbestos, and hazardous material survey to further evaluate the recognized environmental condition related to building materials. In addition, prior to proposed demolition, a pre-demolition/renovation inspection for asbestos containing materials (ACM) and lead paint was warranted to identify the location, type, quantity, and condition of potentially hazardous waste materials to evaluate and plan for abatement activities.

Reference: Pre-Demolition/Renovation Inspection for Asbestos and Lead Paint
1512 Washington Street; Manitowoc, Wisconsin
USEPA Cooperative Agreement No. BF-00E01529-0

INSPECTION METHODS AND RESULTS

A pre-demolition/renovation inspection for ACM and lead paint was completed in the remaining buildings on August 11-17, 2016 by NorthStar Environmental Testing, LLC (NorthStar). After completing an assessment of the subsurface tunnel network (Stantec, 2016), NorthStar extended the pre-demolition inspection into the tunnel network on September 6, 2016. A supplemental assessment was conducted by NorthStar on September 9, 2016 following an onsite meeting with asbestos staff from the Wisconsin Department of Natural Resources. The laboratory reports and certifications, field calibration documentation, licensure/accreditation documentation, site diagrams/sample location figures, photographs of ACMs, and sample inventory tables are included in the NorthStar report provided in Attachment A.

In summary, NorthStar collected and submitted 136 bulk samples of building material to CEI Labs, Inc. (CEI) under chain of custody procedures for asbestos determination using EPA Method 600/R-93/116 and EPA Method 600M4-82-020. As detailed in Attachment A, a variety of ACMs in various condition were identified that would affect demolition throughout the buildings. NorthStar noted all friable ACMs (as well as non-friable ACM that would likely be made friable by the intended demolition) are required to be abated prior to disturbance. Non-friable ACM (confirmed or assumed) remaining during demolition must be disposed of properly as demolition debris at an approved landfill. ACM abatement must be performed by a licensed asbestos company utilizing trained and certified workers/supervisor per the Wisconsin Department of Health Service asbestos regulation 159.

A portable energy-dispersive x-ray fluorescent spectrometer (ED-XRF) was used by NorthStar to measure the concentration of lead in building materials at approximately 1,770 locations. Weathered lead based paint in poor condition was identified by NorthStar on most of the porous surfaces.

DATA QUALITY ASSURANCE / QUALITY CONTROL

As noted in the Stantec (2015) project Quality Assurance Project Plan (QAPP), field duplicate and matrix spike/matrix spike duplicate samples will be used to evaluate the quality of data collected during implementation of the two Assessment Grants. As this inspection focused on laboratory analysis of asbestos containing material and field ED-XRF analysis of lead paint, collection of field duplicate and matrix spike/matrix spike duplicate samples during the inspection was not practical. Therefore, the quality assurance/quality control evaluation will focus on asbestos point count results compared to bulk measurements and ED-XRF calibration data.

Asbestos concentrations determined using bulk and corresponding point count techniques are summarized in the table below and indicate the bulk analysis adequately represented the asbestos content of the material.

Sample ID	Asbestos Concentration (Bulk Count)	Asbestos Concentration (Point Count)
584-39	< 1%	0.14%
584-61	< 1%	0.25%

Reference: Pre-Demolition/Renovation Inspection for Asbestos and Lead Paint
1512 Washington Street; Manitowoc, Wisconsin
USEPA Cooperative Agreement No. BF-00E01529-0

Field calibration documentation provided in Attachment A is summarized on Table 1 and indicates the calibration of the ED-XRF spectrometer was confirmed each day using a 1 milligram per square centimeter standard prior to initiation of work and confirmed again after the inspection. The calibration was confirmed twice during the day on August 15, 2016. An additional blank calibration standard was measured each day prior to and after the inspection. As ED-XRF confirmation measurements of the two calibration standards are within project-specific guidelines described in the Stantec (2015) QAPP, ED-XRF data are considered suitable for use in this inspection.

We trust this information meets your needs. Please do not hesitate to call with any questions.

Regards,

STANTEC CONSULTING SERVICES INC.

Harris L. Byers
Brownfields Project Manager
Phone: 414-581-6476
Harris.Byers@stantec.com

STANTEC CONSULTING SERVICES INC.

Hiedi A. Waller, P.E.
Environmental Engineer
Hiedi.Waller@stantec.com

STANTEC CONSULTING SERVICES INC.

Richard J. Binder, P.G., CPG
QA/QC Manager
Rick.Binder@stantec.com

Attachments: Table
Figure
A – Inspection Report

LIMITATIONS

Stantec's observations, findings, and opinions should not be considered as scientific certainties, but only as opinion based on our professional judgment concerning the significance of the data gathered during the course of this investigation. Specifically, Stantec cannot represent that the Site does not contain any hazardous or toxic materials/wastes or other latent conditions beyond that observed by Stantec during the course of the investigation. Additionally, due to limitations of this investigation process and the necessary use of data furnished by others, Stantec and its subcontractors cannot assume liability if actual conditions differ from the information presented in this report.

TABLE

Table 1
ED-XRF Calibration Measurements
1512 Washington Street
Manitowoc, Wisconsin

Date	Type	Triplicate Average (mg/cm2)	Expected Value (mg/cm2)
8/11/2016	Pre-Inspection	0.9	1
8/11/2016	Post-Inspection	1.0	1
8/12/2016	Pre-Inspection	1.1	1
8/12/2016	Post-Inspection	1.1	1
8/15/2016	Pre-Inspection	1.0	1
8/15/2016	Mid-Day	1.0	1
8/15/2016	Mid-Day	1.0	1
8/15/2016	Post-Inspection	1.0	1
8/16/2016	Pre-Inspection	1.0	1
8/16/2016	Post-Inspection	1.0	1

Date	Type	Measurement (mg/cm2)	Expected Value (mg/cm2)
8/11/2016	Pre-Inspection	-0.1	0
8/11/2016	Post-Inspection	-0.1	0
8/12/2016	Pre-Inspection	-0.2	0
8/12/2016	Post-Inspection	0.0	0
8/15/2016	Pre-Inspection	-0.4	0
8/15/2016	Mid-Day	-0.3	0
8/15/2016	Mid-Day	-0.2	0
8/15/2016	Post-Inspection	-0.6	0
8/16/2016	Pre-Inspection	-0.1	0
8/16/2016	Post-Inspection	-0.3	0

Notes:
mg/cm2 = milligrams per square centimeter

Stantec

FIGURE

Figure No.
1

Title
Figure 1
Site Location and 2014 Ortho

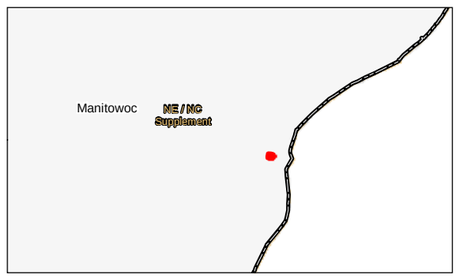
Client/Project
City of Manitowoc
USEPA Brownfield Assessment Grant
Hazardous Substances

0 65 130 Feet

1937003931
Prepared by HLB on 5-24-16

Legend
Target Site
Parcels

N



Notes
1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803
2. Feet
3. Data Sources Include:
   Orthophotography: 2015 City of Mantiowoc

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ATTACHMENT A
INSPECTION REPORT

Design with community in mind

NORTHSTAR ENVIRONMENTAL TESTING, LLC
www.NorthStarTesting.com

Central Wisconsin Office:
817 Oak Ridge Rd
Mosinee, WI 54455
Tel: 715.693.6112
Fax: 715.693.1225

Fox Cities Office:
1835 E. Edgewood Drive
Suite 10542
Appleton, WI 54913
Tel: 920.422.4888

Madison Office:
1310 Mendota Street
Suite 121
Madison, WI 53714
Tel: 608.827.6761

PRE-DEMOLITION INSPECTION: *ASBESTOS & LEAD PAINT*

Stantec Consulting Services, Inc.

Site:
Mirro Building No. 9
1512 Washington Street
Manitowoc, WI 54220

Work Area:
Pre-Demolition

Inspection Dates: August 11-17, 2016
September 6 & 9, 2016

Report Date: September 20, 2016

NorthStar No. 160-584

Submitted By:
NorthStar Environmental Testing, LLC.

Asbestos • Lead Paint • Mold • Indoor Air Quality • Industrial Hygiene

NORTHSTAR ENVIRONMENTAL TESTING, LLC
www.NorthStarTesting.com

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Asbestos • Lead Paint • Mold • Indoor Air Quality • Industrial Hygiene

September 20, 2016

Stantec Consulting Services, Inc.
12075 Corporate Parkway, Suite 200
Mequon, WI 53092

Reference: Pre-Demolition Inspection
Mirro Building No. 9
1512 Washington Street
Manitowoc, WI 54220

NorthStar Environmental Testing, LLC was contracted by Stantec Consulting Services Inc. to complete a pre-demolition inspection to identify the presence of materials containing asbestos and building components with lead-based paint from throughout the facility located at 1512 Washington Street in Manitowoc, Wisconsin. The inspection was conducted by Jamie Brzezinski, Larry Pawlus, Andrew Schilling and Aaron Stroud of NorthStar Environmental Testing, LLC (NorthStar) from August 11 to 17 and September 6 & 9, 2016.

Asbestos materials and lead-based paint were identified in various areas throughout the property. Please review the report in its entirety for more detailed information.

Prepared by:
NorthStar Environmental Testing, LLC.
1835 E. Edgewood Drive
Suite 10542
Appleton, WI 54913

Provided to:
Stantec Consulting Services Inc.
12075 Corporate Parkway, Suite 200
Mequon, WI 53092

Date of Site Visits: August 11-17, 2016, September 6 & 9, 2016

NorthStar Environmental Testing, LLC.

David Barrett
Owner, Senior Project Manager

Aaron Stroud
Operations Manager
AII-108183 / LRA-108183

NORTHSTAR ENVIRONMENTAL TESTING, LLC
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Asbestos • Lead Paint • Mold • Indoor Air Quality • Industrial Hygiene

TABLE OF CONTENTS

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Asbestos • Lead Paint • Mold • Indoor Air Quality • Industrial Hygiene

September 20, 2016

Stantec Consulting Services Inc.
12075 Corporate Parkway, Suite 200
Mequon, WI 53092

Project:	Asbestos Pre-Demolition Inspection
Site Address:	Mirro Building No. 9 1512 Washington Street Manitowoc, WI 54220
Work Area:	Pre-Demolition
Survey Date:	August 11 to 17, 2016 September 6 & 9, 2016
NorthStar No:	160-584

NorthStar Environmental Testing, LLC (NorthStar) was authorized by Stantec Consulting Services Inc. to conduct a pre-demolition survey for the presence of accessible suspect asbestos containing materials (ACM) for the following site.

Previous asbestos sampling and abatement had occurred prior to NorthStar's site visit. NorthStar was requested to site verify asbestos materials and approximate quantities for materials still present within the structure.

INSPECTION SUMMARY:

Site Address:	Mirro Building No. 9 1512 Washington Street Manitowoc, WI 54220				
County:	Manitowoc County				
Structure Type:	Commercial				
Bldg Age:	1904 (approximate original), Multiple Additions				
Size (ft²):	750,000 ft^2				
Floors:	7 (south), 5 (center), 6 (north)				
# of Structures:	3 main structures				
Inspector:	Aaron Stroud	Cert:	AII-108183	Asbestos Company:	CAP-925800
Survey Date:	August 11 to 17, 2016 September 6 & 9, 2016				
Comments:	Some areas of the building were unsafe at the time of inspection due to leaks from unmaintained roofing. No current roofing samples were taken. Please refer to previous sampling data. Any suspect materials, if encountered, which differ from those tested should be assumed to contain asbestos and sampled if/when necessary.				

ASBESTOS SAMPLING SUMMARY:

Number of Samples:	136
Number Analyzed:	136 Polarized Light Microscopy & 2 Point Count Analysis
Asbestos Material:	Square D: Transite Electrical Panels Cutler Hammer: Push Button Panels Cutler Hammer: Motor Control Panels GE: Slate Electrical Panels GE: Transite Electrical Panels AB: Push Button Panels Transformer Box: Black Isolator Square D: Small Black Isolators Cutler Hammer: White Electrical Isolator Cutler Hammer: White Insulation Paper Black Box Electrical Isolators Gray Fiberglass Window Sill Wrap Black Window Perimeter Tar Joint Compound Westinghouse: Black Compressed Board AB: Red Electrical Isolator Black Window Glazing Kiln Gasket Red Brick Debris 12” Tan Floor Tile & Black Adhesive White Window Perimeter Caulk 12” Brown Floor Tile & Black Adhesive White Ceiling Board White Panel (loose on floor) 9” Brown Floor Tile White Cloth Vibration Joint 12” Orange Floor Tile Black Roof Flashing (debris) Black Roofing Felt (debris)
Asbestos Material (previous sampling)	Pipe Fitting Insulation & Pipe Insulation Transite Waste & Debris Black Tar (on foam insulation) (Mirro tower)
Assumed ACM:	Elevator Electrical Components (transite, slate) Elevator Brake Pads Electrical Component (debris)
Laboratory:	CEI Labs, Inc. NVLAP: 101768-0
Analysis Date:	August 23, 2016 August 29, 2016 (point count analysis) September 8, 2016 September 13, 2016

The attached *Bulk Sample Log-in* contains complete sample analysis data.

ASBESTOS MATERIAL SUMMARY:

Confirmed ACBM, or **presumed ACBM** that will require abatement prior to disturbance by mechanical demolition:

Material	Quantity (approx)	Comment/Condition
Square D or GE Electrical Panel: Transite Electrical Panels	71 each	Cat. II non-friable (some contain a friable paper)
Cutler Hammer / AB: Push Button Panels	63 each	Cat. II non-friable
Cutler Hammer: Motor Control Panels	23 each	Cat. II non-friable (some contain a friable paper)
GE Slate Electrical Panels	3 each	Cat. II non-friable (some contain a friable paper)
Transformer Box: Black Electrical Isolator	1 each	Cat. II non-friable (room 126, ground floor, 6 story)
Square D Panel: Small Black Isolators	25 each	Cat. II non-friable
Cutler Hammer: White Electrical Isolator	21 each	Cat. II non-friable (some contain a friable paper)
Large Transformer: Black Box Electrical Isolators	1 square foot	Cat. II non-friable (room 221, second floor, 6 story)
[1] Gray Fiberglass Window Sill Wrap	15,250 square feet	Friable (window sills &north building exterior)
Westinghouse: Black Compressed Board	1 each	Cat. II non-friable (room 426, fourth floor, 6 story)
Black Window Glazing (in metal divider wall)	12 ft^2	Cat. II non-friable (room 619, sixth floor, 6 story)
Kiln Gasket	2 ft^2	Cat. II non-friable / 4' round
Red Brick Debris	64 ft^2	Friable / in pit
12" Tan Floor Tile & Black Adhesive (on wood)	1,440 ft^2	Friable (floor tile)/Cat. II non-friable (Adh) (room 205, second floor, 7 story)
White Ceiling Board	36 ft^2	Friable / (room 508 closet, fifth floor, 7 story)
White Panel (loose on Floor)	8 ft^2 2 ft^2	Friable / (room 603 closet, sixth floor, 7 story) (room 701 closet, seventh floor, 7 story)
White Cloth Vibration Joint	2 ft^2	Friable / (room 716, seventh floor, 7 story)
Pipe Insulation & Pipe Fittings	233 linear feet 45 each	Friable / Assumed (multiple areas, small quantities)
Pipe Insulation & Pipe Fittings	1,050 linear feet 78 each	Friable (tunnels)
Transite Debris	120 cubic feet	Cat. II non-friable / Assumed (room 116, first floor, 5 story)
Elevator Electrical Components (transite, slate, brake pads)	not quantified	Cat. II non-friable / Assumed (elevator penthouses, 9 each)
Electrical Isolators (debris pile)	25 ft^2	Cat. II non-friable (room 221, second floor, 6 story)

[1] Wisconsin DNR has deemed this a friable material requiring abatement prior to demolition.

Non-friable, or **presumed ACBM**, in good condition, on cementitious materials that may remain in place during mechanical demolition **unless the concrete/brick is going to be recycled or crushed**:

Material	Quantity (approx)	Comment/Condition
[2] Black Window Sill Tar and/or White Window Caulk	1,358 ft^2 (679 openings)	Cat. II non-friable
[3] Black Roof Flashing	not quantified	Cat. I non-friable / rubble pile 3-story building
[3] Black Roofing Felt	not quantified	Cat. I non-friable / rubble pile 3-story building
Black Tar (on foam / conc. block)	142 ft^2	Cat. II non-friable / previous sampling (1,420 ft^2 total surface area, mirro tower)

[2] Black window sill tar (interior) and white window caulk (exterior) are present to varying degrees on window openings. Estimated 2 ft^2 per window opening.

[3] Requires proper landfill disposal.

Non-friable, or **presumed ACBM**, in good condition, on wood substrates that may remain in place during mechanical demolition process but requires proper landfill disposal:

Material	Quantity (approx)	Comment/Condition
*Joint Compound	800 ft^2	Cat. II non-friable /total wall surface area (room 424, fourth floor, 6 story)
12" Brown Floor Tile & Black Adhesive (on wood, two locations)	112 ft^2	Cat. I & II non-friable / (room 314, third floor, 7 story)
9" Brown Floor Tile (on wood, under carpet, adh. non-acm)	160 ft^2	Cat. I non-friable / (room 704 east, seventh floor, 7 story)
12" Orange Floor Tile (on wood, adh. non-acm)	400 ft^2	Cat. I non-friable / (room 718, seventh floor, 7 story)
Roofing Materials / Roof Flashings	not quantified	Cat. I non-friable

*Joint compound was found to contain 3% chrysotile. It was then composited with the drywall and found to be <1% chrysotile (allowable by USEPA for demolition process). Abatement of the joint compound material would be required prior to disturbance by normal renovation practices if the building were renovated instead of demolished.

The following areas were inaccessible or excluded at the time of inspection and may contain additional quantities of suspect asbestos containing materials:

Area
Areas of the building were occupied at the time of inspection which may have limited access. Roofing materials and electrical panels are assumed to contain asbestos and should be sampled if/when necessary. Any suspect materials, if encountered, which differ from those tested should be assumed to contain asbestos and sampled if/when necessary.

ASBESTOS RECOMMENDATION:

All friable ACBM as well as non-friable ACBM that would likely be made friable by the intended renovation or demolition processes are required to be abated prior to disturbance.

Non-friable ACBM (confirmed or assumed) remaining during demolition must be disposed of properly as demolition debris at an approved landfill. Non-friable materials typically require abatement prior to any material recycling procedure. For any building that will be subject to burning, all confirmed and presumed ACBM must be removed.

Abatement shall be performed by an abatement company utilizing trained and certified worker/supervisor and further licensed as an asbestos company by the Wisconsin Department of Health Service (DHS), asbestos regulation 159.

Refer to Wisconsin Department of Natural Resources (WDNR) 447; and DHS 159 for complete information on requirements for asbestos abatement and asbestos material disposal.

SURVEY LIMITATIONS:

Sample results, quantities and recommendation are limited to areas that were accessible to us during the investigation. Additional presumed-ACBM that may have been located in spaces not accessible during our investigation, hidden from view, or not sampled at the client's request may require additional sampling prior to disturbance by renovation or demolition activity. Typical areas that may be inaccessible during an investigation include: wall or ceiling cavities; electrical components/wiring, equipment interiors; chimneys/flues/stacks; spaces requiring confined space entry procedures. Additional materials not accessible during a typical building materials survey include items such as miscellaneous caulkings, sealants and construction adhesives that are not readily accessible to sampling as they are often located between layers of building components. These materials are typically non-friable in nature but may require further sampling to confirm or deny the presence of asbestos.

Additional presumed ACBM encountered during renovation or demolition activity, that differs from materials sampled or described during this survey must be assumed to contain asbestos and be abated or be sampled to determine asbestos content prior to disturbance.

Material quantities are listed according to visible estimates at the time of the survey. It is recommended that all quantities be further verified by building owner or abatement contractor prior to project design, bidding and/or DNR notification purposes.

ANALYTICAL DISCUSSION:

Bulk sample analysis for asbestos was performed by polarized light microscopy (PLM); method EPA 600/r-93-116. Samples showing a result of "None Detected" were found to contain no asbestos in any analyzed portion of the sample.

USEPA defines an ACBM as one that contains greater than one percent asbestos. For a sample result showing less than one percent (<1%) of asbestos, the material can be may be treated as a non-asbestos containing material. The building owner or client should be aware that exposure to asbestos is still possible following disturbance of material with a trace or <1% of asbestos present and that worker protection procedures may be necessary.

REMARKS:

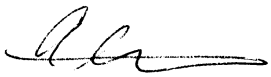
The survey and subsequent report has been performed according to applicable regulations and generally accepted industry standards and practices in this locality under similar conditions. Information provided to us by building owner/occupant, client or other interested party that may have been utilized in the performance and reporting of the survey was accepted in good faith and can only be assumed to be accurate. The findings and recommendations made are representative of our professional opinion based on currently available information, no other warranty is implied or intended.

Please contact us if you have any questions regarding the presented information or the project in general.

Sincerely,

NorthStar Environmental Testing, LLC.

David Barrett
Senior Project Manager



Aaron Stroud
Operations Manager

Appendix A ASBESTOS MATERIALS (ABATEMENT)

Stantec Consulting Services Inc.

Mirro Building No. 9
1512 Washington Street
Manitowoc, WI 54220

September 2016

ASBESTOS MATERIAL SUMMARY:

Confirmed ACBM, or **presumed ACBM** that will require abatement prior to disturbance by mechanical demolition:

Building Area	Material	Quantity (approx)	Comment/Condition
Five / Seven Story Building (south building)			
106	Square D: Transite Electrical Panel	1 ft² (1 each)	South Wall - East
107	AB: Push Button Panel/Switch	2 ft² (2 each)	
107A	Square D: Transite Electrical Panel	2 ft^2 (2 each)	
108	Cutler Hammer: White Electrical Isolator	2 ft^2 (2 each)	
108	Pipe Insulation	10 linear feet	Stair #6
109	Cutler Hammer: Motor Control	3 ft^2 (3 each)	
109	Cutler Hammer: White Electrical Isolator	2 ft^2 (2 each)	
110	Pipe Insulation & Pipe Fittings	1 linear foot & 1 each	At ceiling
111	Cutler Hammer: Push Button Panel	2 ft^2 (2 each)	
111	Cutler Hammer: Transite	1 ft^2 (1 each)	South Wall, By Stair
111	Cutler Hammer: White Electrical Isolator	6 ft^2 (6 each)	
111	GE Electrical Panel: Transite Electrical Panel	1 ft^2 (1 each)	South – East
111	Cutler Hammer: White Paper Insulation	3 ft^2 (3 each)	Center – East Friable
111	AB: Push Button Panel	1 ft^2 (1 each)	North Center – Column
111	Square D: Transite Electrical Panel	1 ft^2 (1 each)	Center
111	Pipe Insulation & Pipe Fittings	2 linear feet (2 each)	At ceiling, By 112 Stair
111 (Stair #7)	Pipe Insulation & Pipe Fittings	1 linear feet (1 each)	Aircell in wall cavity
111B Storage	Square D: Transite Electrical Panel	1 ft^2 (1 each)	
112A	Pipe Insulation & Pipe Fittings	70 linear feet & 15 each	At ceiling
113	Square D: Transite Electrical Panel	2 ft^2 (2 each)	
115 Receiving	Pipe Insulation & Pipe Fittings	20 linear feet (6 each)	At Ceiling
115 Receiving	AB: Push Button Panel	3 ft^2 (3 each)	
115 Receiving	Square D: Transite Electrical Panel	2 ft^2 (2 each)	By 116 & Southwest

Building Area	Material	Quantity (approx)	Comment/Condition
115 Receiving	Cutler Hammer: Motor Control Panel	1 ft^2 (1 each)	
115 Receiving	Square D Panel: Small Black Isolator	2 ft^2 (2 each)	
115 Receiving	GE Electrical Panel: Transite Electrical Panel	2 ft^2 (2 each)	Southwest
116 Load Dock	Pipe Insulation & Pipe Fittings	30 linear feet (3 each)	
116 Load Dock	20 Gallon Container ACM debris (transite)	20 Gallons (1 each)	
116 Load Dock	Transite Debris	120 cubic feet	Pile
118	Square D: Transite Electrical Panel	1 ft^2 (1 each)	
118	Cutler Hammer: Motor Control Panel	1 ft^2 (1 each)	
118	Square D Panel: Small Black Isolator	2 ft^2 (2 each)	
119	Cutler Hammer: Transite Electrical Panel	1 ft^2 (1 each)	Southwest – Column
120	AB: Push Button Panel	1 ft^2 (1 each)	
121	AB: Push Button Panel	4 ft^2 (4 each)	
121	Cutler Hammer: Motor Control Panel	1 ft^2 (1 each)	Northwest
204	Square D: Transite Electrical Panel	1 ft^2 (1 each)	East
205	12” Tan Floor Tile & Black Adhesive	1,440 ft^2	Friable on Wood
205	Pipe Insulation	1 linear feet	Southwest – West at Ceiling
208	Square D Panel: Small Black Isolator	1 ft^2 (1 each)	
208	Square D: Transite Electrical Panel	1 ft^2 (1 each)	
208	AB: Push Button Panel	2 ft^2 (2 each)	
215	Pipe Insulation	3 linear feet	Closet – Northwest
219	GE Electrical Panel: Transite Electrical Panel	1 ft^2 (1 each)	White Paper (friable)
301	Cutler Hammer: Motor Control Panel	1 ft^2 (1 each)	
307	Cutler Hammer: Motor Control Panel	1 ft^2 (1 each)	
405	Square D: Transite Electrical Panel	1 ft^2 (1 each)	Southeast
405	AB: Push Button Panel	2 ft^2 (2 each)	Brown Paper

Building Area	Material	Quantity (approx)	Comment/Condition
405	Cutler Hammer: White Electrical Isolator	1 ft^2 (1 each)	
405	Aircell Debris	10 linear feet	North Center
412	Cutler Hammer: White Electrical Isolator	1 ft^2 (1 each)	
418	Pipe Fittings	4 each	
502	Square D Panel: Small Black Isolator	1 ft^2 (1 each)	
502	Square D: Transite Electrical Panel	1 ft^2 (1 each)	
505	Square D: Transite Electrical Panel	1 ft^2 (2 each)	Closet
508	White Ceiling Board	36 ft^2	Closet
513	Square D: Transite Electrical Panel	2 ft^2 (2 each)	1 North 1 South
513	Square D Panel: Small Gray Isolator	1 ft^2 (1 each)	North White Paper – Friable
518	Pipe Fitting	1 each	
603	AB: Push Button Panel	5 ft^2 (5 each)	
603	White Ceiling Board	8 ft^2	Closet – Loose on Floor
603	Square D: Transite Electrical Panel	2 ft^2 (2 each)	Southwest
607	Square D: Transite Electrical Panel	2 ft^2 (2 each)	North
608	Square D: Transite Electrical Panel	1 ft^2 (1 each)	West
612	Square D Panel: Small Black Isolator	1 ft^2 (1 each)	Closet
617	Square D: Transite Electrical Panel	1 ft^2 (1 each)	West
701	White Ceiling Board	25 ft^2	Closet – Loose on Floor
705	Square D Panel: Small Black Isolator	1 ft^2 (1 each)	
716	White Cloth Vibration Joint	2 ft^2 (2 each)	
Penthouse (Stair #5, Northeast)	Elevator Brake Shoe	1 ft^2	Assumed
Penthouse (Stair #5, Northeast)	Slate Electrical Panel	not quantified	Assumed
Penthouse (Stair #5, Northeast)	Square D Panel: Insulation Paper	1 ft^2	Assumed
Penthouse (Stair #7, South)	GE Electrical Panel: Transite Electrical Panel	1 ft^2 (1 each)	
Penthouse (Stair #7, South)	Slate Electrical Panel	24 ft^2	Assumed

Building Area	Material	Quantity (approx)	Comment/Condition
Penthouse (Stair #7, South)	Elevator Brake Shoes	1 ft^2 (1 each)	Assumed
Penthouse (Stair #8, North)	Transite Board	100 ft^2	Assumed
Penthouse (Stair #8, North)	Slate Electrical Board	8 ft^2	Assumed
Penthouse (Stair #8, North)	Elevator Brake Shoe	1 ft^2	Assumed
Penthouse (Stair #8, North)	Square D Panel: Small Black Isolator	1 ft^2 (1 each)	
Penthouse (Center Stair)	Elevator Brake Shoes	1 ft^2 (1 each)	Assumed
Penthouse (Center Stair)	Slate Board & Transite	18 ft^2	Assumed
Penthouse (2 each)	Inaccessible – assume elevator electrical / shoes	not quantified	Assumed
Exterior South Building	Gray Fiberglass Window Sill Wrap	3,020 ft^2	
Six Story Building (north building)			
Tunnel (south)	Felt Pipe Insulation & Pipe Fittings	50 linear feet 7 each	By S#1 & S#2
Tunnel (south)	Aircell Pipe Insulation & Pipe Fittings	30 linear feet 10 each	By S#3
Tunnel (south)	Asbestos Debris	not quantified	By M#3 Minimal - Clean
Tunnel (north)	Felt Pipe Insulation & Pipe Fittings	970 linear feet 51 each	Throughout
Tunnel (north)	Aircell Pipe Insulation & Pipe Fittings	70 linear feet 10 each	By M#8
124 Load Dock	Cutler Hammer: Motor Control Panel	6 ft^2 (6 each)	
124 Load Dock	Square D: Transite Electrical Panel	4 ft^2 (4 each)	South Center
124 Load Dock	Square D Panel: Small Black Isolator	1 ft^2 (1 each)	Southwest
124 Load Dock	Pipe Insulation & Pipe Fittings	50 linear feet (9 each)	33 linear feet at high ceiling
124 Load Dock	AB: Push Button Panel	1 ft^2 (1 each)	
125	Pipe Insulation & Pipe Fittings	1 linear feet (1 each)	Southwest, At Ceiling
126	Cutler Hammer: Motor Control	2 ft^2 (2 each)	North Wall – West (friable paper)
126	GE Dial Electrical Panel: Slate	2 ft^2 (2 each)	White Paper - Friable
126	AB: Push Button Panel	3 ft^2 (3 each)	
126	Cutler Hammer: Push Button Panel	4 ft^2 (4 each)	

Building Area	Material	Quantity (approx)	Comment/Condition
126	Large Transformer: Black Box Electrical Isolator	1 ft^2 (1 each)	
126	Square D: Transite Electrical Panel	3 ft^2 (3 each)	
126	GE Electrical Panel: Transite Electrical Panel	4 ft^2 (4 each)	
126	Square D Panel: Small Black Isolator	7 ft^2 (7 each)	
127	Square D: Transite Electrical Panel	1 ft^2 (1 each)	N07 Column
127	Unlabeled: Black	1 ft^2 (1 each)	North Wall - East
127	Cutler Hammer: Push Button Panel	2 ft^2 (2 each)	North Wall - Center
127	Square D: Transite Electrical Panel	1 ft^2 (1 each)	North Wall - Center
128 Men's Restroom	Pipe Insulation & Pipe Fittings	2 linear feet (1 each)	
130 (Stair #2 Entry)	Pipe Insulation & Pipe Fittings	2 linear feet (2 each)	
220 (Stair #2)	Pipe Insulation	6 linear feet	
221	Electrical Debris Pile	25 ft^2	Assumed
221	Square D: Transite Electrical Panel	2 ft^2 (2 each)	Column 2M 08 & East Wall - Center
221	Square D Panel: Small Black Isolator	3 ft^2 (3 each)	Column 2M 11 & Column 2M 16
221	Cutler Hammer: White Electrical Isolator	1 ft^2 (1 each)	White Paper - Friable
221	Large Transformer: Black Box Electrical Isolator	1 ft^2 (4 each)	Southeast
223	AB: Push Button Panel	1 ft^2 (1 each)	Northeast
223	Square D: Transite Electrical Panel	1 ft^2 (1 each)	Northeast
223	Cutler Hammer: Push Button Panel	2 ft^2 (2 each)	
223	Square D Panel: Small Black Isolator	2 ft^2 (2 each)	
323	Square D: Transite Electrical Panel	5 ft^2 (5 each)	
324	Square D Panel: Small Black Isolator	2 ft^2 (2 each)	
324	Square D: Transite Electrical Panel	4 ft^2 (4 each)	
422 (Stair #2)	Pipe Insulation	1 linear feet	At Ceiling
423	AB: Push Button Panel	1 ft^2 (1 each)	

Building Area	Material	Quantity (approx)	Comment/Condition
426	AB: Push Button Panel	2 ft^2 (2 each)	
426	Square D: Transite Electrical Panel	1 ft^2 (1 each)	
426	Westinghouse: Black Compressed Board	1 ft^2 (1 each)	
426	Cutler Hammer: White Electrical Isolator	1 ft^2 (1 each)	
520 (Stair #2)	Pipe Insulation	1 linear feet	At Ceiling
521	AB: Push Button Panel	10 ft^2 (10 each)	Black
521	AB: Push Button Panel	1 ft^2 (1 each)	Red
619	AB: Push Button Panel	10 ft^2 (10 each)	
619	Cutler Hammer: Motor Control Panel	4 ft^2 (4 each)	
619	Square D: Transite Electrical Panel	1 ft^2 (1 each)	
619	Cutler Hammer: Push Button Panel	1 ft^2 (1 each)	
619	Square D: Transite Electrical Panel	1 ft^2 (1 each)	
619	GE Slate Electrical Panel	1 ft^2 (1 each)	Assumed
619	Black Window Glazing (in metal divider wall)	12 ft^2	
622	Cutler Hammer: Motor Control Panel	4 ft^2 (4 each)	
622	Square D: Transite Electrical Panel	12 ft^2 (12 each)	
622	Cutler Hammer: White Electrical Isolator	3 ft^2 (3 each)	
622	GE Electrical Panel: Transite Electrical Panel	2 ft^2 (2 each)	
622	Square D Panel: Small Black Isolator	1 ft^2 (1 each)	
622	AB: Push Button Panel	2 ft^2 (2 each)	
Penthouse (Stair #2, west)	Square D: Electrical Panel	1 ft^2	Assumed
Penthouse (Stair #2, west)	Elevator Brake Shoe	1 each	Assumed
Penthouses (north & south)	Square D: Electrical Panel Elevator Brake	not quantified	Assumed / Inaccessible
Exterior North Building	Gray Fiberglass Window Sill Wrap	12,230 ft^2	On columns & foundation

Appendix B BUILDING DIAGRAMS (Asbestos)

Stantec Consulting Services Inc.

Mirro Building No. 9
1512 Washington Street
Manitowoc, WI 54220

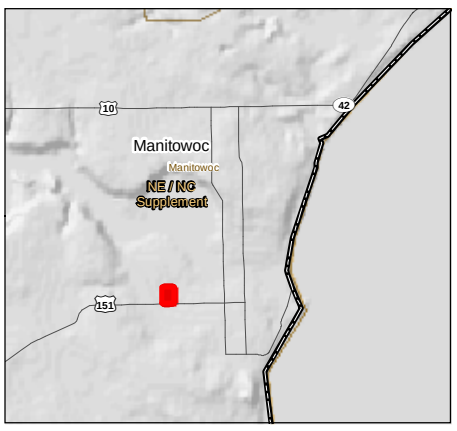
September 2016

R:\ gis\ client\ Manitowoc\ MXD\ 11512 Washington\ 11.mxd Revised: 2016-08-31 By: hbyers

#7 #10 #6 #14 #12 #13 #8 #9 #11 #1 #5 #2 #3 #4

S 16th St

S 15th St



Notes
Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
Orthophotography Source: 2014, City of Manitowoc

Legend

- Corner of Building

Tunnel Entrances

- Confirmed-Floor Access-Way
- Confirmed-Stairwell
- Unconfirmed-Manway
- Confirmed
- Unconfirmed

Figure No.
2

Title
Figure 2 Subsurface Tunnel Network and Access Locations

Client/Project
City of Manitowoc
USEPA Brownfield Assessment Grant
Hazardous Substances

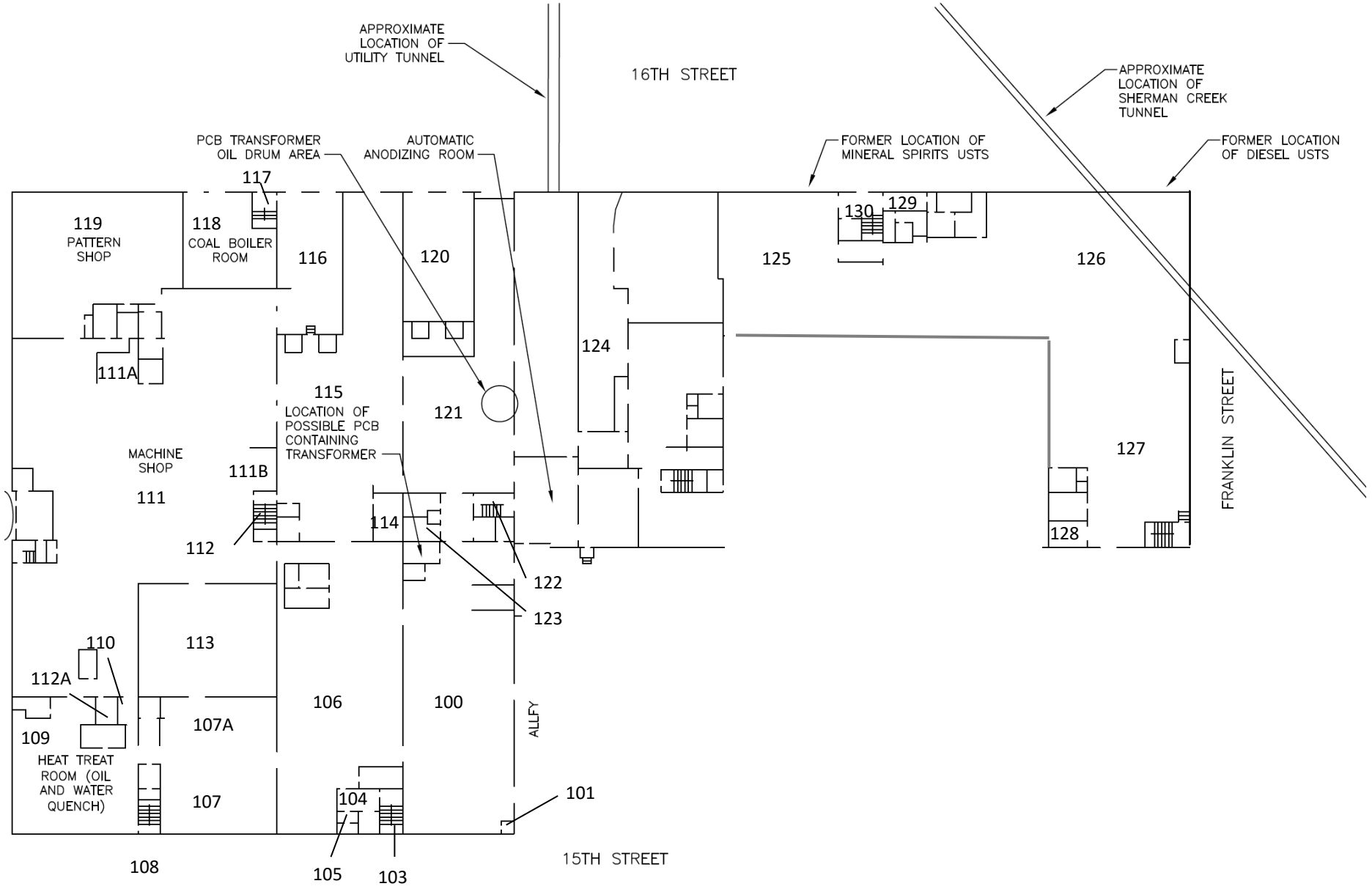
N

0 15 30 60 Feet

193703931
Prepared by HLB on 8-31-16

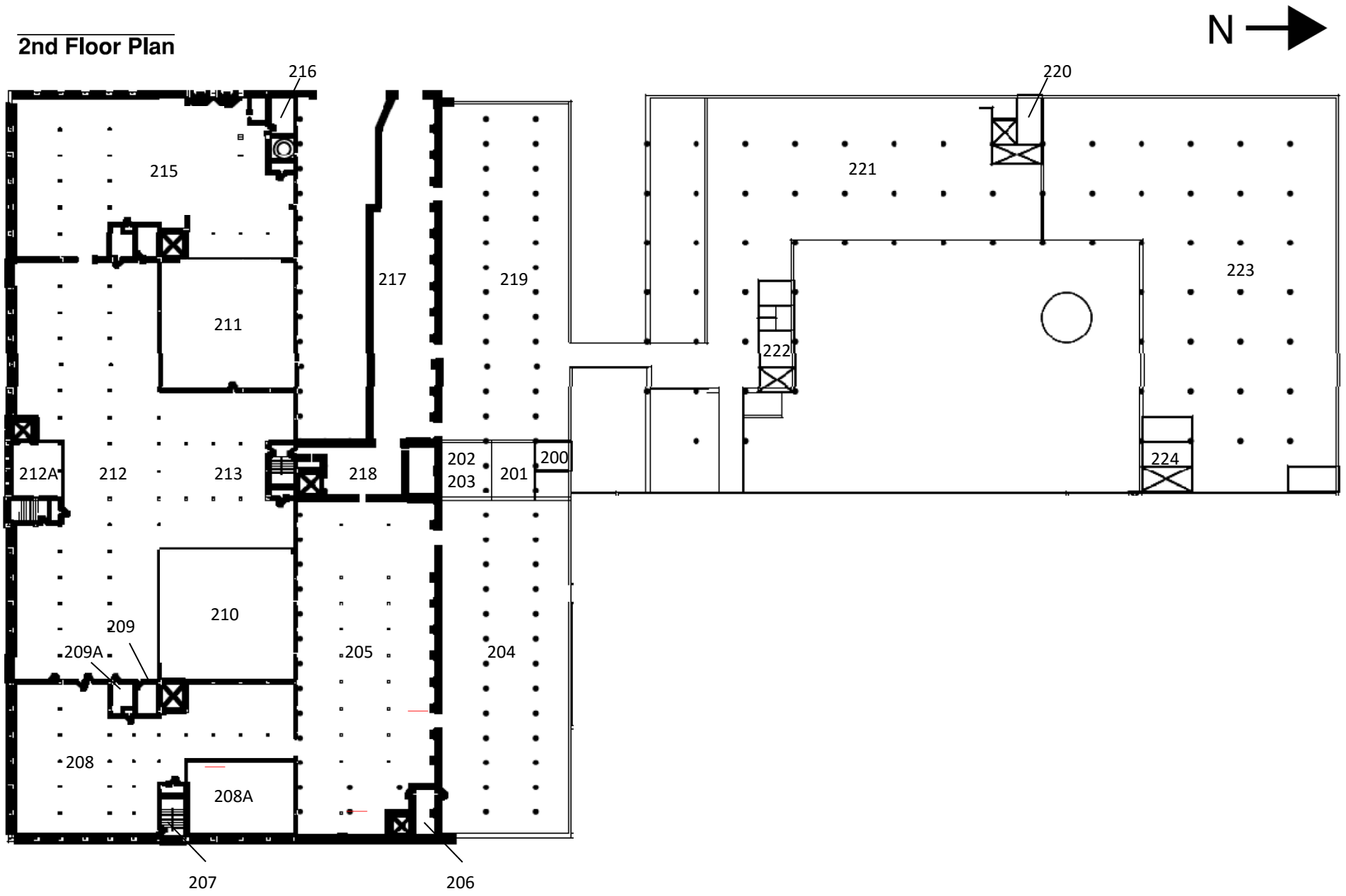
1:550 (At Original document size of 11x17)

