

GENESEE COUNTY LAND BANK AUTHORITY
PROJECT MANUAL AND TECHNICAL SPECIFICATIONS

For

ENVIRONMENTAL ABATEMENT, DEMOLITION AND SITE RESTORATION

BID NUMBER: #LB 17-017

At

**Former Ross Oil, 2360 West Pierson Road,
and Former FIA Building, 2320 West Pierson Road,
City of Flint, Michigan 48504**

Date: August 9, 2017

Prepared for:

**GENESEE COUNTY LAND BANK AUTHORITY
452 South Saginaw Street, 2nd Floor
Flint, Michigan 48502**

Prepared by:



214 Janes Avenue
Saginaw, Michigan 48607
989.754.9896

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ADVERTISEMENT

**Genesee County Land Bank Authority (GCLBA)
Environmental Abatement, Demolition, and Site Restoration #LB 17-017
Former Ross Oil, 2360 West Pierson Road,
and Former FIA Building, 2320 West Pierson Road, City of Flint, Michigan**

Bid Release Date – August 9, 2017

Starting **Wednesday, August 9, 2017**, electronic copies of plans, proposal forms and specifications may be obtained from AKT Peerless (ENGINEER).

Sealed bids will be received by the Genesee County Land Bank Authority (OWNER) at the GCLBA Office, Attn: Ms. Faith Finholm, Grants Manager, 452 South Saginaw Street, 2nd Floor, Flint, Michigan 48502 **until 3:00 p.m. on Thursday, August 24, 2017.** A public reading will not be held.

The OWNER reserves the right to waive any informality in any bid, to reject any or all bids, omit bid items, negotiate any part of the bid, or accept any bid that is considered most favorable to the OWNER.

A mandatory pre-bid walkthrough will be held at **1:00 p.m. Monday, August 14, 2017**, at the property address provided above. Representatives of AKT Peerless (ENGINEER) shall be present to discuss the Project. A Plan Holders list will be prepared based on attendees of the meeting. Final questions are due by **3:00 p.m. Friday, August 18, 2017**. The property exterior is accessible for a potential bidder to view at their convenience.

Contract Documents are on file and/or available for electronic download from AKT Peerless' website. Please go to: <https://aktpeerless.sharefile.com/d-s4080c4534c94cab8>.

Upon request, starting upon release of the bids, one set of bid documents will be issued electronically in PDF format, via email, to prospective bidders by AKT Peerless located at 214 Janes Avenue, Saginaw, Michigan 48607; phone: 989-754-9896. Paper copies are available from AKT Peerless for a cost of \$100 per set.

All addendums will also be posted to the above stated website and transmitted to all plan holders. The CONTRACTOR is responsible for ensuring all addendums have been received and acknowledged prior to the submittal of the bid. A proposed schedule for the work is included in the bid documents.

Site Walk Safety Notice:

Note that hazardous conditions exist at the subject property. Bidders are not required to enter the subject building and if choose to do so, Bidder shall enter the subject building at their own risk. The subject building has been abandoned for several years. Potential hazards present at the property include, but are not limited to: standing water, ice, falling debris, asbestos, mold, unlighted areas, and trip hazards. At minimum, hard hats, non-slip boots, and flashlights are required for those entering the subject building.

PS-1 – PROPOSED SCHEDULE

PROJECT: # **LB 17-017**

Environmental Abatement, Demolition and Site Restoration – Former Ross Oil, 2360 West Pierson Road, and Former FIA Building, 2320 West Pierson Road, City of Flint, Michigan

PROPOSED SCHEDULE:

Bid Release / Advertisement for Bid:	August 9, 2017	
Mandatory Pre-Bid Walkthrough:	August 14, 2017	1:00 p.m.
Final Contractor Questions:	August 18, 2017	3:00 p.m.
Bids Due:	August 24, 2017	3:00 p.m.
Approximate Award Date:	August 29, 2017	
Start Date:	September 6, 2017	
Contractor Submit 10-Day Notification:	August 23, 2017 (or before)	
First Payment Milestone Target (\$300,000 minimum)	September 18, 2017 (12 days from Notice to Proceed)	
Demolition and Site Restoration Substantially Complete:	October 8, 2017 (40 days from Notice to Proceed)	
Final Completion:	October 18, 2017 (50 days from Notice to Proceed)	

CONTACTS:

Genesee County Land Bank Authority
Attention: Faith Finholm, Grants Manager
452 South Saginaw Street, 2nd Floor
Flint, Michigan 48502
Ph: 810-257-3088
Email: ffinholm@thelandbank.org

AKT Peerless Environmental & Energy Services
Attn: Heath Bobick
214 Janes Avenue
Saginaw, Michigan 48607
Email: BobickH@aktpeerless.com
Ph: 989-754-9896
Cell: 989-630-7701
Fax: 989-754-3804

SECTION 00100 - INVITATION TO BID

The Genesee County Land Bank Authority ("OWNER") will receive sealed bids at the Genesee County Land Bank Authority (GCLBA) office, Attn: Ms. Faith Finholm, Grants Manager, 452 South Saginaw Street, 2nd Floor, Flint, Michigan 48502 **until 3:00 p.m. on Thursday, August 24, 2017** for the following project:

"#LB 17-017, Environmental Abatement, Demolition and Site Restoration – Former Ross Oil, 2360 West Pierson Road, and Former FIA Building, 2320 West Pierson Road, City of Flint, Michigan"

Bids submitted after the above listed date and time will not be accepted. Bids will be publicly opened and/or publicly read aloud. A Bid Tab will be made available within 10 business days.

A mandatory pre-bid site walk is scheduled for Monday, August 14, 2017, at 1:00 p.m. The site walk will be held at the property address provided above. CONTRACTORS bidding on the project are required to attend the site walk. Following the formal pre-bid meeting, the building will remain open and available to CONTRACTORS until approximately **3:00 pm** or later upon request. The CONTRACTOR can schedule additional inspections times with the OWNER and/or duly appointed OWNER representative. The exterior of the site is accessible for CONTRACTORS to view at their convenience.

Site Walk Safety Notice:

Note that potential unsafe conditions exist at the subject property. CONTRACTOR is not required to enter the subject buildings and if choose to do so, CONTRACTOR shall enter the subject buildings at their own risk. The subject buildings have been abandoned for several years. Potential hazards present at the property include, but are not limited to: standing water, ice, falling debris, asbestos, mold, unlighted areas, and trip hazards. At minimum, hard hats, non-slip boots, and flashlights are required for those entering the subject buildings.

Changes to the Bidding Documents or Specifications will be issued as an Addendum. A list of Plan Holders will be prepared based on attendance at the mandatory site walk. The ENGINEER (AKT Peerless) will transmit to all prospective Bidders of record, such Addenda as the Professional considers necessary in response to questions arising at the conference. Oral statements may not be relied upon and will not be binding or legally effective.

The OWNER intends to select one CONTRACTOR based on price and qualifications to perform removal and disposal of environmentally hazardous materials, structure demolition and site restoration. A site-specific hazardous materials survey has been prepared and is provided with the Bidding Documents.

Federal Funding / HUD / Section 3

All contractors and subcontractors are required to comply with the requirements of Section 3.

The above referenced project is a federally funded activity authorized under the Housing and Community Development Act of 1974. All successful bidders must comply with federal labor standards, including the Davis-Bacon Act and the Copeland Anti-Kickback legislation; federal equal opportunity requirements; and Section 3 of the Housing and Urban Development Act of 1968.

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Minority/Women/Handicapped business owned enterprises (MBE/WBE/HBE) and Section 3 business concerns seeking bid opportunities under this project are encouraged to respond.

Contract Documents

Contract Documents are being provided to pre-qualified bidders registered with the GCLBA. Contract Documents are on file and/or available for electronic download from AKT Peerless Environmental & Energy Services' (AKT Peerless) website:

Please go to: <https://aktpeerless.sharefile.com/d-s4080c4534c94cab8> to retrieve the document(s).

Upon request, starting with release of the bids, one set of bid documents will be issued electronically in PDF format, via email, to prospective bidders by AKT Peerless, located at 214 Janes Avenue, Saginaw, Michigan 48607; phone: 989-754-9896. Paper copies are available from AKT Peerless for a cost of \$100 per set.

No proposal may be withdrawn for a period of one hundred and twenty (120) days after submission. Bids offering less than one hundred and twenty (120) days for acceptance by the OWNER from the date set for opening may be considered non-responsive and will be rejected.

The OWNER reserves the right to reject any or all bids and to waive irregularities or informalities in the bids and/or to negotiate separately the terms and conditions of all or any part of the bid, proposed scope of work, and/or contract, as may be deemed in OWNER'S interest in its sole discretion. It is the OWNER'S intent to award the project to the lowest responsive and responsible bidder in compliance with the GCLBA and grant funding requirements.

CONTRACTOR must demonstrate past relevant experience with similar successful projects, capacity and ability to meet Section 3 requirements to be considered for award.

Prevailing salaries and wages are required for this Project.

Time is of the essence. CONTRACTOR will be authorized to proceed with work at the discretion of the OWNER. The Work will be substantially completed on or before **40** days from the Notice to Proceed, as well as completed and ready for final payment in accordance with the contract. Refer to PS-1 for the proposed project schedule. **Note: A 10-day notification must be submitted by the bidders no later than August 23, 2017, and copies must be submitted with the bid response.**

A Bid Bond is required for this contract.

Payment and Performance Bonds are required for this contract.

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All inquiries relating to the contract documents should be directed to:

AKT Peerless Environmental & Energy Services

214 Janes Avenue, Saginaw, Michigan 48607

Attn: Mr. Heath Bobick

BobickhH@aktpeerless.com

Ph: 989-754-9896 Ext. 120

Cell: 989-630-7701

Fax: 989-754-3804

Inquiries must be received by **Friday, August 18, 2017 at 3:00 p.m.** to allow time for a response. Responses to inquiries will be provided to all bidders on the Plan Holders list via email or fax. Responses may not be provided for inquiries received after the above stated date and time.

SECTION 00200 - INSTRUCTIONS TO BIDDERS

PART I - GENERAL

1.1 RECEIPT OF BIDS

- A. The Genesee County Land Bank Authority (herein called the "OWNER") invites Bids/Tenders for removal and disposal of environmentally regulated materials, demolition of the structure(s) and site restoration at the **Former Ross Oil, 2360 West Pierson Road, and Former FIA Building, 2320 West Pierson Road, City of Flint, Michigan.**
- B. Bid/Tenders will be received at the place and time indicated in Section 00100 - Invitation to Bid. Bids shall be included in a sealed envelope, marked with the project title, as well as the name and address of the Bidder. If the Bid is sent through the mail or other delivery system, the sealed envelope shall be enclosed in a separate envelope with the notation "Bid Enclosed" on the face thereof. Electronic or faxed bids will be considered unresponsive and will not be considered.

- C. Entitle the bid as follows:

"#LB 17-017, Environmental Abatement, Demolition and Site Restoration – Former Ross Oil, 2360 West Pierson Road, and Former FIA Building, 2320 West Pierson Road, City of Flint, Michigan"

Mail or Deliver bid to: Genesee County Land Bank Authority
Attn: Ms. Faith Finholm
Grants Manager
452 South Saginaw Street, 2nd Floor
Flint, Michigan 48502
Phone: 810-257-3088 x 539

- D. Bids will be received at the time and place indicated in Section 00100 – Invitation to Bid.
- E. A public reading of the bids will be conducted.
- F. Submit one (1) original, one (1) duplicate copy of Bid, and (1) electronic PDF.

1.2 METHODS OF BIDDING

- A. The OWNER invites Bid/Tenders on Environmental Abatement and Structural Demolition work from qualified CONTRACTORS.
- B. Refer to Section 00800 - "Summary of Work" and following sections for a detailed description of work.
- C. See Bid/Tender form for specific requirements regarding bids.
- D. Pricing shall comply with the following:
1. Prices shall include all applicable taxes.

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2. Unless otherwise noted, prices shall include all fees, mobilization costs, labor, supervision, materials, equipment, fringe benefits, profit, insurance, overhead, handling, and incidental items.
3. Price is based on using qualified and licensed labor as required by regulation and the Project Manual.
4. Bidder has made a careful examination of the requested work, determined the amount and character of the work, as well as the equipment and materials necessary to complete the work in compliance with the Contract Documents, and has become acquainted with labor conditions and all other conditions, which would affect the work; and shall complete the work in and under Conditions that it may encounter or create, without delay or extra cost to the OWNER.
5. Estimated material quantities are provided in the bidding document and hazardous materials survey report; however, **CONTRACTORS ARE STRONGLY CAUTIONED TO VERIFY MATERIAL QUANTITIES BEFORE SUBMITTING A BID**. Prior to submitting a bid, the CONTRACTOR is required to visit the site and verify site conditions and quantities.
6. Payment for each line item shall be based on the methods described in Section 00500.
7. Bidder must provide Unit Prices as indicated on the Bid Form. The Unit Prices shall be applied to Work that is added or deleted from the Contract. The Unit Prices shall be complete and include all labor, materials, equipment, supervision, fringe benefits, profit, overhead, taxes, insurance, incidentals, and fees. These rates shall be valid for the duration of the contract.

1.3 AVAILABILITY OF DOCUMENTS

- A. Contract Documents are available from AKT Peerless located at 214 Janes Avenue, Saginaw, Michigan 48607, Phone: 989-754-9896.

1.4 DEPOSIT

- A. No deposit is required for the electronic set of bid documents.

1.5 ADDITIONAL COPIES

- A. Paper copies are available from AKT Peerless for a cost of \$100 per set.

1.6 PREPARATION OF BID/TENDER

- A. Submit one original, one copy, and one electronic PDF of bid on forms furnished herein.
- B. Make Bid/Tender in name of principal and if co-partnership, give names of all parties. Give complete address. If Bid/Tenders are submitted by an agent, provide satisfactory evidence of agency OWNER.
- C. Bidder must provide available start date and estimated schedule for completion. Time is of the essence as described in Bidding Documents.
- D. Fill in all blank spaces for bid prices in both words and figures.
- E. Bid/Tenders must be received prior to bid date and time as specified in the Invitation to Bid. No late bids will be accepted.
- F. Complete all required sections of Bid/Tender including unit rates and supplemental questions.

1.7 WITHDRAWAL OR REVISION OF BID/TENDERS

- A. Bid/Tenders may be withdrawn or revised prior to scheduled bid due date and time, under the following terms:
1. Bidders may, without prejudice, withdraw Bid/Tender after it has been deposited, provided request for such withdrawal is received in writing, facsimile or by email before time set for opening. Telephonic or other verbal communications are not acceptable. After due date and time, no Bid/Tender may be withdrawn for period indicated.

1.8 IRREGULAR/NON RESPONSIVE/NON RESPONSIBLE BID TENDERS

- A. Bid/Tenders are considered irregular/non responsive and may be rejected for the following reasons unless otherwise provided by law:
1. If form furnished is not used or is altered.
 2. Bids submitted by email or fax.
 3. If there are unauthorized additions, conditional bids, or irregularities of any kind which may tend to make Bid/Tender incomplete, indefinite, or ambiguous as to its meaning.
 4. Bids offering less than one hundred twenty (120) days for acceptance by the OWNER from the bid due date will be considered non-responsive and will be rejected.
 5. If bidder adds any provisions reserving right to accept or reject any award, or to enter into Contract pursuant to an award.
 6. If unit or lump sum prices contained in the bid schedule are obviously unbalanced either in excess of, or below, reasonable cost analysis values.
 7. If bidder fails to complete Bid/Tender in any other particulars where information is requested so Bid/Tender cannot be properly evaluated.
 8. If bidder fails to provide pricing for each unit rate listed in bid pack.
 9. If in the opinion of the OWNER, the bidder does not have the capability in all respects to perform fully the contract requirements, and the tenacity, perseverance, experience, integrity, reliability, capacity, facilities, and equipment that will assure good faith performance.
- B. OWNER reserves right to reject any or all Bid/Tenders and to waive irregularities or informalities as may be deemed in the OWNER'S interest.
- C. The OWNER reserves the right to not award the project for any reason, including, but not limited to lack of funding, bids exceed funding available, or transfer of ownership.
- D. The OWNER intends to award the project to the lowest responsive and responsible bidder in compliance with the Genesee County Land Bank Authority and grant funding policies.

1.9 QUALIFICATIONS OF BIDDER

- A. CONTRACTORS must have previous experience with similar projects.
- B. CONTRACTORS must be properly licensed pursuant to local, State and Federal regulations.
- C. CONTRACTORS/Bidders shall submit at least three (3) references of projects conducted within the past five (5) years that are similar in nature both historically and technically to this proposed project. This list shall include company name, person to contact, address and telephone number. Failure to include references may be ample cause for rejection of Proposal as non-responsive.

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- D. CONTRACTORS with history of violations or enforcement actions by regulatory authorities must be disclosed for review by OWNER. Failure to disclose violations or enforcement notices may be ample cause for rejection of Proposal as non-responsive or cancellation of contract, if discovered after award.
- E. Contractors must demonstrate capacity and equipment ability to meet project timelines.
- F. Contractors must demonstrate ability to meet HUD Section 3 requirements.
- G. Refer to Qualifications and RFP Submittal Checklist attached to Bid/Tender Form.
- H. Proposals will be evaluated and scored by the ENGINEER and OWNER based on the following criteria:

GCLBA EVALUATION CRITERIA AND SCORING – Commercial Bid Packets (Demo & Abate)

The GCLBA will evaluate the qualifications received and identify the submittals that are the most responsive, responsible and offer the best service to the GCLBA. The GCLBA will consider consultant qualifications, financial viability, project references, experience with comparable projects, and projects with concurrent timelines. Specifically, each Qualifications package will be reviewed based on the following selection criteria:

A. PROPOSAL/EVALUATION CRITERIA:

Evaluation Factors	Maximum Points
Ability to Meet Production Goals within Timelines The bidder's demonstration of understanding of scope of work, readiness to proceed and capacity to complete work assigned within timeframes required.	40*
Experience working on environmental cleanup or UST removal projects for the EPA, MDEQ, government or private entity.	5
HUD Section 3 Contractor provides letter from the City of Flint certifying them as a Section 3 Business Concern and a written plan for achieving Section 3 goals.	5
Local Contractor Points awarded to contractors that are located in Genesee County	5
Price The ability to demonstrate reasonable costs in performing scope of work identified in the RFP.	50

* Up to twenty (20) points may be deducted when evaluating Contractor capacity. GCLBA staff will consider past experience with Contractor's response to issues and complaints, including the timeframe in which the Contractor responded to identified issues and where Contractor performed substandard

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work (work performed by Contractor or Contractor's subcontractors that did not meet bid specifications) on any previous GCLBA projects.

LIST #	Evaluation Score	+ Pricing Score	= Total Score

Ability to Meet Production Goals within Timelines – Commercial Bid Packets (Demo & Abate)

1. **Experience** in the appropriate scope of work as outlined in the RFP. (10 points)

Five (5) to nine (9) years of experience in the demolition and disposal of residential/commercial structures.	2 Points
Ten (10) to nineteen (19) years of experience in the demolition and disposal of residential/commercial structures.	4 Points
Twenty (20) to twenty-nine (29) years of experience in the demolition and disposal of residential/commercial structures.	6 Points
Thirty (30) to thirty-nine (39) years of experience in the demolition and disposal of residential/commercial structures.	8 Points
Greater than forty (40) years of experience in the demolition and disposal of residential/commercial structures.	10 Points

2. **Capacity – Part 1:** Does the firm demonstrate through their RFP packet that the firm has the capacity and experience to complete the projects **within the time frame identified in this Request for Proposal?** (If they do not have the required equipment, are they subcontracting with a company/individual that has the required qualifications?) (10 points)

Contractor does not demonstrate experience/ability to complete abatement, demolition and disposal within the time frame identified in this Request for Proposal.	0 Points
Contractor demonstrates some experience and availability to complete abatement, demolition and disposal within the time frame identified in this Request for Proposal.	5 Points
Contractor can easily complete abatement, demolition and disposal within the time frame identified in this Request for Proposal.	10 Points

- ☐ Does the firm have **adequate staffing** to complete the project **within the time frame identified in this Request for Proposal?** (If not, are they subcontracting with a company/individual that has the required qualifications?) An answer of "No" to this question will result in zero (0) points above or a determination that the bid is "non-responsive" depending upon the discrepancy.
- ☐ Does the firm have **adequate equipment** to complete project **within the time frame identified in this Request for Proposal?** (If not, are they subcontracting with a company/individual that has the required qualifications?) An answer of "No" to this question will result in zero (0) points above or a determination that the bid is "non-responsive" depending upon the discrepancy.

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- ☐ Does the firm have **adequate licensing** to complete project? *(If not, are they subcontracting with a company/individual that has the required qualifications?) An answer of "No" to this question will result in a determination that the bid is "non-responsive." See THRESHOLD REQUIREMENTS.*

References:

Contractor does not provide references for similar scopes and references do not respond/cannot be reached. Significant concerns raised by references may be basis for rejecting bid.	0 Points for this section
<ul style="list-style-type: none"> References confirm projects completed on time (2 points) OR References confirm projects not completed within deadlines (-2 points) References confirm projects completed within budget (2 points) OR References confirm projects not completed within budget (-2 points) References confirm contractor was responsive to additional requests from contracting agent (2 points) OR References confirm contractor was NOT responsive to additional requests from contracting agent (-2 points) References confirm that quality of work consistently meets specs (2 points) References confirm that quality of work did not meet specs (-2 points) References confirm quality of work consistently surpasses specs and expectations (2 points) 	Up to 10 Points

3. Capacity – Part 2: Up to twenty (20) points may be deducted when evaluating Contractor capacity.

GCLBA staff will consider past experience with Contractor's response to issues and complaints, including the timeframe in which the Contractor responded to identified issues and where Contractor performed substandard work (work performed by Contractor or Contractor's subcontractors that did not meet bid specifications) on any GCLBA projects within the past 1 year from final payment on a contract.

Contractor has no documented outstanding or unresolved issues as outlined below:	Deduct 0 Points
Contractor has outstanding/unresolved issues and/or complaints on any GCLBA projects.	Deduct 5 Points*
Contractor took more than ten business days to respond and/or demonstrated a lack of response to and GCLBA and/or neighbor complaints and/or issues.	Deduct 5 Points*
Contractor performed substandard work (work performed by Contractor or Contractor's subcontractors that did not meet bid specifications) on previous GCLBA projects.	Deduct 10 Points*

*Attach the record of above described instances.

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4. Demonstrated understanding of the scope of work (10 points)

References provide has similar/relevant scope of work	1 Point
RFP submitted included all of the required submittals/documentation & signature	1 Point
Additional State Licenses and/MBWE/or certification included <ul style="list-style-type: none"> - MBWE (2 points) - Asbestos Abatement Licenses (Additional point if not requirement of scope) (1 Point) - HAZWOPER Certification (Additional point if not requirement of scope) (1 Point) - Lead Awareness/Abatement (1 Point) - City of Flint Sidewalk Licensed Contractor (1 Point) - Storm Water Management Certifications (1 Point) - Tire Hauler Registration (Additional point if not requirement of scope) (1 Point) - Other additional license or certification deemed relevant to the bid (1 Point) 	Up to 5 points
Demonstrated understanding and capacity of the scope of work to complete the work identified in the RFP (If NO to any of the items below Contractor will receive zero (0) points) <ul style="list-style-type: none"> - Contractor has the financial capacity and cash flow to complete the scope of work in the timeframe required. - Does the contractor have commitments to other projects that will compete with this project? <ul style="list-style-type: none"> o If they do, do they have the capacity to complete this project in addition to any other commitments? - If the contractor is using a subcontractor, does the subcontractor have the capacity to do the scope of work assigned to them? 	0 or 3 points

THRESHOLD REQUIREMENTS

Does contractor have the minimum required licenses and certifications to complete the project in compliance with necessary rules and regulations?

- Asbestos Abatement License for Company: N/A YES NO
- Asbestos Supervisor Licenses for employees: N/A YES NO
- Michigan Builders License or Maintenance and Alterations license with House Wrecking *
N/A YES NO
- OSHA 40-hour Hazardous Waste Operations Certification (HAZWOPER)
N/A YES NO

If the answer to the above questions is “No” then submission is to be considered NON-RESPONSIVE.

Evaluating Pricing Proposal – Regular Bid Packets

Pricing will be evaluated and scored as follows:

The maximum points allowable (50) will be divided by the number of eligible responding bidders. The lowest responsive bidder will receive the maximum points (50). The next lowest responsive bidder will receive the maximum points (50) less the quotient of 50 divided by the number of eligible responding bidders. Each eligible bidder will be awarded pricing points based on the points awarded to the bidder with the closest bid price without exceeding the bid in question, less the quotient. For example, if there are four (4) eligible responsive bids, pricing points will be awarded as follows:

Bidder	Bid Price	Bid Ranking	Pricing Score
Bidder A	\$10,000.	3	25
Bidder B	\$9,500.00	1	50
Bidder C	\$12,500.00	4	12.5
Bidder D	\$9,850.00	2	37.5

To achieve the Pricing Score, divide the maximum points possible by the number of eligible bidders: $50/4=12.5$. Then subtract the quotient from the score of the previous bidder subsequently.

- Bidder B, as lowest responsive bid will receive fifty (50) points for pricing.
- Bidder D, as next lowest responsive bid will receive 37.5 points for pricing ($50-12.5= 37.5$)
- Bidder A, as next lowest responsive bid after D, will receive 25 points for pricing ($37.5-12.5=25$)
- Bidder C, as the as next lowest responsive bid after A, will receive 12.5 points for pricing ($25-12.5=12.5$)

A quotient will be rounded to the nearest tenth of a decimal for subtraction purposes. Should two or more eligible bidders have the same pricing, they shall receive the same scoring depending on where they fall in the formula (i.e. should Bidder D and Bidder A in the example above both bid \$9,850.00, they both would have been awarded 37.5 points [$50-12.5=37.5$]. Bidder C would then have received 25 points.)

In the event of a tie in the number of points awarded to a contractor, the contractor that has the lowest price will be awarded the bid.

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Additional Evaluation Criteria and Scoring

Addenda Acknowledgement	Pass/Fail
Bid Form Signed	Pass/Fail
Proposed Schedule Provided	Pass/Fail
Safety Record Provided	Pass/Fail
Debarment Certification	Pass/Fail
Acknowledgement of Iran Sanctions Affidavit	Pass/Fail
MBE/WBE/HBE/Small Business Section	Pass/Fail
Compliance with Federal Requirements including Section 3	Pass/Fail
Related experience of the CONTRACTOR including review of references and safety record.	
Bid Form and Cost Proposal	

- I. Bidder shall be financially solvent and each of its members if a joint venture, its employees, agents or sub-consultants of any tier shall be competent to perform the services required under this Request For Proposal (RFP) document.
1. Evidence of Financial Stability: The bidder shall be financially stable and has the financial wherewithal to carry out the requirements of this solicitation. At the request of the OWNER, bidder shall include two years of Company tax returns and a most recent financial statement provided by their accountant or a letter from their accountant stating evidence of financial stability. This information will assist OWNER in determining the CONTRACTOR's financial condition. OWNER is seeking this information to ensure that the CONTRACTOR has the financial stability and wherewithal to assure good faith performance.
- J. Contractors and workers must possess proper experience, training, and licensing to perform site activities. All subsurface work including excavation, work with subsurface infrastructure, handling of existing soil, sediments or groundwater, removal of storage tanks, or any other site activity with the reasonable potential for exposure must be conducted by currently trained individuals. Minimum qualifications include:
1. Qualified Individual(s) with experience, qualifications, and current asbestos, hazardous waste, and other required certification.
2. Pollution Liability insurance for projects involving the removal and disposal of asbestos, waste or storage tanks.

1.10 INTERPRETATIONS

- A. If Bidder for proposed work is in doubt as to true meaning of any part of Contract Documents, submit written request for interpretation. Bidder submitting request is responsible for its prompt and actual delivery by mail, email or fax. Interpretations will be made electronically and provided to all bidders.
- B. Written inquiries or requests for interpretation can be submitted to:
- AKT Peerless Environmental & Energy Services
214 Janes Avenue, Saginaw, Michigan
Attn: Heath Bobick
Email: BobickH@aktpeerless.com
Phone: 989-754-9896 Ext. 120
Cell: 989-630-7701
Fax: 989-754-3804

Inquiries or requests for interpretation must be received by **3:00 p.m., Friday, August 18, 2017** to allow time for preparation of a response. Responses to inquiries will be provided to all registered bidders via email or fax in the form of an addendum. No response will be provided for inquiries received after the above stated due date and time. All interpretations or supplemental instructions will be in the form of written addenda and will be emailed or faxed to all registered Plan Holders, no later than 24 hours prior to the due date set for opening of bids. Failure to receive such addendum does not relieve bidder from any obligation under his bid as submitted. All addenda are part of the Contract Documents.

1.11 METHOD OF AWARD

- A. The successful bidder(s) shall enter in contract agreement with the OWNER to complete this work. The successful bidder(s) will be chosen based on qualifications, price, and ability to meet the project schedule.
- B. The OWNER intends to award a unit rate contract to the successful bidder(s). The OWNER reserves the right to award separate contracts for items of work based on the bidder's qualifications and pricing. The OWNER reserved the right to not award bid items listed on the Bid Form. The bidder is to include all services, disciplines, management and administration for completion of the project.
- C. If lowest responsive/responsible base bid submitted by a responsible qualified bidder does not exceed amount of funds available to finance the Contract, a Contract may be awarded on the responsive base bid.
- D. If lowest responsive/responsible base bid exceeds the amount of funds available, OWNER may reject all bids.
- E. OWNER, at its sole discretion, may enter into negotiation with any responsible bidder for any reason as determined to be in the OWNER's best interest.

- F. OWNER intends to award the project to the lowest responsive and responsible bidder in compliance with the GCLBA Purchasing Policy.

1.12 EXAMINATION OF SITE

- A. The date and time for examination of the site is indicated in the Invitation to Bid. Additional date and time for interior site examination will be made available upon request.
- B. CONTRACTOR will be held responsible to have compared the premises with the hazardous materials survey, drawings, specifications, or other provided items, and to have satisfied himself as to all conditions affecting the execution of the work.
- C. No allowance or extra compensation concerning any matter or thing about which the Bidder/CONTRACTOR might have become fully informed will be allowed. Additional material quantities will not be compensated without the OWNER'S prior approval. **By submitting the bid, CONTRACTOR acknowledges that estimated quantities are not guaranteed. CONTRACTORS ARE STRONGLY CAUTIONED TO VERIFY MATERIAL QUANTITIES BEFORE SUBMITTING A BID.**

1.13 PRE-BID MEETING

- A. Pre-bid meeting date and time is indicated in the Invitation to Bid.

1.14 BASE BID, ALTERNATES AND UNIT PRICES

- A. General: Bid must include unit prices as requested.
- B. Alternate pricing and value engineering is encouraged. Submit alternate pricing with separate pay item for the requested bid.

1.15 TIME OF THE ESSENCE

- A. OWNER is expected to issue a Notice of Award to CONTRACTOR promptly following bid submission date. CONTRACTORS will be authorized to proceed with work at the discretion of the OWNER.
 - 1. **Substantial completion** of the authorized work for Environmental Abatement, Demolition, Backfill, and Grading will be expected within **40 days** of the notice to proceed.
 - 2. **Final completion** of the authorized work for Final Grading and Seeding will be expected within **50 days** of the Notice to Proceed.
 - 3. As liquidated damages for delay, CONTRACTOR shall pay OWNER \$1,000.00 for each day that expires after the time specified until the Work is substantially complete.

END OF SECTION 00200

SECTION 00210 - OWNER REQUIREMENTS

PART 1- GENERAL

1.1 DESCRIPTION

- A. The following special provisions are requirements for contracts issued by OWNER. These requirements shall supersede requirements listed elsewhere in this specification. The CONTRACTOR shall familiarize himself with all the requirements set forth by the special provisions and submit all required documentation and forms with the bid.
- B. Special provisions are included as follows:
1. Before submitting a proposal, each Bidder shall personally inspect the site of the proposed work to arrive at a clear understanding of the conditions under which the work is to be performed.
 2. Submit one (1) paper original, one (1) paper copy, and (1) electronic PDF of this proposal in a sealed envelope bearing the title listed on the title sheet of the bidding documents in the lower left corner, addresses and delivered to the office of the:

Genesee County Land Bank Authority
Attention: Ms. Faith Finholm
Grants Manager
452 South Saginaw Street, 2nd Floor
Flint, Michigan 48502
Ph: 810-257-3088
 3. Proposals or addenda pertaining thereto received after the announced time and date of submittal, whether by mail or otherwise, will be rejected. It is the sole responsibility of the bidder to ensure their proposals are time stamped by the OWNER personnel before the Bid Submission closing date and time. Proposals will be opened and will be taken under advisement. The OWNER will select the successful Bidder, and may request additional information from any bidder at any time during the procurement process.
 4. Nothing herein is intended to exclude any responsible firm or in any way restrain or restrict competition. On the contrary, all responsible firms are encouraged to submit Proposals.
 5. Authority to Bind Firm in Contract: Bidders shall provide full firm name and address. Failure to manually sign proposal will disqualify it. Firm name and authorized signature shall appear in the space provide on enclosed Bidding Documents.
 6. Minority Bidders: The OWNER encourages all businesses, including minority and women-owned businesses to respond to all Requests for Proposals (RFP).
 - a. In accordance with Federal regulations the OWNER is seeking to encourage participation by respondents who are Minority/Women/Handicap Business

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Enterprise (MBE/WBE/HBE) firms. As practical and available, outreach to MBE/WBE/HBE firms are being conducted by the OWNER for this RFP.

- b. At the time of award of the EPA Grant funds (FY 2017) the following “fair share” objectives were negotiated between the EPA and the State:

Combined Rate MBE: 10% WBE: 7.5%

- c. It is a requirement that Prime CONTRACTORS include the above “fair share” objectives in their bid documents for subcontracts.
- d. All bidders and their subcontracts must identify their status as shown on the Bid Form. All Prime and Subcontractors are responsible to report to ENGINEER/OWNER their status and the procurement of supplies from any MBE/WBE/HBE firms.
- e. Selected Contractor will be required to complete Federal MBE/WBE reporting paperwork.

7. Information Regarding Violations and Enforcements: Please indicate if your firm has been cited, fined, received a notice of violation, and/or been named in an enforcement action within the last five (5) years by any Federal, State, or Local regulatory agency. If so, please provide the following information: Date of Citation, Identity of Agency issuing Citation, Description of Violation, and Final Rulings of Agency.
8. Nondiscrimination Clause: The Bidder who is selected as the CONTRACTOR, as required by law, and/or the Equal Opportunity Employment and Non-Discrimination Policy of Genesee County, shall not discriminate against an employee or applicant for employment with respect to hire, tenure, terms, conditions or privilege of employment, or a matter directly or indirectly related to employment because of race, color, religion, sex, sexual orientation, gender identity, national origin, disability, height, weight, marital status, age or political affiliation (except where age, sex or lack of disability constitutes a bona fide occupational qualification).

The vendor shall adhere to all applicable Federal, State and local laws, ordinances, rules and regulations prohibiting discrimination, including, but not limited to, the following:

- The Elliott-Larsen Civil Rights Act, 1976 PA 453, as amended.
- The Persons with Disabilities Civil Rights Act, 1976 PA 220, as amended.
- Section 504 of the Federal Rehabilitation Act of 1973, P.L. 93-112, 87 Stat. 394, as amended, and regulations promulgated there under.
- The Americans with Disabilities Act of 1990, P.L. 101-336, 104 Stat 328 (42 USCA §12101 et seq) as amended, and regulations promulgated there under.

Breach of this Section, shall be regarded as a material breach of the agreement.

9. Indemnification and Hold Harmless: The Bidder who is selected as the CONTRACTOR shall, at its own expense, protect, defend, indemnify, save and hold harmless the Genesee County Land Bank Authority, Genesee County, ENGINEER (AKT Peerless), and its elected and appointed officers, employees, servants and agents from all claims, damages lawsuits, costs and expenses including, but not limited to, all costs from administrative proceedings, court costs and attorney fees that the Genesee County Land Bank Authority, Genesee County, ENGINEER, and its elected and appointed officers, employees, servants and agents may incur as a result of the acts, omissions or negligence of the CONTRACTOR or its employees, servants, agents or Subcontractors that may arise out of the agreement.

The CONTRACTOR's indemnification responsibility under this section includes the sum of damages, costs and expenses that are in excess of the sum of damages, costs and expenses, which are paid out on behalf of or reimbursed to the OWNER, Genesee County, or ENGINEER its officers, employees, servants and agents by the insurance coverage obtained and/or maintained by the CONTRACTOR.

10. Insurance: The CONTRACTOR shall purchase and maintain insurance not less than the limits set forth below. All coverage shall be within insurance companies licensed and admitted to do business in the State of Michigan.

The CONTRACTOR shall obtain, at its sole cost and expense, and shall require Subcontractor of any tier, to obtain at their sole cost and expense, and keep in force in accordance with the terms of this agreement, insurance for protection from claims under workers' compensation acts; claims for damages because of bodily injury, including personal injury, sickness disease or death of any of the CONTRACTORS employees or any other person; claims for damages because of injury to or destruction of property including loss of use resulting therefrom; claims for damages because of bodily injury or death of any persons or property damage arising out of ownership, maintenance or use of any motor vehicle; and claims arising out of the performance of the contract and caused by the CONTRACTOR or subcontractor's negligence. Compliance by the CONTRACTOR with the insurance requirements set forth herein shall not relieve the CONTRACTOR from liability for amounts not covered by insurance. The CONTRACTOR agrees that the insurance requirements specified in the contract do not reduce the liability CONTRACTOR has assumed in the indemnification/hold harmless section of the contract.

Prior to commencement of the work, the CONTRACTOR shall deliver to the Genesee County Land Bank Authority, insurance certificates evidencing that the required insurance is in force with insurance companies located in Michigan with a Best rating of a least an A- VII or otherwise satisfactory to the Genesee County Land Bank Authority.

The CONTRACTOR shall deliver upon request, copies of the actual insurance policies. All insurance coverage required hereunder shall provide that there shall be endorsed to provide notice of material change in, or cancellation of, the policy or policies evidenced

except upon 30 day prior written notice to OWNER and no later than 30 days prior to the renewal date. The CONTRACTOR shall furnish the OWNER with updated or replacement certificates of insurance that clearly evidence continuation of all coverage in the same manner, limits and protection, as required by this agreement.

The Genesee County Land Bank Authority, Genesee County, and AKT Peerless Environmental & Energy Services shall be included as an additional insured's under all coverage's (except Statutory Workers Compensation) as require by the agreement and such additional insured shall include coverage for completed operations and shall be specifically identified on the certificates of insurance.

Workers' Compensation Insurance Coverage

CONTRACTOR and any subcontractors must maintain workers' compensation insurance with statutory requirements in the State of Michigan. Employers' liability is also required with minimum limits of \$500,000 for any one person. Waiver of subrogation is to be included.

Commercial General Liability Insurance (written on an occurrence form)

Minimum limits = \$5,000,000 (may evidence via Umbrella policy)

Coverage is to include: Premises and Operations, Personal Injury/Advertising Liability, Products/Completed Operations, and Liability assumed under an Insured Contract, Independent CONTRACTORS. Primary and non-contributory status including a waiver of subrogation is required.

Commercial Automobile Liability Insurance

Coverage is to include all owned, non-owned and hired automobiles used in connection with the work, with combined single limit coverage for Bodily Injury and Property Damage of not less than \$1,000,000 per accident. Primary and non-contributory status including a waiver of subrogation is required.

CONTRACTOR's Pollution Liability

CONTRACTOR shall maintain limits no less than \$2,000,000 per loss/\$2,000,000 aggregate.

Coverage is for losses caused by pollution conditions that arise from the operations of the CONTRACTOR described under the scope of services of this contract:

- a) Bodily injury, sickness, disease, mental anguish or shock sustained by any person, including death.
- b) Property damage including physical injury to or destruction of tangible property including the resulting loss of use thereof, cleanup costs, and the loss of use of tangible property that has not been physically injured or destroyed.
- c) Defense including costs, charges and expenses incurred in the investigation, adjustment or defense of claims for such compensatory damages.
- d) Non-owned Disposal Site coverage for specified sites if CONTRACTOR is disposing of waste.

- e) Coverage shall not include exclusion from asbestos, mold or microbial matter. The definition of pollution conditions will include asbestos, mold or microbial matter.
- f) Coverage shall include transportation of waste and materials.
- g) Coverage shall include non-owned disposal sites.
- h) Coverage shall include a provision for additional insured status with primary and non-contributory status and waiver of subrogation in favor of County.

Coverage shall apply to sudden and non-sudden pollution conditions including the discharge, dispersal, release or escape of smoke, vapors, soot, fumes, acids, alkalis, toxic chemicals, liquids' or gases, waste materials or other irritants, contaminants or pollutants into or upon land, the atmosphere or any watercourse or body of water, provided such conditions are not naturally present in the environment in the concentration or amounts discovered, unless such natural condition(s) are released or dispersed as a result of the performance of Covered Operations.

General Conditions Insurance

For all insurance required by this agreement, the CONTRACTOR and Subcontractors may provide the liability limit specified by means of a combination of Primary and Umbrella Liability insurance. The Umbrella Liability coverage must be as broad as or broader than the primary insurance policies.

Right of Rejection:

OWNER reserves the right to reject any or all proposals, to waive any informalities or irregularities in proposals, and/or to negotiate separately the terms and conditions of all or any part of the proposals as determined to be in the OWNER's best interests and at its sole discretion.

The Genesee County Land Bank Authority reserves the right: (a) to waive minor technical deficiencies and irregularities, or both in the requests for proposals, the process of requesting or receiving the proposals, or the proposals received from submitters, (b) to request clarification of all or any portion of a proposal from any or all of the submittals received in response to a request for qualification or proposal, or both, from any or all of the submitters, (c) to accept or reject any or all proposals as determined by the OWNER, in its sole discretion, for any reason including, but not limited to the rejection and disqualification from consideration any or all submissions that the OWNER may, in its sole discretion, deem inaccurate, misleading, exaggerated or unresponsive to the information requested, and (d) to accept the firms that, in its sole judgment, meet the needs of the OWNER, and best serve its overall interests.

11. Standard Forms:

Preprinted contract forms the vendor proposes to include as part of the contract resulting from this RFP must be submitted as part of the proposal. Any standard contract provision not submitted as part of the proposal and subsequently presented for inclusion may be rejected. OWNER reserves the right to accept or reject in whole or in part any contract form submitted by a vendor and/or to require that amendments be made thereto, or that an agreement drafted by OWNER be utilized.

12. Advise of Omission or Misstatement:

In the event it is evident to a vendor responding to this RFP that the OWNER has omitted or misstated a material requirement to the RFP and/or the services required by this RFP, the responding vendor shall advise ENGINEER and OWNER of such omission or misstatement.

13. Cost of Preparation:

OWNER will not pay any costs incurred in the proposal preparation, printing or demonstration process. All costs shall be the responsibility of the Bidder.

14. Notification of Withdraw or Proposal:

Proposals may be withdrawn prior to the date and time specified for the proposal submission with a formal written notice by an authorized representative of the vendor. Proposals submitted will become the property of the OWNER after the proposal submission deadline.

15. Rights to Pertinent Materials:

All responses, inquires, and correspondence relating to this RFP and all reports, charts, displays, schedules, exhibits and other documentation produced by the vendors that are submitted as part of the proposal shall become the property of the OWNER after the proposal submission deadline.

16. Taxes:

OWNER does not pay Federal excise and State sales taxes. OWNER tax exemption number is available upon request.

17. Bonding:

A Bid bond is required for this Contract.

18. Firm Pricing for County Acceptance:

Proposal price must be firm for OWNER acceptance for one hundred twenty (120) days from Proposal opening date.

19. References:

All Bidders shall submit at least three (3) references of past projects within the past five (5) years similar in nature both historically and technically to this proposed project. This list shall include company name, person to contact, address and telephone number. Failure to include references may be ample cause for rejection of Proposal as non-responsive.

20. Basis for Award:

Contract award will be made to the lowest responsive and responsible Bidder on a total cost basis. The OWNER reserves the right to negotiate with the lowest responsive and responsible Bidders if all Proposals exceed budget or with any responsible Bidder, for any reason, at its sole discretion.

21. Contract Approval:

Genesee County or other related entities may approve the contract resulting from this solicitation. This process typically takes a minimum of 1-2 weeks from the date the successful CONTRACTOR is identified. The OWNER or ENGINEER will prepare a formal Agreement between OWNER and CONTRACTOR specific to this solicitation for execution by the successful CONTRACTOR.

22. Davis Bacon Wages:

- a. The rate of wages and fringe benefits paid to each class of construction mechanics, by the CONTRACTOR and his subcontractors shall not be less than the "prevailing wage rates" applicable.
- b. The CONTRACTOR and all Subcontractors shall carry out the Work in accordance with the Davis-Bacon Act of 1931 (CERCLA Section 104(g)(1), 40 U.S.C. Sections 276a-5 and 42 U.S.C. Section 3222 as set forth in CERCLA Section 104(g). Compliance with the Davis-Bacon Act requires payment of federal prevailing wage rates for construction, repair or alteration work funded in whole or in part with federal funds and upon request provide evidence of such compliances such as producing "Certified Payroll Report Forms" of any and all CONTRACTORS or Subcontractors."
- c. Recent and applicable wage rates from the U.S. Department of Labor will be agreed upon between CONTRACTOR and ENGINEER prior to the commencement of work. The CONTRACTOR and all Subcontractors shall submit certified payroll forms with all draw requests to the ENGINEER/OWNER. These forms shall be U.S. Department of Labor Wage and Hour form WH-347 or acceptable equivalent.
- d. Every CONTRACTOR and Subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates prescribed in the contract.
- e. Every CONTRACTOR and Subcontractor shall keep an accurate record showing the name and occupation of and the actual wages and benefits paid to each construction mechanic employed by him in connection with said contract. This record shall be available for reasonable inspection by the ENGINEER, his representative, the OWNER, or Federal Representative.
- f. Prevailing Wage Rate Liability
 - (1) Each CONTRACTOR or subcontractor is separately liable for the payment of the prevailing rate to its employees
 - (2) The prime CONTRACTOR is responsible for advising all subcontractors of the requirement to pay the prevailing rate prior to commencement of work.
 - (3) The prime CONTRACTOR is secondarily liable for payment of prevailing rates that are not paid by a subcontractor.

- g. CONTRACTOR Submittals
 - (1) CONTRACTOR and subcontractors shall submit payroll forms on a weekly basis with each pay request application for payment;
 - (2) Certification that all construction mechanics working on the construction project have been paid the prevailing wages.
 - (3) CONTRACTOR shall submit the identity of subcontractors or other individuals or entities to the ENGINEER for resubmittal to the Grantor for review/approval. This submittal shall occur prior to the Effective Date of the Agreement.

23. Termination by ENGINEER / OWNER

- a. The ENGINEER/OWNER, by written notice to the CONTRACTOR and the sureties of the CONTRACTOR known to the ENGINEER/OWNER, may terminate the CONTRACTOR's right to proceed with that part of the contract, for which less than the prevailing rates of wages and fringe benefits have been or will be paid, and may proceed to complete the contract by separate agreement with another CONTRACTOR or otherwise, and the original CONTRACTOR and his sureties shall be liable to the ENGINEER/OWNER for any excess costs occasioned thereby.

24. Compliance With All Laws

- a. CONTRACTOR shall carry out the Work in accordance with all applicable state, local and federal laws, regulations, orders, writs, judgments, injunctions, decrees or awards, including but not limited to the following, the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended (42 U.S.C. 9601, et seq.) ("CERCLA"); Uniform Administrative Requirements for Grants and Cooperative Agreements to States and Local Governments, 40 C.F.R. Part 31; the National Oil and Hazardous Substances Contingency Plan ("NCP"), 40 C.F.R. Part 300; all applicable "cross-cutting requirements," including those federal requirements agreed between the USEPA and Genesee County defined by their Cooperative Agreement No. BF-96565501; OSHA Worker Health & Safety Standard 29 C.F.R. 1910.120; the Uniform Relocation Act; Historic Preservation Act; Endangered Species Act; and Permits required by Section 404 of the Clean Water Act; all applicable standards, orders, or requirements issued under section 306 of the Clean Air Act (42 U.S.C. 1857(h)), section 508 of the Clean Water Act (33 U.S.C. 1368), Executive Order 11738, and Environmental Protection Agency regulations (40 CFR part 15), Contract Work Hours and Safety Standards Act, as amended (40 U.S.C. 327-333), the Anti Kickback Act (40 U.S.C. 276c) and Section 504 of the Rehabilitation Act of 1973 as implemented by Executive Orders 11914 and 11250.

25. Agency Review

- a. The proposed scope of work and Agreement is subject to review, modification, suspension of work, and cancelation by the EPA or their representative.
- b. Access must be granted to OWNER (grantee), Grantor Agency, or any of their duly authorized representatives to any books, documents, papers, and records of the CONTRACTOR which are directly pertinent to this specific contract for the purpose of making audit, examination, excerpts, and transcriptions.

26. Retention of Records

- a. The CONTRACTOR shall maintain for a period of five years all supporting documents, financial records, statistical records and all other records pertinent to this contract.
- b. GCLBA, the State of Michigan, U.S. Department of Treasury, the USEPA, the Comptroller General of the United States, or any of their duly authorized representatives as well as any and all relevant governmental agencies shall

have access to any books, documents, papers and records of the CONTRACTOR which are pertinent to a specific program for the purpose of making audits, examinations, excerpts, and transcriptions

27. Patent Rights

- a. In accordance with applicable regulation, the Grantor and the OWNER reserve the right to any inventions resulting during the performance of any experimental, developmental, or research work using these funds.

28. Management of Waste Material

- a. All soils, media, and/or debris located on the Property in accordance with the applicable requirements Section 20120c of the NREPA; Part 111, Hazardous Waste Management, of the NREPA; Subtitle C of the Resource Conservation and Recovery Act, 42 U.S.C. Section 6901, et seq.; the Administrative Rules promulgated thereunder; and all other relevant state and federal laws.

29. Byrd Anti-Lobbying Amendment

- a. (31 U.S.C. 1352) CONTRACTORS who apply or bid for an award of \$100,000 or more shall file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the recipient.

30. Fair Housing

- a. Contractors must comply with the Fair Housing Act Title VIII of the Civil Rights Act of 1968 as amended and the Genesee County Land Bank Authority Fair Housing Policy as stated: "Equal housing opportunity for all persons, regardless of race, color, national origin, religion, age, sex, familial status, marital status, sexual orientation or disability, is a fundamental policy of the Genesee County Land Bank Authority (GCLBA). GCLBA is committed to diligence in assuring equal housing opportunity and non-discrimination to all aspects of its housing activities. As a county governmental authority undertaking housing activities, GCLBA has an ethical as well as legal imperative to work aggressively to ensure that GCLBA housing programs comply fully with all local, state and federal fair housing laws."