Stantec

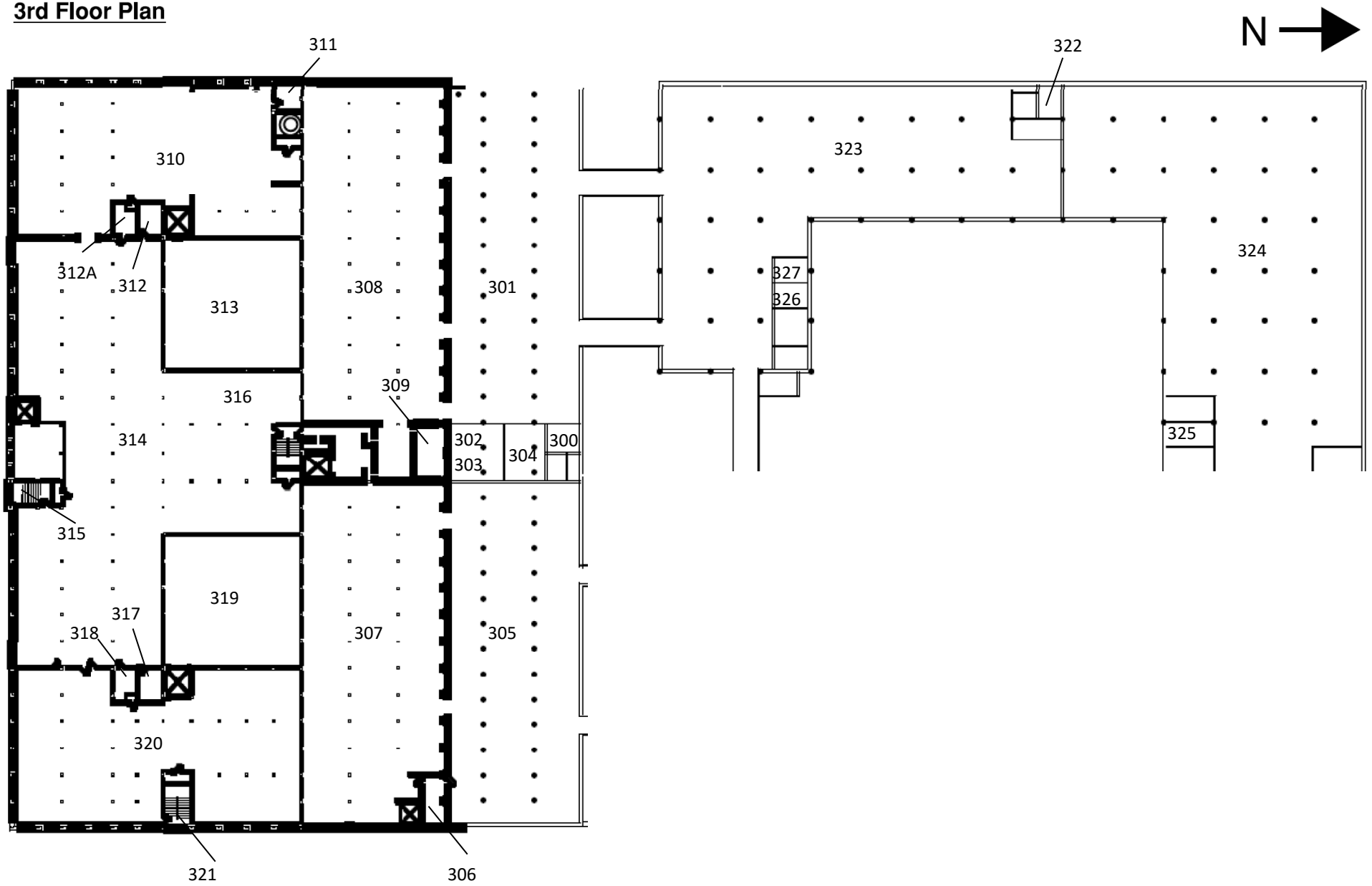


Ground Floor Plan

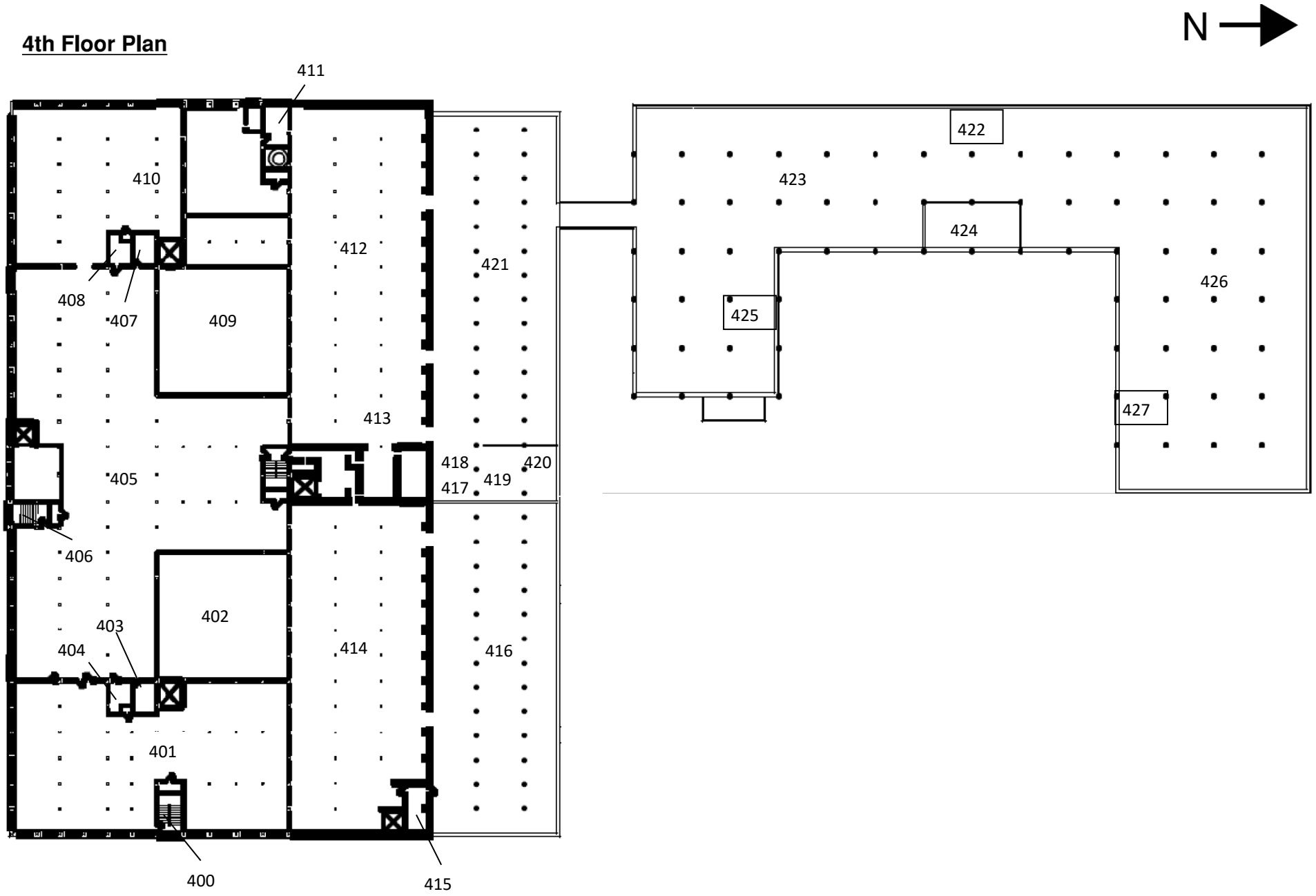
2nd Floor Plan



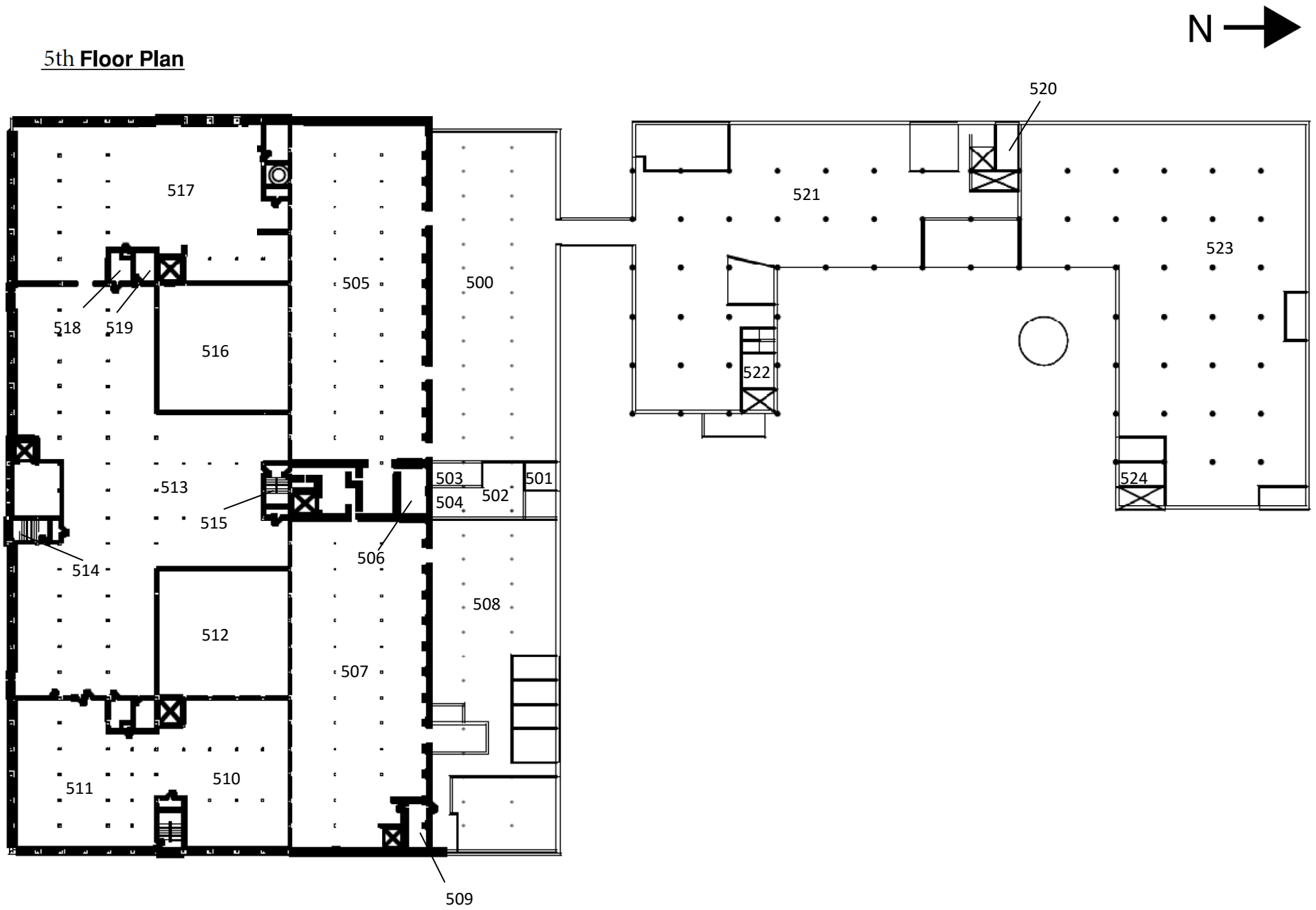
3rd Floor Plan



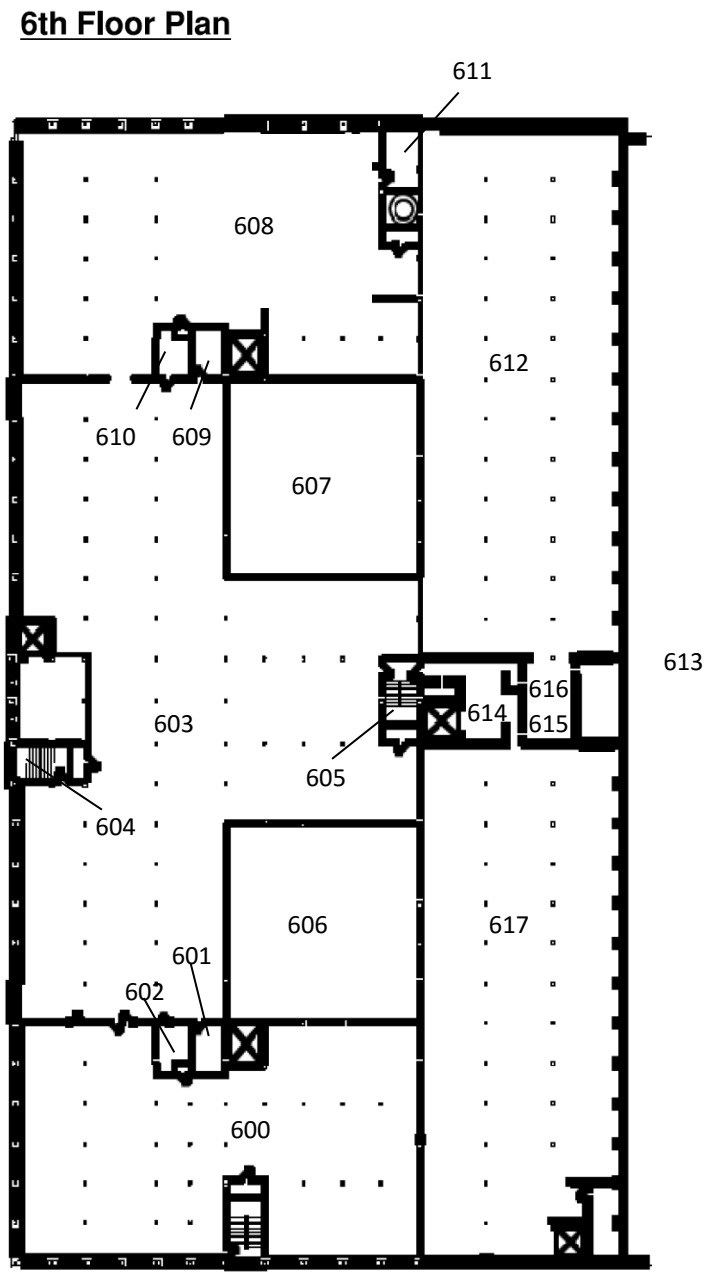
4th Floor Plan

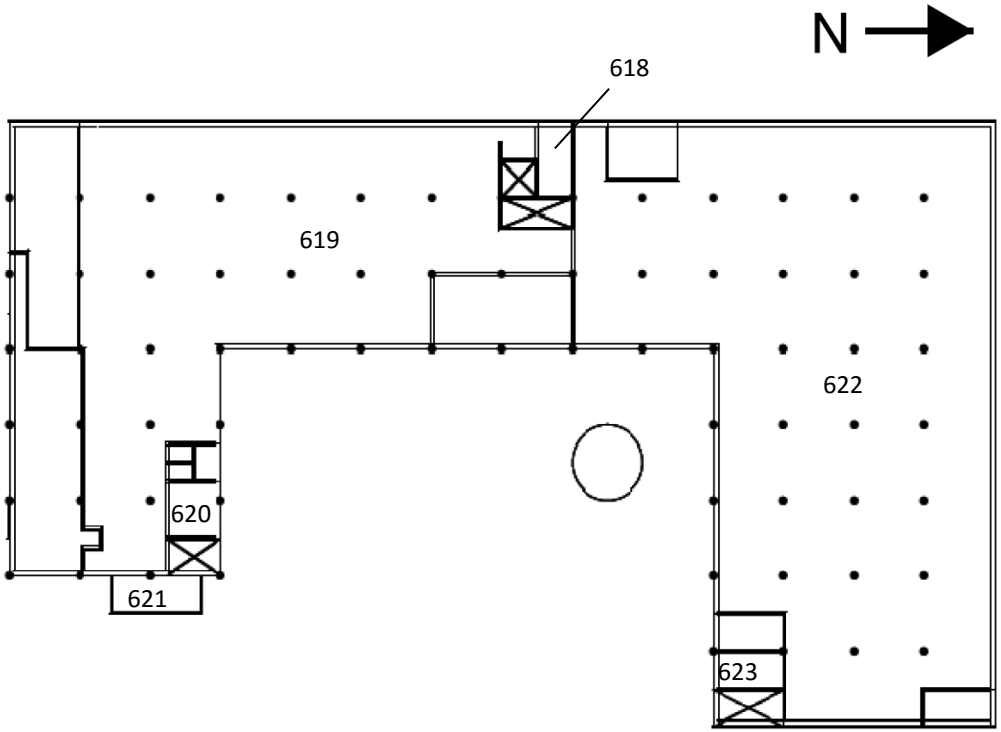


5th **Floor Plan**

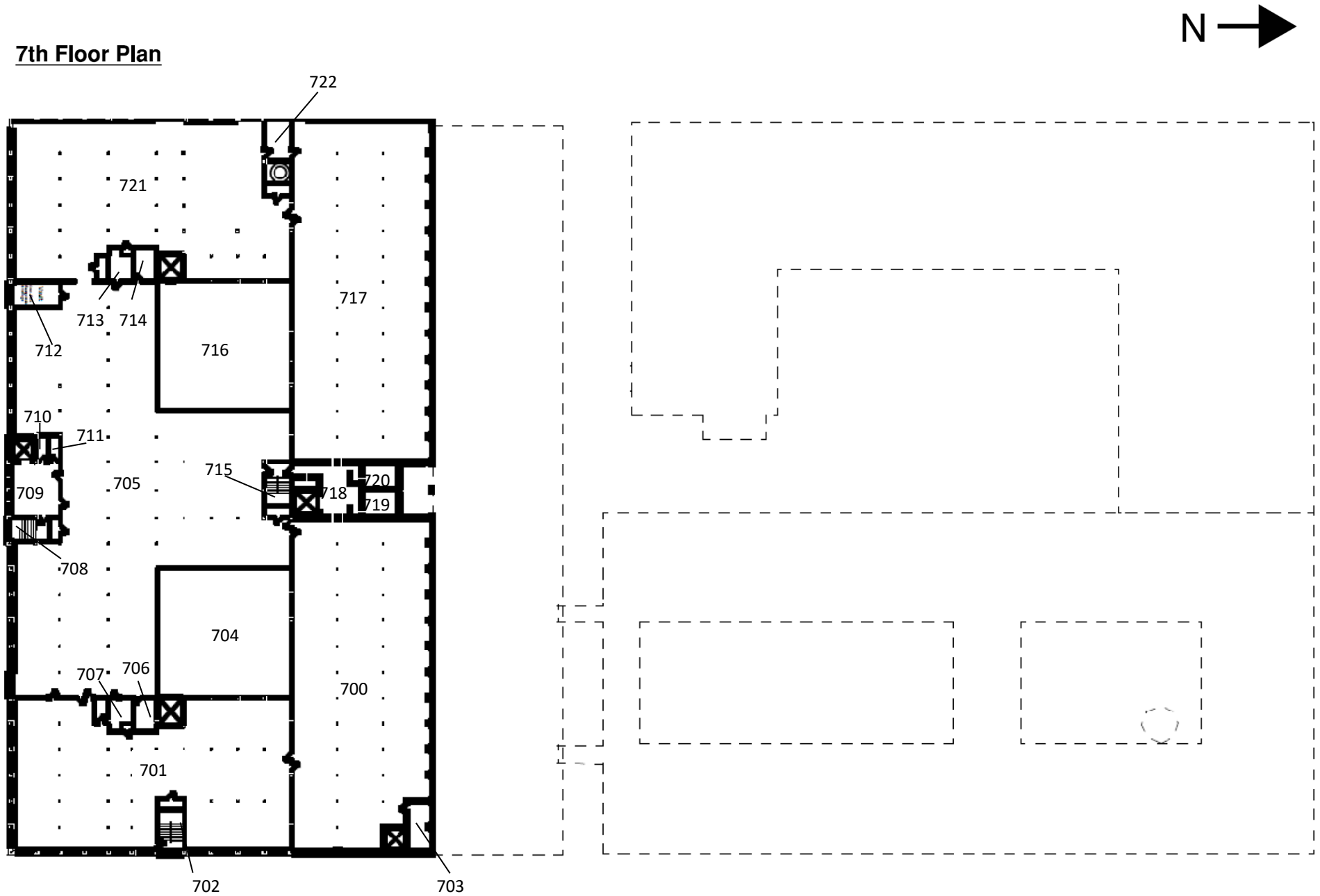


6th Floor Plan





7th Floor Plan



Appendix C **PHOTO LOG (Asbestos)**

Stantec Consulting Services Inc.

Mirro Building No. 9
1512 Washington Street
Manitowoc, WI 54220

September 2016

PHOTO LOG

Photo 1: Exterior (east, south)

Photo 2: Exterior (east, north)

Photo 3: Exterior (north)

Photo 4: Exterior (west, north)

Photo 5: Exterior (west)

Photo 6: Exterior (south)

Photo 7: Square D – Transite Panel

Photo 10: AB – Push Button

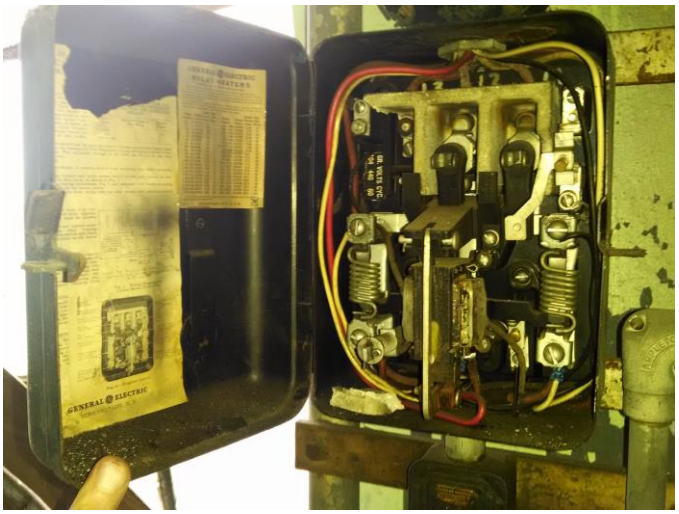


Photo 8: GE – Transite Panel

Photo 11: Cutler Hammer – Motor Control

Photo 9: Cutler Hammer – Push Button

Photo 12: GE Slate Electrical Panel

Photo 13: Transformer Box: Black Isolator

Photo 16: Large Transformer: Black Box Electrical

Photo 14: Square D: Small Black Isolators

Photo 17: Gray Fiberglass Window Sill Wrap (south building)

Photo 15: Cutler Hammer: White Isolator

Photo 18: Gray Fiberglass Window Sill Wrap (north building, tower)

Photo 19: Black Window Glazing

Photo 22: 12” Tan Floor Tile

Photo 20: Kiln Gasket

Photo 23: White Ceiling Board / White Panel

Photo 21: Red Brick Debris

Photo 24: Pipe Insulation & Pipe Fittings (representative)

Photo 25: Transite Debris

Photo 28: Elevator Transite (representative)

Photo 26: Transite Debris

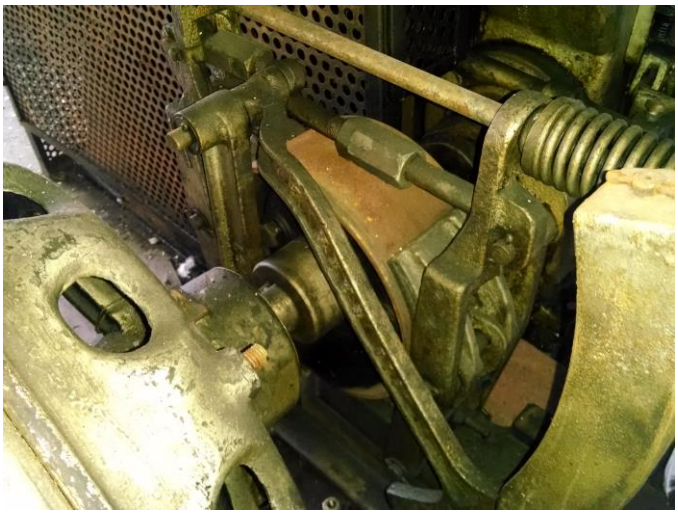


Photo 29: Elevator Brake Shoe (representative)

Photo 27: Elevator Electrical (representative)

Photo 30: Electrical Isolators (debris pile)

Appendix D **SAMPLE LOG (Asbestos)**

Stantec Consulting Services Inc.

Mirro Building No. 9
1512 Washington Street
Manitowoc, WI 54220

September 2016

NORTHSTAR ENVIRONMENTAL TESTING, LLC
www.NorthStarTesting.com

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Madison Office:
1310 Mendota Street
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Madison, WI 53714
Tel: 608.827.6761

BULK SAMPLE LOG-IN

CLIENT:	Stantec Consulting Services Inc.	**NORTHSTAR NO.**	160-584
LOCATION:	1512 Washington St - Manitowoc, WI	**DATE COLLECTED:**	8/12/16 to 8/17/16
WORK AREA:	Mirro Aluminum Company	**TECH:**	Aaron Stroud

Sample ID	Level	Room / Area Info	Sample Info	Content
584-1	1	127 (column N07)	Square D: Transite Electrical Isolator	**15% Chrysotile**
584-2	1	127 (north wall – east)	Cutler Hammer: Gray Electrical Isolator	None Detected
584-3	1	127 (north wall – east)	Unlabeled: Black Electrical Isolator	**15% Chrysotile**
584-4	1	127 (north wall – center)	Cutler Hammer (push button): Black Isolator	**10% Chrysotile**
584-5	1	127 (north wall – center)	Square D: Slate Electrical Isolator	None Detected
584-6	1	127 (north wall – west)	Cutler Hammer (motor control): White Paper	**65% Chrysotile**
584-7	1	127 (north wall – west)	Trumbull: Slate Electrical Isolator	None Detected
584-8	1	127 (north wall – west)	GE (dial): Slate Electrical Isolator	**15% Chrysotile**
584-9	1	127 (north wall – west)	Bulldog: Gray Electrical Isolator	None Detected
584-10	1	126 (west wall – north)	Bulldog: Black Electrical Isolator	None Detected
584-11	1	126 (west wall – north)	GE: Transite Electrical Isolator	**15% Chrysotile**
584-12	1	126 (west wall – north)	AB (push button): Black Isolator	**15% Chrysotile**
584-13	1	127 (column N03)	Transformer Box: Black Electrical Isolator	**10% Chrysotile**
584-14	1	127 (column N10)	ITE: Gray Electrical Isolator	None Detected
584-15	1	126 (column N32)	Square D: Small Black Electrical Isolator	**10% Chrysotile**
584-16	1	126 (column N34)	GE (dial): White Paper	**65% Chrysotile**
584-17	2	220 (Stair #2)	White Porcelain Electrical Isolator	None Detected
584-18	2	220 (Stair #2)	White Electrical Conduit	None Detected

Lab Info:	CEI Labs	**Date Analyzed:**	8/23/16	**Page:**	1 of 7

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BULK SAMPLE LOG-IN

CLIENT:	Stantec Consulting Services Inc.	**NORTHSTAR NO.**	160-584
LOCATION:	1512 Washington St - Manitowoc, WI	**DATE COLLECTED:**	8/12/16 to 8/17/16
WORK AREA:	Mirro Aluminum Company	**TECH:**	Aaron Stroud

Sample ID	Level	Room / Area Info	Sample Info	Content
584-19	2	221 (east wall – center)	Cutler Hammer: White Electrical Isolator (gray)	**20% Chrysotile**
584-20	2	221 (east wall – center)	Cutler Hammer: White Paper (gray)	**65% Chrysotile**
584-21	2	221 (southeast – large panel)	Black Box Electrical Isolator	**10% Chrysotile**
584-22	2	221 (southeast – large panel)	Brown Paneling	None Detected
584-23	2	221 (southeast – large panel)	Black Paneling	None Detected
584-24	2	221 (southeast – large panel)	Brown Support Member	None Detected
584-25	2	223 (green equipment)	AB: Black Electrical Isolator	None Detected
584-26	2	223 (green equipment)	Red Gasket	None Detected
584-27	2	223 (green equipment)	Slate Debris	None Detected
584-28	Ext	223 Exterior (west)	Gray Fiberglass Window Sill Wrap	**5% Chrysotile**
584-29	2	223 (west wall)	Black Window Sill Tar	**5% Chrysotile**
584-30	3	323 (southwest)	ITE: Tan Paper (black)	None Detected
584-31	3	323 (southeast)	Lagging Cloth (on fiberglass insulation)	None Detected
584-32	3	323 (southeast)	Square D: Gray Paper (transite)	None Detected
584-33	3	324 (south wall – center)	Black Window Sill Tar	**5% Chrysotile**
584-34	4	423 (southwest)	Westinghouse: Black Electrical Isolator	None Detected
584-35	4	423 (southwest)	Westinghouse: Black Paper (black)	None Detected
584-36	Ext	423 Exterior (west wall)	Window Glazing	None Detected

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BULK SAMPLE LOG-IN

CLIENT:	Stantec Consulting Services Inc.	**NORTHSTAR NO.**	160-584
LOCATION:	1512 Washington St - Manitowoc, WI	**DATE COLLECTED:**	8/12/16 to 8/17/16
WORK AREA:	Pre-Renovation	**TECH:**	Aaron Stroud

Sample ID	Level	Room / Area Info	Sample Info	Content
584-37	4	424 Office	Drywall	None Detected
584-38	4	424 Office	Joint Compound	**3% Chrysotile**
584-39	4	424 Office	Composite (only if either is positive)	<1% Chrysotile Point Count: 0.14%
584-40	4	426 (northwest)	Square D: Gray Electrical Isolator	None Detected
584-41	4	426 (northwest)	Square D: Gray Flexible Isolator (gray)	None Detected
584-42	4	426 (northwest)	Westinghouse: Black Compressed Board	**50% Chrysotile**
584-43	4	427 Restroom	Floor Leveling Compound	None Detected
584-44	5	521 (southwest)	AB: Red Electrical Isolator	**10% Chrysotile**
584-45	5	521 (east wall)	Black Window Sill Tar	**5% Chrysotile**
584-46	5	521 (southwest room)	Floor Leveling Compound	None Detected
584-47	6	619 (southwest)	Slate Electrical Panel	None Detected
584-48	6	619 (south metal wall)	Black Window Glazing	**5% Chrysotile**
584-49	Ext	Tower Penthouse	Gray Fiberglass Wrap	**5% Chrysotile**
584-50	1	100 (east wall)	Window Glazing	None Detected
584-51	1	100 (northwest)	White Flooring Underlayment Debris	None Detected
584-52	1	100 (northwest)	Green Vinyl Sheet Flooring Debris	None Detected
584-53	1	100 (northwest)	Gray Compressed Board Debris	None Detected
584-54	1	100 (northwest)	Red Flooring Underlayment Debris	None Detected

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BULK SAMPLE LOG-IN

CLIENT:	Stantec Consulting Services Inc.	**NORTHSTAR NO.**	160-584
LOCATION:	1512 Washington St - Manitowoc, WI	**DATE COLLECTED:**	8/12/16 to 8/17/16
WORK AREA:	Pre-Renovation	**TECH:**	Aaron Stroud

Sample ID	Level	Room / Area Info	Sample Info	Content
584-55	1	100 (northwest)	Black Flooring Underlayment Debris	None Detected
584-56	1	103 (Stair #5)	Tan Flooring Underlayment Debris	None Detected
584-57	1	104	Fiberboard Ceiling Panels	None Detected
584-58	1	107	Window Glazing (wood windows)	None Detected
584-59	1	109	Kiln Gasket	**70% Chrysotile**
584-60	1	109	Kiln Gray Mortar	None Detected
584-61	1	109	Kiln Pink Fire Brick	<1% Chrysotile Point Count: 0.25%
584-62	1	109	Kiln Gray Plaster Lining	<1% Chrysotile
584-63	1	109	Red Brick Debris (in pit)	None Detected
584-64	1	109	Pink Brick Debris (in pit)	None Detected
584-65	1	109	Red Brick Debris (in pit)	**15% Amosite 5% Chrysotile**
584-66	1	111	Cutler Hammer: White Electrical Isolator (gray)	**50% Chrysotile**
584-67	1	111	Tar (on wood flooring)	None Detected
584-68	1	111 (south vestibule)	2'x2' Textured Ceiling Tile	None Detected
584-69	1	118 (south)	Boiler Interior Packing	None Detected
584-70	1	118 (center)	Boiler Interior Packing	None Detected
584-71	1	118 (north)	Boiler Interior Packing	None Detected
584-72	1	121 (north wall)	Window Glazing Debris	None Detected

Lab Info:	CEI Labs	**Date Analyzed:**	8/23/16	**Page:**	4 of 7

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BULK SAMPLE LOG-IN

CLIENT:	Stantec Consulting Services Inc.	**NORTHSTAR NO.**	160-584
LOCATION:	1512 Washington St - Manitowoc, WI	**DATE COLLECTED:**	8/12/16 to 8/17/16
WORK AREA:	Pre-Renovation	**TECH:**	Aaron Stroud

Sample ID	Level	Room / Area Info	Sample Info	Content
584-73	2	202 Men's	Red Flooring Underlayment Debris	None Detected
584-74	2	204 (west)	Tan Flooring Patch	None Detected
584-75	2	204 (closet)	White Paper Debris	None Detected
584-76	2	205 (east)	12" Tan Floor Tile	**3% Chrysotile**
584-77	2	205 (east)	Black Floor Tile Adhesive	**3% Chrysotile**
584-78	2	207 (Stair #6)	Black Tar (on window perimeter)	**10% Chrysotile**
584-79	2	207 (Stair #6)	White Window Caulk (on window perimeter)	**3% Chrysotile**
584-80	Ext	208 Exterior	Gray Fiberglass Window Sill Wrap	**5% Chrysotile**
584-81	2	208	Black Flooring Underlayment	None Detected
584-82	2	208A	White Ceiling Paper	None Detected
584-83	2	Women's Restroom (west)	Felt Pipe Insulation	None Detected
584-84	2	215	Cutler Hammer: White Elect. Isolator (gray, new)	**10% Chrysotile**
584-85	3	305	AH (fire control): Gray Electrical Isolator	None Detected
584-86	Ext	307 Exterior (east)	Gray Window Sill Mastic	**3% Chrysotile**
584-87	3	307	Square D: Gray Paper Insulation (gray)	None Detected
584-88	3	307 (northwest)	White Powder Debris (on floor)	None Detected
584-89	3	313 (north)	Window Glazing (remnant)	None Detected
584-90	3	314 (south – center)	12" Brown Floor Tile	**3% Chrysotile**

NORTHSTAR ENVIRONMENTAL TESTING, LLC
www.NorthStarTesting.com

Central Wisconsin Office:
817 Oak Ridge Rd
Mosinee, WI 54455
Tel: 715.693.6112
Fax: 715.693.1225

Fox Cities Office:
1835 E. Edgewood Drive
Suite 10542
Appleton, WI 54913
Tel: 920.422.4888

Madison Office:
1310 Mendota Street
Suite 121
Madison, WI 53714
Tel: 608.827.6761

BULK SAMPLE LOG-IN

CLIENT:	Stantec Consulting Services Inc.	**NORTHSTAR NO.**	160-584
LOCATION:	1512 Washington St - Manitowoc, WI	**DATE COLLECTED:**	8/12/16 to 8/17/16
WORK AREA:	Pre-Renovation	**TECH:**	Aaron Stroud

Sample ID	Level	Room / Area Info	Sample Info	Content
584-91	3	314 (south – center)	Black Floor Tile Adhesive	**3% Chrysotile**
584-92	4	401	Slate Electrical Panel	None Detected
584-93	4	405	Bulldog: Brown Insulation Paper (gray)	None Detected
584-94	4	414 (northwest)	Cal-Sil Pipe Insulation	None Detected
584-95	4	419	Black Tar (on wood flooring)	None Detected
584-96	5	505 (northeast)	Silver Fiberboard Wall Paneling	None Detected
584-97	5	508 (closet)	White Ceiling Board	**65% Chrysotile**
584-98	6	603 (closet)	White Panel (loose on floor)	**65% Chrysotile**
584-99	6	606	Window Glazing (elevator window)	None Detected
584-100	6	615	Cal-Sil Pipe Insulation	None Detected
584-101	7	701	9” Brown Floor Tile	None Detected
584-102	7	701	Gray Flooring Felt	None Detected
584-103	7	701	Plaster Ceiling (skim coat)	None Detected
584-104	7	701	Plaster Ceiling (base coat)	None Detected
584-105	7	701	Gray Wall Adhesive	None Detected
584-106	7	704 (east)	9” Brown Floor Tile	**3% Chrysotile**
584-107	7	704 (east)	Tan Floor Tile Adhesive	None Detected
584-108	7	704 (east)	Black Flooring Underlayment	None Detected

Lab Info:	CEI Labs	**Date Analyzed:**	8/23/16	**Page:**	6 of 7

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BULK SAMPLE LOG-IN

CLIENT:	Stantec Consulting Services Inc.	**NORTHSTAR NO.**	160-584
LOCATION:	1512 Washington St - Manitowoc, WI	**DATE COLLECTED:**	8/12/16 to 8/17/16
WORK AREA:	Pre-Renovation	**TECH:**	Aaron Stroud

Sample ID	Level	Room / Area Info	Sample Info	Content
584-109	7	705 (southwest)	Gray Flooring Felt	None Detected
584-110	7	705 (southwest)	Brown Flooring Adhesive	None Detected
584-111	7	716	Green Vinyl Sheet Flooring	None Detected
584-112	7	716	Black Flooring Adhesive	None Detected
584-113	7	716	White Cloth Vibration Joint	**70% Chrysotile**
584-114	7	718	12” Orange Floor Tile	**3% Chrysotile**
584-115	7	718	Tan Floor Tile Adhesive	None Detected
584-116	Ext	3-Story Rubble	Black Roof Flashing	**30% Chrysotile**
584-117	Ext	3-Story Rubble	Black Roofing Felt	**35% Chrysotile**
584-118	Ext	3-Story Rubble	Black Electrical Isolator	None Detected

Lab Info:	CEI Labs	**Date Analyzed:**	8/23/16	**Page:**	7 of 7

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ASBESTOS BULK SAMPLE LOG-IN

CLIENT:	Stantec	**NORTHSTAR NO.**	160-584
LOCATION:	1512 Washington St - Manitowoc	**DATE COLLECTED:**	9/6/16
WORK AREA:	Mirro Aluminum Company	**TECH:**	Aaron Stroud

Sample ID	Level	Room / Area Info	Sample Info	Asbestos Content
584-119	Tunnel	Southeast Corner	Stacked Circular Fire Brick	None Detected
584-120	Tunnel	M#3 Tunnel Access (south)	Debris on Tunnel Floor	**20% Amosite**
584-121	Tunnel	S#1 Tunnel Access	Tar Paper at Ceiling	None Detected
584-122	Tunnel	S#1 Tunnel Access	Tar Paper at Ceiling	None Detected
584-123	Tunnel	S#2 Tunnel Access	Felt Pipe Insulation	**65% Chrysotile**
584-124	Tunnel	M#9 Tunnel Access	Pipe Fitting Insulation (felt)	**10% Chrysotile**
584-125	Tunnel	M#9 Tunnel Access	Felt Pipe Insulation	**65% Chrysotile**
584-126	Tunnel	M#10 Tunnel Access	Black Ash (under concrete floor)	None Detected
584-127	Tunnel	M#10 Tunnel Access	Black Ash (under concrete floor)	None Detected
584-128	Tunnel	M#10 Tunnel Access	Black Ash (under concrete floor)	None Detected

Lab Info:	CEI Labs, Inc.	**Date Analyzed:**	9/8/16	**Page:**	1 of 1

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ASBESTOS BULK SAMPLE LOG-IN

CLIENT:	Stantec	**NORTHSTAR NO.**	160-584
LOCATION:	1512 Washington St - Manitowoc	**DATE COLLECTED:**	9/9/16
WORK AREA:	Mirro Aluminum Company	**TECH:**	Aaron Stroud

Sample ID	Level	Room / Area Info	Sample Info	Asbestos Content
584-129	Ext	North Building Exterior West (ground level	Gray Fiberglass Wrap (Bottom Layer 1) (beige / reddish mortar)	None Detected
584-130	Ext	North Building Exterior West – ground level	Gray Fiberglass Wrap (Layer 2) (tan thick mortar)	None Detected
584-131	Ext	North Building Exterior West – ground level	Gray Fiberglass Wrap (Layer 3) (gray thick mortar)	None Detected
584-132	Ext	North Building Exterior West – ground level	Gray Fiberglass Wrap (Layer 4) (light gray thin layer)	**3% Chrysotile**
584-133	Ext	North Building Exterior North – ground level	Gray Fiberglass Wrap (Bottom Layer 1) (beige / reddish mortar)	None Detected
584-134	Ext	North Building Exterior North – ground level	Gray Fiberglass Wrap (Layer 2) (tan thick mortar)	None Detected
584-135	Ext	North Building Exterior North – ground level	Gray Fiberglass Wrap (Layer 3) (gray thick mortar)	None Detected
584-136	Ext	North Building Exterior North – ground level	Gray Fiberglass Wrap (Layer 4) (light gray thin layer)	**3% Chrysotile**

Lab Info:	CEI Labs, Inc.	**Date Analyzed:**	9/13/16	**Page:**	1 of 1

Appendix E LABORATORY ANALYSIS (Asbestos)

Stantec Consulting Services Inc.

Mirro Building No. 9
1512 Washington Street
Manitowoc, WI 54220

September 2016

August 23, 2016

NorthStar Environmental Testing, LLC.
817 Oak Ridge Road
Mosinee, WI 54455

CLIENT PROJECT: Stantec- AS; 160-584
CEI LAB CODE: A16-7520

Dear Customer:

Enclosed are asbestos analysis results for PLM Bulk samples received at our laboratory on August 19, 2016. The samples were analyzed for asbestos using polarizing light microscopy (PLM) per the EPA 600 Method.

Sample results containing >1% asbestos are considered asbestos-containing materials (ACMs) per EPA regulatory requirements. The detection limit for the EPA 600 Method is <1% asbestos by weight as determined by visual estimation.

Thank you for your business and we look forward to continuing good relations. If you have any questions, please feel free to call our office at 919-481-1413.

Kind Regards,

Tianbao Bai, Ph.D., CIH
Laboratory Director

NVLAP TESTING
NVLAP LAB CODE 101768-0

ASBESTOS ANALYTICAL REPORT
By: Polarized Light Microscopy

Prepared for

NorthStar Environmental Testing, LLC.

CLIENT PROJECT: Stantec- AS; 160-584

CEI LAB CODE: A16-7520

TEST METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

REPORT DATE: 08/23/16

TOTAL SAMPLES ANALYZED: 118

SAMPLES >1% ASBESTOS: 41

TEL: 866-481-1412

www.ceilabs.com

Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: Stantec- AS; 160-584

CEI LAB CODE: A16-7520

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
584-1		A2214793	Gray	Transite Electrical Isolator	Chrysotile 15%
584-2		A2214794	Gray	Electrical Isolator	None Detected
584-3		A2214795	Black	Electrical Isolator	Chrysotile 15%
584-4		A2214796	Black	Electrical Isolator	Chrysotile 10%
584-5		A2214797	Gray	Slate Electrical Isolator	None Detected
584-6		A2214798	White,Gray	Paper	Chrysotile 65%
584-7		A2214799	Gray	Slate Electrical Isolator	None Detected
584-8		A2214800	Black	Slate Electrical Isolator	Chrysotile 15%
584-9		A2214801	Gray	Electrical Isolator	None Detected
584-10		A2214802	Black	Electrical Isolator	None Detected
584-11		A2214803	Gray	Transite Electrical Isolator	Chrysotile 15%
584-12		A2214804	Black	Electrical Isolator	Chrysotile 15%
584-13		A2214805	Black	Electrical Isolator	Chrysotile 10%
584-14		A2214806	Gray	Electrical Isolator	None Detected
584-15		A2214807	Black	Electrical Isolator	Chrysotile 10%
584-16		A2214808	White,Gray	Paper	Chrysotile 65%
584-17		A2214809	White	Porcelain Electrical Isolator	None Detected
584-18		A2214810	White,Black	Electrical Conduit	None Detected
584-19		A2214811	Gray,White	Electrical Isolator	Chrysotile 20%
584-20		A2214812	White,Gray	Paper	Chrysotile 65%
584-21		A2214813	Black	Electrical Isolator	Chrysotile 10%
584-22		A2214814	Brown	Paneling	None Detected
584-23		A2214815	Brown	Paneling	None Detected
584-24		A2214816	Brown	Support Member	None Detected
584-25		A2214817	Black	Electrical Isolator	None Detected
584-26		A2214818	Red	Gasket	None Detected
584-27		A2214819	Gray	Slate Debris	None Detected
584-28		A2214820	Gray,White	Window Sill Wrap	Chrysotile 5%
584-29		A2214821	Green,Black	Window Sill Tar	Chrysotile 5%
584-30		A2214822	Brown	Paper	None Detected
584-31		A2214823	White	Lagging Cloth	None Detected

Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: Stantec- AS; 160-584 **CEI LAB CODE:** A16-7520

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
584-32		A2214824	Gray	Paper	None Detected
584-33		A2214825	Green,Black	Window Sill Tar	Chrysotile 5%
584-34		A2214826	Black	Electrical Isolator	None Detected
584-35		A2214827	Black	Paper	None Detected
584-36		A2214828	Off-white,Gray	Window Glazing	None Detected
584-37		A2214829	Tan,White	Drywall	None Detected
584-38		A2214830	Blue,Off-white	Joint Compound	Chrysotile 3%
584-39		A2214831	Blue,Off-white	Drywall/Joint Compound	Chrysotile <1%
584-40		A2214832	Gray	Electrical Isolator	None Detected
584-41		A2214833	Gray	Flexible Electrical Isolator	None Detected
584-42		A2214834	Black,White	Compressed Board	Chrysotile 50%
584-43		A2214835	Gray	Leveling Compound	None Detected
584-44		A2214836	Red	Electrical Isolator	Chrysotile 10%
584-45		A2214837	Green,Black	Window Sill Tar	Chrysotile 5%
584-46		A2214838	Gray	Leveling Compound	None Detected
584-47		A2214839	Gray	Slate Electrical Panel	None Detected
584-48		A2214840	Gray,Black	Window Glazing	Chrysotile 5%
584-49		A2214841	Gray,White	Fiberglass Wrap	Chrysotile 5%
584-50		A2214842	White	Window Glazing	None Detected
584-51		A2214843	Gray,Black	Flooring Underlayment	None Detected
584-52		A2214844	Green,Tan	Sheet Flooring	None Detected
584-53		A2214845	Gray	Compressed Board	None Detected
584-54		A2214846	Red,Black	Flooring Underlayment	None Detected
584-55		A2214847	Black	Flooring Underlayment	None Detected
584-56		A2214848	Tan	Flooring Underlayment	None Detected
584-57		A2214849	Tan,White	Fiberboard Ceiling Panel	None Detected
584-58		A2214850	Off-white,Beige	Window Glazing (wood Windows)	None Detected
584-59		A2214851	White,Gray	Kiln Gasket	Chrysotile 70%
584-60		A2214852	Gray	Kiln Mortar	None Detected
584-61		A2214853	Pink	Kiln Fire Brick	Chrysotile <1%

Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: Stantec- AS; 160-584 **CEI LAB CODE:** A16-7520

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
584-62		A2214854	Gray	Kiln Plaster Lining	Chrysotile <1%
584-63		A2214855	Red	Brick Debris	None Detected
584-64		A2214856	Pink	Brick Debris	None Detected
584-65		A2214857	White,Gray	Debris	Amosite 15% Chrysotile 5%
584-66		A2214858	White	Electrical Isolator	Chrysotile 50%
584-67		A2214859	Black	Tar	None Detected
584-68		A2214860	White,Gray	Ceiling Tile	None Detected
584-69		A2214861	Gray	Boiler Interior Packing	None Detected
584-70		A2214862	Gray	Boiler Interior Packing	None Detected
584-71		A2214863	Gray	Boiler Interior Packing	None Detected
584-72		A2214864	Red	Window Glazing Debris	None Detected
584-73		A2214865	Red,Black	Flooring Underlayment	None Detected
584-74		A2214866	Tan	Flooring Patch	None Detected
584-75		A2214867	White	Paper Debris	None Detected
584-76		A2214868	Tan	Floor Tile	Chrysotile 3%
584-77		A2214869	Black	Floor Tile Adhesive	Chrysotile 3%
584-78		A2214870	Green,Black	Tar	Chrysotile 10%
584-79		A2214871	White,Off-white	Window Caulking	Chrysotile 3%
584-80		A2214872	Gray	Fiberglass Window Sill Wrap	Chrysotile 5%
584-81		A2214873	Black	Flooring Underlayment	None Detected
584-82		A2214874	White,Tan	Ceiling Paper	None Detected
584-83		A2214875	Black,Tan	Felt Pipe Insulation	None Detected
584-84		A2214876	White	Electrical Isolator	Chrysotile 10%
584-85		A2214877	Gray	Electrical Isolator	None Detected
584-86		A2214878	Gray	Window Sill Mastic	Chrysotile 3%
584-87		A2214879	Gray	Paper Insulation	None Detected
584-88		A2214880	White	Powder Debris	None Detected
584-89		A2214881	Gray,Green	Window Glazing	None Detected
584-90		A2214882	Brown	Floor Tile	Chrysotile 3%
584-91		A2214883	Black	Floor Tile Adhesive	Chrysotile 3%

Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: Stantec- AS; 160-584

CEI LAB CODE: A16-7520

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
584-92		A2214884	Gray	Slate Electrical Panel	None Detected
584-93		A2214885	Brown	Insulation Paper	None Detected
584-94		A2214886	White	Cal-sil Pipe Insulation	None Detected
584-95		A2214887	Black	Tar	None Detected
584-96		A2214888	Silver,Tan	Fiberboard Wall Panel	None Detected
584-97		A2214889	White,Gray	Ceiling Board	Chrysotile 65%
584-98		A2214890	White,Gray	Panel	Chrysotile 65%
584-99		A2214891	Gray,Tan	Window Glazing	None Detected
584-100		A2214892	White	Cal-sil Pipe Insulation	None Detected
584-101		A2214893	Brown,Tan	Floor Tile (sheet Flooring)	None Detected
584-102		A2214894	Gray	Flooring Felt	None Detected
584-103		A2214895	Gray,White	Plaster Skim Coat	None Detected
584-104		A2214896	Gray	Plaster Base Coat	None Detected
584-105		A2214897	Gray	Wall Adhesive	None Detected
584-106		A2214898	Brown	Floor Tile	Chrysotile 3%
584-107		A2214899	Tan	Floor Tile Adhesive	None Detected
584-108		A2214900	Black	Flooring Underlayment	None Detected
584-109		A2214901	Gray	Flooring Felt	None Detected
584-110		A2214902	Brown	Flooring Adhesive	None Detected
584-111		A2214903	Green,Tan	Sheet Flooring	None Detected
584-112		A2214904	Black,Brown	Flooring Adhesive	None Detected
584-113		A2214905	White	Cloth Vibration Joint	Chrysotile 70%
584-114		A2214906	Orange	Floor Tile	Chrysotile 3%
584-115		A2214907	Tan	Floor Tile Adhesive	None Detected
584-116		A2214908	Black,Gray	Roof Flashing	Chrysotile 30%
584-117		A2214909	Black,Gray	Roof Felt	Chrysotile 35%
584-118		A2214910	Black	Electrical Isolator	None Detected

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: NorthStar Environmental Testing, LLC.
817 Oak Ridge Road
Mosinee, WI 54455

CEI Lab Code: A16-7520
Date Received: 08-19-16
Date Analyzed: 08-22-16
Date Reported: 08-23-16

Project: Stantec- AS; 160-584

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
584-1 A2214793	Transite Electrical Isolator	Heterogeneous Gray Fibrous Bound			50% 35%	Silicates Binder	**15% Chrysotile**
584-2 A2214794	Electrical Isolator	Heterogeneous Gray Non-fibrous Bound			70% 30%	Silicates Binder	**None Detected**
584-3 A2214795	Electrical Isolator	Heterogeneous Black Fibrous Bound			50% 35%	Silicates Binder	**15% Chrysotile**
584-4 A2214796	Electrical Isolator	Heterogeneous Black Fibrous Bound			90%	Binder	**10% Chrysotile**
584-5 A2214797	Slate Electrical Isolator	Heterogeneous Gray Non-fibrous Bound			70% 30%	Silicates Binder	**None Detected**
584-6 A2214798	Paper	Heterogeneous White,Gray Fibrous Bound	25%	Cellulose	10%	Binder	**65% Chrysotile**
584-7 A2214799	Slate Electrical Isolator	Heterogeneous Gray Non-fibrous Bound			70% 30%	Silicates Binder	**None Detected**

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: NorthStar Environmental Testing, LLC.
817 Oak Ridge Road
Mosinee, WI 54455

CEI Lab Code: A16-7520
Date Received: 08-19-16
Date Analyzed: 08-22-16
Date Reported: 08-23-16

Project: Stantec- AS; 160-584

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
584-8 A2214800	Slate Electrical Isolator	Heterogeneous Black Fibrous Bound			85%	Binder	**15% Chrysotile**
584-9 A2214801	Electrical Isolator	Heterogeneous Gray Non-fibrous Bound			70% 30%	Silicates Binder	**None Detected**
584-10 A2214802	Electrical Isolator	Heterogeneous Black Fibrous Bound	10%	Cellulose	90%	Binder	**None Detected**
584-11 A2214803	Transite Electrical Isolator	Heterogeneous Gray Fibrous Bound			50% 35%	Silicates Binder	**15% Chrysotile**
584-12 A2214804	Electrical Isolator	Heterogeneous Black Fibrous Bound			85%	Binder	**15% Chrysotile**
584-13 A2214805	Electrical Isolator	Heterogeneous Black Fibrous Bound			90%	Binder	**10% Chrysotile**
584-14 A2214806	Electrical Isolator	Heterogeneous Gray Non-fibrous Bound			70% 30%	Silicates Binder	**None Detected**

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: NorthStar Environmental Testing, LLC.
817 Oak Ridge Road
Mosinee, WI 54455

CEI Lab Code: A16-7520
Date Received: 08-19-16
Date Analyzed: 08-22-16
Date Reported: 08-23-16

Project: Stantec- AS; 160-584

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
584-15 A2214807	Electrical Isolator	Heterogeneous Black Fibrous Bound			90%	Binder	**10% Chrysotile**
584-16 A2214808	Paper	Heterogeneous White,Gray Fibrous Bound	25%	Cellulose	10%	Binder	**65% Chrysotile**
584-17 A2214809	Porcelain Electrical Isolator	Heterogeneous White Non-fibrous Bound			80% 20%	Silicates Binder	**None Detected**
584-18 A2214810	Electrical Conduit	Heterogeneous White,Black Fibrous Bound	40%	Synthetic Fiber	5% 5% 50%	Tar Binder Rubber	**None Detected**
584-19 A2214811	Electrical Isolator	Heterogeneous Gray,White Fibrous Bound			80%	Binder	**20% Chrysotile**
584-20 A2214812	Paper	Heterogeneous White,Gray Fibrous Bound	25%	Cellulose	10%	Binder	**65% Chrysotile**
584-21 A2214813	Electrical Isolator	Heterogeneous Black Fibrous Bound			90%	Binder	**10% Chrysotile**

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: NorthStar Environmental Testing, LLC.
817 Oak Ridge Road
Mosinee, WI 54455

CEI Lab Code: A16-7520
Date Received: 08-19-16
Date Analyzed: 08-22-16
Date Reported: 08-23-16

Project: Stantec- AS; 160-584

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
584-22 A2214814	Paneling	Heterogeneous Brown Fibrous Bound	90%	Cellulose	10%	Binder	**None Detected**
584-23 A2214815	Paneling	Heterogeneous Brown Fibrous Bound	90%	Cellulose	10%	Binder	**None Detected**
584-24 A2214816	Support Member	Heterogeneous Brown Fibrous Bound	90%	Cellulose	10%	Binder	**None Detected**
584-25 A2214817	Electrical Isolator	Heterogeneous Black Fibrous Bound	15%	Fiberglass	85%	Binder	**None Detected**
584-26 A2214818	Gasket	Heterogeneous Red Non-fibrous Bound			100%	Binder	**None Detected**
584-27 A2214819	Slate Debris	Heterogeneous Gray Non-fibrous Bound			70% 30%	Silicates Binder	**None Detected**
584-28 A2214820	Window Sill Wrap	Heterogeneous Gray,White Fibrous Bound	25%	Fiberglass	70%	Binder	**5% Chrysotile**

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: NorthStar Environmental Testing, LLC.
817 Oak Ridge Road
Mosinee, WI 54455

CEI Lab Code: A16-7520
Date Received: 08-19-16
Date Analyzed: 08-22-16
Date Reported: 08-23-16

Project: Stantec- AS; 160-584

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
584-29 A2214821	Window Sill Tar	Heterogeneous Green,Black Fibrous Bound	5%	Cellulose	90%	Tar	**5% Chrysotile**
584-30 A2214822	Paper	Heterogeneous Brown Fibrous Bound	95%	Cellulose	5%	Binder	**None Detected**
584-31 A2214823	Lagging Cloth	Heterogeneous White Fibrous Bound	95%	Fiberglass	5%	Binder	**None Detected**
584-32 A2214824	Paper	Heterogeneous Gray Fibrous Bound	90%	Cellulose	10%	Binder	**None Detected**
584-33 A2214825	Window Sill Tar	Heterogeneous Green,Black Fibrous Bound	5%	Cellulose	90%	Tar	**5% Chrysotile**
584-34 A2214826	Electrical Isolator	Heterogeneous Black Fibrous Bound	10%	Cellulose	90%	Binder	**None Detected**
584-35 A2214827	Paper	Heterogeneous Black Fibrous Bound	90%	Cellulose	10%	Binder	**None Detected**

ASBESTOS BULK ANALYSIS

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Project: Stantec- AS; 160-584

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
584-36 A2214828	Window Glazing	Heterogeneous Off-white,Gray Fibrous Bound	2%	Cellulose	5% 43% 50%	Paint Binder Calc Carb	**None Detected**
584-37 A2214829	Drywall	Heterogeneous Tan,White Fibrous Bound	25%	Cellulose	75%	Gypsum	**None Detected**
584-38 A2214830	Joint Compound	Heterogeneous Blue,Off-white Fibrous Bound	2%	Cellulose	5% 20% 70%	Paint Silicates Calc Carb	**3% Chrysotile**
584-39 A2214831	Drywall/Joint Compound	Heterogeneous Blue,Off-white Fibrous Bound	20%	Cellulose	5% 5% 70%	Paint Calc Carb Gypsum	**<1% Chrysotile**
Lab Notes: 3% Chrysotile in Joint Compound, <1% Chrysotile Overall							
584-40 A2214832	Electrical Isolator	Heterogeneous Gray Non-fibrous Bound			70% 30%	Silicates Binder	**None Detected**
584-41 A2214833	Flexible Electrical Isolator	Heterogeneous Gray Fibrous Bound	80%	Cellulose	20%	Binder	**None Detected**
584-42 A2214834	Compressed Board	Heterogeneous Black,White Fibrous Bound			50%	Binder	**50% Chrysotile**

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
584-43 A2214835	Leveling Compound	Heterogeneous Gray Fibrous Bound	5%	Cellulose	50% 45%	Silicates Binder	**None Detected**
584-44 A2214836	Electrical Isolator	Heterogeneous Red Fibrous Bound			90%	Binder	**10% Chrysotile**
584-45 A2214837	Window Sill Tar	Heterogeneous Green,Black Fibrous Bound	5%	Cellulose	90%	Tar	**5% Chrysotile**
584-46 A2214838	Leveling Compound	Heterogeneous Gray Fibrous Bound	2%	Cellulose	70% 28%	Silicates Binder	**None Detected**
584-47 A2214839	Slate Electrical Panel	Heterogeneous Gray Non-fibrous Bound			70% 30%	Silicates Binder	**None Detected**
584-48 A2214840	Window Glazing	Heterogeneous Gray,Black Fibrous Bound	5%	Cellulose	5% 85%	Paint Tar	**5% Chrysotile**
584-49 A2214841	Fiberglass Wrap	Heterogeneous Gray,White Fibrous Bound	25%	Fiberglass	70%	Binder	**5% Chrysotile**

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		 Non-Fibrous		ASBESTOS %
584-50 A2214842	Window Glazing	Heterogeneous White Fibrous Bound	2%	Cellulose	48% 50%	Binder Calc Carb	**None Detected**
584-51 A2214843	Flooring Underlayment	Heterogeneous Gray,Black Fibrous Bound	90%	Cellulose	5% 5%	Tar Binder	**None Detected**
584-52 A2214844	Sheet Flooring	Heterogeneous Green,Tan Fibrous Bound	40%	Cellulose	50% 5% 5%	Vinyl Binder Mastic	**None Detected**
584-53 A2214845	Compressed Board	Heterogeneous Gray Fibrous Bound	95%	Cellulose	5%	Binder	**None Detected**
584-54 A2214846	Flooring Underlayment	Heterogeneous Red,Black Fibrous Bound	90%	Cellulose	5% 5%	Tar Binder	**None Detected**
584-55 A2214847	Flooring Underlayment	Heterogeneous Black Fibrous Bound	90%	Cellulose	10%	Tar	**None Detected**
584-56 A2214848	Flooring Underlayment	Heterogeneous Tan Fibrous Bound	95%	Cellulose	5%	Binder	**None Detected**

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
584-57 A2214849	Fiberboard Ceiling Panel	Heterogeneous Tan,White Fibrous Bound	90%	Cellulose	5% 5%	Binder Paint	**None Detected**
584-58 A2214850	Window Glazing (wood Windows)	Heterogeneous Off-white,Beige Fibrous Bound	2%	Cellulose	5% 43% 50%	Paint Binder Calc Carb	**None Detected**
584-59 A2214851	Kiln Gasket	Heterogeneous White,Gray Fibrous Bound	20%	Cellulose	10%	Binder	**70% Chrysotile**
584-60 A2214852	Kiln Mortar	Heterogeneous Gray Fibrous Bound	2%	Cellulose	70% 28%	Silicates Binder	**None Detected**
584-61 A2214853	Kiln Fire Brick	Heterogeneous Pink Fibrous Bound			70% 30%	Silicates Binder	**<1% Chrysotile**
584-62 A2214854	Kiln Plaster Lining	Heterogeneous Gray Fibrous Bound			70% 30%	Silicates Binder	**<1% Chrysotile**
584-63 A2214855	Brick Debris	Heterogeneous Red Fibrous Bound	2%	Cellulose	70% 28%	Silicates Binder	**None Detected**

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
584-64 A2214856	Brick Debris	Heterogeneous Pink Fibrous Bound	2%	Cellulose	70% 28%	Silicates Binder	**None Detected**
584-65 A2214857	Debris	Heterogeneous White,Gray Fibrous Bound			50% 30%	Calc Carb Binder	**15% Amosite** **5% Chrysotile**
Lab Notes: Sample Bag Does Not Match COC, Sample is a White Debris							
584-66 A2214858	Electrical Isolator	Heterogeneous White Fibrous Bound			50%	Binder	**50% Chrysotile**
584-67 A2214859	Tar	Heterogeneous Black Fibrous Bound	2%	Cellulose	98%	Tar	**None Detected**
584-68 A2214860	Ceiling Tile	Heterogeneous White,Gray Fibrous Bound	50% 12%	Cellulose Fiberglass	35% 3%	Perlite Paint	**None Detected**
584-69 A2214861	Boiler Interior Packing	Heterogeneous Gray Fibrous Bound	2%	Cellulose	70% 28%	Silicates Binder	**None Detected**
584-70 A2214862	Boiler Interior Packing	Heterogeneous Gray Fibrous Bound	2%	Cellulose	70% 28%	Silicates Binder	**None Detected**

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ASBESTOS BULK PLM, EPA 600 METHOD

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584-71 A2214863	Boiler Interior Packing	Heterogeneous Gray Fibrous Bound	2%	Cellulose	70% 28%	Silicates Binder	**None Detected**
584-72 A2214864	Window Glazing Debris	Heterogeneous Red Fibrous Bound	2%	Cellulose	48% 50%	Binder Calc Carb	**None Detected**
584-73 A2214865	Flooring Underlayment	Heterogeneous Red,Black Fibrous Bound	90%	Cellulose	5% 5%	Binder Tar	**None Detected**
584-74 A2214866	Flooring Patch	Heterogeneous Tan Fibrous Bound	95%	Cellulose	5%	Binder	**None Detected**
584-75 A2214867	Paper Debris	Heterogeneous White Fibrous Bound	95%	Cellulose	5%	Binder	**None Detected**
584-76 A2214868	Floor Tile	Heterogeneous Tan Fibrous Bound	2%	Cellulose	50% 45%	Vinyl Binder	**3% Chrysotile**
584-77 A2214869	Floor Tile Adhesive	Heterogeneous Black Fibrous Bound	2%	Cellulose	95%	Mastic	**3% Chrysotile**

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
584-78 A2214870	Tar	Heterogeneous Green,Black Fibrous Bound	5%	Cellulose	80% 5%	Tar Paint	**10% Chrysotile**
584-79 A2214871	Window Caulking	Heterogeneous White,Off-white Fibrous Bound	2% 3%	Cellulose Talc	5% 37% 50%	Paint Binder Calc Carb	**3% Chrysotile**
584-80 A2214872	Fiberglass Window Sill Wrap	Heterogeneous Gray Fibrous Bound	25%	Fiberglass	70%	Binder	**5% Chrysotile**
584-81 A2214873	Flooring Underlayment	Heterogeneous Black Fibrous Bound	90%	Cellulose	10%	Tar	**None Detected**
584-82 A2214874	Ceiling Paper	Heterogeneous White,Tan Fibrous Bound	90%	Cellulose	5% 5%	Paint Binder	**None Detected**
584-83 A2214875	Felt Pipe Insulation	Heterogeneous Black,Tan Fibrous Bound	90%	Cellulose	5% 5%	Binder Tar	**None Detected**
584-84 A2214876	Electrical Isolator	Heterogeneous White Fibrous Bound			90%	Binder	**10% Chrysotile**

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
584-85 A2214877	Electrical Isolator	Heterogeneous Gray Non-fibrous Bound			70% 30%	Silicates Binder	**None Detected**
584-86 A2214878	Window Sill Mastic	Heterogeneous Gray Fibrous Bound	2%	Cellulose	75% 20%	Binder Silicates	**3% Chrysotile**
584-87 A2214879	Paper Insulation	Heterogeneous Gray Fibrous Bound	90%	Cellulose	10%	Binder	**None Detected**
584-88 A2214880	Powder Debris	Heterogeneous White Fibrous Loose	2%	Cellulose	80% 18%	Calc Carb Silicates	**None Detected**
584-89 A2214881	Window Glazing	Heterogeneous Gray,Green Fibrous Bound	2%	Cellulose	5% 43% 50%	Paint Binder Calc Carb	**None Detected**
584-90 A2214882	Floor Tile	Heterogeneous Brown Fibrous Bound	2%	Cellulose	50% 45%	Vinyl Binder	**3% Chrysotile**
584-91 A2214883	Floor Tile Adhesive	Heterogeneous Black Fibrous Bound	2%	Cellulose	95%	Mastic	**3% Chrysotile**

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
584-92 A2214884	Slate Electrical Panel	Heterogeneous Gray Non-fibrous Bound			70% 30%	Silicates Binder	**None Detected**
584-93 A2214885	Insulation Paper	Heterogeneous Brown Fibrous Bound	95%	Cellulose	5%	Binder	**None Detected**
584-94 A2214886	Cal-sil Pipe Insulation	Heterogeneous White Non-fibrous Loosely Bound			100%	Foam	**None Detected**
584-95 A2214887	Tar	Heterogeneous Black Fibrous Bound	2%	Cellulose	98%	Tar	**None Detected**
584-96 A2214888	Fiberboard Wall Panel	Heterogeneous Silver,Tan Fibrous Bound	90%	Cellulose	5% 5%	Paint Binder	**None Detected**
584-97 A2214889	Ceiling Board	Heterogeneous White,Gray Fibrous Bound	25%	Cellulose	10%	Binder	**65% Chrysotile**
584-98 A2214890	Panel	Heterogeneous White,Gray Fibrous Bound	25%	Cellulose	10%	Binder	**65% Chrysotile**

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
584-99 A2214891	Window Glazing	Heterogeneous Gray,Tan Fibrous Bound	2%	Cellulose	5% 43% 50%	Paint Binder Calc Carb	**None Detected**
584-100 A2214892	Cal-sil Pipe Insulation	Heterogeneous White Non-fibrous Loosely Bound			100%	Foam	**None Detected**
584-101 A2214893	Floor Tile (sheet Flooring)	Heterogeneous Brown,Tan Fibrous Bound	40%	Cellulose	50% 5% 5%	Vinyl Binder Mastic	**None Detected**
584-102 A2214894	Flooring Felt	Heterogeneous Gray Fibrous Bound	85% 10%	Cellulose Synthetic Fiber	5%	Binder	**None Detected**
584-103 A2214895	Plaster Skim Coat	Heterogeneous Gray,White Fibrous Bound	2%	Cellulose	5% 23% 70%	Paint Silicates Calc Carb	**None Detected**
584-104 A2214896	Plaster Base Coat	Heterogeneous Gray Fibrous Bound	2% 3%	Cellulose Hair	50% 45%	Silicates Binder	**None Detected**
584-105 A2214897	Wall Adhesive	Heterogeneous Gray Fibrous Bound	3%	Cellulose	97%	Mastic	**None Detected**

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
584-106 A2214898	Floor Tile	Heterogeneous Brown Fibrous Bound	2%	Cellulose	50% 45%	Vinyl Binder	**3% Chrysotile**
584-107 A2214899	Floor Tile Adhesive	Heterogeneous Tan Fibrous Bound	2%	Cellulose	98%	Mastic	**None Detected**
584-108 A2214900	Flooring Underlayment	Heterogeneous Black Fibrous Bound	90%	Cellulose	10%	Tar	**None Detected**
584-109 A2214901	Flooring Felt	Heterogeneous Gray Fibrous Bound	85% 10%	Cellulose Synthetic Fiber	5%	Binder	**None Detected**
584-110 A2214902	Flooring Adhesive	Heterogeneous Brown Fibrous Bound	2%	Cellulose	98%	Mastic	**None Detected**
584-111 A2214903	Sheet Flooring	Heterogeneous Green,Tan Fibrous Bound	45%	Cellulose	50% 5%	Vinyl Binder	**None Detected**
584-112 A2214904	Flooring Adhesive	Heterogeneous Black,Brown Fibrous Bound	3%	Cellulose	97%	Mastic	**None Detected**

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ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
584-113 A2214905	Cloth Vibration Joint	Heterogeneous White Fibrous Bound	25%	Cellulose	5%	Binder	**70% Chrysotile**
584-114 A2214906	Floor Tile	Heterogeneous Orange Fibrous Bound	2%	Cellulose	50% 45%	Vinyl Binder	**3% Chrysotile**
584-115 A2214907	Floor Tile Adhesive	Heterogeneous Tan Fibrous Bound	2%	Cellulose	98%	Mastic	**None Detected**
584-116 A2214908	Roof Flashing	Heterogeneous Black,Gray Fibrous Bound	20%	Cellulose	50%	Tar	**30% Chrysotile**
584-117 A2214909	Roof Felt	Heterogeneous Black,Gray Fibrous Bound	35%	Cellulose	30%	Tar	**35% Chrysotile**
584-118 A2214910	Electrical Isolator	Heterogeneous Black Fibrous Bound	20%	Cellulose	80%	Binder	**None Detected**

LEGEND:	Non-Anth	= Non-Asbestiform Anthophyllite
	Non-Trem	= Non-Asbestiform Tremolite
	Calc Carb	= Calcium Carbonate

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

LIMIT OF DETECTION: <1% by visual estimation

REGULATORY LIMIT: >1% by weight

Due to the limitations of the EPA 600 method, nonfriable organically bound materials (NOBs) such as vinyl floor tiles can be difficult to analyze via polarized light microscopy (PLM). EPA recommends that all NOBs analyzed by PLM, and found not to contain asbestos, be further analyzed by Transmission Electron Microscopy (TEM). Please note that PLM analysis of dust and soil samples for asbestos is not covered under NVLAP accreditation.

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ANALYST: Ryan Williams

APPROVED BY: Tianbao Bai, Ph.D., CIH
Laboratory Director

NVLAP TESTING
NVLAP LAB CODE 101768-0

(118) A16-7520
A2214793-
A2214910

CEI LABS

107 New Edition Court, Cary, NC 27511
Tel: 866-481-1412; Fax: 919-481-1442

CHAIN OF CUSTODY

LAB USE ONLY:
CEI Lab Code:
CEI Lab I.D. Range:

COMPANY CONTACT INFORMATION	
Company: NorthStar Environmental Testing	Client #: 25143
Address: 817 Oak Ridge Road	Job Contact: Aaron Stroud
Mosinee, WI 54455	Email: info@northstartesting.com
	Tel: (920) 422-4881
Project Name: Stantec - AS	Fax:
Project ID #: 160- 584	P.O. #:

ASBESTOS	METHOD	TURN AROUND TIME 4 HR*	8 HR*	12 HR*	1 DAY	2 DAY	3 DAY	5 DAY
PLM BULK	EPA 600	☐	☐	☐	☐	☐	☒	☐
PLM POINT COUNT (400)	EPA 600	☐	☐	☐	☐	☐	☐	☐
PLM POINT COUNT (1000)	EPA 600	☐	☐	☐	☐	☐	☐	☐
PLM GRAVIMETRIC	EPA 600		☐	☐	☐	☐	☐	☐
PLM GRAV w POINT COUNT	EPA 600		☐	☐	☐	☐	☐	☐
PCM AIR	NIOSH 7400	☐	☐	☐	☐	☐	☐	☐
TEM AIR	AHERA	☐	☐	☐	☐	☐	☐	☐
TEM AIR	EPA Level II	☐	☐	☐	☐	☐	☐	☐
TEM AIR	NIOSH 7402	☐	☐	☐	☐	☐	☐	☐
TEM BULK	CHATFIELD		☐	☐	☐	☐	☐	☐
TEM DUST WIPE	ASTM D6480-05	☐	☐	☐	☐	☐	☐	☐
TEM DUST MICROVAC	ASTM D5755-03	☐	☐	☐	☐	☐	☐	☐
TEM QUALITATIVE	CEI LABS	☐	☐	☐	☐	☐	☐	☐
OTHER:		☐	☐	☐	☐	☐	☐	☐

LEAD PAINT	METHOD	4 HR*	8 HR*	12 HR*	24 HR	2 DAY	3 DAY	5 DAY
LEAD PAINT	EPA SW846 7000B					☐	☐	☐
LEAD WIPE	EPA SW846 7000B					☐	☐	☐
LEAD SOIL	EPA SW846 7000B					☐	☐	☐
LEAD AIR	NIOSH 7082					☐	☐	☐
OTHER:						☐	☐	☐

REMARKS:

☑ Accept Samples
☐ Reject Samples

Relinquished By:	Date/Time	Received By:	Date/Time
	8/10/16	AR	8/19/16
			9:00

*Call to confirm RUSH analysis.