31. Interest of the GCLBA and Local Public Officials

- a. By submitting a proposal Bidder certifies, to the best of his or her knowledge and belief that: no member of the governing body of the GCLBA who exercises any functions or responsibilities in connection with the administration of the Federal Grant Programs, no other officer or employee or public official of the GCLBA, who exercises such functions or responsibilities, and no member of the City

Government of Flint , shall have any interest, direct or indirect, in this Contract. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of the GCLBA, City of Flint, or other local official.

32. Debarment and Suspension

- A. The CONTRACTOR must certify to the best of its knowledge and belief that it, its agents, and its subcontractors:

Are not presently debarred, suspended, proposed for debarment, and declared ineligible or voluntarily excluded from covered transactions by any federal department or the State.

Have not within a three-year period preceding this Agreement been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (federal, state, or local) transaction or contract under a public transaction, as defined in 45CFR1185; violation of federal or state antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property.

Are not presently indicted or otherwise criminally or civilly charged by a government entity (federal, state, or local) with commission of any of the offenses enumerated in subsection (c).

Have not within a three-year period preceding this Agreement had one or more public transactions (federal, state, or local) terminated for cause of default.

Will comply with all applicable requirements of all state or federal laws, executive orders, regulations, and policies governing this work, which is funded by a Federal EPA Cleanup program.

- B. CONTRACTOR shall provide certification the above on the 'Certification Regarding Debarment, Suspension, and Other Responsible Matters' (see attached Bid Form). The attached certification shall be signed and submitted by the CONTRACTOR with the proposal. Each Subcontractor shall also submit certification to the ENGINEER/OWNER prior to starting work.

33. Section 3 Clause

- a. The work to be performed under this contract is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701u (section 3). The purpose of section 3 is to ensure that employment and other economic opportunities generated by HUD assistance or HUD-

assisted projects covered by section 3, shall, to the greatest extent feasible, be directed to low- and very low-income persons, particularly persons who are recipients of HUD assistance for housing.

- b. The parties to this contract agree to comply with HUD's regulations in 24 CFR part 135, which implement section 3. As evidenced by their execution of this contract, the parties to this contract certify that they are under no contractual or other impediment that would prevent them from complying with the part 135 regulations.
- c. The contractor agrees to send to each labor organization or representative of workers with which the contractor has a collective bargaining agreement or other understanding, if any, a notice advising the labor organization or workers' representative of the contractor's commitments under this Section 3 clause, and will post copies of the notice in conspicuous places at the work site where both employees and applicants for training and employment positions can see the notice. The notice shall describe the Section 3 preference, shall set forth minimum number and job titles subject to hire, availability of apprenticeship and training positions, the qualifications for each; and the name and location of the person(s) taking applications for each of the positions; and the anticipated date the work shall begin.
- d. The contractor agrees to include this Section 3 clause in every subcontract subject to compliance with regulations in 24 CFR part 135, and agrees to take appropriate action, as provided in an applicable provision of the subcontract or in this Section 3 clause, upon a finding that the subcontractor is in violation of the regulations in 24 CFR part 135. The contractor will not subcontract with any subcontractor where the contractor has notice or knowledge that the subcontractor has been found in violation of the regulations in 24 CFR part 135.
- e. The contractor will certify that any vacant employment positions, including training positions, that are filled: (1) after the contractor is selected but before the contract is executed, and (2) with persons other than those to whom the regulations of 24 CFR part 135 require employment opportunities to be directed, were not filled to circumvent the contractor's obligations under 24 CFR part 135.
- f. Noncompliance with HUD's regulations in 24 CFR part 135 may result in sanctions, termination of this contract for default, and debarment or suspension from future HUD assisted contracts.
- g. With respect to work performed in connection with Section 3 covered Indian housing assistance, section 7(b) of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450e) also applies to the work to be performed under this contract. Section 7(b) requires that to the greatest extent feasible (i) preference and opportunities for training and employment shall be given to Indians, and (ii) preference in the award of contracts and subcontracts shall be

given to Indian organizations and Indian-owned Economic Enterprises. Parties to this contract that are subject to the provisions of Section 3 and section 7(b) agree to comply with Section 3 to the maximum extent feasible, but not in derogation of compliance with section 7(b).

Refer to **Appendix H** for additional Section 3 Requirements and Forms.

34. Observation of On-Site Work

All on-site work including abatement and demolition shall be observed by the OWNER or the duly appointed representative of OWNER. Work performed by CONTRACTOR without ENGINEER, OWNER, or the duly appointed representative of OWNER approval may not be paid.

35. Construction Administration

- A. The OWNER and/or duly appointed OWNER representative will provide Construction Administration on behalf of the OWNER. Construction Administration may include, but is not limited to:

Pre-Bid Meeting Coordination

Coordination of routine and non-routine on-site meetings with CONTRACTOR, daily, weekly, etc.

The OWNER and/or duly appointed OWNER representative shall assist CONTRACTOR with site access, communication, review and approval of documents, profiles, manifests, submittal of waste characterization samples for laboratory analysis.

Project Observation, Field Inspection, Field Measurements

Davis Bacon Interviews

Collection of Certified Payrolls from CONTRACTOR

Pay Request Verification and Payment Recommendation

Completion Certification

Coordination of Final Deliverables from CONTRACTOR – Reports, Certification, Project Documentation, Release of Liens, Warranty Terms, etc.

Coordinate warranty inspections with CONTRACTOR

- B. CONTRACTOR shall accommodate completion of the above activities, all reasonable requests, and instruction by OWNER and/or the duly appointed representative.
- C. Work or delays necessary for CONTRACTOR compliance with the above or other Construction Administration activity is considered incidental to the contract.

36. Permits, Licenses, and Certificates

It is the responsibility of the CONTRACTOR to identify and secure all permits, licenses and certificates for this project. For the project records, submit to the OWNER and/or duly appointed OWNER representative copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations related to this project.

37. Evidence of Financial Stability

The bidder shall be financially stable and has the financial wherewithal to carry out the requirements of this solicitation. Prior to award CONTRACTOR shall provide two years of Company tax returns and a most recent financial statement provided by their accountant or a letter from their accountant stating evidence of financial stability. This information will assist GCLBA in determining the Respondent's financial condition. GCLBA is seeking this information to ensure that the proposer's have the financial stability and wherewithal to assure good faith performance.

38. Michigan Builders or M&A –Wrecking License

The bidder must be licensed by the State of Michigan, as a Licensed Builders and/or Maintenance & Alterations Contractors with a Wrecking trade designation.

39. Current Certificate of Good Standing (Corporation) or Certificate of Existence:

Prior to Award CONTRACTOR shall provide a Certificate of Good Standing (Corporation) or Certificate of Existence (Limited Liability Company) issued by the Michigan Department of Licensing and Regulatory Affairs Corporations, Securities & Commercial Licensing Bureau. (If Respondent is a joint venture, a Certificate of Good Standing or Certificate of Existence, as applicable, must be submitted for each entity comprising the joint venture.)

40. Conflict of Interest Statement & Supporting Documentation:

The CONTRACTOR shall disclose any professional or personal financial interests that may be a conflict of interest in representing the GCLBA. In addition, all Respondents shall further disclose arrangement to derive additional compensation from various investment and reinvestment products, including financial contracts.

41. Change Orders:

CONTRACTOR should note that change orders will not be approved for this project. When submitting pricing proposals CONTRACTOR must ensure prices quoted allow for the complete environmental abatement and building demolition. No change orders will be accepting barring a significant material change requiring substantial unforeseen work.

Additional Genesee County Land Bank Contract Requirements

EQUAL EMPLOYMENT OPPORTUNITY. During the performance of this contract, the contractor (Contractor) agrees as follows:

During the performance of this contract, the contractor agrees as follows:

- 1) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of this nondiscrimination clause.
- 2) The contractor will, in all solicitations or advancements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.
- 3) The contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information.
- 4) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency contracting officer, advising the labor union or workers' representative of the contractor's commitments under Section 202 of Executive Order No. 11246 of September 24, 1965, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- 5) The contractor will comply with all provisions of Executive Order No. 11246 of Sept. 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
- 6) The contractor will furnish all information and reports required by Executive Order No. 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the contracting agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

- 7) In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of such rules, regulations, or orders, this contract may be cancelled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order No. 11246 of Sept. 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order No. 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
- 8) The contractor will include the provisions of paragraphs (1) through (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order No. 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as may be directed by the Secretary of Labor as a means of enforcing such provisions including sanctions for noncompliance: Provided, however, that in the event the contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

NONDISCRIMINATION. The Contractor agrees that it will comply with the Elliot Larsen Civil Rights Act, 1976 PA 453, as amended, MCL 37.2101 *et seq.*, the Persons with Disabilities Civil Rights Act, 1976 PA 220, as amended, MCL 37.1101 *et seq.*, and all other federal, State and local fair employment practices and equal opportunity laws. The Contractor agrees that it shall not discriminate against an employee or applicant of employment with respect to hire, tenure, terms, conditions, or privileges of employment, or a matter directly or indirectly related to employment, because of race, color, religion, national origin, age, sex, height, weight, marital status or a disability that is unrelated to the individual's ability to perform the duties of a particular job or position, and that it will require the same non-discrimination assurances from any subcontractor who may be used to carry out duties described in this contract. Contractor covenants that it will not discriminate against businesses that are owned by women, minorities or persons with disabilities in providing Work covered by this Contract, and that it shall require the same assurances from subcontractors. Breach of this agreement shall be regarded as a material breach of this contract.

UNFAIR LABOR PRACTICES. The Contractor shall comply with the Employers Engaging in Unfair Labor Practices Act, 1980 PA 278, as amended, MCL 423.321 *et seq.*

FREEDOM OF INFORMATION ACT. This Agreement and all attachments, as well as all other information submitted by the Contractor to the County, are subject to disclosure under the provisions of MCL 15.231, *et seq.*, known as the "Freedom of Information Act".

RIGHTS TO INVENTIONS Made Under a Contract or Contract. Contracts or subcontracts for the performance of experimental, developmental, or research work shall provide for the rights of the Federal Government and the recipient in any resulting invention in accordance with 37 CFR part 401, "Rights to Invention Made by Nonprofit Organizations and Small Business Firms. Under Government Grants, Contracts and Cooperative Contracts," and any implementing regulations issued by the awarding agency.

CLEAN AIR ACT (42 U. S.C. 7401 *et seq.*) and the **FEDERAL WATER POLLUTION CONTROL ACT** (33 U.S.C. 1251 *et seq.*), as amended. For contracts and subcontracts of amounts in excess of \$100,000 the Contractor or subcontractor shall comply with all applicable standards, orders, or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401 *et seq.*). Violations are reported to the Federal awarding agency and the Regional Agency (EPA).

BYRD ANTI-LOBBYING AMENDMENT (31 U.S.C. 1352). Contractors who apply or bid for an award of \$100,000 or more shall file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the recipient.

DEBARMENT AND SUSPENSION (Executive Orders 12549 and 12689). No contract shall be made to parties listed on the General Services Administration's List of Parties Excluded from Federal Procurement or Non-procurement Programs in accordance with E.O.s 12549 and 12689, "Debarment and Suspension," as set forth at 24 CFR part 24. This list contains the names of parties debarred, suspended, or otherwise excluded by agencies, and contractors declared ineligible under statutory or regulatory authority other than E.O. 12549. Contractors with awards that exceed the small purchase threshold shall provide the required certification regarding its exclusion status and that of its principal employees.

FAIR HOUSING. Contractors must comply with the **Fair Housing** Act Title VIII of the Civil Rights Act of 1968 as amended and the Genesee County Land Bank Authority Fair Housing Policy as stated: "Equal housing opportunity for all persons, regardless of race, color, national origin, religion, age, sex, familial status, marital status, sexual orientation or disability, is a fundamental policy of the Genesee County Land Bank Authority (GCLBA). GCLBA is committed to diligence in assuring equal housing opportunity and non-discrimination to all aspects of its housing activities. As a county governmental authority undertaking housing activities, GCLBA has an ethical as well as legal imperative to work aggressively to ensure that GCLBA housing programs comply fully with all local, state and federal fair housing laws."

INTEREST OF THE GCLBA AND LOCAL PUBLIC OFFICIALS. The undersigned certifies, to the best of his or her knowledge and belief that: no member of the governing body of the GCLBA who exercises any functions or responsibilities in connection with the administration of the Hardest Hit Fund (HHF) or Genesee County Treasurer Funding, no other officer or employee or public official of the GCLBA, who exercises such functions or responsibilities, and no member of the City Government of the City of Flint, shall have any interest, direct or indirect, in this Contract. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of the GCLBA.

RETENTION AND ACCESS TO RECORDS. The Contractor shall maintain for a period of five (5) years all supporting documents, financial records, statistical records and all other records pertinent to this contract. GCLBA, the State of Michigan, U.S. Department of Treasury, the Comptroller General of the United States, or any of their duly authorized representatives as well as any and all relevant governmental agencies shall have access to any books, documents, papers and records of the Contractor which are pertinent to a specific program for the purpose of making audits, examinations, excerpts, and transcriptions.

ARBITRATION CLAUSE. Any dispute arising out of or relating to this agreement that has not been resolved by good-faith negotiations will be finally settled by arbitration in accordance with Michigan statute 2012 PA 371, MCL 691.1681 et. seq. by a sole arbitrator. The place of arbitration will be Flint, Michigan. The arbitrator is not empowered to award damages in excess of any lawful limitations on damages provided in this agreement.

The statute of limitations of State of Michigan applicable to the commencement of the lawsuit will apply to the commencement of an arbitration under this section.

LIQUIDATED DAMAGES. Contractor and the GCLBA recognize that time is of the essence for this Contract and that GCLBA will suffer financial loss if the Work is not completed within the times specified in the Term of Contract, plus any extensions thereof allowed in accordance of the Contract. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by GCLBA if the Work is not completed on time. Accordingly, instead of requiring any such proof, GCLBA and Contractor agree that as liquidated damages for delay (but not as a penalty), Contractor shall pay GCLBA \$250.00 for each day that expires after the time specified in Notices to Proceed, as well as, Term of Contract for Substantial Completion until the Work is substantially complete. After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Time or any proper extension thereof granted by GCLBA, Contractor shall pay GCLBA \$250.00 for each day that expires after the time specified in the Term of Contract for completion and readiness for final payment until the Work is completed and ready for final payment.

INDEMNIFICATION AND INSURANCE. During the term of the contract the Contractor must carry and maintain current insurance coverage of the types and amounts required as set forth in the Insurance Checklist as defined in Attachment A of the Request for Proposals documents. The GCLBA must be named as additional insured on all certificates of insurance. If insurance information changes the Contractor must notify the GCLBA immediately of the change.

Contractor shall defend, indemnify and hold harmless GCLBA, and their respective directors, officers, employees, agents, sureties and servants, from and against all damages, liabilities, claims, suits demands, judgments and awards (including attorney's fees and other expenses) on account of any damage to property or injury (including death) to persons (including any damage or injury to the property or person of any employee of contractor, other subcontractor, or which may occur or be alleged to have occurred in connection with the performance of the Work, whether or not GCLBA is alleged to be concurrently negligent; provided, however, Contractor does not assume responsibility for liability to the proportional extent it arises from the active negligence of GCLBA.

TERMINATION. Either party may terminate this contract at its convenience at any time by giving written notice at least 30 days before the effective date of such termination to the other party of such termination and specifying the effective date. Partial terminations of the Work may only be undertaken with the prior approval of the GCLBA. In the event of any termination for convenience, all finished or unfinished documents, data, studies, surveys, maps, models, photographs, reports or other materials prepared by Contractor under this agreement shall, at the option of the GCLBA, become the property of the GCLBA, and Contractor shall be entitled to receive just and equitable compensation for any satisfactory work completed on such documents or materials prior to the termination. The Contractor agrees to adhere to all requirements as outlined in 2 CFR 200 Subpart D, §200.339 - §200.342. These requirements include all contracts in excess of \$10,000 must address termination for cause and for convenience by the non-federal entity including the manner by which it will be effected and the basis for settlement.

The GCLBA may also immediately suspend or terminate this Contract for cause if Contractor materially fails to comply with any term of this Contract, or with any of the rules, regulations or provisions referred to herein; and the GCLBA may declare the Contractor ineligible for any further participation in GCLBA contracts in accordance with 2 CFR 200.

This contract may also be immediately terminated by the GCLBA for reasons of substandard or non-performance, diminution of funds, or any reasons related to changing objectives of the GCLBA. The GCLBA reserves the right to cancel contracts for non-compliance with the terms of this Contract, reporting requirements as defined in the Work, and any of such rules, regulations, or orders as may be applicable to the Work and the funding source under which the Work is undertaken. Three months of non-compliance may result in automatic termination.

USE OF CITY OF FLINT WATER: Any contractor that is illegally using the City of Flint water/fire hydrants will face consequences including the possibility of debarment by the Genesee County Land Bank.

WARRANTY. In addition to any other warranties set forth elsewhere in this Contract, Contractor warrants that Work performed and materials furnished under this Contract conform to the Contract requirements and as required in the Request For Proposals, and are free of any defect of equipment, material or design furnished, or workmanship performed by Contractor or any of its subcontractors or suppliers of any tier. Such warranty shall continue for a period of one (1) year from the date of final acceptance of the Work by GCLBA. Under this warranty, Contractor shall remedy at its own expense any such failure to conform or any such defect. In addition, Contractor shall remedy at its own expense any damage to real or personal property owned or controlled by Owner/Relevant Parties when that damage is the result of Contractor's failure to conform to Contractor requirements or of any defect in equipment, material, workmanship or design furnished by Contractor. Contractor shall also restore any work damaged in fulfilling the terms of this Article.

RE-INSPECTION FEE. If the Contractor's work fails the GCLBA's inspection, the GCLBA will charge Contractor a \$75 fee per re-inspection.

MODIFICATION OF CONTRACT. No modification of this Contract will be made except by the written addendum, signed by the Contractor and the GCLBA.

Further Information

Questions about the proposal process, specifications or scope of work shall be directed to Mr. Heath Bobick, AKT Peerless at email BobickH@aktpeerless.com, or phone 989-630-7701 Ext. 120.

GENESEE COUNTY LAND BANK AUTHORITY
PROJECT MANUAL AND TECHNICAL SPECIFICATIONS

SECTION 00400 - BID/TENDER FORM

SUBMITTED TO: Ms. Faith Finholm, Grants Manager
452 South Saginaw Street, 2nd Floor
Flint, Michigan 48502
Ph: 810-257-3088 x 539

FOR: **"#LB 17-017, Environmental Abatement, Demolition and Site Restoration – Former Ross Oil, 2360 West Pierson Road, and Former FIA Building, 2320 West Pierson Road, City of Flint, Michigan"**

DATE: _____
NAME OF BIDDER: _____
ADDRESS: _____
TELEPHONE: _____

TO: Genesee County Land Bank Authority (hereinafter called "OWNER")

Gentlemen/Ladies:

The Bidder, in compliance with the invitation for bids for the project **"Environmental Abatement, Demolition and Site Restoration – Former Ross Oil, 2360 West Pierson Road, and Former FIA Building, 2320 West Pierson Road, City of Flint, Michigan,"** having examined the Contract Documents prepared by the OWNER and other related documents and having examined the site of the proposed work, and with all conditions surrounding environmental abatement and disposal of asbestos and hazardous materials, structure deconstruction and demolition, site feature demolition, and site restoration, hereby propose to furnish all labor, materials, tools, equipment, machinery, equipment rental, transportation, superintendence, perform all work, provide all services, and to perform all work in accordance with Contract Documents at price stated below. Prices are to cover all expenses incurred in performing work required under Contract Documents, of which this Bid/Tender is a part.

GENESEE COUNTY LAND BANK AUTHORITY
PROJECT MANUAL AND TECHNICAL SPECIFICATIONS

BID/TENDER FORM (cont.)

Bidder will complete the Work in accordance with the Contract Documents for the following price(s):

<u>Item No.</u>	<u>Description</u>	<u>Units</u>	<u>Estimated Quantity</u>	<u>Unit Price</u>	<u>Proposal Price</u>
1.	Mobilization/Demobilization/Work Plan/Site Service	LS	1	Lump Sum	\$ _____
2.	Hazardous Materials/Waste Disposal/Onsite Soil Contamination	LS	1	Lump Sum	\$ _____
3.	Structure Demolition (Including Building, Foundations, Select Site Features, Concrete, Pads, Posts, Etc.; Cut and Cap Utilities as Necessary) Backfill and Slope to Grade, Site Restoration	LS	1	Lump Sum	\$ _____
Total of Items No. 1, 2, and 3					\$ _____

Alternates

1.	Parking Lot and Associated Alley Way Demolition/Removal (Including asphalt, stone base, curbs, parking lot light poles, concrete, etc.) Select Site Features, Backfill and Slope to Grade, Site Restoration	LS	1	1		\$ _____
2.	Remove/Bulkhead Subject Property Storm Sewer System and Site Restoration	LS	1		\$ _____	\$ _____
3.	Remove 2320 West Pierson Road, Flint, Michigan Marquee Sign and Associated Components, Such as but Not Limited to; footings, electrical lines, etc.	LS	1		\$ _____	\$ _____
4	Remove 2360 West Pierson Road, Flint, Michigan Marquee Sign and Associated Components, Such as but Not Limited to; footings, electrical lines, etc.	LS	1		\$ _____	\$ _____
	Total of Alternates No. 1, 2, 3, and 4					\$ _____
	Total of All Proposal Prices (Including Alternate No. 1 2 3, and 4)					\$ _____

GENESEE COUNTY LAND BANK AUTHORITY
PROJECT MANUAL AND TECHNICAL SPECIFICATIONS

Notes: LS – Lump Sum
TN – Ton

DY – Day

EA – Each Unit Cost

* Air Monitoring to be provided by the CONTRACTOR. Refer to Asbestos Abatement Air Monitoring provided by CONTRACTOR in Section 13281 and 13286.

** Quantity likely to change based on easements and proposed redevelopment plans.

CONTRACTOR is encouraged to submit alternate pricing with bid to provide value engineering services. Attach separately to the bid.

CONTRACTOR should note that all Alternate Lump Sum rates are for bidding purposes only. Final payment will be based on actual quantities completed.

Mobilization/Demobilization cannot exceed 15% of the contract amount.

OWNER may omit any and all work items from the contract. Items may be omitted based on available project funding and at request of future developer.

Total Bid Price **(Not Including Alternates)**:

\$ _____

In Words: _____

Total Bid Price **(Including Alternates)**:

\$ _____

In Words: _____

CONTRACTOR

Name: _____

GENESEE COUNTY LAND BANK AUTHORITY
PROJECT MANUAL AND TECHNICAL SPECIFICATIONS

BID/TENDER FORM (cont.)

Contractor Name: _____

ADDITIONAL INFORMATION (attach additional sheets if necessary)

1. Air Monitoring Oversight Days

All on-site asbestos abatement work including investigation, setup and take down is the responsibility of the CONTRACTOR and must be observed by CONTRACTOR and/or SUBCONTRACTOR duly appointed by the CONTRACTOR, and may be observed by OWNER and/or duly appointed OWNER representative. CONTRACTOR shall provide the estimated number of actual on-site Asbestos Abatement Work days to complete scope of work:

Estimated Number of on-site Asbestos Abatement Days: _____

Estimated Number of Proposed Asbestos Abatement Workers: _____ Number of Shifts: _____

2. Can you meet project schedule as proposed in PS-1 Proposed Schedule?

3. Please provide available start date and estimated schedule for completion or if answered "No" to Question 2, please provide a proposed alternative schedule:

4. Please provide a brief description for your proposed method of asbestos and hazardous material abatements of subject buildings.

5. Please provide a brief description for your proposed method of building demolitions.

6. Please provide a brief description of your proposed method for handling of onsite soil contamination.

GENESEE COUNTY LAND BANK AUTHORITY
PROJECT MANUAL AND TECHNICAL SPECIFICATIONS

7. Please provide any additional information necessary, which may allow the OWNER to perform an accurate review of your bid and methods.

8. Describe the overall nature of the Bidder's business and affiliates, including their qualifications and ability to complete the proposed project. Provide a brief summary of qualifications to perform work. Attached supporting information as appropriate.

9. Specify the number of years the Bidder has experience with similar projects. _____

10. Safety

Please provide a list of Contractor Experience Modification Rate (EMR) and OSHA Recordable Incident Rate (IR) for past three years:

Year	EMR	OSHA IR
2016		
2015		
2014		

Describe any significant safety incident involving your company or primary subcontractors:

11. Fill

Provide the source location and a description for the fill material(s) you propose to install at the property.

12. Bidder Location

As a benefit to the project including lower mobilization costs and local knowledge of the site, municipal contacts, and community, points will be given for Contractors that demonstrate company and/or primary staff is located in State or Genesee County. Provide a brief justification for points that should be awarded based on Bidder located in State and Genesee County.

GENESEE COUNTY LAND BANK AUTHORITY
PROJECT MANUAL AND TECHNICAL SPECIFICATIONS

13. Debarment Certification
Bidder must complete and submit the attached Certification Regarding Debarment, Suspension, and Other Responsibility Matters. Subcontractors shall submit if Bidder is chosen for award.
14. Iran Sanction Affidavit
If awarded, Bidder and their Subcontractors must sign the attached affidavit of compliance-with the Iran Economic Sanctions Act. Please acknowledge that this form will be signed or submit with Bid.
15. Violation Notices
Bidder and their Subcontractors must disclose any violations of law, permit or license, enforcement notices, or escalated enforcement actions involving Contractor or Subcontractor within the past five (5) years. Also, describe any pollution liability claims filed or pending in the last five (5) years.
16. MBE/WBE/HBE
The OWNER is seeking to encourage participation by respondents who are Minority/Women/Handicap Business Enterprise (MBE/WBE/HBE) firms. Respondents should state whether they are an MBE/WBE/HBE business enterprise. If so, please provide a copy of a current certification letter.

All Respondents must identify their status as follows:

- ☐ Disadvantaged Business
- ☐ Small Business
- ☐ Veteran Owned Small Business
- ☐ Disabled Vet. Owned Small Business
- ☐ Minority Business
- ☐ Woman Owned
- ☐ HBCU
- ☐ Alaska Native
- ☐ NONE

16. Federal Requirements
Include an affirmative stated that the Bidder and Subcontractors agree to maintain compliance with federal grant requirements and reporting.

17. Section 3
In space below Contractor shall describe their plan and ability to meet Section 3 Clause.

18. Affirm that CONTRACTOR conducting demolition is a licensed abatement contractor and all on-site workers conducting demolition or within the regulate area will be trained accredited employees. Attached evidence.

GENESEE COUNTY LAND BANK AUTHORITY
PROJECT MANUAL AND TECHNICAL SPECIFICATIONS

BID/TENDER FORM (cont.)

Contractor Name: _____

UNIT PRICE SCHEDULE FOR NON-SCOPE WORK ADD/DEDUCT

Bidders must also provide a unit rate price for:

Asbestos Unit Rate Schedule			
Item No.	Description	Unit	Unit Price
1	Sprayed-on Fireproofing	Square Foot	
2	Hard Wall/Ceiling Plaster (all layers, metal or wood lathe)	Square Foot	
3	Soft/Decorative Plaster (all layers, including substrate if necessary)	Square Foot	
4	Popcorn or Sprayed-on Ceiling or Wall Texture (all layers, including substrate if necessary)	Square Foot	
5	Drywall/Mud Compound	Square Foot	
6	Thermal System Insulation (TSI) Straight Pipe < 6-inch diameter	Linear Foot	
7	TSI Straight Pipe > 6 to 12 inch diameter	Linear Foot	
8	TSI Straight Pipe > 12 inch diameter	Linear Foot	
9	TSI Mud Fitting < 6 inch diameter	Each	
10	TSI Mud Fitting > 6 to 12 inch diameter	Each	
11	TSI Mud Fitting > 12 inch diameter	Each	
12	Duct Insulation (cloth or paper)	Square Foot	
13	Duct Insulation (fiberglass with ACM seam mud)	Square Foot	
14	Undercoated Sink	Each	
15	Fire Door	Each	
16	Floor Tile Only (any size)	Square Foot	
17	Floor Tile and Mastic (any size, any mastic type)	Square Foot	
18	Linoleum/Resilient Sheeting	Square Foot	
19	Linoleum/Resilient Sheeting and Mastic (any type)	Square Foot	

GENESEE COUNTY LAND BANK AUTHORITY
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Asbestos Unit Rate Schedule			
Item No.	Description	Unit	Unit Price
20	Window with associated caulk and/or glazing (any size including frame)	Each	
21	Furnace, boiler, or tank insulation (mud and jacket)	Square Foot	
22	Transite (Panels, Siding or Board)	Square Foot	
23	Glue, behind paneling, drywall, etc, on wood or concrete. Abatement or complete removal with substrate.	Square Foot	
24	Electrical Panel	Each	
25	Glued-on ceiling tiles (any size) and glue pods	Square Foot	
26	Construction Adhesives/other glue pods	Square Foot	
27	Cove Base	Square Foot	
28	Vermiculite Insulation	Cubic Yard	
29	Miscellaneous Asbestos Debris (any type, total quantity)	Cubic Foot	
30	Roofing/Flashing/Tar (any type)	Square Foot	
31	Light Fixture Heat Shields	Each	
32	Foundation, wall, or block caulk	Linear Foot	
33	Foundation Tar, Complete removal and disposal	Square Foot	
34	Transite / asbestos utility piping (any size)	Linear Foot	

Hazardous Material Unit Rate Schedule			
Item No.	Description	Unit	Unit Price
35	PCB or other ballasts	Each	
36	Fluorescent light tubes, > 4feet	Each	
37	Fluorescent light tubes, 4' or less	Each	
38	Mercury thermostats or switches	Each	

GENESEE COUNTY LAND BANK AUTHORITY
PROJECT MANUAL AND TECHNICAL SPECIFICATIONS

Hazardous Material Unit Rate Schedule			
Item No.	Description	Unit	Unit Price
39	Misc household chemical containers	Each	
40	CFC (refrigerator, freezer, any size)	Each	
41	CFC A/C unit (window or whole house)	Each	
42	Oil filled equipment	Each	
43	Gas cylinders (any size and type including, but not limited to: propane, oxygen, acetylene, etc.)	Each	
44	High pressure light fixtures (sodium, mercury vapor, etc.)	Each	
45	Heating oil or other bulk oil	Gallon	
46	Miscellaneous Aerosol Containers	Each	
47	Car/vehicle battery	Each	
48	Bicycle tires	Each	
49	Automobile or truck tires	Each	
50	Television, microwave, computer monitor	Each	
51	Smoke detector	Each	
52	Paint cans (latex, oil, etc. any size)	Each	
53	Gas Cans (10-gallons or less)	Each	
54	Lawn mowers/snow blowers (or other small engine item)	Each	
55	Empty 55-gallon drums	Each	
56	55-gallon drum with non-hazardous liquid	Each	
57	Ethylene glycol (one gallon)	Each	
58	Fire extinguishers	Each	
59	Unknown waste material characterization (TCLP)	Per Waste Stream	
60	Unknown waste disposal	Per drum	

GENESEE COUNTY LAND BANK AUTHORITY
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Mobilization Material Unit Rate Schedule			
Item No.	Description	Unit	Unit Price
61	Mobilization for additional environmental abatement	Per event	
Construction / Restoration Items			
62	Sidewalk Replacement	SF	
63	Curb Replacement / Install	LF	

If Bidder is aware of additional Unit Prices not described above, Bidder may provide a description and pricing of items in following table:

Additional Material Unit Rate Schedule			
Item No.	Description	Unit	Unit Price

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GENERAL

Bidder, if awarded a Contract, hereby agrees to commence work under this contract on or before a date to be specified in written "Notice to Proceed" by OWNER.

The bidder agrees that the OWNER may accept or reject any or all of the bids.

Bidder understands that the OWNER reserves right to accept or reject any or all Bid/Tenders and to waive any informalities or irregularities herein.

Upon notice of acceptance of this Bid/Tender, Bidder will execute Contract Agreement and deliver properly executed insurance certificates to OWNER within three (3) working days.

ADDENDA ACKNOWLEDGEMENT

Bidder acknowledges receipt of following addenda:

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ADDRESS, LEGAL STATUS, AND SIGNATURE OF BIDDER

The undersigned does hereby designate the address, given below, as the legal address to which all notices, directions, or other communications may be served or mailed.

P.O. Box (if
applicable) _____
Street _____
City _____ State _____ Zip Code _____

The undersigned does hereby declare that it has the legal status checked below.

_____ Individual
_____ Co-Partnership
_____ Corporation Incorporated under the laws and State
of _____

The names and address of all people indicated as partners in this Bid Proposal are as follows:

<u>NAME</u>	<u>ADDRESS</u>
_____	_____
_____	_____
_____	_____
_____	_____

This Bid Proposal is submitted in the name of:

(Name of CONTRACTOR)
By _____
Title _____

Signed and sealed _____ Day of _____ 20____
this _____

INSTRUCTIONS: Submit this form as instructed in SECTION 00100 – BID INVITATION and SECTION 00200 – INSTRUCTIONS TO BIDDERS.

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SUBCONTRACTOR LIST

The following list should contain the names, contact information, and items of work assigned to each Subcontractor. Subcontractors are subject to the same requirements as the prime CONTRACTOR, and shall provide documentation and certifications as required in the contract documents. Subcontractor payments will be handled by the CONTRACTOR. Separate agreements will not be made between the subcontractors and OWNER.

SUBCONTRACTOR LIST

Work Item	Subcontractor Contact Information

Note: Additional pages may be attached if necessary.

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REFERENCES

Bidder shall submit at least three (3) references of past projects within the past five (5) years similar in nature both historically and technically to this proposed project. This list shall include company name, person to contact, address and telephone number. Failure to include references may be ample cause for rejection of Proposal as non-responsive. Use space provided below or additional sheets as necessary.

Indicate the length of time you have been in business as a company providing the type of service required for this contract.

_____ years _____ months

Reference No. 1

Name/Organization:
Contact:
Address:
Phone: _____ Fax: _____
Email:
Budget: \$ _____
Type of Project/Short Narrative:

Reference No. 2

Name/Organization:
Contact:
Address:
Phone: _____ Fax: _____
Email:
Budget: \$ _____
Type of Project/Short Narrative:

Reference No. 3

Name/Organization:
Contact:
Address:
Phone: _____ Fax: _____
Email:
Budget: \$ _____
Type of Project/Short Narrative:

**Certification Regarding
Debarment, Suspension, and Other Responsibility Matters**

The prospective participant certifies, to the best of its knowledge and belief, that it and its principals:

- (1) Are not presently or proposed to be debarred or suspended, declared ineligible, or voluntarily excluded from federal, state, or local (hereinafter "public") transactions;
- (2) Have not within a three year period preceding this Agreement been convicted of or had a civil judgment rendered against them for
 - (i) Fraud or commission of a criminal offence in connection with obtaining, attempting to obtain, or performing a public transaction or contract under a public transaction,
 - (ii) Violation of federal or state antitrust laws, or
 - (iii) Embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements or receiving stolen property;
- (3) Have not within the preceding three years had a public transaction terminated for cause or default; and
- (4) Are not presently indicted for or otherwise criminally or civilly charged by a public entity with commission of any of the offenses enumerated under the above.

I understand that a false statement on this certification may be grounds for the rejection of this proposal or the termination of the award.

Name and Title of Authorized Representative

Name of Participant Agency or Firm

Signature of Authorized Representative

Date

☐ I am unable to certify to the above statement. Attached is my explanation.

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AFFIDAVIT OF COMPLIANCE-IRAN ECONOMIC SANCTIONS ACT
MICHIGAN PUBLIC ACT 517 OF 2012

The undersigned, as owner or authorized officer of the below named contractor (CONTRACTOR), pursuant to the compliance certification requirement by the State of Michigan, and as referenced by the Genesee County Land Bank Authority (LAND BANK) in the Request for Proposal (RFP) which you are receiving, hereby certifies, represents and warrants that the CONTRACTOR (including its Officers, Directors and Employees) is not an "Iran linked business" as defined by the Iran Economic Sanctions Act, Michigan Public Act 517 of 2012 (THE ACT). And, that in the event CONTRACTOR is awarded a contract as a result of the aforementioned RFP, the Contractor will not become an "Iran linked business" at any time during the course of performing the work or any services under the contract.

The CONTRACTOR further acknowledges that any person who is found to have submitted a false certification is responsible for a civil penalty of not more than \$250,000.00 or 2 times the amount of the contract or proposed contract for which the false certification was made, whichever is greater. The cost of the LAND BANK'S investigation and reasonable attorney fees may also be added in addition to the fine. Moreover, any person who submitted a false certification shall be ineligible to bid on a request for proposal for three (3) years from the date that it is determined that the person has submitted the false certification.

CONTRACTOR:

Name of Contractor

By: _____

Its: _____

Date: _____

END OF SECTION 00400

SECTION 00401 - BID SUBMITTAL CHECKLIST

Please provide Checklist with response to RFP

RFP SUBMITTAL REQUIREMENTS CHECKLIST

Please provide Checklist with response to RFP

(GCLBA STAFF ONLY)	Included in bid packet	Expiration Date	
			<input type="checkbox"/> Bid/Tender Form, Additional Information, Number of Air Monitoring Days, Description of Company, References, Unit Prices, 10-Day Notification
			<input type="checkbox"/> Certificate regarding Debarment
			<input type="checkbox"/> Compliance with Iran Sanctions Act
			<input type="checkbox"/> Bid Bond
			<input type="checkbox"/> <u>Current</u> Certificate of Good Standing* (Corporation) or Certificate of Existence (Limited Liability Company) issued by the Michigan Secretary of State (If Respondent is a joint venture, a Certificate of Good Standing or Certificate of Existence, as applicable, must be submitted for each entity comprising the joint venture.)
			<input type="checkbox"/> Evidence of Insurance* – GCLBA must be listed as an insured
			<input type="checkbox"/> Michigan Builders License or Maintenance and Alterations license with House Wrecking * <div style="margin-left: 40px;">o Issued to: _____</div>
			<input type="checkbox"/> Michigan Accredited Asbestos Certification for Company*
			<input type="checkbox"/> Michigan Accredited Asbestos Certification for Asbestos Supervisor
			<input type="checkbox"/> Michigan Accredited Asbestos Certification for workers
			<input type="checkbox"/> OSHA 40-hour Hazardous Waste Operations Certification (HAZWOPER) *
			<input type="checkbox"/> MDEQ Scrap Tire Hauler Registration *
			<input type="checkbox"/> Evidence of Financial Stability* - Two most recent years tax returns and corresponding annual financial statements

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(GCLBA STAFF ONLY)	Included in bid packet	Expiration Date	<i>** Some of the submittal requirements are included in the attachments. (PAGE 2)</i>
			<input type="checkbox"/> Conflict of Interest Statement & Supporting Documentation*
			<input type="checkbox"/> Local Hiring, HUD Section 3, MBE/WBE/DVBE plan to meet goals of HUD and EPA
			<input type="checkbox"/> Section 3 Plan (Section 3 Goals: 10% of construction subcontracts and 3% of non-construction subcontracts are to be awarded to agencies/businesses who are Section 3 certified. Contractors can achieve Section 3 goals through committing 25% of award to Section 3 certified subcontractors.)
			<input type="checkbox"/> Work Plan
			<input type="checkbox"/> Health and Safety Plan*
			<input type="checkbox"/> Any other State License and/or Certification that is deemed necessary or applicable and is relevant to work completed within Genesee County
			<input type="checkbox"/> RFP Submittal Requirements Checklist
			<input type="checkbox"/> Received Addendum(s): _____

SECTION 00500 – FORM OF AGREEMENT

STANDARD FORM OF AGREEMENT
BETWEEN OWNER AND CONTRACTOR
ON THE BASIS OF A STIPULATED PRICE

THIS AGREEMENT is by and between Genesee County Land Bank Authority

(hereinafter called OWNER) and _____
(hereinafter called CONTRACTOR).

OWNER and CONTRACTOR, in consideration of the mutual covenants hereinafter set forth, agree as follows:

ARTICLE 1 – WORK

1.01 CONTRACTOR shall complete all Work as specified or indicated in the contract documents. The work is generally described as follows:

Removal and disposal of environmentally hazardous materials from the structure, structure demolition and site restoration. Work shall be conducted in accordance with all applicable laws and regulations.

ARTICLE 2 – THE PROJECT

2.01 The Project for which the Work under the Contract Documents may be the whole or only a part is generally described as follows:

“#LB 17-017, Environmental Abatement, Demolition and Site Restoration – Former Ross Oil, 2360 West Pierson Road, and Former FIA Building, 2320 West Pierson Road, City of Flint, Michigan”

ARTICLE 3 – ENGINEER

3.01 OWNER and/or duly appointed OWNER representative, shall assume all duties and responsibilities, and have the rights and authority in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

ARTICLE 4 – CONTRACT TIMES

4.01 Time of the Essence

A. Please provide available start date and estimated schedule for completion:

B. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence to the Contract.

ARTICLE 6 – PAYMENT PROCEDURES

- 6.01 The person representing CONTRACTOR who will submit written requests for progress payments shall be:

- 6.02 The person representing OWNER to whom requests for progress payments are to be submitted shall be:

AKT Peerless

Kristie Hardy

22725 Orchard Lake Road

Farmington, Michigan 48336

Phone: 248-227-6579

Email: HardyK@aktpeerless.com

- 6.03 Submittal and Processing Payments

- A. CONTRACTOR shall submit Applications for Payment in accordance with Article 14 of the General Conditions. Applications for Payment will be processed by OWNER or appointed representative of OWNER as provided in the General Conditions.

- 6.04 Progress Payments; Retainage.

- A. Monthly progress payments will be made by OWNER. Upon final completion and acceptance of the WORK, in accordance with paragraph 14.07 of the General Conditions, completion of all work requirements including punch list items, and receipt of written waivers of lien, OWNER shall make a single, one-time final payment including retainage.

B. Retainage amount shall be ten percent (10%) of the contract price.

- 6.05 Final Payment

- A. Upon final completion and acceptance of the Work in accordance with paragraph 14.07 of the General Conditions, OWNER shall pay the remainder of the Contract Price as recommended by ENGINEER and/or duly appointed as provided in said paragraph 14.07.

- B. After CONTRACTOR has, in the opinion of the duly appointed representative of the OWNER and/or OWNER, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance certificates of inspection, marked up and/or supporting documentation as provided in Contract Documents and General Conditions, (or as otherwise requested by ENGINEER, OWNER, and/or duly appointed representative of the OWNER) to allow ENGINEER and/or duly appointed OWNER representative, or OWNER, to prepare Record

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Plans, and other documents, CONTRACTOR may make application for final payment following the procedure for progress payments.

C. All documentation called for in the Contract Documents, General Conditions, and required by governing authorities including but not limited to:

- Sewer Permit closure with photograph (approval from City and Engineer)
- Demolition and all other permits
- 10-Day Notification(s)
- Clean fill and topsoil certification and approval
- Soil and Landfill tickets and matching truck logs
- Final Asbestos abatement visual and/or air clearance certification (from Engineer)
- Air Monitoring Records and Reports
- Final grade acceptance/demolition permit closeout (from City and Engineer)
- Before and After photograph and video survey
- Written warranty
- Certifications
- Material testing
- Manifests and receipts
- Seed Tickets and Project Submittals (approved by Engineer)
- Certified Payrolls
- Sworn Statements and Lien Waivers

D. Final Application for Payment shall be accompanied (except as previously delivered) by:

1. All documentation called for in the Contract Documents, General Conditions, and required by governing authorities;
2. Consent of the surety, if any, to final payment;
3. A list of all Claims against OWNER that CONTRACTOR believes are unsettled;
4. Complete and legally effective releases or waivers in a form satisfactory to OWNER of all claims, including but limited to, Lien rights arising out of or Liens filed in connection with the Work and proof of payment to all subcontractors and suppliers utilized on this project.

ARTICLE 7 – CONTRACTOR’S REPRESENTATIONS

7.01 In order to induce OWNER to enter into this Agreement CONTRACTOR makes the following representations:

A. CONTRACTOR has examined and carefully studied the Contract Documents and other related data identified in the Bidding Documents.

- B. CONTRACTOR is familiar with similar projects and had become familiar with and is satisfied as to the general, local, and area conditions that may affect cost, progress, and performance of the Work.
- C. CONTRACTOR is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work.
- D. CONTRACTOR has obtained and carefully studied (or assumes responsibility for having done so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and underground facilities) at or contiguous to the Site that may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by CONTRACTOR, including applying the specific means, methods, techniques, sequences, and procedures of construction, if any, expressly required by the Contract Documents to be employed by CONTRACTOR, and safety precautions and programs incident thereto.
- E. CONTRACTOR does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract Documents.
- F. CONTRACTOR has correlated the information known to CONTRACTOR, information and observations obtained from similar projects and reports and drawings identified in the Contract Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Contract Documents.
- G. CONTRACTOR has given OWNER and/or duly appointed OWNER representative written notice of all conflicts, errors or discrepancies that he has discovered in the Contract documents and the written resolution thereof by OWNER and/or duly appointed OWNER representative is acceptable to CONTRACTOR.
- H. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

ARTICLE 8 – CONTRACT DOCUMENTS

8.01 Contents

- A. The Contract Documents consist of the following:
 - 1. This Agreement (pages 1 to ____, inclusive)
 - 2. CONTRACTOR's Bid/Tender (pages 1 to ____, inclusive)
 - 3. Project Manual and Technical Specifications, Dated _____
 - 4. Certificate(s) of Insurance
 - 5. The following which may be delivered or issued on or after the Effective Date of the

Agreement and are not attached hereto:

- a. Written Amendments
- b. Work Change Directives
- c. Change Order(s)

- 6. Addenda Numbers _____ to _____ inclusive
 - 7. Any Pre-Award Modification, including Plan Revisions and Specification Bulletins, duly delivered
 - 8. Any Post-Award Modification, including Specification Bulletins, Change Orders, duly delivered after execution of Agreement.
- B. The documents listed in paragraph 8.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. There are not Contract Documents other than those listed above in this Article 8.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in paragraph 3.04 of the General Conditions.

ARTICLE 9 – MISCELLANEOUS

9.01 Terms

- A. Terms used in this Agreement will have the meanings indicated in the General Conditions.

9.02 Assignment of Contract

- A. No assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

9.03 Successors and Assigns

- A. OWNER and CONTRACTOR each binds itself, its partners, successors, assigns, and legal representatives to the other party hereto, its partners, successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

9.04 Severability

- A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue

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to be valid and binding upon OWNER and CONTRACTOR, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

9.05 Correction Period

- A. For a period of one year from the date of submittal of completion, promptly correct work, repair damage to protected features, or replace materials that are found to be defective.

9.06 Other Provisions

None

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IN WITNESS WHEREOF, OWNER and CONTRACTOR have signed this Agreement in duplicate. One counterpart each has been delivered to OWNER and CONTRACTOR. All portions of the Contract Documents have been signed or identified by OWNER and CONTRACTOR or on their behalf.

This Agreement will be effective on, _____ (which is the Effective date of the Agreement).

OWNER:

CONTRACTOR:

Genesee County Land Bank Authority

By: _____

By: _____

Date: _____

Date: _____

Attest: _____

Attest: _____

Address for giving notices

Address for giving notices

Genesee County Land Bank Authority

452 South Saginaw Street, 2nd Floor

Flint, MI 48502

Designated Representative:

Designated Representative:

Name: _____

Name: _____

Title: _____

Title: _____

Address: _____

Address: _____

Phone: _____

Phone: _____

Fax: _____

Fax: _____

Copy to ENGINEER:

AKT Peerless Environmental & Energy Services,
214 Janes Avenue, Saginaw, Michigan 48607

Attn: Heath Bobick

email: BobickH@aktpeerless.com

SECTION 00510 – NOTICE OF AWARD

Date: _____

To:

Attention:

Project: **"#LB 17-017, Environmental Abatement, Demolition and Site Restoration – Former Ross Oil, 2360 West Pierson Road, and Former FIA Building, 2320 West Pierson Road, City of Flint, Michigan"**

Gentlemen:

You are hereby notified that the Genesee County Land Bank Authority (OWNER) has directed the acceptance of your Bid for the above-referenced Project in the amount of (\$ _____).

This project shall include the Work, as delineated in your Bid submitted to the OWNER.

Please comply with the following conditions within one (1) day of the date of this Notice of Award:

1. Deliver to the OWNER, the executed Form of Agreement (Section 0500), on the form included in the Contract Documents. Please do not date Form of Agreement, as these will be dated by the OWNER when executed by him.

It is important to comply with these conditions and time limits, as failure to comply with these conditions within the time specified will entitle OWNER to consider your bid abandoned and to annul this Notice of Award.

Copy to ENGINEER:

AKT Peerless Environmental & Energy Services,
214 Janes Avenue, Saginaw, Michigan 48607
Attn: Heath Bobick
email: BobickH@aktpeerless.com

Genesee County Land Bank Authority (OWNER)

By: _____
(Authorized Signature)

SECTION 00550 – NOTICE TO PROCEED

Date: _____

To:

Attention:

Project: **"#LB 17-017, Environmental Abatement, Demolition and Site Restoration – Former Ross Oil, 2360 West Pierson Road, and Former FIA Building, 2320 West Pierson Road, City of Flint, Michigan"**

Please note that the Contract Time under the above Contract will commence to run on the date of this Notice to Proceed. The Work will be substantially completed on or before 40 days from the date of this Notice to Proceed, and completed and ready for final payment in accordance with the Contract Documents and paragraph 14.07 of the General Conditions.

Please submit to the OWNER and/or duly appointed OWNER representative the expected schedule for completion of the project. The OWNER and/or duly appointed OWNER representative must be notified three (3) full working days prior to initial delivery of any materials or start of any Work.

Copy to ENGINEER:

AKT Peerless Environmental & Energy Services,
214 Janes Avenue, Saginaw, Michigan 48607
Attn: Heath Bobick
email: BobickH@aktpeerless.com

Genesee County Land Bank Authority (OWNER)

By: _____
(Authorized Signature)

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ARTICLE 1—DEFINITIONS

Wherever used in these General Conditions or in the other Contract Documents the following terms have the meanings indicated which are applicable to both the singular and plural thereof:

1.1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct or change the Bidding Requirements or the Contract Documents.

1.2. *Agreement*—The written contract between OWNER and CONTRACTOR covering the Work to be performed; other Contract Documents are attached to the Agreement and made a part thereof as provided therein.

1.3. *Application for Payment*—The form accepted by PROFESSIONAL which is to be used in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

1.4. *Asbestos*—Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.

1.5. *Bid*—The offer or proposal of the bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

1.6. *Bidding Documents*—The advertisement or invitation to Bid, instructions to bidders, the Bid form and the proposed Contract Documents (including all Addenda issued prior to receipt of Bids).

1.7. *Bidding Requirements*—The advertisement or invitation to Bid, instructions to bidders and the Bid form.

1.8. *Bonds*—Performance and Payment bonds and other instruments of security.

1.9. *Change Order*—A document recommended by PROFESSIONAL, which is signed by CONTRACTOR and OWNER and authorizes an

addition, deletion or revision in the Work, or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement.

1.10. *Contract Documents*—The Agreement, Addenda (which pertain to the Contract Documents), CONTRACTOR's Bid (including documentation accompanying the Bid and any post Bid documentation submitted prior to the Notice of Award) when attached as an exhibit to the Agreement, the Notice to Proceed, the Bonds, these General Conditions, the Supplementary Conditions, the Specifications and the Drawings as the same are more specifically identified in the Agreement, together with all Written Amendments, Change Orders, Work Change Directives, Field Orders and PROFESSIONAL's written interpretations and clarifications issued pursuant to paragraphs 3.5, 3.6.1, and 3.6.3 on or after the Effective Date of the Agreement. Shop Drawing submittals approved pursuant to paragraphs 6.26 and 6.27 and the reports and drawings referred to in paragraphs 4.2.1.1 and 4.2.2.2 are not Contract Documents.

1.11. *Contract Price*—The moneys payable by OWNER to CONTRACTOR for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of paragraph 11.9.1 in the case of Unit Price Work).

1.12. *Contract Times*—The numbers of days or the dates stated in the Agreement: (i) to achieve Substantial Completion and (ii) to complete the Work so that it is ready for final payment as evidenced by PROFESSIONAL's written recommendation of final payment in accordance with paragraph 14.13.

1.13. *CONTRACTOR*—The person, firm or corporation with whom OWNER has entered into the Agreement.

1.14. *defective*—An adjective which when modifying the word Work refers to Work that is unsatisfactory, faulty or deficient, in that it does not conform to the Contract Documents, or does not meet the requirements of any inspection, reference standard, test or approval referred to in the Contract Documents, or has been damaged prior to PROFESSIONAL's recommendation of final payment (unless responsibility for the protection thereof has been assumed by OWNER at Substantial Completion in accordance with paragraph 14.8 or 14.10).

1.15. *Drawings*—The drawings which show the scope, extent and character of the Work to be furnished and performed by CONTRACTOR and which
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have been prepared or approved by PROFESSIONAL and are referred to in the Contract Documents. Shop drawings are not Drawings as so defined.

1.16. *Effective Date of the Agreement*—The date indicated in the Agreement on which it becomes effective, but if no such date is indicated it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.

1.17. *Field Order*—A written order issued by PROFESSIONAL which orders minor changes in the Work in accordance with paragraph 9.5 but which does not involve a change in the Contract Price or the Contract Times.

1.18. *General Requirements*—Sections of Division 1 of the Specifications.

1.19. *Hazardous Waste*—The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.

1.20. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, rules, regulations, ordinances, codes and orders of any and all governmental bodies, agencies, authorities and courts having jurisdiction.

1.21. *Liens*—Liens, charges, security interests or encumbrances upon real property or personal property.

1.22. *Milestone*—A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.

1.23. *Notice of Award*—The written notice by OWNER to the apparent successful bidder stating that upon compliance by the apparent successful bidder with the conditions precedent enumerated therein, within the time specified, OWNER will sign and deliver the Agreement.

1.24. *Notice to Proceed*—A written notice given by OWNER to CONTRACTOR (with a copy to PROFESSIONAL) fixing the date on which the Contract Times will commence to run and on which

CONTRACTOR shall start to perform CONTRACTOR's obligations under the Contract Documents.

1.25. *OWNER*—The public body or authority, corporation, association, firm or person with whom
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CONTRACTOR has entered into the Agreement and for whom the Work is to be provided.

1.26. *Partial Utilization*—Use by OWNER of a substantially completed part of the Work for the purpose for which it is intended (or a related purpose) prior to Substantial Completion of all the Work.

1.27. *PCB's*—Polychlorinated biphenyls.

1.28. *Petroleum*—Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Wastes and crude oils.

1.29. *PROFESSIONAL*—The person, firm or corporation named as such in the Agreement, performing as the Architect, Engineer, or Planner.

1.30. *PROFESSIONAL's Consultant*—A person, firm or corporation having a contract with PROFESSIONAL to furnish services as PROFESSIONAL's independent professional associate or consultant with respect to the Project and who is identified as such in the Supplementary Conditions.

1.31. *Project*—The total construction of which the Work to be provided under the Contract Documents may be the whole, or a part as indicated elsewhere in the Contract Documents.

1.32. *Radioactive Material*—Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.

1.33. *Resident Project Representative*—The authorized representative of PROFESSIONAL who may be assigned to the site or any part thereof.

1.34. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.

1.35. *Shop Drawings*—All drawings, diagrams, illustrations, schedules and other data or information which are specifically prepared or assembled by or for CONTRACTOR and submitted by CONTRACTOR to illustrate some portion of the Work.

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1.36. *Specifications*—Those portions of the Contract Documents consisting of written technical descriptions of materials, equipment, construction systems, standards and workmanship as applied to the Work and certain administrative details applicable thereto.

1.37. *Subcontractor*—An individual, firm or corporation having a direct contract with CONTRACTOR or with any other Subcontractor for the performance of a part of the Work at the site.

1.38. *Substantial Completion*—The Work (or a specified part thereof) has progressed to the point where, in the opinion of PROFESSIONAL as evidenced by PROFESSIONAL's definitive certificate of Substantial Completion, it is sufficiently complete, in accordance with the Contract Documents, so that the Work (or specified part) can be utilized for the purposes for which it is intended; or if no such certificate is issued, when the Work is complete and ready for final payment as evidenced by PROFESSIONAL's written recommendation of final payment in accordance with paragraph 14.13. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof.

1.39. *Supplementary Conditions*—The part of the Contract Documents which amends or supplements these General Conditions.

1.40. *Supplier*—A manufacturer, fabricator, supplier, distributor, materialman or vendor having a direct contract with CONTRACTOR or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by CONTRACTOR or any Subcontractor.

1.41. *Underground Facilities*—All pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels or other such facilities or attachments, and any encasements containing such facilities which have been installed underground to furnish any of the following services or materials: electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, sewage and drainage removal, traffic or other control systems or water.

1.42. *Unit Price Work*—Work to be paid for on the basis of unit prices.

1.43. *Work*—The entire completed construction or the various separately identifiable parts thereof required to be furnished under the Contract Documents. Work includes and is the result of performing or furnishing labor and furnishing and

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incorporating materials and equipment into the construction, and performing or furnishing services and furnishing documents, all as required by the Contract Documents.

1.44. *Work Change Directive*—A written directive to CONTRACTOR, issued on or after the Effective Date of the Agreement and signed by OWNER and recommended by PROFESSIONAL, ordering an addition, deletion or revision in the Work, or responding to differing or unforeseen physical conditions under which the Work is to be performed as provided in paragraph 4.2 or 4.3 or to emergencies under paragraph 6.23. A Work Change Directive will not change the Contract Price or the Contract Times, but is evidence that the parties expect that the change directed or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times as provided in paragraph 10.2.

1.45. *Written Amendment*—A written amendment of the Contract Documents, signed by OWNER and CONTRACTOR on or after the Effective Date of the Agreement and normally dealing with the nonengineering or nontechnical rather than strictly construction-related aspects of the Contract Documents.

ARTICLE 2—PRELIMINARY MATTERS

Delivery of Bonds:

2.1. When CONTRACTOR delivers the executed Agreements to OWNER, CONTRACTOR shall also deliver to OWNER such Bonds as CONTRACTOR may be required to furnish in accordance with paragraph 5.1.

Copies of Documents:

2.2. OWNER shall furnish to CONTRACTOR up to ten copies (unless otherwise specified in the Supplementary Conditions) of the Contract Documents as are reasonably necessary for the execution of the Work. Additional copies will be furnished, upon request, at the cost of reproduction.

Commencement of Contract Times; Notice to Proceed:

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2.3. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Agreement, or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed.

serve as the basis for progress payments during construction. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.7. N/A

Preconstruction Conference:

2.8. Within twenty days after the Contract Times start to run, but before any Work at the site is started, a conference attended by CONTRACTOR, PROFESSIONAL and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in paragraph 2.6, procedures for handling Shop Drawings and other submittals, processing Applications for Payment and maintaining required records.

Starting the Work:

2.4. CONTRACTOR shall start to perform the Work on the date when the Contract Times commence to run, but no Work shall be done at the site prior to the date on which the Contract Times commence to run.

Before Starting Construction:

2.5. Before undertaking each part of the Work, CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures shown thereon and all applicable field measurements. CONTRACTOR shall promptly report in writing to PROFESSIONAL any conflict, error, ambiguity or discrepancy which CONTRACTOR may discover and shall obtain a written interpretation or clarification from PROFESSIONAL before proceeding with any Work affected thereby; however, CONTRACTOR shall not be liable to OWNER or PROFESSIONAL for failure to report any conflict, error, ambiguity or discrepancy in the Contract Documents, unless CONTRACTOR knew or reasonably should have known thereof.

2.6. Within ten days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), CONTRACTOR shall submit to PROFESSIONAL for review:

2.6.1. a preliminary progress schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents;

2.6.2. a preliminary schedule of Shop Drawing and Sample submittals which will list each required submittal and the times for submitting, reviewing and processing such submittal;

2.6.3. a preliminary schedule of values for all of the Work which will include quantities and prices of items aggregating the Contract Price and will subdivide the Work into component parts in sufficient detail to

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Initially Acceptable Schedules:

2.9. Unless otherwise provided in the Contract Documents, at least ten days before submission of the first Application for Payment a conference attended by CONTRACTOR, PROFESSIONAL and others as appropriate will be held to review for acceptability to PROFESSIONAL as provided below the schedules submitted in accordance with paragraph 2.6. CONTRACTOR shall have an additional ten days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to CONTRACTOR until the schedules are submitted to and acceptable to PROFESSIONAL as provided below. The progress schedule will be acceptable to PROFESSIONAL as providing an orderly progression of the Work to completion within any specified Milestones and the Contract Times, but such acceptance will neither impose on PROFESSIONAL responsibility for the sequencing, scheduling or progress of the work nor interfere with or relieve CONTRACTOR from CONTRACTOR's full responsibility therefor. CONTRACTOR's schedule of Shop Drawing and Sample submissions will be acceptable to PROFESSIONAL as providing a workable arrangement for reviewing and processing the required submittals. CONTRACTOR's schedule of values will be acceptable to PROFESSIONAL as to form and substance.

ARTICLE 3—CONTRACT DOCUMENTS:
INTENT, AMENDING, REUSE

Intent:

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3.1. The Contract Documents comprise the entire agreement between OWNER and CONTRACTOR concerning the Work. The Contract Documents are complementary; what is called for by one is as binding as if called for by all. The Contract Documents will be construed in accordance with the law of the place of the Project.

3.2. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any Work, materials or equipment that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result will be furnished and performed whether or not specifically called for. When words or phrases which have a well-known technical or construction industry or trade meaning are used to describe Work, materials or equipment, such words or phrases shall be interpreted in accordance with that meaning. Clarifications and interpretations of the Contract Documents shall be issued by PROFESSIONAL as provided in paragraph 9.4.

3.3. *Reference to Standards and Specifications of Technical Societies; Reporting and Resolving Discrepancies:*

3.3.1. Reference to standards, specifications, manuals or codes of any technical society, organization or association, or to the Laws or Regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard, specification, manual, code or Laws or Regulations in effect at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.

3.3.2. If, during the performance of the Work, CONTRACTOR discovers any conflict, error, ambiguity or discrepancy within the Contract Documents or between the Contract Documents and any provision of any such Law or Regulation applicable to the performance of the Work or of any such standard, specification, manual or code or of any instruction of any Supplier referred to in paragraph 6.5, CONTRACTOR shall report it to PROFESSIONAL in writing at once, and, CONTRACTOR shall not proceed with the Work affected thereby (except in an emergency as authorized by paragraph 6.23) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in paragraph 3.5 or 3.6; provided, however, that CONTRACTOR shall not be liable to OWNER or PROFESSIONAL for failure to report

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any such conflict, error, ambiguity or discrepancy unless CONTRACTOR knew or reasonably should have known thereof.

3.3.3. Except as otherwise specifically stated in the Contract Documents or as may be provided by amendment or supplement thereto issued by one of the methods indicated in paragraph 3.5 or 3.6, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity or discrepancy between the provisions of the Contract Documents and:

3.3.3.1. the provisions of any such standard, specification, manual, code or instruction (whether or not specifically incorporated by reference in the Contract Documents); or

3.3.3.2. the provisions of any such Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

No provision of any such standard, specification, manual, code or instruction shall be effective to change the duties and responsibilities of OWNER, CONTRACTOR or PROFESSIONAL, or any of their subcontractors, consultants, agents, or employees from those set forth in the Contract Documents, nor shall it be effective to assign to OWNER, PROFESSIONAL or any of PROFESSIONAL's Consultants, agents or employees any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of paragraph 9.13 or any other provision of the Contract Documents.

3.4. Whenever in the Contract Documents the terms "as ordered," "as directed," "as required," "as allowed," "as approved" or terms of like effect or import are used, or the adjectives "reasonable," "suitable," "acceptable," "proper" or "satisfactory" or adjectives of like effect or import are used to describe a requirement, direction, review or judgment of PROFESSIONAL as to the Work, it is intended that such requirement, direction, review or judgment will be solely to evaluate, in general, the completed Work for compliance with the requirements of and information in the Contract Documents and conformance with the design concept of the completed Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective shall not be effective to assign to PROFESSIONAL any duty or authority to

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supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of paragraph 9.13 or any other provision of the Contract Documents.

CONDITIONS; REFERENCE
POINTS

Amending and Supplementing Contract Documents:

3.5. The Contract Documents may be amended to provide for additions, deletions and revisions in the Work or to modify the terms and conditions thereof in one or more of the following ways:

- 3.5.1. a formal Written Amendment,
 - 3.5.2. a Change Order (pursuant to paragraph 10.4), or
 - 3.5.3. a Work Change Directive (pursuant to paragraph 10.1).
- 3.6. In addition, the requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, in one or more of the following ways:
- 3.6.1. a Field Order (pursuant to paragraph 9.5),
 - 3.6.2. PROFESSIONAL's approval of a Shop Drawing or Sample (pursuant to paragraphs 6.26 and 6.27), or
 - 3.6.3. PROFESSIONAL's written interpretation or clarification (pursuant to paragraph 9.4).

Reuse of Documents:

3.7. CONTRACTOR, and any Subcontractor or Supplier or any other person or organization performing or furnishing any of the Work under a direct or indirect contract with OWNER (i) shall not have or acquire any title to or ownership rights in any of the Drawings, Specifications or other documents (or copies of any thereof) prepared by or bearing the seal of PROFESSIONAL or PROFESSIONAL's Consultant, and (ii) shall not reuse any of such Drawings, Specifications, other documents or copies on extensions of the Project or any other project without written consent of OWNER and PROFESSIONAL and specific written verification or adaption by PROFESSIONAL.

Availability of Lands:

4.1. OWNER shall furnish, as indicated in the Contract Documents, the lands upon which the Work is to be performed, rights-of-way and easements for access thereto, and such other lands which are designated for the use of CONTRACTOR. Upon reasonable written request, OWNER shall furnish CONTRACTOR with a correct statement of record legal title and legal description of lands upon which the Work is to be performed and OWNER's interest therein as necessary for giving notice of or filing a mechanic's lien against such lands in accordance with applicable Laws and Regulations. OWNER shall identify any encumbrances or restrictions not of general application but specifically related to use of lands so furnished with which CONTRACTOR will have to comply in performing the Work. Easements for permanent structures or permanent changes in existing facilities will be obtained and paid for by OWNER, unless otherwise provided in the Contract Documents. CONTRACTOR shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

Protection of Land Monuments and Property Stakes. Land Monuments or lot stakes marking property corners shall not be moved or otherwise disturbed except as directed by PROFESSIONAL. When they occur within the area of concrete base or pavement, they shall be enclosed as specified by the PROFESSIONAL; such work to be paid for by the OWNER. When, in the judgment of the PROFESSIONAL, land monuments or property lot stakes can be saved, all such stakes shall be marked by the CONTRACTOR in a manner agreed to by the PROFESSIONAL and CONTRACTOR, after which the CONTRACTOR shall protect such land monuments or lot stakes from injury. If any land monuments or lot stakes are moved or disturbed by the CONTRACTOR after their locations have been marked in a manner acceptable to the PROFESSIONAL and CONTRACTOR, then the CONTRACTOR agrees that \$500.00 for each and every land monument or lot stake so moved or disturbed may be deducted from any money due to him as a payment to the OWNER for the cost of replacing or resetting said land monument or lot stake.

4.2. ***Subsurface and Physical Conditions:***

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It is understood by the CONTRACTOR that if any reports or drawings containing "technical data" were utilized by the PROFESSIONAL regarding subsurface conditions per paragraph 4.2.1.1 of the General Conditions or physical conditions per paragraph 4.2.1.2 of the General Conditions then these reports and drawings would be identified in SC 4.2.1 and no where else in the Contract Documents.

4.2.1. *Reports and Drawings:* Reference is made to the Supplementary Conditions for identification of:

4.2.1.1. *Subsurface Conditions:* Those reports of explorations and tests of subsurface conditions at or contiguous to the site that have been utilized by PROFESSIONAL in preparing the Contract Documents; and

4.2.1.2. *Physical Conditions:* Those drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the site (except Underground Facilities) that have been utilized by PROFESSIONAL in preparing the Contract Documents.

4.2.2. *Limited Reliance by CONTRACTOR Authorized; Technical Data:* CONTRACTOR may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," CONTRACTOR may not rely upon or make any claim against OWNER, PROFESSIONAL or any of PROFESSIONAL's Consultants with respect to:

4.2.2.1. the completeness of such reports and drawings for CONTRACTOR's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by CONTRACTOR and safety precautions and programs incident thereto, or

4.2.2.2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings, or

4.2.2.3. any CONTRACTOR interpretation of or conclusion drawn from any "technical data" or any such data, interpretations, opinions or information.

4.2.3. *Notice of Differing Subsurface or Physical Conditions:* If CONTRACTOR believes that any subsurface or physical condition at or contiguous to the site that is uncovered or revealed either:

4.2.3.1 is of such a nature as to establish that any "technical data" on which CONTRACTOR is entitled to rely as provided in paragraphs 4.2.1 and 4.2.2 is materially inaccurate, or

4.2.3.2. is of such a nature as to require a change in the Contract Documents, or

4.2.3.3. differs materially from that shown or indicated in the Contract Documents, or

4.2.3.4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents; then

CONTRACTOR shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as permitted by paragraph 6.23), notify OWNER and PROFESSIONAL in writing about such condition. CONTRACTOR shall not further disturb such conditions or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

4.2.4. *PROFESSIONAL's Review:* PROFESSIONAL will promptly review the pertinent conditions, determine the necessity of OWNER's obtaining additional exploration or tests with respect thereto and advise OWNER in writing (with a copy to CONTRACTOR) of PROFESSIONAL's findings and conclusions.

4.2.5. *Possible Contract Documents Change:* If PROFESSIONAL concludes that a change in the Contract Documents is required as a result of a condition that meets one or more of the categories in paragraph 4.2.3., a Work Change Directive or a Change Order will be issued as provided in Article 10 to reflect and document the consequences of such change.

4.2.6. *Possible Price and Times Adjustments:* An equitable adjustment in the Contract Price or in the Contract Times, or both, will be allowed to the extent that the existence of such uncovered or revealed condition causes an increase or decrease in CONTRACTOR's cost of, or time required for

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performance of, the Work; subject, however, to the following:

4.2.6.1. Such Condition must meet any one or more of the categories described in paragraphs 4.2.3.1 through 4.2.3.4, inclusive;

4.2.6.2. A change in the Contract Documents pursuant to paragraph 4.2.5 will not be an automatic authorization of nor a condition precedent to entitlement to any such adjustment;

4.2.6.3. With respect to Work that is paid for on a Unit Price Basis, any adjustment in Contract Price will be subject to the provisions of paragraphs 9.10 and 11.9; and

4.2.6.4. CONTRACTOR shall not be entitled to any adjustment in the Contract Price or Times if;

4.2.6.4.1. CONTRACTOR knew of the existence of such conditions at the time CONTRACTOR made a final commitment to OWNER in respect of Contract Price and Contract Times by the submission of a bid or becoming bound under a negotiated contract; or

4.2.6.4.2. The existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test or study of the site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for CONTRACTOR prior to CONTRACTOR's making such final commitment; or

4.2.6.4.3. CONTRACTOR failed to give the written notice within the time and as required by paragraph 4.2.3.

If OWNER and CONTRACTOR are unable to agree on entitlement to or as to the amount or length of any such equitable adjustment in the Contract Price or Contract Times, a claim may be made therefor as provided in Articles 11 and 12. However, OWNER, PROFESSIONAL and PROFESSIONAL's Consultants shall not be liable to CONTRACTOR for any claims, costs, losses or damages sustained by CONTRACTOR or damages sustained by CONTRACTOR on or in connection with any other project or anticipated project.

4.3. *Physical Conditions—Underground Facilities:*

4.3.1. *Shown or Indicated:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the site is based on information and data furnished to OWNER or PROFESSIONAL by the owners of such Underground Facilities or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

4.3.1.1. OWNER and PROFESSIONAL shall not be responsible for the accuracy or completeness of any such information or data; and

4.3.1.2. The cost of all the following will be included in the Contract Price and CONTRACTOR shall have full responsibility for: (i) reviewing and checking all such information and data, (ii) locating all Underground Facilities shown or indicated in the Contract Documents, (iii) coordination of the Work with the owners of such Underground Facilities during construction, and (iv) the safety and protection of all such Underground Facilities as provided in paragraph 6.20 and repairing any damage thereto resulting from the Work.

4.3.2. *Not Shown or Indicated:* If an Underground Facility is uncovered or revealed at or contiguous to the site which was not shown or indicated in the Contract Documents, CONTRACTOR shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by paragraph 6.23), identify the owner of such Underground Facility and give written notice to that owner and to OWNER and PROFESSIONAL, PROFESSIONAL will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence of the Underground Facility. If PROFESSIONAL concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued as provided in Article 10 to reflect and document such consequences. During such time, CONTRACTOR shall be responsible for the safety and protection of such Underground Facility as provided in paragraph 6.20. CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, to the extent that they are attributable to the existence of any Underground Facility that was not shown or indicated in the Contract

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Documents and that CONTRACTOR did not know of and could not reasonably have been expected to be aware of or to have anticipated.

If OWNER and CONTRACTOR are unable to agree on entitlement to or the amount or length of any such adjustment in Contract Price or Contract Times, CONTRACTOR may make a claim therefor as provided in Articles 11 and 12. However, OWNER, PROFESSIONAL and PROFESSIONAL's Consultants shall not be liable to CONTRACTOR for any claims, costs, losses or damages incurred or sustained by

CONTRACTOR on or in connection with any other projects OR anticipated projects.

Reference Points:

4.4. OWNER may provide engineering surveys to establish reference points for construction which in PROFESSIONAL's judgment are necessary to enable CONTRACTOR to proceed with the Work. CONTRACTOR is referred to Section 6 of the Proposal (Bid Form) for information regarding the type and level or extent of engineering surveys including reference marks and layout that the OWNER may provide. CONTRACTOR shall protect and preserve the established reference points and shall make no changes or relocations without the prior written approval of OWNER. CONTRACTOR shall report to PROFESSIONAL whenever any reference point is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points by professionally qualified personnel. CONTRACTOR is responsible for the protection, replacement and relocation of all reference points and layout work (staking) provided by the OWNER or the PROFESSIONAL. If the OWNER or PROFESSIONAL has to return to the site a second time or more to reset reference points or layout work (staking) destroyed or rendered inaccurate as a result of the CONTRACTOR's negligent or careless activities then the cost of the OWNER or PROFESSIONAL to reset the reference points or layout work (staking) shall be deducted from the final progress payment to the CONTRACTOR by the OWNER, if applicable.

4.5. Asbestos, PCB's, Petroleum, Hazardous Waste or Radioactive Material:

4.5.1. OWNER shall be responsible for any Asbestos, PCB's, Petroleum, Hazardous Waste or Radioactive Material uncovered or revealed at the site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents
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to be within the scope of the Work and which may present a substantial danger to persons or property exposed thereto in connection with the Work at the site. OWNER shall not be responsible for any such materials brought to the site by CONTRACTOR, Subcontractor, Suppliers or anyone else for whom CONTRACTOR is responsible.

4.5.2. CONTRACTOR shall immediately: (i) stop all Work in connection with such hazardous condition and in any area affected thereby (except in an emergency as required by paragraph 6.23), and (ii) notify OWNER and PROFESSIONAL (and thereafter confirm such notice in writing). OWNER shall promptly consult with PROFESSIONAL concerning the necessity for OWNER to retain a qualified expert to evaluate such hazardous condition or take corrective action, if any. CONTRACTOR shall not be required to resume Work in connection with such hazardous condition or in any such affected area until after OWNER has obtained any required permits related thereto and delivered to CONTRACTOR special written notice; (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (ii) specifying any special conditions under which such Work may be resumed safely. If OWNER and CONTRACTOR cannot agree as to entitlement to or the amount or extent of an adjustment, if any, in Contract Price or Contract Times as a result of such Work stoppage or such special conditions under which Work is agreed by CONTRACTOR to be resumed, either party may make a claim therefor as provided in Articles 11 and 12.

4.5.3. If after receipt of such special written notice CONTRACTOR does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then OWNER may order such portion of the Work that is in connection with such hazardous condition or in such affected area to be deleted from the Work. If OWNER and CONTRACTOR cannot agree as to entitlement to or the amount or extent of an adjustment, if any, in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a claim therefor as provided in Articles 11 and 12. OWNER may have such deleted portion of the Work performed by OWNER's own forces or others in accordance with Article 7.

4.5.4. To the fullest extent permitted by Laws and Regulations, OWNER shall indemnify and hold harmless CONTRACTOR, Subcontractors, PROFESSIONAL, PROFESSIONAL's Consultants and the officers, directors, employees, agents, other consultants
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and subcontractors of each and any of them from and against all claims, costs, losses and damages arising out of or resulting from such hazardous condition, provided that: (i) any such claim, cost, loss or damage is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom, and (ii) nothing in this subparagraph 4.5.4 shall obligate OWNER to indemnify any person or entity from and against the consequences of that person's or entity's own negligence.

4.5.5. The provisions of paragraphs 4.2 and 4.3 are not intended to apply to Asbestos, PCB's, Petroleum, Hazardous Waste or Radioactive Material uncovered or revealed at the site.

4.5.6. The above procedures outlined in paragraph 4.5 shall be used if the site on which any Asbestos, PCB's, Petroleum, Hazardous Waste or Radioactive Material is uncovered or revealed is owned and controlled by the OWNER. On sites not owned and controlled by the OWNER, the PROFESSIONAL, OWNER & CONTRACTOR agree that upon uncovering or revealing Asbestos, PCB's, Petroleum, Hazardous Waste or Radioactive Material it will be the OWNER's responsibility to notify the site's property owner of the discovery.

4.6 **Responsibility for Moving of Structures:** Any buildings, poles, conduits, manholes, catchbasins, valve boxes, trees, water mains and services, storm and sanitary sewers, gas mains and services or other structures which in the opinion of the PROFESSIONAL will have to be moved or changed by the CONTRACTOR, in order to permit the proper construction of the work or will be moved or changed by the respective OWNERS, if that is their practice, at the insistence of the OWNER, unless otherwise specifically stated in the contract documents, but any such structures which, in the opinion of the PROFESSIONAL, can be left without being disturbed, shall be left and the CONTRACTOR shall take all necessary precautions for their protection and he will be held fully responsible for their protection. All costs resulting from the moving of such structures shall be borne by the CONTRACTOR and shall be included in the unit prices or lump sums bid for the work.

ARTICLE 5—BONDS AND INSURANCE

Performance, Payment and Other Bonds:

5.1. CONTRACTOR shall furnish Performance and Payment Bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all CONTRACTOR's obligations under the Contract Documents. These Bonds shall remain in effect at least until one year after the date when final payment becomes due, except as provided otherwise by Laws or Regulations or by the Contract Documents. CONTRACTOR shall also furnish such other Bonds as are required by the Supplementary Conditions. All Bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Audit Staff, Bureau of Government Financial Operations, U.S. Treasury Department. All Bonds signed by an agent must be accompanied by a certified copy of such agent's authority to act.

All insurance required by the Contract Documents to be purchased and maintained by CONTRACTOR shall be obtained from surety or insurance companies that are authorized to transact business in Michigan and are classified at not lower than each of the following:

5.1.1. Best's Key Rating Guide, current edition:

(1)	Rating Classification: A-
(2)	Financial Size Category: Class V.

5.2. If the surety on any Bond furnished by CONTRACTOR is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of paragraph 5.1, CONTRACTOR shall within ten days thereafter substitute another Bond and surety, both of which must be acceptable to OWNER.

5.3. Licensed Sureties and Insurers; Certificates of Insurance:

5.3.1. All Bonds and insurance required by the Contract Documents to be purchased and maintained by OWNER or CONTRACTOR shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue Bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also meet such

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additional requirements and qualifications as may be provided in the Supplementary Conditions.

5.3.2. CONTRACTOR shall deliver to OWNER, with copies to each additional insured identified in the Insurance Coverages, certificates of insurance (and other evidence of insurance requested by OWNER or any other additional insured) which CONTRACTOR is required to purchase and maintain in accordance with paragraph 5.4. OWNER shall deliver to CONTRACTOR, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by CONTRACTOR or any other additional insured) which OWNER is required to purchase and maintain in accordance with paragraph 5.6 hereof.

CONTRACTOR's Liability Insurance:

5.4. CONTRACTOR shall purchase and maintain such liability and other insurance as is appropriate for the Work being performed and furnished and as will provide protection from claims set forth below which may arise out of or result from CONTRACTOR's performance and furnishing of the Work and CONTRACTOR's other obligations under the Contract Documents, whether it is to be performed or furnished by CONTRACTOR, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform or furnish any of the Work, or by anyone for whose acts any of them may be liable:

5.4.1. claims under workers' compensation, disability benefits and other similar employee benefit acts; such as the U.S. Longshore and Harborworkers', Maritime Employment, or Railroad Compensation Act(s), if applicable;

5.4.2. claims for damages because of bodily injury, occupational sickness or disease, or death of CONTRACTOR's employees;

5.4.3. claims for damages because of bodily injury, sickness or disease, or death of any person other than CONTRACTOR's employees;

5.4.4. claims for damages insured by customary personal injury liability coverage which are sustained: (i) by any person as a result of an offense directly or indirectly related to the employment of such person by CONTRACTOR, or (ii) by any other person for any other reason;

5.4.5. claims for damages, other than to the Work itself, because of injury to or destruction of

tangible property wherever located, including loss of use resulting therefrom; and

5.4.6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.

The policies of insurance so required by this paragraph 5.4 to be purchased and maintained shall:

5.4.7. with respect to insurance required by paragraphs 5.4.3 through 5.4.6 inclusive, include as additional insureds (subject to any customary exclusion in respect of professional liability) OWNER, PROFESSIONAL, PROFESSIONAL's Consultants and any other persons or entities identified in the Insurance Coverages, all of whom shall be listed as additional insureds, and include coverage for the respective officers and employees of all such additional insureds;

5.4.8. include the specific coverages and be written for not less than the limits of liability provided in the Insurance Coverages or required by Laws or Regulations, whichever is greater;

5.4.9. include completed operations insurance;

5.4.10. include contractual liability insurance covering CONTRACTOR's indemnity obligations under paragraphs 6.12, 6.16 and 6.31 through 6.33;

5.4.11. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least thirty days prior written notice has been given to OWNER and CONTRACTOR and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the CONTRACTOR pursuant to paragraph 5.3.2 will so provide);

5.4.12. remain in effect at least until final payment and at all times thereafter when CONTRACTOR may be correcting, removing or replacing *defective* Work in accordance with paragraph 13.12; and

5.4.13. with respect to completed operations insurance, and any insurance coverage written on a claims-made basis, remain in effect for at least two years after final payment (and CONTRACTOR shall furnish OWNER and each other additional insured identified in the Supplementary Conditions to whom a

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certificate of insurance has been issued evidence satisfactory to OWNER and any such additional insured of continuation of such insurance at final payment and one year thereafter).

OWNER's Liability Insurance:

5.5. In addition to the insurance required to be provided by CONTRACTOR under paragraph 5.4, OWNER, at OWNER's option, may purchase and maintain at OWNER's expense OWNER's own liability insurance as will protect OWNER against claims which may arise from operations under the Contract Documents.

Property Insurance:

5.6. CONTRACTOR shall purchase and maintain property insurance upon the Work for any or all insurable portions of the Work at the site in the amount of the full replacement cost thereof (subject to such deductible amounts as may be provided in these Supplementary Conditions or required by Laws and Regulations). This insurance shall:

5.6.1. include the interests of OWNER, CONTRACTOR, SubCONTRACTORS, PROFESSIONAL, and PROFESSIONAL's Consultants and also any other persons or entities specifically identified in the Supplementary Conditions, each of whom is deemed to have an insurable interest as an insured or additional insured;

5.6.2 be written on a Builder's Risk "all-risk" or rider or floater or another policy or special causes of loss policy form that shall at least include insurance for any or all insurable portions of the Work for physical loss and damage to the Work, temporary buildings, falsework and Work in transit and shall insure against at least the following perils: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage, and such other perils as may be specifically required by the Supplementary Conditions.

5.6.3 include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of PROFESSIONAL's and architects);

5.6.4 by an installation floater covering materials and equipment in transit for incorporation in the Work or stored and secured at the site or at another location that was agreed to in writing by OWNER prior to being incorporated in the Work, provided that such

materials and equipment have been included in an Application for Payment as "materials stored and secured on site" recommended by PROFESSIONAL; and

5.6.5 be maintained in effect until final payment is made unless otherwise agreed to in writing by OWNER, CONTRACTOR and PROFESSIONAL with thirty days written notice to each other additional insured to whom a certificate of insurance has been issued.

The policies of insurance required to be purchased and maintained by CONTRACTOR in accordance with this paragraph 5.6 shall comply with the requirements of GC-5.8

5.7. Not in this contract.

5.8. All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained by OWNER will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least thirty days' prior written notice has been given to OWNER and CONTRACTOR and to each other additional insured to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with paragraph 5.11.

5.9. OWNER shall not be responsible for purchasing and maintaining any property insurance to protect the interest of CONTRACTOR, Subcontractors or others in the Work to the extent of any deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount, will be borne by CONTRACTOR, Subcontractor or others suffering any such loss and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.

5.10. If CONTRACTOR requests in writing that other special insurance be included in the property insurance policies provided under paragraphs 5.6, OWNER shall, if possible, include such insurance, and the cost thereof will be charged to CONTRACTOR by appropriate Change Order or written amendment. Prior to commencement of the Work at the site, OWNER shall in writing advise CONTRACTOR whether or not such other insurance has been procured by OWNER.

5.11. Waiver of Rights:

5.11.1. OWNER and CONTRACTOR intend that all policies purchased in accordance with paragraph 5.6 will protect OWNER, CONTRACTOR, Subcontractors,

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PROFESSIONAL, PROFESSIONAL's Consultants and all other persons or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds in such policies and will provide primary coverage for all losses and damages caused by the perils covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or additional insureds thereunder. OWNER and CONTRACTOR waive all rights against each other and their respective officers, directors, employees and agents for all losses and damages caused by, arising out of or resulting from any of the perils covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Subcontractors, PROFESSIONAL, PROFESSIONAL's Consultants and all other persons or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by OWNER as trustee or otherwise payable under any policy so issued.

5.11.2. In addition, OWNER waives all rights against CONTRACTOR, Subcontractors, PROFESSIONAL, PROFESSIONAL's Consultants and the officers, directors, employees and agents of any of them for:

5.11.2.1. loss due to business interruption, loss of use or other consequential loss extending beyond direct physical loss or damage to OWNER's property or the Work caused by, arising out of or resulting from fire or other peril, whether or not insured by OWNER; and

5.11.2.2. loss or damage to the completed Project or part thereof caused by, arising out of or resulting from fire or other insured peril covered by any property insurance maintained on the completed Project or part thereof by OWNER during partial utilization pursuant to paragraph 14.10, after substantial completion pursuant to paragraph 14.8 or after final payment pursuant to paragraph 14.13.

Any insurance policy maintained by OWNER covering any loss, damage or consequential loss referred to in this paragraph 5.11.2 shall contain provisions to the effect that in the event of payment of any such loss, damage or consequential loss the insurers will have no

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rights of recovery against any of CONTRACTOR, Subcontractors, PROFESSIONAL, PROFESSIONAL's Consultants and the officers, directors, employees and agents of any of them.

Receipt and Application of Insurance Proceeds:

5.12. Any insured loss under the policies of insurance required by paragraphs 5.6 will be adjusted with OWNER and made payable to OWNER as fiduciary for the insured, as their interests may appear, subject to the requirements of any applicable mortgage clause and of paragraph 5.13. OWNER shall deposit in a separate account any money so received, and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof and the Work and the cost thereof covered by an appropriate Change Order or Written Amendment.

5.13. OWNER as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within fifteen days after the occurrence of loss to OWNER's exercise of this power. If such objection be made, OWNER as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, OWNER as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, OWNER as fiduciary shall give bond for the proper performance of such duties.

Acceptance of Bonds and Insurance; Option to Replace:

5.14. If either party (OWNER or CONTRACTOR) has any objection to the coverage afforded by or other provisions of the Bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the objecting party shall so notify the other party in writing within ten days after receipt of the certificates (or other evidence requested) required by paragraph 2.7. OWNER and CONTRACTOR shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the Bonds and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without

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prejudice to any other right or remedy, the other party may elect to obtain equivalent Bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

Partial Utilization—Property Insurance:

5.15. If OWNER finds it necessary to occupy or use a portion or portions of the Work prior to Substantial completion of all the Work, such use or occupancy may be accomplished in accordance with paragraph 14.10; provided that no such use or occupancy shall commence before the insurers providing the property insurance have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy.

ARTICLE 6—CONTRACTOR'S
RESPONSIBILITIES

Supervision and Superintendence:

6.1. CONTRACTOR shall supervise, inspect and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences and procedures of construction, but CONTRACTOR shall not be responsible for the negligence of others in the design or specification of a specific means, method, technique, sequence or procedure of construction which is shown or indicated in and expressly required by the Contract Documents. CONTRACTOR shall be responsible to see that the completed Work complies accurately with the Contract Documents.

6.2. CONTRACTOR shall keep on the Work at all times during its progress a competent resident

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superintendent, who shall not be replaced without written notice to OWNER and PROFESSIONAL except under extraordinary circumstances. The superintendent will be CONTRACTOR's representative at the site and shall have authority to act on behalf of CONTRACTOR. All communications to the superintendent shall be as binding as if given to CONTRACTOR.

Labor, Materials and Equipment

6.3. CONTRACTOR shall provide competent, suitably qualified personnel to survey, lay out and construct the Work as required by the Contract Documents. CONTRACTOR shall at all times maintain good discipline and order at the site. Except as otherwise required for the safety or protection of persons or the Work or property at the site or adjacent thereto, and except as otherwise indicated in the Contract Documents, all Work at the site shall be performed during regular working hours and CONTRACTOR will not permit overtime work or the performance of the Work on Saturday, Sunday or any legal holiday without OWNER's written consent given after prior written notice to PROFESSIONAL.

6.4. Unless otherwise specified in the General Requirements, CONTRACTOR shall furnish and assume full responsibility for all materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities and all other facilities and incidentals necessary for the furnishing, performance, testing, start-up and completion of the Work.

6.5. All materials and equipment shall be of good quality and new, except as otherwise provided in the Contract Documents. All warranties and guarantees specifically called for by the Specifications shall be expressly run to the benefit of OWNER. If required by PROFESSIONAL, CONTRACTOR shall furnish satisfactory evidence (including reports of required tests) as to the kind and quality of materials and equipment. All materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with instructions of the applicable supplier, except as otherwise provided in the Contract Documents.

Progress Schedule:

6.6. CONTRACTOR shall adhere to the progress schedule established in accordance with paragraph 2.9 as it may be adjusted from time to time as provided below:

6.6.1. CONTRACTOR shall submit to PROFESSIONAL for acceptance (to the extent indicated in paragraph 2.9) proposed adjustments in the progress schedule that will not change the Contract Times (or Milestones). Such adjustments will conform generally to the progress schedule then in effect and additionally will comply with any provisions of the General Requirements applicable thereto.

6.6.2. Proposed adjustments in the progress schedule that will change the Contract Times (or Milestones) shall be submitted in accordance with the requirements of paragraph 12.1. Such adjustments may only be made by a Change Order or Written Amendment in accordance with Article 12.

6.7. Substitutes and "Or-Equal" Items:

6.7.1. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent or "or-equal" item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be accepted by PROFESSIONAL under the following circumstances:

6.7.1.1. "Or-Equal": If in PROFESSIONAL's sole discretion an item of material or equipment proposed by CONTRACTOR is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by PROFESSIONAL as an "or-equal" item, in which case review and approval of the proposed item may, in PROFESSIONAL's sole discretion, be accomplished without compliance with some or all of the requirements for acceptance of proposed substitute items.

6.7.1.2. *Substitute Items*: If in PROFESSIONAL's sole discretion an item of material or equipment proposed by CONTRACTOR does not qualify as an "or-equal" item under subparagraph 6.7.1.1, it will be considered a proposed substitute item. CONTRACTOR shall submit sufficient information as provided below to allow PROFESSIONAL to determine that the item of material or equipment proposed is essentially

equivalent to that named and an acceptable substitute therefor. The procedure for review by the PROFESSIONAL will include the following as supplemented in the General Requirements and as PROFESSIONAL may decide is appropriate under the circumstances. Request for review of proposed substitute items of material or equipment will not be accepted by PROFESSIONAL from anyone other than CONTRACTOR. If CONTRACTOR wishes to furnish or use a substitute item of material or equipment, CONTRACTOR shall first make written application to PROFESSIONAL for acceptance thereof, certifying that the proposed substitute will perform adequately the functions and achieve the results called for by the general design, be similar in substance to that specified and be suited to the same use as that specified. The application will state the extent, if any, to which the evaluation and acceptance of the proposed substitute will prejudice CONTRACTOR's achievement of Substantial Completion on time, whether or not acceptance of the substitute for use in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with OWNER for work on the Project) to adapt the design to the proposed substitute and whether or not incorporation or use of the substitute in connection with the Work is subject to payment of any license fee or royalty. All variations of the proposed substitute from that specified will be identified in the application and available maintenance, repair and replacement service will be indicated. The application will also contain an itemized estimate of all cost or credits that will result directly or indirectly from acceptance of such substitute, including costs of redesign and claims of other contractors affected by the resulting change, all of which will be considered by PROFESSIONAL in evaluating the proposed substitute. PROFESSIONAL may require CONTRACTOR to furnish additional data about the proposed substitute.

6.7.1.3. *CONTRACTOR's Expense*: All data to be provided by CONTRACTOR in support of any proposed "or-equal" or substitute item will be at CONTRACTOR's expense.

6.7.2. *Substitute Construction Methods or Procedures*: If a specific means, method, technique, sequence or procedure of construction is shown or

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indicated in and expressly required by the Contract Documents, CONTRACTOR may furnish or utilize a substitute means, method, technique, sequence or procedure of construction acceptable to PROFESSIONAL. CONTRACTOR shall submit sufficient information to allow PROFESSIONAL, in PROFESSIONAL's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The procedure for review by PROFESSIONAL will be similar to that provided in subparagraph 6.7.1.2.

6.7.3. Professional's Evaluation:

PROFESSIONAL will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to paragraphs 6.7.1.2 and 6.7.2, PROFESSIONAL will be the sole judge of acceptability. No "or-equal" or substitute will be ordered, installed or utilized without PROFESSIONAL's prior written acceptance which will be evidenced by either a Change Order or an approved Shop Drawing. OWNER may require CONTRACTOR to furnish at CONTRACTOR's expense a special performance guarantee or other surety with respect to any "or-equal" or substitute. PROFESSIONAL will record time required by PROFESSIONAL and PROFESSIONAL's Consultants in evaluating substitutes proposed or submitted by CONTRACTOR pursuant to paragraphs 6.7.1.2. and 6.7.2 and in making changes in the Contract Documents (or in the provisions of any other direct contract with OWNER for work on the Project) occasioned thereby. Whether or not PROFESSIONAL accepts a substitute item so proposed or submitted by CONTRACTOR, CONTRACTOR shall reimburse OWNER for the charges of PROFESSIONAL and PROFESSIONAL's Consultants for evaluating each such proposed substitute item.

Concerning Subcontractors, Suppliers and Others:

6.8. CONTRACTOR shall not employ and Subcontractor, Supplier or other person or organization, whether initially or as a substitute, against whom OWNER or PROFESSIONAL may have reasonable objection. CONTRACTOR shall not be required to employ any Subcontractor, Supplier or other person or organization to furnish or perform any of the Work against whom CONTRACTOR has reasonable objection.

6.8.1. CONTRACTOR shall be fully responsible to OWNER and PROFESSIONAL for all acts and omissions of the Subcontractors, Suppliers and other persons and organizations performing or furnishing any of the Work under a direct or indirect contract with CONTRACTOR just as CONTRACTOR is responsible for CONTRACTOR's own acts and omissions.

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Nothing in the Contract Documents shall create for the benefit of any such Subcontractor, Supplier or other person or organization any contractual relationship between OWNER or PROFESSIONAL and any such Subcontractor, Supplier or other person or organization, nor shall it create any obligation on the part of OWNER or PROFESSIONAL to pay or to see to the payment of any moneys due any such Subcontractor, Supplier or other person or organization except as may otherwise be required by Laws and Regulations.

6.8.2. CONTRACTOR shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers and other persons and organizations performing or furnishing any of the Work under a direct or indirect contract with CONTRACTOR. CONTRACTOR shall require all Subcontractors, Suppliers and such other persons and organizations performing or furnishing any of the Work to communicate with the PROFESSIONAL through CONTRACTOR.

6.9. The divisions and sections of the Specifications and the identifications of any Drawings shall not control CONTRACTOR in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

6.10. All Work performed for CONTRACTOR by a Subcontractor or Supplier will be pursuant to an appropriate agreement between CONTRACTOR and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of OWNER and PROFESSIONAL. Whenever any such agreement is with a Subcontractor or Supplier who is listed as an additional insured on the property insurance provided in paragraph 5.6, the agreement between the CONTRACTOR and Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against OWNER, CONTRACTOR, PROFESSIONAL, PROFESSIONAL's Consultants and all other additional insureds for all losses and damages caused by, arising out of or resulting from any of the perils covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, CONTRACTOR will obtain the same.

6.11 Not in this Contract

Patent Fees and Royalties:

6.12. CONTRACTOR shall pay all license fees and royalties and assume all costs incident to the use in the

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performance of the Work or the incorporation in the Work of any invention, design, process, product or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product or device is specified in the Contract Documents for use in the performance of the Work and if to the actual knowledge of OWNER or PROFESSIONAL its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by OWNER in the Contract Documents. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, PROFESSIONAL, PROFESSIONAL's Consultants and the officers, directors, employees, agents and other consultants of each and any of them from and against all claims, costs, losses and damages arising out of or resulting from any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product or device not specified in the Contract Document.

Permits:

6.13. Unless otherwise provided in the Supplementary Conditions, CONTRACTOR shall obtain and pay for all construction permits and licenses. OWNER shall assist CONTRACTOR, when necessary, in obtaining such permits and licenses. CONTRACTOR shall pay all governmental charges and inspection fees necessary for the prosecution of the Work, which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. CONTRACTOR shall pay all charges of utility owners for connections to the Work, and OWNER shall pay all charges of such utility owners for capital costs related thereto such as plant investment fees.

6.14 Laws and Regulations:

6.14.1. CONTRACTOR shall give all notices and comply with all Laws and Regulations applicable to furnishing and performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither OWNER nor PROFESSIONAL shall be responsible for monitoring CONTRACTOR's compliance with any Laws or Regulations.

6.14.2. If CONTRACTOR performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, CONTRACTOR shall bear all claims, costs, losses and damages caused by, arising out of or resulting therefrom; however, it shall not be CONTRACTOR's primary responsibility to make certain that the Specifications and Drawings are in accordance

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with Laws and Regulations, but this shall not relieve CONTRACTOR of CONTRACTOR's obligations under paragraph 3.3.2.

Taxes:

6.15. CONTRACTOR shall pay all sales, consumer, use and other similar taxes required to be paid by CONTRACTOR in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

Use of Premises:

6.16. CONTRACTOR shall confine construction equipment, the storage of materials and equipment and the operations of workers to the site and land and areas identified in and permitted by the Contract Documents and other land and areas permitted by Laws and Regulations, rights-of-way, permits and easements, and shall not unreasonably encumber the premises with construction equipment or other materials or equipment. The CONTRACTOR shall assume full responsibility for the safe-guarding and protection of all buildings, poles, conduits, manholes, catchbasins, valve boxes, trees, water mains and services, storm and sanitary sewers, gas mains and services, or other structures which may occur near his work or which in any way may be affected by any of his work under this contract except as otherwise specifically stated in the contract documents. CONTRACTOR shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof or of any adjacent land or areas, resulting from the performance of the Work. Should any claim be made by any such owner or occupant because of the performance of the Work, CONTRACTOR shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law. CONTRACTOR shall, to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless OWNER, PROFESSIONAL, PROFESSIONAL's Consultant and anyone directly or indirectly employed by any of them from and against all claims, costs, losses and damages arising out of or resulting from any claim or action, legal or equitable, brought by any such owner or occupant against OWNER, PROFESSIONAL or any other party indemnified hereunder to the extent caused by or based upon CONTRACTOR's performance of the Work.

6.17. During the progress of the Work, CONTRACTOR shall keep the premises free from accumulations of waste materials, rubbish and other debris resulting from the Work. At the completion of the Work CONTRACTOR

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shall remove all waste materials, rubbish and debris from and about the premises as well as all tools, appliances, construction equipment and machinery and surplus materials. CONTRACTOR shall leave the site clean and ready for occupancy by OWNER at Substantial Completion of the Work. CONTRACTOR shall restore to original condition all property not designated for alteration by the Contract Documents.