Samples will be disposed of 30 days after analysis

AE-7520

NORTHSTAR ENVIRONMENTAL TESTING, LLC
www.NorthStarTesting.com

Central Wisconsin Office:
817 Oak Ridge Rd
Mosinee, WI 54455
Tel: 715.693.6112
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1835 E. Edgewood Drive
Suite 10542
Appleton, WI 54913
Tel: 920.422.4888

Madison Office:
1310 Mendota Street
Suite 121
Madison, WI 53714
Tel: 608.827.6761

BULK SAMPLE LOG-IN

CLIENT:	Stantec	**NORTHSTAR NO.**	160-584
LOCATION:	1512 Washington St - Manitowoc	**DATE COLLECTED:**	8/12/16 to 8/17/16
WORK AREA:	Mirro Aluminum Company	**TECH:**	Aaron Stroud

Sample ID	Level	Room / Area Info	Sample Info	Content
584-1	1	127 (column N07)	Square D: Transite Electrical Isolator	
584-2	1	127 (north wall – east)	Cutler Hammer: Gray Electrical Isolator	
584-3	1	127 (north wall – east)	Unlabeled: Black Electrical Isolator	
584-4	1	127 (north wall – center)	Cutler Hammer (push button): Black Isolator	
584-5	1	127 (north wall – center)	Square D: Slate Electrical Isolator	
584-6	1	127 (north wall – west)	Cutler Hammer (motor control): White Paper	
584-7	1	127 (north wall – west)	Trumbull: Slate Electrical Isolator	
584-8	1	127 (north wall – west)	GE (dial): Slate Electrical Isolator	
584-9	1	127 (north wall – west)	Bulldog: Gray Electrical Isolator	
584-10	1	126 (west wall – north)	Bulldog: Black Electrical Isolator	
584-11	1	126 (west wall – north)	GE: Transite Electrical Isolator	
584-12	1	126 (west wall – north)	AB (push button): Black Isolator	
584-13	1	127 (column N03)	Transformer Box: Black Electrical Isolator	
584-14	1	127 (column N10)	ITE: Gray Electrical Isolator	
584-15	1	126 (column N32)	Square D: Small Black Electrical Isolator	
584-16	1	126 (column N34)	GE (dial): White Paper	
584-17	2	220 (Stair #2)	White Porcelain Electrical Isolator	
584-18	2	220 (Stair #2)	White Electrical Conduit	

Lab Info:	CEI Labs	**Date Analyzed:**	x/xx/xx	**Page:**	1 of 7

A16-7520

NORTHSTAR ENVIRONMENTAL TESTING, LLC
www.NorthStarTesting.com

Central Wisconsin Office:
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Fax: 715.693.1225

Fox Cities Office:
1835 E. Edgewood Drive
Suite 10542
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Tel: 920.422.4888

Madison Office:
1310 Mendota Street
Suite 121
Madison, WI 53714
Tel: 608.827.6761

BULK SAMPLE LOG-IN

CLIENT:	Stantec	**NORTHSTAR NO.**	160-584
LOCATION:	1512 Washington St - Manitowoc	**DATE COLLECTED:**	8/12/16 to 8/17/16
WORK AREA:	Mirro Aluminum Company	**TECH:**	Aaron Stroud

Sample ID	Level	Room / Area Info	Sample Info	Content
584-19	2	221 (east wall – center)	Cutler Hammer: White Electrical Isolator (gray)	
584-20	2	221 (east wall – center)	Cutler Hammer: White Paper (gray)	
584-21	2	221 (southeast – large panel)	Black Box Electrical Isolator	
584-22	2	221 (southeast – large panel)	Brown Paneling	
584-23	2	221 (southeast – large panel)	Black Paneling	
584-24	2	221 (southeast – large panel)	Brown Support Member	
584-25	2	223 (green equipment)	AB: Black Electrical Isolator	
584-26	2	223 (green equipment)	Red Gasket	
584-27	2	223 (green equipment)	Slate Debris	
584-28	Ext	223 Exterior (west)	Gray Fiberglass Window Sill Wrap	
584-29	2	223 (west wall)	Black Window Sill Tar	
584-30	3	323 (southwest)	ITE: Tan Paper (black)	
584-31	3	323 (southeast)	Lagging Cloth (on fiberglass insulation)	
584-32	3	323 (southeast)	Square D: Gray Paper (transite)	
584-33	3	324 (south wall – center)	Black Window Sill Tar	
584-34	4	423 (southwest)	Westinghouse: Black Electrical Isolator	
584-35	4	423 (southwest)	Westinghouse: Black Paper (black)	
584-36	Ext	423 Exterior (west wall)	Window Glazing	

A16-7520

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BULK SAMPLE LOG-IN

CLIENT:	Stantec	**NORTHSTAR NO.**	160-584
LOCATION:	1512 Washington St - Manitowoc	**DATE COLLECTED:**	8/12/16 to 8/17/16
WORK AREA:	Mirro Aluminum Company	**TECH:**	Aaron Stroud

Sample ID	Level	Room / Area Info	Sample Info	Content
584-37	4	424 Office	Drywall	
584-38	4	424 Office	Joint Compound	
584-39	4	424 Office	Composite (only if either is positive)	
584-40	4	426 (northwest)	Square D: Gray Electrical Isolator	
584-41	4	426 (northwest)	Square D: Gray Flexible Isolator (gray)	
584-42	4	426 (northwest)	Westinghouse: Black Compressed Board	
584-43	4	427 Restroom	Floor Leveling Compound	
584-44	5	521 (southwest)	AB: Red Electrical Isolator	
584-45	5	521 (east wall)	Black Window Sill Tar	
584-46	5	521 (southwest room)	Floor Leveling Compound	
584-47	6	619 (southwest)	Slate Electrical Panel	
584-48	6	619 (south metal wall)	Black Window Glazing	
584-49	Ext	Tower Penthouse	Gray Fiberglass Wrap	
584-50	1	100 (east wall)	Window Glazing	
584-51	1	100 (northwest)	White Flooring Underlayment Debris	
584-52	1	100 (northwest)	Green Vinyl Sheet Flooring Debris	
584-53	1	100 (northwest)	Gray Compressed Board Debris	
584-54	1	100 (northwest)	Red Flooring Underlayment Debris	

A16-7520

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BULK SAMPLE LOG-IN

CLIENT:	Stantec	**NORTHSTAR NO.**	160-584
LOCATION:	1512 Washington St - Manitowoc	**DATE COLLECTED:**	8/12/16 to 8/17/16
WORK AREA:	Mirro Aluminum Company	**TECH:**	Aaron Stroud

Sample ID	Level	Room / Area Info	Sample Info	Content
584-55	1	100 (northwest)	Black Flooring Underlayment Debris	
584-56	1	103 (Stair #5)	Tan Flooring Underlayment Debris	
584-57	1	104	Fiberboard Ceiling Panels	
584-58	1	107	Window Glazing (wood windows)	
584-59	1	109	Kiln Gasket	
584-60	1	109	Kiln Gray Mortar	
584-61	1	109	Kiln Pink Fire Brick	
584-62	1	109	Kiln Gray Plaster Lining	
584-63	1	109	Red Brick Debris (in pit)	
584-64	1	109	Pink Brick Debris (in pit)	
584-65	1	109	Red Brick Debris (in pit)	
584-66	1	111	Cutler Hammer: White Electrical Isolator (gray)	
584-67	1	111	Tar (on wood flooring)	
584-68	1	111 (south vestibule)	2'x2' Textured Ceiling Tile	
584-69	1	118 (south)	Boiler Interior Packing	
584-70	1	118 (center)	Boiler Interior Packing	
584-71	1	118 (north)	Boiler Interior Packing	
584-72	1	121 (north wall)	Window Glazing Debris	

AIC-7520

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BULK SAMPLE LOG-IN

CLIENT:	Stantec	**NORTHSTAR NO.**	160-584
LOCATION:	1512 Washington St - Manitowoc	**DATE COLLECTED:**	8/12/16 to 8/17/16
WORK AREA:	Mirro Aluminum Company	**TECH:**	Aaron Stroud

Sample ID	Level	Room / Area Info	Sample Info	Content
584-73	2	202 Men's	Red Flooring Underlayment Debris	
584-74	2	204 (west)	Tan Flooring Patch	
584-75	2	204 (closet)	White Paper Debris	
584-76	2	205 (east)	12" Tan Floor Tile	
584-77	2	205 (east)	Black Floor Tile Adhesive	
584-78	2	207 (Stair #6)	Black Tar (on window perimeter)	
584-79	2	207 (Stair #6)	White Window Caulk (on window perimeter)	
584-80	Ext	208 Exterior	Gray Fiberglass Window Sill Wrap	
584-81	2	208	Black Flooring Underlayment	
584-82	2	208A	White Ceiling Paper	
584-83	2	Women's Restroom (west)	Felt Pipe Insulation	
584-84	2	215	Cutler Hammer: White Elect. Isolator (gray, new)	
584-85	3	305	AH (fire control): Gray Electrical Isolator	
584-86	Ext	307 Exterior (east)	Gray Window Sill Mastic	
584-87	3	307	Square D: Gray Paper Insulation (gray)	
584-88	3	307 (northwest)	White Powder Debris (on floor)	
584-89	3	313 (north)	Window Glazing (remnant)	
584-90	3	314 (south – center)	12" Brown Floor Tile	

AIC-7520

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BULK SAMPLE LOG-IN

CLIENT:	Stantec	**NORTHSTAR NO.**	160-584
LOCATION:	1512 Washington St - Manitowoc	**DATE COLLECTED:**	8/12/16 to 8/17/16
WORK AREA:	Mirro Aluminum Company	**TECH:**	Aaron Stroud

Sample ID	Level	Room / Area Info	Sample Info	Content
584-91	3	314 (south – center)	Black Floor Tile Adhesive	
584-92	4	401	Slate Electrical Panel	
584-93	4	405	Bulldog: Brown Insulation Paper (gray)	
584-94	4	414 (northwest)	Cal-Sil Pipe Insulation	
584-95	4	419	Black Tar (on wood flooring)	
584-96	5	505 (northeast)	Silver Fiberboard Wall Paneling	
584-97	5	508 (closet)	White Ceiling Board	
584-98	6	603 (closet)	White Panel (loose on floor)	
584-99	6	606	Window Glazing (elevator window)	
584-100	6	615	Cal-Sil Pipe Insulation	
584-101	7	701	9" Brown Floor Tile	
584-102	7	701	Gray Flooring Felt	
584-103	7	701	Plaster Ceiling (skim coat)	
584-104	7	701	Plaster Ceiling (base coat)	
584-105	7	701	Gray Wall Adhesive	
584-106	7	704 (east)	9" Brown Floor Tile	
584-107	7	704 (east)	Tan Floor Tile Adhesive	
584-108	7	704 (east)	Black Flooring Underlayment	

Lab Info:	CEI Labs	**Date Analyzed:**	x/xx/xx	**Page:**	6 of 7

A16-526

NORTHSTAR ENVIRONMENTAL TESTING, LLC
www.NorthStarTesting.com

Central Wisconsin Office:
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Madison, WI 53714
Tel: 608.827.6761

BULK SAMPLE LOG-IN

CLIENT:	Stantec	**NORTHSTAR NO.**	160-584
LOCATION:	1512 Washington St - Manitowoc	**DATE COLLECTED:**	8/12/16 to 8/17/16
WORK AREA:	Mirro Aluminum Company	**TECH:**	Aaron Stroud

Sample ID	Level	Room / Area Info	Sample Info	Content
584-109	7	705 (southwest)	Gray Flooring Felt	
584-110	7	705 (southwest)	Brown Flooring Adhesive	
584-111	7	716	Green Vinyl Sheet Flooring	
584-112	7	716	Black Flooring Adhesive	
584-113	7	716	White Cloth Vibration Joint	
584-114	7	718	9" Orange Floor Tile	
584-115	7	718	Tan Floor Tile Adhesive	
584-116	Ext	3-Story Rubble	Black Roof Flashing	
584-117	Ext	3-Story Rubble	Black Roofing Felt	
584-118	Ext	3-Story Rubble	Black Electrical Isolator	

Lab Info:	CEI Labs	**Date Analyzed:**	x/xx/xx	**Page:**	7 of 7

August 29, 2016

City of Manitowac
1512 Washington Street
Manitowac, WI 54220

CLIENT PROJECT: Stantec- AS; 160-584
CEI LAB CODE: A16-7520.1

Dear Customer:

Enclosed are asbestos analysis results for PLM bulk samples received at our laboratory on August 24, 2016. The samples were analyzed for asbestos using polarized light microscopy (PLM) point count per the EPA 600 Method.

Sample results containing > 1% asbestos are considered asbestos-containing materials (ACMs) per the EPA regulatory requirements. The detection limit for the EPA 600 method is 0.25% for 400 point counts, or 0.1% for 1,000 point counts.

Thank you for your business and we look forward to continuing good relations. If you have any questions, please feel free to call our office at 919-481-1413.

Kind Regards,

Tianbao Bai, Ph.D., CIH
Laboratory Director

NVLAP TESTING
NVLAP LAB CODE 101768-0

ASBESTOS ANALYTICAL REPORT
By: Polarized Light Microscopy

Prepared for

City of Manitowac

CLIENT PROJECT: Stantec- AS; 160-584

CEI LAB CODE: A16-7520.1

TEST METHOD: PLM Point Count
EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

REPORT DATE: 08/29/16

TEL: 866-481-1412

www.ceilabs.com

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: City of Manitowac
1512 Washington Street
Manitowac, WI 54220

CEI Lab Code: A16-7520.1
Date Received: 08-24-16
Date Analyzed: 08-25-16
Date Reported: 08-29-16

Project: Stantec- AS; 160-584

ASBESTOS POINT COUNT PLM, EPA 600 METHOD

Client ID	Lab ID	Material Description	POINTS Total	POINTS Asbestos	ASBESTOS %	
584-39	A2214831	Joint Compound	400	11	**2.8%**	**Chrysotile**
	A2214831	Drywall/Joint Compound (Composite Result from Point Count)			**0.14%**	**Chrysotile**
Lab Notes: Joint Compound is 5% of Overall Sample, 0.14% Chrysotile Overall						
584-61	A2214853	Kiln Fire Brick	400	1	**0.25%**	**Chrysotile**

LEGEND: None

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

LIMIT OF DETECTION: 0.25% by 400 points or 0.1% by 1,000 points

REGULATORY LIMIT: >1% by weight

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ANALYST: Ryan Williams

APPROVED BY: Tianbao Bai, Ph.D., CIH
Laboratory Director

NVLAP TESTING
NVLAP LAB CODE 101768-0

A16-7520.1

RE: Laboratory Report for Stantec- AS; 160-584 (A16-7520)

From: Aaron Stroud
Sent: Wed, Aug 24, 2016 at 5:01 pm
To: 'CEI Labs, Inc.'

Hello, Could I please have a point count analysis on samples 584-39 and 584-61? Standard TAT. Thanks!!

Please let me know if you have any questions.

Thanks and have a great day,

Aaron Stroud

Aaron Stroud
Operations Manager

NorthStar Environmental Testing, LLC.
1835 E. Edgewood Drive
Suite 10542
Appleton, WI 54913

Office: 920.422.4888
Cell: 920.422.4881
www.northstartesting.com

ASBESTOS * LEAD PAINT * MOLD * INDOOR AIR QUALITY

From: CEI Labs, Inc. [mailto:asbestos@ceilabs.com]
Sent: Tuesday, August 23, 2016 11:28 AM
To: info@northstartesting.com
Subject: Laboratory Report for Stantec- AS; 160-584 (A16-7520)

CEI LABS HAS MOVED

Our new address is 730 SE Maynard Road, Cary, NC 27511.

Attached is the laboratory report for your recently submitted samples. Please print out a copy for your records.

We appreciate your business,

CEI Labs, Inc.
(866) 481-1412

September 20, 2016

Stantec
12075 Corporate Parkway Ste 200
Mequon, WI 53092-2649

CLIENT PROJECT: Santec - AS; 160-584
CEI LAB CODE: B16-7517

Dear Customer:

Enclosed are asbestos analysis results for PLM Bulk samples received at our laboratory on September 8, 2016. The samples were analyzed for asbestos using polarizing light microscopy (PLM) per the EPA 600 Method.

Sample results containing >1% asbestos are considered asbestos-containing materials (ACMs) per EPA regulatory requirements. The detection limit for the EPA 600 Method is <1% asbestos by weight as determined by visual estimation.

Thank you for your business and we look forward to continuing good relations. If you have any questions, please feel free to call our office at 919-481-1413.

Kind Regards,

Tianbao Bai, Ph.D., CIH
Laboratory Director

NVLAP TESTING
NVLAP LAB CODE 101768-0

AMENDED

ASBESTOS ANALYTICAL REPORT
By: Polarized Light Microscopy

Prepared for

Stantec

CLIENT PROJECT: Santec - AS; 160-584

CEI LAB CODE: B16-7517

TEST METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

REPORT DATE: 09/08/16

TOTAL SAMPLES ANALYZED: 10

SAMPLES >1% ASBESTOS: 5

TEL: 866-481-1412

www.ceilabs.com

AMENDED

Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: Santec - AS; 160-584

CEI LAB CODE: B16-7517

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
584-119		B204569	Tan	Fire Brick	None Detected
584-120		B204570	White	Debris	Amosite 20%
584-121		B204571	Black	Tar Paper	None Detected
584-122		B204572	Black	Tar Paper	None Detected
584-123	Layer 1	B204573	Black	Felt Pipe Insulation	Chrysotile 65%
	Layer 2	B204573	Gray	Paper Insulation	Chrysotile 10%
584-124		B204574	Gray	Pipe Fitting Insulation	Chrysotile 10%
584-125		B204575	Black,Gray	Felt Pipe Insulation	Chrysotile 65%
584-126		B204576	Black	Ash	None Detected
584-127		B204577	Black	Ash	None Detected
584-128		B204578	Black	Ash	None Detected

AMENDED

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Stantec
12075 Corporate Parkway Ste 200
Mequon, WI 53092-2649

CEI Lab Code: B16-7517
Date Received: 09-08-16
Date Analyzed: 09-08-16
Date Reported: 09-08-16

Project: Santec - AS; 160-584

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
584-119 B204569	Fire Brick	Homogeneous Tan Non-fibrous Bound	3%	*Other	10% 87%	Silicates Binder	**None Detected**
Lab Notes: *Other - Heat or chemically altered Chrysotile. Structures are no longer asbestiform.							
584-120 B204570	Debris	Homogeneous White Fibrous Loose			80%	Binder	**20% Amosite**
584-121 B204571	Tar Paper	Homogeneous Black Fibrous Bound	85%	Cellulose	15%	Tar	**None Detected**
584-122 B204572	Tar Paper	Homogeneous Black Fibrous Bound	85%	Cellulose	15%	Tar	**None Detected**
584-123 Layer 1 B204573	Felt Pipe Insulation	Homogeneous Black Fibrous Bound	20%	Cellulose	15%	Tar	**65% Chrysotile**
Layer 2 B204573	Paper Insulation	Homogeneous Gray Fibrous Loosely Bound	80% 5%	Cellulose Hair	5%	Binder	**10% Chrysotile**
584-124 B204574	Pipe Fitting Insulation	Homogeneous Gray Fibrous Loose	65%	Fiberglass	25%	Binder	**10% Chrysotile**

AMENDED

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Stantec
12075 Corporate Parkway Ste 200
Mequon, WI 53092-2649

CEI Lab Code: B16-7517
Date Received: 09-08-16
Date Analyzed: 09-08-16
Date Reported: 09-08-16

Project: Santec - AS; 160-584

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
584-125 B204575	Felt Pipe Insulation	Homogeneous Black,Gray Fibrous Loosely Bound	20%	Cellulose	10% 5%	Binder Tar	**65% Chrysotile**
584-126 B204576	Ash	Homogeneous Black Non-fibrous Bound			5% 95%	Silicates Binder	**None Detected**
584-127 B204577	Ash	Homogeneous Black Non-fibrous Bound			5% 95%	Silicates Binder	**None Detected**
584-128 B204578	Ash	Homogeneous Black Non-fibrous Bound			5% 95%	Silicates Binder	**None Detected**

LEGEND:	Non-Anth	= Non-Asbestiform Anthophyllite
	Non-Trem	= Non-Asbestiform Tremolite
	Calc Carb	= Calcium Carbonate

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

LIMIT OF DETECTION: <1% by visual estimation

REGULATORY LIMIT: >1% by weight

Due to the limitations of the EPA 600 method, nonfriable organically bound materials (NOBs) such as vinyl floor tiles can be difficult to analyze via polarized light microscopy (PLM). EPA recommends that all NOBs analyzed by PLM, and found not to contain asbestos, be further analyzed by Transmission Electron Microscopy (TEM). Please note that PLM analysis of dust and soil samples for asbestos is not covered under NVLAP accreditation.

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ANALYST: Gary A. Swanson

APPROVED BY: Tianbao Bai, Ph.D., CIH
Laboratory Director

NVLAP TESTING
NVLAP LAB CODE 101768-0

CEI LABS

107 New Edition Court, Cary, NC 27511
Tel: 866-481-1412; Fax: 919-481-1442

CHAIN OF CUSTODY

LAB USE ONLY:	
CEI Lab Code:	B16-7517 (10)
CEI Lab I.D. Range:	B204569 - B204578

COMPANY CONTACT INFORMATION			
Company:	NorthStar Environmental Testing	Client #:	25143
Address:	817 Oak Ridge Road	Job Contact:	Aaron Stroud
	Mosinee, WI 54455	Email:	info@northstartesting.com
		Tel:	(920) 422-4881
Project Name:	Stantec-WS	Fax:	
Project ID #:	160- 584	P.O. #:	

		TURN AROUND TIME						
ASBESTOS	**METHOD**	4 HR*	8 HR*	12 HR*	1 DAY	2 DAY	3 DAY	5 DAY
PLM BULK	EPA 600	☐	☐	☒	☐	☐	☐	☐
PLM POINT COUNT (400)	EPA 600	☐	☐	☐	☐	☐	☐	☐
PLM POINT COUNT (1000)	EPA 600	☐	☐	☐	☐	☐	☐	☐
PLM GRAVIMETRIC	EPA 600		☐	☐	☐	☐	☐	☐
PLM GRAV w POINT COUNT	EPA 600		☐	☐	☐	☐	☐	☐
PCM AIR	NIOSH 7400	☐	☐	☐	☐	☐	☐	☐
TEM AIR	AHERA	☐	☐	☐	☐	☐	☐	☐
TEM AIR	EPA Level II	☐	☐	☐	☐	☐	☐	☐
TEM AIR	NIOSH 7402	☐	☐	☐	☐	☐	☐	☐
TEM BULK	CHATFIELD		☐	☐	☐	☐	☐	☐
TEM DUST WIPE	ASTM D6480-05	☐	☐	☐	☐	☐	☐	☐
TEM DUST MICROVAC	ASTM D5755-03	☐	☐	☐	☐	☐	☐	☐
TEM QUALITATIVE	CEI LABS	☐	☐	☐	☐	☐	☐	☐
OTHER:		☐	☐	☐	☐	☐	☐	☐
LEAD PAINT	**METHOD**	4 HR*	8 HR*	12 HR*	24 HR	2 DAY	3 DAY	5 DAY
LEAD PAINT	EPA SW846 7000B					☐	☐	☐
LEAD WIPE	EPA SW846 7000B					☐	☐	☐
LEAD SOIL	EPA SW846 7000B					☐	☐	☐
LEAD AIR	NIOSH 7082					☐	☐	☐
OTHER:						☐	☐	☐

REMARKS:

* By noon on

☑ Accept Samples
☐ Reject Samples

Relinquished By:	Date/Time	Received By:	Date/Time
	9/7/16	AC	9/8/16
			9:20

*Call to confirm RUSH analysis.

Samples will be disposed of 30 days after analysis

ENVIRONMENTAL TESTING, LLC
www.NorthStarTesting.com
Tel: 715.693.6112
Fax: 715.693.1225
Appleton, WI 54913
Tel: 920.422.4888
Madison, WI 53714
Tel: 608.827.6761

ASBESTOS BULK SAMPLE LOG-IN

B16-7517

CLIENT:	Stantec	**NORTHSTAR NO.**	160-584
LOCATION:	1512 Washington St - Manitowoc	**DATE COLLECTED:**	9/6/16
WORK AREA:	Mirro Aluminum Company	**TECH:**	Aaron Stroud

Sample ID	Level	Room / Area Info	Sample Info	Asbestos Content
584-119	Tunnel	Southeast Corner	Stacked Circular Fire Brick	
584-120		M#3 Tunnel Access (south)	Debris on Tunnel Floor	
584-121		S#1 Tunnel Access	Tar Paper at Ceiling	
584-122		S#1 Tunnel Access	Tar Paper at Ceiling	
584-123		S#2 Tunnel Access	Felt Pipe Insulation	
584-124		M#9 Tunnel Access	Pipe Fitting Insulation (felt)	
584-125		M#9 Tunnel Access	Felt Pipe Insulation	
584-126		M#10 Tunnel Access	Black Ash (under concrete floor)	
584-127		M#10 Tunnel Access	Black Ash (under concrete floor)	
584-128		M#10 Tunnel Access	Black Ash (under concrete floor)	

Lab Info:	CEI Labs, Inc.	**Date Analyzed:**	x/xx/16	**Page:**	1 of 1

September 13, 2016

NorthStar Environmental Testing, LLC.
817 Oak Ridge Road
Mosinee, WI 54455

CLIENT PROJECT: Stantec Mirro; 160-584
CEI LAB CODE: B16-7612

Dear Customer:

Enclosed are asbestos analysis results for PLM Bulk samples received at our laboratory on September 12, 2016. The samples were analyzed for asbestos using polarizing light microscopy (PLM) per the EPA 600 Method.

Sample results containing >1% asbestos are considered asbestos-containing materials (ACMs) per EPA regulatory requirements. The detection limit for the EPA 600 Method is <1% asbestos by weight as determined by visual estimation.

Thank you for your business and we look forward to continuing good relations. If you have any questions, please feel free to call our office at 919-481-1413.

Kind Regards,

Tianbao Bai, Ph.D., CIH
Laboratory Director

NVLAP TESTING
NVLAP LAB CODE 101768-0

ASBESTOS ANALYTICAL REPORT
By: Polarized Light Microscopy

Prepared for

NorthStar Environmental Testing, LLC.

CLIENT PROJECT: Stantec Mirro; 160-584

CEI LAB CODE: B16-7612

TEST METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

REPORT DATE: 09/13/16

TOTAL SAMPLES ANALYZED: 8

SAMPLES >1% ASBESTOS: 2

TEL: 866-481-1412

www.ceilabs.com

Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: Stantec Mirro; 160-584

CEI LAB CODE: B16-7612

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
584-129		B205324	Gray,Off-white	Wrap	None Detected
584-130		B205325	Gray	Wrap	None Detected
584-131		B205326	Gray	Wrap	None Detected
584-132		B205327	Gray	Wrap	Chrysotile 3%
584-133		B205328	Gray	Wrap	None Detected
584-134		B205329	Gray	Wrap	None Detected
584-135		B205330	Gray	Wrap	None Detected
584-136		B205331	Gray	Wrap	Chrysotile 3%

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: NorthStar Environmental Testing, LLC.
817 Oak Ridge Road
Mosinee, WI 54455

CEI Lab Code: B16-7612
Date Received: 09-12-16
Date Analyzed: 09-13-16
Date Reported: 09-13-16

Project: Stantec Mirro; 160-584

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
584-129 B205324	Wrap	Heterogeneous Gray,Off-white Fibrous Bound	<1%	Cellulose	50% 40% 10%	Calc Carb Silicates Binder	**None Detected**
584-130 B205325	Wrap	Heterogeneous Gray Fibrous Bound	<1%	Cellulose	50% 40% 10%	Calc Carb Silicates Binder	**None Detected**
584-131 B205326	Wrap	Heterogeneous Gray Fibrous Bound	<1%	Cellulose	50% 40% 10%	Calc Carb Silicates Binder	**None Detected**
584-132 B205327	Wrap	Heterogeneous Gray Fibrous Bound	<1%	Cellulose	50% 37% 10%	Calc Carb Silicates Paint	**3% Chrysotile**
584-133 B205328	Wrap	Heterogeneous Gray Fibrous Bound	<1%	Cellulose	50% 40% 10%	Calc Carb Silicates Binder	**None Detected**
584-134 B205329	Wrap	Heterogeneous Gray Fibrous Bound	<1%	Cellulose	50% 40% 10%	Calc Carb Silicates Binder	**None Detected**
584-135 B205330	Wrap	Heterogeneous Gray Fibrous Bound	<1%	Cellulose	50% 40% 10%	Calc Carb Silicates Binder	**None Detected**

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: NorthStar Environmental Testing, LLC.
817 Oak Ridge Road
Mosinee, WI 54455

CEI Lab Code: B16-7612
Date Received: 09-12-16
Date Analyzed: 09-13-16
Date Reported: 09-13-16

Project: Stantec Mirro; 160-584

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
584-136	Wrap	Heterogeneous	<1%	Cellulose	50%	Calc Carb	**3% Chrysotile**
B205331		Gray			37%	Silicates	
		Fibrous			10%	Paint	
		Bound					

LEGEND:

Non-Anth	= Non-Asbestiform Anthophyllite
Non-Trem	= Non-Asbestiform Tremolite
Calc Carb	= Calcium Carbonate

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

LIMIT OF DETECTION: <1% by visual estimation

REGULATORY LIMIT: >1% by weight

Due to the limitations of the EPA 600 method, nonfriable organically bound materials (NOBs) such as vinyl floor tiles can be difficult to analyze via polarized light microscopy (PLM). EPA recommends that all NOBs analyzed by PLM, and found not to contain asbestos, be further analyzed by Transmission Electron Microscopy (TEM). Please note that PLM analysis of dust and soil samples for asbestos is not covered under NVLAP accreditation.

This report relates only to the samples tested or analyzed and may not be reproduced, except in full, without written approval by CEI Labs, Inc. CEI Labs makes no warranty representation regarding the accuracy of client submitted information in preparing and presenting analytical results. Interpretation of the analytical results is the sole responsibility of the client. This report may not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. Government.

ANALYST: Scott Minyard

APPROVED BY: Tianbao Bai, Ph.D., CIH
Laboratory Director

NVLAP TESTING
NVLAP LAB CODE 101768-0

CEI LABS

107 New Edition Court, Cary, NC 27511
Tel: 866-481-1412; Fax: 919-481-1442

CHAIN OF CUSTODY

LAB USE ONLY:	
CEI Lab Code:	B16-7612 (8)
CEI Lab I.D. Range:	B205324-B205331

COMPANY CONTACT INFORMATION	
Company: NorthStar Environmental Testing	Client#: bill to Stantec SB
Address: bill to Stantec	Job Contact: Dave Barrett
results to NorthStar	Email: info@northstartesting.com
	Tel: (715) 693-6112
Project Name: Stantec Mirro	Fax: (715) 693-1225
Project ID #: 160-584	P.O. #:

ASBESTOS	METHOD	TURN AROUND TIME 4 HR*	8 HR*	12 HR*	1 DAY	2 DAY	3 DAY	5 DAY
PLM BULK	EPA 600	☐	☐	☐	☑	☐	☐	☐
PLM POINT COUNT (400)	EPA 600	☐	☐	☐	☐	☐	☐	☐
PLM POINT COUNT (1000)	EPA 600	☐	☐	☐	☐	☐	☐	☐
PLM GRAVIMETRIC	EPA 600		☐	☐	☐	☐	☐	☐
PLM GRAV w POINT COUNT	EPA 600		☐	☐	☐	☐	☐	☐
PCM AIR	NIOSH 7400	☐	☐	☐	☐	☐	☐	☐
TEM AIR	AHERA	☐	☐	☐	☐	☐	☐	☐
TEM AIR	EPA Level II	☐	☐	☐	☐	☐	☐	☐
TEM AIR	NIOSH 7402	☐	☐	☐	☐	☐	☐	☐
TEM BULK	CHATFIELD		☐	☐	☐	☐	☐	☐
TEM DUST WIPE	ASTM D6480-05	☐	☐	☐	☐	☐	☐	☐
TEM DUST MICROVAC	ASTM D5755-03	☐	☐	☐	☐	☐	☐	☐
TEM QUALITATIVE	CEI LABS	☐	☐	☐	☐	☐	☐	☐
OTHER:		☐	☐	☐	☐	☐	☐	☐
LEAD PAINT	**METHOD**	**4 HR***	**8 HR***	**12 HR***	**24 HR**	**2 DAY**	**3 DAY**	**5 DAY**
LEAD PAINT	EPA SW846 7000B					☐	☐	☐
LEAD WIPE	EPA SW846 7000B					☐	☐	☐
LEAD SOIL	EPA SW846 7000B					☐	☐	☐
LEAD AIR	NIOSH 7082					☐	☐	☐
OTHER:						☐	☐	☐

REMARKS:

☑ Accept Samples
☐ Reject Samples

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	9 / 9 /16	AA	91216
			9:20

*Call to confirm RUSH analysis.

Samples will be disposed of 30 days after analysis

B16-7612

NORTHSTAR ENVIRONMENTAL TESTING, LLC
www.NorthStarTesting.com

Central Wisconsin Office:
817 Oak Ridge Rd
Mosinee, WI 54455
Tel: 715.693.6112
Fax: 715.693.1225

Fox Cities Office:
1835 E. Edgewood Drive
Suite 10542
Appleton, WI 54913
Tel: 920.422.4888

Madison Office:
1310 Mendota Street
Suite 121
Madison, WI 53714
Tel: 608.827.6761

ASBESTOS BULK SAMPLE LOG-IN

CLIENT:	Stantec Consulting Services, Inc.	**NORTHSTAR NO.**	160-584
LOCATION:	1512 Washington St – Manitowoc, WI	**DATE COLLECTED:**	9/09/16
WORK AREA:	Mirro - Exterior Coatings	**TECH:**	Aaron Stroud

Sample ID	Room / Area Info	Sample Info	Asbestos Content
584-129	North Building Exterior West – ground level	Gray Fiberglass Wrap Layer 1 beige with reddish top	
584-130	North Building Exterior West – ground level	Gray Fiberglass Wrap Layer 2 tan (thick)	
584-131	North Building Exterior West – ground level	Gray Fiberglass Wrap Layer 3 gray	
584-132	North Building Exterior West – ground level	Gray Fiberglass Wrap Layer 4 light gray (thin)	
584-133	North Building Exterior North – ground level	Gray Fiberglass Wrap Layer 1 beige with reddish top	
584-134	North Building Exterior North – ground level	Gray Fiberglass Wrap Layer 2 tan (thick)	
584-135	North Building Exterior North – ground level	Gray Fiberglass Wrap Layer 3 gray	
584-136	North Building Exterior North – ground level	Gray Fiberglass Wrap Layer 4 light gray (thin)	

Lab Info:	CEI, Inc.	**Date Analyzed:**	9/xx/16	**Page:**	1 of 1

Appendix F LEAD PAINT TESTING REPORT

Stantec Consulting Services Inc.

Mirro Building No. 9
1512 Washington Street
Manitowoc, WI 54220

September 2016

NORTHSTAR ENVIRONMENTAL TESTING, LLC
www.NorthStarTesting.com

Central Wisconsin Office:
817 Oak Ridge Rd
Mosinee, WI 54455
Tel: 715.693.6112
Fax: 715.693.1225

Fox Cities Office:
1835 E. Edgewood Drive
Suite 10542
Appleton, WI 54913
Tel: 920.422.4888

Madison Office:
1310 Mendota Street
Suite 121
Madison, WI 53714
Tel: 608.827.6761

Asbestos • Lead Paint • Mold • Indoor Air Quality • Industrial Hygiene

September 20, 2016

Stantec Consulting Services Inc.
12075 Corporate Parkway, Suite 200
Mequon, WI 53092

Project:	Lead Paint Inspection (limited)
Site Address:	Mirro Building No. 9 1512 Washington Street Manitowoc, WI 54220
Work Area:	Pre-Demolition
Site Date:	August 11 to 16, 2016
NorthStar No:	160-584

NorthStar Environmental Testing, LLC (NorthStar) was authorized by Stantec Consulting Services Inc. to perform limited, non-destructive inspection for the presence of lead in paint on designated surfaces prior to potential disturbance by specific demolition activity.

Testing for lead based paint was limited to representative areas. A surface-by-surface visual assessment of painted components was conducted at the property to determine which areas/substrates to test.

TESTING SUMMARY (XRF):

Testing Date:	August 11 to 16, 2016
Building/Site:	Mirro Building No. 9 1512 Washington Street Manitowoc, WI 54220
Building Contact:	Harris Byers (Stantec Consulting Services Inc.) Phone: 414.581.6476
Work Area:	Pre-Demolition
Materials Tested Pre-Demolition:	Cementitious painted surfaces (primarily floors, walls, columns & ceilings)
Lead Paint for Demolition Items:	**Lead paint was identified for various surfaces throughout the property. Please see testing data for specific locations.**
Visual Assessment:	**Deteriorated lead-based paint was noted in multiple areas throughout the structure.**
Sampling Tech:	Aaron Stroud
Cert No.:	LRA-108183
Lead Company:	HFS-925800 Expiration Date: 08/01/2017
Testing Equipment:	RMD LPA-1 XRF analyzer, Serial Number: 3499
Comment:	Sampling was limited to representative surfaces on cementitious materials within accessible areas of the building. Any additional items not specifically tested should be assumed to contain lead unless additional testing proves otherwise.

DISCUSSION:

The testing performed was limited in scope and does not constitute a full lead paint inspection. Demolition activity beyond the anticipated work scope specified at the time of our site visit may require additional testing prior to disturbance.

The United States Federal Government through the Environmental Protection Agency (EPA) and Housing and Urban Development (HUD) defines lead-based paint as equal to or greater than 1.0 mg/cm^2 measured by XRF analysis, or 0.5% (5000 ppm) measured by weight through laboratory analysis. The State of Wisconsin has adopted the same definition of lead bearing paint (mainly for residential HUD applications) as that which is equal to or greater than 1.0 mg/cm^2 or 0.5% (5000 ppm) respectively.

Our non-destructive testing by x-ray fluorescence has been performed in an attempt to screen for areas with quantifiable lead above regulatory limits on painted substrates. The reportable limit of detection is essentially 1.0 mg/cm^2 by XRF analysis and therefore paint chip analysis would be recommended for a more accurate determination of lead in paint below this level or for results to rule out lead in any quantifiable amount. The testing equipment is calibrated against a known standard before and after actual substrate testing.

For worker exposure applications, lead in any quantifiable amount, and disturbance of the material creating dust and/or fumes and subsequent potential worker exposure would be regulated by the OSHA lead in construction standard (29 CFR 1926.62).

REMARKS:

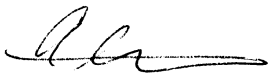
The testing and subsequent report has been performed according to applicable regulations and generally accepted industry standards and practices in this locality under similar conditions. Information provided to us by the building owner/occupant, client or other interested party that may have been utilized in the performance and reporting of the testing was accepted in good faith and can only be assumed to be accurate. The findings and recommendations made are representative of our professional opinion based on currently available information; no other warranty is implied or intended.

Please contact us if you have any questions regarding the presented information or the project in general.

Submitted By,

NorthStar Environmental Testing, LLC.

David Barrett
Senior Project Manager



Aaron Stroud
Operations Manager

Attach: testing data

NORTHSTAR ENVIRONMENTAL TESTING, LLC
www.NorthStarTesting.com

LEAD PAINT XRF TESTING DATA

CLIENT:	Stantec Consulting Services Inc.	NORTHSTAR NO.	160-584
LOCATION:	1512 Washington St – Manitowoc, WI	SITE DATE:	August 11, 2016
WORK AREA:	Pre-Demolition	TECH:	L Pawlus

Reading No	Wall	Structure	Location	Member	Paint Condition	Substrate	Color	Lead (mg/cm2)
Interior Room 999 Pre-Calibration 8/11/16								
1								**1**
2								**0.9**
3								**0.9**
4								-0.1
Interior Room 001 100								
5	A	Wall	U Lft		Poor	Brick	Green	0.4
6	A	Wall	U Ctr		Poor	Brick	Green	0.1
7	A	Wall	L Ctr		Poor	Brick	Gray	**>9.9**
8	B	Wall	L Lft		Poor	Brick	Gray	0.2
9	B	Wall	U Lft		Poor	Brick	Green	-0.3
10	B	Wall	U Ctr		Poor	Brick	Green	0.5
11	B	Wall	L Ctr		Poor	Brick	Gray	**>9.9**
12	B	Wall	L Rgt		Poor	Brick	Gray	**5.5**
13	B	Wall	U Rgt		Poor	Brick	Green	0.5
14	C	Wall	L Lft		Poor	Brick	White	**>9.9**
15	C	Wall	U Lft		Poor	Brick	Green	0.4
16	C	Wall	U Rgt		Poor	Brick	Green	0.5
17	C	Wall	L Rgt		Poor	Brick	Dk Green	**>9.9**
63	A	Ceiling			Poor	Wood	Green	0.1
Interior Room 002 101								
18	A	Wall	U Ctr		Poor	Brick	Silver	0.4
Interior Room 003 102								
19	A	Wall	U Ctr		Poor	Brick	White	-0.1
20	D	Wall	U Ctr		Poor	Brick	White	0
Interior Room 004 103								
21	C	Wall	U Ctr		Poor	Brick	White	0.3
22	C	Wall	L Ctr		Poor	Brick	Green	0.2
23	B	Wall	L Ctr		Poor	Brick	Green	0
24	B	Wall	U Ctr		Poor	Brick	White	0.1
Interior Room 005 104								
25	D	Wall	U Ctr		Poor	Brick	White	0.2
26	A	Wall	U Ctr		Poor	Brick	White	-0.1
27	B	Wall	U Ctr		Poor	Brick	White	-0.4
28	C	Wall	U Ctr		Poor	Brick	White	0.3
Interior Room 006 105								
29	D	Wall	U Ctr		Poor	Brick	White	0
30	B	Wall	U Ctr		Poor	Brick	White	0.1
Interior Room 007 106								
31	D	Wall	L Rgt		Poor	Brick	Dk Green	**7.7**
32	D	Wall	U Rgt		Poor	Brick	Green	-0.4
33	A	Wall	U Ctr		Poor	Brick	Green	-0.5
34	A	Wall	L Ctr		Poor	Brick	Dk Green	**>9.9**

* Wall A is the road side (15th Street) of the building (east). Walls B/C/D are determined clockwise from Wall A.