6.18. CONTRACTOR shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall CONTRACTOR subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

Record Documents:

6.19. CONTRACTOR shall maintain in a safe place at the site one record copy of all Drawings, Specifications, Addenda, Written Amendments, Change Orders, Work Change Directives, Field Orders and written interpretations and clarifications (issued pursuant to paragraph 9.4) in good order and annotated to show all changes made during construction. These record documents together with all approved Samples and a counterpart of all approved Shop Drawings will be available to PROFESSIONAL for reference. Upon completion of the Work, these record documents, Samples and Shop Drawings will be delivered to PROFESSIONAL for OWNER.

Safety and Protection:

6.20. CONTRACTOR shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. CONTRACTOR shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

6.20.1. all persons on the Work site or who may be affected by the Work;

6.20.2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the site; and

6.20.3. other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities and Underground Facilities not designated for removal, relocation or replacement in the course of construction.

CONTRACTOR shall comply with all applicable Laws and Regulations of any public body having jurisdiction for
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safety of persons or property or to protect them from damage, injury or loss; and shall erect and maintain all necessary safeguards for such safety and protection. When working in a roadway or public right-of-way, the CONTRACTOR shall, at all times, so conduct his work as to ensure the least possible obstruction to traffic. The safety and convenience of the general public and the residents along the roadway and the protection of persons and property shall be provided by the CONTRACTOR at all times in accordance with the authority which has jurisdiction over the roadway. To that end, the CONTRACTOR shall erect and shall maintain during the continuance of the work, such barricades, lights, signs and other protective devices which comply with the laws of the State of Michigan and the Michigan Manual for Uniform Traffic Control Devices. The CONTRACTOR shall also furnish such watchmen as will effectually prevent any accident in consequence of his work and he shall be liable for all accidents and damages occasioned in any way by his acts of neglect, or by the acts of neglect of his subCONTRACTORS, agents or workers. CONTRACTOR shall notify owners of adjacent property and of Underground Facilities and utility owners when prosecution of the Work may affect them and shall cooperate with them in the protection, removal, relocation and replacement of their property. All damage, injury or loss to any property referred to in paragraph 6.20.2 or 6.20.3 caused, directly or indirectly, in whole or in part, by CONTRACTOR, any Subcontractor, Supplier or any other person or organization directly or indirectly employed by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, shall be remedied by CONTRACTOR (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of OWNER or PROFESSIONAL or PROFESSIONAL's Consultant or anyone employed by any of them or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of CONTRACTOR or any Subcontractor, Supplier or other person or organization directly or indirectly employed by any of them). CONTRACTOR's duties and responsibilities for safety and for protection of the work shall continue until such time as all the Work is completed and PROFESSIONAL has issued a notice to OWNER and CONTRACTOR in accordance with paragraph 14.13 that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

Safety Representative:

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6.21. CONTRACTOR shall designate a qualified and experienced safety representative at the site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

Hazard Communication Programs:

6.22. CONTRACTOR shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the site in accordance with Laws or Regulations.

Emergencies:

6.23. In emergencies affecting the safety or protection of persons or the Work or property at the site or adjacent thereto, CONTRACTOR, without special instruction or authorization from OWNER or PROFESSIONAL, is obligated to act to prevent threatened damage, injury or loss. CONTRACTOR shall give PROFESSIONAL prompt written notice if CONTRACTOR believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby. If PROFESSIONAL determines that a change in the Contract Documents is required because of the action taken by CONTRACTOR in response to such an emergency, a Work Change Directive or Change Order will be issued to document the consequences of such action.

6.24. Shop Drawings and Samples:

6.24.1. CONTRACTOR shall submit Shop Drawings to PROFESSIONAL for review and approval in accordance with the accepted schedule of Shop Drawings and Sample submittals (see paragraph 2.9). All submittals will be identified as PROFESSIONAL may require and in the number of copies specified in the General Requirements. The data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials and similar data to show PROFESSIONAL the materials and equipment CONTRACTOR proposes to provide and to enable PROFESSIONAL to review the information for the limited purposes required by paragraph 6.26.

6.24.2. CONTRACTOR shall also submit Samples to PROFESSIONAL for review and approval in accordance with said accepted schedule of Shop Drawings and Sample submittals. Each Sample will be identified clearly as to material, Supplier, pertinent data

such as catalog numbers and the use for which intended and otherwise as PROFESSIONAL may require to enable PROFESSIONAL to review the submittal for the limited purposes required by paragraph 6.26. The numbers of each Sample to be submitted will be as specified in the Specifications.

6.25. Submittal Procedures:

6.25.1. Before submitting each Shop Drawing or Sample, CONTRACTOR shall have determined and verified:

6.25.1.1. all field measurements, quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers and similar information with respect thereto,

6.25.1.2. all materials with respect to intended use, fabrication, shipping, handling, storage, assembly and installation pertaining to the performance of the Work, and

6.25.1.3. all information relative to CONTRACTOR's sole responsibilities in respect of means, methods, techniques, sequences and procedures of construction and safety precautions and programs incident thereto.

CONTRACTOR shall also have reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents.

6.25.2. Each submittal will bear a stamp or specific written indication that CONTRACTOR has satisfied CONTRACTOR's obligations under the Contract Documents with respect to CONTRACTOR's review and approval of that submittal.

6.25.3. At the time of each submission, CONTRACTOR shall give PROFESSIONAL specific written notice of such variations, if any, that the Shop Drawing or Sample submitted may have from the requirements of the Contract Documents, such notice to be in a written communication separate from the submittal; and, in addition, shall cause a specific notation to be made on each Shop Drawing and Sample submitted to PROFESSIONAL for review and approval of each such variation.

6.26. PROFESSIONAL will review and approve Shop Drawings and Samples in accordance with the schedule of Shop Drawings and Sample submittals accepted by

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PROFESSIONAL as required by paragraph 2.9. PROFESSIONAL's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. PROFESSIONAL's review and approval will not extend to means, methods, techniques, sequences or procedures of construction (except where a particular means, method, technique, sequence or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions. CONTRACTOR shall make corrections required by PROFESSIONAL, and shall return the required number of corrected copies of Shop Drawings and submit as required new samples for review and approval.

6.27 PROFESSIONAL's review and approval of Shop Drawings or Samples shall not relieve CONTRACTOR from responsibility for any variation from the requirements of the Contract Documents unless CONTRACTOR has in writing called PROFESSIONAL's attention to each such variation at the time of submission as required by paragraph 6.25.3 and PROFESSIONAL has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample approval; nor will any approval by PROFESSIONAL relieve CONTRACTOR from responsibility for complying with the requirements of paragraph 6.25.1.

6.28. Where a Shop Drawing or Sample is required by the Contract Documents or the schedule of Shop Drawings and Sample submissions accepted by PROFESSIONAL as required by paragraph 2.9, any related Work performed prior to PROFESSIONAL'S review and approval of the pertinent submittal will be at the sole expense and responsibility of CONTRACTOR.

Continuing the Work:

6.29. CONTRACTOR shall carry on the Work and adhere to the progress schedule during all disputes or disagreements with OWNER. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by paragraph 15.5 or as OWNER and CONTRACTOR may otherwise agree in writing.

6.30. *CONTRACTOR's General Warranty and Guarantee:*

6.30.1. CONTRACTOR warrants and guarantees to OWNER, PROFESSIONAL and PROFESSIONAL's Consultants that all work will be in accordance with Contract Documents and will not be *defective*. CONTRACTOR's warranty and guarantee hereunder excludes defects or damage caused by:

6.30.1.1. abuse, modification or improper maintenance or operation by persons other than CONTRACTOR, Subcontractors or Suppliers; or

6.30.1.2. normal wear and tear under normal usage.

6.30.2. CONTRACTOR's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of CONTRACTOR's obligation to perform the Work in accordance with the Contract Documents:

6.30.2.1. observations by PROFESSIONAL;

6.30.2.2. recommendation of any progress or final payment by PROFESSIONAL;

6.30.2.3. the issuance of a certificate of Substantial Completion or any payment by OWNER to CONTRACTOR under the Contract Documents;

6.30.2.4. use or occupancy of the Work or any part thereof by OWNER;

6.30.2.5. any acceptance by OWNER or any failure to do so;

6.30.2.6. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by PROFESSIONAL pursuant to paragraph 14.13;

6.30.2.7. any inspection, test or approval by others; or

6.30.2.8. any correction of *defective* Work by OWNER.

Indemnification:

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6.31. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, PROFESSIONAL, PROFESSIONAL's consultants and the officers, directors, employees, agents and other consultants of each and any of them from and against all claims, costs, losses and damages (including but not limited to all fees and charges of engineers, architects, attorneys and other professionals and all court or arbitration or other dispute resolution costs) caused by, arising out of or resulting from the performance of the Work, provided that any such claim, cost, loss or damage: (i) is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom, and (ii) is caused in whole or in part by any negligent act or omission of CONTRACTOR, any Subcontractor, any Supplier, any person or organization directly or indirectly employed by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, regardless of whether or not caused in part by any negligence or omission of a person or entity indemnified hereunder or whether liability is imposed upon such indemnified party by Laws and Regulations regardless of the negligence of any such person or entity.

6.32. In any and all claims against OWNER or PROFESSIONAL or any of their respective consultants, agents, officers, directors or employees by any employee (or the survivor or personal representative of such employee) of CONTRACTOR, any Subcontractor, any Supplier, any person or organization directly or indirectly employed by any of them to perform or furnish any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under paragraph 6.31 shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for CONTRACTOR or any such Subcontractor, Supplier or other person or organization under workers' compensation acts, disability benefit acts or other employee benefit acts.

6.33. The indemnification obligations of CONTRACTOR under paragraph 6.31 shall not extend to the liability of PROFESSIONAL and PROFESSIONAL's Consultants, officers, directors, employees or agents caused by the professional negligence, errors or omissions of any of them.

Survival of Obligations:

6.34. All representations, indemnifications, warranties and guarantees made in, required by or
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given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion and acceptance of the Work and termination or completion of the Agreement.

ARTICLE 7—OTHER WORK

Related Work at Site:

7.1. OWNER may perform other work related to the Project at the site by OWNER's own forces, or let other direct contracts therefor which shall contain General Conditions similar to these, or have other work performed by utility owners. If the fact that such other work is to be performed was not noted in the Contract Documents, then: (i) written notice thereof will be given to CONTRACTOR prior to starting any such other work, and (ii) CONTRACTOR may make a claim therefor as provided in Articles 11 and 12 if CONTRACTOR believes that such performance will involve additional expense to CONTRACTOR or requires additional time and the parties are unable to agree as to the amount or extent thereof.

7.2. CONTRACTOR shall afford each other contractor who is a party to such a direct contract and each utility owner (and OWNER, if OWNER is performing the additional work with OWNER's employees) proper and safe access to the site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work and shall properly connect and coordinate the Work with theirs. Unless otherwise provided in the Contract Documents. CONTRACTOR shall do all cutting, fitting and patching of the Work that may be required to make its several parts come together properly and integrate with such other work. CONTRACTOR shall not endanger any work of others by cutting, excavating or otherwise altering their work and will only cut or alter their work with the written consent of PROFESSIONAL and the others whose work will be affected. The duties and responsibilities of CONTRACTOR under this paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of CONTRACTOR in said direct contracts between OWNER and such utility owners and other contractors.

7.3. If the proper execution or results of any part of CONTRACTOR's Work depends upon work performed by others under this Article 7, CONTRACTOR shall inspect such other work and promptly report to PROFESSIONAL
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in writing any delays, defects or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of CONTRACTOR's Work. CONTRACTOR's failure so to report will constitute an acceptance of such other work as fit and proper for integration with CONTRACTOR's Work except for latent or nonapparent defects and deficiencies in such other work.

Coordination:

7.4. If OWNER contracts with others for the performance of other work on the Project at the site, the following will be set forth in Supplementary Conditions:

7.4.1. the person, firm or corporation who will have authority and responsibility for coordination of the activities among the various prime contractors will be identified;

7.4.2. the specific matters to be covered by such authority and responsibility will be itemized; and

7.4.3. the extent of such authority and responsibilities will be provided.
Unless otherwise provided in the Supplementary Conditions, OWNER shall have sole authority and responsibility in respect of such coordination.

ARTICLE 8—OWNER'S RESPONSIBILITIES

8.1. Except as otherwise provided in these General Conditions, OWNER shall issue all communications to CONTRACTOR through PROFESSIONAL.

8.2. In case of termination of the employment of PROFESSIONAL, OWNER shall appoint an engineer against whom CONTRACTOR makes no reasonable objection, whose status under the Contract Documents shall be that of the former PROFESSIONAL.

8.3. OWNER shall furnish the data required of OWNER under the Contract Documents promptly and shall make payments to CONTRACTOR promptly when they are due as provided in paragraphs 14.4 and 14.13.

8.4. OWNER's duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in paragraphs 4.1 and 4.4. Paragraph 4.2 refers to OWNER's identifying and making available to CONTRACTOR copies of reports of explorations and tests of subsurface

conditions at the site and drawings of physical conditions in existing structures at or contiguous to the site that have been utilized by PROFESSIONAL in preparing the Contract Documents.

8.5. OWNER's responsibilities in respect of purchasing and maintaining liability and property insurance are set forth in paragraphs 5.5 through 5.10.

8.6. OWNER is obligated to execute Change Orders as indicated in paragraph 10.4.

8.7. OWNER's responsibility in respect of certain inspections, tests and approvals is set forth in paragraph 13.4.

8.8. In connection with OWNER's right to stop Work or suspend Work, see paragraphs 13.10 and 15.1. Paragraph 15.2 deals with OWNER's rights to terminate services of CONTRACTOR under certain circumstances.

8.9. The OWNER shall not supervise, direct or have control or authority over, nor be responsible for, CONTRACTOR's means, methods, techniques, sequences or procedures of construction or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the furnishing or performance of the Work. OWNER will not be responsible for CONTRACTOR's failure to perform or furnish the Work in accordance with the Contract Documents.

8.10. OWNER's responsibility in respect of undisclosed Asbestos, PCB's, Petroleum, Hazardous Waste or Radioactive Materials uncovered or revealed at the site is set forth in paragraph 4.5.

8.11. If and to the extent OWNER has agreed to furnish CONTRACTOR reasonable evidence that financial arrangements have been made to satisfy OWNER's obligations under the Contract Documents, OWNER's responsibility in respect thereof will be as set forth in the Supplementary Conditions.

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ARTICLE 9—PROFESSIONAL'S STATUS
DURING CONSTRUCTION

OWNER'S Representative:

9.1. PROFESSIONAL will be OWNER's representative during the construction period. The duties and responsibilities and the limitations of authority of PROFESSIONAL as OWNER's representative during construction are set forth in the Contract Documents and shall not be extended without written consent of OWNER and PROFESSIONAL.

Visits to Site:

9.2. PROFESSIONAL will make visits to the site at intervals appropriate to the various stages of construction as PROFESSIONAL deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of CONTRACTOR's executed Work. Based on information obtained during such visits and observations, PROFESSIONAL will endeavor for the benefit of OWNER to determine, in general, if the Work is proceeding in accordance with the Contract Documents. PROFESSIONAL will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. PROFESSIONAL's efforts will be directed toward providing for OWNER a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and on-site observations, PROFESSIONAL will keep OWNER informed of the progress of the Work and will endeavor to guard OWNER against *defective* Work. PROFESSIONAL's visits and on-site observations are subject to all the limitations on PROFESSIONAL's authority and responsibility set forth in paragraph 9.13, and particularly, but without limitation, during or as a result of PROFESSIONAL's on-site visits or observations of CONTRACTOR's Work PROFESSIONAL will not supervise, direct, control or have authority over or be responsible for CONTRACTOR's means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the furnishing or performance of the Work.

Project Representative:

9.3. If OWNER and PROFESSIONAL agree, PROFESSIONAL will furnish a Resident Project Representative to assist PROFESSIONAL in providing more continuous observation of the Work. The

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responsibilities and authority and limitations thereon of any such Resident Project Representative and assistants will be as provided in paragraph 9.13 and in the Supplementary Conditions. If OWNER designates another representative or agent to represent OWNER at the site who is not PROFESSIONAL's Consultant, agent or employee, the responsibilities and authority and limitations thereon of such other person will be as provided in the Supplementary Conditions.

Clarifications and Interpretations:

9.4. PROFESSIONAL will issue with reasonable promptness such written clarifications or interpretations of the requirements of the Contract Documents (in the form of Drawings or otherwise) as PROFESSIONAL may determine necessary, which shall be consistent with the intent of and reasonably inferable from Contract Documents. Such written clarifications and interpretations will be binding on OWNER and CONTRACTOR. If OWNER or CONTRACTOR believe that a written clarification or interpretation justifies an adjustment in the Contract Price or the Contract Times and the parties are unable to agree to the amount or extent thereof, if any, OWNER or CONTRACTOR may make a written claim therefor as provided in Article 11 or Article 12.

Authorized Variations in Work:

9.5. PROFESSIONAL may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on OWNER and also on CONTRACTOR who shall perform the Work involved promptly. If OWNER or CONTRACTOR believes that a Field Order justifies an adjustment in the Contract Price or the Contract Times and the parties are unable to agree as to the amount or extent thereof, OWNER or CONTRACTOR may make a written claim therefor as provided in Article 11 or 12.

Rejecting Defective Work:

9.6. PROFESSIONAL will have authority to disapprove or reject Work which PROFESSIONAL believes to be *defective*, or that PROFESSIONAL believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. PROFESSIONAL will also have authority to require special inspection or testing of the Work as

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provided in paragraph 13.9, whether or not the Work is fabricated, installed or completed.

9.6.1. OWNER will have the authority to reduce the contract's final payment by an amount equal to but not greater than increased identified associated costs incurred by the OWNER due to rejection and correction of defective work above and beyond reasonable budgeted efforts.

Shop Drawings, Change Orders and Payments:

9.7. In connection with PROFESSIONAL's authority as to Shop Drawings and Samples, see paragraphs 6.24 through 6.28 inclusive.

9.8. In connection with PROFESSIONAL's authority as to Change Orders, see Articles 10, 11, and 12.

9.9. In connection with PROFESSIONAL's authority as to Applications for Payment, see Article 14.

Determinations for Unit Prices:

9.10. PROFESSIONAL will determine the actual quantities and classifications of Unit Price Work performed by CONTRACTOR. PROFESSIONAL will review with CONTRACTOR the PROFESSIONAL's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). PROFESSIONAL's written decision thereon will be final and binding upon OWNER and CONTRACTOR, unless, within ten days after the date of any such decision, either OWNER or CONTRACTOR delivers to the other and to PROFESSIONAL written notice of intention to appeal from PROFESSIONAL's decision and; (i) an appeal from PROFESSIONAL'S decision is taken within the time limits and in accordance with the procedures set forth in Article 16, Dispute Resolution or (ii) if no such Alternate Dispute Resolution Agreement has been entered into, a formal proceeding is instituted by the appealing party in a forum of competent jurisdiction to exercise such rights or remedies as the appealing party may have with respect to PROFESSIONAL's decision, unless otherwise agreed in writing by OWNER and CONTRACTOR. Such appeal will not be subject to the procedures of paragraph 9.11.

Decisions on Disputes:

9.11. PROFESSIONAL will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. Claims, disputes and other matters relating to the acceptability

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of the Work or the interpretation of the requirements of the Contract Documents pertaining to the performance and furnishing of the Work and Claims under Articles 11 and 12 in respect of changes in the Contract Price or Contract Times will be referred initially to PROFESSIONAL in writing with a request for a formal decision in accordance with this paragraph. Written notice of each such claim, dispute or other matter will be delivered by the claimant to PROFESSIONAL and the other party to the Agreement promptly (but in no event later than thirty days) after the start of the occurrence or event giving rise thereto, and written supporting data will be submitted to PROFESSIONAL and the other party within sixty days after the start of such occurrence or event unless PROFESSIONAL allows an additional period of time for the submission of additional or more accurate data in support of such claim, dispute or other matter. The opposing party shall submit any response to PROFESSIONAL and the claimant within thirty days after receipt of the claimant's last submittal (unless PROFESSIONAL allows additional time). PROFESSIONAL will render a formal decision in writing within thirty days after receipt of the opposing party's submittal, if any, in accordance with this paragraph. PROFESSIONAL's written decision on such claim, dispute or other matter will be final and binding upon OWNER and CONTRACTOR unless (i) an appeal from PROFESSIONAL's decision is taken within the time limits and in accordance with the procedures set forth in Article 16, Dispute Resolution, or (ii) if no such Alternate Dispute Resolution Agreement has been entered into, a written notice of intention to appeal from PROFESSIONAL's written decision is delivered by OWNER or CONTRACTOR to the other and to PROFESSIONAL within thirty days after the date of such decision and a formal proceeding is instituted by the appealing party in a forum of competent jurisdiction to exercise such rights or remedies as the appealing party may have with respect to such claim, dispute or other matter in accordance with applicable Laws, and Regulations within sixty days of the date of such decision, unless otherwise agreed in writing by OWNER and CONTRACTOR.

9.12. When functioning as interpreter and judge under paragraphs 9.10 and 9.11, PROFESSIONAL will not show partiality to OWNER or CONTRACTOR and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity. The rendering of a decision by PROFESSIONAL pursuant to paragraphs 9.10 or 9.11 with respect to any such claim, dispute or other matter (except any which have been waived by the making or acceptance of final payment as provided in paragraph 14.16) will be a condition precedent to any exercise by OWNER or CONTRACTOR

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of such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations in respect of any such claim, dispute or other matter pursuant to Article 16.

9.13. Limitations on PROFESSIONAL's Authority and Responsibilities:

9.13.1. Neither PROFESSIONAL's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by PROFESSIONAL in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise or performance of any authority or responsibility by PROFESSIONAL shall create, impose or give rise to any duty owed by PROFESSIONAL to CONTRACTOR, any Subcontractor, any Supplier, any other person or organization, or to any surety for or employee or agent of any of them.

9.13.2. PROFESSIONAL will not supervise, direct, control or have authority over or be responsible for CONTRACTOR's means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the furnishing or performance of the Work. PROFESSIONAL will not be responsible for CONTRACTOR's failure to perform or furnish the Work in accordance with the Contract Documents.

9.13.3. PROFESSIONAL will not be responsible for the acts or omissions of CONTRACTOR or of any Subcontractor, any Supplier, or of any other person or organization performing or furnishing any of the Work.

9.13.4. PROFESSIONAL's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds and certificates of inspection, tests and approvals and other documentation required to be delivered by paragraph 14.12 will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspection, tests and approvals that the results certified indicate compliance with, the Contract Documents.

9.13.5. The limitations upon authority and responsibility set forth in this paragraph 9.13 shall also apply to PROFESSIONAL's Consultants, Resident Project Representative and assistants.

9.13.6. Insofar as jobsite safety is concerned, the PROFESSIONAL shall be responsible solely for his or her own and his or her employees' activities on the

jobsite, but this shall not be construed to relieve the CONTRACTOR from its responsibility for maintaining a safe jobsite. Neither the professional activities of the PROFESSIONAL, nor the presence of the PROFESSIONAL or his or her employees, subconsultant and SubCONTRACTORS, shall be construed to imply the PROFESSIONAL has any responsibility for methods of work performance, superintendence, sequencing of construction, or safety in, on or about the jobsite. The OWNER and CONTRACTOR agree that the CONTRACTOR is solely responsible for jobsite safety.

ARTICLE 10—CHANGES IN THE WORK

10.1. Without invalidating the Agreement and without notice to any surety, OWNER may, at anytime or from time to time, order additions, deletions or revisions in the Work. Such additions, deletions or revisions will be authorized by a Written Amendment, a Change Order, or a Work Change Directive. Upon receipt of any such document, CONTRACTOR shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

10.2. If OWNER and CONTRACTOR are unable to agree as to the extent, if any, of an adjustment in the Contract Price or an adjustment of the Contract Times that should be allowed as a result of a Work Change Directive, a claim may be made therefor as provided in Article 11 or Article 12.

10.3. CONTRACTOR shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any Work performed that is not required by the Contract Documents as amended, modified and supplemented as provided in paragraphs 3.5 and 3.6 except in the case of an emergency as provided in paragraph 6.23 or in the case of uncovering Work as provided in paragraph 13.9.

10.4. OWNER and CONTRACTOR shall execute appropriate Change Orders recommended by PROFESSIONAL (or Written Amendments) covering:

10.4.1 changes in the Work which are (i) ordered by OWNER pursuant to paragraph 10.1, (ii) required because of acceptance of *defective* Work under paragraph 13.13 or correcting *defective* Work under paragraph 13.14, or (iii) agreed to by the parties;

10.4.2 changes in the Contract Price or Contract Times which are agreed to by the parties; and

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10.4.3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by PROFESSIONAL pursuant to paragraph 9.11;

provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, CONTRACTOR shall carry on the Work and adhere to the progress schedule as provided in paragraph 6.29.

10.5. If notice of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times) is required by the provisions of any Bond to be given to a surety, the giving of any such notice will be CONTRACTOR's responsibility, and the amount of each applicable Bond will be adjusted accordingly.

ARTICLE 11—CHANGE OF CONTRACT
PRICE

11.1. The Contract Price constitutes the total compensation (subject to authorized adjustments) payable to CONTRACTOR for performing the Work. All duties, responsibilities and obligations assigned to or undertaken by CONTRACTOR shall be at CONTRACTOR's expense without change in the Contract Price.

11.2. The Contract Price may only be changed by a Change Order or by a Written Amendment. Any claim for an adjustment in the Contract Price shall be based on written notice delivered by the party making the claim to the other party and to PROFESSIONAL promptly (but in no event later than thirty days) after the start of the occurrence or event giving rise to the claim and stating the general nature of the claim. Notice of the amount of the claim with supporting data shall be delivered within sixty days after the start of such occurrence or event (unless PROFESSIONAL allows additional time for claimant to submit additional or more accurate data in support of the claim) and shall be accompanied by claimant's written statement that the adjustment claimed covers all known amounts to which the claimant is entitled as a result of said occurrence or event. All claims for adjustment in the Contract Price shall be determined by PROFESSIONAL in accordance with paragraph 9.11 if OWNER and CONTRACTOR cannot otherwise agree on the amount involved. No

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claim for an adjustment in the Contract Price will be valid if not submitted in accordance with this paragraph 11.2.

11.3. The value of any Work covered by a Change Order or of any claim for an adjustment in the Contract Price will be determined as follows:

11.3.1. where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of paragraphs 11.9.1 through 11.9.2, inclusive);

11.3.2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with paragraph 11.6.2);

11.3.3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under paragraph 11.3.2, on the basis of the Cost of the Work (determined as provided in paragraphs 11.4 and 11.5) plus a CONTRACTOR's fee for overhead and profit (determined as provided in paragraph 11.6).

Cost of the Work:

11.4. The term Cost of the Work means the sum of all costs necessarily incurred and paid by CONTRACTOR in the proper performance of the Work. Except as otherwise may be agreed to in writing by OWNER, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall include only the following items and shall not include any of the costs itemized in paragraph 11.5:

11.4.1. Payroll costs for employees in the direct employ of CONTRACTOR in the performance of the Work under schedules of job classifications agreed upon by OWNER and CONTRACTOR. Such employees shall include without limitation superintendents, foremen and other personnel employed full-time at the site. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits which shall include social security contributions, unemployment, excise and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. The expenses of performing Work after regular working hours, on Saturday, Sunday or legal holidays,

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shall be included in the above to the extent authorized by OWNER.

11.4.2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to CONTRACTOR unless OWNER deposits funds with CONTRACTOR with which to make payments, in which case the cash discounts shall accrue to OWNER. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment accrue to OWNER, and CONTRACTOR shall make provisions so that they may be obtained.

11.4.3. Payments made by CONTRACTOR to the Subcontractors for Work performed or furnished by Subcontractors. If required by OWNER, CONTRACTOR shall obtain competitive bids from subcontractors acceptable to OWNER and CONTRACTOR and shall deliver such bids to OWNER who will then determine, with the advice of PROFESSIONAL, which bids, if any, will be accepted. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as CONTRACTOR's Cost of the Work and fee as provided in paragraphs 11.4, 11.5, 11.6 and 11.7. All subcontracts shall be subject to the other provisions of the Contract Documents insofar as applicable.

11.4.4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys and accountants) employed for services specifically related to the Work.

11.4.5. Supplemental costs including the following:

11.4.5.1. The proportion of necessary transportation, travel and subsistence expenses of CONTRACTOR's employees incurred in discharge of duties connected with the Work.

11.4.5.2. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office and temporary facilities at the site and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost less market value of such items used but not consumed which remain the property of CONTRACTOR.

11.4.5.3. Rentals of all construction equipment and machinery and the parts thereof whether rented from CONTRACTOR or others in accordance with rental agreements approved by OWNER with the advice of PROFESSIONAL, and the costs of transportation, loading, unloading, installation, dismantling and removal thereof—all in accordance with the terms of said rental agreements. The rental of any such equipment, machinery or parts shall cease when the use thereof is no longer necessary for the Work.

11.4.5.4. Sales, consumer, use or similar taxes related to the Work, and for which CONTRACTOR is liable, imposed by Laws and Regulations.

11.4.5.5. Deposits lost for causes other than negligence of CONTRACTOR, any Subcontractor or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

11.4.5.6. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by CONTRACTOR in connection with the performance and furnishing of the Work (except losses and damages within the deductible amounts of property insurance established by OWNER in accordance with paragraph 5.9), provided they have resulted from causes other than the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of OWNER. No such losses, damages and expenses shall be included in the Cost of the Work for the purpose of determining CONTRACTOR's fee. If, however, any such loss or damage requires reconstruction and CONTRACTOR is placed in charge thereof, CONTRACTOR shall be paid for services a fee proportionate to that stated in paragraph 11.6.2.

11.4.5.7. The cost of utilities, fuel and sanitary facilities at the site.

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11.4.5.8. Minor expenses such as telegrams, long distance telephone calls, telephone service at the site, expressage

and similar petty cash items in connection with the Work.

11.4.5.9. Cost of premiums for additional Bonds and insurance required because of changes in the Work.

11.5. The term Cost of the Work shall not include any of the following:

11.5.1. Payroll costs and other compensation of CONTRACTOR's officers, executives, principals (of partnership and sole proprietorships), general managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks and other personnel employed by CONTRACTOR whether at the site or in CONTRACTOR's principal or a branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in paragraph 11.4.1 or specifically covered by paragraph 11.4.4—all of which are to be considered administrative costs covered by the CONTRACTOR's fee.

11.5.2. Expenses of CONTRACTOR's principal and branch offices other than CONTRACTOR's office at the site.

11.5.3. Any part of CONTRACTOR's capital expenses, including interest on CONTRACTOR's capital employed for the Work and charges against CONTRACTOR for delinquent payments .

11.5.4. Cost of premiums for all Bonds and for all insurance whether or not CONTRACTOR is required by the Contract Documents to purchase and maintain the same (except for the cost of premiums covered by subparagraph 11.4.5.9 above).

11.5.5. Costs due to the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of *defective* Work, disposal of materials or equipment wrongly supplied and making good any damage to property.

Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in paragraph 11.4.

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11.6. The CONTRACTOR's fee allowed to CONTRACTOR for overhead and profit shall be determined as follows:

11.6.1. a mutually acceptable fixed fee; or

11.6.2. If a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:

11.6.2.1. for costs incurred under paragraphs 11.4.1 and 11.4.2, the CONTRACTOR's fee shall be fifteen percent;

11.6.2.2. for costs incurred under paragraph 11.4.3, the CONTRACTOR's fee shall be five percent;

11.6.2.3. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of paragraphs 11.4.1, 11.4.2, 11.4.3 and 11.6.2 is that only the Subcontractor who actually performs or furnishes the Work, at whatever tier, will be paid a fee of ten percent of the costs incurred by such Subcontractor under paragraphs 11.4.1 and 11.4.2 and that only the CONTRACTOR will be paid a fee of five percent of the amount paid to the Subcontractor;

11.6.2.4. no fee shall be payable on the basis of costs itemized under paragraphs 11.4.4, 11.4.5 and 11.5;

11.6.2.5. the amount of credit to be allowed by CONTRACTOR to OWNER for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in CONTRACTOR's fee by an amount equal to five percent of such net decrease; and

11.6.2.6. when both additions and credits are involved in any one change, the adjustment in CONTRACTOR's fee shall be computed on the basis of the net change in accordance with paragraphs 11.6.2.1 through 11.6.2.5, inclusive.

11.7. Whenever the cost of any Work is to be determined pursuant to paragraphs 11.4 and 11.5, CONTRACTOR will establish and maintain records thereof in accordance with generally accepted

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accounting practices and submit in form acceptable to PROFESSIONAL an itemized cost breakdown together with supporting data.

Cash Allowances:

11.8. It is understood that CONTRACTOR has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be furnished and performed for such sums as may be acceptable to OWNER and PROFESSIONAL. CONTRACTOR agrees that:

11.8.1. the allowances include the cost to CONTRACTOR (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the site, and all applicable taxes; and

11.8.2. CONTRACTOR's costs for unloading and handling on the site, labor, installation costs, overhead, profit and other expenses contemplated for the allowances have been included in the Contract Price and not in the allowances and no demand for additional payment on account of any of the foregoing will be valid.

Prior to final payment, an appropriate Change Order will be issued as recommended by PROFESSIONAL to reflect actual amounts due CONTRACTOR on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

11.9. Unit Price Work:

11.9.1. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the established unit price for each separately identified item of Unit price Work times the estimated quantity of each item as indicated in the Agreement. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by CONTRACTOR will be made by PROFESSIONAL in accordance with paragraph 9.10.

11.9.2. Each unit price will be deemed to include an amount considered by CONTRACTOR to be adequate to cover CONTRACTOR's overhead and profit for each separately identified item.

TIMES

12.1. The Contract Times (or Milestones) may only be changed by a Change Order or a Written Amendment. Any claim for an adjustment of the Contract Times (or Milestones) shall be based on written notice delivered by the party making the claim to the other party and to PROFESSIONAL promptly (but in no event later than thirty days) after the occurrence of the event giving rise to the claim and stating the general nature of the claim. Notice of the extent of the claim with supporting data shall be delivered within sixty days after such occurrence (unless PROFESSIONAL allows an additional period of time to ascertain more accurate data in support of the claim) and shall be accompanied by the claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant has reason to believe it is entitled as a result of the occurrence of said event. All claims for adjustment in the Contract Times (or Milestones) shall be determined by PROFESSIONAL in accordance with paragraph 9.11 if OWNER and CONTRACTOR cannot otherwise agree. No claim for an adjustment in the Contract Times (or Milestones) will be valid if not submitted in accordance with the requirements of the paragraph 12.1.

12.2. All time limits stated in the Contract Documents are of the essence of the Agreement.

12.3. Where CONTRACTOR is prevented from completing any part of the Work within the Contract Times (or Milestones) due to delay beyond the control of CONTRACTOR, the Contract Times (or Milestones) will be extended in an amount equal to the time lost due to such delay if a claim is made therefor as provided in paragraph 12.1. Delays beyond the control of CONTRACTOR shall include, but not be limited to, acts or neglect by OWNER, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions or acts of God.

Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of CONTRACTOR.

12.4. Where CONTRACTOR is prevented from completing any part of the Work within the Contract Times (or Milestones) due to delay beyond the control of both OWNER and CONTRACTOR, an extension of the Contract Times (or Milestones) in an amount equal to the time lost due to such delay shall be CONTRACTOR's sole and exclusive remedy for such delay. In no event shall OWNER be liable to CONTRACTOR, any

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Subcontractor, any Supplier, any other person or organization, or to any surety for or employee or agent of any of them, for damages arising out of or resulting from (i) delays caused by or within the control of CONTRACTOR, or (ii) delays beyond the control of both parties including but not limited to fires, floods, epidemics, abnormal weather conditions, acts of God or acts or neglect by utility owners or other contractors performing other work as contemplated by Article 7.

ARTICLE 13—TESTS AND INSPECTIONS;
CORRECTION, REMOVAL OR
ACCEPTANCE OF DEFECTIVE
WORK

13.1. *Notice of Defects:* Prompt notice of all defective Work of which OWNER or PROFESSIONAL have actual knowledge will be given to CONTRACTOR. All defective Work may be rejected, corrected or accepted as provided in this Article 13.

Access to Work:

13.2. OWNER, PROFESSIONAL, PROFESSIONAL'S Consultants, other representatives and personnel of OWNER, independent testing laboratories and governmental agencies with jurisdictional interests will have access to the Work at reasonable times for their observation, inspecting and testing. CONTRACTOR shall provide them proper and safe conditions for such access and advise them of CONTRACTOR's site safety procedures and programs so that they may comply therewith as applicable.

Tests and Inspections:

13.3. CONTRACTOR shall give PROFESSIONAL timely notice of readiness of the Work for all required inspections, tests or approvals, and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.

13.4. OWNER shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:

13.4.1. for inspections, tests or approvals covered by paragraph 13.5 below;

13.4.2. that costs incurred in connection with tests or inspections conducted pursuant to paragraph

13.9 below shall be paid as provided in said paragraph 13.9; and

13.4.3. as otherwise specifically provided in the Contract Documents.

13.5. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested or approved by an employee or other representative of such public body, CONTRACTOR shall assume full responsibility for arranging and obtaining such inspections, tests or approvals, pay all costs in connection therewith, and furnish PROFESSIONAL the required certificates of inspection, or approval. CONTRACTOR shall also be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests or approvals required for OWNER's and PROFESSIONAL's acceptance of materials or equipment to be incorporated in the Work, or of materials, mix designs, or equipment submitted for approval prior to CONTRACTOR's purchase thereof for incorporation in the Work.

13.6. If any Work (or the work of others) that is to be inspected, tested or approved is covered by CONTRACTOR without written concurrence of PROFESSIONAL, it must, if requested by PROFESSIONAL, be uncovered for observation.

13.7. Uncovering Work as provided in paragraph 13.6 shall be at CONTRACTOR's expense unless CONTRACTOR has given PROFESSIONAL timely notice of CONTRACTOR's intention to cover the same and PROFESSIONAL has not acted with reasonable promptness in response to such notice.

Uncovering Work:

13.8. If any Work is covered contrary to the written request of PROFESSIONAL, it must, if requested by PROFESSIONAL, be uncovered for PROFESSIONAL's observation and replaced at CONTRACTOR's expense.

13.9. If PROFESSIONAL considers it necessary or advisable that covered Work be observed by PROFESSIONAL or inspected or tested by others, CONTRACTOR, at PROFESSIONAL's request, shall uncover, expose or otherwise make available for observation, inspection or testing as PROFESSIONAL may require, that portion of the Work in question, furnishing all necessary labor, material and equipment. If it is found that such Work is *defective*, CONTRACTOR shall pay all claims, costs, losses and damages caused by, arising out of or resulting from such uncovering, exposure, observation, inspection and testing and of

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satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and OWNER shall be entitled to an appropriate decrease in the Contract Price, and, if the parties are unable to agree as to the amount thereof, may make a claim therefor as provided in Article 11. If, however, such Work is not found to be *defective*, CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Times (or Milestones), or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement and reconstruction; and, if the parties are unable to agree as to the amount or extent thereof, CONTRACTOR may make a claim therefor as provided in Articles 11 and 12.

OWNER May Stop the Work:

13.10. If the Work is *defective*, or CONTRACTOR fails to supply sufficient skilled workers or suitable materials or equipment, or fails to furnish or perform the Work in such a way that the completed Work will conform to the Contract Documents, OWNER may order CONTRACTOR to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of OWNER to stop the Work shall not give rise to any duty on the part of OWNER to exercise this right for the benefit of CONTRACTOR or any surety or other party.

Correction or Removal of Defective Work:

13.11. If required by PROFESSIONAL, CONTRACTOR shall promptly, as directed, either correct all *defective* Work, whether or not fabricated, installed or completed, or, if the Work has been rejected by PROFESSIONAL, remove it from the site and replace it with Work that is not defective. CONTRACTOR shall pay all claims, costs, losses and damages caused by or resulting from such correction or removal (including but not limited to all costs of repair or replacement of work of others).

13.12. Correction Period:

13.12.1. If within one year after the date of Substantial Completion or such longer period of time as may be prescribed by Laws or Regulations or by the terms of any applicable special guarantee required by the Contract Documents or by any specific provision of the Contract Documents, any Work is found to be *defective*, CONTRACTOR shall promptly, without cost to OWNER and in accordance with OWNER's written instructions: (i) correct such defective Work, or, if it has been rejected by OWNER, remove it from the site and replace it with Work that is not *defective*, and (ii)

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satisfactorily correct or remove and replace any damage to other Work or the work of others resulting therefrom. If CONTRACTOR does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, OWNER may have the *defective* Work corrected or the rejected Work removed and replaced, and all claims, costs, losses and damages caused by or resulting from such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by CONTRACTOR.

13.12.2. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications or by Written Amendment.

13.12.3. Where *defective* Work (and damage to other Work resulting therefrom) has been corrected, removed or replaced under this paragraph 13.12, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

Acceptance of Defective Work:

13.13. If, instead of requiring correction or removal and replacement of *defective* Work, OWNER (and, prior to PROFESSIONAL's recommendation of final payment, also PROFESSIONAL) prefers to accept it, OWNER may do so. CONTRACTOR shall pay all claims, costs, losses and damages attributable to OWNER'S evaluation of and determination to accept such *defective* Work (such costs to be approved by PROFESSIONAL as to reasonableness). If any such acceptance occurs prior to PROFESSIONAL's recommendation of final payment, a Change Order will be issued incorporation the necessary revisions in the Contract Documents with respect to the Work; and OWNER shall be entitled to an appropriate decrease in the Contract Price, and, if the parties are unable to agree as to the amount thereof, OWNER may make a claim therefor as provided in Article 11. If the acceptance occurs after such recommendation, an appropriate amount will be paid by CONTRACTOR to OWNER.

OWNER May Correct Defective Work:

13.14. If CONTRACTOR fails within a reasonable time after written notice from the PROFESSIONAL to correct *defective* Work or to remove and replace rejected Work as required by PROFESSIONAL in accordance with

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paragraph 13.11, of if CONTRACTOR fails to perform the Work in accordance with the Contract Documents, or if CONTRACTOR fails to comply with any other provision of the Contract Documents, OWNER may, after seven days' written notice to CONTRACTOR, correct and remedy any such deficiency. In exercising the rights and remedies under this paragraph OWNER shall proceed expeditiously. In connection with such corrective and remedial action, OWNER may exclude CONTRACTOR from all or part of the site, take possession of all or part of the Work, and suspend CONTRACTOR's services related thereto, take possession of CONTRACTOR's tools, appliances, construction equipment and machinery at the site and incorporate in the Work all materials and equipment stored at the site or for which OWNER has paid CONTRACTOR but which are stored elsewhere. CONTRACTOR shall allow OWNER, OWNER's representatives, agents and employees, OWNER's other contractors and PROFESSIONAL and PROFESSIONAL's Consultants access to the site to enable OWNER to exercise the rights and remedies under this paragraph. All claims, costs, losses and damages incurred or sustained by OWNER in exercising such rights and remedies will be charged against CONTRACTOR and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and OWNER shall be entitled to an appropriate decrease in the Contract Price, and, if the parties are unable to agree as to the amount thereof, OWNER may make a claim therefor as provided in Article 11. Such claims, costs, losses and damages will include but not be limited to all costs of repair or replacement of work of others destroyed or damaged by correction, removal or replacement of CONTRACTOR's *defective* Work. CONTRACTOR shall not be allowed an extension of the Contract Times (or Milestone) because of any delay in the performance of the Work attributable to the exercise by OWNER of OWNER'S rights and remedies hereunder.

ARTICLE 14—PAYMENTS TO CONTRACTOR
AND COMPLETION

Schedule of Values:

14.1. The schedule of values established as provided in paragraph 2.9 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to PROFESSIONAL. Progress payments on account of Unit Price Work will be based on the number of units completed.

Application for Progress Payment

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14.2. At least twenty days before the date established for each progress payment (but not more often than once a month), CONTRACTOR shall consult with PROFESSIONAL and review an Application for Payment filled out and signed by CONTRACTOR covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice or other documentation from the supplier, warranting that OWNER has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance and other arrangements to protect OWNER's interest therein, all of which will be satisfactory to OWNER. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

CONTRACTOR's Warranty of Title

14.3. CONTRACTOR warrants and guarantees that title to all Work, materials and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to OWNER no later than the time of payment free and clear of all Liens.

Review of Applications for Progress Payment:

14.4. PROFESSIONAL will, within ten days after receipt of each application for payment, either indicate in writing a recommendation of payment and present the application to OWNER, or return the application to CONTRACTOR indicating in writing PROFESSIONAL's reasons for refusing to recommend payment. In the latter case, CONTRACTOR may make the necessary corrections and resubmit the Application. Ten days after presentation of the Application for Payment to OWNER with PROFESSIONAL's recommendation, the amount recommended will (subject to the provisions of the last sentence of paragraph 14.7) become due and when due will be paid by OWNER to CONTRACTOR.

14.5. PROFESSIONAL's recommendation of any payment requested in an Application for Payment will constitute a representation by PROFESSIONAL to OWNER, based on PROFESSIONAL's on-site observations of the executed Work as an experienced and qualified design professional and on PROFESSIONAL's review of the Application for Payment and the accompanying data

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and schedules, that to the best of PROFESSIONAL's knowledge, information and belief:

14.5.1. the Work has progressed to the point indicated,

14.5.2. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, to a final determination of quantities and classifications for Unit Price Work under paragraph 9.10, and to any other qualifications stated in the recommendation), and

14.5.3. the conditions precedent to CONTRACTOR's being entitled to such payment appear to have been fulfilled in so far as it is PROFESSIONAL's responsibility to observe the Work.

However, by recommending any such payment PROFESSIONAL will not thereby be deemed to have represented that: (i) exhaustive or continuous on-site inspections have been made to check the quality or the quantity of the Work beyond the responsibilities specifically assigned to PROFESSIONAL in the Contract Documents or (ii) that there may not be other matters or issues between the parties that might entitle CONTRACTOR to be paid additionally by OWNER or entitle OWNER to withhold payment to CONTRACTOR.

14.6. PROFESSIONAL's recommendation of any payment, including final payment, shall not mean that PROFESSIONAL is responsible for CONTRACTOR's means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with laws and Regulations applicable to the furnishing or performance of Work, or for any failure of CONTRACTOR to perform or furnish Work in accordance with the Contract Documents.

14.7. PROFESSIONAL may refuse to recommend the whole or any part of any payment if, in PROFESSIONAL's opinion, it would be incorrect to make the representations to OWNER referred to in paragraph 14.5. PROFESSIONAL may also refuse to recommend any such payment, or, because of subsequently discovered evidence or the results of subsequent inspections or test, nullify any such payment previously recommended to such extent as may be necessary in PROFESSIONAL's opinion to protect OWNER from loss because:

14.7.1. the Work is defective, or completed Work has been damaged requiring correction or replacement,

14.7.2. the Contract Price has been reduced by Written Amendment or Change Order,

14.7.3. OWNER has been required to correct *defective* Work or complete Work in accordance with paragraph 13.14, or

14.7.4. PROFESSIONAL has actual knowledge of the occurrence of any of the events enumerated in paragraphs 15.2.1 through 15.2.4 inclusive.

OWNER may refuse to make payment of the full amount recommended by PROFESSIONAL because:

14.7.5. claims have been made against OWNER on account of CONTRACTOR's performance or furnishing of the Work,

14.7.6. Liens have been filed in connection with the Work, except where CONTRACTOR has delivered a specific Bond satisfactory to OWNER to secure the satisfaction and discharge of such Liens,

14.7.7. there are other items entitling OWNER to a set-off against the amount recommended, or

14.7.8. OWNER has actual knowledge of the occurrence of any of the events enumerated in paragraphs 14.7.1 through 14.7.3 or paragraphs 15.2.1 through 15.2.4 inclusive; but OWNER must give CONTRACTOR immediate written notice (with a copy to PROFESSIONAL) stating the reasons for such action and promptly pay CONTRACTOR the amount so withheld, or any adjustment thereto agreed to by OWNER and CONTRACTOR, when CONTRACTOR corrects to OWNER's satisfaction the reasons for such action.

Substantial Completion:

14.8. When CONTRACTOR considers the entire Work ready for its intended use, CONTRACTOR shall notify OWNER and PROFESSIONAL in writing that the entire Work is substantially complete (except for items specifically listed by CONTRACTOR as incomplete) and request that PROFESSIONAL issue a certificate of Substantial Completion. Within a reasonable time thereafter, OWNER, CONTRACTOR and PROFESSIONAL shall make an inspection of the Work to determine the status of completion. If PROFESSIONAL does not consider the Work substantially complete, PROFESSIONAL will notify CONTRACTOR in writing giving

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the reasons therefor. If PROFESSIONAL considers the Work substantially complete, PROFESSIONAL will prepare and deliver to OWNER a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. OWNER shall have seven days after receipt of the tentative certificate during which to make written objection to PROFESSIONAL as to any provisions of the certificate or attached list. If, after considering such objections, PROFESSIONAL concludes that the Work is not substantially complete, PROFESSIONAL will within fourteen days after submission of the tentative certificate to OWNER notify CONTRACTOR in writing, stating the reasons therefor. If, after consideration of OWNER's objections, PROFESSIONAL considers the Work Substantially complete, PROFESSIONAL will within said fourteen days execute and deliver to OWNER and CONTRACTOR a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as PROFESSIONAL believes justified after consideration of any objections from OWNER. At the time of delivery of the tentative certificate of Substantial Completion PROFESSIONAL will deliver to OWNER and CONTRACTOR a written recommendation as to division of responsibilities pending final payment between OWNER and CONTRACTOR with respect to security, operation, safety, maintenance, heat, utilities, insurance and warranties and guarantees. Unless OWNER and CONTRACTOR agree otherwise in writing and so inform PROFESSIONAL in writing prior to PROFESSIONAL's issuing the definitive certificate of Substantial Completion, PROFESSIONAL's aforesaid recommendation will be binding on OWNER and CONTRACTOR until final payment.

14.9. OWNER shall have the right to exclude CONTRACTOR from the Work after the date of Substantial Completion, but OWNER shall allow CONTRACTOR reasonable access to complete or correct items on the tentative list.