Reading No	Wall	Structure	Location	Member	Paint Condition	Substrate	Color	Lead (mg/cm2)
35	B	Wall	L Lft		Poor	Brick	Dk Green	**>9.9**
36	B	Wall	U Lft		Poor	Brick	Green	0
37	A	Column	Lft		Poor	Brick	Green	**3.2**
38	B	Wall	L Ctr		Poor	Brick	Dk Green	**>9.9**
39	B	Wall	U Ctr		Poor	Brick	Green	0.3
40	C	Wall	U Lft		Poor	Brick	Green	-0.4
41	C	Wall	L Lft		Poor	Brick	Dk Green	**>9.9**
42	C	Wall	L Rgt		Poor	Brick	Dk Green	**>9.9**
43	C	Wall	U Rgt		Poor	Brick	Green	**>9.9**
44	C	Wall	U Ctr		Poor	Brick	Green	-0.1
45	C	Wall	U Rgt		Poor	Brick	Green	0
46	D	Wall	U Lft		Poor	Brick	Green	-0.2
47	D	Wall	L Lft		Poor	Brick	Dk Green	**>9.9**
48	C	Column	Ctr		Poor	Brick	Green	-0.1
49	C	Column	Ctr		Poor	Brick	Dk Green	**>9.9**
50	D	Wall	L Ctr		Poor	Brick	Dk Green	**>9.9**
51	D	Wall	U Ctr		Poor	Brick	Green	-0.1
52	D	Column	Ctr		Poor	Brick	Green	0
53	D	Column	Ctr		Poor	Brick	Dk Green	**>9.9**
62	A	Ceiling			Poor	Wood	Green	0
Interior Room 008 107								
54	D	Wall	U Rgt		Poor	Brick	Silver	0.1
55	C	Column	Ctr		Poor	Brick	Silver	0
56	B	Wall	U Ctr		Poor	Brick	Silver	0.2
Interior Room 009 108								
57	A	Wall	U Ctr		Poor	Brick	Green	0.2
58	A	Wall	L Ctr		Poor	Brick	Dk Green	0
59	B	Wall	U Ctr		Poor	Brick	Green	0
60	B	Wall	U Ctr		Poor	Brick	Green	0.1
61	B	Wall	L Ctr		Poor	Brick	Dk Green	0.2
Interior Room 010 109								
64	D	Ceiling			Poor	Wood	Gray	0
66	B	Wall	U Ctr		Poor	Brick	Yellow	0.1
67	C	Wall	U Ctr		Poor	Brick	Yellow	-0.1
68	D	Wall	U Rgt		Poor	Brick	Yellow	0.3
69	D	Ceiling			Poor	Concrete	Yellow	0.2
70	D	Wall	U Rgt		Poor	Brick	Green	0.5
71	D	Wall	L Rgt		Poor	Brick	Dk Green	0.4
72	A	Wall	L Lft		Poor	Brick	Dk Green	0.3
73	A	Wall	U Lft		Poor	Brick	Green	0.4
74	A	Wall	U Ctr		Poor	Brick	Green	-0.1
75	A	Wall	L Ctr		Poor	Concrete	Dk Green	0.6
76	B	Wall	L Ctr		Poor	Concrete	Dk Green	0.4
77	B	Wall	U Ctr		Poor	Brick	Green	0.7
78	C	Wall	U Ctr		Poor	Brick	Green	0.3
79	C	Wall	L Ctr		Poor	Brick	Dk Green	0.5
80	D	Wall	L Lft		Poor	Brick	Dk Green	0.7
81	D	Wall	U Lft		Poor	Brick	Green	0.6
82	C	Wall	U Lft		Poor	Brick	Tan	**>9.9**
83	A	Column	Ctr		Poor	Concrete	Dk Green	0.7
Interior Room 011 110								
65	A	Wall	U Rgt		Poor	Brick	Yellow	**>9.9**

* Wall A is the road side (15th Street) of the building (east). Walls B/C/D are determined clockwise from Wall A.

Reading No	Wall	Structure	Location	Member	Paint Condition	Substrate	Color	Lead (mg/cm2)
84	D	Column	Ctr		Poor	Concrete	Green	0.2
Interior Room 012 111								
85	A	Wall	U Ctr		Poor	Brick	Yellow	0.4
91	A	Wall	U Rgt		Poor	Brick	Green	0.3
92	A	Wall	L Rgt		Poor	Brick	Dk Green	0.5
93	B	Wall	L Lft		Poor	Concrete	Dk Green	0.7
94	B	Wall	U Lft		Poor	Brick	Green	0.6
95	D	Wall	U Lft		Poor	Brick	Green	0.5
96	D	Wall	L Lft		Poor	Brick	Dk Green	0.4
97	B	Column	Ctr		Poor	Concrete	Green	0.6
98	B	Column	Ctr		Poor	Concrete	Gray	0.7
99	B	Wall	L Ctr		Poor	Concrete	Dk Green	0.4
100	B	Wall	U Ctr		Poor	Brick	Green	-0.1
101	B	Quality	U Ctr		Poor	Brick	Green	0
102	B	Wall	U Rgt		Poor	Brick	Green	0
103	B	Wall	U Rgt		Poor	Concrete	Dk Green	0.4
104	C	Wall	L Lft		Poor	Brick	Dk Green	0.3
105	C	Wall	U Lft		Poor	Brick	Green	0.2
106	D	Wall	U Lft		Poor	Brick	Green	-0.1
107	D	Wall	L Lft		Poor	Brick	Dk Green	0
108	B	Ceiling			Poor	Wood	Gray	-0.1
111	C	Wall	U Ctr		Poor	Brick	Silver	0
112	C	Wall	U Rgt		Poor	Brick	Silver	-0.1
113	C	Ceiling			Poor	Concrete	Silver	0.2
114	D	Wall	U Lft		Poor	Brick	Silver	0.4
115	D	Column	Lft		Poor	Concrete	Silver	0
116	D	Ceiling			Poor	Wood	Silver	-0.2
125	D	Wall	U Rgt		Poor	Brick	White	0.1
126	D	Wall	L Rgt		Poor	Brick	Green	0.7
127	A	Wall	L Lft		Poor	Brick	Green	-0.2
128	A	Wall	U Lft		Poor	Brick	White	-0.2
Interior Room 013 112								
86	B	Wall	U Ctr		Poor	Brick	Tan	0.5
87	C	Wall	U Ctr		Poor	Brick	Tan	0.3
88	D	Wall	U Ctr		Poor	Brick	Tan	0.5
89	A	Wall	U Ctr		Poor	Brick	Tan	0.4
90	A	Ceiling			Poor	Concrete	Tan	0.6
Interior Room 014 111A								
109	B	Wall	U Ctr		Poor	Brick	Silver	0.3
110	C	Wall	U Ctr		Poor	Brick	Silver	0.3
Interior Room 015 111B								
117	D	Wall	U Ctr		Poor	Brick	White	0.3
118	D	Wall	L Ctr		Poor	Brick	Green	0.3
119	A	Wall	L Ctr		Poor	Brick	Green	0.1
120	A	Wall	U Ctr		Poor	Brick	White	0.1
Interior Room 016 112								
121	C	Wall	U Ctr		Poor	Brick	Silver	0.6
122	D	Wall	U Ctr		Poor	Brick	Silver	0
123	A	Wall	U Ctr		Poor	Brick	Silver	0.2
124	B	Wall	U Ctr		Poor	Brick	Silver	0.2
Interior Room 017 113								
129	C	Wall	U Ctr		Poor	Brick	Silver	-0.1

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Reading No	Wall	Structure	Location	Member	Paint Condition	Substrate	Color	Lead (mg/cm2)
130	D	Wall	U Ctr		Poor	Brick	Silver	0.1
131	A	Wall	U Ctr		Poor	Brick	Silver	0.1
132	A	Wall	U Rgt		Poor	Brick	Green	0.5
133	A	Column	Ctr		Poor	Concrete	Green	-0.3
134	D	Column	Ctr		Poor	Concrete	Silver	-0.2
135	D	Ceiling			Poor	Wood	Silver	0
Interior Room 018 114								
136	C	Wall	U Ctr		Poor	Brick	Silver	-0.1
137	D	Wall	U Ctr		Poor	Brick	Silver	0.2
138	A	Wall	U Ctr		Poor	Brick	Silver	0
139	B	Wall	U Ctr		Poor	Brick	Silver	0.1
Interior Room 019 115								
140	A	Wall	U Ctr		Poor	Brick	Green	0.7
141	A	Wall	L Ctr		Poor	Brick	Dk Green	**>9.9**
142	B	Wall	L Lft		Poor	Brick	Dk Green	**5.3**
143	B	Wall	U Lft		Poor	Brick	Green	0.2
144	B	Wall	U Ctr		Poor	Brick	Green	0.1
145	B	Wall	L Ctr		Poor	Brick	Dk Green	0.1
146	B	Wall	L Rgt		Poor	Brick	Dk Green	0
147	B	Wall	U Rgt		Poor	Brick	Green	0.2
148	B	Wall	U Rgt		Poor	Conc Block	Green	0
149	B	Wall	L Rgt		Poor	Conc Block	Dk Green	0.6
150	C	Wall	U Rgt		Poor	Brick	Silver	0
151	C	Quality	U Rgt		Poor	Brick	Silver	-0.1
152	D	Wall	U Lft		Poor	Brick	Silver	-0.1
153	D	Wall	L Lft		Poor	Concrete	Silver	**>9.9**
154	D	Wall	U Ctr		Poor	Brick	Green	0
155	D	Wall	L Ctr		Poor	Brick	Dk Green	0.2
156	D	Wall	L Rgt		Poor	Brick	Dk Green	**>9.9**
157	D	Wall	U Rgt		Poor	Brick	Green	-0.3
158	D	Wall	L Ctr		Poor	Brick	Dk Green	**>9.9**
159	D	Column	Ctr		Poor	Concrete	Dk Green	**>9.9**
160	D	Column	Ctr		Poor	Concrete	Green	-0.1
161	D	Ceiling			Poor	Wood	Green	0.1
Interior Room 020 116								
162	B	Wall	L Lft		Poor	Concrete	Dk Green	**>9.9**
163	B	Wall	U Lft		Poor	Brick	Green	-0.1
164	B	Wall	U Rgt		Poor	Brick	Green	-0.1
165	B	Wall	L Rgt		Poor	Concrete	Dk Green	**>9.9**
166	D	Wall	L Lft		Poor	Concrete	Dk Green	-0.1
167	D	Wall	U Lft		Poor	Conc Block	Green	-0.1
168	B	Wall	U Ctr		Poor	Brick	Green	0
169	A	Wall	L Ctr		Poor	Concrete	Dk Green	0
Interior Room 021 117								
170	D	Wall	U Ctr		Poor	Brick	Gray	**>9.9**
Interior Room 022 118								
171	B	Wall	U Rgt		Poor	Brick	Silver	0.3
172	B	Wall	L Rgt		Poor	Concrete	Gray	**1.6**
173	C	Wall	L Ctr		Poor	Concrete	Gray	**2.2**
174	C	Wall	U Ctr		Poor	Brick	Silver	-0.1
175	D	Wall	U Lft		Poor	Brick	Silver	0.2
176	D	Wall	L Lft		Poor	Brick	Gray	**6.6**

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Reading No	Wall	Structure	Location	Member	Paint Condition	Substrate	Color	Lead (mg/cm2)
177	D	Chimney	Ctr		Poor	Brick	Gray	**>9.9**
178	D	Chimney	Ctr		Poor	Brick	Silver	0.5
179	A	Wall	U Ctr		Poor	Brick	Silver	-0.3
180	A	Wall	L Ctr		Poor	Concrete	Gray	**2.4**
Interior Room 023 119								
181	A	Wall	U Lft		Poor	Brick	Green	0.2
182	A	Wall	L Lft		Poor	Brick	Dk Green	0.4
183	A	Wall	L Ctr		Poor	Brick	Dk Green	0.4
184	A	Wall	U Ctr		Poor	Brick	Green	0.4
185	A	Wall	U Rgt		Poor	Brick	Green	0.2
186	A	Wall	L Rgt		Poor	Brick	Dk Green	0.3
187	B	Wall	L Lft		Poor	Brick	Dk Green	0.5
188	B	Wall	U Lft		Poor	Brick	Green	0.4
189	B	Wall	U Rgt		Poor	Brick	Green	0.6
190	B	Wall	L Rgt		Poor	Brick	Dk Green	0.3
191	C	Wall	L Lft		Poor	Brick	Dk Green	0.8
192	C	Wall	U Lft		Poor	Brick	Green	0.5
193	C	Wall	U Rgt		Poor	Brick	Green	0.1
194	C	Wall	L Rgt		Poor	Brick	Dk Green	0.2
195	D	Wall	L Ctr		Poor	Brick	Dk Green	0.3
196	D	Wall	U Ctr		Poor	Brick	Green	0.7
197	D	Column	Ctr		Poor	Concrete	Green	0.5
198	D	Column	Ctr		Poor	Concrete	Dk Green	0.7
199	A	Ceiling			Poor	Wood	Gray	0
Interior Room 024 120								
200	A	Wall	U Ctr		Poor	Conc Block	Green	-0.3
201	A	Quality	U Ctr		Poor	Conc Block	Green	-0.3
202	A	Wall	L Ctr		Poor	Conc Block	Dk Green	0.2
203	B	Wall	L Lft		Poor	Brick	Dk Green	-0.2
204	B	Wall	U Lft		Poor	Brick	Green	0.3
205	B	Wall	U Ctr		Poor	Brick	Green	**>9.9**
206	B	Wall	L Ctr		Poor	Concrete	Gray	0.2
207	C	Wall	U Ctr		Poor	Brick	Green	-0.1
208	D	Wall	L Ctr		Poor	Concrete	Dk Green	0
209	D	Wall	U Ctr		Poor	Conc Block	Green	0
Interior Room 025 121								
210	C	Wall	U Ctr		Poor	Conc Block	Green	-0.2
211	C	Wall	L Ctr		Intact	Conc Block	Dk Green	0.3
212	C	Wall	L Rgt		Intact	Brick	Gray	**>9.9**
213	C	Wall	U Rgt		Intact	Brick	White	-0.1
214	D	Wall	U Lft		Intact	Brick	White	0.2
215	D	Wall	L Lft		Intact	Brick	Gray	**9.4**
216	D	Wall	L Ctr		Intact	Brick	Gray	**>9.9**
217	D	Wall	U Ctr		Intact	Brick	White	-0.1
218	A	Wall	U Ctr		Intact	Brick	Green	0.4
219	A	Wall	L Ctr		Intact	Brick	Dk Green	**>9.9**
220	B	Wall	L Ctr		Intact	Brick	Dk Green	**>9.9**
221	B	Wall	U Ctr		Intact	Brick	Green	0.4
222	D	Ceiling			Intact	Wood	Green	0
Interior Room 026 122								
223	C	Wall	U Ctr		Intact	Brick	Silver	**8.3**
224	D	Wall	U Ctr		Intact	Brick	Silver	**7.9**

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Reading No	Wall	Structure	Location	Member	Paint Condition	Substrate	Color	Lead (mg/cm2)
225	A	Wall	U Ctr		Intact	Brick	Silver	**9.2**
226	B	Wall	U Ctr		Intact	Brick	Silver	**3.5**
227	A	Ceiling			Intact	Concrete	Silver	0.2
Interior Room 027 123								
228	A	Wall	U Ctr		Poor	Brick	White	**>9.9**
229	A	Wall	L Ctr		Poor	Brick	Green	**>9.9**
230	B	Wall	L Ctr		Poor	Brick	Green	**>9.9**
231	B	Wall	U Ctr		Poor	Brick	White	**8.5**
232	D	Ceiling			Poor	Concrete	White	**6.1**
Interior Room 028 123A								
233	A	Wall	U Ctr		Poor	Brick	Silver	0.6
234	A	Wall	L Ctr		Poor	Brick	Tan	**>9.9**
235	B	Wall	L Ctr		Poor	Brick	Tan	**7**
236	B	Wall	U Ctr		Poor	Brick	Silver	0.5
237	D	Ceiling			Poor	Concrete	Silver	0
Interior Room 029 200								
238	B	Wall	U Ctr		Poor	Brick	Silver	**7.6**
239	C	Wall	U Ctr		Poor	Brick	Silver	**>9.9**
240	D	Wall	U Ctr		Poor	Brick	Silver	**>9.9**
241	A	Wall	U Ctr		Poor	Brick	Silver	**>9.9**
242	B	Ceiling			Poor	Concrete	Silver	0.6
Interior Room 030 201								
243	D	Wall	U Ctr		Poor	Brick	Green	**4.4**
244	D	Wall	L Ctr		Poor	Brick	Dk Green	**>9.9**
245	B	Wall	L Ctr		Poor	Brick	Dk Green	**7.7**
246	B	Wall	U Ctr		Poor	Brick	Green	**>9.9**
Interior Room 031 202								
247	D	Wall	U Ctr		Poor	Brick	White	**>9.9**
248	A	Wall	U Ctr		Poor	Brick	White	**>9.9**
249	B	Wall	U Ctr		Poor	Brick	White	**>9.9**
250	C	Wall	U Ctr		Poor	Brick	White	**4.9**
251	C	Quality	U Ctr		Poor	Brick	White	**5.2**
Interior Room 032 203								
252	A	Wall	L Ctr		Poor	Brick	Gray	**>9.9**
253	A	Wall	U Ctr		Poor	Brick	White	**5**
254	B	Wall	U Ctr		Poor	Brick	White	**6.9**
255	B	Wall	L Ctr		Poor	Brick	Gray	**9.2**
256	D	Ceiling			Poor	Concrete	Tan	**3.6**
Interior Room 033 204								
257	C	Ceiling			Poor	Wood	Green	-0.1
258	C	Wall	U Ctr		Poor	Brick	Green	0.3
259	C	Wall	L Ctr		Poor	Brick	Dk Green	**9.5**
260	D	Wall	L Lft		Poor	Brick	Dk Green	**9.7**
261	D	Wall	U Lft		Poor	Brick	Green	0.4
262	D	Column	Lft		Poor	Concrete	Green	**5.7**
263	D	Column	Lft		Poor	Concrete	Dk Green	**7.6**
264	D	Wall	L Rgt		Poor	Brick	Dk Green	**>9.9**
265	A	Wall	L Ctr		Poor	Brick	Dk Green	**>9.9**
266	A	Wall	U Ctr		Poor	Brick	Green	0.4
267	B	Wall	U Lft		Poor	Brick	Green	0
268	B	Wall	L Lft		Poor	Brick	Dk Green	**>9.9**
269	B	Wall	L Ctr		Poor	Brick	Dk Green	**>9.9**

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Reading No	Wall	Structure	Location	Member	Paint Condition	Substrate	Color	Lead (mg/cm2)
270	B	Wall	L Rgt		Poor	Brick	Dk Green	**>9.9**
271	B	Wall	U Rgt		Poor	Brick	Green	0.3
Interior Room 034 205								
272	C	Wall	L Ctr		Poor	Brick	Dk Green	**8.9**
273	C	Wall	U Ctr		Poor	Brick	Green	-0.3
274	B	Wall	U Rgt		Poor	Brick	Green	0.3
275	B	Wall	L Rgt		Poor	Brick	Dk Green	**>9.9**
276	B	Wall	L Lft		Poor	Brick	Tan	**>9.9**
277	A	Wall	L Ctr		Poor	Brick	Tan	**>9.9**
278	D	Wall	L Rgt		Poor	Brick	Tan	**>9.9**
279	D	Wall	U Rgt		Poor	Brick	Tan	0
280	B	Wall	U Lft		Poor	Brick	Tan	0
281	A	Column	Ctr		Poor	Concrete	Tan	**>9.9**
282	A	Column	Ctr		Poor	Concrete	Tan	0.3
283	A	Ceiling			Poor	Wood	Tan	-0.1
284	D	Ceiling			Poor	Wood	Green	0.1
285	D	Column	Ctr		Poor	Concrete	Green	0
286	D	Column	Ctr		Poor	Concrete	Dk Green	**>9.9**
287	D	Wall	L Ctr		Poor	Brick	Dk Green	**>9.9**
288	D	Wall	U Ctr		Poor	Brick	Green	-0.2
289	A	Wall	L Lft		Poor	Brick	Tan	**>9.9**
290	A	Wall	U Lft		Poor	Brick	Tan	0.2
Interior Room 035 206								
291	C	Wall	U Ctr		Poor	Brick	Green	0.7
292	C	Wall	L Ctr		Poor	Brick	Dk Green	0.1
293	D	Wall	L Ctr		Poor	Brick	Dk Green	-0.1
294	D	Wall	U Ctr		Poor	Brick	Green	-0.1
Interior Room 999 Post Calibration 8/11/16								
295								**1**
296								**1**
297								**0.9**
298								-0.1

- The State of Wisconsin defines lead bearing paint as that which is equal to or greater than 1.0 mg/cm$^{2.}$
- Readings with a negative value (i.e. -0.1) are equivalent to 0.0

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NORTHSTAR ENVIRONMENTAL TESTING, LLC
www.NorthStarTesting.com

LEAD PAINT XRF TESTING DATA

CLIENT:	Stantec Consulting Services Inc.	NORTHSTAR NO.	160-584
LOCATION:	1512 Washington St – Manitowoc, WI	SITE DATE:	August 12, 2016
WORK AREA:	Pre-Demolition	TECH:	L Pawlus

Reading No	Wall	Structure	Location	Member	Paint Condition	Substrate	Color	Lead (mg/cm2)
Interior Room 999 Pre-Calibration 8/12/16								
1								**1.1**
2								**1.2**
3								**1.1**
4								-0.2
Interior Room 001 208A								
5	A	Wall	U Ctr		Poor	Brick	Green	0.3
6	A	Wall	L Ctr		Poor	Brick	Dk Green	0.4
7	B	Wall	L Ctr		Poor	Brick	Dk Green	0.1
8	B	Wall	U Ctr		Poor	Brick	Green	0
9	A	Ceiling			Poor	Wood	White	0
Interior Room 002 207								
10	D	Wall	U Ctr		Poor	Brick	White	-0.3
11	D	Wall	L Ctr		Poor	Brick	Green	0
12	A	Wall	L Ctr		Poor	Brick	Green	0.6
13	B	Wall	U Ctr		Poor	Brick	White	0.3
Interior Room 003 208								
14	A	Wall	U Ctr		Poor	Brick	Silver	0.6
15	C	Wall	U Ctr		Poor	Brick	Silver	0.1
16	B	Column	Ctr		Poor	Concrete	Silver	-0.2
17	C	Wall	U Rgt		Poor	Brick	Silver	-0.1
18	D	Wall	U Ctr		Poor	Brick	Silver	-0.2
19	D	Ceiling			Poor	Wood	Silver	0
Interior Room 004 209								
20	B	Wall	U Ctr		Poor	Brick	Silver	-0.1
21	B	Wall	L Ctr		Poor	Brick	Tan	0.6
22	A	Wall	L Ctr		Poor	Brick	Tan	0.4
23	A	Wall	U Ctr		Poor	Brick	Silver	0.4
Interior Room 005 210								
24	A	Wall	L Rgt		Poor	Brick	Silver	-0.1
25	B	Wall	L Ctr		Poor	Brick	Silver	-0.1
26	C	Wall	L Ctr		Poor	Brick	Silver	0
27	D	Wall	L Ctr		Poor	Brick	Silver	0
28	D	Column	Ctr		Poor	Concrete	Silver	-0.2
29	D	Ceiling			Poor	Wood	Silver	0
Interior Room 006 211								
30	B	Wall	U Ctr		Poor	Brick	White	0
31	B	Wall	L Ctr		Poor	Brick	Blue	0.7
32	C	Wall	L Ctr		Poor	Brick	Blue	0.7
33	C	Wall	U Ctr		Poor	Brick	White	0.2
Interior Room 007 212								
34	A	Wall	U Lft		Poor	Brick	Silver	0.5
35	D	Wall	L Rgt		Poor	Brick	Silver	0.3

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Reading No	Wall	Structure	Location	Member	Paint Condition	Substrate	Color	Lead (mg/cm2)
36	A	Column	Ctr		Poor	Concrete	Silver	0.5
37	A	Ceiling			Poor	Wood	Silver	0.1
38	C	Ceiling			Poor	Wood	Green	0
41	B	Wall	L Rgt		Poor	Brick	Dk Green	0.5
42	B	Wall	U Rgt		Poor	Brick	Green	0.6
43	C	Wall	U Lft		Poor	Brick	Green	0.7
44	C	Wall	L Lft		Poor	Brick	Dk Green	0.7
45	D	Wall	L Lft		Poor	Brick	Dk Green	0.8
46	D	Wall	U Lft		Poor	Brick	Green	0.4
47	C	Wall	U Rgt		Poor	Brick	Green	0.2
48	C	Wall	L Rgt		Poor	Brick	Dk Green	0.7
49	D	Wall	U Ctr		Poor	Brick	Green	0
50	D	Wall	L Ctr		Poor	Brick	Dk Green	0.4
51	D	Quality	L Ctr		Poor	Brick	Dk Green	0.5
52	D	Column	Ctr		Poor	Concrete	Dk Green	0.3
53	D	Column	Ctr		Poor	Concrete	Green	0.2
54	A	Wall	U Lft		Poor	Brick	Green	0.6
55	A	Wall	L Lft		Poor	Brick	Dk Green	0.5
56	D	Column	Ctr		Poor	Concrete	Dk Green	0.7
57	D	Column	Ctr		Poor	Concrete	Green	0.6
Interior Room 008 212A								
39	A	Wall	U Ctr		Poor	Brick	Tan	0.2
40	B	Wall	U Ctr		Poor	Brick	Tan	0
Interior Room 009 213								
58	C	Wall	U Ctr		Poor	Brick	Silver	0
59	B	Wall	U Ctr		Poor	Brick	Silver	0.1
Interior Room 010 214								
60	A	Wall	L Ctr		Poor	Brick	Silver	0
61	B	Wall	L Ctr		Poor	Brick	Silver	0.6
62	C	Wall	L Ctr		Poor	Brick	Silver	0.7
63	D	Wall	L Ctr		Poor	Brick	Silver	-0.1
64	D	Column	Ctr		Poor	Concrete	Silver	0
65	C	Ceiling			Poor	Wood	Silver	-0.1
Interior Room 011 215								
66	A	Wall	U Ctr		Poor	Brick	Green	0
67	A	Wall	L Ctr		Poor	Brick	Dk Green	0.3
68	B	Wall	L Lft		Poor	Brick	Dk Green	0
69	B	Wall	U Lft		Poor	Brick	Green	0.2
70	C	Wall	U Ctr		Poor	Brick	Green	0.2
71	C	Wall	L Ctr		Poor	Brick	Dk Green	0.3
72	C	Column	Ctr		Poor	Concrete	Dk Green	**1.8**
73	C	Column	Ctr		Poor	Concrete	Green	**1.4**
74	D	Wall	U Lft		Poor	Brick	Green	0.1
75	D	Wall	L Lft		Poor	Brick	Dk Green	0.1
76	D	Ceiling			Poor	Wood	Green	-0.1
Interior Room 012 216								
77	D	Wall	L Ctr		Poor	Wood	Gray	**>9.9**
78	D	Wall	U Ctr		Poor	Wood	White	-0.1
Interior Room 013 217								
79	A	Wall	L Ctr		Poor	Brick	Dk Green	**>9.9**
80	A	Wall	U Ctr		Poor	Brick	Green	0.4
81	B	Wall	U Lft		Poor	Brick	Green	-0.2

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Reading No	Wall	Structure	Location	Member	Paint Condition	Substrate	Color	Lead (mg/cm2)
82	B	Wall	L Lft		Poor	Brick	Dk Green	**>9.9**
83	D	Wall	L Rgt		Poor	Brick	Dk Green	**>9.9**
84	D	Wall	U Rgt		Poor	Brick	Green	0.2
85	D	Ceiling			Poor	Wood	Green	0
86	B	Column	Ctr		Poor	Concrete	Green	0
87	B	Column	Ctr		Poor	Concrete	Dk Green	**6.3**
Interior Room 014 218								
88	C	Wall	U Ctr		Poor	Brick	Silver	0.2
89	D	Wall	U Ctr		Poor	Brick	Silver	0.3
90	B	Wall	U Ctr		Poor	Brick	Silver	-0.1
Interior Room 015 219								
91	B	Wall	L Lft		Poor	Brick	Dk Green	**9.5**
92	B	Wall	U Lft		Poor	Brick	Green	0.4
93	B	Wall	U Rgt		Poor	Brick	Green	**>9.9**
94	B	Wall	L Rgt		Poor	Brick	Dk Green	**>9.9**
95	C	Wall	L Ctr		Poor	Brick	Dk Green	**>9.9**
96	C	Wall	U Ctr		Poor	Brick	Green	**>9.9**
97	C	Column	Ctr		Poor	Concrete	Green	**>9.9**
98	D	Wall	L Ctr		Poor	Brick	Dk Green	**>9.9**
99	D	Wall	U Ctr		Poor	Brick	Green	0.2
100	A	Wall	U Rgt		Poor	Brick	Green	**>9.9**
101	A	Quality	U Rgt		Poor	Brick	Green	**>9.9**
102	A	Wall	L Rgt		Poor	Brick	Dk Green	**8.8**
103	A	Ceiling			Poor	Wood	Green	0
Interior Room 016 300								
104	A	Wall	L Ctr		Poor	Brick	Gray	**>9.9**
105	A	Wall	U Ctr		Poor	Brick	Silver	-0.1
106	C	Wall	L Ctr		Poor	Brick	Gray	**>9.9**
Interior Room 017 301								
107	A	Wall	L Lft		Poor	Brick	Dk Green	**>9.9**
108	A	Wall	U Lft		Poor	Brick	Green	0.5
109	B	Wall	U Rgt		Poor	Brick	Green	0.5
110	D	Wall	L Rgt		Poor	Brick	Dk Green	**>9.9**
111	A	Wall	L Rgt		Poor	Brick	Dk Green	**6.6**
112	A	Wall	U Rgt		Poor	Brick	Green	0.1
113	B	Wall	U Lft		Poor	Brick	Green	0.3
114	B	Wall	L Lft		Poor	Brick	Dk Green	**8.2**
115	B	Wall	L Rgt		Poor	Brick	Dk Green	**>9.9**
116	B	Wall	U Rgt		Poor	Brick	Green	**1.5**
117	B	Ceiling			Poor	Wood	Green	0.1
118	A	Column	Rgt		Poor	Concrete	Green	**1.8**
Interior Room 018 302								
119	C	Wall	U Ctr		Poor	Brick	Tan	**6.9**
120	C	Ceiling			Poor	Concrete	Tan	**7.5**
Interior Room 019 303								
121	A	Wall	U Ctr		Poor	Brick	Blue	**4.8**
Interior Room 020 304								
122	B	Wall	U Ctr		Poor	Brick	Green	0.5
123	B	Wall	L Ctr		Poor	Brick	Dk Green	**>9.9**
124	C	Ceiling			Poor	Concrete	Green	0.6
Interior Room 021 305								
125	C	Wall	L Rgt		Poor	Brick	Gray	**>9.9**

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Reading No	Wall	Structure	Location	Member	Paint Condition	Substrate	Color	Lead (mg/cm2)
126	C	Wall	U Rgt		Poor	Brick	White	0.5
127	D	Wall	U Lft		Poor	Brick	White	0.7
128	D	Wall	L Lft		Poor	Brick	Gray	**>9.9**
129	B	Wall	L Rgt		Poor	Brick	Gray	**>9.9**
130	B	Wall	U Rgt		Poor	Brick	White	0.7
131	B	Wall	L Lft		Poor	Brick	Tan	**8.8**
132	B	Wall	U Lft		Poor	Brick	Tan	-0.1
133	A	Wall	U Ctr		Poor	Brick	Tan	0.5
134	A	Wall	L Ctr		Poor	Brick	Tan	**8.3**
135	B	Column	Ctr		Poor	Concrete	Gray	**8**
136	B	Column	Ctr		Poor	Concrete	Tan	0
137	B	Ceiling			Poor	Wood	White	0.1
Interior Room 022 306								
138	D	Wall	L Ctr		Poor	Brick	Dk Green	0.1
139	D	Wall	U Ctr		Poor	Brick	Green	0.2
Interior Room 023 307								
140	A	Wall	U Ctr		Poor	Brick	Green	0.2
141	A	Wall	L Ctr		Poor	Brick	Dk Green	**9.2**
142	B	Wall	L Lft		Poor	Brick	Dk Green	**9.6**
143	B	Wall	U Lft		Poor	Brick	Green	0.1
144	B	Wall	L Rgt		Poor	Brick	Dk Green	**>9.9**
145	B	Wall	U Rgt		Poor	Brick	Green	0.2
146	C	Wall	U Ctr		Poor	Brick	Green	-0.2
147	C	Wall	L Ctr		Poor	Brick	Dk Green	**>9.9**
148	D	Wall	L Lft		Poor	Brick	Dk Green	**7.3**
149	D	Wall	U Lft		Poor	Brick	Green	-0.1
150	D	Column	Ctr		Poor	Concrete	Green	-0.1
151	D	Quality	Ctr		Poor	Concrete	Green	-0.3
152	D	Column	Ctr		Poor	Concrete	Dk Green	**2.5**
153	D	Wall	L Rgt		Poor	Brick	Dk Green	**>9.9**
154	D	Wall	U Rgt		Poor	Brick	Green	0.1
155	A	Ceiling			Poor	Wood	Green	0.3
Interior Room 024 308								
156	D	Ceiling			Poor	Wood	Green	0
157	B	Wall	U Ctr		Poor	Brick	Green	0
158	B	Wall	L Ctr		Poor	Brick	Dk Green	**>9.9**
159	C	Wall	L Ctr		Poor	Brick	Dk Green	**>9.9**
160	C	Wall	U Ctr		Poor	Brick	Green	0
161	D	Wall	U Lft		Poor	Brick	Green	0.2
162	D	Wall	L Lft		Poor	Brick	Dk Green	**>9.9**
163	D	Wall	L Rgt		Poor	Brick	Dk Green	**>9.9**
164	D	Wall	U Rgt		Poor	Brick	Green	0.1
165	A	Wall	U Ctr		Poor	Brick	Green	0.3
166	A	Wall	L Ctr		Poor	Brick	Dk Green	**4.6**
167	B	Wall	L Lft		Poor	Brick	Dk Green	**8.7**
168	B	Wall	U Lft		Poor	Brick	Green	0.1
169	B	Column	Lft		Poor	Concrete	Green	-0.1
170	B	Column	Lft		Poor	Concrete	Dk Green	**>9.9**
Interior Room 025 309								
171	D	Wall	U Ctr		Poor	Brick	Tan	-0.3
172	D	Wall	L Ctr		Poor	Brick	Brown	0
173	B	Wall	L Ctr		Poor	Brick	Brown	0

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Reading No	Wall	Structure	Location	Member	Paint Condition	Substrate	Color	Lead (mg/cm2)
174	B	Wall	U Ctr		Poor	Brick	Tan	0.4
Interior Room 026 310								
175	A	Wall	U Rgt		Poor	Brick	Green	0
176	A	Wall	L Rgt		Poor	Brick	Dk Green	0.1
177	B	Wall	L Ctr		Poor	Brick	Dk Green	0
178	B	Wall	U Ctr		Poor	Brick	Green	0.1
179	C	Wall	U Ctr		Poor	Brick	Green	0.1
180	C	Wall	L Ctr		Poor	Brick	Dk Green	0.7
181	C	Column	Ctr		Poor	Concrete	Dk Green	**2**
182	C	Column	Ctr		Poor	Concrete	Green	**1.6**
183	D	Wall	U Ctr		Poor	Brick	Green	-0.1
184	D	Wall	L Ctr		Poor	Brick	Dk Green	0
185	A	Wall	L Lft		Poor	Brick	Dk Green	0
186	A	Wall	U Lft		Poor	Brick	Green	0.3
189	B	Ceiling			Poor	Wood	Green	-0.1
Interior Room 027 311								
187	D	Wall	U Ctr		Poor	Brick	White	-0.1
188	D	Wall	L Ctr		Poor	Brick	Gray	**>9.9**
Interior Room 028 312A								
190	D	Wall	U Ctr		Poor	Brick	Tan	0.2
191	D	Wall	L Ctr		Poor	Brick	Brown	0.4
Interior Room 029 312								
192	D	Wall	L Ctr		Poor	Brick	Tan	0.2
193	D	Wall	U Ctr		Poor	Brick	Silver	0.2
Interior Room 030 313								
194	B	Wall	L Ctr		Poor	Brick	Silver	0.3
195	A	Wall	L Ctr		Poor	Brick	Silver	0
196	D	Wall	L Ctr		Poor	Brick	Silver	0.3
197	A	Wall	L Ctr		Poor	Brick	Silver	0
198	A	Column	Ctr		Poor	Concrete	Silver	-0.1
199	A	Ceiling			Poor	Wood	Silver	0
Interior Room 031 314								
200	C	Ceiling			Poor	Wood	Green	-0.1
201	C	Quality			Poor	Wood	Green	-0.2
202	C	Wall	U Lft		Poor	Brick	Green	-0.1
203	C	Wall	L Lft		Poor	Brick	Dk Green	0.3
204	B	Wall	L Rgt		Poor	Brick	Dk Green	0.3
205	B	Wall	U Rgt		Poor	Brick	Green	0.6
206	B	Wall	U Ctr		Poor	Brick	Green	0.6
207	B	Wall	L Ctr		Poor	Brick	Dk Green	0.7
208	A	Wall	L Rgt		Poor	Brick	Dk Green	0.5
209	A	Wall	U Rgt		Poor	Brick	Green	0
210	A	Wall	U Ctr		Poor	Brick	Green	0.2
211	A	Wall	L Ctr		Poor	Brick	Dk Green	0.5
212	D	Wall	L Rgt		Poor	Brick	Dk Green	0.7
213	D	Wall	U Rgt		Poor	Brick	Green	0.8
214	A	Wall	U Lft		Poor	Brick	Green	0.4
215	A	Wall	L Lft		Poor	Brick	Dk Green	0.7
216	D	Wall	L Ctr		Poor	Brick	Dk Green	0.4
217	D	Wall	U Ctr		Poor	Brick	Green	0.3
218	C	Wall	U Rgt		Poor	Brick	Green	0.4
219	C	Wall	L Rgt		Poor	Brick	Dk Green	0.2

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Reading No	Wall	Structure	Location	Member	Paint Condition	Substrate	Color	Lead (mg/cm2)
220	B	Column	Ctr		Poor	Concrete	Dk Green	0.3
221	B	Column	Ctr		Poor	Concrete	Green	0.3
Interior Room 032 315								
222	A	Wall	U Ctr		Poor	Brick	Green	0
223	A	Wall	L Ctr		Poor	Brick	Dk Green	0.2
Interior Room 033 316								
224	D	Wall	U Ctr		Poor	Brick	Silver	0.4
Interior Room 034 317								
225	D	Wall	U Ctr		Poor	Brick	Tan	-0.1
226	D	Wall	L Ctr		Poor	Brick	Brown	0.2
Interior Room 035 318								
227	D	Wall	U Ctr		Poor	Brick	Tan	0.2
228	D	Wall	L Ctr		Poor	Brick	Brown	0.5
Interior Room 036 319								
229	C	Wall	L Ctr		Poor	Brick	Silver	0.4
230	B	Wall	L Ctr		Poor	Brick	Silver	0.1
231	A	Wall	L Ctr		Poor	Brick	Silver	0.4
232	D	Wall	L Ctr		Poor	Brick	Silver	0
233	D	Column	Ctr		Poor	Concrete	Silver	0.2
234	D	Ceiling			Poor	Wood	Silver	-0.1
Interior Room 037 320								
235	C	Wall	U Rgt		Poor	Brick	Green	0
236	C	Wall	L Rgt		Poor	Brick	Dk Green	-0.1
237	D	Wall	L Ctr		Poor	Brick	Dk Green	0
238	D	Wall	U Ctr		Poor	Brick	Green	-0.1
239	A	Wall	U Lft		Poor	Brick	Green	-0.4
240	A	Wall	L Lft		Poor	Brick	Dk Green	0.3
241	B	Wall	L Lft		Poor	Brick	Dk Green	0.2
242	B	Wall	U Lft		Poor	Brick	Green	0.1
243	A	Column	Ctr		Poor	Concrete	Green	-0.1
244	A	Column	Ctr		Poor	Concrete	Dk Green	-0.1
Interior Room 037 321								
245	A	Ceiling			Poor	Wood	Green	-0.2
Interior Room 038 321								
246	D	Wall	U Ctr		Poor	Brick	Green	0.3
247	D	Wall	L Ctr		Poor	Brick	Dk Green	-0.1
Interior Room 039 400								
248	D	Wall	L Ctr		Poor	Brick	Green	0.4
249	D	Wall	U Ctr		Poor	Brick	White	0.1
Interior Room 040 401								
250	A	Wall	U Ctr		Poor	Brick	Gray	0.3
251	A	Quality	U Ctr		Poor	Brick	Gray	0.1
252	D	Wall	U Rgt		Poor	Brick	Gray	0
253	C	Wall	U Ctr		Poor	Brick	Gray	0.1
254	C	Column	Ctr		Poor	Concrete	Gray	-0.3
255	C	Ceiling			Poor	Wood	Gray	0.1
256	A	Wall	U Lft		Poor	Brick	Gray	-0.2
257	D	Wall	U Ctr		Poor	Brick	Gray	0.5
258	C	Wall	U Rgt		Poor	Brick	Gray	0.1
Interior Room 041 402								
259	A	Wall	L Ctr		Poor	Brick	Silver	0.5

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Reading No	Wall	Structure	Location	Member	Paint Condition	Substrate	Color	Lead (mg/cm2)
260	B	Wall	L Ctr		Poor	Brick	Silver	0.2
261	C	Wall	L Ctr		Poor	Brick	Silver	0
262	D	Wall	L Ctr		Poor	Brick	Silver	-0.1
263	A	Column	Ctr		Poor	Concrete	Silver	-0.1
264	A	Ceiling			Poor	Wood	Silver	0.1
Interior Room 042 403								
265	D	Wall	U Ctr		Poor	Brick	Tan	0.5
266	D	Wall	L Ctr		Poor	Brick	Brown	0.4
267	D	Ceiling			Poor	Concrete	Tan	0.3
Interior Room 043 404								
268	D	Wall	U Ctr		Poor	Brick	Tan	0
269	D	Wall	L Ctr		Poor	Brick	Brown	0.5
Interior Room 044 405								
270	D	Wall	L Rgt		Poor	Brick	Silver	0.5
271	A	Wall	U Rgt		Poor	Brick	Silver	0.5
272	B	Wall	U Lft		Poor	Brick	Silver	0.8
273	B	Column	Lft		Poor	Concrete	Silver	0.8
274	A	Wall	L Ctr		Poor	Brick	Silver	**2.4**
275	A	Wall	L Lft		Poor	Brick	Silver	0.8
276	D	Wall	U Ctr		Poor	Brick	Silver	**1**
277	C	Wall	L Rgt		Poor	Brick	Silver	**1**
278	D	Wall	L Lft		Poor	Brick	Silver	**1.3**
279	C	Wall	U Lft		Poor	Brick	Silver	0.4
280	B	Wall	U Rgt		Poor	Brick	Silver	**1**
281	B	Ceiling			Poor	Wood	Silver	-0.2
Interior Room 045 406								
282	A	Wall	U Ctr		Poor	Brick	White	0
283	A	Wall	L Ctr		Poor	Brick	Gray	0.2
Interior Room 046 407								
284	D	Wall	U Ctr		Poor	Brick	Tan	0
285	D	Wall	L Ctr		Poor	Brick	Brown	0.5
286	D	Ceiling			Poor	Concrete	Tan	0.6
Interior Room 047 408								
287	D	Wall	U Ctr		Poor	Brick	Tan	0.4
288	D	Wall	L Ctr		Poor	Brick	Brown	0
289	D	Ceiling			Poor	Concrete	Tan	0
Interior Room 048 409								
290	A	Wall	U Rgt		Poor	Brick	Green	-0.2
291	A	Wall	L Rgt		Poor	Brick	Dk Green	0.3
292	B	Wall	L Lft		Poor	Brick	Dk Green	-0.2
293	B	Wall	U Lft		Poor	Brick	Green	0.6
294	C	Wall	U Ctr		Poor	Brick	Green	0.2
295	C	Wall	L Ctr		Poor	Brick	Dk Green	0.6
296	D	Wall	L Ctr		Poor	Brick	Dk Green	-0.1
297	D	Wall	U Ctr		Poor	Brick	Green	0.6
298	D	Column	Ctr		Poor	Concrete	Green	-0.1
299	D	Column	Ctr		Poor	Concrete	Dk Green	0.4
300	D	Ceiling			Poor	Wood	Green	-0.1
301	D	Quality			Poor	Wood	Green	-0.1
Interior Room 049 410								
302	A	Ceiling			Poor	Wood	Silver	0
303	D	Wall	U Rgt		Poor	Brick	Silver	0.2

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Reading No	Wall	Structure	Location	Member	Paint Condition	Substrate	Color	Lead (mg/cm2)
304	D	Wall	L Rgt		Poor	Brick	Tan	-0.2
305	D	Wall	U Lft		Poor	Brick	Silver	0.2
306	C	Wall	U Ctr		Poor	Brick	Silver	0
307	B	Wall	U Rgt		Poor	Brick	Silver	0.3
308	B	Column	Rgt		Poor	Concrete	Silver	**2.2**
Interior Room 050 411								
309	D	Wall	U Ctr		Poor	Brick	White	-0.4
310	D	Wall	L Ctr		Poor	Brick	Gray	**>9.9**
Interior Room 051 412								
311	B	Wall	L Lft		Poor	Brick	Gray	**9.6**
312	B	Wall	U Lft		Poor	Brick	White	0
313	B	Wall	U Rgt		Poor	Brick	Green	0
314	B	Wall	L Rgt		Poor	Brick	Dk Green	**>9.9**
315	C	Wall	L Ctr		Poor	Brick	Dk Green	**>9.9**
316	C	Wall	U Ctr		Poor	Brick	Green	0.1
317	D	Wall	U Lft		Poor	Brick	Green	0
318	D	Wall	L Lft		Poor	Brick	Dk Green	**>9.9**
319	C	Ceiling			Poor	Wood	Green	-0.2
320	D	Ceiling			Poor	Wood	White	-0.1
321	D	Wall	U Ctr		Poor	Brick	White	0.2
322	D	Wall	L Ctr		Poor	Brick	Gray	**9.6**
323	B	Wall	L Lft		Poor	Brick	Gray	**>9.9**
324	B	Wall	U Lft		Poor	Brick	White	-0.1
325	B	Wall	U Ctr		Poor	Brick	White	0.5
326	B	Wall	L Ctr		Poor	Brick	Gray	**>9.9**
Interior Room 052 413								
327	D	Wall	U Ctr		Poor	Brick	Silver	-0.2
328	A	Wall	U Ctr		Poor	Brick	Silver	0.2
Interior Room 053 414								
329	C	Wall	U Ctr		Poor	Brick	White	0
330	C	Wall	L Ctr		Poor	Brick	Gray	**>9.9**
331	B	Wall	L Ctr		Poor	Brick	Gray	**>9.9**
332	B	Wall	U Ctr		Poor	Brick	White	-0.1
333	B	Wall	L Lft		Poor	Brick	Tan	**8**
334	B	Wall	U Lft		Poor	Brick	Tan	0.3
335	A	Wall	U Ctr		Poor	Brick	Tan	0
336	A	Wall	L Ctr		Poor	Brick	Tan	**>9.9**
337	D	Wall	U Rgt		Poor	Wood	Tan	**>9.9**
338	D	Wall	L Rgt		Poor	Brick	Tan	**>9.9**
339	D	Wall	U Rgt		Poor	Brick	Tan	0
340	A	Column	Ctr		Poor	Concrete	Tan	**>9.9**
341	A	Column	Ctr		Poor	Concrete	Tan	-0.2
342	A	Ceiling			Poor	Wood	Tan	0
343	B	Ceiling			Poor	Wood	Green	0
344	D	Wall	U Ctr		Poor	Brick	White	-0.1
345	D	Wall	L Ctr		Poor	Brick	Gray	**>9.9**
346	B	Column	Ctr		Poor	Brick	Gray	**>9.9**
347	B	Column	Ctr		Poor	Brick	White	-0.2
Interior Room 054 416								
348	B	Ceiling			Poor	Wood	Silver	0.1
352	A	Wall	U Ctr		Poor	Brick	Green	0.2
353	A	Wall	L Ctr		Poor	Brick	Gray	**>9.9**

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Reading No	Wall	Structure	Location	Member	Paint Condition	Substrate	Color	Lead (mg/cm2)
354	B	Wall	L Lft		Poor	Brick	Gray	**>9.9**
355	B	Wall	U Lft		Poor	Brick	Green	0.6
356	B	Wall	U Ctr		Poor	Brick	Green	0.5
357	B	Wall	L Ctr		Poor	Brick	Gray	**>9.9**
358	C	Wall	L Ctr		Poor	Brick	Gray	**>9.9**
359	C	Wall	U Ctr		Poor	Brick	Gray	0.6
360	D	Wall	L Lft		Poor	Brick	Gray	**7.7**
361	D	Wall	U Lft		Poor	Brick	Green	0.4
362	D	Column	Lft		Poor	Concrete	Gray	**7.8**
Interior Room 055 415								
349	D	Wall	U Ctr		Poor	Brick	White	0.4
350	D	Wall	L Ctr		Poor	Brick	Gray	0.2
351	D	Quality	L Ctr		Poor	Brick	Gray	0.1
Interior Room 056 417								
363	A	Wall	U Ctr		Poor	Brick	Tan	**9.2**
Interior Room 057 418								
364	C	Wall	U Ctr		Poor	Brick	Tan	**5.2**
365	C	Ceiling			Poor	Concrete	Tan	0.2
Interior Room 058 419								
366	B	Wall	L Ctr		Poor	Brick	Dk Green	**>9.9**
367	B	Wall	U Ctr		Poor	Brick	Green	0.7
368	B	Ceiling			Poor	Concrete	Green	0.5
Interior Room 059 421								
369	A	Ceiling			Poor	Wood	White	0
370	D	Wall	U Rgt		Poor	Brick	White	0.3
371	D	Wall	L Rgt		Poor	Brick	Green	**>9.9**
372	A	Wall	L Lft		Poor	Brick	Green	**>9.9**
373	A	Wall	U Lft		Poor	Brick	White	0.7
374	B	Wall	L Lft		Poor	Brick	Green	**9.7**
375	B	Wall	U Lft		Poor	Brick	White	0.6
376	C	Wall	L Lft		Poor	Brick	Dk Green	**>9.9**
Interior Room 060 500								
377	A	Wall	L Rgt		Poor	Brick	Dk Green	**1.3**
378	A	Wall	U Rgt		Poor	Brick	Green	0.7
379	B	Wall	L Lft		Poor	Brick	Dk Green	**1.6**
380	A	Column	Lft		Poor	Concrete	Dk Green	**1.1**
Interior Room 061 501								
381	D	Wall	L Ctr		Poor	Brick	Gray	**7.7**
382	D	Wall	U Ctr		Poor	Brick	Silver	0.6
Interior Room 062 502								
383	B	Wall	U Ctr		Poor	Brick	Green	**7.5**
Interior Room 063 503								
384	C	Wall	U Ctr		Poor	Brick	Tan	**7.1**
Interior Room 064 504								
385	A	Wall	U Ctr		Poor	Brick	Tan	**6.2**
Interior Room 065 505								
386	D	Wall	L Rgt		Poor	Brick	Dk Green	**>9.9**
387	D	Wall	U Rgt		Poor	Brick	Green	0.1
388	C	Wall	L Ctr		Poor	Brick	Dk Green	**>9.9**
389	C	Wall	U Ctr		Poor	Brick	Green	0.5
390	B	Wall	U Rgt		Poor	Brick	Green	0.6

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Reading No	Wall	Structure	Location	Member	Paint Condition	Substrate	Color	Lead (mg/cm2)
391	B	Wall	L Rgt		Poor	Brick	Dk Green	**8.4**
392	C	Ceiling			Poor	Wood	Green	-0.1
393	A	Column	Ctr		Poor	Concrete	Dk Green	**>9.9**
394	A	Column	Ctr		Poor	Concrete	Green	0
395	A	Wall	U Ctr		Poor	Brick	Green	0
396	A	Wall	L Ctr		Poor	Brick	Dk Green	**>9.9**
402	D	Wall	L Rgt		Poor	Brick	Silver	**>9.9**
403	D	Wall	U Rgt		Poor	Brick	Silver	0.2
Interior Room 066 506								
397	D	Wall	L Ctr		Poor	Brick	Green	-0.2
398	D	Wall	U Ctr		Poor	Brick	White	0
399	A	Wall	U Ctr		Poor	Brick	White	0.2
400	A	Wall	L Ctr		Poor	Brick	Green	0.1
401	A	Quality	L Ctr		Poor	Brick	Green	0.2
Interior Room 067 507								
404	C	Wall	L Rgt		Poor	Brick	Tan	**4.1**
405	C	Wall	U Rgt		Poor	Brick	Tan	0.1
406	D	Wall	U Lft		Poor	Brick	Tan	-0.1
407	D	Wall	L Lft		Poor	Brick	Tan	**>9.9**
408	D	Wall	L Ctr		Poor	Brick	Tan	**>9.9**
409	D	Wall	U Ctr		Poor	Brick	Tan	0.5
410	A	Wall	U Ctr		Poor	Brick	Tan	-0.3
411	A	Wall	L Ctr		Poor	Brick	Tan	**>9.9**
412	B	Wall	L Lft		Poor	Brick	Tan	**>9.9**
413	B	Wall	U Lft		Poor	Brick	Tan	-0.1
414	B	Wall	U Rgt		Poor	Brick	Tan	-0.1
415	B	Wall	L Rgt		Poor	Brick	Tan	**>9.9**
416	B	Column	Ctr		Poor	Concrete	Brown	**>9.9**
417	B	Column	Ctr		Poor	Concrete	Tan	0.1
418	D	Ceiling			Poor	Wood	Tan	0
Interior Room 068 508								
419	B	Wall	U Ctr		Poor	Brick	Tan	0
420	B	Wall	L Ctr		Poor	Brick	Green	**1.2**
Interior Room 069 509								
421	D	Wall	L Ctr		Poor	Brick	Gray	0.1
422	D	Wall	U Ctr		Poor	Brick	White	0
Interior Room 070 510								
423	D	Wall	U Lft		Poor	Brick	Black	**1.7**
424	C	Wall	U Rgt		Poor	Brick	Black	0.9
425	B	Wall	U Rgt		Poor	Brick	Black	**1.3**
426	B	Ceiling			Poor	Wood	Black	-0.2
427	A	Ceiling			Poor	Wood	Silver	0.1
428	A	Wall	U Lft		Poor	Brick	Tan	0.5
429	A	Wall	U Rgt		Poor	Brick	Tan	**1**
430	C	Wall	L Lft		Poor	Brick	Tan	**1.1**
431	C	Wall	U Lft		Poor	Brick	Tan	0.5
Interior Room 071 511								
432	C	Wall	U Ctr		Poor	Brick	Silver	0.5
433	D	Wall	U Rgt		Poor	Brick	Silver	0.5
434	A	Wall	U Lft		Poor	Brick	Silver	0.9
435	B	Wall	U Lft		Poor	Brick	Silver	**1**
436	C	Wall	U Lft		Poor	Brick	Silver	0.9

* Wall A is the road side (15th Street) of the building (east). Walls B/C/D are determined clockwise from Wall A.

Reading No	Wall	Structure	Location	Member	Paint Condition	Substrate	Color	Lead (mg/cm2)
437	C	Column	Lft		Poor	Concrete	Silver	0.3
Interior Room 999 Post Calibration 8/12/16								
438								**1.1**
439								**1**
440								**1.1**
441								0

- The State of Wisconsin defines lead bearing paint as that which is equal to or greater than 1.0 mg/cm$^{2.}$
- Readings with a negative value (i.e. -0.1) are equivalent to 0.0

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NORTHSTAR ENVIRONMENTAL TESTING, LLC
www.NorthStarTesting.com

LEAD PAINT XRF TESTING DATA

CLIENT:	Stantec Consulting Services Inc.	NORTHSTAR NO.	160-584
LOCATION:	1512 Washington St – Manitowoc, WI	SITE DATE:	August 15, 2016
WORK AREA:	Pre-Demolition	TECH:	A Stroud

Reading No	Wall	Structure	Location	Member	Paint Condition	Substrate	Color	Lead (mg/cm2)
Interior Room 999 Pre-Calibration 8/15/16								
1								**1**
2								**1.1**
3								**1**
4								-0.4
Interior Room 001 512								
5	A	Wall	L Lft		Poor	Brick	Silver	-0.2
6	A	Wall	U Lft		Poor	Brick	Silver	-0.1
7	A	Wall	L Rgt		Poor	Brick	Silver	-0.3
8	A	Wall	U Rgt		Poor	Brick	Silver	-0.1
9	B	Wall	L Lft		Poor	Brick	Silver	-0.2
10	B	Wall	U Lft		Poor	Brick	Silver	-0.2
11	B	Wall	L Rgt		Poor	Brick	Silver	-0.3
12	B	Wall	U Rgt		Poor	Brick	Silver	-0.3
13	C	Wall	L Lft		Poor	Brick	Silver	-0.1
14	C	Wall	U Lft		Poor	Brick	Silver	0
15	C	Wall	L Rgt		Poor	Brick	Silver	-0.2
16	C	Wall	U Rgt		Poor	Brick	Silver	0
17	D	Wall	L Lft		Poor	Brick	Silver	-0.2
18	D	Wall	U Lft		Poor	Brick	Silver	-0.2
19	D	Wall	L Rgt		Poor	Brick	Silver	-0.2
20	D	Wall	U Rgt		Poor	Brick	Silver	-0.4
21	A	Column	Ctr	L column	Poor	Concrete	Silver	-0.1
22	A	Ceiling			Poor	Wood	Silver	0
Interior Room 002 513								
23	A	Window	Lft	Sill	Poor	Concrete	Silver	**1.2**
24	A	Wall	L Ctr		Poor	Brick	Silver	**1.1**
25	A	Wall	U Ctr		Poor	Brick	Silver	-0.1
26	A	Wall	L Lft		Poor	Brick	Silver	**1.1**
27	D	Wall	U Rgt		Poor	Brick	Silver	**1.3**
28	D	Wall	L Rgt		Poor	Brick	Silver	**1.1**
29	D	Wall	U Ctr		Poor	Brick	Silver	0.4
30	D	Wall	L Ctr		Poor	Brick	Silver	0.4
31	D	Wall	U Lft		Poor	Brick	Silver	0.4
32	D	Wall	L Lft		Poor	Brick	Silver	**1.3**
33	C	Wall	U Rgt		Poor	Brick	Silver	0.3
34	C	Wall	L Rgt		Poor	Brick	Silver	0.3
35	C	Window	Rgt	Sill	Poor	Concrete	Silver	0
36	C	Wall	L Ctr		Poor	Brick	Yellow	**3.7**
37	C	Wall	U Ctr		Poor	Brick	Silver	**1.7**
38	C	Wall	L Ctr		Poor	Brick	Silver	0.3
39	C	Wall	U Ctr		Poor	Brick	Silver	0.2
40	D	Wall	U Lft		Poor	Brick	Silver	**1.6**

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Reading No	Wall	Structure	Location	Member	Paint Condition	Substrate	Color	Lead (mg/cm2)
41	D	Wall	L Lft		Poor	Brick	Silver	**3.5**
42	D	Wall	U Lft		Poor	Brick	Silver	**2.1**
43	D	Wall	L Lft		Poor	Brick	Silver	**2**
44	D	Wall	U Lft		Poor	Brick	Silver	**1.2**
45	D	Wall	L Lft		Poor	Brick	Silver	**2**
46	C	Wall	U Ctr		Poor	Brick	Silver	**1.1**
47	C	Wall	L Ctr		Poor	Brick	Silver	**1.2**
48	C	Wall	U Lft		Poor	Brick	Silver	**1.8**
49	C	Wall	L Lft		Poor	Brick	Silver	**2.2**
50	B	Wall	U Rgt		Poor	Brick	Silver	**1.7**
51	B	Quality	Rgt		Poor	Brick	Silver	**1.9**
52	B	Wall	L Rgt		Poor	Brick	Silver	**2.5**
53	B	Wall	U Ctr		Poor	Brick	Silver	**1**
54	B	Wall	L Ctr		Poor	Brick	Silver	**2**
55	B	Wall	U Ctr		Poor	Brick	Silver	**2.2**
56	B	Wall	L Ctr		Poor	Brick	Silver	**1.3**
57	B	Wall	U Ctr		Poor	Brick	Silver	**1.4**
58	B	Wall	L Ctr		Poor	Brick	Silver	**1.4**
59	B	Wall	U Lft		Poor	Brick	Silver	**1.1**
60	B	Wall	L Lft		Poor	Brick	Silver	**3.1**
61	A	Wall	U Ctr		Poor	Brick	Silver	**1.9**
62	A	Wall	L Ctr		Poor	Brick	Silver	**1.4**
63	D	Wall	U Rgt		Poor	Brick	Silver	**1.2**
64	D	Wall	L Rgt		Poor	Brick	Silver	**1**
65	D	Window	Rgt	Sill	Poor	Concrete	Silver	**1.2**
66	A	Column	Ctr	L column	Poor	Concrete	Silver	0.5
67	D	Ceiling			Poor	Wood	Silver	-0.2
68	C	Column	Ctr	L column	Poor	Concrete	Silver	0.6
Interior Room 003 514								
69	D	Wall	U Ctr		Poor	Brick	White	-0.1
70	D	Wall	L Ctr		Poor	Brick	Gray	-0.2
71	C	Wall	L Ctr		Poor	Brick	Gray	-0.1
72	C	Wall	U Ctr		Poor	Brick	White	0.3
73	B	Wall	U Ctr		Poor	Brick	White	0
74	B	Wall	L Ctr		Poor	Brick	Gray	-0.1
75	A	Wall	L Ctr		Poor	Brick	Gray	-0.3
76	A	Wall	U Ctr		Poor	Brick	White	-0.3
Interior Room 004 515								
77	B	Wall	U Ctr		Poor	Brick	Silver	0
78	C	Wall	U Ctr		Poor	Brick	Silver	-0.2
79	D	Wall	U Ctr		Poor	Brick	Silver	0.1
80	A	Wall	U Ctr		Poor	Brick	Silver	-0.3
Interior Room 005 516								
81	A	Floor			Poor	Wood	Silver	-0.3
82	A	Wall	L Rgt		Poor	Brick	Silver	-0.1
83	A	Wall	U Rgt		Poor	Brick	Silver	-0.1
84	A	Wall	L Lft		Poor	Brick	Silver	-0.3
85	A	Wall	U Lft		Poor	Brick	Silver	-0.2
86	D	Wall	L Rgt		Poor	Brick	Silver	-0.3
87	D	Wall	U Rgt		Poor	Brick	Silver	0.1
88	D	Wall	L Lft		Poor	Brick	Silver	-0.2
89	D	Wall	U Lft		Poor	Brick	Silver	-0.1

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Reading No	Wall	Structure	Location	Member	Paint Condition	Substrate	Color	Lead (mg/cm2)
90	C	Wall	L Rgt		Poor	Brick	Silver	-0.3
91	C	Wall	U Rgt		Poor	Brick	Silver	0
92	C	Wall	L Lft		Poor	Brick	Silver	-0.1
93	C	Wall	U Lft		Poor	Brick	Silver	0.1
94	B	Wall	L Ctr		Poor	Brick	Silver	-0.3
95	B	Wall	U Ctr		Poor	Brick	Silver	-0.1
96	B	Window	Ctr	Sill	Poor	Concrete	Silver	0
97	C	Column	Ctr	L column	Poor	Concrete	Silver	-0.4
Interior Room 006 517								
98	A	Ceiling			Poor	Wood	Silver	-0.2
99	A	Column	Ctr	L column	Poor	Concrete	Silver	0.4
100	A	Wall	L Lft		Poor	Brick	Silver	-0.4
101	A	Wall	U Lft		Poor	Brick	Silver	-0.2
102	D	Wall	L Rgt		Poor	Brick	Silver	-0.3
103	D	Wall	U Rgt		Poor	Brick	Silver	0.6
104	D	Wall	L Lft		Poor	Brick	Silver	-0.4
105	D	Wall	U Lft		Poor	Brick	Silver	-0.2
106	C	Wall	L Rgt		Poor	Brick	Silver	0
107	C	Wall	U Rgt		Poor	Brick	Silver	-0.1
108	C	Wall	L Ctr		Poor	Brick	Silver	-0.1
109	C	Wall	U Ctr		Poor	Brick	Silver	-0.1
110	C	Wall	L Lft		Poor	Brick	Silver	0.1
111	C	Wall	U Lft		Poor	Brick	Silver	-0.1
112	B	Wall	L Rgt		Poor	Brick	Silver	-0.1
113	B	Wall	U Rgt		Poor	Brick	Silver	-0.1
114	B	Wall	L Lft		Poor	Brick	Silver	-0.2
115	B	Wall	U Lft		Poor	Brick	Silver	-0.1
116	A	Wall	L Rgt		Poor	Brick	Silver	0.1
117	A	Wall	U Rgt		Poor	Brick	Silver	-0.2
Interior Room 007 518								
118	A	Wall	L Ctr		Poor	Brick	Tan	-0.3
119	A	Wall	U Ctr		Poor	Brick	Silver	0.5
120	D	Wall	L Ctr		Poor	Brick	Tan	0
121	D	Wall	U Ctr		Poor	Brick	Silver	0
122	C	Wall	L Ctr		Poor	Brick	Tan	0.1
123	C	Wall	U Ctr		Poor	Brick	Silver	0
124	B	Wall	L Ctr		Poor	Brick	Tan	0.2
125	B	Wall	U Ctr		Poor	Brick	Silver	0
Interior Room 008 519								
126	A	Wall	L Ctr		Poor	Brick	Brown	-0.1
127	A	Wall	U Ctr		Poor	Brick	Tan	-0.2
128	D	Wall	L Ctr		Poor	Brick	Brown	0.4
129	D	Wall	U Ctr		Poor	Brick	Tan	-0.1
130	C	Wall	L Ctr		Poor	Brick	Brown	-0.1
131	C	Wall	U Ctr		Poor	Brick	Tan	-0.1
132	B	Wall	L Ctr		Poor	Brick	Brown	0.1
133	B	Wall	U Ctr		Poor	Brick	Tan	-0.2
Interior Room 009 600								
134	B	Ceiling			Poor	Wood	Silver	-0.1
135	B	Column	Lft	L column	Poor	Concrete	Silver	-0.5
136	C	Wall	L Lft		Poor	Brick	Silver	0.3
137	C	Wall	U Lft		Poor	Brick	Silver	0.6

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Reading No	Wall	Structure	Location	Member	Paint Condition	Substrate	Color	Lead (mg/cm2)
138	B	Wall	L Rgt		Poor	Brick	Silver	0.1
139	B	Wall	U Rgt		Poor	Brick	Silver	**1.3**
140	B	Wall	L Ctr		Poor	Brick	Silver	**1.2**
141	B	Wall	U Ctr		Poor	Brick	Silver	0.3
142	B	Wall	L Lft		Poor	Brick	Silver	0.4
143	B	Wall	U Lft		Poor	Brick	Silver	**1.3**
144	A	Wall	L Rgt		Poor	Brick	Silver	0.3
145	A	Wall	U Rgt		Poor	Brick	Silver	0.4
146	A	Wall	L Ctr		Poor	Brick	Silver	0.6
147	A	Wall	U Ctr		Poor	Brick	Silver	**2.8**
148	A	Wall	L Ctr		Poor	Brick	Silver	0.2
149	A	Wall	U Ctr		Poor	Brick	Silver	0.2
150	A	Wall	L Ctr		Poor	Brick	Silver	0.2
151	A	Wall	U Ctr		Poor	Brick	Silver	0.2
152	A	Wall	L Ctr		Poor	Brick	Silver	0.7
153	A	Wall	U Ctr		Poor	Brick	Silver	**1**
154	A	Wall	L Lft		Poor	Brick	Silver	0.5
155	A	Wall	U Lft		Poor	Brick	Silver	**1.2**
156	D	Wall	L Rgt		Poor	Brick	Silver	0.5
157	D	Wall	U Rgt		Poor	Brick	Silver	0.5
158	D	Wall	L Lft		Poor	Brick	White	0.6
159	D	Wall	U Lft		Poor	Brick	White	0.7
160	C	Wall	L Rgt		Poor	Brick	White	0.6
161	C	Wall	U Rgt		Poor	Brick	White	**1.1**
162	C	Wall	L Ctr		Poor	Brick	White	0.1
163	C	Wall	U Ctr		Poor	Brick	White	**1**
164	C	Wall	U Ctr		Poor	Brick	White	0.2
165	C	Wall	U Ctr		Poor	Brick	Silver	0
Interior Room 010 601								
166	C	Wall	L Ctr		Poor	Brick	Gray	-0.1
167	C	Wall	U Ctr		Poor	Brick	White	0
168	B	Wall	L Ctr		Poor	Brick	Gray	0.4
169	B	Wall	U Ctr		Poor	Brick	White	-0.2
170	A	Wall	L Rgt		Poor	Brick	Gray	-0.2
171	A	Wall	U Rgt		Poor	Brick	White	-0.2
172	A	Wall	L Lft		Poor	Brick	Gray	0.1
173	A	Wall	U Lft		Poor	Brick	White	-0.1
Interior Room 011 602								
174	C	Wall	L Ctr		Poor	Brick	Green	-0.2
175	C	Wall	U Ctr		Poor	Brick	Silver	-0.1
176	B	Wall	L Ctr		Poor	Brick	Green	-0.3
177	B	Wall	U Ctr		Poor	Brick	Silver	0
178	A	Wall	L Ctr		Poor	Brick	Green	0.4
179	A	Wall	U Ctr		Poor	Brick	Silver	0
180	D	Wall	L Ctr		Poor	Brick	Green	0.2
181	D	Wall	U Ctr		Poor	Brick	Silver	-0.2
Interior Room 012 603								
182	A	Ceiling			Poor	Wood	Silver	0
183	A	Column	Lft	L column	Poor	Concrete	Green	-0.4
184	A	Wall	L Ctr		Poor	Brick	Green	0
185	A	Wall	U Ctr		Poor	Brick	Green	-0.1
186	A	Wall	L Rgt		Poor	Brick	Silver	-0.3

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Reading No	Wall	Structure	Location	Member	Paint Condition	Substrate	Color	Lead (mg/cm2)
187	A	Wall	U Rgt		Poor	Brick	Silver	-0.1
188	B	Wall	L Lft		Poor	Brick	Silver	-0.3
189	B	Wall	U Lft		Poor	Brick	Silver	-0.2
190	B	Wall	L Ctr		Poor	Brick	Silver	-0.1
191	B	Wall	U Ctr		Poor	Brick	Silver	-0.2
192	B	Wall	L Ctr		Poor	Brick	Gray	-0.1
193	B	Wall	U Ctr		Poor	Brick	White	-0.1
194	B	Wall	L Ctr		Poor	Brick	Gray	**2**
195	B	Wall	U Ctr		Poor	Brick	White	**1.3**
196	B	Wall	L Ctr		Poor	Brick	Gray	**1.2**
197	B	Wall	U Ctr		Poor	Brick	White	**1.2**
198	B	Wall	L Ctr		Poor	Brick	Gray	0.3
199	B	Wall	U Ctr		Poor	Brick	White	0.2
200	B	Wall	L Ctr		Poor	Brick	Gray	0.7
201	B	Wall	U Ctr		Poor	Brick	White	0.6
202	B	Wall	L Rgt		Poor	Brick	White	0.1
203	B	Wall	U Rgt		Poor	Brick	White	0.7
204	B	Wall	L Rgt		Poor	Brick	White	0.6
205	B	Wall	U Rgt		Poor	Brick	White	**1**
206	B	Wall	L Rgt		Poor	Brick	White	**2.1**
207	B	Wall	L Rgt		Poor	Brick	White	**1.1**
208	C	Wall	L Lft		Poor	Brick	White	0.2
209	C	Quality	Lft		Poor	Brick	White	0.2
210	C	Wall	U Lft		Poor	Brick	White	**1.2**
211	C	Wall	L Ctr		Poor	Brick	White	0.4
212	C	Wall	U Ctr		Poor	Brick	White	**1.9**
213	D	Wall	L Lft		Poor	Brick	White	**1.4**
214	D	Wall	U Lft		Poor	Brick	White	0.6
215	D	Wall	L Lft		Poor	Brick	White	0.2
216	D	Wall	U Lft		Poor	Brick	White	-0.1
217	C	Wall	L Rgt		Poor	Brick	Tan	0.3
218	C	Wall	U Rgt		Poor	Brick	Tan	0.1
219	C	Wall	L Rgt		Poor	Brick	Green	-0.3
220	C	Wall	U Rgt		Poor	Brick	Green	-0.3
221	D	Wall	L Ctr		Poor	Brick	Green	-0.2
222	D	Wall	U Ctr		Poor	Brick	Green	0
223	D	Wall	L Ctr		Poor	Brick	Green	-0.4
224	D	Wall	U Ctr		Poor	Brick	Green	0.1
225	D	Wall	L Rgt		Poor	Brick	Green	-0.4
226	D	Wall	U Rgt		Poor	Brick	Green	-0.3
227	A	Wall	L Lft		Poor	Brick	Green	-0.3
228	A	Wall	U Lft		Poor	Brick	Green	-0.3
229	A	Wall	L Ctr		Poor	Brick	Silver	-0.2
230	A	Wall	U Ctr		Poor	Brick	Silver	-0.2
231	D	Wall	L Rgt		Poor	Brick	Silver	-0.3
232	D	Wall	U Rgt		Poor	Brick	Silver	-0.2
233	D	Wall	L Rgt		Poor	Brick	Silver	-0.2
234	D	Wall	U Rgt		Poor	Brick	Silver	0
235	A	Column	Lft	L column	Poor	Concrete	Green	-0.8
Interior Room 013 604								
236	C	Wall	L Ctr		Poor	Brick	Gray	0.3
237	C	Wall	U Ctr		Poor	Brick	White	-0.2

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Reading No	Wall	Structure	Location	Member	Paint Condition	Substrate	Color	Lead (mg/cm2)
238	D	Wall	L Ctr		Poor	Brick	Gray	0
239	D	Wall	U Ctr		Poor	Brick	White	-0.4
240	A	Wall	L Ctr		Poor	Brick	Gray	-0.1
241	A	Wall	U Ctr		Poor	Brick	White	-0.2
242	B	Wall	L Ctr		Poor	Brick	Gray	0
243	B	Wall	U Ctr		Poor	Brick	White	0
Interior Room 014 605								
244	B	Wall	U Ctr		Poor	Brick	Silver	-0.5
245	C	Wall	U Ctr		Poor	Brick	Silver	0
246	D	Wall	U Ctr		Poor	Brick	Silver	-0.2
247	A	Wall	U Ctr		Poor	Brick	Silver	-0.3
Interior Room 015 606								
248	A	Ceiling			Poor	Wood	Silver	-0.1
249	A	Wall	L Lft		Poor	Brick	Silver	-0.5
250	A	Wall	U Lft		Poor	Brick	Silver	-0.3
251	A	Wall	L Rgt		Poor	Brick	Green	0
252	A	Wall	U Rgt		Poor	Brick	Green	-0.1
253	B	Wall	L Lft		Poor	Brick	Green	-0.2
254	B	Wall	U Lft		Poor	Brick	Green	0.1
255	B	Wall	L Rgt		Poor	Brick	Green	0.1
256	B	Wall	U Rgt		Poor	Brick	Green	-0.2
257	C	Wall	L Lft		Poor	Brick	Green	-0.1
258	C	Wall	U Lft		Poor	Brick	Green	-0.1
259	C	Wall	L Rgt		Poor	Brick	Green	0
260	C	Wall	U Rgt		Poor	Brick	Green	-0.4
261	C	Quality	Rgt		Poor	Brick	Green	-0.1
262	D	Wall	L Lft		Poor	Brick	Green	0.1
263	D	Wall	U Lft		Poor	Brick	Green	-0.3
264	D	Wall	L Rgt		Poor	Brick	Silver	-0.5
265	D	Wall	U Rgt		Poor	Brick	Silver	-0.2
266	A	Column	Ctr	L column	Poor	Concrete	Silver	-0.7
Interior Room 999 Mid Day Calibration 8/15/16								
267								**1**
268								**1.1**
269								**1**
270								-0.3
Interior Room 016 607								
271	A	Ceiling			Poor	Wood	Silver	0
272	A	Column	Ctr	L column	Poor	Concrete	Silver	-0.2
273	A	Wall	L Lft		Poor	Brick	Silver	0
274	A	Wall	U Lft		Poor	Brick	Silver	0.3
275	A	Wall	L Rgt		Poor	Brick	Silver	-0.3
276	A	Wall	U Rgt		Poor	Brick	Silver	0.3
277	B	Wall	L Lft		Poor	Brick	Silver	-0.2
278	B	Wall	U Lft		Poor	Brick	Silver	-0.2
279	B	Wall	L Rgt		Poor	Brick	Silver	-0.4
280	B	Wall	U Rgt		Poor	Brick	Silver	-0.1
281	C	Wall	L Lft		Poor	Brick	Silver	-0.1
282	C	Wall	U Lft		Poor	Brick	Silver	0
283	C	Wall	L Rgt		Poor	Brick	Silver	-0.2
284	C	Wall	U Rgt		Poor	Brick	Silver	-0.4
285	D	Wall	L Lft		Poor	Brick	Silver	0.2

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Reading No	Wall	Structure	Location	Member	Paint Condition	Substrate	Color	Lead (mg/cm2)
286	D	Wall	U Lft		Poor	Brick	Silver	0.1
287	D	Wall	L Rgt		Poor	Brick	Silver	-0.2
288	D	Wall	U Rgt		Poor	Brick	Silver	-0.1
Interior Room 017 608								
289	C	Ceiling			Poor	Wood	Silver	-0.1
290	C	Column	Rgt	L column	Poor	Concrete	Silver	-0.4
291	A	Wall	L Lft		Poor	Brick	Silver	-0.1
292	A	Wall	U Lft		Poor	Brick	Silver	-0.2
293	A	Wall	L Ctr		Poor	Brick	Silver	-0.2
294	A	Wall	U Ctr		Poor	Brick	Silver	-0.3
295	A	Wall	L Ctr		Poor	Brick	Silver	0.2
296	A	Wall	U Ctr		Poor	Brick	Silver	-0.2
297	A	Wall	L Rgt		Poor	Brick	Gray	0
298	A	Quality	Rgt		Poor	Brick	Gray	-0.2
299	A	Wall	U Rgt		Poor	Brick	White	-0.3
300	B	Wall	L Lft		Poor	Brick	Gray	-0.1
301	B	Wall	U Lft		Poor	Brick	White	-0.3
302	B	Wall	L Rgt		Poor	Brick	Gray	-0.1
303	B	Wall	U Rgt		Poor	Brick	White	-0.3
304	C	Wall	L Lft		Poor	Brick	Gray	-0.2
305	C	Wall	U Lft		Poor	Brick	White	-0.3
306	C	Wall	L Ctr		Poor	Brick	Gray	0.2
307	C	Wall	U Ctr		Poor	Brick	White	0.1
308	C	Wall	L Rgt		Poor	Brick	Yellow	0
309	C	Wall	U Rgt		Poor	Brick	Yellow	-0.3
310	D	Wall	L Lft		Poor	Brick	Yellow	-0.3
311	D	Wall	U Lft		Poor	Brick	Yellow	-0.1
312	D	Wall	L Ctr		Poor	Brick	Silver	-0.1
313	D	Wall	U Ctr		Poor	Brick	Silver	-0.1
314	D	Wall	L Rgt		Poor	Brick	Silver	0
315	D	Wall	U Rgt		Poor	Brick	Silver	-0.3
Interior Room 018 609								
316	A	Wall	U Ctr		Poor	Brick	Gray	0
317	D	Wall	U Ctr		Poor	Brick	Gray	0
318	C	Wall	U Ctr		Poor	Brick	Gray	-0.2
319	B	Wall	U Ctr		Poor	Brick	Gray	-0.1
Interior Room 019 610								
320	A	Wall	U Ctr		Poor	Brick	Gray	0.1
321	D	Wall	U Ctr		Poor	Brick	Gray	0.2
322	C	Wall	U Ctr		Poor	Brick	Gray	-0.1
323	B	Wall	U Ctr		Poor	Brick	Gray	0
Interior Room 020 611								
324	B	Wall	L Ctr		Poor	Brick	Gray	**>9.9**
325	B	Wall	U Ctr		Poor	Brick	White	-0.4
326	A	Wall	L Ctr		Poor	Brick	Gray	**>9.9**
327	A	Wall	U Ctr		Poor	Brick	White	-0.1
328	D	Wall	L Ctr		Poor	Brick	Gray	**>9.9**
329	D	Wall	U Ctr		Poor	Brick	White	-0.4
330	C	Wall	L Ctr		Poor	Brick	Gray	**>9.9**
331	C	Wall	U Ctr		Poor	Brick	White	-0.3
Interior Room 021 612								
332	C	Ceiling			Poor	Wood	Tan	**>9.9**