Partial Utilization:

14.10. Use by OWNER at OWNER'S option of any substantially completed part of the Work which: (i) has specifically been identified in the Contract Documents, or (ii) OWNER, PROFESSIONAL and CONTRACTOR agree constitutes a separately functioning and usable part of the Work that can be used by OWNER for its intended purpose without significant interference with CONTRACTOR's performance of the remainder of the GENERAL CONDITIONS

Work, may be accomplished prior to Substantial Completion of all the Work subject to the following:

14.10.1. OWNER at any time may request CONTRACTOR in writing to permit OWNER to use any such part of the Work which OWNER believes to be ready for its intended use and substantially complete. If CONTRACTOR agrees that such part of the Work is substantially complete, CONTRACTOR will certify to OWNER and PROFESSIONAL that such part of the Work is substantially complete and request PROFESSIONAL to issue a certificate of Substantial Completion for that part of the Work. CONTRACTOR at any time may notify OWNER and PROFESSIONAL in writing that CONTRACTOR considers any such part of the Work ready for its intended use and substantially complete and request PROFESSIONAL to issue a certificate of Substantial Completion for that part of the Work. Within a reasonable time after either such request, OWNER, CONTRACTOR and PROFESSIONAL shall make an inspection of that part of the Work to determine its status of completion. If PROFESSIONAL does not consider that part of the Work to be substantially complete, PROFESSIONAL will notify OWNER and CONTRACTOR in writing giving the reasons therefor. If PROFESSIONAL considers that part of the Work to be substantially complete, the provisions of paragraphs 14.8 and 14.9 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

14.10.2. No occupancy or separate operation of part of the Work will be accomplished prior to compliance with the requirements of paragraph 5.15 in respect of property insurance.

Final Inspection:

14.11. Upon written notice from CONTRACTOR that the entire Work or an agreed portion thereof is complete, PROFESSIONAL will make a final inspection with OWNER and CONTRACTOR and will notify CONTRACTOR in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. CONTRACTOR shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

Final Application for Payment:

14.12. After CONTRACTOR has completed all such corrections to the satisfaction of PROFESSIONAL and delivered in accordance with the Contract Documents all maintenance and operating instructions, schedules, GC-46

guarantees, Bonds, certificates or other evidence of insurance required by paragraph 5.4, certificates of inspection, marked-up record documents (as provided in paragraph 6.19) and other documents, CONTRACTOR may make application for final payment following the procedure for progress payments. The final Application for Payment shall be accompanied (except as previously delivered) by: (i) all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by subparagraph 5.4.13, (ii) consent of the surety, if any, to final payment, and (iii) complete and legally effective releases or waivers (satisfactory to OWNER) of all Liens arising out of or filed in connection with the Work. In lieu of such releases or waivers of Liens and as approved by OWNER, CONTRACTOR may furnish receipts or releases in full and an affidavit of CONTRACTOR that: (i) the releases and receipts include all labor, services, material and equipment for which a Lien could be filed, and (ii) all payrolls, material and equipment bills and other indebtedness connected with the Work for which OWNER or OWNER's property might in any way be responsible have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, CONTRACTOR may furnish a Bond or other collateral satisfactory to OWNER to indemnify OWNER against any Lien.

Final Payment and Acceptance:

14.13. If, on the basis of PROFESSIONAL's observation of the Work during construction and final inspection, and PROFESSIONAL's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, PROFESSIONAL is satisfied that the Work has been completed and CONTRACTOR's other obligations under the Contract Documents have been fulfilled, PROFESSIONAL will, within ten days after receipt of the final Application for Payment, indicate in writing PROFESSIONAL's recommendation of payment and present the Application to OWNER for payment. At the same time PROFESSIONAL will also give written notice to OWNER and CONTRACTOR that the Work is acceptable subject to the provisions of paragraph 14.15. Otherwise, PROFESSIONAL will return the Application to CONTRACTOR, indicating in writing the reasons for refusing to recommend final payment, in which case CONTRACTOR shall make the necessary corrections and resubmit the Application. Thirty days after the presentation to OWNER of the Application and accompanying documentation, in appropriate form and substance and with PROFESSIONAL's recommendation and notice of acceptability, the amount recommended by PROFESSIONAL will become due and will be paid by OWNER to CONTRACTOR.

14.14. If, through no fault of CONTRACTOR, final completion of the Work is significantly delayed and if PROFESSIONAL so confirms, OWNER shall, upon receipt of CONTRACTOR's final Application for Payment and recommendation of PROFESSIONAL, and without terminating the Agreement, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by OWNER for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if Bonds have been furnished as required in paragraph 5.1, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by CONTRACTOR to PROFESSIONAL with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

Waiver of Claims:

14.15. The making and acceptance of final payment will constitute:

14.15.1. a waiver of all claims by OWNER against CONTRACTOR, except claims arising from unsettled Liens, from *defective* Work appearing after final inspection pursuant to paragraph 14.11, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from CONTRACTOR's continuing obligations under the Contract Documents; and

14.15.2. a waiver of all claims by CONTRACTOR against OWNER other than those previously made in writing and still unsettled.

ARTICLE 15—SUSPENSION OF WORK AND
TERMINATION

OWNER May Suspend Work

15.1. At any time and without cause, OWNER may suspend the Work or any portion thereof for a period of not more than ninety days by notice in writing to CONTRACTOR and PROFESSIONAL which will fix the date on which Work will be resumed. CONTRACTOR shall resume the Work on the date so fixed. CONTRACTOR shall be allowed an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if CONTRACTOR

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makes an approved claim therefor as provided in Articles 11 and 12.

OWNER May Terminate:

15.2. Upon the occurrence of any one or more of the following events:

15.2.1. if CONTRACTOR persistently fails to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the progress schedule established under paragraph 2.9 as adjusted from time to time pursuant to paragraph 6.6);

15.2.2. if CONTRACTOR disregards Laws or Regulations of any public body having jurisdiction;

15.2.3. if CONTRACTOR disregards the authority of PROFESSIONAL; or

15.2.4. if CONTRACTOR otherwise violates in any substantial way any provisions of the Contract Documents;

OWNER may, after giving CONTRACTOR (and the surety, if any,) seven days' written notice and to the extent permitted by Laws and Regulations, terminate the services of CONTRACTOR, exclude CONTRACTOR from the site and take possession of the Work and of all CONTRACTOR's tools, appliances, construction equipment and machinery at the site and use the same to the full extent they could be used by CONTRACTOR (without liability to CONTRACTOR for trespass or conversion), incorporate in the Work all materials and equipment stored at the site or for which OWNER has paid CONTRACTOR but which are stored elsewhere, and finish the Work as OWNER may deem expedient. In such case CONTRACTOR shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds all claims, costs, losses and damages sustained by OWNER arising out of or resulting from completing the Work, such excess will be paid to CONTRACTOR. If such claims, costs, losses and damages exceed such unpaid balance, CONTRACTOR shall pay the difference to OWNER. Such claims, costs, losses and damages incurred by OWNER will be reviewed by PROFESSIONAL as to their reasonableness and when so approved by PROFESSIONAL incorporated in a Change Order, provided that when exercising any rights or remedies under this paragraph OWNER shall not be required to obtain the lowest price for the Work performed.

15.3. Where CONTRACTOR's services have been so terminated by OWNER, the termination will not affect any rights or remedies of OWNER against CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of moneys due CONTRACTOR by OWNER will not release CONTRACTOR from liability.

15.4. Upon seven days' written notice to CONTRACTOR and PROFESSIONAL, OWNER may, without cause and without prejudice to any other right or remedy of OWNER, elect to terminate the Agreement. In such case, CONTRACTOR shall be paid (without duplication of any items):

15.4.1. for completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;

15.4.2. for expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;

15.4.3. for all claims, costs, losses and damages incurred in settlement of terminated contracts with Subcontractors, Suppliers and others; and

15.4.4. for reasonable expenses directly attributable to termination.

CONTRACTOR shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

CONTRACTOR May Stop Work or Terminate:

15.5. If, through no act or fault of CONTRACTOR, the Work is suspended for a period of more than ninety days by OWNER or under an order of court or other public authority, or PROFESSIONAL fails to act on any Application for Payment within thirty days after it is submitted or OWNER fails for thirty days to pay CONTRACTOR any sum finally determined to be due, then CONTRACTOR may, upon seven days' written notice to OWNER and PROFESSIONAL, and provided OWNER or PROFESSIONAL do not remedy such suspension or failure within that time, terminate the Agreement and recover from OWNER payment on the same terms as provided in paragraph 15.4. In lieu of terminating the Agreement and without prejudice to any other right or remedy, if PROFESSIONAL has failed

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to act on an Application for Payment within thirty days after it is submitted, or OWNER has failed for thirty days to pay CONTRACTOR any sum finally determined to be due, CONTRACTOR may upon seven day's written notice to OWNER and PROFESSIONAL stop the Work until payment of all such amounts due CONTRACTOR, including interest thereon. The provisions of this paragraph 15.5 are not intended to preclude CONTRACTOR from making claim under Articles 11 and 12 for an increase in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to CONTRACTOR's stopping Work as permitted by this paragraph.

ARTICLE 16—DISPUTE RESOLUTION

If and to the extent that OWNER and CONTRACTOR have agreed on the method and procedure for resolving disputes between them that may arise under this Agreement, such dispute resolution method and procedure shall be as follows. If no such agreement on the method and procedure for resolving such disputes has been reached, and subject to the provisions of paragraphs 9.10, 9.11, and 9.12, OWNER and CONTRACTOR may exercise such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations in respect of any dispute.

ALTERNATE DISPUTE RESOLUTION (ADR) AGREEMENT

OWNER and CONTRACTOR hereby agree that Article 16 of the General Conditions to the Agreement between OWNER and CONTRACTOR is amended to include the following agreement of the parties:

16.1 OWNER and CONTRACTOR agree that they shall first submit any and all unsettled claims, counterclaims, disputes and other matters in question between them arising out of or relating to the Contract Documents or the breach thereof ("disputes"), to mediation by the American Arbitration Association under the Construction Industry Mediation Rules of the American Arbitration Association prior to either of them initiating against the other types of demands.

16.1.1 **Agreement of Parties** - Whenever, by stipulation or in their contract, the parties have provided for mediation for existing or future disputes under the auspices of the American Arbitration Association (AAA) or under these Rules, they shall be deemed to have made these Rules, as amended and in GENERAL CONDITIONS

effect as of the date of the submission of the dispute, a part of their agreement.

16.1.2 **Initiation of Mediation** - Any party or parties to a dispute may initiate mediation by filing with the AAA a written request for mediation pursuant to these Rules, together with the appropriate administrative fee contained in the Administrative Fee Schedule.

16.1.3 **Request for Mediation** - A request for mediation shall contain a brief statement of the nature of the dispute and the names, addresses, and phone numbers of all parties to the dispute, and those who will represent them, if any, to the mediation. The initiating party shall simultaneously file two (2) copies of the request with the AAA and one copy with every other party to the dispute.

16.1.4 **Appointment of Mediator** - Upon receipt of a request for mediation, the AAA will appoint a qualified mediator or standing neutral facilitator to serve. Normally, a single mediator will be appointed unless the parties agree otherwise or the AAA determines otherwise. If the agreement of the parties name a mediator or specifies a method of appointing a mediator, that designation or method shall be followed.

16.1.5 **Qualifications of a Mediator** - Any mediator appointed shall be a member of the AAA's Construction Mediation Panel, with expertise in the area of the dispute and knowledgeable in the mediation process. As an alternative, a standing neutral facilitator for ADR as certified by the Michigan Society of Professional Engineers may be used.

No person shall serve as a mediator in any dispute in which that person has any financial or personal interest in the result of the mediation, except by the written consent of all parties. Prior to accepting an appointment, the prospective mediator shall disclose any circumstances likely to create a presumption of bias or prevent a prompt meeting with the parties. Upon receipt of such information, the AAA shall either replace the mediator or immediately communicate the information to the parties for their comments. In the event the parties disagree as to whether the mediator shall serve, the AAA will appoint another mediator. The AAA is authorized to appoint another mediator if the appointed mediator is unable to serve promptly.

16.1.6 **Vacancies** - If any mediator shall become unwilling or unable to serve, the AAA will appoint another mediator, unless the parties agree otherwise.

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16.1.7 Representation - Any party may be represented by persons of their choice. The names and addresses of such persons shall be communicated in writing to all parties and to the AAA.

16.1.8 Time and Place of Mediation - The mediator shall fix the time of each mediation session. The mediation shall be held at the appropriate regional office of the AAA, or at any other convenient location agreeable to the mediator and the parties, as the mediator shall determine.

16.1.9 Identification of Matters in Dispute - At least ten (10) days prior to the first scheduled mediation session, each party shall provide the mediator with a brief memorandum setting forth its position with regard to the issues that need to be resolved. At the

discretion of the mediator, such memoranda may be mutually exchanged by the parties.

At the first session, the parties will be expected to produce all information reasonably required for the mediator to understand the issue presented. The mediator may require either party to supplement such information.

16.1.10 Authority of Mediator - The mediator does not have authority to impose a settlement upon the parties but will attempt to help the parties reach a satisfactory resolution of their dispute. The mediator is authorized to conduct joint and separate meetings with the parties and to make oral and written recommendations for settlement. Whenever necessary, the mediator may also obtain expert advice concerning technical aspects of the dispute, provide the parties agree and assume the expenses of obtaining such advice. Arrangements for obtaining such advice shall be made by the mediator or the parties, as the mediator shall determine.

The mediator is authorized to end the mediation whenever, in the judgment of the mediator, further efforts at mediation would not contribute to a resolution of the dispute between parties.

16.1.11 Privacy - Mediation sessions are private. The parties and their representatives may attend mediation sessions. Other persons may attend only with the permission of the parties and with the consent of the mediator.

16.1.12 Confidentiality - Confidential information disclosed to a mediator by the parties or by

witnesses in the course of the mediation shall not be divulged by the mediator. All records, reports, or other documents received by a mediator while serving in such records or to testify in regard to the mediation in any adversary proceeding or judicial forum.

The parties shall maintain the confidentiality of the mediation and shall not rely on, or introduce as evidence in any arbitral, judicial or other proceedings: (a) views expressed or suggestions made by the other party with respect to a possible settlement of the dispute; (b) admissions made by the other party in the course of the mediation proceedings; (c) proposals made or views expressed by the mediator; (d) the fact that the other party had or had not indicated willingness to accept a proposal for resettlement made by the mediator.

16.1.13 No Stenographic Record - There shall be no stenographic record of the mediation process.

16.1.14 Termination of Mediation - The mediation shall be terminated: (a) by the execution of a settlement agreement by the parties; or (b) by a written declaration of the mediator to the effect that further efforts at mediation are no longer worthwhile; or (c) by a written declaration of a party or parties to the effect that the mediation proceedings are terminated.

16.1.15 Exclusion of Liability - Neither the AAA nor the mediator is a necessary party in judicial proceedings relating to the mediation.

Neither the AAA nor any mediator shall be liable to any party for any act or omission in connection with any mediation conducted under these Rules.

16.1.16 Interpretation and Application of Rules - The mediator shall interpret and apply these Rules insofar as they relate to the mediator's duties and responsibilities. All other Rules shall be interpreted and applied by the AAA.

16.1.17 Expenses - The expenses of witnesses for either side shall be paid by the party producing such witnesses. All other expenses of the mediation, including required traveling and other expenses of the mediator and representatives of the AAA, and the expenses of any witness, or the cost of any proofs or expert advice produced at the direct request of the mediator, shall be borne equally by the parties unless they agree otherwise.

16.2 Except as provided in paragraph 16.3 below, no mediation arising out of or relating to the Contract Documents shall include by consolidation, joinder or in

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any other manner any other person or entity (including PROFESSIONAL, PROFESSIONAL's Consultant and the officers, directors, agents, employees or consultants of any of them) who is not a part to this contract unless:

16.2.1 the inclusion of such other person or entity is necessary if complete relief is to be afforded among those who are already parties to the mediation and

16.2.2 such other person or entity is substantially involved in a question of law or fact which is common to those who are already parties to the mediation and which will arise in such proceedings.

16.3 Notwithstanding paragraph 16.2 if a claim, dispute or other matter in question between OWNER and CONTRACTOR involves the Work of a Subcontractor, either OWNER or CONTRACTOR may join such Subcontractor as a party to the mediation between OWNER and CONTRACTOR hereunder. CONTRACTOR shall include in all subcontracts required by paragraph 6.11 a specific provision whereby the Subcontractor consents to being joined in a mediation between OWNER and CONTRACTOR involving the Work of such subcontract, and consenting to joinder shall not create any claim, right or cause of action in favor of Subcontractor and against OWNER, PROFESSIONAL or PROFESSIONAL's Consultants that does not otherwise exist.

ARTICLE 17—MISCELLANEOUS

Giving Notice:

17.1. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

Computation of Time:

17.2 When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

17.2.1. A calendar day of twenty-four hours measured from midnight to the next midnight will constitute a day.

Notice of Claim:

17.3. Should OWNER or CONTRACTOR suffer injury or damage to person or property because of any error, omission or act of the other party or of any of the other party's employees or agents or others for whose acts the other party is legally liable, claim will be made in writing to the other party within a reasonable time of the first observance of such injury or damage. The provisions of this paragraph 17.3 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitations or repose.

Cumulative Remedies:

17.4. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto, and, in particular but without limitation, the warranties, guarantees and obligations imposed upon CONTRACTOR by paragraphs 6.12, 6.16, 6.30, 6.31, 6.32, 13.1, 13.12, 13.14, 14.3 and 15.2 and all of the rights and remedies available to OWNER and PROFESSIONAL thereunder, are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee or by other provisions of the Contract Documents, and the provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right and remedy to which they apply.

Professional Fees and Court Costs Included:

17.5. Whenever reference is made to "claims, costs, losses and damages," it shall include in each case, but not be limited to, all fees and charges of engineers, architects, attorneys and other professionals and all court or arbitration or other dispute resolution costs.

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PROJECTS UNDER ACT NO. 524 OF PUBLIC ACTS OF 1980

General Information

1. Interest will be paid on retainage in accordance with the Act.
2. The Contractor may request reasonable interest on accounts past due on prior progress payments which can be included in the next request for payment.
3. Retainage will be in accordance with the Act, Subsections 3 and 4.
4. All matters described in Subsection 3 of the Act shall be submitted to the decision of an agent at the option of the Owner.

Retainage. The retainage for the project shall be as follows:

1. For projects with Payment Schedule No. 1, the retainage shall be in accordance with Act No. 524.
2. For projects with Payment Schedule No. 2, the retainage shall be ten percent (10%) of the contract price.

Payment. All requests for payment shall be in compliance with Act No. 524 of Public Acts of 1980. Construction contracts having a dollar value of less than \$30,000 or a contract that provides for three or fewer payments shall be exempt from the Act.

The requests for payments shall be made in accordance with one of the following Payment Schedules:

Payment Schedules

1. Not later than the 25th day of each calendar month, the Owner will make partial payment to the Contractor on the basis of a duly certified, approved estimate of the work performed during the preceding calendar month by the Contractor, but the Owner will retain a percentage as stated in Act No. 524 of the amount of each such estimate until final completion and acceptance of all work covered by this contract.

2. Payment requests shall be limited to three or fewer payments less ten percent (10%) retained on each payment request, except for the final payment which shall include all amounts previously retained. Payment requests will only be permitted after completion of fifty percent (50%) of the project, after seventy-five percent (75%) of the project and after one hundred percent (100%) of the project is completed and accepted. No payment request will be made within 30 consecutive days of a previous request.

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Act No. 524

Public Acts of 1980

Approved by Governor

January 29, 1981

STATE OF MICHIGAN

80TH LEGISLATURE

REGULAR SESSION OF 1980

Introduced by Rep. Ryan

ENROLLED HOUSE BILL NO. 5541

AN ACT to provide for the terms of certain construction contracts with certain public agencies; to regulate the payment and retainage of payments on construction contracts with certain public agencies; and to provide for the resolution of certain disputes.

The People of the State of Michigan enact:

Sec. 1. As used in this act:

(a) "Agent" means the person or persons agreed to or selected by the contractor and the public agency pursuant to section 4(2).

(b) "Architect or professional engineer" means an architect or professional engineer licensed under Act No. 299 of the Public Acts of 1980, being sections 339.10 to 339.2601 of the Michigan Compiled Laws, and designated by a public agency in a construction contract to recommend progress payments.

(c) "Construction contract" or "contract" means a written agreement between a contractor and a public agency for the construction, alternation, demolition, or repair of a facility, other than a contract having a dollar value of less than \$30,000.00 or a contract that provides for 3 or fewer payments.

(d) "Contract documents" means the construction contract; instructions to bidders, proposal; conditions of the contract; performance bond; labor and material bond; drawings; specifications; all addenda issued before execution of the construction contract and all modifications issued subsequently.

(e) "Contractor" means an individual, sole proprietorship, partnership, corporation, or joint venture that is a party to a construction contract with a public agency.

(f) "Facility" means a building, utility, road, street, boulevard, parkway, bridge, ditch, drain, levee, dike, sewer, park, playground, or other structure or work that is paid for with public funds or a special assessment.

(g) "Progress payment" means a payment by a public agency to a contractor work in place under the terms of a construction contract.

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(h) "Public agency" means this state, or a county, city, township, village, assessment district, or other political subdivision, corporation, commission, agency, or authority created by law. However, public agency does not include the state transportation department, a school district, junior or community college, the Michigan state housing development authority created in Act No. 346 of the Public Acts of 1966, as amended, beings sections 125.1401 to 125.1496 of the Michigan Compiled Laws, and a municipal electric utility or agency. "Assessment district" means the real property within a distinct area upon which special assessments are levied or imposed for the construction, reconstruction, betterment, replacement or repair of a facility to be paid for by funds derived from those special assessments imposed or levied on the benefitted real property.

(i) "Retainage" or "retained funds" means the amount withheld from a progress payment to a contractor pursuant to section 3.

Sec. 2

(1) The construction contract shall designate a person representing the contractor who will submit written requests for progress payments, and a person representing the public agency to whom requests for progress payments are to be submitted. The written requests for progress payments shall be submitted to the designated person in a manner and at such times as provided in the construction contract.

(2) The processing of progress payments by the public agency may be deferred by the public agency until work having a prior sequence, as provided in the contract documents, is in place and is approved.

(3) Each progress payment requested, including reasonable interest if requested under subsection (4), shall be paid within 1 of the following time periods, whichever is later.

(a) Thirty days after the architect or professional engineer has certified to the public agency that work is in place in the portion of the facility covered by the applicable request for payment in accordance with the contract documents.

(b) Fifteen days after the public agency has received the funds with which to make the progress payment from a department or agency of the federal or state government, if any funds are to come from either of those sources.

(4) Upon failure of a public agency to make a timely progress payment pursuant to this section, the person designated to submit requests for progress payments may include reasonable interest on amounts past due in the next request for payment.

Sec. 3

(1) To assure proper performance of a construction contract by the contractor, a public agency may retain a portion of each progress payment otherwise due as provided in this section.

(2) The retainage shall be limited to the following:

(a) Not more than 10% of the dollar value of all work in place until work is 50% in place.

(b) After the work is 50% in place, additional retainage shall not be withheld unless the public agency determines that the contractor is not making satisfactory progress, or for other specific cause relating to the contractor's performance under the contract. If the public agency so determines, the public agency may retain not more than 10% of the dollar value of work more than 50% in place.

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(3) The retained funds shall not exceed the pro rata share of the public agency's matching requirement under the construction contract and shall not be commingled with other funds of the public agency and shall be deposited in an interest bearing account in a regulated financial institution in this state wherein all such retained funds are kept by the public agency which shall account for both retainage and interest on each construction contract separately. A public agency is not required to deposit retained funds in an interest bearing account if the retained funds are to be provided under a state or federal grant and the retained funds have not been paid to the public agency.

(4) Except as provided in section 4(7) and (8), retainage and interest earned on retainage shall be released to a contractor together with the final progress payment.

(5) At any time after 94% of work under the contract is in place and at the request of the original contractor, the public agency shall release the retainage plus interest to the original contractor only if the original contractor provides to the public agency an irrevocable letter of credit in the amount of the retainage plus interest, issued by a bank authorized to do business in this state, containing terms mutually acceptable to the contractor and the public agency.

Sec. 4

(1) The construction contract shall contain an agreement to submit those matters described in subsection (3) to the decision of an agent at the option of the public agency.

(2) If a dispute regarding a matter described in subsection (3) arises, the contractor and the public agency shall designate an agent who has background, training, and experience in the construction of facilities similar to that which is the subject of the contract, as follows:

(a) In an agreement reached within 10 days after a dispute arises.

(b) If an agreement cannot be reached within 10 days after a dispute arises, the public agency shall designate an agent who has background, training, and experience in the construction of facilities similar to that which is the subject of the contract and who is not an employee of the agency.

(3) The public agency may request dispute resolution by the agent regarding the following:

(a) At any time during the term of the contract, to determine whether there has been a delay for reasons that were within the control of the contractor, and the period of time that delay has been caused, continued, or aggravated by actions of the contractor.

(b) At any time after 94% of work under the contract is in place, whether there has been an unacceptable delay by the contractor in performance of the remaining 6% of work under the contract. The agent shall consider the terms of the contract and the procedures normally followed in the industry and shall determine whether the delay was for failure to follow reasonable and prudent practices in the industry for completion of the project.

(4) This dispute resolution process shall be used only for the purpose of determining the rights of the parties to retained funds and interest earned on retained funds and is not intended to alter, abrogate, or limit any rights with respect to remedies that are available to enforce or compel performance of the terms of the contract by either party.

(5) The agent may request and shall receive all pertinent information from the parties and shall provide an opportunity for an informal meeting to receive comments, documents, and other relevant information in order to

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resolve the dispute. The agent shall determine the time, place and procedure for the informal meeting. A written decision and reasons for the decision shall be given to the parties within 14 days after the meeting.

(6) The decision of the agent shall be final and binding upon all parties. Upon application of either party, the decision of the agent may be vacated by order of the circuit court only upon a finding by the court that the decision was procured by fraud, duress, or other illegal means.

(7) If the dispute resolution results in a decision.

(a) That there has been a delay as described in subsection (3)(a), all interest earned on retained funds during the period of delay shall become the property of the public agency.

(b) That there has been unacceptable delay as described in subsection (3)(b), the public agency may contract with a subsequent contractor to complete the remaining 6% of work under the contract, and interest earned on retained funds shall become the property of the public agency. A subsequent Contractor under this subdivision shall be paid by the public agency from the following sources until each source is depleted, in the order listed below:

(i) The dollar value of the original contract, less the dollar value of funds already paid to the original contractor and the dollar value of work for which the original contractor has not received payment.

(ii) Retainage from the original contractor, or funds made available under a letter of credit provided under section 3(5).

(iii) Interest earned on retainage from the original contractor, or funds made available under a letter of credit provided under section 3(5).

(8) If the public agency contracts with a subsequent contractor as provided in subsection (7)(b), the final progress payment shall be payable to the original contractor within the time period specified in section 2(3). The amount of the final progress payment to the original contractor shall not include interest earned on retained funds. The public agency may deduct from the final progress payment all expenses of contracting with the subsequent contractor. This act shall not impair the right of the public agency to bring an action or to otherwise enforce a performance bond to complete work under a construction contract.

Sec. 5

(1) Except as provided in subsection (2), this act shall apply only to a construction contract entered into after the effective date of this act.

(2) For a construction contract entered into before the effective date of this act, the provisions of this act may be implemented by a public agency, through a contract amendment, upon the written request of the contractor, with such consideration as the public agency considers adequate.

Sec. 6

This act shall take effect January 1, 1983.

SECTION 0800 – SUMMARY OF WORK

1.1 GENERAL SITE INFORMATION

Site Information - Subject Property

Former Ross Oil, 2360 West Pierson Road, City of Flint, Michigan

The subject property is located in the southwest ¼ of the southwest ¼ of Section 26 in the City of Flint (T.8N. /R.6E.), Genesee County, Michigan. The subject property is located north of West Pierson Road, east of Clio Road, and west of Cloverlawn Drive. It consists of one irregular shaped parcel (Parcel Identification Number 46-26-351-044) that comprises approximately 0.76 acres. The Genesee County Land Bank Authority (GCLBA) is the current owner of the subject property, which is currently unoccupied. The following table provides a summary of the on-site subject building obtained from public information sources.

Former FIA Building, 2320 West Pierson Road, City of Flint, Michigan

The subject property is located in the southwest ¼ of the southwest ¼ of Section 26 in the City of Flint (T.8N. /R.6E.), Genesee County, Michigan. The subject property is located north of West Pierson Road, east of Clio Road, and west of Cloverlawn Drive. It consists of one rectangular shaped parcel (Parcel Identification Number 46-26-351-045) that comprises approximately 6.91 acres. The Genesee County Land Bank Authority (GCLBA) is the current owner of the subject property, which is currently unoccupied. The following table provides a summary of the on-site subject building obtained from public information sources.

Building Information

Subject Buildings			
Former Ross Oil, 2360 West Pierson Road, City of Flint, Michigan			
General Construction	Interior Finish:	Square Ft.	Construction and Other Improvement Dates
One-story, flat roof, concrete block and wood construction, concrete slab on grade foundation, partial basement/sub-floor pits	Concrete, drywall, paint, wood, metal, glass	4,496 SF	Constructed in 1985 Addition in 1986 Remodel in 1993
Former FIA Building, 2320 West Pierson Road, City of Flint, Michigan			
General Construction	General Construction	General Construction	General Construction
One-story, gable roof, steel frame, brick and concrete block exterior, concrete slab on grade foundation, no basement.	Concrete, drywall, pine board, ceramic tile, ceiling tile, carpet, paint, wood, metal, glass.	99,958 SF	Constructed in 1961

The exterior of the subject property is improved with asphalt and/or concrete parking areas, light poles, concrete sidewalks and landscaping.

The subject property is currently zoned D-5 (Metropolitan Commercial Service District) and D-3 (Community Business District), and is located in an area of Flint that is characterized by commercial, residential, and light industrial properties, surface roadways, municipal water, municipal sewage, as well as electrical and gas utilities.

Historical Summary – Subject Property

Former Ross Oil, 2360 West Pierson Road, City of Flint, Michigan

From at least 1937 to 1960, the subject property was utilized for agricultural purposes. In 1961, the subject property was developed with an asphalt parking lot, used in association with the eastern adjoining property for use as a furniture store. The subject building was constructed in 1985 as an oil change/car wash shop. Since 2009, the subject property has been unoccupied.

Former FIA Building, 2320 West Pierson Road, City of Flint, Michigan

From at least 1937 to 1960, the subject property was utilized for agricultural purpose. In 1961, the subject property was developed with the subject building. The subject property was utilized as a department store and for multi-tenant commercial purposes from 1961 to 2014. Since 2014, the subject property has been unoccupied.

Municipal water, sewer, natural gas and other utilities are installed in the area of the subject properties.

Refer to the attached plans and photographs for additional site information.

CONTRACTOR shall have unlimited access to the property during the work.

1.2 DESCRIPTION OF WORK

GENERAL DESCRIPTION OF WORK

The Work covered by this section summarizes the Work for environmental abatement, disposal of asbestos and hazardous materials, structure demolition, select site feature removal, and site restoration for the above described property located in **the City of Flint, Genesee County**:

The GCLBA's purpose is to demolish, remove and dispose of the specified building and debris located at the subject property. Following demolition the site is to be backfilled and restored to the existing grade generally level with the surrounding properties, sloped to provide storm water drainage to on-site catch basins. Prior to demolition, OWNER and/or duly appointed representative may install at least 4 surveyed benchmarks on the property to assist with grading activities. Final grade must be within +/- 3-inches of the surveyed benchmarks.

Damage caused by CONTRACTOR to paved areas outside the work area, public streets, sidewalks, right-of-way, or other protected features shall to be repaired by CONTRACTOR at no cost to OWNER.

Foundations are to be removed in their entirety. Depth of the proposed ground disturbing activity is not defined. CONTRACTOR shall refer to attached Historical Blueprints (if available).

The property is proposed to be left as a grassy lawn area suitable for future redevelopment at end of this contract. Select catch basins, portions of the asphalt parking area, and select curbing will remain.

The scope of work for the project involves furnishing all labor, equipment, materials, services, and incidentals (necessary items not specifically mentioned) to demolish, remove and dispose of all specified building structures and foundations, pavement, site features, asbestos containing materials (ACMs), hazardous materials, other building contents, and miscellaneous debris; terminating all utilities; and conducting site restoration. The proposed work/demolition area is shown on the attached maps and further described below.

SPECIFIC DESCRIPTION OF WORK

Refer to "Technical Specifications" and other Sections as referenced herein.

The following includes a general summary of the items listed in the bid form.

CONTRACTOR is responsible to coordinate his work with OWNER and/or duly appointed OWNER representative, and other contractors on site, utilities, regulatory agencies, and other affected parties. Specifically, CONTRACTOR is responsible to provide all preparation work, ancillary supplies, appurtenances, and incidental work including all labor, materials and equipment to complete the following tasks according to these specifications, and in accordance with applicable regulations, codes, ordinances, and industry standards:

Bid Item 1 - Mobilization/Demobilization/Work Plan/Site Service

Provide all labor, materials, and equipment to deliver to the site all necessary personnel, equipment and supplies to complete the work of this contract. Provide site cleanup upon completion of work and provide all incidentals (services and items not specifically mentioned) necessary for completion of work. Specifically, the Mobilization/Demobilization item includes the following:

1. Deliver to the site all necessary personnel, equipment and supplies to complete the work of this contract. Removal of all materials and equipment and conduct site cleanup immediately upon completion of contract.
2. Conduct a pre-demolition engineering survey by a competent person and prepare a project Work Plan for review by OWNER and/or duly appointed OWNER representative, and affected units of government as applicable.
3. Preparation of a Site Specific Health and Safety Plan and provide copy to OWNER and/or duly appointed OWNER representative.
4. Provide all temporary power, utilities, water, lighting, and other services necessary to complete contract.

5. Provide all storage, staging, temporary office facilities, restroom, and sanitation facilities.
6. Item includes site security, installation of a minimum **6-foot security fence**, safety personnel, and protection of public, existing utilities, public infrastructure, right-of-way, and adjacent properties. Repair of any existing utilities, public infrastructure, right-of-way, and adjacent properties are considered incidental to this contract.

At minimum the security fence shall surround the proposed building demolition area. It is not necessary to fence the parking lot demolition area; however, all parking lot entrances shall be barricaded or fenced to prevent unauthorized entry. Barricades and site security fencing cannot be removed without prior approval of OWNER and/or duly appointed OWNER representative.
7. Item includes all shipping costs including loading, hauling and delivering materials to the job site.
8. Provide soil erosion and sedimentation control (SESC), including provide certified operator, obtain permit, weekly monitoring, inspection logs, and preventing runoff of construction debris, dust and sediment to municipal storm water system. Provide sediment removal services for eroding sediment leaving subject property or entering storm water system.
9. Provide all dust controls during the Work.
10. Coordination of work with OWNER and/or duly appointed OWNER representative, City, County, and State, including compliance with ordinances, codes, and regulations. Also includes coordination of work with other CONTRACTORS working at the site.
11. Attendance at all Project Meetings (assume at least one formal on-site meeting per week).
12. Providing all required documentation to OWNER and/or duly appointed OWNER representative. Submit copies of disposal records, demolition permits, other permit, backfill certifications, inspections, testing results, manifests, notice of violations, and other Work related documents to OWNER and/or duly appointed OWNER representative as necessary and upon conclusion of the work.
13. Obtain all permits, provide all notifications, and pay all associated fees including, but not limited to:
 - a. Demolition permit
 - b. State of Michigan 10-day Notice of Demolition/Abatement.
 - c. Soil Erosion and Sedimentation Control Permit
14. Obtain all access agreements (special consideration should be given to adjacent property operations). Work hours and street closures must be coordinated with City of Flint and Genesee County, OWNER, and adjacent property owners. CONTRACTOR will not be held responsible for project delays due to work hours or work day restrictions caused by others.
15. CONTRACTOR is responsible for the evaluation, design, and installation of all shoring, bracing, or lateral supporting to prevent collapse, failure, settlement, or cracking of

adjoining structures, sidewalks, parking areas, and other site features to remain. The use of shoring, bracing, or lateral supporting is considered part of CONTRACTOR's means and methods. CONTRACTOR shall submit a Shoring/Bracing Plan to maintain stability to OWNER and/or duly appointed OWNER representative for review prior to start of work.

16. CONTRACTOR must conduct and provide a pre- and post- demolition video and photographic survey of the site, structures to remain, adjacent buildings, property entrances and surrounding right of way (including West Pierson Road and Pier North Boulevard). Pre-demolition photographs and video should show existing conditions of structures, facilities and site improvements, including finish surfaces, which might be misconstrued as damage caused by demolition or construction operations.
17. Provide all other incidental (services and items not specifically mentioned) items necessary to provide a satisfactory work product in compliance with all governing laws and approved by the OWNER and/or duly appointed OWNER representative.

Bid Item 2 - Hazardous Materials/Waste Disposal/Onsite Soil Contamination

Provide all labor, equipment, supplies, materials, and incidentals to conduct the environmental abatement and disposal of asbestos and hazardous/other regulated materials. Hazardous materials/waste disposal work includes:

1. Removal and disposal of hazardous materials, other materials banned from landfill disposal, and asbestos containing materials identified in the pre-demolition survey and encountered during completion of Work, and handling of onsite soil contamination.

Buildings have been surveyed and inspected for the presence of asbestos and hazardous materials. Reference AKT Peerless' Hazardous Materials Identification Surveys, included as Appendix B for an inventory and approximate quantity of site-specific materials identified.

Prior to submitting a bid, CONTRACTOR is required to review all relevant documented information and to visit the site and verify site conditions and make their own estimation of quantities of asbestos, hazardous materials, and other items banned from landfill disposal.

Limited Phase II Environmental Site Assessments (ESA) have been conducted at 2320 West Pierson Road and 2360 West Pierson Road, Flint, Michigan. The Phase II ESA scope of work evaluated for the presence of contamination at both referenced addresses based on recognized environmental conditions (RECs) identified in AKT Peerless' Phase I ESAs, and evaluated levels of contamination to determine if the subject properties meet the definition of a "facility" as defined in Part 201 of Natural Resources and Environmental Protection Act (NREPA), Michigan Public Act (PA) 451, 1994. As amended. Reference AKT Peerless' Phase II ESAs, included as Appendix C of site-specific conditions identified.

Prior to submitting a bid, CONTRACTOR is required to review all relevant documented information and to visit the site and verify site conditions, and propose a method for handling of onsite soil contamination. CONTRACTOR will implement and maintain proposed methods throughout duration of the project and will notify and update as necessary to OWNER and/or duly appointed OWNER representative of handling of onsite soil contamination.

2. CONTRACTOR shall use best methods to perform work in accordance with all applicable local, state and federal regulations. However, OWNER and/or duly appointed OWNER representative reserves right to review, inspect, and reject method proposed by CONTRACTOR. OWNER and/or duly appointed OWNER representative also reserve right to stop work by CONTRACTOR at any time for any reason.
3. CONTRACTOR on behalf of OWNER shall provide daily, OSHA personnel air sampling, and other necessary monitoring and documentation. CONTRACTOR and/or duly appointed CONTRACTOR representative/third party will provide periodic oversight and final asbestos visual and air clearance on behalf of OWNER.
4. CONTRACTOR shall provide third party clearance and approval that all hazardous materials present within the subject buildings have been removed prior to demolition.
5. CONTRACTOR is responsible for all necessary permits, licenses, waste characterization, coordination of waste profiles and manifests, submittal of all notices, notifications, and associated fees. Coordinate all work with OWNER and/or duly appointed OWNER representative.

Bid Item 3 - Structure Demolitions (Including Select Site Features) and Site Restoration

Structure Demolitions

Provide all labor, equipment, materials, supplies and incidentals to remove the subject buildings, designated site features, and associated debris in their entirety in accordance with the contract documents and other sections of the scope of work. Structure demolition work includes, but is not limited to:

1. Identification of special conditions at the site that could impact demolition operations.
2. Removal of salvageable contents, equipment and site features. Unless otherwise specified, all contents, equipment, interior finishes, and recyclable material become property of CONTRACTOR. OWNER reserves the right to remove select items from building prior to issuance of Notice to Proceed. OWNER encourages modern deconstruction methods and recycling of all salvageable site features.

Certain items may be removed prior to start of work by utility providers.

3. Proper and duly appointed OWNER representative approved characterization and disposal of any liquids accumulated within site features including, but not limited to boiler, heat, fire protection, and domestic water systems. Liquids may be disposed of within the municipal sewer system, upon approval and approved characterization. No disposal to surface of property or within the storm water system is permitted.

CONTRACTOR shall coordinate and document compliance with local municipality prior to discharge of liquids from associated subject buildings site features. CONTRACTOR shall be responsible for sample collection, access to liquids for sampling, and coordination with local municipality for testing requirements. OWNER may provide laboratory analytical testing services at no cost to CONTRACTOR.

4. Cut and cap all on-site utilities as necessary and/or as directed by OWNER and/or duly appointed OWNER representative. Unless otherwise approved, terminate at inside of

property boundary or main. Coordinate with utility companies, OWNER, and/or duly appointed OWNER representative to cut and cap utilities including: sanitary sewer, water, natural gas, electricity, cable television, telephone, and select storm sewer. Coordinate and acquire all feed disconnects, and shutoffs with local utility company. Do not disconnect any active utilities potentially connected to off-site structures without coordinating with adjacent property owner, utility provider, OWNER and/or duly appointed OWNER representative to relocate.

Acquire and supply necessary utility clearances (e.g. cable, telephone, water, storm and sanitary sewer). Ensure all utility meters and other equipment is removed.

Water and sewer disconnect fee will be paid directly by OWNER. Consumers Energy gas and electric disconnect fee will be paid directly by OWNER. Pay any other associated fees. OWNER will coordinate natural gas and electric, and water and sewer disconnect work. CONTRACTOR must coordinate any other disconnect work to be done, and it may be necessary for CONTRACTOR to coordinate with OWNER for water, sewer, gas, and electric disconnect activities. CONTRACTOR must protect and coordinate removal of equipment and site features owned by utilities.

CONTRACTOR verify all disconnects of utilities.

5. OWNER and/or duly appointed OWNER representative may elect to survey at least 4 benchmarks on the subject property prior to structure demolition for backfilling and grading purposes.
6. Demolish and remove subject buildings.
7. Removal of entire building slabs, grade beams, foundations and subsurface features including all associated site features as specified. Foundations must be removed completely. Depth of foundation components is unknown.
8. All work near adjoining structures, public right-of-way, and municipal sidewalk shall proceed with caution.
9. Plug and seal lead at property boundary or main in accordance with specifications, codes, and ordinances.
10. Removal of site features including private concrete paving, sidewalks, curbing, private utility poles, fencing, yard sprinkler systems, associated foundations, other features, and debris. Remove below grade features including foundations and wiring.
11. Disconnect and remove exterior site features and foundations including lights, private light poles, parking blocks, electrical features, buried and aboveground wiring, and water features.
12. Maintain existing topsoil and subsoil and stage for reuse on-site.
13. Grub landscaping, vegetation, and trees smaller than 10-inches from work areas.
14. Removal of vegetation, landscaping, and select private trees.
15. Conduct site cleanup including removal of site debris.
16. CONTRACTOR shall use best methods to perform work. However, OWNER and/or duly appointed OWNER representative reserves right to review, inspect, and reject method

proposed by CONTRACTOR. OWNER and/or duly appointed OWNER representative also reserve right to stop work by CONTRACTOR at any time for any reason.

Site Restoration

Provide all labor, materials, equipment and incidentals necessary to backfill and compact soil excavations and grade site to a level within +/- 3-inches of possible and previously surveyed benchmarks as directed by OWNER and/or duly appointed OWNER representative in accordance with the contract documents and other sections of the scope of work. Backfill site restoration work includes:

1. Grade, backfill, restore, and compact existing subsoil. Existing subsurface soil capable of being compacted to form a stable, homogenous material may be graded and utilized as fill.
2. Backfill site, including voids caused by demolition, as necessary to meet proposed grade with MDOT Class II Sand. Backfill must be certified clean fill from a virgin source. Final volume and depth of backfill will be based on actual quantities necessary to meet proposed grades and as approved by OWNER and/or duly appointed OWNER representative. Backfill and earthwork is included in lump sum bid item and will not be paid per unit installed. Site must be left in condition suitable for future development.
3. OWNER may retain third party compaction testing services and certification of backfill. Backfill shall be compacted in minimum 12-inch lifts to not less than 95% M.U.W. and verified by a Construction Testing Engineer, provided by OWNER at no cost to CONTRACTOR.
4. Backfill site to level consistent with surrounding grades as determined by possible survey benchmarks provided by OWNER and/or duly appointed OWNER representative prior to demolition, slope to allow for topographic runoff of storm water towards appropriate storm water conveyance (e.g. green belt or nearby storm water catch basins). Provide smooth topographic slope between benchmarks and storm water conveyances.
5. Provide backfill documentation for Class II Sand and Topsoil including clean certification and volume in cubic yards. If necessary for non-scope add/deduct, conversion factor will be 1.5 tons per yard.
6. Place and grade topsoil on-site for surface restoration in disturbed areas. Topsoil shall be placed in friable condition to a depth of 4-inch (+/- 1-inch). All stripped topsoil shall meet the approval of the OWNER and/or duly appointed OWNER representative prior to re-use. Import topsoil necessary to complete surface restoration. Site must be left in condition suitable for future development.
7. Seed, fertilize, mulch, and tackify disturbed area(s). Seed shall only be sown between May 1st and October 1st. If this timeline cannot be met, OWNER and/or duly appointed OWNER representative's approval is required for seeding alternates. Seeded areas shall be maintained for one year from time of last day of installation as part of the CONTRACTOR's warranty, including removal of straw, erosion controls, reseeding, etc.

Alternate Number 1 – Parking Lot and Associated Alley Way Demolition/Removal, and Select Site Features, and Site Restoration

Parking Lot and Associated Alley Way Demolition/Removal, and Select Site Features Removal, and Site Restoration

Provide all labor, equipment, materials, supplies and incidentals to remove parking lot and associated alley way, and select site features removal at the specified parcels in its entirety in accordance with the contract documents and other sections of the scope of work. Provide all labor, equipment, materials, supplies and incidentals to remove the storm sewer system located within the parking lot of the specified parcel in its entirety in accordance with the contract documents and other sections of the scope of work. Work includes, but is not limited to:

1. Remove parking lot and associated alley way, select site features, grassy islands, and curbs, etc.
2. Provide concrete and asphalt saw cuts as necessary.
3. Gravel sub base shall be excavated and removed or utilized as backfill in building area.
4. Disconnect and remove exterior site features and foundations including lights, private light poles, parking blocks, electrical features, buried and aboveground wiring, water features, etc.

Site Restoration

Provide all labor, materials, equipment and incidentals necessary to backfill and compact soil excavations and slope site to a level consistent with grade prior to demolition. OWNER and/or duly appointed OWNER representative may install survey benchmarks prior to demolition activities. Backfill site restoration work includes:

1. Grade, backfill, restore, and compact existing subsoil. Existing subsurface soil capable of being compacted to form a stable, homogenous material may be graded and utilized as fill.
2. Backfill site, including voids caused by demolition, as necessary to meet pre-existing grade with MDOT Class II Sand. Backfill must be certified clean fill from a virgin source. Final volume and depth of backfill will be based on actual quantities necessary to meet proposed grades and as approved by OWNER and/or duly appointed OWNER representative. Site must be left in condition suitable for future development.
3. OWNER may retain third party compaction testing services and certification of backfill. Backfill shall be compacted in minimum 12-inch lifts to not less than 95% M.U.W. and verified by a Construction Testing Engineer, provided by OWNER at no cost to CONTRACTOR.
4. Backfill site to level consistent with pre-existing grades as determined by possible survey benchmarks provided by OWNER and/or duly appointed OWNER representative prior to demolition, slope to allow for topographic runoff of storm water towards appropriate storm water conveyance.
5. Provide backfill documentation for Class II Sand and Topsoil including clean certification and volume in cubic yards.

6. Place and grade topsoil on-site for surface restoration in disturbed areas. Topsoil shall be placed in friable condition to a depth of 4-inch (+/- 1-inch). All stripped topsoil shall meet the approval of the OWNER and/or duly appointed OWNER representative prior to re-use. Import topsoil necessary to complete surface restoration. Site must be left in condition suitable for future development.
7. Seed, fertilize, mulch, and tackify disturbed area(s). Seed shall only be sown between May 1st and October 1st. If this timeline cannot be met, OWNER and/or duly appointed OWNER representative's approval is required for seeding alternates. Seeded areas shall be maintained for one year from last day of installation as part of the CONTRACTOR's warranty, including removal of straw, erosion controls, reseeding, etc.

Alternate Number 2 – Remove/Bulkhead Subject Property Storm Sewer System and Site Restoration

Provide all labor, equipment, materials, supplies and incidentals to remove/bulkhead subject property storm sewer system and site restoration at the specified parcels in its entirety in accordance with the contract documents and other sections of the scope of work. Work includes, but is not limited to:

1. Demolish and remove the specified storm sewer system in its entirety to the property boundary, utility main, next storm water catch basin, or location approved by OWNER and/or duly appointed OWNER representative.
2. Plug and seal lead at property boundary or main in accordance with specifications, codes, and ordinances. Adjoining property potentially connected to the subject property's storm sewer and adjoining property, if connected, must be left in functioning state.

Site Restoration

Provide all labor, materials, equipment and incidentals necessary to backfill and compact soil excavations and slope site to a level consistent with grade prior to demolition. OWNER and/or OWNER representative may will install survey benchmarks prior to demolition activities. Backfill site restoration work includes:

3. Grade, backfill, restore, and compact existing subsoil. Existing subsurface soil capable of being compacted to form a stable, homogenous material may be graded and utilized as fill.
4. Backfill site, including voids caused by demolition, as necessary to meet pre-existing grade with MDOT Class II Sand. Backfill must be certified clean fill from a virgin source. Final volume and depth of backfill will be based on actual quantities necessary to meet proposed grades and as approved by OWNER and/or duly appointed OWNER representative. Site must be left in condition suitable for future development.
5. OWNER may retain third party compaction testing services and certification of backfill. Backfill shall be compacted in minimum 12-inch lifts to not less than 95% M.U.W. and

verified by a Construction Testing Engineer, provided by OWNER at no cost to CONTRACTOR.

6. Backfill site to level consistent with pre-existing grades as determined by possible survey benchmarks provided by OWNER and/or duly appointed OWNER representative prior to demolition, slope to allow for topographic runoff of storm water towards appropriate storm water conveyance.
7. Provide backfill documentation for Class II Sand and Topsoil including clean certification and volume in cubic yards.
8. Place and grade topsoil on-site for surface restoration in disturbed areas. Topsoil shall be placed in friable condition to a depth of 4-inch (+/- 1-inch). All stripped topsoil shall meet the approval of the OWNER and/or duly appointed OWNER representative prior to re-use. Import topsoil necessary to complete surface restoration. Site must be left in condition suitable for future development.
9. Seed, fertilize, mulch, and tackify disturbed area(s). Seed shall only be sown between May 1st and October 1st. If this timeline cannot be met, OWNER and/or duly appointed OWNER representative's approval is required for seeding alternates. Seeded areas shall be maintained for one year from time of last day of installation as part of the CONTRACTOR's warranty, including removal of straw, erosion controls, reseeding, etc.