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Reading No	Wall	Structure	Location	Member	Paint Condition	Substrate	Color	Lead (mg/cm2)
333	C	Column	Ctr	L column	Poor	Concrete	Orange	**>9.9**
334	A	Wall	L Lft		Poor	Brick	Green	**>9.9**
335	A	Wall	U Lft		Poor	Brick	White	**>9.9**
336	A	Wall	L Ctr		Poor	Brick	Green	**>9.9**
337	A	Wall	U Ctr		Poor	Brick	White	**>9.9**
338	A	Wall	L Rgt		Poor	Brick	Green	**>9.9**
339	A	Wall	U Rgt		Poor	Brick	White	**>9.9**
340	B	Wall	L Lft		Poor	Brick	Green	**>9.9**
341	B	Wall	U Lft		Poor	Brick	White	**>9.9**
342	B	Wall	L Ctr		Poor	Brick	Green	**7.5**
343	B	Wall	U Ctr		Poor	Brick	White	**>9.9**
344	B	Wall	L Rgt		Poor	Brick	Green	**>9.9**
345	B	Wall	U Rgt		Poor	Brick	White	**>9.9**
346	C	Wall	L Lft		Poor	Brick	Green	**8.3**
347	C	Wall	U Lft		Poor	Brick	White	**>9.9**
348	C	Wall	L Rgt		Poor	Brick	Green	**7**
349	C	Wall	U Rgt		Poor	Brick	White	**>9.9**
350	D	Wall	L Lft		Poor	Brick	Green	**>9.9**
351	D	Quality	Lft		Poor	Brick	Green	**>9.9**
352	D	Wall	U Lft		Poor	Brick	White	**>9.9**
Interior Room 022 613								
353	A	Ceiling			Poor	Wood	Silver	0.1
354	A	Wall	L Lft		Poor	Brick	White	-0.4
355	B	Wall	L Ctr		Poor	Brick	White	-0.3
356	B	Wall	U Ctr		Poor	Brick	White	-0.2
357	C	Wall	L Ctr		Poor	Brick	White	-0.3
358	D	Wall	L Ctr		Poor	Brick	White	-0.2
Interior Room 023 614								
359	A	Ceiling			Poor	Wood	Tan	**>9.9**
360	A	Wall	L Ctr		Poor	Brick	Tan	**>9.9**
361	A	Wall	U Ctr		Poor	Brick	Tan	**>9.9**
362	B	Wall	U Ctr		Poor	Brick	Tan	**1.5**
363	C	Wall	U Ctr		Poor	Brick	Tan	**>9.9**
364	D	Wall	U Ctr		Poor	Brick	Tan	**>9.9**
Interior Room 024 615								
365	A	Wall	L Ctr		Poor	Brick	Tan	**>9.9**
366	D	Wall	U Ctr		Poor	Brick	Tan	**>9.9**
367	C	Wall	U Ctr		Poor	Brick	Tan	**>9.9**
368	B	Wall	U Ctr		Poor	Brick	Tan	**>9.9**
Interior Room 025 616								
369	A	Wall	U Ctr		Poor	Brick	Tan	**>9.9**
Interior Room 026 617								
370	C	Ceiling			Poor	Wood	Tan	**>9.9**
371	C	Column	Ctr	L column	Poor	Concrete	Tan	**>9.9**
372	A	Wall	L Ctr		Poor	Brick	Silver	**>9.9**
373	A	Wall	U Ctr		Poor	Brick	Silver	**>9.9**
374	B	Wall	L Ctr		Poor	Brick	Silver	**>9.9**
375	B	Wall	U Ctr		Poor	Brick	Silver	**>9.9**
376	C	Wall	L Lft		Poor	Brick	Silver	**>9.9**
377	C	Wall	U Lft		Poor	Brick	Silver	**>9.9**
378	D	Wall	L Ctr		Poor	Brick	Silver	**8.6**
379	D	Wall	U Ctr		Poor	Brick	Silver	**>9.9**

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Reading No	Wall	Structure	Location	Member	Paint Condition	Substrate	Color	Lead (mg/cm2)
Interior Room 027 700								
380	A	Ceiling			Poor	Wood	White	0.2
381	A	Column	Ctr	L column	Poor	Concrete	White	**>9.9**
382	A	Wall	U Lft		Poor	Wood	White	-0.2
383	A	Wall	L Rgt		Poor	Brick	Tan	-0.3
384	A	Wall	U Rgt		Poor	Brick	Tan	**>9.9**
385	B	Wall	L Lft		Poor	Brick	Tan	**>9.9**
386	B	Wall	U Lft		Poor	Brick	Tan	**>9.9**
387	B	Wall	L Ctr		Poor	Brick	Tan	**>9.9**
388	B	Wall	U Ctr		Poor	Brick	Tan	**>9.9**
389	B	Wall	L Rgt		Poor	Brick	Tan	**>9.9**
390	B	Wall	U Rgt		Poor	Brick	Tan	**>9.9**
391	C	Wall	L Lft		Poor	Brick	Tan	**>9.9**
392	C	Wall	U Lft		Poor	Brick	Tan	**>9.9**
393	C	Wall	L Rgt		Poor	Brick	Green	**>9.9**
394	C	Wall	U Rgt		Poor	Brick	Green	**>9.9**
395	D	Wall	L Lft		Poor	Brick	Green	**>9.9**
396	D	Wall	U Lft		Poor	Brick	Green	**>9.9**
397	D	Wall	L Ctr		Poor	Brick	White	**>9.9**
Interior Room 028 701								
398	D	Ceiling			Poor	Plaster	Tan	0.1
399	D	Column	Ctr	L column	Poor	Concrete	Tan	0.1
400	A	Wall	L Lft		Poor	Brick	Tan	-0.1
401	A	Quality	Lft		Poor	Brick	Tan	-0.2
402	A	Wall	U Lft		Poor	Brick	Tan	0
403	A	Window	Lft	Sill	Poor	Concrete	Green	-0.1
404	A	Wall	L Ctr		Poor	Brick	Tan	0.2
405	A	Wall	U Ctr		Poor	Brick	Tan	0.1
406	A	Wall	L Ctr		Poor	Brick	White	-0.1
407	A	Wall	U Ctr		Poor	Brick	White	-0.1
408	A	Wall	L Rgt		Poor	Brick	Tan	0.2
409	A	Wall	U Rgt		Poor	Brick	Tan	-0.3
410	A	Wall	U Rgt		Poor	Brick	Tan	0.5
411	C	Wall	L Lft		Poor	Brick	Green	0.3
412	C	Wall	U Lft		Poor	Brick	Green	0.3
413	C	Wall	L Ctr		Poor	Brick	Green	0.2
414	C	Wall	U Ctr		Poor	Brick	Green	0.1
415	C	Wall	L Rgt		Poor	Brick	White	-0.1
416	C	Wall	U Rgt		Poor	Brick	White	0
417	D	Wall	L Lft		Poor	Brick	White	0.6
418	D	Wall	U Lft		Poor	Brick	Tan	0.6
419	D	Wall	L Rgt		Poor	Brick	Tan	0.5
420	D	Wall	U Rgt		Poor	Brick	Tan	0.5
Interior Room 029 702								
421	B	Wall	L Ctr		Poor	Brick	Green	0.1
422	B	Wall	U Ctr		Poor	Brick	White	-0.1
423	C	Wall	L Ctr		Poor	Brick	Green	0.1
424	C	Wall	U Ctr		Poor	Brick	White	-0.1
425	D	Wall	L Ctr		Poor	Brick	Green	-0.2
426	D	Wall	U Ctr		Poor	Brick	White	-0.5
427	A	Wall	L Ctr		Poor	Brick	Green	0.3
428	A	Wall	U Ctr		Poor	Brick	White	0

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Reading No	Wall	Structure	Location	Member	Paint Condition	Substrate	Color	Lead (mg/cm2)
Interior Room 030 703								
429	A	Wall	L Ctr		Poor	Brick	Green	-0.2
430	A	Wall	U Ctr		Poor	Brick	White	-0.1
431	B	Wall	L Ctr		Poor	Brick	Green	**>9.9**
432	B	Wall	U Ctr		Poor	Brick	White	-0.3
433	C	Wall	L Ctr		Poor	Brick	Green	**>9.9**
434	C	Wall	U Ctr		Poor	Brick	White	-0.1
435	D	Wall	L Ctr		Poor	Brick	Green	**>9.9**
436	D	Wall	U Ctr		Poor	Brick	White	-0.3
Interior Room 031 704								
437	A	Ceiling			Poor	Wood	White	-0.3
438	A	Column	Ctr	L column	Poor	Concrete	White	-0.3
439	A	Wall	L Lft		Poor	Brick	Green	0.2
440	A	Wall	U Lft		Poor	Brick	Green	-0.1
441	A	Wall	L Rgt		Poor	Brick	White	-0.1
442	A	Wall	U Rgt		Poor	Brick	White	0.2
443	B	Wall	L Lft		Poor	Brick	White	-0.2
444	B	Wall	U Lft		Poor	Brick	White	0.1
445	C	Wall	L Lft		Poor	Brick	White	0
446	C	Wall	U Lft		Poor	Brick	White	0.2
447	C	Wall	L Rgt		Poor	Brick	White	0
448	C	Wall	U Rgt		Poor	Brick	White	-0.2
449	D	Wall	L Ctr		Poor	Brick	White	-0.1
450	D	Wall	U Ctr		Poor	Brick	White	-0.5
451	D	Quality	Ctr		Poor	Brick	White	0
Interior Room 032 705								
452	A	Ceiling			Poor	Wood	Tan	0.5
453	A	Column	Ctr	L column	Poor	Concrete	Tan	0.6
454	A	Wall	L Ctr		Poor	Brick	Tan	0.2
455	A	Wall	U Ctr		Poor	Brick	Tan	0.2
456	A	Wall	L Ctr		Poor	Brick	Green	0.4
457	A	Wall	U Ctr		Poor	Brick	Green	-0.2
458	A	Wall	L Rgt		Poor	Brick	White	0.7
459	A	Wall	U Rgt		Poor	Brick	White	0.1
460	B	Wall	L Lft		Poor	Brick	White	0.5
461	B	Wall	U Lft		Poor	Brick	White	0
462	B	Wall	L Lft		Poor	Brick	White	0.3
463	B	Wall	U Lft		Poor	Brick	White	-0.2
464	B	Wall	L Ctr		Poor	Brick	Green	0.3
465	B	Wall	U Ctr		Poor	Brick	White	-0.1
466	B	Wall	L Ctr		Poor	Brick	White	0.1
467	B	Wall	U Ctr		Poor	Brick	White	0.3
468	B	Wall	L Rgt		Poor	Brick	Gray	-0.1
469	B	Wall	U Rgt		Poor	Brick	Gray	-0.2
470	B	Wall	L Rgt		Poor	Brick	White	0.7
471	B	Wall	U Rgt		Poor	Brick	White	-0.1
472	C	Wall	L Lft		Poor	Brick	White	**1.1**
473	C	Wall	U Lft		Poor	Brick	White	**1**
474	C	Wall	L Ctr		Poor	Brick	Green	0
475	C	Wall	U Ctr		Poor	Brick	Tan	0.3
476	C	Wall	L Rgt		Poor	Brick	Green	0.3
477	C	Wall	U Rgt		Poor	Brick	Tan	0

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Reading No	Wall	Structure	Location	Member	Paint Condition	Substrate	Color	Lead (mg/cm2)
478	D	Wall	L Lft		Poor	Brick	Green	0.6
479	D	Wall	U Lft		Poor	Brick	Tan	-0.1
480	D	Wall	L Lft		Poor	Brick	White	0
481	D	Wall	U Lft		Poor	Brick	White	-0.3
482	C	Wall	L Rgt		Poor	Brick	White	0.5
483	C	Wall	U Rgt		Poor	Brick	White	0.3
484	C	Wall	L Rgt		Poor	Brick	White	0.3
485	C	Wall	U Rgt		Poor	Brick	White	0.6
486	D	Wall	L Ctr		Poor	Brick	White	0.5
487	D	Wall	U Ctr		Poor	Brick	White	0.6
488	D	Wall	L Ctr		Poor	Brick	White	0.1
489	D	Wall	U Ctr		Poor	Brick	White	0
490	D	Wall	L Ctr		Poor	Brick	White	0.5
491	D	Wall	U Ctr		Poor	Brick	White	0.5
492	A	Wall	L Lft		Poor	Brick	White	0.6
493	A	Wall	U Lft		Poor	Brick	White	0.4
Interior Room 033 706								
494	C	Wall	U Ctr		Poor	Drywall	White	-0.4
495	B	Wall	U Ctr		Poor	Drywall	White	-0.4
496	D	Wall	U Ctr		Poor	Brick	Tan	0.5
Interior Room 034 707								
497	D	Wall	U Ctr		Poor	Brick	Tan	0.1
498	C	Wall	U Ctr		Poor	Brick	Tan	0.5
499	B	Wall	U Ctr		Poor	Brick	Tan	-0.2
500	A	Wall	U Ctr		Poor	Brick	Tan	-0.3
501	A	Quality	Ctr		Poor	Brick	Tan	-0.2
Interior Room 035 708								
502	A	Wall	L Ctr		Poor	Brick	Gray	-0.5
503	A	Wall	U Ctr		Poor	Brick	White	-0.2
504	B	Wall	L Ctr		Poor	Brick	Gray	-0.3
505	B	Wall	U Ctr		Poor	Brick	White	-0.2
506	C	Wall	L Ctr		Poor	Brick	Gray	-0.2
507	C	Wall	U Ctr		Poor	Brick	White	-0.4
508	D	Wall	L Ctr		Poor	Brick	Gray	-0.3
509	D	Wall	U Ctr		Poor	Brick	White	-0.2
Interior Room 036 709								
510	A	Wall	L Ctr		Poor	Brick	Green	0.5
511	A	Wall	U Ctr		Poor	Plaster	Green	**9**
512	B	Wall	L Ctr		Poor	Brick	Green	0.1
513	B	Wall	U Ctr		Poor	Brick	Green	-0.1
514	C	Wall	L Ctr		Poor	Brick	Green	-0.2
515	C	Wall	U Ctr		Poor	Plaster	Green	**9.4**
516	D	Wall	L Ctr		Poor	Brick	Green	-0.2
517	D	Wall	U Ctr		Poor	Plaster	Green	**7.3**
518	D	Ceiling			Poor	Plaster	Green	0.6
Interior Room 037 710								
519	D	Wall	U Ctr		Poor	Plaster	White	-0.1
Interior Room 038 711								
520	D	Wall	U Ctr		Poor	Plaster	White	0
Interior Room 039 712								
521	A	Wall	L Lft		Poor	Plaster	Brown	-0.4
522	D	Wall	L Rgt		Poor	Plaster	Brown	-0.1

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Reading No	Wall	Structure	Location	Member	Paint Condition	Substrate	Color	Lead (mg/cm2)
Interior Room 040 713								
523	A	Wall	U Ctr		Poor	Brick	Tan	-0.1
524	B	Wall	U Ctr		Poor	Brick	Tan	0
525	C	Wall	U Ctr		Poor	Brick	Tan	0.4
526	D	Wall	U Ctr		Poor	Brick	Tan	0.3
Interior Room 041 714								
527	A	Wall	U Ctr		Poor	Brick	Tan	0
528	B	Wall	U Ctr		Poor	Brick	Tan	-0.1
529	C	Wall	U Ctr		Poor	Brick	Tan	0.4
530	D	Wall	U Ctr		Poor	Brick	Tan	0.2
Interior Room 042 715								
531	A	Wall	U Ctr		Poor	Brick	Gray	-0.1
532	B	Wall	U Ctr		Poor	Brick	Gray	-0.1
533	C	Wall	U Ctr		Poor	Brick	Gray	0.2
534	D	Wall	U Ctr		Poor	Brick	Gray	-0.1
Interior Room 043 716								
535	A	Ceiling			Poor	Wood	White	-0.1
536	A	Column	Ctr	L column	Poor	Concrete	White	-0.1
537	A	Wall	L Lft		Poor	Brick	White	0
538	A	Wall	U Lft		Poor	Brick	White	-0.2
539	A	Wall	L Rgt		Poor	Brick	Tan	-0.1
540	A	Wall	U Rgt		Poor	Brick	Tan	-0.2
541	B	Wall	L Lft		Poor	Brick	Tan	-0.3
542	B	Wall	U Lft		Poor	Brick	Tan	0.1
543	C	Wall	L Lft		Poor	Brick	Tan	0
544	C	Wall	U Lft		Poor	Brick	White	-0.1
545	C	Wall	L Rgt		Poor	Brick	White	-0.1
546	C	Wall	U Rgt		Poor	Brick	White	0
547	D	Wall	L Lft		Poor	Brick	White	0
548	D	Wall	U Lft		Poor	Brick	White	0
Interior Room 044 717								
549	B	Ceiling			Poor	Wood	White	0.6
550	B	Column	Ctr	L column	Poor	Concrete	White	**>9.9**
551	B	Quality	Ctr		Poor	Concrete	White	**>9.9**
552	A	Wall	L Lft		Poor	Brick	White	**>9.9**
553	A	Wall	U Lft		Poor	Brick	White	**>9.9**
554	A	Wall	L Rgt		Poor	Brick	White	**>9.9**
555	A	Wall	U Rgt		Poor	Brick	White	**>9.9**
556	B	Wall	L Lft		Poor	Brick	Tan	**>9.9**
557	B	Wall	U Lft		Poor	Brick	Tan	**>9.9**
558	B	Wall	L Rgt		Poor	Brick	White	**>9.9**
559	B	Wall	U Rgt		Poor	Brick	White	**>9.9**
560	C	Wall	L Ctr		Poor	Brick	White	**>9.9**
561	C	Wall	U Ctr		Poor	Brick	White	**>9.9**
562	D	Wall	L Ctr		Poor	Brick	White	**>9.9**
563	D	Wall	U Ctr		Poor	Brick	White	**>9.9**
Interior Room 045 718								
564	A	Wall	U Ctr		Poor	Brick	White	**>9.9**
565	B	Wall	U Ctr		Poor	Brick	White	**>9.9**
566	C	Wall	U Ctr		Poor	Brick	White	**>9.9**
567	D	Wall	U Ctr		Poor	Brick	White	**>9.9**
Interior Room 046 719								

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Reading No	Wall	Structure	Location	Member	Paint Condition	Substrate	Color	Lead (mg/cm2)
568	A	Wall	U Ctr		Poor	Brick	Gray	**>9.9**
569	B	Wall	U Ctr		Poor	Brick	Gray	**>9.9**
570	C	Wall	U Ctr		Poor	Brick	Gray	**>9.9**
571	D	Wall	U Ctr		Poor	Brick	Gray	**>9.9**
Interior Room 047 720								
572	A	Wall	U Ctr		Poor	Brick	Green	**>9.9**
573	B	Wall	U Ctr		Poor	Brick	Green	**>9.9**
574	C	Wall	U Ctr		Poor	Brick	Green	**>9.9**
575	D	Wall	U Ctr		Poor	Brick	Green	**>9.9**
Interior Room 048 721								
576	D	Ceiling			Poor	Wood	White	0
577	D	Column	Ctr	L column	Poor	Concrete	White	0.5
578	A	Wall	L Lft		Poor	Brick	White	0.2
579	A	Wall	U Lft		Poor	Brick	White	0.6
580	A	Wall	L Ctr		Poor	Brick	White	0.6
581	A	Wall	U Ctr		Poor	Brick	White	0
582	C	Wall	L Rgt		Poor	Brick	White	0.4
583	C	Wall	U Rgt		Poor	Brick	White	0
584	D	Wall	L Lft		Poor	Brick	White	0.3
585	D	Wall	U Lft		Poor	Brick	White	0.5
586	D	Wall	L Ctr		Poor	Brick	White	0.3
587	D	Wall	U Ctr		Poor	Brick	White	0.3
Interior Room 049 722								
588	A	Wall	L Ctr		Poor	Brick	Gray	**>9.9**
589	A	Wall	U Ctr		Poor	Brick	White	0.2
590	B	Wall	L Ctr		Poor	Brick	Gray	**>9.9**
591	B	Wall	U Ctr		Poor	Brick	White	-0.2
592	C	Wall	L Ctr		Poor	Brick	Gray	**>9.9**
593	C	Wall	U Ctr		Poor	Brick	White	-0.1
594	D	Wall	L Ctr		Poor	Brick	Gray	**>9.9**
595	D	Wall	U Ctr		Poor	Brick	White	-0.4
Interior Room 999 Mid Day Calibration 8/15/16								
596								**0.9**
597								**1**
598								**1.1**
599								-0.2
Interior Room 050 124								
600	A	Wall	L Ctr		Poor	Concrete	Green	-0.2
601	A	Quality	Ctr		Poor	Concrete	Green	-0.5
602	A	Wall	U Ctr		Poor	Concrete	Green	-0.4
603	B	Wall	L Lft		Poor	Concrete	Green	-0.3
604	B	Wall	U Lft		Poor	Brick	Green	0
605	B	Wall	L Rgt		Poor	Concrete	Green	0
606	B	Wall	U Rgt		Poor	Brick	Green	0.1
607	C	Wall	L Lft		Poor	Concrete	Green	0.2
608	C	Wall	U Lft		Poor	Concrete	Green	0.2
609	C	Wall	L Ctr		Poor	Brick	Green	0.1
610	C	Wall	U Ctr		Poor	Concrete	Green	0.2
611	D	Wall	L Lft		Poor	Conc Block	Green	-0.2
612	D	Wall	L Lft		Poor	Brick	Green	0.4
613	D	Wall	L Ctr		Poor	Concrete	Green	-0.1
614	D	Wall	U Ctr		Poor	Concrete	Green	0.3

* Wall A is the road side (15th Street) of the building (east). Walls B/C/D are determined clockwise from Wall A.

Reading No	Wall	Structure	Location	Member	Paint Condition	Substrate	Color	Lead (mg/cm2)
615	D	Wall	U Ctr		Poor	Concrete	Green	-0.1
616	D	Wall	L Rgt		Poor	Brick	Green	**4.9**
617	D	Wall	U Rgt		Poor	Plaster	Green	-0.1
619	D	Wall	U Rgt		Poor	Brick	Green	-0.1
620	D	Column	Rgt	L column	Poor	Concrete	Green	0.3
621	A	Ceiling			Poor	Concrete	Green	**2.4**
622	D	Ceiling			Poor	Concrete	Green	**1.9**
623	C	Ceiling			Poor	Concrete	Green	**1.6**
Interior Room 051 Elevator								
618	C	Wall	L Lft		Poor	Brick	Gray	0
Interior Room 051 125								
624	C	Ceiling			Poor	Concrete	Green	**4.9**
625	A	Wall	L Lft		Poor	Concrete	Green	0.1
626	A	Wall	U Lft		Poor	Concrete	Green	**>9.9**
627	A	Wall	L Rgt		Poor	Concrete	Green	0.4
628	A	Wall	U Rgt		Poor	Concrete	Green	**4.2**
629	B	Wall	L Ctr		Poor	Brick	Silver	0.1
630	B	Wall	U Ctr		Poor	Brick	Silver	**>9.9**
631	B	Wall	L Rgt		Poor	Brick	Green	0.1
632	B	Wall	U Rgt		Poor	Brick	Green	**7.3**
633	C	Wall	L Ctr		Poor	Concrete	Gray	-0.1
634	C	Wall	U Ctr		Poor	Concrete	Gray	0
635	C	Wall	L Rgt		Poor	Concrete	Green	0.1
636	C	Wall	U Rgt		Poor	Concrete	Green	-0.1
637	D	Wall	L Lft		Poor	Brick	Green	0.3
638	D	Wall	U Lft		Poor	Brick	Green	0.3
639	D	Wall	L Lft		Poor	Brick	Green	0.1
640	D	Wall	U Lft		Poor	Brick	Green	0.5
641	D	Wall	L Ctr		Poor	Concrete	Green	-0.3
642	D	Wall	U Ctr		Poor	Concrete	Green	0.6
Interior Room 052 126								
643	B	Ceiling			Poor	Concrete	Green	**3.6**
644	B	Column	Ctr	L column	Poor	Concrete	Green	0
645	D	Column	Ctr	L column	Poor	Concrete	Green	0
646	A	Wall	L Ctr		Poor	Concrete	Green	-0.1
647	A	Wall	U Ctr		Poor	Concrete	White	0.1
648	B	Wall	L Ctr		Poor	Concrete	Gray	0.5
649	B	Wall	U Ctr		Poor	Concrete	Gray	-0.1
650	C	Wall	L Lft		Poor	Plaster	Green	0.4
651	C	Quality	Lft		Poor	Plaster	Green	0.5
652	C	Wall	U Lft		Poor	Plaster	Green	0.6
653	C	Window	Ctr	Sill	Poor	Concrete	Gray	**>9.9**
654	C	Wall	U Ctr		Poor	Concrete	Gray	**5.6**
655	C	Wall	L Rgt		Poor	Concrete	Gray	**>9.9**
656	C	Wall	U Rgt		Poor	Concrete	Gray	**>9.9**
657	D	Wall	L Ctr		Poor	Concrete	Green	**>9.9**
658	D	Wall	U Ctr		Poor	Concrete	Green	**>9.9**
659	D	Wall	L Rgt		Poor	Concrete	Gray	0
660	D	Wall	U Rgt		Poor	Concrete	Gray	0
Interior Room 053 127								
661	C	Ceiling			Poor	Concrete	Green	**3.1**
662	C	Column	Ctr	L column	Poor	Concrete	Green	0

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Reading No	Wall	Structure	Location	Member	Paint Condition	Substrate	Color	Lead (mg/cm2)
663	A	Wall	L Lft		Poor	Brick	Green	0.2
664	A	Wall	U Lft		Poor	Brick	Silver	0.1
665	A	Wall	L Lft		Poor	Concrete	Green	-0.1
666	A	Wall	U Lft		Poor	Concrete	Green	-0.1
667	B	Wall	L Lft		Poor	Plaster	Green	-0.2
668	B	Wall	U Lft		Poor	Plaster	Green	0.1
669	B	Wall	L Lft		Poor	Plaster	Green	0.2
670	B	Wall	U Lft		Poor	Plaster	Green	0.6
671	B	Wall	L Ctr		Poor	Concrete	Green	0
672	B	Wall	U Ctr		Poor	Concrete	Green	0.1
Interior Room 054 128								
673	A	Wall	L Ctr		Poor	Brick	Brown	0.6
674	A	Wall	U Ctr		Poor	Brick	Tan	0
675	B	Wall	L Ctr		Poor	Concrete	Gray	-0.2
676	C	Wall	L Ctr		Poor	Plaster	Gray	0.3
677	C	Wall	U Ctr		Poor	Plaster	Tan	-0.2
678	D	Wall	L Ctr		Poor	Plaster	Gray	0.3
679	D	Wall	U Ctr		Poor	Plaster	Tan	0.3
680	D	Ceiling			Poor	Concrete	Tan	**2.8**
Interior Room 055 129								
681	D	Wall	L Ctr		Poor	Plaster	Green	0.6
682	C	Wall	L Ctr		Poor	Plaster	Green	0.5
683	C	Wall	U Ctr		Poor	Plaster	White	0.6
684	B	Wall	L Ctr		Poor	Brick	Gray	0.6
685	B	Wall	U Ctr		Poor	Brick	Green	0.5
686	C	Ceiling			Poor	Concrete	Gray	**8.1**
Interior Room 056 130								
687	A	Wall	L Ctr		Poor	Brick	Gray	0.6
688	A	Wall	U Ctr		Poor	Brick	White	-0.1
689	B	Wall	L Ctr		Poor	Brick	Green	0.3
690	B	Wall	U Ctr		Poor	Brick	White	0.6
691	C	Wall	L Ctr		Poor	Concrete	Green	0.1
692	C	Wall	U Ctr		Poor	Concrete	White	0
693	D	Wall	L Ctr		Poor	Brick	Gray	**1**
694	D	Wall	U Ctr		Poor	Brick	White	-0.1
695	A	Ceiling			Poor	Concrete	Gray	0
Interior Room 057 220								
696	A	Wall	L Ctr		Poor	Brick	Gray	0.5
697	A	Wall	U Ctr		Poor	Brick	White	0.1
698	B	Wall	L Ctr		Poor	Brick	Gray	0.2
699	B	Wall	U Ctr		Poor	Brick	White	0.1
700	C	Wall	L Ctr		Poor	Concrete	Gray	0.3
701	C	Quality	Ctr		Poor	Concrete	Gray	0.3
702	C	Wall	U Ctr		Poor	Concrete	White	0
703	D	Wall	L Ctr		Poor	Brick	Gray	0.6
704	D	Wall	U Ctr		Poor	Brick	White	-0.2
705	A	Ceiling			Poor	Concrete	Gray	**1.7**
Interior Room 058 221								
706	D	Ceiling			Poor	Concrete	Green	**>9.9**
707	D	Column	Ctr	L column	Poor	Concrete	Green	0.2
708	A	Wall	L Lft		Poor	Concrete	Green	0.3
709	A	Wall	U Lft		Poor	Concrete	Green	0.3

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Reading No	Wall	Structure	Location	Member	Paint Condition	Substrate	Color	Lead (mg/cm2)
710	A	Wall	L Ctr		Poor	Concrete	Green	0.5
711	A	Wall	U Ctr		Poor	Concrete	Green	0
712	D	Wall	L Ctr		Poor	Concrete	Gray	-0.3
713	D	Wall	U Ctr		Poor	Concrete	Gray	0.5
714	A	Wall	L Rgt		Poor	Brick	Green	0
715	A	Wall	U Rgt		Poor	Brick	Green	0.5
716	B	Wall	L Lft		Poor	Brick	Green	0.2
717	B	Wall	U Lft		Poor	Brick	Green	0.6
718	B	Wall	L Rgt		Poor	Brick	Green	0.6
719	B	Wall	U Rgt		Poor	Brick	Green	0.5
720	C	Wall	L Lft		Poor	Concrete	Green	0.2
721	C	Wall	U Lft		Poor	Concrete	Green	0.4
722	C	Wall	L Rgt		Poor	Concrete	Green	-0.2
723	C	Wall	U Rgt		Poor	Concrete	Green	0.4
724	D	Wall	L Lft		Poor	Brick	Green	0.3
725	D	Wall	U Lft		Poor	Brick	Green	0.6
726	D	Wall	L Ctr		Poor	Brick	Green	**1.8**
727	D	Wall	U Ctr		Poor	Brick	Green	0.6
728	D	Wall	L Ctr		Poor	Brick	Green	0.4
729	D	Wall	U Ctr		Poor	Brick	Green	-0.1
Interior Room 059 222								
730	A	Wall	L Ctr		Poor	Brick	Brown	0.1
731	A	Wall	U Ctr		Poor	Brick	Tan	0.2
732	B	Wall	L Ctr		Poor	Plaster	Brown	0.4
733	B	Wall	U Ctr		Poor	Plaster	Tan	0
734	C	Wall	L Ctr		Poor	Plaster	Brown	-0.3
735	C	Wall	U Ctr		Poor	Plaster	Tan	-0.2
736	D	Wall	L Ctr		Poor	Concrete	Gray	0.4
737	D	Wall	U Lft		Poor	Concrete	Tan	0.6
Interior Room 060 223								
738	B	Ceiling			Poor	Concrete	White	**6.7**
739	B	Column	Lft	L column	Poor	Concrete	Green	0
740	A	Wall	L Lft		Poor	Brick	Green	0.4
741	A	Wall	U Lft		Poor	Brick	White	0.4
742	A	Wall	L Ctr		Poor	Plaster	Green	-0.1
743	A	Wall	U Ctr		Poor	Plaster	White	-0.1
744	B	Window	Lft	Sill	Poor	Concrete	Green	-0.1
745	B	Wall	U Ctr		Poor	Concrete	White	0.2
746	A	Wall	L Rgt		Poor	Concrete	Green	0.5
747	A	Wall	U Rgt		Poor	Concrete	White	0.6
748	B	Wall	L Lft		Poor	Brick	Green	0.3
749	B	Wall	U Lft		Poor	Brick	White	0.6
750	C	Wall	L Lft		Poor	Concrete	Green	0.3
751	C	Wall	U Lft		Poor	Concrete	White	0.4
752	C	Quality	Lft		Poor	Concrete	White	0.5
753	C	Wall	L Rgt		Poor	Concrete	Green	0.6
754	C	Wall	U Rgt		Poor	Concrete	White	-0.3
755	D	Wall	L Lft		Poor	Concrete	Green	0.6
756	D	Wall	U Lft		Poor	Concrete	White	0
757	D	Wall	L Rgt		Poor	Concrete	Green	0
758	D	Wall	U Rgt		Poor	Concrete	White	-0.2
Interior Room 061 224								

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Reading No	Wall	Structure	Location	Member	Paint Condition	Substrate	Color	Lead (mg/cm2)
759	A	Wall	L Ctr		Poor	Brick	Brown	0
760	A	Wall	U Ctr		Poor	Brick	Tan	0.5
761	B	Wall	L Ctr		Poor	Concrete	Brown	0.6
762	B	Wall	U Rgt		Poor	Concrete	Tan	0.4
763	C	Wall	L Ctr		Poor	Plaster	Brown	0.1
764	C	Wall	U Ctr		Poor	Plaster	Tan	0.6
765	D	Wall	L Ctr		Poor	Plaster	Brown	0.6
766	D	Wall	U Ctr		Poor	Plaster	Tan	0.5
Interior Room 999 Post Calibration 8/15/16								
767								**0.9**
768								**1**
769								**1**
770								-0.6

- The State of Wisconsin defines lead bearing paint as that which is equal to or greater than 1.0 mg/cm$^{2.}$
- Readings with a negative value (i.e. -0.1) are equivalent to 0.0

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NORTHSTAR ENVIRONMENTAL TESTING, LLC
www.NorthStarTesting.com

LEAD PAINT XRF TESTING DATA

CLIENT:	Stantec Consulting Services Inc.	NORTHSTAR NO.	160-584
LOCATION:	1512 Washington St – Manitowoc, WI	SITE DATE:	August 16, 2016
WORK AREA:	Pre-Demolition	TECH:	A Stroud

Reading No	Wall	Structure	Location	Member	Paint Condition	Substrate	Color	Lead (mg/cm2)
Interior Room 999 Pre-Calibration 8/16/16								
1								**0.9**
2								**1**
3								**1**
4								-0.1
Interior Room 001 322								
5	A	Ceiling			Poor	Concrete	Gray	-0.3
6	A	Wall	L Ctr		Poor	Brick	Green	0.6
7	A	Wall	U Ctr		Poor	Brick	White	0.6
8	B	Wall	L Ctr		Poor	Brick	Green	0.2
9	B	Wall	U Ctr		Poor	Brick	White	0
10	C	Wall	L Ctr		Poor	Concrete	Green	0.1
11	C	Wall	U Ctr		Poor	Concrete	White	0.1
12	D	Wall	L Ctr		Poor	Brick	Green	0.5
13	D	Wall	U Ctr		Poor	Brick	White	0
Interior Room 002 323								
14	C	Ceiling			Poor	Concrete	White	-0.2
15	C	Column	Rgt	L column	Poor	Concrete	Green	0.2
16	A	Wall	L Lft		Poor	Concrete	Green	0.3
17	A	Wall	U Lft		Poor	Concrete	White	0.1
18	A	Wall	L Ctr		Poor	Concrete	Green	-0.1
19	A	Wall	U Ctr		Poor	Concrete	White	-0.3
20	A	Ceiling			Poor	Concrete	White	0
21	D	Wall	L Rgt		Poor	Brick	Green	0
22	D	Wall	U Rgt		Poor	Brick	White	0.1
23	A	Wall	L Ctr		Poor	Concrete	Green	0.6
24	A	Wall	U Ctr		Poor	Concrete	White	0.2
25	B	Wall	L Lft		Poor	Concrete	Green	0.4
26	B	Wall	U Lft		Poor	Brick	Green	0.4
27	B	Wall	L Ctr		Poor	Concrete	Green	0
28	B	Wall	U Ctr		Poor	Concrete	White	-0.2
29	C	Wall	L Lft		Poor	Concrete	Green	0.3
30	C	Wall	U Lft		Poor	Concrete	White	0.2
31	C	Wall	L Rgt		Poor	Concrete	Green	0.3
32	C	Wall	U Rgt		Poor	Concrete	White	0.2
33	D	Wall	L Lft		Poor	Brick	Green	0.5
34	D	Wall	U Lft		Poor	Brick	White	0.3
35	D	Wall	L Ctr		Poor	Brick	Green	0.4
36	D	Wall	U Ctr		Poor	Brick	White	0.6
Interior Room 003 324								
37	B	Ceiling			Poor	Concrete	White	0.4
38	C	Column	Ctr	L column	Poor	Concrete	White	0
39	A	Wall	L Lft		Poor	Brick	Green	-0.1

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Reading No	Wall	Structure	Location	Member	Paint Condition	Substrate	Color	Lead (mg/cm2)
40	A	Wall	U Lft		Poor	Brick	White	-0.1
41	B	Wall	L Lft		Poor	Brick	Green	-0.2
42	B	Wall	U Lft		Poor	Plaster	White	0.3
43	B	Wall	L Ctr		Poor	Concrete	Green	0.5
44	B	Wall	U Ctr		Poor	Concrete	White	-0.1
45	A	Ceiling			Poor	Concrete	Green	-0.1
46	A	Wall	L Rgt		Poor	Concrete	Green	0
47	A	Wall	U Rgt		Poor	Concrete	White	0.2
48	B	Wall	L Lft		Poor	Brick	Green	0.4
49	B	Wall	U Lft		Poor	Brick	White	0.6
50	C	Wall	L Lft		Poor	Brick	White	-0.5
51	C	Quality	Lft		Poor	Brick	White	0
52	C	Wall	U Lft		Poor	Brick	White	-0.2
53	C	Wall	L Ctr		Poor	Concrete	Green	-0.1
54	C	Wall	U Ctr		Poor	Concrete	White	-0.1
55	C	Wall	L Rgt		Poor	Concrete	Green	0.3
56	C	Wall	U Rgt		Poor	Concrete	White	0.6
57	D	Wall	L Lft		Poor	Concrete	Green	-0.4
58	D	Wall	U Lft		Poor	Concrete	White	0.3
59	D	Wall	L Rgt		Poor	Concrete	Green	-0.1
60	D	Wall	U Rgt		Poor	Concrete	White	-0.1
Interior Room 004 325								
61	A	Wall	L Ctr		Poor	Brick	Brown	0.2
62	A	Wall	U Ctr		Poor	Brick	Tan	0.6
63	B	Wall	L Ctr		Poor	Concrete	Brown	0.6
64	B	Wall	U Rgt		Poor	Concrete	Tan	0.3
65	C	Wall	L Ctr		Poor	Plaster	Brown	0.1
66	C	Wall	U Ctr		Poor	Plaster	Tan	0.5
67	D	Wall	L Ctr		Poor	Plaster	Brown	0
68	D	Wall	U Ctr		Poor	Plaster	Tan	0.6
Interior Room 005 326								
69	A	Wall	U Ctr		Poor	Brick	Tan	0.4
70	B	Wall	U Ctr		Poor	Plaster	Tan	0.2
71	C	Wall	U Ctr		Poor	Plaster	Tan	-0.2
72	D	Wall	L Ctr		Poor	Concrete	Tan	0.2
Interior Room 006 327								
73	A	Wall	U Ctr		Poor	Plaster	Tan	0.1
74	B	Wall	L Ctr		Poor	Plaster	Brown	-0.2
75	C	Wall	U Ctr		Poor	Plaster	Tan	0.5
76	D	Wall	L Ctr		Poor	Concrete	Brown	0.1
Interior Room 007 422								
77	A	Ceiling			Poor	Concrete	White	0.1
78	A	Wall	L Ctr		Poor	Brick	Green	0.3
79	A	Wall	U Ctr		Poor	Brick	White	0.4
80	B	Wall	L Ctr		Poor	Brick	Green	0.4
81	B	Wall	U Ctr		Poor	Brick	White	0.3
82	C	Wall	L Ctr		Poor	Concrete	Green	-0.1
83	C	Wall	U Ctr		Poor	Concrete	White	0
84	D	Wall	L Ctr		Poor	Brick	Green	0.6
85	D	Wall	U Ctr		Poor	Brick	White	-0.2
Interior Room 008 423								
86	C	Ceiling			Poor	Concrete	White	0

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Reading No	Wall	Structure	Location	Member	Paint Condition	Substrate	Color	Lead (mg/cm2)
87	A	Wall	L Lft		Poor	Concrete	Green	0.1
88	A	Wall	U Lft		Poor	Concrete	White	0.3
89	D	Wall	L Ctr		Poor	Concrete	Green	0.5
90	D	Wall	U Ctr		Poor	Concrete	White	0.6
91	D	Wall	L Rgt		Poor	Brick	Green	0.4
92	D	Wall	U Rgt		Poor	Brick	White	0.5
93	A	Wall	L Ctr		Poor	Concrete	Green	0.4
94	A	Wall	U Ctr		Poor	Concrete	White	0.6
95	B	Wall	L Lft		Poor	Concrete	Green	0.6
96	B	Wall	U Lft		Poor	Concrete	White	0
97	B	Wall	L Rgt		Poor	Concrete	Green	0.6
98	B	Wall	U Rgt		Poor	Concrete	White	0.2
99	C	Wall	L Lft		Poor	Concrete	Green	0.6
100	C	Wall	U Lft		Poor	Concrete	White	0.5
101	C	Quality	Lft		Poor	Concrete	White	0.6
102	C	Wall	L Rgt		Poor	Concrete	Green	0.4
103	C	Wall	U Ctr		Poor	Concrete	White	0.6
104	D	Wall	L Lft		Poor	Brick	Green	0.1
105	D	Wall	U Lft		Poor	Brick	White	0.1
106	B	Ceiling			Poor	Concrete	White	0.2
Interior Room 009 424								
107	A	Wall	L Ctr		Poor	Concrete	Green	0.5
108	A	Wall	U Ctr		Poor	Concrete	White	0.6
109	D	Wall	L Ctr		Poor	Brick	Green	0.1
110	D	Wall	U Ctr		Poor	Brick	Green	0.6
111	D	Ceiling			Poor	Concrete	Silver	0.1
Interior Room 010 425								
112	A	Wall	L Ctr		Poor	Brick	Brown	0.4
113	A	Wall	U Ctr		Poor	Brick	Tan	0.3
114	B	Wall	L Ctr		Poor	Plaster	Brown	0.3
115	B	Wall	U Ctr		Poor	Plaster	Tan	-0.1
116	C	Wall	L Ctr		Poor	Plaster	Brown	0
117	C	Wall	U Ctr		Poor	Plaster	Tan	0
118	D	Wall	L Ctr		Poor	Concrete	Brown	0.6
119	D	Wall	U Lft		Poor	Concrete	Tan	0.4
Interior Room 011 426								
120	B	Ceiling			Poor	Concrete	White	0
121	B	Column	Ctr	L column	Poor	Concrete	White	0.5
122	A	Wall	L Lft		Poor	Brick	Green	-0.1
123	A	Wall	U Lft		Poor	Brick	White	0
124	A	Wall	L Ctr		Poor	Concrete	Green	-0.2
125	A	Wall	U Ctr		Poor	Concrete	White	-0.2
126	A	Wall	L Ctr		Poor	Plaster	Green	-0.1
127	A	Wall	U Ctr		Poor	Plaster	White	-0.2
128	B	Wall	L Ctr		Poor	Concrete	Green	0.1
129	B	Wall	U Ctr		Poor	Concrete	White	0.3
130	A	Ceiling			Poor	Concrete	White	0.5
131	A	Wall	L Rgt		Poor	Concrete	Green	0.6
132	A	Wall	U Rgt		Poor	Concrete	White	0.1
133	B	Wall	L Lft		Poor	Brick	Green	0.5
134	B	Wall	U Lft		Poor	Brick	White	0.4
135	B	Wall	L Rgt		Poor	Brick	Green	0.2

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Reading No	Wall	Structure	Location	Member	Paint Condition	Substrate	Color	Lead (mg/cm2)
136	B	Wall	U Rgt		Poor	Brick	White	0.3
137	C	Wall	L Lft		Poor	Concrete	Green	0
138	C	Wall	U Lft		Poor	Concrete	White	-0.2
139	C	Wall	L Rgt		Poor	Concrete	Green	-0.2
140	C	Wall	U Rgt		Poor	Concrete	White	-0.1
141	D	Wall	L Lft		Poor	Concrete	Green	0.6
142	D	Wall	U Lft		Poor	Concrete	White	0.2
143	D	Wall	L Rgt		Poor	Concrete	Green	-0.1
144	D	Wall	U Rgt		Poor	Concrete	White	-0.3
Interior Room 012 427								
145	A	Wall	L Ctr		Poor	Plaster	Brown	-0.1
146	A	Wall	U Ctr		Poor	Plaster	Tan	0.1
147	B	Wall	L Ctr		Poor	Concrete	Brown	0.6
148	B	Wall	U Lft		Poor	Concrete	Tan	0.5
149	C	Wall	U Ctr		Poor	Plaster	Tan	-0.1
150	D	Wall	L Ctr		Poor	Plaster	Gray	-0.1
151	D	Quality	Ctr		Poor	Plaster	Gray	-0.3
Interior Room 013 520								
152	A	Ceiling			Poor	Concrete	White	-0.1
153	A	Wall	L Ctr		Poor	Brick	Green	0.5
154	A	Wall	U Ctr		Poor	Brick	White	0.4
155	B	Wall	L Ctr		Poor	Brick	Green	0.4
156	B	Wall	U Ctr		Poor	Brick	White	0.2
157	C	Wall	L Ctr		Poor	Concrete	Green	0.6
158	C	Wall	U Ctr		Poor	Concrete	White	0.5
159	D	Wall	L Ctr		Poor	Brick	Green	-0.1
160	D	Wall	U Ctr		Poor	Brick	White	-0.2
Interior Room 014 521								
161	C	Ceiling			Poor	Concrete	White	-0.3
162	A	Wall	L Lft		Poor	Concrete	Green	0.6
163	A	Wall	U Lft		Poor	Concrete	White	-0.4
164	D	Wall	L Ctr		Poor	Concrete	Tan	0.5
165	D	Wall	U Ctr		Poor	Concrete	Tan	-0.1
166	D	Wall	L Rgt		Poor	Brick	Tan	0.6
167	D	Wall	U Rgt		Poor	Plaster	Tan	0.5
168	A	Wall	L Rgt		Poor	Concrete	Silver	0.6
169	A	Wall	U Rgt		Poor	Concrete	Silver	0
170	B	Wall	L Ctr		Poor	Concrete	Gray	**>9.9**
171	B	Wall	U Ctr		Poor	Concrete	Gray	**>9.9**
172	B	Wall	L Lft		Poor	Concrete	Gray	**1.1**
173	A	Wall	L Rgt		Poor	Concrete	Gray	-0.2
174	C	Wall	L Lft		Poor	Concrete	Silver	0.3
175	C	Wall	U Lft		Poor	Concrete	Silver	0
176	B	Wall	L Rgt		Poor	Brick	Silver	0.6
177	C	Wall	L Lft		Poor	Concrete	Gray	-0.2
178	C	Wall	U Lft		Poor	Concrete	White	0.1
179	C	Wall	L Rgt		Poor	Concrete	Green	0.6
180	C	Wall	U Rgt		Poor	Concrete	Green	-0.4
181	D	Wall	L Lft		Poor	Brick	Tan	0
182	D	Wall	U Lft		Poor	Brick	Tan	-0.2
183	D	Wall	L Ctr		Poor	Brick	Gray	0.1
184	D	Wall	U Ctr		Poor	Brick	White	-0.1

* Wall A is the road side (15th Street) of the building (east). Walls B/C/D are determined clockwise from Wall A.

Reading No	Wall	Structure	Location	Member	Paint Condition	Substrate	Color	Lead (mg/cm2)
185	D	Wall	L Rgt		Poor	Brick	Silver	0.6
186	D	Wall	U Rgt		Poor	Brick	Silver	0.3
Interior Room 015 522								
187	A	Wall	L Ctr		Poor	Brick	Brown	0.3
188	A	Wall	U Ctr		Poor	Brick	Green	0.1
189	B	Wall	L Ctr		Poor	Plaster	Brown	0.1
190	B	Wall	U Ctr		Poor	Plaster	Green	-0.2
191	C	Wall	L Ctr		Poor	Plaster	Gray	0.3
192	C	Wall	U Ctr		Poor	Plaster	Green	0.5
193	D	Wall	L Ctr		Poor	Concrete	Brown	0.6
194	D	Wall	U Lft		Poor	Concrete	Green	-0.1
Interior Room 016 523								
195	B	Ceiling			Poor	Concrete	Tan	0.1
196	B	Column	Ctr	L column	Poor	Concrete	White	0.4
197	A	Wall	L Lft		Poor	Brick	Green	0.2
198	A	Wall	U Lft		Poor	Brick	White	0.2
199	A	Wall	L Ctr		Poor	Concrete	Green	0
200	A	Wall	U Ctr		Poor	Concrete	White	-0.3
201	A	Quality	Ctr		Poor	Concrete	White	0
202	B	Wall	L Lft		Poor	Concrete	Green	0
203	B	Wall	U Lft		Poor	Concrete	Green	0
204	A	Wall	L Rgt		Poor	Concrete	Green	0.5
205	A	Wall	U Rgt		Poor	Concrete	Green	0.6
206	B	Wall	L Lft		Poor	Brick	Green	0.3
207	B	Wall	U Lft		Poor	Brick	White	0.4
208	B	Wall	L Rgt		Poor	Brick	Green	0.4
209	B	Wall	U Rgt		Poor	Brick	White	-0.1
210	C	Wall	L Lft		Poor	Concrete	Green	0.3
211	C	Wall	U Lft		Poor	Concrete	White	0.1
212	C	Wall	L Rgt		Poor	Concrete	Green	0.6
213	C	Wall	U Rgt		Poor	Concrete	Green	0.2
214	D	Wall	L Lft		Poor	Concrete	Green	-0.2
215	D	Wall	U Lft		Poor	Concrete	Green	-0.1
216	D	Wall	L Rgt		Poor	Concrete	Green	-0.5
217	D	Wall	U Rgt		Poor	Concrete	Green	-0.3
Interior Room 017 524								
218	A	Wall	L Ctr		Poor	Brick	Brown	0.2
219	A	Wall	U Ctr		Poor	Brick	Tan	0.4
220	B	Wall	L Ctr		Poor	Concrete	Brown	-0.2
221	B	Wall	U Rgt		Poor	Concrete	Tan	-0.1
222	C	Wall	L Ctr		Poor	Plaster	Brown	0.2
223	C	Wall	U Ctr		Poor	Plaster	Tan	0.2
224	D	Wall	U Ctr		Poor	Plaster	Tan	0.1
Interior Room 018 618								
225	A	Ceiling			Poor	Concrete	White	0.3
226	A	Wall	L Ctr		Poor	Brick	Green	0.2
227	A	Wall	U Ctr		Poor	Brick	White	0.2
228	B	Wall	L Ctr		Poor	Brick	Green	0.2
229	B	Wall	U Ctr		Poor	Brick	White	0.1
230	C	Wall	L Ctr		Poor	Concrete	Green	0
231	C	Wall	U Ctr		Poor	Concrete	White	0.6
232	D	Wall	L Ctr		Poor	Brick	Green	0.5

* Wall A is the road side (15th Street) of the building (east). Walls B/C/D are determined clockwise from Wall A.

Reading No	Wall	Structure	Location	Member	Paint Condition	Substrate	Color	Lead (mg/cm2)
233	D	Wall	U Ctr		Poor	Brick	White	0.4
Interior Room 019 619								
234	D	Horz Beam	Ctr		Poor	Concrete	Silver	**9.4**
235	C	Ceiling			Poor	Plaster	Silver	**>9.9**
236	C	Column	Rgt	L column	Poor	Concrete	Silver	**>9.9**
237	A	Wall	L Lft		Poor	Concrete	Gray	**7.9**
238	A	Wall	U Lft		Poor	Concrete	Gray	**>9.9**
239	A	Wall	L Ctr		Poor	Concrete	Gray	**1.3**
240	A	Wall	U Ctr		Poor	Concrete	Gray	**4.2**
241	D	Wall	L Ctr		Poor	Concrete	Gray	0.1
242	D	Wall	U Ctr		Poor	Concrete	Gray	**8.4**
243	D	Wall	L Rgt		Poor	Brick	Silver	**7.2**
244	D	Wall	U Rgt		Poor	Plaster	Silver	**8**
245	A	Wall	L Rgt		Poor	Concrete	Silver	**1.9**
246	A	Wall	U Rgt		Poor	Brick	Silver	**7.9**
247	B	Wall	L Lft		Poor	Concrete	Silver	**>9.9**
248	B	Wall	U Lft		Poor	Concrete	Silver	**5.9**
249	B	Wall	L Ctr		Poor	Concrete	Silver	**>9.9**
250	B	Wall	L Rgt		Poor	Concrete	Silver	**9.2**
251	B	Quality	Rgt		Poor	Concrete	Silver	**9.3**
252	C	Wall	U Ctr		Poor	Concrete	Silver	**>9.9**
Interior Room 020 620								
253	A	Wall	U Ctr		Poor	Brick	Silver	-0.1
254	B	Wall	U Ctr		Poor	Plaster	Silver	-0.3
255	C	Wall	U Ctr		Poor	Plaster	Silver	0
256	D	Wall	L Ctr		Poor	Concrete	Silver	0.1
Interior Room 021 621								
257	A	Wall	U Ctr		Poor	Brick	Silver	0
258	B	Wall	U Ctr		Poor	Brick	Silver	0.3
259	C	Wall	L Ctr		Poor	Concrete	Silver	0.2
260	D	Wall	L Ctr		Poor	Brick	Silver	0.4
Interior Room 022 622								
261	B	Ceiling			Poor	Plaster	Green	**>9.9**
262	B	Column	Ctr	L column	Poor	Concrete	Green	**9.5**
263	A	Wall	L Lft		Poor	Brick	Green	**7.9**
264	A	Wall	U Lft		Poor	Brick	White	**>9.9**
265	A	Wall	L Ctr		Poor	Concrete	Green	**>9.9**
266	A	Wall	U Ctr		Poor	Concrete	Green	**8.5**
267	B	Wall	L Lft		Poor	Concrete	Green	**>9.9**
268	B	Wall	U Ctr		Poor	Concrete	Green	**8.4**
269	A	Wall	L Rgt		Poor	Concrete	Green	**8.5**
270	B	Wall	U Lft		Poor	Brick	Green	-0.1
271	B	Wall	L Rgt		Poor	Brick	Green	-0.4
272	C	Wall	U Lft		Poor	Concrete	White	**7.2**
273	C	Wall	L Rgt		Poor	Concrete	Green	**>9.9**
274	D	Wall	U Lft		Poor	Concrete	Green	**6.7**
275	D	Wall	L Rgt		Poor	Concrete	Red	**6.8**
Interior Room 023 623								
276	A	Wall	L Ctr		Poor	Brick	Green	0
277	A	Wall	U Ctr		Poor	Brick	Green	0
278	B	Wall	L Ctr		Poor	Concrete	Green	0.5
279	C	Wall	L Ctr		Poor	Plaster	Green	0.5

* Wall A is the road side (15th Street) of the building (east). Walls B/C/D are determined clockwise from Wall A.

Reading No	Wall	Structure	Location	Member	Paint Condition	Substrate	Color	Lead (mg/cm2)
280	C	Wall	U Ctr		Poor	Plaster	Green	-0.4
281	D	Wall	U Ctr		Poor	Plaster	Green	-0.2
Interior Room 999 Post Calibration 8/16/16								
282								**0.9**
283								**1**
284								**1**
285								-0.3

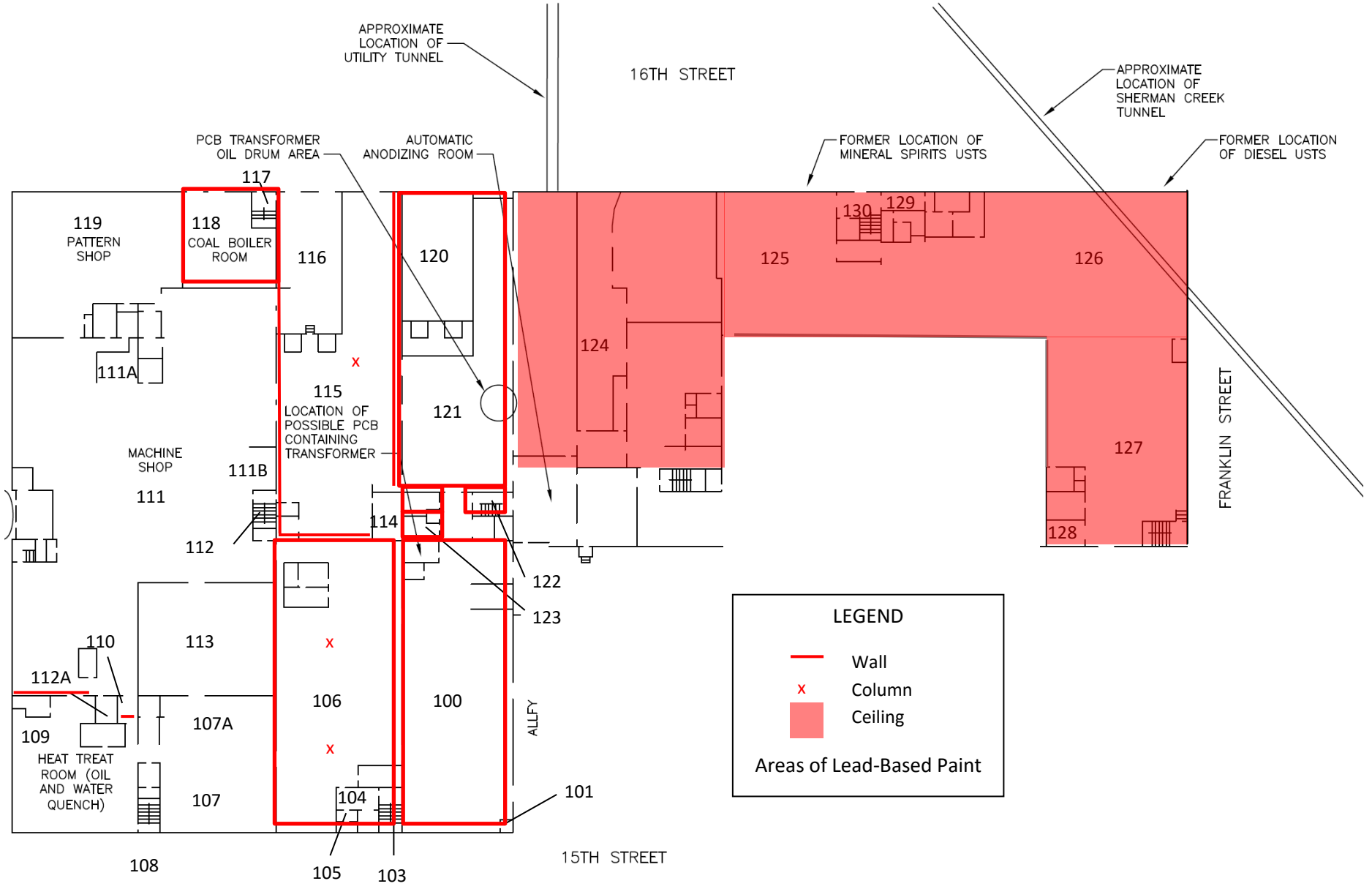
- The State of Wisconsin defines lead bearing paint as that which is equal to or greater than 1.0 mg/cm$^{2.}$
- Readings with a negative value (i.e. -0.1) are equivalent to 0.0

* Wall A is the road side (15th Street) of the building (east). Walls B/C/D are determined clockwise from Wall A.

Stantec Consulting Services Inc.

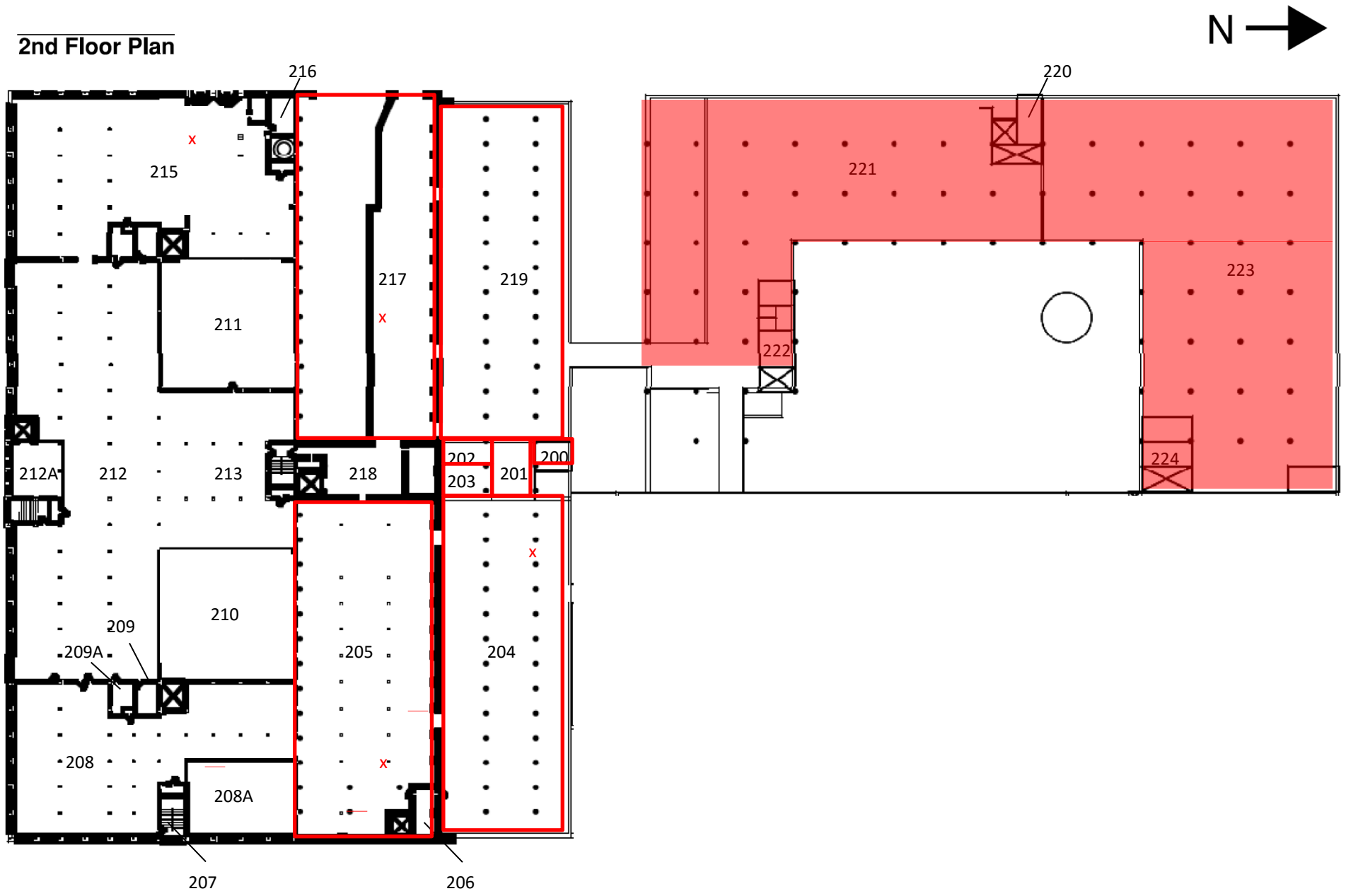
Mirro Building No. 9
1512 Washington Street
Manitowoc, WI 54220

September 2016

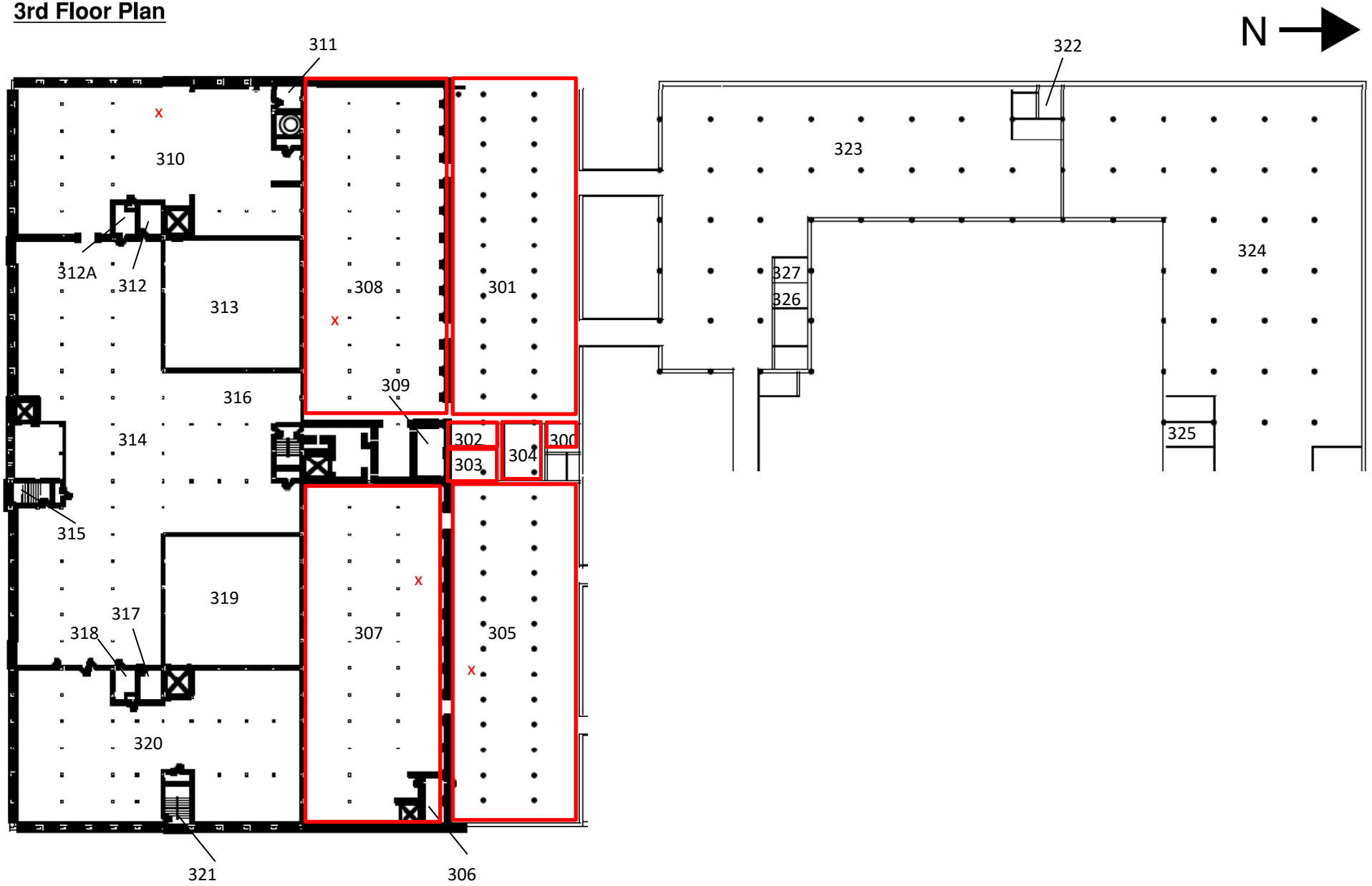


Ground Floor Plan

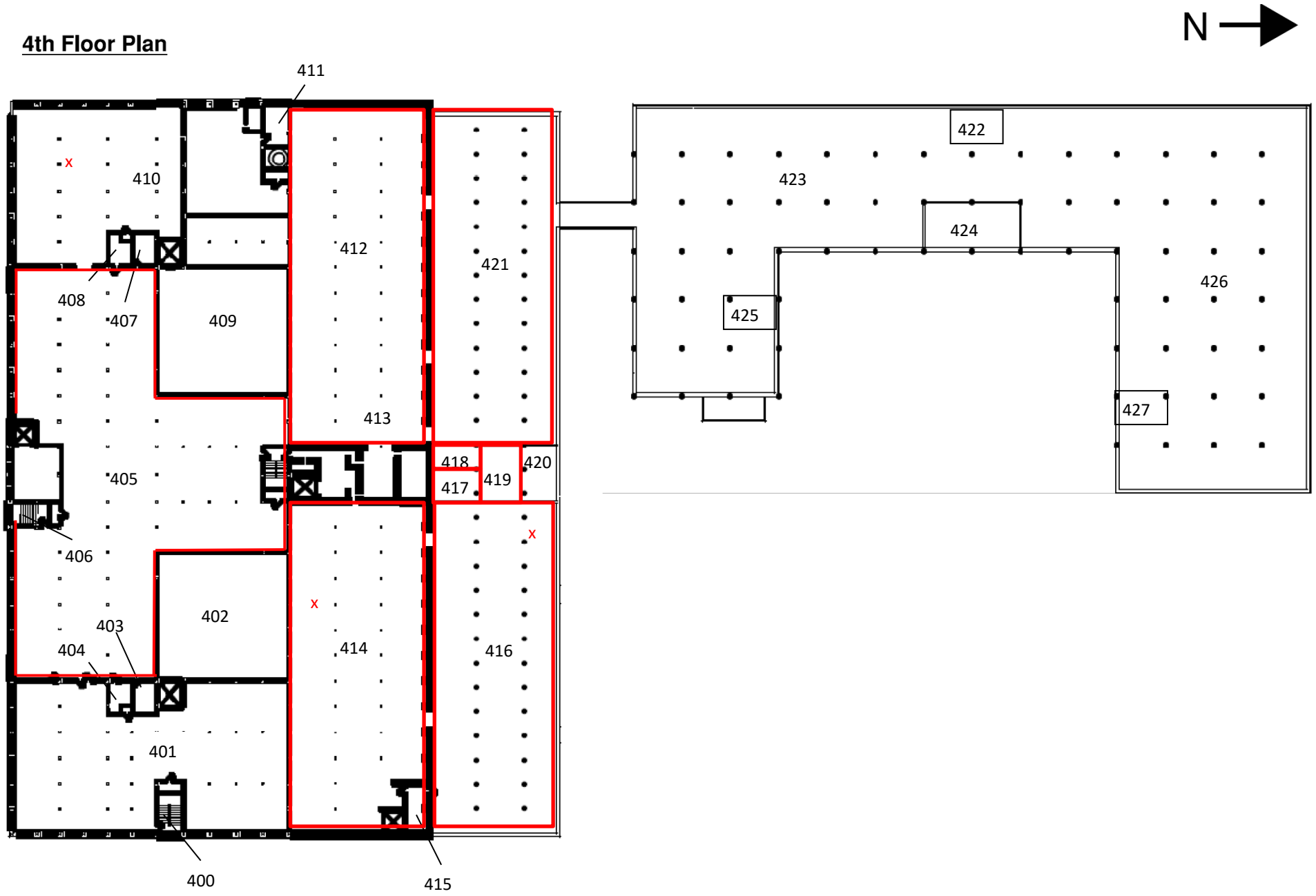
2nd Floor Plan



3rd Floor Plan

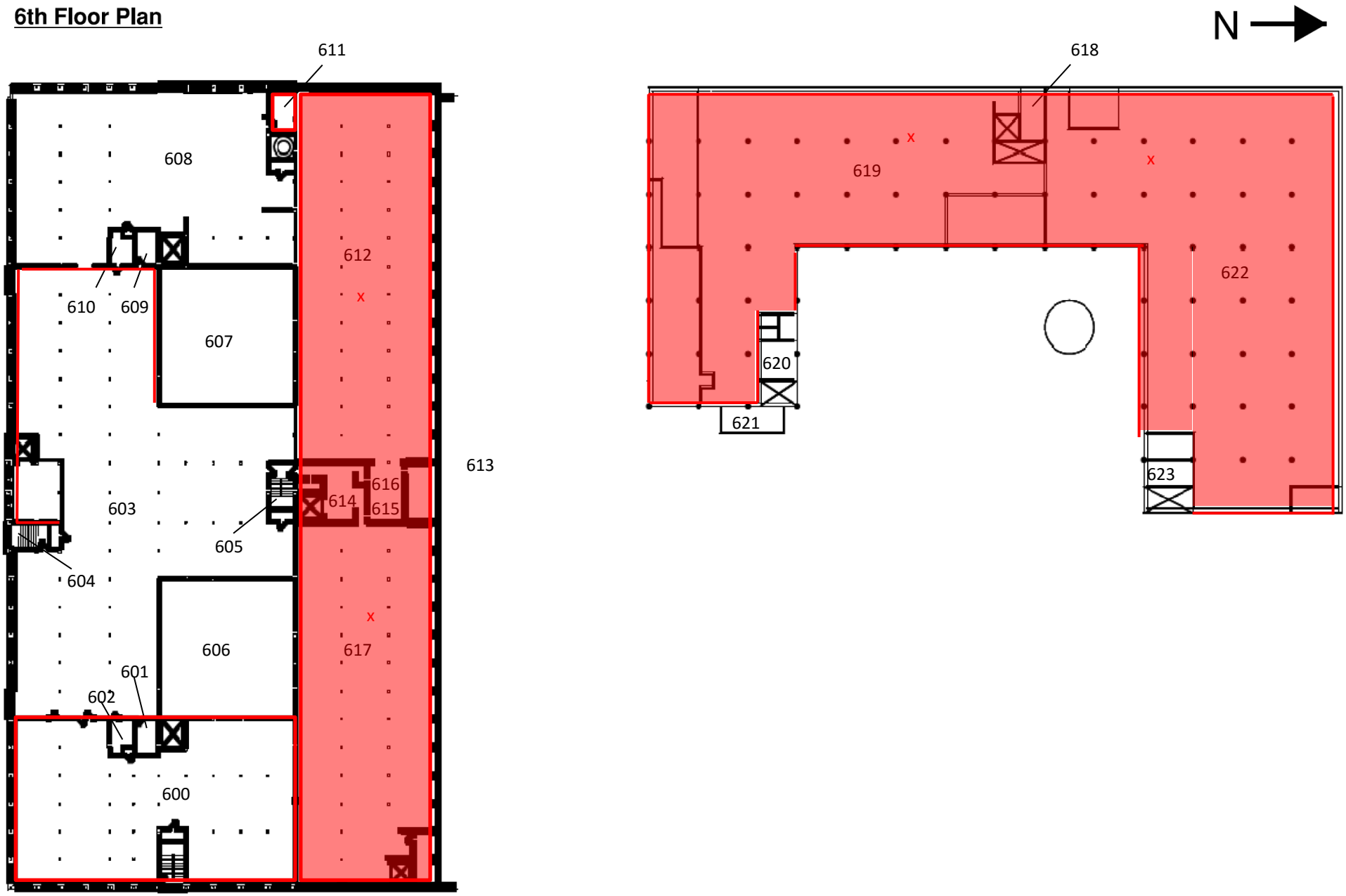


4th Floor Plan

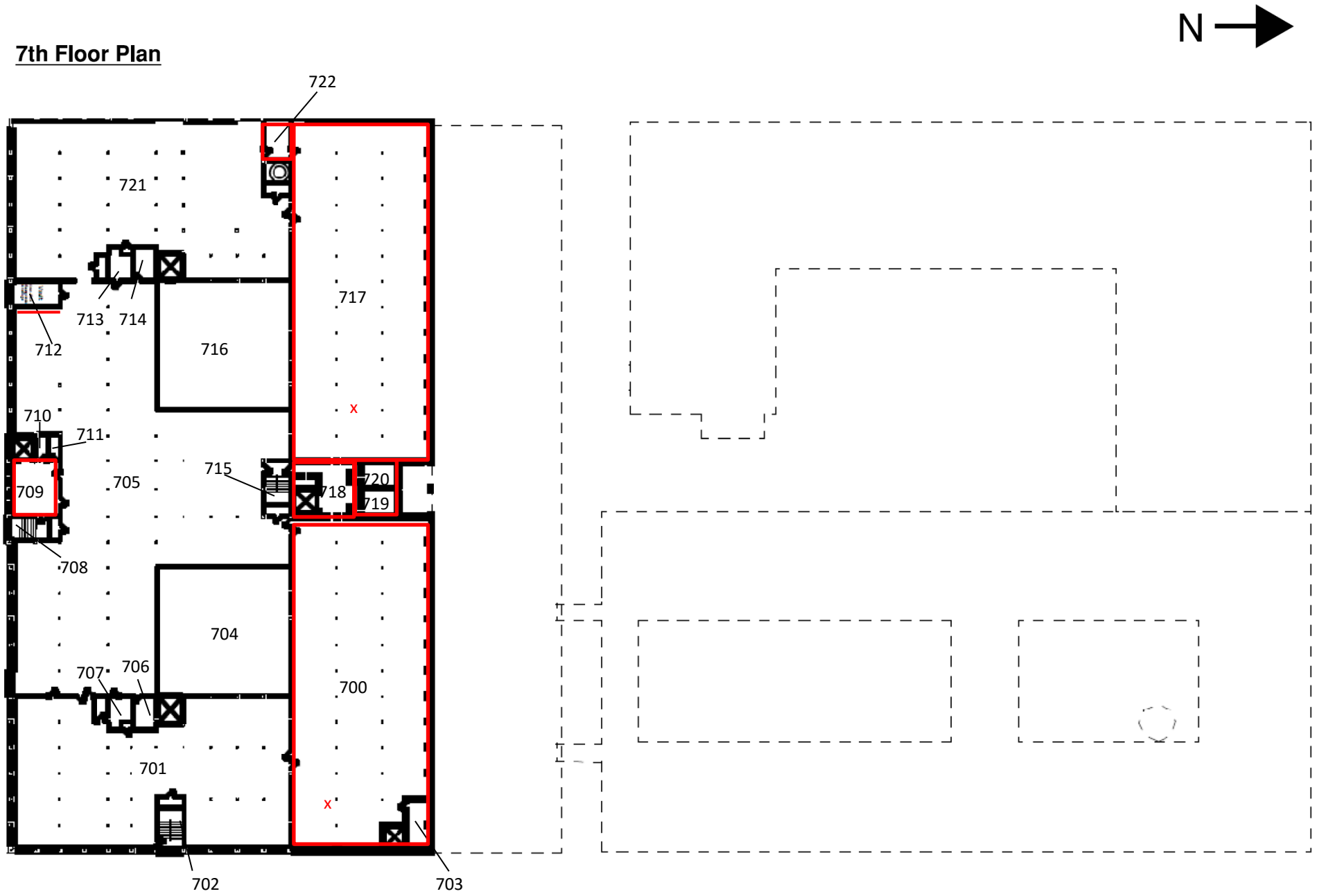


5th **Floor Plan**

6th Floor Plan



7th Floor Plan



Appendix H CERTIFICATIONS

NorthStar Environmental Testing, LLC.

Company Certificate

This certifies that

NORTHSTAR ENVIRONMENTAL TESTING LLC

817 OAK RIDGE RD
MOSINEE WI 54455-8672

is certified under ch. DHS 159, Wis.Adm.Code as a

Asbestos Company - Primary

COPY

Certificate Issue Date: 05/21/2015
Expiration Date: 08/01/2017, 12:01 a.m.
Certification #: CAP-925800

Wisconsin Department of Health Services
Division of Public Health
Bureau of Environmental and Occupational Health
Asbestos & Lead Section
PO Box 2659
Madison WI 53701-2659
Phone: (608) 261-6876

Shelley A Bruce,
Unit Supervisor

Company Certificate

This certifies that

NORTHSTAR ENVIRONMENTAL TESTING LLC

817 OAK RIDGE RD
MOSINEE WI 54455-8672

is certified under ch. DHS 163, Wis.Adm.Code as a

Lead (Pb) Company

COPY

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PO Box 2659
Madison WI 53701-2659
Phone: (608) 261-6876

Shelley A Bruce,
Unit Supervisor

ATTACHMENT B
Wisconsin Historical Society
Division of Historic Preservation Approval Letter

HP-05-07 (8/15/03)

For SHPO Use Only. Case # 16-0983/MN

REQUEST FOR SHPO COMMENT AND CONSULTATION ON A FEDERAL UNDERTAKING

Submit one copy with each undertaking for which our comment is requested. Please print or type. Return to:

Wisconsin Historical Society, Division of Historic Preservation, Office of Preservation Planning, 816 State Street, Madison, WI 53706

Please Check All Boxes and Include All of the Following Information, as Applicable:

SEP 2 1 2016

BY: .....

I. GENERAL INFORMATION

☑ **This is a new submittal.**
☐ **This is supplemental information relating to Case #:_____ and title:_____**
☐ **This project is being undertaken pursuant to the terms and conditions of a programmatic or other interagency agreement.**
The title of the agreement is _____

a. Federal Agency Jurisdiction (Agency providing funds, assistance, license, permit): U.S. EPA (RLF Brownfield Grant)

b. Federal Agency Contact Person: Jon Peterson Phone: 312-353-1264

c. Project Contact Person: Jon Currie - Stantec Consulting Services, Inc. Phone: 262-643-9165

d. Return Address: 12075 Corporate Pkwy, Suite 200 / Mequon, Wisconsin Zip Code: 53092

e. Email Address: jon.currie@stantec.com

f. Project Name: Abatement of Hazardous Building Materials, 1512 Washington Street, Manitowoc

g. Project Street Address: 1512 Washington Street

h. County: Manitowoc City: Manitowoc Zip Code: 54220

i. Project Location: Township 19 N, Range 24 E, E/W (circle one), Section 30, Quarter Sections NE

j. Project Narrative Description—Attach Information as Necessary.

k. Area of Potential Effect (APE). Attach Copy of U.S.G.S. 7.5 Minute Topographic Quadrangle Showing APE.

II. IDENTIFICATION OF HISTORIC PROPERTIES

☐ Historic Properties are located within the project APE per 36 CFR 800.4. Attach supporting materials.
☑ Historic Properties are not located within the project APE per 36 CFR 800.4. Attach supporting materials.

III. FINDINGS

☑ No historic properties will be affected (i.e., none is present or there are historic properties present but the project will have no effect upon them). Attach necessary documentation, as described at 36 CFR 800.11.
☐ The proposed undertaking will have no adverse effect on one or more historic properties located within the project APE under 36 CFR 800.5. Attach necessary documentation, as described at 36 CFR 800.11.
☐ The proposed undertaking will result in an adverse effect to one or more historic properties and the applicant, or other federally authorized representative, will consult with the SHPO and other consulting parties to resolve the adverse effect per 36 CFR 800.6. Attach necessary documentation, as described at 36 CFR 800.11, with a proposed plan to resolve adverse effect(s).

Authorized Signature: JCurrie Date: 9/20/2016

Type or print name: Jon Currie

IV. STATE HISTORIC PRESERVATION OFFICE COMMENTS

☒ Agree with the finding in section III above.
☐ Object to the finding for reasons indicated in attached letter.
☐ Cannot review until information is sent as follows: _____

Authorized Signature: _____ Date: 9-22-16