Alternate Number 3 – Remove 2320 West Pierson Road, Flint, Michigan – Removal of Marquee Sign and Associated Components

Provide all labor, equipment, materials, supplies and incidentals to remove the marquee sign located within the parking lot of the specified parcel in its entirety in accordance with the contract documents and other sections of the scope of work. Work includes, but is not limited to:

1. Demolish and remove the specified marquee in its entirety to the property as approved by OWNER and/or duly appointed OWNER representative.
2. Remove all associated components of the marquee sign in their entirety, such as but not limited to; footings, electrical lines, etc. Plug and seal lead at property boundary or main in accordance with specifications, codes.

Site Restoration

Provide all labor, materials, equipment and incidentals necessary to backfill and compact soil excavations and slope site to a level consistent with grade prior to demolition. OWNER and/or OWNER representative may will install survey benchmarks prior to demolition activities. Backfill site restoration work includes:

3. Grade, backfill, restore, and compact existing subsoil. Existing subsurface soil capable of being compacted to form a stable, homogenous material may be graded and utilized as fill.
4. Backfill site, including voids caused by demolition, as necessary to meet pre-existing grade with MDOT Class II Sand. Backfill must be certified clean fill from a virgin source.

Final volume and depth of backfill will be based on actual quantities necessary to meet proposed grades and as approved by OWNER and/or duly appointed OWNER representative. Site must be left in condition suitable for future development.

5. OWNER may retain third party compaction testing services and certification of backfill. Backfill shall be compacted in minimum 12-inch lifts to not less than 95% M.U.W. and verified by a Construction Testing Engineer, provided by OWNER at no cost to CONTRACTOR.
6. Backfill site to level consistent with pre-existing grades as determined by possible survey benchmarks provided by OWNER and/or duly appointed OWNER representative prior to demolition, slope to allow for topographic runoff of storm water towards appropriate storm water conveyance.
7. Provide backfill documentation for Class II Sand and Topsoil including clean certification and volume in cubic yards.
8. Place and grade topsoil on-site for surface restoration in disturbed areas. Topsoil shall be placed in friable condition to a depth of 4-inch (+/- 1-inch). All stripped topsoil shall meet the approval of the OWNER and/or duly appointed OWNER representative prior to re-use. Import topsoil necessary to complete surface restoration. Site must be left in condition suitable for future development.
9. Seed, fertilize, mulch, and tackify disturbed area(s). Seed shall only be sown between May 1st and October 1st. If this timeline cannot be met, OWNER and/or duly appointed OWNER representative's approval is required for seeding alternates. Seeded areas shall be maintained for one year from time of last day of installation as part of the CONTRACTOR's warranty, including removal of straw, erosion controls, reseeding, etc.

Alternate Number 4 – Remove 2360 West Pierson Road, Flint, Michigan – Removal of Marquee Sign and Associated Components

Provide all labor, equipment, materials, supplies and incidentals to remove the marquee sign located within the parking lot of the specified parcel in its entirety in accordance with the contract documents and other sections of the scope of work. Work includes, but is not limited to:

1. Demolish and remove the specified marquee in its entirety to the property as approved by OWNER and/or duly appointed OWNER representative.
2. Remove all associated components of the marquee sign in their entirety, such as but not limited to; footings, electrical lines, etc. Plug and seal lead at property boundary or main in accordance with specifications, codes.

Site Restoration

Provide all labor, materials, equipment and incidentals necessary to backfill and compact soil excavations and slope site to a level consistent with grade prior to demolition. OWNER and/or OWNER representative may will install survey benchmarks prior to demolition activities. Backfill site restoration work includes:

3. Grade, backfill, restore, and compact existing subsoil. Existing subsurface soil capable of being compacted to form a stable, homogenous material may be graded and utilized as fill.
4. Backfill site, including voids caused by demolition, as necessary to meet pre-existing grade with MDOT Class II Sand. Backfill must be certified clean fill from a virgin source. Final volume and depth of backfill will be based on actual quantities necessary to meet proposed grades and as approved by OWNER and/or duly appointed OWNER representative. Site must be left in condition suitable for future development.
5. OWNER may retain third party compaction testing services and certification of backfill. Backfill shall be compacted in minimum 12-inch lifts to not less than 95% M.U.W. and verified by a Construction Testing Engineer, provided by OWNER at no cost to CONTRACTOR.
6. Backfill site to level consistent with pre-existing grades as determined by possible survey benchmarks provided by OWNER and/or duly appointed OWNER representative prior to demolition, slope to allow for topographic runoff of storm water towards appropriate storm water conveyance.
7. Provide backfill documentation for Class II Sand and Topsoil including clean certification and volume in cubic yards.
8. Place and grade topsoil on-site for surface restoration in disturbed areas. Topsoil shall be placed in friable condition to a depth of 4-inch (+/- 1-inch). All stripped topsoil shall meet the approval of the OWNER and/or duly appointed OWNER representative prior to re-use. Import topsoil necessary to complete surface restoration. Site must be left in condition suitable for future development.
9. Seed, fertilize, mulch, and tackify disturbed area(s). Seed shall only be sown between May 1st and October 1st. If this timeline cannot be met, OWNER and/or duly appointed OWNER representative's approval is required for seeding alternates. Seeded areas shall be maintained for one year from time of last day of installation as part of the CONTRACTOR's warranty, including removal of straw, erosion controls, reseeding, etc.

END OF SECTION 00800

TECHNICAL SPECIFICATIONS

01 General Requirements

02 Technical Specification

13 Special Construction

SECTION 01025

MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.01 DESCRIPTION

All units of measurement shall be standard United States convention as applied to the specific items of work by tradition and as interpreted by OWNER and/or duly appointed OWNER representative.

A. Unit Price Items

Payment items for the work of this contract on which the contract progress payment will be based are listed in the Bid Documents. The unit price and payment made for each item listed shall constitute full compensation for furnishing all labor, materials, and equipment, and performing any associated CONTRACTOR quality control, environmental protection, safety requirements, sampling, tests, and reports, and for performing all work required for each of the unit price items. Payment is contingent upon approval of all applicable submittals.

B. Lump Sum Items

Payment items for the work of this contract for which Contract lump sum payments will be made are listed in Bid Documents. Contract progress payments for lump sum items will be paid for based on the approved schedule of values. All cost for items of work, which are not specifically mentioned to be included in a particular lump sum or unit price payment item, shall be included in the listed lump sum item most closely associated with the work involved. The lump sum price and payment made for each item listed shall constitute full compensation for furnishing all labor, materials, and equipment, and performing any associated CONTRACTOR quality control, environmental protection, safety requirements, sampling, tests and reports, and for performing all work required for which separated payment is not otherwise provided. Payment is contingent upon approval of all applicable submittals.

1.02 SCOPE OF PAYMENT

- A. The CONTRACTOR shall accept compensation as herein provided, as full payment to furnish all materials, labor, tools, equipment, permitting, and incidentals necessary to the completed work; for performing all work contemplated and embraced by the Contract; for all loss or damage arising from the nature of the work, or from the action of the elements, or from any unforeseen difficulties which may be encountered during the execution of the work; and for all expenses incurred in consequence of the suspension of the work as herein authorized.
- B. No extra payment will be made to the CONTRACTOR for any expense or delays caused by revision of inadequate submittals, lack of progress, defective workmanship, or rescheduling of work by other contractors, subcontractors, or equipment and material suppliers.
- C. No additional payment will be allowed because of differences between field dimensions and those shown specified herein should work be conducted before notifying the OWNER and/or duly appointed OWNER representative of these differences.
- D. Additional costs caused by ill-timed or defective work, or work not conforming to Project Specifications, including costs for additional services of an ENGINEER, the OWNER and/or duly appointed OWNER representative shall be incurred solely by the CONTRACTOR.

SECTION 01025

MEASUREMENT AND PAYMENT

- E. Work done on written instructions of the OWNER and/or duly appointed OWNER representative, other than defective or non-conforming work, will be paid for by the OWNER.

1.03 PAYMENT FOR INCREASED OR DECREASED QUANTITIES

- A. Payment will be at the unit price bid for the respective item. Note only an estimated quantity is given in the Bid Schedule.
- B. If less work than the unit price estimated quantity is performed, payment will be at unit price bid for actual quantity performed.
- C. Increased or decreased work involving Change Orders will be paid for as stipulated in such Change Orders.

1.04 FINAL PAYMENT

The CONTRACTOR will make, as soon as practicable after the entire completion of the project, a final quantity invoice of the amount of the Work performed and the value of such work for review and approval by OWNER and/or duly appointed OWNER representative will then pay the entire sum found to be due, after deducting therefrom all previous payments. All amounts to be paid under the provisions of the Contract may be held by the OWNER until such time as the Contractor submits satisfactory evidence that all bills for labor and materials used under this Contract have been paid and all required documents have been submitted to OWNER and/or duly appointed OWNER representative as required by the General Conditions/Contract Documents.

1.05 DESCRIPTION OF PAY ITEMS

- A. The pay items describe the measurement of and payment for the work to be done under the respective items listed in the Bid.
- B. Each unit price stated in the Bid shall constitute full compensation, as herein specified, for each item of the work completed.

1.06 SPECIFIC PAY ITEMS (NOT USED)

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

--END OF SECTION--

SECTION 01028

CHANGE ORDER PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Submittals.
- B. Documentation of change in Contract Price and Contract Time.
- C. Change procedures.
- D. Construction Change Authorization or Work Directive Change.
- E. Stipulated Price change order.
- F. Unit price change order.
- G. Time and material change order.
- H. Execution of change orders.
- I. Correlation of CONTRACTOR submittals.

1.2. RELATED SECTIONS

- A. Agreement Forms: Monetary values of established Unit Prices and percentage allowances for CONTRACTOR's overhead and profit.
- B. General Conditions: Governing requirements for changes in the Work, in Contract Price, and Contract Time.
- C. Section 01025 – Measurement and Payment.
- D. Section 01300 - Submittals.

1.3. SUBMITTALS

- A. Submit name of the individual authorized to receive change documents and be responsible for informing others in Contactor's employ or SUBCONTRACTORs of changes to the Work.
- B. Change Order Forms: See General Conditions

1.4. DOCUMENTATION OF CHANGE IN CONTRACT PRICE AND CONTRACT TIME

- A. Maintain detailed records of work done on a lime and material basis. Provide full information required for evaluation of proposed changes and to substantiate costs of changes in the Work.
- B. Document each quotation for a change in cost or time with sufficient data to allows evaluation of the quotation.

SECTION 01028

CHANGE ORDER PROCEDURES

- C. On request, provide additional data to support computations:
 - 1. Quantities of products, labor and equipment.
 - 2. Taxes, insurance and bonds.
 - 3. Overhead and profit.
 - 4. Justification for any change in Contract Time.
 - 5. Credit for deletions from Contract, similarly documented.
- D. Support each claim for additional costs and for work completed on a time and material basis with additional information:
 - 1. Origin and date of claim.
 - 2. Dates and times work was performed, and by whom.
 - 3. Time records and wage rates paid.
 - 4. Invoices and receipts for products, equipment and Subcontracts, similarly documented.

1.5. CHANGE PROCEDURES

- A. The OWNER and/or duly appointed OWNER representative will advise of minor changes in the Work not involving an adjustment to Contract Price or Contract Time as authorized by General Conditions by issuing supplemental instructions on Field Order.
- B. The OWNER and/or duly appointed OWNER representative may issue a Proposal Request which includes a detailed description of a proposed change with supplementary or revised drawings and specifications, a change in Contract Time for executing the change with a stipulation of any overtime work required and the period of time during which the requested price will be considered valid. CONTRACTOR will prepare and submit an estimate within five (5) calendar days.
- C. The CONTRACTOR may propose a change by submitting a request for change to the OWNER and/or duly appointed OWNER representative, describing the proposed change and its full effect on the Work. with a statement describing the reason for the change, and the effect on the Contract Price and Contract Time with full documentation and a statement describing the effect on Work by separate or other CONTRACTORS. Document any requested substitutions.

1.6. CONSTRUCTION CHANGE AUTHORIZATION OR WORK DIRECTIVE CHANGE

- A. The duly appointed OWNER representative may issue a document, signed by the OWNER, instructing the CONTRACTOR to proceed with a change in the Work, for subsequent inclusion in a Change Order.

SECTION 01028

CHANGE ORDER PROCEDURES

- B. The document will describe changes in the Work and will designate method of determining any change in Contract Price or Contract Time.
- C. Promptly execute the change in Work.

1.7. STIPULATED PRICE CHANGE ORDER

- A. Based on Proposal Request and CONTRACTOR's fixed price quotation or CONTRACTOR's request for a Change Order as approved by OWNER and/or duly appointed OWNER representative.

1.8. UNIT PRICE CHANGE ORDER

- A. For pre-determined unit prices and quantities, the Change Order will be executed on a fixed unit price basis.
- B. For unit costs or quantities or units of work which are not pre-determined, execute Work under a Construction Change Authorization or Work Directive Change.
- C. Changes in Contract Price or Contract Time will be computed as specified for Time and Material Change Order.

1.9. TIME AND MATERIAL CHANGE ORDER

- A. Submit itemized account and supporting data after completion of change, within time limits indicated in the Conditions or the Contract.
- B. OWNER and/or duly appointed OWNER representative will determine the change allowable in Contract Price and Contract Time as provided in the Contract Documents.
- C. Maintain detailed records or work done on Time and Material basis.
- D. Provide full information required for evaluation of proposed changes, and to substantiate costs for changes in the Work.

1. 10. EXECUTION OF CHANGE ORDERS

- A. Execution of Change Orders: OWNER and/or duly appointed OWNER representative will issue Change Orders for signatures of parties as provided in the Conditions of the Contract

1.11. CORRELATION OF CONTRACTOR SUBMITTALS

- A. Promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Price.
- B. Promptly revise progress schedules to reflect any change in Contract Time, revise sub-schedules to adjust time for other items of work affected by the change, and resubmit.
- C. Promptly enter changes in Project Record Documents.

SECTION 01028

CHANGE ORDER PROCEDURES

--END OF SECTION--

SECTION 01040

COORDINATION

PART 1 GENERAL

1.01 Project Coordination:

1. Prior to beginning Work the CONTRACTOR shall meet with the OWNER and/or duly appointed OWNER representative and arrange the schedule for the project. Once the project is started, it shall be carried to completion without delay.
2. Phasing of Work shall be clearly established and verified with the OWNER and/or duly appointed OWNER representative prior to commencing Work in any area. No demolition and removal of work shall begin until authorized by OWNER and/or duly appointed OWNER representative.
3. CONTRACTOR is responsible for contacting Miss Dig a minimum of three (3) working days prior to work start. Miss Dig 1-800-482-7171.
4. CONTRACTOR is responsible for contacting and coordinating Work with utility companies servicing the property.
5. CONTRACTOR is responsible for coordinating Work with local municipalities including compliance with local ordinances.
6. CONTRACTOR is responsible for coordinating Work with OWNER and/or duly appointed OWNER representative. CONTRACTOR shall provide access for all inspection and monitoring activities conducted by OWNER and/or duly appointed OWNER representative or representatives.
7. CONTRACTOR shall coordinate all waste disposal approvals, manifests, and associated signatures with OWNER and/or duly appointed OWNER representative. CONTRACTOR shall provide sufficient advance notice to prevent delays caused by obtaining necessary signatures and approvals.
8. CONTRACTOR shall obtain all access agreements (special consideration should be given to adjacent property operations). Note that project may be connected or adjacent to operating business occupied by employees and customers. Work hours and street closures must be coordinated with municipality, OWNER and/or duly appointed OWNER representative, and adjacent property owners.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

--END OF SECTION--

SECTION 01110

SAFETY, HEALTH, AND EMERGENCY RESPONSE

PART 1 GENERAL

1.01 DESCRIPTION OF WORK

This Section provides minimum guidance and implementation of a site safety and accident prevention program for the employees of the CONTRACTOR and for preparation of a Health and Safety Plan (HASP). The HASP shall be submitted to the OWNER and/or duly appointed OWNER representative for information only. Approval shall not be required. The information and requirements identified in this section are the minimum requirements. The CONTRACTOR shall evaluate the work conditions and implement appropriate measures to protect the workers, environment, and general public.

1.02 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS (ACGIH)

ACGIH-02 (1993) 1993-1994 Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices or most recent revision.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI Z358.1 (1990) Emergency Eyewash and Shower Equipment or most recent revision.

CODE OF FEDERAL REGULATIONS (CFR)

29 CFR Part 1904 Recording and Reporting Occupational Injuries and Illnesses

29 CFR Part 1910 Occupational Safety and Health Standards

29 CFR Part 1926 Safety and Health Regulations for Construction

49 CFR Part 171 General Information, Regulations, and Definitions

49 CFR Part 172 Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements

NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH (NIOSH)

NIOSH Pub No. 85-115 (1985) Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities or most recent revision.

TECHNICAL SPECIFICATION

01110 - 1

SAFETY HEALTH
AND EMERGENCY RESPONSE

For

ENVIRONMENTAL ABATEMENT, STRUCTURE DEMOLITION AND SITE RESTORATION

SECTION 01110

SAFETY, HEALTH, AND EMERGENCY RESPONSE

1.03 SUBMITTALS

The following submittals are required for information only. The OWNER reserves the right to request for additional pertinent information.

- A. Site Drawings showing proposed zones such as exclusion zones, decontamination zones, support zones, etc.
- B. Personnel Exposure Monitoring Results
- C. Site Control Log
- D. Record of each entry into and exit from the site
- E. Health and Safety Plan
- F. Qualifications and experience of the Site Safety and Health Officer (SSHO) and Safety Health Manager (SHM)
- G. Proof of Employee Training (OSHA HAZWOPER 40 Hour, Annual 8 Hour Updates, and AHERA Asbestos Worker and Contract Supervisor).

1.04 REGULATORY REQUIREMENTS

Work performed under this contract shall conform to all applicable Federal, State, and local safety and occupational health laws and regulations. These may include, but are not limited to, Occupational Safety and Health Administration (OSHA) standards, 29 CFR Part 1910, especially Section .120, "Hazardous Waste Site Operations and Emergency Response" and 29 CFR Part 1926, especially Section .65, "Hazardous Waste Site Operations and Emergency Response". Matters of interpretation of standards shall be submitted to the appropriate administrative agency for resolution before starting work. Where the requirements of this specification, applicable laws, criteria, ordinances, regulations, and referenced documents vary, the most stringent requirements shall apply.

1.05 HEALTH AND SAFETY PLAN

- A. Preparation and Implementation

A HASP shall be prepared covering on site work to be performed by the CONTRACTOR and all subcontractors. The Safety and Health Manager shall be responsible for the development, implementation, and oversight of the HASP. The HASP shall establish, in detail, the protocols necessary for the anticipation, recognition, evaluation, and control of hazards associated with each task performed. The HASP shall address site-specific safety and health requirements and procedures based upon site-specific conditions. The level of detail provided in the HASP shall be tailored to the type of work, complexity of operations to be performed, and hazards anticipated. Details about some activities may not be available when the initial HASP is prepared. Therefore, the HASP shall address, in as much detail as possible, anticipated tasks, their related hazards, and anticipated control measures.

SECTION 01110

SAFETY, HEALTH, AND EMERGENCY RESPONSE

B. Availability

The HASP shall be made available in accordance with 29 CFR Part 1910, Section .120 (b)(1)(v) and 29 CFR Part 1926, Section .65 (b)(1)(v).

C. Elements

Topics required by 29 CFR Part 1910, Section .120 (b)(4) and in 29 CFR Part 1926, Section .65 (b)(4) shall be addressed in the HASP. Where the use of a specific topic is not applicable to the project, the HASP shall include a statement to justify its omission or reduced level of detail and establish that adequate consideration was given the topic. The HASP should include but will not be limited to the following sections:

- A. Site description and contamination characterization
- B. Hazard/Risk analysis
- C. Staff organization, qualifications, and responsibilities
- D. Training
- E. Personal protective equipment
- F. Medical surveillance
- G. Exposure monitoring/air sampling program
- H. Heat and cold stress monitoring
- I. Safety procedures, engineering, controls, and work practices
- J. Site control measures
- K. Personal hygiene and decontamination
- L. Equipment Decontamination
- M. Emergency equipment and first aid requirements
- N. Emergency response and contingency
- O. Certificate of worker/visitor acknowledgment
- P. Inspection
- Q. Safety and health phase-out report

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

--END OF SECTION--

SECTION 01200

PROJECT MEETINGS

PART 1 GENERAL

1.01 PRECONSTRUCTION MEETING

OWNER and/or duly appointed OWNER representative shall schedule a preconstruction conference to be attended by the OWNER, the CONTRACTOR, and other personnel. Once the project has been started, the CONTRACTOR shall carry it to completion without delay.

1.02 PROGRESS MEETINGS

If necessary, the OWNER and/or duly appointed OWNER representative or CONTRACTOR will schedule progress meetings to be held on the job site whenever needed to supply information necessary to prevent job interruptions, to observe the Work or to inspect completed Work. CONTRACTOR shall be represented at each progress meeting by persons with full authority to act for the CONTRACTOR in regard to all portions of the Work.

1.03 WEEKLY SITE ACTIVITY MEETINGS

If necessary, activity meetings shall be held on the job site weekly throughout the entire period of the project. The weekly meeting shall be attended by the OWNER and/or duly appointed OWNER representative and CONTRACTOR, and other parties involved in the construction activities. The CONTRACTOR shall report weekly site activities, problems and solutions.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

--END OF SECTION--

SECTION 01300

SUBMITTALS

PART 1 GENERAL

1.1 SUBMITTAL CLASSIFICATION

- A. Submittals are classified as OWNER- (or duly appointed OWNER representative-) Approved (SA) and For Information Only (FIO).

1.2 APPROVED SUBMITTALS

- A. The approval of submittals by the OWNER and/or duly appointed OWNER representative shall not be construed as a complete check, but will indicate only that the general method of construction, materials, detailing and other information are satisfactory. Approval will not relieve the CONTRACTOR of the responsibility for any error which may exist.
- B. Upon completion of review of OWNER and/or duly appointed OWNER representative-required approval (SA), the submittal will be identified as having received approval by being so stamped and dated.

1. Reservation of Rights

OWNER reserves the right to require the CONTRACTOR to resubmit any item found not to comply with the Contract. This does not relieve the CONTRACTOR from the obligation to furnish material conforming to the plans and specifications and will not prevent the OWNER and/or duly appointed OWNER representative from requiring removal and replacement if nonconforming material is incorporated into the work. This does not relieve the CONTRACTOR of the requirement to furnish samples for testing by the OWNER or check testing by the OWNER in those instances where the technical specifications so prescribe. Additional time and expense necessary to comply with additional resubmittals required under this paragraph will not be the basis for any claims for time extension, delay, or extra cost on the part of the CONTRACTOR.

1.3 DISAPPROVED SUBMITTALS

When a submittal is returned to the CONTRACTOR and marked "DISAPPROVED" or "APPROVED AS NOTED, REVISE AND RESUBMIT", CONTRACTOR shall make all corrections required by the OWNER and/or duly appointed OWNER representative and promptly furnish a corrected submittal in the form and number of copies as specified for initial submittal.

1.4 WITHHOLDING OF PAYMENT

Payment for materials incorporated in the work will not be made if required approvals have not been obtained. Additional time and expense necessary to comply with additional resubmittals required under this paragraph will not be the basis for any claims for time extension, delay, or extra cost on the part of the CONTRACTOR.

1.5 SCHEDULING

Submittal covering component items forming a system or items that are interrelated shall be scheduled

TECHNICAL SPECIFICATION

01300 - 1

SUBMITTALS

For

ENVIRONMENTAL ABATEMENT, STRUCTURE DEMOLITION AND SITE RESTORATION

SECTION 01300

SUBMITTALS

to be coordinated and submitted concurrently. Certifications to be submitted with pertinent drawings shall be so scheduled. No delay damages or time extensions will be allowed for time lost in late submittals.

1.6 CONTROL OF SUBMITTALS

The CONTRACTOR shall carefully control its procurement operations to ensure that each individual submittal is made on or before the CONTRACTOR scheduled submittal date.

1.7 INFORMATION ONLY SUBMITTALS

Normally submittal for information only (FIO) will not be returned by receipt thereof will be acknowledged. Approval of duly appointed OWNER representative is not required on information only submittals. These submittals will be used for information purposes.

1.8 LIST OF SUBMITTALS

Submittals include but are not limited to the followings:

A. Contract Deliverable Submittals

1. Project Record Documents
2. Site activity reports
3. Disposal Documents, including manifests and disposal tickets
4. Inspection and test reports

B Other Submittals

1. Project Work Plan; SA
2. Health and Safety Plan (HASP); FIO
3. Disposal Facility; SA
4. Soil Erosion and Sedimentation Control Plan; FIO
5. Permits, FIO

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01330

SUBMITTAL PROCEDURES

PART 1 GENERAL

1.01 PURPOSE

- A. To verify that products and systems proposed by the CONTRACTOR for use on this Project conform with the design intent, CONTRACTOR shall forward to the OWNER and/or duly appointed OWNER representative, project data, shop drawings, samples, certifications, schedules, manuals, and other submittals as required in the specifications.

1.02 SUBMITTAL SCHEDULE

- A. Provide a submittal schedule within five (5) business days after receipt of Notice of Award, listing the following by specification section:
 - 1. Dates that submittal items shall be provided for review.
 - 2. Dates by which the CONTRACTOR requires acceptance of the submittal for procurement, fabrication, and installation purposes.
- B. The schedule shall allow for reasonable review cycles, and shall be consistent with the overall construction schedule.
- C. No claims for schedule delays will be allowed for unresponsive submittals or failure to respond to comments in a timely manner by CONTRACTOR.

1.03 PREPARATION OF SUBMITTALS BY CONTRACTOR

- A. Review submittal items for legibility, conformance to the Contract Documents, coordination between work items, and completeness according to submittal requirements of each specification section; certify review by signing transmittal form; and list the CONTRACTOR's comments
- B. Utilize the transmittal form attached to identify submittals, and provide information required in CONTRACTOR's portion of form, including:
 - 1. Date of submittal.
 - 2. Project Name, Contract No., and Location.
 - 3. Submittal No., in sequence, beginning with 1.
 - 4. CONTRACTOR's name, address, and contact person.
 - 5. Items within submittal, numbered in sequence.
 - 6. Specification sections no.
 - 7. Manufacturer/Designer/Supplier.
 - 8. Special Instructions (when response is needed, if there is a deviance, etc.).
 - 9. Signature certifying that the CONTRACTOR has reviewed the submittal.

SECTION 01330

SUBMITTAL PROCEDURES

- C. Cross-reference actual items in submittal by labeling them clearly by item number listed in transmittal, and provide them in the sequence listed.
- D. If all the submittal items required for the specification section are not provided or deviate from the Contract Documents, attach a memo explaining when the missing items will be provided.
- E. Provide three copies of submittals to the OWNER and/or duly appointed OWNER representative. If the CONTRACTOR anticipates review will require markup and return of the actual submittal, rather than a separate comment sheet to be faxed or emailed, then CONTRACTOR shall provide an additional copy for mark up and return. A legible fax or electronic copy may be accepted to initiate review, if followed by hard copy.
- F. Send submittals to:

AKT Peerless Environmental and Energy Services
214 Janes Avenue, Saginaw, Michigan 48607
Attn: Ryan T. Londrigan, CHMM
Email: Ryan@aktpeerless.com
Ph: 989-754-9896
Cell: 989-284-7238
Fax: 989-754-3804

1.04 OWNER AND/OR DULY APPOINTED OWNER REPRESENTATIVE REVIEW

- A. Upon receipt, OWNER and/or duly appointed OWNER representative will log in submittals, provide copy of submittal to the OWNER, and review for conformance with the design intent.
- B. The OWNER and/or duly appointed OWNER representative will return submittal review forms and comments via fax or email. Review of items noted critical by the CONTRACTOR will be expedited.
- C. The OWNER and/or duly appointed OWNER representative will log out submittal upon faxing or emailing comments to the CONTRACTOR, and will further distribute forms and comments to the OWNER and/or duly appointed OWNER representative's organization as required for orderly progression of the project.
- D. Review is for general conformance with design concept for the project and general compliance with the information given in the Contract Documents. Review action codes are listed below (see also attached Transmittal Form and the OWNER and/or duly appointed OWNER representative's Stamp/Comment Form).
 - 1. No Exceptions Taken (Code 1): Fabrication and installation may proceed.
 - 2. Make Corrections Noted (Code 2): The CONTRACTOR shall make the changes noted, and then may proceed with fabrication or installation.
 - 3. Amend and Resubmit (Code 3): The CONTRACTOR shall make the changes noted, and resubmit for an additional review cycle.
 - 4. Rejected - See Remarks (Code 4): The CONTRACTOR shall make the changes noted, which may involve a complete new product submittal, and resubmit for an additional review cycle.

SECTION 01330

SUBMITTAL PROCEDURES

1.05 RESPONSIBILITIES OF THE CONTRACTOR

- A. The review action code (described in this Section) does not relieve the CONTRACTOR from responsibility of compliance with requirements of the Contract Documents. The CONTRACTOR remains responsible for dimensions, job site correlation, fabrication processes, construction methods, and coordination of installation work, as well as manufacturers' testing and operational requirements.
- B. CONTRACTOR shall promptly distribute submittal review actions and comments to its suppliers, and otherwise as required for orderly progression of the job, and shall modify or replace products to comply with comments.
- C. Products fabricated or installed before receiving Review Action Code 1 or 2 shall be modified or replaced at the CONTRACTOR's expense, to conform with the design intent, as directed by the OWNER and/or duly appointed OWNER representative. Products receiving Action 2, but not modified per comments prior to installation, shall similarly be modified or replaced per direction of OWNER and/or duly appointed OWNER representative.

1.06 RESUBMISSION

- A. Items receiving an Action Code 1 or 2 do not require resubmission, unless the original product becomes unavailable, or changes in the project make the original product incompatible.
- B. The CONTRACTOR shall repeat the submittal process for items receiving an Action Code 3 or 4. The original submittal number shall be used with a letter code suffix appended in ascending order for each resubmission of the item.
 - 1. The original submittal shall be #1.
 - 2. The first resubmission of that submittal would be #1A.
 - 3. The second resubmission of that submittal would be #1B; and etc. (if required).
- C. The CONTRACTOR shall relate item numbers in resubmissions to prior submittals of that series. For example, if original submittal No. 1 items 1, 4, and 6 require resubmission, they should be provided as [re]submittal No. 1A, items 1, 4, and 6.
- D. The resubmission coding systems described above are designed to expedite review processes and simplify filing and retrieval for the Project Manager, the OWNER and/or duly appointed OWNER representative, the CONTRACTOR, and the Resident Project Representative. When additional cross-referencing is required for the sake of clarity, the CONTRACTOR shall provide explanatory notes.

1.07 DOCUMENTATION

- A. Documentation provided in submittals shall be in adequate detail regarding dimensions, capacities, durability, materials, connections, and interface to confirm whether the products represented comply with the design intent.
- B. Documentation shall be organized to facilitate review and use: reports and manuals shall have a table of contents in suitable detail for locating required topics and attachments.
- C. Documentation shall be in proper form and format. For example, signed Certificates of Compliance shall be provided under Manufacturer's Letterhead with information requested in the attached sample form.

SECTION 01330

SUBMITTAL PROCEDURES

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

--END OF SECTION--

SECTION 01330

SUBMITTAL PROCEDURES

(Sample)
**MANUFACTURER'S LETTERHEAD
CERTIFICATE OF
COMPLIANCE
(Manufactured or Fabricated Material)**

Date _____

WE HEREBY CERTIFY that _____
(Description, Kind of Material, Model No., etc.)

Furnished to _____
(Name of CONTRACTOR) (Prime or Sub.)

For Use On _____
(Project Name)

No. _____ OWNER _____

In the Amount of _____
(Quantity Represented)

Identified By _____
(Label, Marking, Seal No., Consignment, or Waybill No.)

Shipped on _____ Delivered on _____

Shipped Via _____
(Method of Shipment, Car No., Truck No.)

MEETS THE REQUIREMENTS OF THE PERTINENT PROJECT PLANS, SPECIAL CONDITIONS AND SPECIFICATIONS OF THE SUBJECT PROJECT IN ALL RESPECTS. PROCESSING, PRODUCT TESTING AND INSPECTION CONTROL OF RAW MATERIALS ARE IN CONFORMANCE WITH ALL APPLICABLE SPECIFICATIONS, DRAWINGS AND/OR STANDARDS OF ALL ARTICLES FURNISHED.

All records and documents pertinent to this certificate and not submitted herewith will be maintained available by the undersigned for a period of not less than three years from the date of this certificate.

Manufacturer _____

Signed by _____

Printed Name _____

Title _____

SECTION 01510

TEMPORARY UTILITIES

PART 1 GENERAL

1.01 SECTION INCLUDES

Requirements for temporary utilities used on site during project activities. Costs for temporary utilities shall be included in the bid for site services.

1.02 RELATED SECTIONS

- A. Section 01520 – Construction Facilities

1.03 PERFORMANCE REQUIREMENTS

A. Installation

Supply and install all temporary utilities and controls required to complete all specified activities. Temporary utilities may include electricity and water.

B. Connection

Connect (or have connected) all temporary utilities and controls required to complete all specified activities. Pay all initial connection fees and monthly service costs.

C. Disconnection

At the conclusion of the project, disconnect or have disconnected all temporary utilities and controls installed for completion of this project. Pay final cancellation costs, if any, and monthly service costs. Restore grounds and existing facilities to original condition.

PART 2 PRODUCTS

2.01 EQUIPMENT

Provide all necessary equipment, materials, labor, hook-up fees, and incidentals to supply each utility. If renting equipment, pay all costs associated with rental of temporary utility equipment.

2.02 COMPONENTS

- A. Provide temporary electrical power to the job site during construction.
 - 1. Arrange and pay for connection and fees.
 - 2. Install temporary wiring and accessories.
 - 3. Pay for electricity used during construction.
 - 4. Remove temporary connection and wiring at completion of job.

SECTION 01510

TEMPORARY UTILITIES

- B. Provide temporary telephone service to the job site during construction, either by mobile or hard-wired.
 - 1. Arrange and pay for connection and fees.
 - 2. Install temporary wiring and accessories.
 - 3. Provide telephones for use during construction.
 - 4. Pay for telephone service (and roam charges as applicable) used during construction.
 - 5. Remove temporary connection and wiring at completion of job.
- C. Provide and pay for temporary heat to the job site during construction.
- D. Provide and pay for temporary water supply to the job site during construction.
 - 1. Arrange and pay for connection and fees.
 - 2. Install temporary piping and accessories.
 - 3. Pay for water service used during construction.
 - 4. Remove temporary connection and wiring at completion of job.
 - 5. Provisions assumed by the CONTRACTOR.

PART 3 EXECUTION (NOT USED)

--END OF SECTION--

SECTION 01520

CONSTRUCTION FACILITIES

PART 1 GENERAL

1.01 SECTION INCLUDES

Requirements for temporary facilities used on site during project activities. Costs for any construction facilities should be included in the bid items for site services.

1.02 RELATED SECTIONS

Section 01510 – Temporary Utilities

1.03 PERFORMANCE REQUIREMENTS

A. Installation

Provide additional storage (as necessary) and sanitary facilities for the property. Sanitation facilities must remain at the property until termination of this phase of the project. Connect or have connected temporary utilities necessary for operation of the construction facilities, as specified in Section 01510, Temporary Utilities.

B. Cleanliness

All construction facilities must be kept clean, orderly, and in adequate state of repair. Adequacy of provided facilities will be determined by the OWNER and/or duly appointed OWNER representative. Dilapidated construction facilities will be immediately removed from site at the Contractor's expense.

1.04 QUALITY ASSURANCE

A. Cross-Contamination

Instruct personnel to maintain cleanliness throughout the construction area to prevent unnecessary cross-contamination.

B. Daily Inspections

Conduct daily inspections to ensure that standards are being maintained. OWNER and/or duly appointed OWNER representative will conduct random inspections to verify "good housekeeping" procedures are being practiced.

1.05 SCHEDULING

A. Facility Inspections

Conduct daily inspections and necessary cleaning and maintenance for the facilities specified. Inadequate facilities, as determined by OWNER and/or duly appointed OWNER representative, will be immediately removed from site at the contractor's expense. At a minimum, sanitary facilities will be cleaned twice each month.

SECTION 01520

CONSTRUCTION FACILITIES

PART 2 PRODUCTS

2.01 EQUIPMENT

A. Sanitary Facilities

Provide and maintain temporary, portable sanitary facilities, in locations approved by the OWNER and/or duly appointed OWNER representative. Provide adequate facilities for the work force. Comply with local, state, and federal code requirements. Maintain the temporary sanitary facilities in good condition at all times and remove them when all specified activities under this Contract have been completed. Bid must include costs for (1) mobilization, (2) building rental, (3) semi-monthly cleanings, and (4) demobilization.

PART 3 EXECUTION (NOT USED)

--END OF SECTION--

SECTION 01530

BARRIERS AND ENCLOSURES

PART 1 GENERAL

1.1 DESCRIPTION

- A. The CONTRACTOR shall furnish, install and maintain as long as necessary and remove when no longer required adequate barriers, enclosures, warning signs or lights at all dangerous points throughout the Work for protection of property, workers and the public. The CONTRACTOR shall hold the OWNER and/or duly appointed OWNER representative harmless from damage or claims arising out of any injury or damage that may be sustained by any person or persons as a result of the Work under the Contract.

- B. Temporary Fence: The CONTRACTOR shall entirely enclose the Contract Work area by means of appropriate industry standard fencing having minimum height of six (6) feet.

Fencing shall be in compliance with all governing laws, regulations, codes and ordinances

Gates shall be provided at all points of access. Gates shall be closed and secured in place at all times when Work under the Contract is not in progress.

Gates shall have minimum width of 20 feet to allow access for emergency vehicles.

Gates must be capable of manual operation by one person.

Installation of temporary fencing shall not deter or hinder access to existing and new hose connection and fire hydrants. Maintain fencing in good condition.

If damaged, repair immediately.

The fence shall be removed and grounds restored to original condition upon completion of the Work.

Repair damage caused by installation of temporary fencing.

The OWNER and/or duly appointed OWNER representative reserve right to stop work based on inadequate fencing, reject installed fencing, and require immediate changes.

- C. Street Barricades: The CONTRACTOR shall erect, maintain all street barricades, signal lights and lane change markers during the periods that a traffic lane is closed for operations. There shall be full compliance with rules and ordinances respecting such street barricading and devices shall be removed when hazard is no longer present.

PART 2 PRODUCTS

Not Used.

SECTION 01530

BARRIERS AND ENCLOSURES

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01570

TEMPORARY CONTROLS

PART 1 GENERAL

1.01 SECTION INCLUDES

Section covers site or environmental controls necessary to allow safe working conditions.

1.02 RELATED SECTIONS

- A. Section 01510 – Temporary Utilities
- B. Section 1520 – Construction Facilities
- C. Section 01530 –Barriers and Enclosures

1.03 QUALITY ASSURANCE

A. Cleanliness

All construction facilities must be kept clean, orderly, and in adequate state of repair. Adequacy of provided facilities will be determined by the OWNER and/or duly appointed OWNER representative. Dilapidated construction facilities will be immediately removed from site at the CONTRACTOR's expense.

B. Inspections

Conduct routine inspections to ensure that standards are being maintained. The OWNER and/or duly appointed OWNER representative will conduct random inspections to verify "good housekeeping" procedures are being practiced.

1.04 SITE CONDITIONS

A. Safety Provisions

Maintain all temporary facilities to provide safe working conditions and prevent unauthorized entry to the site.

B. Drainage Facilities

Provide as part of the Contract Price all temporary drainage facilities necessary to perform specified activities in accordance with the bid schedule.

C. Erosion Control

CONTRACTOR is responsible for all soil erosion and sedimentation control, including installation of silt fence, check dams, geo-fabric, track-out prevention, and other controls. CONTRACTOR must comply with local, state, and federal soil erosion and sedimentation control requirements. Inspect the construction site weekly or within 24 hours after a rainfall greater than 0.5 inches. If erosion has occurred or if sediment accumulation warrants removal, conduct the necessary removal. Upgrade soil erosion and sedimentation controls as necessary to prevent off-site soil transport. Remove or replace soil accordingly.

SECTION 01570

TEMPORARY CONTROLS

D. Cleaning and Waste Removal

Continuously maintain cleanliness and orderliness around storage areas during construction activities, to allow safe passage, good drainage, and proper access.

1. Collect scrap, waste, debris, and spoil in and around storage areas daily. Discard in appropriate waste receptacles.
2. Straighten and restack storage piles weekly.
3. Collect scrap, waste, debris, and spoil in and around construction areas weekly. Discard in appropriate waste receptacles.
4. Remove and dispose all waste derived from on-site activities, including used PPE, general refuse, and scrap metal.

E. Temporary Fencing, Barriers, Enclosures, and Security Devices

1. The CONTRACTOR shall entirely enclose the Contract Work area by means of appropriate industry standard fencing having minimum height of six (6) feet.
2. Provide temporary protection to existing improvements, including fencing, poles, wires, pipes, underground utilities, property corners, curbing, and survey benchmarks (as necessary). Repair or restore to original condition any improvements damaged during on-site activities.
3. If existing fencing inhibits on-site activities, request permission in writing to temporarily remove. If permission is granted, replace removed fencing immediately after necessary activities are completed in the restricted area.
4. Erect a temporary, four-foot-high fence to deny access to open excavations deeper than 1-foot. Place bright plastic ribbon at eye-level and in random locations along the fence to warn workers or passers-by of the imminent danger. Barricade area with construction barrels or with blinking lights at conspicuous levels.

1.05 MAINTENANCE

A. General

Maintain all storage areas, improvements, work areas, and access roads for clear passage and safe functional use.

B. Adequacy

The OWNER and/or duly appointed OWNER representative will determine adequacy of maintenance at the property.

SECTION 01570

TEMPORARY CONTROLS

PART 2 PRODUCTS

2.01 EQUIPMENT AND COMPONENTS

- A. Provide all equipment necessary to conduct all activities specified in this section and Contract Documents. Equipment will include, but not be limited to, trash receptacles, caution tape, plastic barricades, sawhorses, and other related equipment.
- B. Provide all incidental components necessary to maintain safe working conditions as specified in this section and Contract Documents, including, but not limited to, fencing silt fencing or straw bundles to prevent erosion.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01700

CONTRACT CLOSE OUT

PART 1 GENERAL

1.1 DESCRIPTION

- A. Substantial Completion: The CONTRACTOR shall notify the OWNER and/or duly appointed OWNER representative when the Work will be substantially complete and ready for inspection. At such time, a list of minor replacement, correction and adjustment items will be made. The CONTRACTOR shall be represented on the job site at the time this inspection is made and thereafter shall complete all Work by the date set for final acceptance by the OWNER. Substantial Completion shall be defined as completion of all demolition, major construction, and site restoration, except placement of grass seed.

1.2 CLOSEOUT PROCEDURES

- A. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for OWNER's inspection.
- B. Provide submittals to OWNER as required by governing or other authorities.
- C. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due.

1.3 CLEANING

- A. Regular Cleaning: All scrap or removed material, debris or rubbish shall be regularly removed from the project at the end of each working day and more frequently whenever the OWNER and/or duly appointed OWNER representative deems such material to be a hazard. No discarded material shall be deposited on the grounds of the OWNER without the express permission of the OWNER, or their representatives, or regulatory agency. No salvage or surplus material may be sold on the premises of the OWNER.
- B. Final Cleaning: Just prior to final acceptance by the OWNER, the CONTRACTOR shall remove or restore all areas of the property that were disturbed or damaged by his/her operations and make repairs for any damage or blemish that was caused by the Work.

14. PROJECT RECORD DOCUMENTS

- A. Maintain on site, one set of the following record documents; record actual revisions to the Work:
 - 1. Contract Drawings
 - 2. Specifications
 - 3. Addenda
 - 4. Change Orders and other Modifications to the Contract
 - 5. Reviewed shop drawings, product data, and samples
- B. Store Record Documents separate from documents used for construction.

SECTION 01700

CONTRACT CLOSE OUT

- C. Record information concurrent with construction/demolition progress.
- D. Record Documents and Shop Drawings: Legibly mark each item to record actual construction/demolition including:
 - 1. Measured horizontal and vertical locations of underground utilities (including termination point) and appurtenances referenced to permanent surface improvements.
 - 2. Field changes of dimension and detail.
 - 3. Details not on original Contract Drawings.
- E. Submit full accounting of unit cost quantities that are to be reimbursed on a unit rate basis.
- F. Submit documents to OWNER and/or duly appointed OWNER representative with claim for final Application for Payment.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

--END OF SECTION--

SECTION 01740

WARRANTIES AND BONDS

PART 1 GENERAL

1.1 DESCRIPTION

- A. Compile specified Warranties and Bonds.
- B. Compile specified Service and Maintenance Contracts.
- C. Review submittals to verify compliance with Contract Documents.
- D. Manufacturers warranties notwithstanding, the CONTRACTOR and subcontractors warrant the entire Work against defects in materials and workmanship a minimum of twelve (12) months from the substantial completion and shall include a twelve (12) month period of maintenance service.
- E. CONTRACTOR shall obtain and forward to OWNER and/or duly appointed OWNER representative any documents concerning Guarantee and Indebtedness, and any other special warranties or requirements of the Contract Documents. All required material shall accompany CONTRACTOR's request for final payment, including all operation and maintenance data required by the Contract Documents.
 - a. Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve the CONTRACTOR of the warranty on the work that incorporates the products nor does it relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the CONTRACTOR.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

--END OF SECTION--

SECTION 01770

CLOSEOUT PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

Section covers administrative procedures for substantial completion and full completion of specified work.

1.02 RELATED SECTIONS

Section 01560 – Temporary Barriers and Enclosures

1.03 PERFORMANCE REQUIREMENTS

A. Cleanup

Before final acceptance by OWNER and/or duly appointed OWNER representative, clean all work areas, storage areas, walls, and floor surfaces that become potentially impacted by material from on-site activities or otherwise dirtied. Repair any damaged materials or building components caused by on-site activities.

B. Demobilization

Demobilize all equipment.

C. Notification

Notify the OWNER and/or duly appointed OWNER representative when the Work will be substantially complete and ready for inspection (Section 1700 – Contract Closeout). Be present at the time of the inspection. A list of minor replacement, correction, and adjustment items will be prepared.

D. Follow-up

Complete all listed deficiencies by the date set by the OWNER and/or duly appointed OWNER representative for final acceptance.

E. Documentation

Submit all documentation required including, but not limited to, copies of landfill disposal tickets, waste manifests, fill documentation, inspection and test reports, and permit closeouts.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

--END OF SECTION--

TECHNICAL SPECIFICATION

01770 - 1

CLOSEOUT PROCEDURES

For

ENVIRONMENTAL ABATEMENT, STRUCTURE DEMOLITION AND SITE RESTORATION

SECTION 01780

CLOSEOUT SUBMITTALS

PART 1 GENERAL

1.01 SECTION INCLUDES

Section covers procedures for closeout submittals and revised project documents.

1.02 RELATED SECTIONS

- A. Section 01300 – Submittal Procedures
- B. Section 1700 – Contract Closeout
- C. Section 01770 – Closeout Procedures

1.03 SUBMITTALS

- A. Warranties
Forward special warranties or other requirements specified in the Contract Documents.
- B. Final Invoice
Along with the request for final payment, submit all required material, including operation and maintenance data required by the Contract Documents.
- C. Documentation
Submit all documentation required including but not limited to copies of landfill disposal tickets, waste manifests, fill documentation, inspection and test reports, and permit closeouts.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

--END OF SECTION--

SECTION 02000

SITE PREPARATION

PART 1 GENERAL

1.01 SITE PLAN

- A. CONTRACTOR shall prepare a site plan indicating the proposed location and dimensions of any area to be used for material stockpiles, employee and/or vehicle/equipment parking/storage, the number of trailers to be used, avenues of ingress/egress to the fenced construction area, vehicle and personnel decontamination units and primary roadways within the site used in the demolition/construction. Any areas anticipated for use as access roads or which may have to be graveled to prevent the tracking of mud shall also be identified and permission gained from the OWNER and/or duly appointed OWNER representative, County, and MDOT as necessary. In addition, CONTRACTOR shall identify the location, size and type of vehicle and personnel decontamination units.

- B. Identification of Employees

The CONTRACTOR shall be responsible for furnishing to each employee and for requiring each employee engaged on the work to display identification. Identification shall be kept on site during periods when an employee is not engaged in work. CONTRACTOR and Subcontractor personnel shall wear identifying markings clearly identifying the company for whom the employee works.

- C. Employee Parking

CONTRACTOR employee parking shall not interfere with the progress of work. Vehicles leaving the construction site that become contaminated while within the construction site or vehicles specified by the OWNER and/or duly appointed OWNER representative shall pass through the vehicle decontamination unit.

- D. Sampling and Analytical Testing

All analytical testing as required under this Section shall be paid for by the CONTRACTOR. It is the CONTRACTOR's responsibility to employ a laboratory for testing and analysis, which routinely provides analytical services acceptable to the Michigan Department of Environmental Quality.

Any confirmatory sampling/analysis necessary will be performed by the OWNER and/or duly appointed OWNER representative at OWNER's and/or duly appointed OWNER representative discretion.

1.02 AVAILABILITY AND USE OF UTILITY SERVICES

- A. The CONTRACTOR shall furnish and install all temporary facilities and controls required by the Work, shall remove them from the property upon completion of the Work, and shall restore the grounds and existing facilities to their original condition.

- B. Payment and Utility Services

The CONTRACTOR shall arrange for such utilities as required. The amount of each utility service consumed shall be charged to or paid for by the CONTRACTOR. The CONTRACTOR shall carefully conserve any utilities.

- C. Meters and Temporary Connections

SECTION 02000

SITE PREPARATION

The CONTRACTOR, at its expense and in a manner satisfactory to the OWNER and/or duly appointed OWNER representative, shall provide and maintain necessary temporary connections, distribution lines, meters and meter bases required to measure the amount of each utility used for the purpose of determining charges unless this service is provided by the local utility company. The CONTRACTOR shall notify the local utility company in writing at least five (or as required by the respective utility company) working days before final electrical connection is desired so that a utilities contract can be established. Under no circumstances shall the CONTRACTOR make the final electrical connection on his/her own.

D. Final Meter Reading

Before completion of the work and final acceptance of the work, the CONTRACTOR shall notify the OWNER and/or duly appointed OWNER representative, in writing, five working days before termination is desired. The CONTRACTOR shall take a final meter reading and provide it to the local utility company so that service can be disconnected. The CONTRACTOR shall coordinate with the OWNER and/or duly appointed OWNER representative and the utility company for disconnecting the services. The CONTRACTOR shall then remove, in coordination with the utility company, all the temporary distribution lines, meters, meter base(s), and associated material. The CONTRACTOR shall pay all outstanding utility bills before final acceptance of the work.

E. Sanitation

The CONTRACTOR shall provide and maintain within the construction area minimum field-type sanitary facilities, as necessary. The sanitation facilities shall be per applicable federal, state and local regulatory requirements.

F. Telephone/Facsimile

The CONTRACTOR shall make arrangements and pay all costs for telephone/facsimile facilities.

1.03 PROJECT SIGNAGE

A. Bulletin Board

A. Immediately upon beginning of work, CONTRACTOR required to post all OSHA, Equal Employment Opportunity, and health and safety posters as required by law.

1.04 BARRIER AND ENCLOSURES

A. CONTRACTOR shall furnish, install, and maintain as long as necessary, adequate barriers, warning signs, or lights at all dangerous locations throughout the Work for protection of property, workers, and the public. The CONTRACTOR shall remove such material when deemed no longer required. The CONTRACTOR shall hold the OWNER harmless from damage or claims arising out of any injury or damage that may be sustained by any person or persons as a result of the Work under the Contract.

SECTION 02000

SITE PREPARATION

1.05 DECONTAMINATION

- A. The CONTRACTOR shall provide, operate and maintain decontamination units for personnel, equipment and vehicles at the project site as approved by the OWNER and/or duly appointed OWNER representative. The decontamination unit shall serve to remove, to the best extent possible, contaminated soil and materials from equipment and vehicles before they exit the site.
- B. All vehicles that come in contact with contaminated material and/or as specified by the OWNER and/or duly appointed OWNER representative shall pass through the decontamination unit. Soils or contaminants shall be removed and properly handled by the CONTRACTOR. At a minimum, the CONTRACTOR shall provide wheel and under carriage wash using high-pressure water or steam. The rinse waters used in the operation shall be collected and stored, sampled and disposed of based on the analytical results of the testing coordinated by the CONTRACTOR. All the related costs are incidental to the project.

1.06 SOIL EROSION AND SEDIMENTATION CONTROL

Prior to any earth disturbance, install all necessary soil erosion and sedimentation control necessary to prevent eroded soils from leaving the site. CONTRACTOR is responsible for obtaining and complying with any necessary soil erosion permits. CONTRACTOR is responsible for all soil erosion and sedimentation control, including installation of silt fence, check dams, track-out prevention, and other controls. CONTRACTOR must comply with local, state, and federal soil erosion and sedimentation control requirements. Inspect the construction site weekly or within 24 hours after a rainfall greater than 0.5 inches. If erosion has occurred or if sediment accumulation warrants removal, conduct the necessary removal. Upgrade soil erosion and sedimentation controls as necessary to prevent off-site soil transport. Remove or replace soil accordingly. Related soil erosion and sedimentation control and monitoring are incidental to the project.

1.07 DUST CONTROL AND AIR MONITORING

The CONTRACTOR shall provide necessary engineering controls to prevent emissions of aerosol dust and other airborne material. Emissions must be prevented from contaminating surrounding properties. If necessary, air monitoring shall be performed, at the CONTRACTORs expense, to ensure the airborne dust levels do not exceed the regulatory limit. At no time shall the concentration of aerosol dust resulting from CONTRACTOR activity exceed 10 milligrams per cubic meter (mg/m³) for more than 5 minutes during building demolition, waste removal, and soil removal activities. Related dust control and monitoring are incidental to the project.

1.08 PROTECTION AND MAINTENANCE OF TRAFFIC

- A. During the project, the CONTRACTOR shall maintain and protect traffic on all affected roads during the construction period. Measures for the protection and diversion of traffic, including the provision of watchman and flagmen, erection of barricades, placing of lights around and in front of equipment and the work, and the erection and maintenance of adequate warning, danger, and direction signs, shall be as required by the State and local authorities having jurisdiction. The traveling public shall be protected from damage to person and property. The CONTRACTOR's traffic on roads selected for hauling material to and from the site shall interfere as little as possible with public traffic. CONTRACTOR shall investigate

SECTION 02000

SITE PREPARATION

the adequacy of existing roads and the allowable load limits on these roads. The CONTRACTOR shall be responsible for the repair of any damage to roads caused by construction operations. The CONTRACTOR shall minimize public road impacts from construction operations. If non-contaminated soil is being trucked onto public roads, CONTRACTOR shall arrange for and supply a street-sweeper/cleaner to maintain the public road. The cleaning operation shall be conducted at least daily or as required and determined by the OWNER and/or duly appointed OWNER representative. Related street-cleaning operations are incidental to the project.

B. Barricades

CONTRACTOR shall erect and maintain temporary barricades to limit public access to the construction areas. Such barricades shall be required whenever safe public access to paved areas such as roads, parking areas or sidewalks is prevented by construction activities or as otherwise necessary to ensure the safety of both pedestrian and vehicular traffic. Barricades shall be securely placed and clearly visible with adequate illumination to provide sufficient visual warning of the hazard during both day and night.

1.09 TREE AND UNDERBRUSH CLEARING

CONTRACTOR shall clear and remove trees and brush in conjunction with the demolition of on-site buildings, unless otherwise indicated. Trees and brush removed shall be properly disposed of off-site.

1.10 GENERAL SITE DEBRIS CLEARING

CONTRACTOR shall clear and remove all debris on the property at the direction of the OWNER and/or duly appointed OWNER representative in conjunction with the demolition of the on-site buildings. General debris removed shall be properly disposed of off-site.

1.11 CONTRACTOR'S TEMPORARY FACILITIES

A. Appearance of Trailers

Trailers utilized by the CONTRACTOR for administrative or material storage purposes shall present a clean and neat exterior appearance and shall be in a state of good repair.

B. Maintenance of Construction Area

Fencing shall be kept in a state of good repair and proper alignment. Should the CONTRACTOR elect to traverse with construction equipment or other vehicles grassed or unpaved areas which are not established roadways, such areas shall be covered with a layer of gravel as necessary to prevent rutting and the tracking of mud onto paved or established roadways; gravel gradation shall be at the CONTRACTOR's discretion and expense.

C. Security Provisions

CONTRACTOR shall be responsible for the security of its own equipment and facilities. In addition, CONTRACTOR shall notify the appropriate law enforcement agency requesting periodic security checks of the temporary project field office and surrounding area. Other security items, such as lighting, shall be the responsibility of the CONTRACTOR including all related fees.

SECTION 02000

SITE PREPARATION

D. Storage Facilities

The CONTRACTOR shall be responsible for providing and maintaining storage facilities for decontamination water, storm water and other water generated and/or collected on site; and other project related materials and items.

1.12 CLEANUP

- A. Construction debris, waste materials, packaging material and the like created by the CONTRACTOR shall be removed from the work site daily. Any dirt or mud that is tracked onto paved or surfaced roadways shall be cleaned away. Uncontaminated or decontaminated materials resulting from hazardous material or tank removal activities, which are salvageable, may be stored at the site with OWNER's approval. Stored material not in trailers, whether new or salvaged, shall be neatly stacked when stored.

1.13 RESTORATION

- A. Upon completion of the project and after removal of trailers, materials, and equipment from within the construction fenced area; CONTRACTOR shall restore impacts to the site caused by the demolition and removal work.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 02021

EQUIPMENT DECONTAMINATION PROCEDURES

PART 1 GENERAL

1.1 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 02315 - Excavation, Backfill, and Compaction
- B. Section 01110 - Health, Safety, and Emergency Response
- C. Section 02000 – Site Preparation

1.2 HEALTH AND SAFETY REQUIREMENTS

Completed all work in accordance with applicable regulations.

1.3 SUBMITTALS

Submit the following in accordance with Section 01330, "Submittal Procedures".

- A. Equipment Decontamination Procedures
 - 1. Equipment decontamination procedures shall be submitted as part of the Work Plan and shall detail all equipment and procedures proposed for decontamination of equipment used in contaminated areas. At a minimum, the decontamination procedures shall include:
 - 2. Proposed water supply source and method.
 - 3. Proposed washing equipment and procedures.
 - 4. Proposed decontamination procedures.
 - 5. Decontamination pad plan.

1.4 CONTRACTOR RESPONSIBILITY

- A. Equipment - Provide and maintain equipment required for decontaminating and maintaining decontaminating pad and all other facilities and equipment included in the equipment decontamination system. Decontaminate all equipment requiring decontamination, as specified in Paragraph: 3.01 Need for Decontamination.
- B. Water Supply - Provide an acceptable supply of decontamination water, ensuring that a minimum of 250 gallons of decontamination water is always available at the site.

PART 2 PRODUCTS

2.1 MISCELLANEOUS EQUIPMENT

Provide all scrub brushes or other equipment necessary to remove contaminated material from the equipment. Dispose all miscellaneous equipment in accordance with applicable or appropriate and relevant disposal regulations for contaminated materials.

EQUIPMENT DECONTAMINATION PROCEDURES

PART 3 EXECUTION**3.1 NEED FOR DECONTAMINATION**

All equipment within the Exclusion Zone, require decontamination to avoid spreading contamination into uncontaminated areas. All CONTRACTOR materials, equipment, and facilities shall be decontaminated, and inspected and approved by the OWNER and/or duly appointed OWNER representative prior to removal from the Exclusion Zone. Decontaminate all remaining improvements within the Exclusion Zone. All small tools and other materials for which decontamination is difficult or uncertain shall be packaged and disposed of by the CONTRACTOR in accordance with applicable or appropriate and relevant disposal regulations for contaminated materials. Examples of such equipment or materials are personal protective equipment, rope, lumber, plastic, had tools, heavy machinery, abatement equipment, etc.

3.2 EXTENT OF DECONTAMINATION

All equipment requiring decontamination, as defined in Paragraph: "Need for Decontamination", shall be washed to the extent that visible contamination is removed from the equipment. Any vehicles exiting the exclusion zone shall be washed to the extent that visible soil is removed from the vehicle body and undercarriage and no visible tracking of soil onto public roads occurs, as verified by the OWNER and/or duly appointed OWNER representative.

3.3 CERTIFICATES OF DECONTAMINATION

Provide a certificate of decontamination for all equipment and materials removed from the project site. Provide a copy of each decontamination certificate to the OWNER and/or duly appointed OWNER representative and maintain the original certificate at the CONTRACTOR'S office.

3.4 DECONTAMINATION PROCEDURES

- A. Schedule Construction activities to avoid spreading of contamination into uncontaminated areas. If possible, schedule work so that contaminated media are addressed first, leaving the facility sufficiently clean so that subsequent work can be performed with less potential of spreading of contamination and reduced requirements for decontamination.
- B. Decontaminate equipment to avoid spreading contamination onto previously uncontaminated equipment. Rinse small equipment with potable water, wash with a solution of Alconox or other approved non-phosphate detergent and water, and rinse with potable water. Submit Alternative decontamination procedures and methods to the OWNER and/or duly appointed OWNER representative prior to implementation. Perform decontamination at a specially designated decontamination area as authorized by the OWNER and/or duly appointed OWNER representative, and determined at the commencement of construction activities.

3.05 STORAGE AND DISPOSAL OF DECONTAMINATION FLUIDS

Decontamination fluids shall be disposed of in accordance with applicable laws and regulations.

--END OF SECTION--

MOBILIZATION & DEMOBILIZATION

PART 1 GENERAL

1.01 MOBILIZATION/DEMOBILIZATION

- A. Section 00800– Summary of Work
- B. Section 00400 – Bid Worksheet

In general, this item includes the provision of all labor, materials, equipment, personnel, and supplies necessary to complete the work of this contract. Provide site cleanup upon completion of work and provide all incidentals (services and items not specifically mentioned) necessary for completion of work. Mobilization / Demobilization also includes items such as trash removal (site clean-up), erosion controls, dust controls, fencing, temporary utilities and facilities, preparation of work plan, preparation of a site specific health and safety plan, and project administration.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.01 Plans and Documentation

- A. Prepare and Submit Required Work Plans, Health and Safety Plans, Pre-Demolition Engineering Survey (Refer to CFR 29 1926.850), and other plans/submittals required by Contract Documents.

3.02 Site Access

- A. CONTRACTOR shall construct as needed and maintain access roads used for construction traffic.
- B. CONTRACTOR shall provide security items (fencing, signage, etc.) as needed to prevent unauthorized access to the site.

3.03 Dust Control

- A. Dust generation shall be eliminated in the work area, resulting from grading, equipment movement, stockpiles, demolition or other elements of the work.
- B. Dust control methods may include any or all of the following:
 - 1. Chemical application such as calcium chloride;
 - 2. Water spray (CONTRACTOR responsible for water source and equipment used in dust control)

SECTION 02025

MOBILIZATION & DEMOBILIZATION

3. Other method approved by OWNER and/or duly appointed OWNER representative.

3.04 Temporary Facilities and Miscellaneous Items

- A. CONTRACTOR shall provide facilities, utilities, and other miscellaneous items for his crew as needed to complete the work, and to provide health and safety for site workers. This may include potable water, communications, and other temporary utilities.
 1. Temporary electricity, water, and sewer shall be coordinated with OWNER.
- B. CONTRACTOR shall fully remove all temporary facilities, utilities, and other miscellaneous items upon completion of the Work, as part of his equipment demobilization.
- C. As part of this item, CONTRACTOR shall provide full-time, qualified supervision and field management for this project. The field supervisor shall cooperate with the OWNER and/or duly appointed OWNER representative, and OWNER's personnel to ensure a well-run project. Field supervisor shall also be responsible for worker safety meetings and implementation of safety measures.
- D. Provide all storage, staging, temporary office facilities, restroom, and sanitation facilities.
- E. Coordinate all work with OWNER and/or duly appointed OWNER representative, local municipality, County, and State, including compliance with ordinances, codes, and regulations. Also coordinate all work with other CONTRACTORS working at the site.
- F. Attend all project meetings.
- G. Obtain all access agreements.
- H. Obtain all permits, provide all notifications, and pay all associated fees.
- I. Provide all other incidental (services and items not specifically mentioned) items necessary to provide a satisfactory work product in compliance with all governing laws and approved by the OWNER and/or duly appointed OWNER representative.

3.05 Site Security

- A. Provide all site security required by contract document.

3.06 Soil Erosion and Sedimentation Control

- A. Provide all soil erosion and sedimentation control.

END OF SECTION

02025-[2]

SECTION 02050

DEMOLITION

PART 1 GENERAL

1.1 WORK INCLUDED

A. Demolition of Structures

The following list of items to be demolished including related items is a single unit of work.

- The specific building structures as indicated in Contract Documents and Maps;
- Site features including private light poles, private utility poles, fencing, signs, other features and debris;
- Private utilities;
- Any miscellaneous debris located on the site;
- Building slabs, foundations, basements, and subsurface features (unless otherwise specified or necessary to support adjacent buildings, public infrastructure, or approved by OWNER and/or duly appointed OWNER representative);
- Concrete paving, sidewalks, and private curbing;
- Pavement areas as indicated in Contract Documents.

B. Grubbing and removal of trees (unless otherwise specified), brush, and vegetation to boundary of work area.

C. Removal and disposal of the building materials and debris including the removal and disposal of all miscellaneous site debris, including but not limited to building area debris, woods, piping materials, bricks, roof materials, metal equipment and all other non-specified material and debris found at the site.

D. Removal and disposal of the building debris and concrete materials generated by the demolition of the structures listed above. Removal and disposal of concrete, rebar, and steel is incidental to the project. It is recommended that steel be recycled. The CONTRACTOR may recycle concrete and asphalt and other legal products to reduce its cost. Any stained contaminated building materials, however, must be disposed.

E. The CONTRACTOR has salvage rights to all legal salvageable equipment, electrical equipment, metals, salable items, and other recyclable materials except for items specified in Contract Documents that will be salvaged by OWNER or others.

F. Submittal, sampling, analytical, and manifesting as related to demolition, removal and disposal of all building and structure debris and materials.

G. Perform dust control during the entire period of the demolition and removal operation.

H. Perform all necessary environmental, health, and safety including but not limited to employee exposure monitoring and documentation.

I. Stage hazardous material removal from the subject buildings as appropriate to conduct the project by best methods.

SECTION 02050

DEMOLITION

1.2 SUBMITTALS, PREPARATION, and MISCELLANEOUS

A. Work Plan; SA

Prior to proceeding with the demolition, removal and disposal work, the CONTRACTOR shall submit a work plan which includes the means, methods and procedures proposed for the accomplishment of all specified activities. The means, methods and procedures shall provide for safe conduct of the work; careful removal and disposition of buildings and structures, and solid materials and wastes; and protection of property that is to remain undisturbed. The procedures shall provide a detailed description of the methods and equipment to be used for each operation, and the sequence of operations. The name and location of disposal facilities for all removed materials shall be submitted in the Work Plan.

Include detailed sequence of demolition, removal work, and construction with starting and ending dates for each activity. Provide a clear means and methods of structural demolition, protection of adjacent structures/public right-of-way, proposed temporary shoring, bracing, and stabilization. Ensure OWNER and adjacent property owners operations are uninterrupted.

Provide a mechanism for coordination of any shutoff, capping, and continuation of utility services required. The procedures shall provide for safe conduct of the work, property protection, and protection of the structures and site features to remain. The procedures shall provide a detailed description of the methods and equipment to be used for each operation, protection methods, and the sequence of operations. This includes drawings or reports that indicate the measures proposed for protecting individuals and property, for environmental protection, for dust control and, for noise control, as well as indicate proposed locations and construction of barriers.

Provide a map depicting notable locations including but not limited to staging areas, temporary office, utility connection, fencing, gates, street closures, stockpiles, sequence of work, and shoring and bracing.

The work plan shall be based on work experience, and the guidance provided in this specification. The cost of work plan preparation is incidental to the project.

B. Preparation:

At a minimum, conduct a physical inspection and video/photographic survey to record condition of adjacent structures, walls, piers, foundations, parking lots, roads, rail, sidewalks, buildings, facilities, and grounds. Pay particular attention to existing cracks and irregularities. Install crack monitors, as needed, prior to commencement of work. Report location of all crack monitors to OWNER and/or duly appointed OWNER representative. Report to the OWNER and/or duly appointed OWNER representative any structural damage noted prior to commencement of work.

SECTION 02050

DEMOLITION

C. Protection:

CONTRACTOR is responsible to observe and monitor public infrastructure, adjacent structures and features, public utilities, and right-of way during all work operations. Stop work and notify OWNER and/or duly appointed OWNER representative for resolution if any movement or damage is observed. CONTRACTOR shall provide methodology for protection and monitoring in Work Plan.

Observe and monitor adjacent structures and site features during demolition operations by comparing to photographs taken. Stop work and notify OWNER and/or duly appointed OWNER representative for resolution if changes are observed.

Cracks, settling, or structural damage resulting from work shall be repaired by CONTRACTOR at no cost to OWNER.

D. Photographic Documentation:

CONTRACTOR must conduct and provide a pre- and post- demolition video and photographic survey of the site, structures to remain, adjacent buildings, and surrounding right of way. Pre-demolition photographs and video should show existing conditions of structures, facilities and site improvements, including finish surfaces, which might be misconstrued as damage caused by demolition or construction operations. Document distress conditions of all surrounding properties, buildings, roads, railways, etc. prior to any demolition.

Before commencement of demolition, take photographs of site and surrounding properties, including existing items to remain during construction, from different vantage points. Take enough photographs to show existing conditions adjacent to property before starting the work. Take enough photographs of existing on-site and adjacent buildings and properties to: (1) accurately record physical conditions at start of project, (2) as required to record settlement or cracking of adjacent structures, pavements, as well as improvements, and (3) accurately record physical conditions at end of demolition project.

Take approximately 30 photographs weekly from the same locations to document the site and building conditions. Take additional photographs at select vantage points to show status of demolition and progress since last photographs were taken and as required to illustrate requests for information and significant events.

Copies of all pre-demolition video and photographic documentation must be provided to OWNER and/or duly appointed OWNER representative for review prior to the start of work.

Submit key plan of project site and building(s) with notation of vantage points marked for location and direction of each photograph and video recording. Indicate elevation or story of construction. Include the same information as corresponding photographic documentation and display the time and date on all photographs and video.

SECTION 02050

DEMOLITION

CONTRACTOR may act as the professional photographer documenter. Based on quality of images and video provided, the OWNER and/or duly appointed OWNER representative (with the OWNER's approval) may request the CONTRACTOR employ an individual who has been regularly engaged as a professional photographer of construction projects for not less than three years, at no additional cost to the OWNER.

OWNER and/or duly appointed OWNER representative shall be granted unlimited copyright usage rights for reproduction and royalty free use of all photographic and video documentation.

E. Notice:

Provide not less than 72-hour notice to OWNER and/or duly appointed OWNER representative of activities that will affect the OWNER's facility, grounds, adjacent buildings, structures, or infrastructure. OWNER and/or duly appointed OWNER representative may elect to have a representative present to observe all work.

H. Inspection Reports

The CONTRACTOR shall provide a copy of the records of inspections and tests, as well as records of any corrective action taken to address any problems encountered.

I. Disposal Documents

The CONTRACTOR shall provide copies of all licenses, certifications, permits, agreements, manifests, chain of custody records, weigh tickets, meter recordings, delivery tickets, and receipts required or issued for the disposal of materials, the methods used, and the disposal areas and facilities. The CONTRACTOR shall also provide a copy of the results of tests performed to comply with the requirements of each disposal facility.

J. Manifests

The CONTRACTOR shall submit a copy of the official manifest for each shipment of removed materials including, but not limited to, building and structure debris, concrete and brick debris, and miscellaneous site debris and solid wastes evidencing delivery of the material to an approved licensed disposal facility. All manifests shall be in accordance with the requirements of all the applicable federal, state, and local regulations. Manifests shall be signed by the OWNER and/or duly appointed OWNER representative.

K. Records

Accurately record actual locations of capped utilities, and subsurface obstructions. Submit records to OWNER and/or duly appointed OWNER representative.

L. Access

SECTION 02050

DEMOLITION

Obtain written permission from adjacent property owners when demolition equipment will traverse, infringe upon, or limit access to their property. Submit copy to OWNER and/or duly appointed OWNER representative.

1.3 PROJECT/SITE CONDITIONS

The CONTRACTOR shall carefully coordinate the work in this Section with all other work. The work shall be complied with OSHA regulations and other applicable safety requirements. Representative of utility OWNERS shall verify and approve all disconnections.

A. Electrical Disconnection

The CONTRACTOR shall verify that on site electrical wiring entering all structures to be demolished or in close enough proximity to be damaged by the demolition operations shall be disconnected and/or de-energized prior to proceeding with demolition operations. CONTRACTOR shall coordinate with the OWNER and/or duly appointed OWNER representative, and the local electrical utility company for any necessary relocation of utilities and be responsible for any associated fees or expenses.

B. Water Disconnection

The CONTRACTOR shall verify that on site water lines entering all structures or in close enough proximity to be damaged by the demolition operations shall be disconnected and/or capped prior to proceeding with demolition operations. The CONTRACTOR shall coordinate with the utility provider for any necessary relocation of utilities and be responsible for any associated fees or expenses.

C. Sewer Disconnection

The CONTRACTOR shall locate and bulkhead all sewer connections from the building structure prior to proceeding to demolition. The work shall be performed between the roadway and curb line of municipal sewer in accordance with the municipal Wastewater and Sewerage Standard. Permits shall be obtained from the Local Municipality and any damage or removal of sidewalk or curbs shall be repaired. The CONTRACTOR shall coordinate with the utility provider for any necessary relocation of utilities and be responsible for any associated fees or expenses.

D. Gas Disconnection

The CONTRACTOR shall verify that on site gas lines/mains entering all structures or in close enough proximity to be damaged as a result of the demolition operations shall be disconnected and/or capped prior to proceeding with demolition operations. The CONTRACTOR shall coordinate with the local electrical utility company for any necessary relocation of utilities and be responsible for any associated fees or expenses.

E. Telephone and Cable Disconnection

SECTION 02050

DEMOLITION

The CONTRACTOR shall verify that on site telephone and cable lines entering all structures or in close enough proximity to be damaged as a result of the demolition operations shall be disconnected and/or capped prior to proceeding with demolition operations. The CONTRACTOR shall coordinate with the local telephone and cable companies for any necessary relocation of utilities and be responsible for any associated fees or expenses.

F. Site Changes

Conditions existing at time of inspection for bidding purposes will be maintained by OWNER in so far as practicable. Variations within structures may occur by OWNER'S removal and salvage operations prior to start of demolition work or by unauthorized access.

1.4 GENERAL REQUIREMENTS

- A. The work includes demolition and removal of resulting rubbish and debris. Rubbish and debris shall be removed from the property daily, unless otherwise directed, to avoid accumulation at the demolition site. Materials that cannot be removed daily shall be stored in areas as approved by the OWNER and/or duly appointed OWNER representative. In the interest of safety the work shall be performed with regard to the protection of personnel and property.

B. Dust Control and Air Monitoring

The CONTRACTOR shall take all necessary means and procedures to control dust and avoid airborne dust from impacting the surrounding properties as a result of his demolition operations. The CONTRACTOR shall provide necessary engineering controls to prevent emission of aerosol dust and migration of airborne materials off site from contaminating surrounding properties. If necessary, air monitoring shall be performed, at the CONTRACTOR's expense, to ensure the airborne dust levels do not exceed the regulatory limit. At no time shall the concentration of aerosol dust resulting from the CONTRACTOR's activity exceed 10 mg/M³ for more 5 minutes during the demolition/construction operation. Dust control and monitoring are incidental to the project.

Clean adjacent structures and improvements of dust, dirt, and debris caused by demolition operations. Return adjacent areas to condition existing prior to start of work.

C. Protection of Personnel

During the demolition work the CONTRACTOR shall continuously evaluate the conditions of the items being demolished and take immediate action to protect all personnel working in and around the demolition site. No area, section, or component of floors, walls, or other structural elements will be allowed to be left standing without sufficient bracing, shoring, or lateral supporting to prevent collapse or failure while personnel perform other work in the immediate area. The CONTRACTOR shall ensure that no elements determined to be unstable are left unsupported and shall be responsible for placing and securing bracing,

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DEMOLITION

shoring, or lateral supports as may be required as a result of any cutting, removal, or demolition work performed under this contract.

CONTRACTOR shall perform and document all hazard assessments and employee exposure monitoring.

D. Protection of Existing Work

Before beginning any demolition, the CONTRACTOR shall carefully survey the existing work and examine the drawings and specifications to determine the extent of work.

Protect site features indicated in Contract Documents.

E. Ownership and Salvage

The CONTRACTOR shall have claim to any items or components of items to be demolished as well as debris, unless otherwise specified. The CONTRACTOR shall be responsible for the removal and disposal of materials and debris in a fashion that complies with all local, State and Federal Codes and Regulations. Ownership of items and materials to be removed by the CONTRACTOR does not transfer to the CONTRACTOR until such items and materials are physically removed from the site.

The CONTRACTOR has salvage rights to all salvageable equipment, electrical equipment, metals, salable items, and other recyclable materials.

F. Sequencing and Scheduling

The scheduling and sequencing of work should not interfere with other site activities that may be occurring concurrently with this phase of the work. CONTRACTOR shall perform work in such a way so that any hazardous materials, materials banned from landfill disposal, asbestos, or contaminated materials discovered on site, or as specified by the OWNER and/or duly appointed OWNER representative shall be removed or cleaned-up prior to demolition or debris removal to protect the safety and health of all personnel. Liquids accumulated in building components, site features, the sub grade areas or excavations shall be removed prior to demolition of buildings in accordance with applicable regulations.

G. Burning

Burning waste and debris materials at this site is prohibited.

H. Noise Control

The CONTRACTOR shall eliminate noise to as great an extent as possible at all times. In the vicinity of hospitals, libraries, and school precautions shall be taken to avoid noise and other nuisance and the CONTRACTOR shall require strict observance of all pertaining ordinances and regulations.

I. Explosives

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The use of explosives at this site is prohibited.

1.5 PERMITS

The permits described here cover the general description of the permits called for demolition. The permits described below are not necessarily all of the permits required for completion of this project.

A. Demolition Permit

The CONTRACTOR shall be responsible for obtaining a Demolition permit from the Local Municipality Building Department. The CONTRACTOR is responsible for all permit fees.

B. NESHAP Notification of Intent to Renovate/Demolish

The CONTRACTOR shall be responsible for filling and for the fee involved with submitting and obtaining a Notification of Intent to Renovate/Demolish permit from the State of Michigan. The notification shall describe the demolition tasks to be conducted and the quantities of asbestos containing materials specified for abatement. The CONTRACTOR is responsible for all notification fees.

C. Soil Erosion and Sedimentation Control

The CONTRACTOR shall be responsible for filing and for the fee involved with obtaining soil erosion and sedimentation control permits the Local Municipality and the State of Michigan. The CONTRACTOR is responsible for all permit fees.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 DUST CONTROL

A. The CONTRACTOR shall employ all necessary engineering controls and misting operations to prevent emission of dust and migration of airborne materials off site from impacting surrounding properties.

B. Constant watering for the site may be required to prevent dust emissions during the demolition and removal operations. The water for dust control may be available for use from the fire hydrants located in the area. The CONTRACTOR shall verify with the Local Municipality for water availability and pay for the use of the municipal water. The CONTRACTOR shall pay costs for installation and removal of any temporary connections including necessary safety devices and controls. Use of the municipal water shall not disrupt or interfere with operations of the surrounding property OWNERS. Use of water shall not result in or create hazardous or objectionable conditions such as ice, flooding, pollution and electrical shock.

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- C. If the CONTRACTOR wants temporarily to stockpile any demolition debris and pulverized concrete materials that may generate dust at the site, the stockpiles shall be covered with a 10 mil plastic sheet.

3.2 DEMOLITION AND REMOVAL

A. Buildings and Structures

The CONTRACTOR shall demolish and remove all buildings and structures as specified in Part 1.1, the Contract Documents, and Site Maps. The building floor slabs, and concrete slabs shall be demolished and removed in their entirety. The CONTRACTOR shall excavate and remove any building foundations, footings, and walls. Flooring constructed of wood, wood blocks, or brick shall be removed and disposed of.

CONTRACTOR shall ensure structures to be demolished will be discontinued in use and vacated prior to start of work.

Owner assumes no responsibility for condition of structures to be demolished.

Proceed with demolition in systematic manner, from top of structure to ground and complete demolition work above each floor or tier before disturbing supporting members on lower levels.

All components or elements of structures, buildings, vaults, pits settling and basins to remain shall be approved by OWNER and/or duly appointed OWNER representative, and Local Municipality.

Debris located or contained within basements, reservoirs, pits or voids shall be removed. Unsuitable debris will be removed and disposed of in their entirety. Debris piles encountered on the top of concrete surfaces shall be removed in their entirety. Removal of structural steel and reinforcing steel from concrete is incidental to the project.

Conform to applicable local code for demolition of structures, safety of adjacent structures, dust control, and runoff control.

B. Utilities

Underground utility lines such as for water, sewer and gas and water as well as conduit extending above grade shall be cut off at least two feet below ground at the property line and plugged with leak-proof devices. Below ground utilities shall be removed to the property line or mail. Utilities entering the building basement shall be removed and plugged with leak-proof devices. The CONTRACTOR shall identify any active utilities on the site and be responsible for the protection of workers and deactivation of utilities as necessary for the safe conduct of work.

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DEMOLITION

The CONTRACTOR shall locate and bulkhead all sewer connections from the property prior to proceeding with demolition operations. The CONTRACTOR shall properly abandon all utilities encountered including those discovered during demolition activities. Septic tanks, potable wells, heating oil tanks, or similar items discovered during on-site activities shall be reported to the OWNER and/or duly appointed OWNER representative and properly abandoned prior to proceeding with demolition operations.

CONTRACTOR shall coordinate all necessary utility cuts, plugs, shut-offs, and inspection/approvals with utility companies and service providers.

C. Asbestos Containing Materials

For buildings or portion of buildings deemed safe to enter, the removal and disposal of asbestos materials, as specified in Section 13281, shall be completed prior to beginning demolition work of structures containing asbestos materials.

Asbestos containing materials not specified which are discovered or unearthed during the demolition and removal operations, and which may cause a material change in the contract, shall immediately be brought to the attention of the OWNER and/or duly appointed OWNER representative.

D. Hazardous Contaminated Materials

Any potentially hazardous or contaminated materials not specified which are discovered or unearthed during the demolition and removal operations, and which may cause a material change in the contract, shall immediately be brought to the attention of the OWNER and/or duly appointed OWNER representative.

All building demolition and removal work shall be performed in compliance with the OSHA requirements for Lead Exposure in Construction, Silica Exposure, Cadmium Exposure, and exposure to other applicable heavy metals published in the Federal Register.

Care must be taken to prevent the mixture of non-hazardous debris and waste materials with regulated hazardous materials. Non-hazardous materials must also be prevented from coming in contact with materials identified as being hazardous, so as to prevent increasing the volume of hazardous materials (by contact).

The CONTRACTOR shall remove, segregate from other material, and properly dispose of material banned from landfill disposal and other hazardous materials. The method and order for removal and disposal of hazardous material shall be the responsibility of the CONTRACTOR.

PCB contaminated materials, if encountered, shall be removed, segregated from other debris, and disposed of in a licensed TSCA landfill. The selected, licensed TSCA disposal facility shall be approved by the OWNER and/or duly appointed OWNER representative. All handling, and disposal, waste manifesting, and recording requirements, as set forth in 40 CFR 761 – PCB Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions and as specified in Section 13282, shall be followed.

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DEMOLITION

E. Utility Pole

The CONTRACTOR shall identify and locate the utility company who owns the overhead utility poles located on the property if removal of the utility pole is necessary for demolition activities. The CONTRACTOR shall contact the utility company to arrange for the removal of the overhead utility pole and connecting wires located on the property. The CONTRACTOR shall be responsible for all costs of removal of the overhead pole and connecting wires if either CONTRACTOR or the utility company performs the works.

3.3 RECYCLING

Authority encourages the recycling of building components and demolition debris where appropriate. The CONTRACTOR has the option to recycle any material found or demolished on site in order to reduce his/her costs or project duration. Although the materials are not limited, it is recommended that at least steel and concrete be recycled. Steel and concrete to be recycled can be stockpiled on site and eventually removed. Steel separated from demolition rubble may be recycled and becomes the property of the CONTRACTOR. The CONTRACTOR will not be allowed to abate on site any lead, cadmium, or other paint found on the steel unless appropriate procedures and federal, state and local codes or regulations are followed. Any material stockpiled for recycling shall be removed from the site prior to the contract end date and/or site restoration.

3.4 CONSTRUCTION WATER

Water used in demolition operations to control the emission of airborne dust shall be in accordance with all Federal, State, and local codes and regulations. Water used for the removal of asbestos materials shall be collected and processed in accordance with specific Federal and State requirements with respective to the asbestos abatement.

3.5 DISPOSAL

The buildings, structures, and debris piles are required to be demolished and removed, and all miscellaneous inert debris, waste and unsatisfactory materials resulting from this work shall be removed from the site, unless otherwise specified or directed by the OWNER and/or duly appointed OWNER representative, and upon removal shall become property of the CONTRACTOR. All disposals shall conform to Federal, State, and local requirements. All removed materials shall be documented by manifests and disposal facility receipts with copies given to the OWNER and/or duly appointed OWNER representative.

3.6 SHORING AND BRACING

As necessary, provide bracing and shoring.

Protection of the adjacent structures, public utilities, and public right-of-way to is of the utmost importance. CONTRACTOR is responsible for the evaluation, design, and installation of all shoring, bracing, or lateral supporting to prevent collapse, failure, settlement, or cracking of structures and site features to remain. The use of shoring, bracing, or lateral supporting is considered part of CONTRACTOR's means and methods.

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DEMOLITION

3.7 QUALITY CONTROL

The CONTRACTOR shall establish and maintain a quality control system for contract requirements and maintain records of its quality control for all operations performed, including, but not limiting to, to following:

- Electrical, gas, and water disconnection verified.
- Dust Control.
- Aerosol and asbestos air monitoring.
- Noise and vibration control.
- Demolition, removal, and cleanup.
- Disposal.
- Observance of safety regulations.
- Observance of environmental regulations.

3.8 HISTORICAL MARKERS, RELICS, ANTIQUES

Historic items, relics, antiques, and similar objects including, but not limited to, mason cornerstone(s) and their contents, commemorative or dedication plaques and tablets, and other items of interest or value to OWNER that may be present or uncovered during demolition remain the property of OWNER, unless otherwise indicated in writing by the OWNER.

END OF SECTION

SECTION 02080

OFFSITE TRANSPORTATION AND DISPOSAL

PART 1 GENERAL

1.1 WORK INCLUDED

- A. Insure that all vehicles entering and leaving the site comply with all safety requirements and licensing requirements of the local, state and federal regulations.
- B. Prepare vehicles to prevent spillage or contamination.
- C. Inspect vehicles before leaving the site.
- D. Transport equipment to and from the site.
- E. Transport liquids, sludge and other hazardous or non-hazardous materials from the site to an approved facility.

1.2 SUBMITTALS

- A. Submit the names of the disposal facilities to the OWNER and/or duly appointed OWNER representative for review and comment at least a week before the disposal operation is conducted.
- B. Submit the transportation routes to the selected solid and liquid disposal facilities to the OWNER and/or duly appointed OWNER representative for review and comment.
- C. Submit to OWNER and/or duly appointed OWNER representative for review and comment, a Spill Contingency Plan for transportation of solids and liquid. The Plan shall address all the potential hazards, necessary actions to follow in case of spills and emergency phone numbers enroute.
- D. Submit copies of all manifests and/or bills of lading to OWNER and/or duly appointed OWNER representative.
- E. If necessary, submit a plan to decontaminate the vehicle wheels. These procedures could be identified in the overall decontamination plan.

1.3 PROJECT RECORD DOCUMENTATION

- A. Record weight, volume and character of material disposed.
- B. Provide documentation that measuring devices used, are certified by the appropriate state inspection agency.
- C. The CONTRACTOR shall provide to the OWNER and/or duly appointed OWNER representative written documentation and records verifying receipt and the quantity received of each load at the disposal facility and verification of proper disposal. Copies of the actual

TECHNICAL SPECIFICATION

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OFFSITE TRANSPORTATION
AND DISPOSAL

For
ENVIRONMENTAL ABATEMENT, STRUCTURE DEMOLITION AND SITE RESTORATION

SECTION 02080

OFFSITE TRANSPORTATION AND DISPOSAL

receipt must be provided.

- D. The CONTRACTOR shall prepare and maintain accurate manifests or bills of lading for each batch of the waste materials being transported and disposed of. The CONTRACTOR is responsible for obtaining the OWNER and/or duly appointed OWNER representative signatures on manifests for transportation and disposal purposes.
- E. All the materials shall be sampled and analyzed in accordance with the disposal requirements as directed by the OWNER and/or duly appointed OWNER representative. The testing parameters shall be determined based on the potential for presence of the respective contaminants.

PART 2 PRODUCTS

2.1 EQUIPMENT

- A. The CONTRACTOR shall provide equipment, personnel and facilities necessary to handle and load materials for transport.

PART 3 EXECUTION

3.1 GENERAL

- A. Transportation and disposal of all hazardous materials shall comply with the regulations as specified in Section 01120.

3.2 LOADING AND HAULING

- A. Inspect haul vehicles for soil adhesion to wheels and under carriage. These soils shall be removed and properly handled by the CONTRACTOR before leaving site. The decontamination procedures shall be carried out at the decontamination zone.
- B. At a minimum, provide wheel wash down using high pressure water and steam. All rinse waters are to be collected for temporary storage prior to disposal. The CONTRACTOR will sample collected rinse waters to ensure proper disposal. CONTRACTOR shall be responsible for the disposal and any associated testing.
- C. No transport vehicles shall be allowed to leave the site which are leaking or spilling materials.
- D. All transport vehicles shall be in strict conformance with all the applicable federal, state and local Laws.
- E. The CONTRACTOR shall keep accurate records for the following information: Type and quantity of materials and liquids removed from the site. OWNER and/or duly appointed OWNER representative approval is required before any liquid or material leaves the site.

SECTION 02080

OFFSITE TRANSPORTATION AND DISPOSAL

- F. The CONTRACTOR shall provide the OWNER and/or duly appointed OWNER representative with copies of the above records, all permits required, manifests, waste hauling permits, and necessary affidavit regarding the waste materials, including liquid disposal.
- G. All transport vehicles shall be cleaned before filling with waste material.
- H. Prior to transportation, all of the established pretransportation requirements shall be met.
- I. Where applicable, waste shall be transported by a certified waste hauler in approved containers.

3.3 DISPOSAL

- A. All disposal shall conform to Federal, State and local government regulations.
- B. For hazardous or non-hazardous contaminated wastes the CONTRACTOR shall utilize a State of Michigan approved manifest system (such as the uniform hazardous waste manifest form (8700-22)) so that the waste can be tracked from generation to ultimate disposal. The manifest shall comply with all of the provisions of the transportation and disposal regulations. All transporters must sign the appropriate portions of the manifest and must comply with all of the provisions established in the applicable regulations. Contaminated waste manifests must be signed by the OWNER or OWNER's designee.
- C. All hazardous and non-hazardous materials shall be disposed of at an approved licensed disposal facility.
- D. Arrangements for disposal shall be performed by the CONTRACTOR.
- E. Disposal of any material at a non-licensed facility or at private property is strictly prohibited under this contract. Written approval from the OWNER and/or duly appointed OWNER representative would be necessary prior to any deviation from this requirement.

3.4 SPILLS

- A. The CONTRACTOR is responsible for cleaning up all the leaks, spills from containers and other items on site or off site that occur, whether due to the CONTRACTOR's negligence or not. Immediate containment actions shall be taken as necessary to minimize the effect of any spill or leak. The CONTRACTOR shall notify the OWNER and/or duly appointed OWNER representative, Authority and appropriate governmental authorities of the incident. Cleanup shall be in accordance with applicable Federal, State, and local laws and regulations at no additional cost to the OWNER.

END OF SECTION

SECTION 02110

SITE CLEARING

1. PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Remove surface debris.
- B. Clear site of plantings.
- C. Remove trees and shrubs.
- D. Remove root system of trees and shrubs.
- E. Topsoil excavation.

1.2 RELATED SECTIONS

- A. Section 02211 - Rough Grading.
- B. Section 02923 - Landscape Grading.

1.3 UNIT PRICE - MEASUREMENT AND PAYMENT

- A. Site Clearing:
 - 1. Basis of Measurement: Included in the lump sum price bid for Structure and Site Feature Demolition as stated in the proposal.
 - 2. Basis of Payment: Included all labor, equipment, and material for clearing site, loading and removing waste materials from site.

1.4 REGULATORY REQUIREMENTS

- A. Conform to applicable code for disposal of debris.
- B. Coordinate clearing Work with utility companies.

2. PART 2 EXECUTION

2.1 PREPARATION

- A. Verify that existing plant life within the clearing limits that is designated to remain, is tagged or identified.

2.2 PROTECTION

- A. Locate, identify, and protect utilities that remain, from damage.
- B. Protect survey stakes.

- C. Protect trees, plant growth, and features designated to remain, as final landscaping.
- D. Protect bench marks and existing structures from damage or displacement.

2.3 CLEARING

- A. Clear areas required for access to site and execution of Work.
- B. Clear undergrowth and deadwood, without disturbing subsoil.
- C. Clear to limits delineated by OWNER and/or duly appointed OWNER representative, and/or as shown on plans.

2.4 REMOVAL

- A. Remove debris, rock, and extracted plant life from site.
- B. Trees, shrubs, and bushes to be removed shall be done by falling the tree in sections, beginning from the top down and removing the stump and debris from the site.
- C. Timber shall become the property of the CONTRACTOR.
- D. The cost of removing trees, brush, and bushes and the cutting of timber and removing debris from the site shall be included in the unit price for cleanup of the project.

2.5 TOPSOIL EXCAVATION

- A. Excavate topsoil from areas to be further excavated, re-landscaped marked areas.
- B. Stockpile in area designated on site as approved by the OWNER and/or duly appointed OWNER representative. Protect from erosion.

END OF SECTION

SECTION 02211

ROUGH GRADING

1 PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Removal of topsoil and subsoil.
- B. Cutting, grading, filling and rough contouring the site.

1.2 RELATED SECTIONS

- A. Section 02923 - Landscape Grading: Finish grading with topsoil to contours.

1.3 REFERENCES

- A. MDOT Standards.

1.4 PROJECT RECORD DOCUMENTS

- A. Accurately record actual locations of utilities remaining, by horizontal dimensions, elevations or inverts, and slope gradients.

1.5 UNIT PRICE - MEASUREMENT AND PAYMENT

- A. Rough Grading:
 - 1. Basis of Measurement: Included in Lump Sum price as stated in the proposal.
 - 2. Basis of Payment: Includes all excavation, fill, labor, materials, and grading required for rough grading to provide the required contours and/or return the disturbed areas back to existing conditions.

2 PART 2 PRODUCTS

2.1 MATERIALS

- A. Topsoil: As defined in Section 02923 – Landscape Grading.
- B. Subsoil: **Existing** material on site, graded, free of lumps larger than 6 inches (150 mm), rocks larger than 3 inches (75 mm), and debris.
- C. Granular Fill: Type B specified in Section 2223 - Backfilling MDOT Class II for dry excavation. Type A specified in Section 2223 - MDOT 6A compacted crushed limestone for wet excavation.
- D. Coarse Aggregate: Type A MDOT 6A compacted crushed limestone for wet excavation specified in Section 2223 - Backfilling.

3 PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify existing site conditions.
- B. Verify that existing fill materials to be used are acceptable.

3.2 PREPARATION

- A. Identify required lines, levels, contours, and datum.
- B. Identify known underground, above ground and aerial utilities. Stake and flag locations.
- C. Notify utility company to remove and relocate utilities.
- D. Protect above and below grade utilities which are to remain.
- E. Protect plant life, lawns, rock outcropping and other features remaining as a portion of final landscaping.
- F. Protect bench marks, existing structures, fences, sidewalks, paving and curbs from excavation equipment and vehicular traffic.

3.3 TOPSOIL EXCAVATION

- A. Excavate topsoil from areas to be further excavated, re-landscaped, or re-graded marked areas.
- B. Stockpile in area designated on site or as approved by the OWNER and/or duly appointed OWNER representative. Remove excess topsoil not being reused, from site.
- C. Do not excavate wet topsoil.
- D. Stockpile topsoil for reuse on site to depth not exceeding 8 feet (2.5 m).

3.4 SUBSOIL EXCAVATION

- A. Excavate subsoil from areas to be further excavated, re-landscaped, or re-graded.
- B. Stockpile in area designated on site or as approved by the OWNER and/or duly appointed OWNER representative.
- C. Do not excavate wet subsoil.
- D. When excavation through roots is necessary, perform work by hand and cut roots with sharp axe.

3.5 FILLING

- A. Fill areas to contours and elevations with unfrozen materials.
- B. Granular Fill: Place and compact materials in continuous layers not exceeding 12 inches compacted depth, compacted to 95 percent.

- C. Subsoil and Topsoil Fill: Place and compact material in continuous layers not exceeding 12 inches compacted depth, compacted to 95 percent.
- D. Maintain optimum moisture content of fill materials to attain required compaction density.
- E. Slope grade away from buildings and structures minimum 2 inches in 10 ft, unless noted otherwise.
- F. Make grade changes gradual. Blend slope into level areas.
- G. Remove surplus and unsuitable fill materials from site.
- H. The OWNER may have a use for any surplus excess excavated material. It shall be their OWNER'S property and the CONTRACTOR'S shall be responsible to transport said material to the OWNER'S stockyard. All cost associated with transporting, hauling, and loading said material shall be included in other pay items of this project.

3.6 SPOIL LEVELING

- A. As indicated on Drawings, or as directed by OWNER and/or duly appointed OWNER representative.
- B. CONTRACTOR shall be responsible for loading and hauling of all excess excavated material generated from this project to locations determined by OWNER.
- C. Place no excavated materials on roads without written permission of the authorities having jurisdiction of said road.
- D. Remove excavation in areas adjacent to yards where there is no suitable place to deposit spoils and dispose of as indicated on the drawings or off site as directed by the OWNER and/or duly appointed OWNER representative.
- E. Place no spoils in a watercourse or drain.

3.7 TOLERANCES

- A. Top Surface of Subgrade: Plus or minus 1/10 foot.

3.8 FIELD QUALITY CONTROL

- A. Tests and analysis of fill material will be performed in accordance with MDOT Standards.
- B. Compaction testing will be performed in accordance with MDOT Standards.
- C. If tests indicate Work does not meet specified requirements, remove Work, replace and retest at no cost to OWNER.
- D. Frequency of Tests: As directed by the OWNER and/or duly appointed OWNER representative.

END OF SECTION

SECTION 02223

BACKFILLING

1. PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Fill materials.
- B. Backfilling.
- C. Consolidation and compaction.

1.2 RELATED SECTIONS

- A. Section 02222 – Excavation.

1.3 REFERENCES

- A. ANSI/ASTM C136 or ASTM 108 & 109 - Method for Sieve Analysis of Fine and Coarse Aggregates.
- B. MDOT Density Control Handbook.
- C. MDOT Specifications for Construction, Latest Edition.

1.4 UNIT PRICE - MEASUREMENT AND PAYMENT

- A. Backfilling:
 - 1. Basis of Measurement: Included in Lump Sum Price as stated in the Proposal.
 - 2. Basis of Payment: Includes all excavation, labor, material, furnishing, hauling, placing, grading, and compacting of specified fill as required to construct the ditches, shoulders, driveways, curb, and road to the required grades and elevations as stated in the plans and specifications.

2. PART 2 PRODUCTS

2.1 FILL MATERIALS

- A. Type A - Coarse Stone Fill: MDOT 6A - for wet excavation, excavation within open drain, refill for poor soil or over excavation in pipe trench, compacted to 95 percent of maximum density. A ballast type crushed limestone free of shale, clay, friable material, sand debris graded in accordance with ANSI/ASTM C136.
- B. Type B - Granular Fill: MDOT Class II - for dry excavation and backfill around structure compacted to 95 percent of maximum density in accordance with MDOT standards.
- C. Type C - Structural Fill: MDOT Class I - for lower area of excess excavation over 24", compacted to 97 percent of maximum density in accordance with MDOT standards.
- D. Type D - Native Subsoil: Reused, free of gravel larger than 3 inch size, and debris, backfill above bedding of pipe to subgrade in greenbelt area. Compacted to 90 percent of maximum density in accordance with MDOT standards. As approved by the OWNER

and/or duly appointed OWNER representative.

- E. Type E - Dense Aggregate: MDOT 22A crushed limestone for driveway and parking lots compacted to 98 percent of maximum density in accordance with MDOT standards.
- F. Type F - Coarse Stone Fill: MDOT 7A - for filling open drain over excavation. A ballast type crushed limestone compacted to 95% of maximum density in accordance with MDOT standards.
- G. Type G - Flowable Fill (Fill Class C concrete) - for headwall, sheet piling repair, and culvert storm sewer back filling.

3. PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that fill materials to be used are acceptable.
- B. Verify foundation and/or perimeter drainage installation has been inspected.

3.2 PREPARATION

- A. Generally, compact subgrade to density requirements for subsequent backfill materials.
- B. Cut out soft areas of subgrade not capable of in-situ compaction. Backfill with Type A fill (wet excavation) or Type B fill (dry excavation), and compact to density equal to or greater than requirements for subsequent backfill material.
- C. Prior to placement of aggregate base course material at gravel paved areas, compact subsoil to 95 percent of its maximum dry density in accordance with MDOT standard requirements.

3.3 BACKFILLING

- A. Backfill areas to contours and elevations with unfrozen materials.
- B. Systematically backfill to allow maximum time for natural settlement. Do not backfill over porous, wet, frozen or spongy subgrade surfaces.
- C. Granular Fill: Place and machine compact materials with plate compactor in continuous layers not exceeding 6 inches compacted depth.
- D. Native Fill: Place and machine compact material with plate compactor in continuous layers not exceeding 12 inches compacted depth.
- E. Machine compact under springline of pipe with plate compactor or equivalent.
- F. Employ a placement method that does not disturb or damage foundation perimeter drainage conduit in trenches.
- G. Maintain optimum moisture content of backfill materials to attain required compaction density.
- H. Backfill against supported foundation walls. Do not backfill against unsupported foundation walls.

- I. Backfill simultaneously on each side of unsupported foundation walls until supports are in place.
- J. Make grade changes gradual. Blend slope into level areas.
- K. Remove surplus backfill materials from site.
- L. Leave fill material stockpile areas completely free of excess fill materials.
- M. Backfill wet excavation areas with Type A fill.

3.4 TOLERANCES

- A. Top Surface of Backfilling Under Paved Areas: Plus or minus 1/2 inch from required elevations.

3.5 FIELD QUALITY CONTROL

- A. Compaction testing will be performed by a third party construction testing OWNER and/or duly appointed OWNER representative in accordance with MDOT standard requirements.
- B. If tests indicate Work does not meet specified requirements, remove Work, replace and retest at no cost to OWNER.
- C. Frequency of Tests: 12-inch lifts throughout.
- D. As requested by OWNER and/or duly appointed OWNER representative, proof roll compacted fill surfaces using heavy equipment such as fully loaded front end loader or tandem-axle dump truck.

3.6 PROTECTION OF FINISHED WORK

- A. Protect finished work.
- B. Recompect fills subjected to vehicular traffic.

END OF SECTION

SECTION 02274

SOIL EROSION PREVENTION AND SEDIMENTATION CONTROL

1. PART 1 GENERAL

1.1 SECTION INCLUDES

- A. System Description.
- B. Quality Assurance.
- C. Regulatory Requirements.
- D. Method of Payment.

1.2 SYSTEM DESCRIPTION

- A. Methods of control are identified on Drawings.
- B. The notation "T" or "P" following the number (as shown on the Drawings) indicates whether the control measure is temporary or permanent.
- C. Additional control measures shall be employed as required by site conditions and applicable enforcing agency having project jurisdiction.

1.3 UNIT PRICE - BASIS OF MEASUREMENT

- A. Soil Erosion and Sedimentation Control:
 - 1. Basis of Measurement: Included in the lump sum price bid for Mobilization
 - 2. Basis of Payment: Includes all labor, material, equipment and permit fee required for soil erosion prevention and sedimentation control required for this project. Additional control measures shall be employed, maintained, and removed as required by site conditions and applicable enforcing agency having project jurisdiction at no additional cost.

1.4 QUALITY ASSURANCE

- A. Perform and maintain work in accordance with the Soil Erosion and Sedimentation Control, Part 91 of Act 451 of 1994, and corresponding rules of the Michigan Department of Environmental Quality.

1.5 REGULATORY REQUIREMENTS

- A. CONTRACTOR shall obtain all permits and pay all fees for plan review and inspection as required by applicable enforcing agency having jurisdiction.
- B. Submit installation time schedule for temporary and permanent soil erosion and sedimentation control measures to applicable enforcing agency having jurisdiction, as well as to OWNER and/or duly appointed OWNER representative. Make submittals prior to start of construction.

2. PART 2 PRODUCTS

2.1 MATERIALS

- A. Permanent Measures: In accordance with applicable Section for specified materials.
- B. Temporary Measures: In accordance with standards and specifications for soil erosion and sediment control with approved plans and requirements of applicable enforcing agency.

3. PART 3 EXECUTION

3.1 EXAMINATION AND PREPARATION

- A. Identify required lines, levels, contours and datum.
- B. Field locate known utility locations. Notify OWNER and/or duly appointed OWNER representative of conflicts and attain removal or relocation instructions prior to continuing installation activities.
- C. Maintain and protect existing utilities to remain.

3.2 PROTECTION OF ADJACENT WORK

- A. Protect adjacent structures and property which may be damaged by execution of work.
- B. Protect existing trees, shrubs, landscaping and lawn areas designated to remain.

3.3 INSTALLATION AND MAINTENANCE

- A. Construct soil erosion and sedimentation control measures in accordance with approved plans and requirements of applicable enforcing agency.
- B. Schedule planned control measures with construction operations to limit the area of any disturbed land to the shortest possible period of exposure.
- C. Conduct all earth changes so as to effectively reduce accelerated soil erosion and resulting sedimentation.
- D. Remove all sediment from runoff water before it leaves the site.
- E. Inspect, maintain and repair temporary control measures until permanent control measures are implemented.
- F. Maintain permanent control measures until final acceptance by OWNER.
- G. Install silt fences around all catchbasin inlets, to be removed after final inspection of the project.
- H. Remove all debris from catch basins on storm sewers resulting from this work.

END OF SECTION

SECTION 02923

LANDSCAPE GRADING

1. PART 1 GENERAL

1.1 WORK INCLUDED

- A. Finish grade subsoil and proof roll.
- B. Place, level, and compact topsoil.

1.2 RELATED WORK

- A. Section 02211 - Rough Grading.
- B. Section 02223 - Backfilling.
- C. Section 02936 - Seeding: Finish ground cover.

1.3 SAMPLES

- A. Submit 10 lb sample of imported fill to testing laboratory, in air-tight containers.
- B. Disregard sample submission if recent test results are available for type of fill.

1.4 PROTECTION

- A. Protect landscaping and other features remaining as final work.
- B. Protect existing structures, fences, roads, sidewalks, paving, mailboxes, and curbs.

1.5 UNIT PRICE - MEASUREMENT AND PAYMENT

- A. Landscape Grading:
 - 1. Basis of Measurement: Included in Lump Sum Bid price as stated in the proposal
 - 2. Topsoil shall be installed 4-inches minimum.
 - 3. Basis of Payment: Includes all labor, excavation, fill for landscape grading and grading necessary to obtain the required contours, and other landscaping necessary to return work area to preconstruction conditions.

2. PART 2 PRODUCTS

2.1 MATERIALS

- A. Topsoil: Min. 4" compacted depth.
- B. Topsoil: Imported, friable loam; free of subsoil, roots, grass, excessive amount of weeds, stone, and foreign matter; acidity range (pH) of 5.5 to 7.5; containing a minimum of 4 percent and a maximum of 25 percent organic matter.

- C. Submit lab results or samples for testing as requested by the OWNER and/or duly appointed OWNER representative if imported topsoil is used.

3. PART 3 EXECUTION

3.1 INSPECTION

- A. Verify site conditions and note irregularities affecting work of this Section.
- B. Beginning work of this Section means acceptance of existing conditions.

3.2 SUBSOIL PREPARATION

- A. Eliminate uneven areas and low spots. Remove debris, roots, branches, stones, in excess of 1/2 inch in size. Remove subsoil contaminated with petroleum products.
- B. Scarify subgrade to depth of 4 inches where topsoil is scheduled. Scarify in areas where equipment used for hauling and spreading topsoil has compacted subsoil.

3.3 PLACING TOPSOIL

- A. Place topsoil to a minimum 4-inch compacted depth in areas where seeding, sodding and planting is scheduled.
- B. Use topsoil in relatively dry state. Place during dry weather.
- C. Fine grade topsoil eliminating rough or low areas. Maintain levels, profiles, and contours of subgrade.
- D. Remove stone, roots, grass, weeds, debris, and foreign material while spreading.
- E. Manually spread topsoil around trees and plants to prevent damage.
- F. Lightly compact. Roll placed topsoil.
- G. Remove surplus subsoil and topsoil from site.
- H. Leave stockpile area and site clean and raked, ready to receive landscaping.
- I. Place required trees, shrubs, fences, and mail boxes in their proper locations.
- J. Reconstruct and place guard rails in proper locations to meet MDOT requirements.

3.4 TOLERANCES

- A. Top of Topsoil: Plus or minus 1/2 inch.

END OF SECTION

SECTION 02936

SEEDING

1 PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Preparation of subsoil.
- B. Placing topsoil.
- C. Hydroseeding, mulching and fertilizer.
- D. Maintenance.
- E. Landscape Seeding.

1.2 RELATED SECTIONS

- A. Section 02110 - Site Clearing.
- B. Section 02211 - Rough Grading.
- C. Section 02923 - Landscape Grading: Preparation of subsoil and placement of topsoil in preparation for the work of this section.

1.3 UNIT PRICE - MEASUREMENT AND PAYMENT

- A. Seeding:
 - 1. Basis of Measurement: Included in the lump sum price bid as stated in the proposal.
 - 2. Basis of Payment: Includes all excavation, labor, materials, fertilizer, mulch, landscape grading, topsoil, subsoil, seeding, watering and maintenance to provide for uniform grass growth and any re-seeding and erosion repair to provide for a uniform grass growth at the completion of the project.

1.4 REFERENCES

- A. FS 0-F-241 - Fertilizers, Mixed, Commercial.

1.5 DEFINITIONS

- A. Weeds: Include Dandelion, Jimsonweed, Quackgrass, Horsetail, Morning Glory, Rush Grass, Mustard, Lambsquarter, Chickweed, Cress, Crabgrass, Canadian Thistle, Nutgrass, Poison Oak, Blackberry, Tansy Ragwort, Bermuda Grass, Johnson Grass, Poison Ivy, Nut Sedge, Nimble Will, Bindweed, Bent Grass, Wild Garlic, Perennial Sorrel, and Brome Grass.

1.6 MAINTENANCE DATA

- A. Submit any maintenance date at completion of construction.

1.7 QUALITY ASSURANCE

- A. Provide seed mixture in containers showing percentage of seed mix, year of production, net weight, date of packaging, and location of packaging.
- B. Provide signed affidavit stating the amount and type of seed, fertilizer, and mulch applied per acre.

1.8 REGULATORY REQUIREMENTS

- A. Comply with regulatory agencies for fertilizer and herbicide composition.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, protect and handle products to site in accordance with manufacturers recommendations.
- B. Deliver grass seed mixture in sealed containers. Seed in damaged packaging is not acceptable.
- C. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer.

1.10 COORDINATION

- A. Coordinate work with owner and other contractors on site.

1.11 MAINTENANCE SERVICE

- A. Maintain seeded areas immediately after placement until grass is well established and exhibits a vigorous growing condition and is accepted by Owner. Guarantee replacement of dead material for one year following acceptance.

2 PART 2 PRODUCTS

2.1 SEED MIXTURE

- A. Seed Mixture:
 - 1. Creeping Red Fescue: 60%
 - 2. Perennial Rye Grass: 40%

2.2 SOIL MATERIALS

- A. Topsoil: Imported, friable loam; free of subsoil, roots, grass, excessive amount of weeds, stone, and foreign matter; acidity range (pH) of 5.5 to 7.5; containing a minimum of 4 percent and a maximum of 25 percent organic matter.

2.3 ACCESSORIES

- A. Mulching Material: Conwed Verdoyl #2000.
- B. Fertilizer: FS O-F-241, Commercial Grade A with 12-12-12 analysis.

- C. Water: Clean, fresh and free of substances or matter which could inhibit vigorous growth of grass.

3 PART 3 EXECUTION

3.1 EXAMINATION

- A. Landscape Seeding - Verify that prepared soil base is ready to receive the work of this section. See Section 02923 - Landscape Grading.

3.2 PREPARATION OF SUBSOIL

- A. Prepare sub-soil to eliminate uneven areas and low spots. Maintain lines, levels, profiles and contours. Make changes in grade gradual. Blend slopes into level areas.
- B. Remove foreign materials, weeds and undesirable plants and their roots. Remove contaminated sub-soil.
- C. Scarify subsoil to a depth of 3 inches where topsoil is to be placed. Repeat cultivation in areas where equipment, used for hauling and spreading topsoil, has compacted sub-soil.

3.3 PLACING TOPSOIL

- A. In accordance with Section 02923 - Landscaping Grading.

3.4 FERTILIZING

- A. Apply fertilizer at a minimum rate of 500 lbs. per acre.
- B. Apply after smooth raking of topsoil and prior to roller compaction.
- C. Do not apply fertilizer at same time or with same machine as will be used to apply seed.
- D. Mix thoroughly into upper 2 inches of topsoil.
- E. Lightly water to aid the dissipation of fertilizer.

3.5 HYDROSEEDING

- A. Apply seed and mulch slurry with a hydraulic seeder at a rate of 200 lbs. of seed per acre of seed and 1000 lbs. per acre of mulch, evenly in two intersecting directions. Maintain clear of shrubs and trees.
- B. Apply water with a fine spray immediately after each area has been mulched. Saturate to 3 inches of soil.
- C. Planting season: May 1 to October 10.

3.6 QUALITY CONTROL

- A. Notify OWNER and/or duly appointed OWNER representative 3 working days prior to hydroseeding and fertilizing for approval to proceed.

3.7 MAINTENANCE

- A. Immediately reseed areas which show bare spots.
- B. Repair any eroded areas and reseed immediately.
- C. CONTRACTOR shall guarantee a uniform grass growth over the entire project and shall reseed bare and thin areas until this is accomplished at no additional cost to the project.

END OF SECTION

SECTION 02960

IMPORTED SOIL QUALITY ASSURANCE

The testing requirements for imported soil shall be as follows:

Quality Assurance Testing

Unless otherwise specified, for each imported material the borrow area shall be samples for material quality assurance.

Topsoil

CONTRACTOR shall provide one (1) Quality Control Report for every 5,000 cubic yards or less of Topsoil material imported, for each source location.

Topsoil shall be sourced from a clean borrow source or supplier.

Topsoil consisting of Friable Sandy Loam that can be pulverized under normal hand pressure may also be acceptable.

Topsoil consisting of Sandy Clay Loams with the lowest possible clay proportion may also be acceptable. Conforming to ASTM D2487 Group Symbol SM.

Free of roots, rocks larger than ½-inch, subsoil, debris, large weeds, and foreign matter (including any construction rubble, or other man-made items).

Topsoil shall not be overly compacted.

Acceptable target ranges for Topsoil will be as follows:

Parameter	Acceptable Range
pH	5.5 – 8.5
% Organic Matter	2% - 25%
Texture Class	SM

Testing results for additional parameters will be evaluated by the ENGINEER and OWNER at the time of test submittal.

With approval of ENGINEER or OWNER, natural topsoil may be amended by the CONTRACTOR with approved materials and methods to meet the above specifications.

Imported Compost

CONTRACTOR shall provide one (1) Quality Control Report for every source location of imported Compost material. Parameters for Compost are provided in Section 32 9113.33.

Acceptable target range is described below:

pH – 5.0 -8.5

Soluble Salt – Maximum 10 dS/m

Organic Matter Content – 30 – 65% dry weight basis

Particle Size – 98% pass through ¾" screen or smaller

Physical Contaminants – < 1 % dry weight basis

Chemical Contaminants – See environmental testing described below

Class II Sand

At this time no quality assurance testing is required. Provide submittal clean certification, and material certification from source pit to ENGINEER for review and approval.

General Backfill

Only laboratories approved by the ENGINEER or OWNER shall be utilized to analyze materials.

Provide advance notice (48 hours) to ENGINEER and OWNER and opportunity to witness sample collection. ENGINEER and OWNER may also elect to collect independent samples at borrow/source area for analysis, at OWNER's expense.

Provide ENGINEER and OWNER above Quality Control Reports at least ten (10) working days in advance of delivery to project site. The ENGINEER and OWNER reserves the right to reject materials if deliverables are not completed properly and in their entirety or testing reveals parameters outside of acceptable target ranges. No material will be transported to the property prior to ENGINEER and OWNER written approval.

ENGINEER and OWNER may also conduct random Quality Assurance testing of imported materials, during the project. Upon request, CONTRACTOR shall provide 10 lb sample of material to ENGINEER and OWNER, in air-tight containers. Testing conducted by ENGINEER and OWNER will be at OWNER's expense.

In the event, the Quality Assurance testing shows that the material does not meet specifications, the CONTRACTOR will be required to determine the extent and remove the non-specified materials and supply acceptable material.

Unless otherwise noted, cost for testing and preparation of deliverables shall be at CONTRACTOR's expense.

Environmental Testing and Certification

Applicable to: General Fill, Sand, Imported Compost, and Topsoil (referred to collectively as "Backfill Materials").

Testing requirements and certification will differ based on the source site Category. Source Site Categories are defined as follows:

Category 1: Virgin (Native) Commercial Borrow and Sand/Gravel Pit Sites

Category 2: Commercial, Utility, and Road Construction Sites; Commercial Landscape Yards, and Agricultural Sites

Category 3: Industrial, Known Sites of Environmental Contamination (Gas Stations, Dry Cleaners, etc.), Dredge Sites, and Other

CONTRACTOR must receive approval from ENGINEER and OWNER prior to import of Backfill Materials. Approval for import of Backfill Materials is conditioned upon submittal and review of the information described below.

A. Sampling Requirements by Category: Contractor must receive approval from the Authority prior to import of backfill materials. Approval for import of backfill materials is conditioned upon submittal and review of the information described below and as outlined in the deliverables section:

1. Category 1 and Category 2 Source Sites:

For each of the backfill materials, the Contractor shall furnish a certification to the Authority, for each source location stating the following:

- a. The origin of the backfill material and address location.
- b. Affirm no evidence of known or suspected sources of environmental contamination that may have impacted proposed backfill materials.
- c. The backfill materials are homogeneous in nature, description of general composition of the backfill materials, affirmation that materials are free from debris, large rocks, concrete, or other conditions, which would make the material unsuitable for use as backfill, and meet the backfill specification described in the Contract Documents.
- d. Certifies that all information submitted complete and accurate.
- e. Certify that the soil samples were collected by a qualified and knowledgeable individual and identify that individual.
- f. Certify that samples were collected and analyzed in accordance with methods approved by the USEPA SW-846 and/or MDEQ PA 201
- g. Certify that the soil samples are representative of the entire material proposed for use at the Authority's properties.
- h. Collection of the following discrete soil samples representative of the backfill material to be imported:
 - i. Category 1 Source Site
 - One (1) representative Environmental Sample for analyses identified below per site per year, and
 - One (1) representative Quality Assurance sample for analyses identified below, per site per year.
 - ii. Category 2 Source Site
 - One (1) representative Environmental Samples for analyses identified below per 5,000 cubic yards of material.

- One (1) representative Quality Assurance sample for analyses identified below, 5,000 cubic yards of material.
- i. Complete laboratory analyses as described below for each soil sample collected.
- j. For Category II Source Sites provide the volume of the source material.
- k. Provide a scaled site map or aerial photograph depicting the source material origin and sample location(s).
- l. Prepare a complete deliverable package as described below.

2. Category 3 Source Sites:

Backfill materials from Category 3 source sites are **prohibited** for use at project sites without a site specific evaluation by a Qualified Environmental Professional and approval by the Authority, **in advance**.

For Category 3 Source Sites, Contractors can retain a Qualified Environmental Professional to conduct an independent evaluation of the proposed backfill material and propose a work plan to the Authority in advance of sampling and testing. Sampling frequency, methodology, and strategy must be detailed and designed to demonstrate that the proposed backfill materials meet Michigan Department of Environmental Quality (MDEQ) Part 201 Cleanup Criteria for Unrestricted Residential use. After work plan review and approval by the Authority, the Contractor's Environmental Professional will be required to implement the work plan and prepare a complete deliverable package as described below for review and approval.

B. Environmental Sample Parameters

For each discrete soil sample collected, laboratory analytical parameters and methods shall meet the following requirements:

1. Volatile organic compounds (EPA Method 8260) – Note: Backfill material with any detectable concentrations of volatile organic compounds may be rejected.
2. Semi-volatile organic compounds (EPA Method 8270)
3. Pesticides/PCBs (EPA Method 8081/8082)
4. Metals, including: arsenic, barium, cadmium, copper, lead, mercury, selenium, silver, zinc (EPA Method 6020, 7470/7471)
5. Chloride, add for road construction projects or soils located beneath parking lots only (EPA Method 9056).

The above identified target parameters for backfill materials must be below the latest published MDEQ Part 201 Generic Residential Cleanup Criteria (GRCC).

Acceptable target ranges for environmental testing will be as follows:

Parameter	Acceptable Range
Environmental Testing (VOCs, SVOCs, PCBs)	<TDL
Environmental Testing	<GRCC

C. Sample Collection Methodologies

The Authority encourages Contractors to use Environmental Professionals to perform soil sampling; thereby ensuring that Contract Document requirements are strictly adhered. The Authority reserves the right to reject any sampling and testing data that does not strictly adhere to this Sampling Methodology and Laboratory Analysis guidance.

Soil sampling methodology is most often contingent upon physical characteristics of the medium to be sampled, in most cases, simple hand tools will suffice. Follow these procedures to collect soil samples with a scoop or trowel:

1. Using a pre-cleaned stainless steel scoop or trowel, remove vegetation and top layer of soil, then loosen the desired volume of soil from the sampling area.
2. Transfer the discrete grab sample into an appropriate sample container.
3. Secure the cap tightly. Methanol preservation of soils (EPA Method 5035) is required for volatile organic compound analysis.
4. Label and tag the sample containers, and record appropriate data on soil sample data sheets (depth, location, color, and other observations).
5. Place glass sample containers in sealable plastic bags, if required, and place containers into an iced shipping container. Samples should be cooled to 4°C as soon as possible.

Complete chain of custody forms and ship as soon as possible to minimize sample holding time. Scheduled arrival time at the analytical laboratory should give as much of a holding time as possible for scheduling and sample analysis.

D. Deliverables

Contractor must provide the following deliverables that backfill materials are below MDEQ Part 201 GRCC and within target Quality Assurance parameters as outlined above. Deliverables should include at a minimum:

1. Statement of Certification from Contractor including, but not limited to: backfill material type; location of material, including address and name; homogeneous nature of material, no evidence of environmental contamination, and that material meets backfill specifications as described in the Contract Documents. Certification should include all lab results from soil samples collected for backfill materials.
2. Certification Form per material, for approval by Authority upon review of the above identified deliverable.
3. A site map and aerial photograph depicting the location of the source material origin and a sample location map.

Provide Authority with the above Quality Control Reports at least ten (10) working days in advance of delivery to project site. The Authority reserves the right to reject backfill materials if deliverables are not completed properly and in their entirety or if parameters reveal contamination in excess of

the acceptable criteria. No material will be transported to the property prior to the GCLBA's written approval.

In the event the Environmental or Quality Assurance testing shows that imported material does not meet specifications, the Contractor will be required to determine the extent and remove the non-specified materials and supply acceptable material.

The following does not constitute acceptance of the Work in the event the Work or any material is not in accordance with the Contract Documents, and therefore does not release the Contractor from its obligation to perform and furnish the Work/Material in accordance with the Contract Documents:

1. A certification by the Authority or Authority's Representative of any Request for Payment or final payment;
2. The issuance of a Substantial Completion certificate;
3. Any payment by the Owner to the Contractor;
4. Any Partial Use;
5. Any act of acceptance by the Owner or any failure to do so;
6. Any review and approval of a Shop Drawing, sample, test procedure or other Submittal;
7. Any review of a Progress Schedule;
8. Any On-Site Inspection;
9. Any inspection, test or approval;
10. Any issuance of a notice of acceptability by the Authority or Authority's Representative;
or
11. Any correction of defective Work or any completion of Work by the Authority or Authority's Representative.

Due to any independent inspection or testing performed by the Authority, if the imported material is found not to meet the specifications, the Contractor must (a) pay all related costs , including an appropriate portion of the delay and costs occasioned by discovery of defective work; (b) schedule related activities; (c) repair and associated damage including impacts to human health and the environment; and (d) promptly remove and replace defective work.

If the Contractor covers any Work without proper approval by the Authority as required by the Contract Documents, the Contractor must, at its own expense, uncover, expose, or otherwise make available, when requested by the Authority, for testing, inspection or approval of the covered Work.

Unless otherwise noted, cost for testing and preparation of above deliverables shall be at CONTRACTOR's expense.

END OF SECTION

DATE

Mr. Douglas Weiland
Genesee County Land Bank Authority
452 S. Saginaw Street, 2nd Floor
Flint, Michigan 48502

Subject: TYPE OF MATERIAL Certification
LOCATION OF MATERIAL
ADDRESS
CITY, Michigan ZIP CODE

Dear Mr. Weiland,

As outlined the Contract Documents for the NAME OF BID specs, COMPANY NAME is providing this certification to the Genesee County Land Bank Authority (GCLBA) for TYPE OF MATERIAL material being transported from the MATERIAL LOCATION. In accordance with the Contract Documents, I certify that the backfill TYPE OF MATERIAL material is from the following source site Category:

- ☐ Category 1: Virgin (Native) Commercial Borrow and Sand/Gravel Pit Sites
- ☐ Category 2: Commercial, Utility, and Road Construction Sites; Commercial Landscape Yards, and Agricultural Sites
- ☐ Category 3: Industrial, Dredge Sites, Known Sites of Environmental Contamination (Gas Stations, Dry Cleaners, etc.), and Other.

COMPANY NAME certifies the following: (1) that no evidence of known or suspected sources of environmental contamination which may have impacted the proposed backfill materials has been identified; (2) that the backfill materials at this location are from a native soil source or other eligible source; (3) that the backfill materials are homogeneous in nature, consisting of the proper percentages of sand, silt, and clay; (4) that the material is free from debris, including large rocks, concrete, or other conditions; and (5) that the soil meets the backfill specifications as described in the Contract Documents.

COMPANY NAME certifies that all information submitted in the attached documents is complete and accurate, and that the soil samples were collected by a qualified and knowledgeable individual, samples were collected and analyzed in accordance with methods approved by the USEPA SW-846 and/or MDEQ PA 201, and that the soil samples are representative of the entire material proposed for use at the Authority's properties.

By signing this document, I authorize representatives of the Authority to conduct random visits of the source sites/material locations for inspection, and collection of soil samples for independent testing.

Sincerely,

COMPANY NAME

COMPANY REPRESENTATIVE
TITLE

General Backfill Material Certification Form

Company: _____

Address: _____

Soil Type and Category2: _____

- ☐ Category 1 Material (Virgin Borrow Source) ☐ Category 2 Material (Agric. / Const. Sites) ☐ Category 3 Material (Other Sites)
(not accepted without approval)

For Cat. 2 Sites identify the total yardage of the source material _____

Soil Location, Name, Address: _____

Sampler(s) Name/Contact Information: _____

Sample Collection Date: _____

Analytical Testing Firm(S): _____

Indicate in following table whether topsoil material meets acceptable range per material type:

Parameter	Acceptable Range	General Backfill Results
Environmental Testing (VOCs, SVOCs, PCBs)	<TDL	
Environmental Testing	<GRCC	

Notes:

Environmental Testing Parameters – Volatile Organic Compounds; Semi-Volatile Organic Compounds; Polychlorinated Biphenyls; Metals: arsenic, barium, cadmium, copper, lead, mercury, selenium, silver, zinc
TDL – Target Detection Limit (Please note any detection in laboratory report for further evaluation by Authority)
GRCC – Generic Residential Cleanup Criteria published by the Michigan Department of Environmental Quality

Attachments:

- ☐ Sample Location Map/Aerial Photograph
☐ Laboratory Analytical Results
☐ Certification Letter

For GCLBA/GCLBA's Representative Use Only	
<input type="checkbox"/>	Not Approved
<input type="checkbox"/>	Approved
<input type="checkbox"/>	Approved with the following considerations: _____ _____
<input type="checkbox"/>	Category 1 Material, Certification Expires:
<input type="checkbox"/>	Category 2 Material, Certification Approved for: _____ cubic yards
Reviewed By: _____ Date: _____ Title: _____	

Topsoil Material Certification Form

Company: _____

Address: _____

Soil Type and Category: _____

- ☐ Category 1 Material (Virgin Borrow Source) ☐ Category 2 Material (Agric. / Const. Sites) ☐ Category 3 Material (Other Sites)
(not accepted without approval)

For Cat. 2 Sites identify the total yardage of the source material _____

Soil Location (Name, address): _____

Sampler(s) Name/Contact Information: _____

Sample Collection Date(s): _____

Analytical Testing Firm(s): _____

Indicate in following table whether topsoil material meets acceptable range per material type:

Parameter	Acceptable Range	Topsoil Results
pH	5.5-8.5	
% Organic Matter	≥2% to ≤ 25%	
Texture Class	SM	
Environmental Testing (VOCs, SVOCs, PCBs)	<TDL	
Environmental Testing	<GRCC	

Notes:

Environmental Testing Parameters – Volatile Organic Compounds; Semi-Volatile Organic Compounds; Polychlorinated Biphenyls; Metals: arsenic, barium, cadmium, copper, lead, mercury, selenium, silver, zinc
TDL – Target Detection Limit (Please note any detection in laboratory report for further evaluation by Authority)
GRCC – Generic Residential Cleanup Criteria published by the Michigan Department of Environmental Quality

Attachments:

- ☐ Sample Location Map/Aerial Photograph
☐ Laboratory Analytical Results
☐ Certification Letter

For GCLBA/GCLBA's Representative Use Only	
<input type="checkbox"/>	Not Approved
<input type="checkbox"/>	Approved
<input type="checkbox"/>	Approved with the following considerations: _____ _____
<input type="checkbox"/>	Category 1 Material, Certification Expires:
<input type="checkbox"/>	Category 2 Material, Certification Approved for: _____ cubic yards
Reviewed By: _____ Date: _____ Title: _____	

SECTION 03001

CONCRETE

1. PART 1 GENERAL

1.1 WORK INCLUDED

- A. Formwork, shoring, bracing, and anchorage.
- B. Concrete reinforcement and accessories.
- C. Cast-in-place concrete.

1.2 REFERENCES

- A. ACI 301 - Specifications of Structural Concrete for Buildings.
- B. ANSI/ASTM A185 - Welded Steel Wire Fabric for Concrete Reinforcement.
- C. ANSI/ASTM A497 - Welded Deformed Steel Wire Fabric for Concrete Reinforcement.
- D. ASTM A615 - Deformed and Plain Billet-Steel for Concrete Reinforcement.
- E. ASTM C33 - Concrete Aggregates.
- F. ASTM C94 - Ready-Mixed Concrete.
- G. ASTM C150 - Portland Cement.
- H. ASTM C260 - Air Entraining Admixtures for Concrete.
- I. ASTM C309 - Liquid Membrane-Forming Compounds for Curing Concrete.
- J. ASTM D2103 - Polyethylene Film and Sheeting.
- K. FS TT-C-800 - Curing Compound, Concrete, for New and Existing Surfaces.

1.3 QUALITY ASSURANCE

- A. Perform work in accordance with ACI 301.

1.4 REGULATORY REQUIREMENTS

- A. Conform to ACI 301 code for design fabrication, erection and removal of formwork.

2. PART 2 PRODUCTS

2.1 FORM MATERIALS

- A. Conform to ACI 301.

2.2 REINFORCING STEEL

- A. Reinforcing Steel: ASTM A615, 60 ksi yield grade billet steel deformed bars; uncoated finish.
- B. Welded Steel Wire Fabric: Plain type, ANSI/ASTM A185; Deformed type, ANSI/ASTM A497; in flat sheets, uncoated finish.

2.3 CONCRETE MATERIALS

- A. Cement: ASTM C150, normal - Type 1 Air Entraining.
- B. Fine and Coarse Aggregates: ASTM C33.
- C. Water: Clean and not detrimental to concrete.

2.4 ADMIXTURES.

- A. Air Entrainment Admixture: ASTM C260.

2.5 ACCESSORIES

- A. Bonding Agent: Two component epoxy resin.
- B. Vapor Barrier: ASTM D2103, 6 mil thick clear polyethylene film.
- C. Non-Shrink Grout: Premixed compound with non-metallic aggregate, cement, water reducing and plasticizing agents; capable of minimum compressive strength of 2400 psi.
- D. Form Release Agent: Colorless material which will not stain concrete, absorb moisture or impair natural bonding or color characteristics of coating intended for use on concrete.

2.6 CURING MATERIALS

- A. Water: Clean and drinkable.

2.7 CONCRETE MIX

- A. Mix concrete in accordance with ASTM C94. .
- B. Structural Class A or Foundation Concrete:
 - 1. Compressive Strength: 7 days: 2,600 psi
 - 2. Compressive Strength: 28 days: 3,500 psi
 - 3. Slump: 0-3 inch w/o MR; 0-6 inch w/MR
- C. Slab On Fill Concrete:
 - 1. Compressive Strength: 7 days: 2,600 psi
 - 2. Compressive Strength: 28 days: 3,000 psi
 - 3. Slump: 5-2 inch
- D. All concrete exposed to weathering shall be air entrained with 3.5% to 6.5% total air content by volume.

3. PART 3 EXECUTION

3.1 FORMWORK ERECTION

- A. Verify lines, levels, and measurement before proceeding with formwork.
- B. Hand trim sides and bottom of earth forms; remove loose dirt.
- C. Align form joints.
- D. Do not apply form release agent where concrete surfaces receive special finishes or applied coatings which may be affected by agent.
- E. Coordinate work of other Sections in forming and setting openings, slots, recesses, chases, sleeves, bolts, anchors, and other inserts.
- F. Install and secure all formwork prior to placing concrete.

3.2 REINFORCEMENT

- A. Place, support, and secure reinforcement against displacement

3.3 PLACING CONCRETE

- A. Place concrete in accordance with ACI 301.
- B. Ensure reinforcement, inserts, embedded parts, formed joint fillers, joint devices and accessories are not disturbed.
- C. Place concrete continuously between predetermined expansion, control and construction joints.
- D. Do not interrupt successive placement; do not permit cold joints to occur.
- E. Thoroughly compact concrete immediately after placing by means of mechanical vibrators or other suitable tools.
- F. Concrete transported in a truck mixer, agitator or other transportation device shall be discharged at the job within 1 1/2 hours after the cement has been added to the water or aggregates.
- G. When hand mixing is authorized, it shall be done on a watertight platform and in such a manner as to ensure a uniform distribution of the materials throughout the mass. Mixing shall continue until a homogeneous mixture of the required consistency is obtained.
- H. Retempering of partially hardened concrete will not be permitted.
- I. Saw-cut joints within 24 hours after placing concrete, using 3/16 inch thick blade cut into 1/4 depth of slab thickness.

3.4 Sidewalk Repairs

- A. Place sidewalk repairs as directed by Engineer.

- B. Saw cut control joints at an optimum time after finishing. Cut slabs with 3/16 inch thick blade, cutting 1/4 of depth of slab thickness.
- C. Separate exterior slabs on fill from vertical surfaces with joint filler. Extend joint filler from bottom of slab to within 1/4 inch of finished slab surface.

3.5 EXISTING WORK

- A. Where new concrete is dowelled to existing work, drill holes in existing concrete, insert steel dowels and pack with non-shrinking grout.
- B. Prepare previously placed concrete by cleaning with steel brush and apply bonding agent in accordance with manufacturer's instructions.

3.6 CONCRETE FINISHING

- A. Provide a broomed finish for exterior sidewalk repairs.

3.7 CURING AND PROTECTION

- A. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.
- B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.

3.8 FIELD QUALITY CONTROL

- A. Field inspection and testing will be performed in accordance with ACI 301.
- B. Provide free access to Work and cooperate with appointed firm.
- C. Notify Owner 24 hours in advance of any scheduled placement of concrete.

3.9 FORM REMOVAL

- A. Do not remove forms or bracing until concrete has gained sufficient strength to carry its own weight and imposed loads.
- B. Results of tests may be used to verify the strength gain of the concrete prior to removal of forms. The Contractor shall be responsible for coordination of and payment for additional test cylinders requested for this purpose.
- C. Loosen forms carefully. Do not wedge pry bars, hammers, or tools against finish concrete surfaces scheduled for exposure to view.
- D. Store removed forms in manner that surfaces to be in contact with fresh concrete will not be damaged. Discard damaged forms.

END OF SECTION

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PART 1 GENERAL

1.01 SECTION INCLUDES

Removal and disposal requirements for asbestos containing materials (ACM). Information regarding ACM as identified in the buildings at the site is discussed in detail in Bidding Documents and Hazardous Material Survey. It is recommended that the CONTRACTOR review and consider the recommendations reported in this survey when performing asbestos abatement and general building demolition activities.

1.02 REFERENCE STANDARDS

The publications listed below form a part of this Section to the extent referenced. The publications are referenced in the text by basic designation only.

- A. American Society for Testing and Materials (ASTM)
 - 1. ASTM E 736 (1986) Cohesion/Adhesion of Sprayed Fire-Resistive Materials Applied to Structural Members.
 - 2. ASTM 1368 (1990) Visual Inspection of Asbestos Abatement Projects.
- B. Code of Federal Regulations (CFR)
 - 1. CFR 29 Part 1926/1910 Construction Industry Occupational Safety and Health Standards.
 - 2. CFR 40 Part 61 National Emissions Standards for Hazardous Air Pollutants.
 - 3. CFR 40 Part 260 General Regulations for Hazardous Waste Management.
 - 4. CFR 40 Part 263 Standards Applicable to Transporters of Hazardous Waste.
 - 5. CFR 40 Part 763 Asbestos.
 - 6. CFR 49 CFR 171 Department of Transportation Regulations to Stipulate Requirements for Containers and Procedure for Shipment of Hazardous Waste.
- C. National Fire Protection Association (NFPA)
 - 1. NFPA 10 (1988) Portable Fire Extinguishers.
 - 2. NFPA 70 B (1990) Recommended Practice for Electrical Equipment Maintenance.
 - 3. NFPA 90A (1989) Installation of Air Conditioning and Ventilating Systems.
 - 4. NFPA 101 (1988) Safety to Life from Fire in Buildings and Structures.
 - 5. NFPA 90A (1989) Installation of Air Conditioning and Ventilating Systems.
- D. National Institute of Occupational Safety and Health (NIOSH)
 - 1. NIOSH -01 Manual of analytical Methods
- E. State of Michigan
 - 1. P.A. Act 451, Michigan Natural Resources and Environmental Protection Act
 - 2. MIOSHA Act 154 General Industry and Construction (as amended) Safety

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Standards.

- F. United States Environmental Protection Agency (U.S. EPA)
 - 1. U.S. EPA SW-846, Test Methods for Evaluating Solid Waste.

1.03 MEASUREMENT

Removal and Disposal of ACM

- 1. The removal and disposal of ACM will be included in the building demolition lump sum pay item, consequently no measurements for payment will be conducted.
- 2. Estimated quantities of ACM are included in Bidding Documents and Hazardous Material Survey. **ESTIMATED QUANTITIES SHOULD NOT BE UTILIZED FOR BIDDING PURPOSES. CONTRACTOR IS STRONGLY CAUTIONED AND REQUIRED TO DETERMINE THEIR OWN MATERIAL QUANTITIES FOR BIDDING PURPOSES.**

1.04 PAYMENT

Removal and Disposal of ACM

All acceptably completed work as required under this Section for the removal and disposal of ACM found on site will be paid as the lump sum cost as bid.

1.05 DEFINITIONS

- A. Friable Asbestos Containing Material
As defined in 40 CFR Part 61, Subpart M, any material containing more than 1 percent asbestos as determined using the method specified in 40 CFR Part 763, Appendix A, Subpart F, Section 1, Polarized Light Microscopy, that when dry, can be crumbled, pulverized, or reduced to powder by hand pressure.
- B. Nonfriable Asbestos Containing Material
As defined in 40 CFR Part 61, Subpart M, any material containing more than 1 percent asbestos as determined using the method specified in 40 CFR Part 763, Appendix A, Subpart F, Section 1, Polarized Light Microscopy, that, when dry, cannot be crumbled, pulverized or reduced to powder by hand pressure.
- C. Category I Nonfriable Asbestos Containing Material
As defined in 40 CFR Part 61, Subpart M, asbestos-containing packings, gaskets, resilient floor covering, and asphalt roofing products containing more than 1 percent asbestos as determined using the method specified in 40 CFR Part 763, Appendix A, Subpart F, Section 1, Polarized Light Microscopy, that when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.
- D. Category II Nonfriable Asbestos Containing Material
As defined in 40 CFR Part 61, Subpart M, any material, except Category I nonfriable ACM, containing more than 1 percent asbestos as determined using the methods

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specified in Appendix A, Subpart F, 40 CFR Part 763, Section 1, Polarized Light Microscopy, that when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

- E. **Asbestos Regulated Work Area**
An area contained and controlled where asbestos containing materials (ACM) operations are performed and isolated by physical boundaries to prevent the spread of ACM and control access to authorized persons. Containment may consist of full containment area, single or double bulkhead containment area, mini-containment area, modified containment, glove bag, or other techniques. An outdoor regulated work area is not isolated within a containment enclosure, but is otherwise secured by means of physical barriers, boundary warning tape, and signage, etc., to control access by unauthorized persons.
- F. **Time-Weighted Average**
The Time Weighted Average (TWA) is an average of airborne concentration of fibers (longer than 5 micrometers) per cubic centimeter of air based on an 8-hour exposure duration, which represents the employee's 8-hour workday as defined in Appendix A of 29 CFR Part 1926, Section 1926.1101.
- G. **Amended Water**
Water containing a wetting agent or surfactant with a surface tension of at least 29 dynes per square centimeter when tested in accordance with ASTM D 1331.
- H. **Adequately Wet**
As defined in 40 CFR Part 61, Subpart M, sufficiently mix or penetrate with liquid to prevent the release of particulates from the source material. Continue wetting asbestos-containing material (ACM) if visible emissions are encountered during abatement activities. When uncertainties arise, continue wetting material until uncertainties are reduced.
- I. **Competent Person**
As defined in 29 CFR Part 1926, should be experienced in administering and supervising asbestos abatement projects. A competent person should be familiar with safe and reasonable work practices, abatement methods, protective measures for personnel, inspection of asbestos abatement work areas, evaluating the adequacy of containment barriers, placement and operation of local exhaust systems, waste containment and disposal procedures, decontamination units, and site health and safety health requirements. The designated "competent person" will be responsible for compliance with applicable local State, and Federal requirements and for enforcing the site-specific Health and Safety Plan (HASP).

1.06 SUBMITTALS

- A. **Work Plan**
Before proceeding with any removal and disposal work, submit a work plan that includes the procedures proposed for the accomplishment of all specified activities. The procedures shall provide for safe conduct of the work, careful removal and disposition of asbestos-containing materials, and property protection. The procedures shall provide a

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detailed description of the methods and equipment to be used for each operation, and the sequence of operations. The work plan shall be based on work experience, and the guidance provided in this specification.

- B. **Health and Safety Plan**
Submit a site-specific Health and Safety Plan (HASP) before beginning removal or disposal activities. Include in the HASP required personal protective equipment, respiratory protection, asbestos regulated work area controls, and hazard communication program. Refer to Section 01110 for other HASP requirements. Submission of the HASP will be for file purposes only. HASP will not be reviewed by OWNER or ENGINEER.
- C. **Asbestos Abatement Plan**
Submit a site-specific Asbestos Abatement Plan that includes methods utilized (1) to determine the necessary extent of asbestos removal work within structures and the debris piles and (2) for removal and disposal of asbestos and surfactant impacted water. Include contact name and telephone number for the licensed disposal facility and waste hauler used for removal, treatment, and disposal of the wastewater unsuitable to discharge into the sanitary sewer. Provide a copy of the approval notice from the disposal facility agreeing to accept the impounded water for disposal. Include a configuration map that displays the asbestos regulated work area, containment areas, and entrances and exits.
- D. **Qualifications**
Submit adequate information to conclude the qualifications of the CONTRACTOR, on-site supervisors, workers, all subcontractors, and the independent testing laboratory performing asbestos abatement activities are properly trained in safety procedures associated with handling asbestos-containing materials. Specify the staff organization to include subcontractors used for this project. Include qualifications and certifications of the designated "competent person."
- E. **Materials**
Submit a list of data for all materials and equipment used during abatement activities. Include brand name, model, capacity, performance characteristics, and other pertinent information. Submit any test results and certificates from the manufacturer for equipment and materials substantiating compliance with performance requirements of these specifications. Provide Material Safety Data Sheets (MSDS) for all chemicals to be used on site.
- F. **Air Sampling Results**
CONTRACTOR shall conduct fiber counting for air quality during each sampling event and provide results within 24 hours of completion of each sampling event. CONTRACTOR shall notify OWNER and/or duly appointed OWNER representative immediately if any airborne levels of asbestos fibers are encountered above levels established by regulation or these specifications. CONTRACTOR shall provide a table including sampling results within 5 working days of the date of collection.
- G. **Manifests/shipping papers**
Submit waste documentation for all shipments removed from the property. Waste disposal manifests will be signed by the OWNER or appointed representative.

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1.07 REGULATORY REQUIREMENTS

A. Permits

Obtain all necessary permits and licenses for asbestos abatement activities. Notify the Michigan Department of Labor and Regulatory Affairs (MDLARA) and the Michigan Department of Environmental Quality (MDEQ), Air Quality Division, in writing at least 10 calendar days before beginning abatement activities. Conduct all abatement activities in accordance with 40 CFR Part 61, Subpart M, state and local requirements to include the mandatory "Notification of Demolition and Renovation Record" form and other required notification documents.

B. Health and Safety Compliance

Comply with all applicable laws, ordinances, rules, regulations, and specifications described in this Section and Section 01110, Safety, Health and Emergency Response. While conducting all handling, storing, transporting, and disposing activities for asbestos waste materials, comply with the applicable requirements of 29 CFR Part 1910, 29 CFR Part 1926, 40 CFR Part 61, Subpart A, and 40 CFR Part 61, Subpart M, NFPA 10, NFPA 70, NFPA 90A, NFPA 101. In case of a discrepancy between the requirements of this specification, applicable laws, rules, criteria, ordinances, regulations, and referenced documents vary, the most stringent requirement as determined by the ENGINEER shall apply.

1. Air Monitoring

- a. CONTRACTOR will conduct personal air sampling as defined by the previously noted regulations. CONTRACTOR will also conduct baseline, contiguous, AFD discharge, final clearance and other air monitoring at his/her discretion for airborne asbestos fibers. Adhere to all permit and regulatory requirements for air quality and emissions control.
2. CONTRACTOR shall conduct final clearance air sampling on behalf of OWNER.

2. Respiratory Protection Program

- a. Establish and implement a respiratory protection program in accordance with 29 CFR 1926, Section 1926.1101, 29 CFR Part 1910, Section 1910.134. Include medical monitoring, employee training, procedures for respirator use, respirator fit-testing, routine inspection, and storage. Select and use respirators in accordance with manufacturers recommendations, Mine Safety and Health Administration, and the National Institute for Occupational Safety and Health requirements for use in environments containing airborne asbestos fibers.

3. Training

- a. All employees working directly with asbestos-containing material and wastes must have successfully completed a course of asbestos training as specified by United States Environmental Protection Agency (EPA)

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requirements at 40 CFR Part 763, Subpart E, Appendix C, within 1 year prior to conducting asbestos abatement activities. Each worker must successfully complete the “Worker” course, and on-site supervisors and technical support personnel must successfully complete the “CONTRACTOR/Supervisor” course.

4. Medical Monitoring
 - a. Conduct medical monitoring requirements as described in 29 CFR Part 1926, Section 1926.1101 and the requirements of the CONTRACTOR’s Health and Safety Plan.
5. Personal Protective Equipment
 - a. Provide personnel working in asbestos environments with whole body protection as specified in Section 01110, Health, Safety, and Emergency Response. Single-use coveralls shall be disposed as asbestos-contaminated waste upon exiting from the asbestos regulated work area.

PART 2 PRODUCTS

2.01 MATERIALS

- A Wetting Agent
 1. Amended Water
 - a. Comply with ASTM D 1331.
 2. Removal Encapsulant
 - a. Provide a removal or penetrating encapsulant when conducting asbestos abatement activities that require a longer removal time or are subject to rapid evaporation of amended water. The removal encapsulant shall be capable of wetting the ACM and retarding fiber release during disturbance of the ACM equal to or greater than provided by amended water.
- B. Strippable Coating
Provide additional incidental items necessary to complete specified activities.
- C Prefabricated Decontamination Unit(s)
Provide additional incidental items necessary to complete specified activities.
- D. Chemical encapsulant
Provide additional incidental items necessary to complete specified activities.
- E. Chemical encasement materials
Provide additional incidental items necessary to complete specified activities.

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- F. Material Safety Data Sheets (for all chemicals proposed)
Provide additional incidental items necessary to complete specified activities.
- G. Sheet Plastic
Provide sheet plastic as specified herein and in the largest size necessary to minimize seams. Comply with ASTM D 4397 and NFPA 701.
- H. Other items
Provide additional incidental items necessary to complete specified activities.

2.02 EQUIPMENT

- A. High efficiency filtered local exhaust equipment
- B. Vacuum equipment
- C. Pressure differential monitor
- D. Air monitoring equipment
Provide appropriate air monitoring equipment to evaluate concentrations of airborne asbestos fibers. The ENGINEER will conduct Quality Assurance/Quality Control air monitoring along the property boundaries or within abatement areas as deemed necessary by the ENGINEER.
- E. Respirators
Provide respirators as specified in Part 1.08.B.2 of this Section
- F. Glove Bag
Provide glove bags that comply with 29 CFR Part 1926.
- G. Duct Tape
Provide industrial grade duct tape in 2 inch and 3 inch widths, suitable for bonding sheet plastic and disposal containers specified herein.
- H. Leak-Tight Containers
Provide leak-tight disposal containers and bags for asbestos-containing materials and generated wastes as specified herein. All disposal containers shall be either pre-labeled or affixed with OSHA warning label, as specified in 29 CFR Part 1926.

2.03 SOURCE QUALITY CONTROL

Encapsulants shall conform to USEPA requirements, shall contain no toxic or hazardous substances or solvent, and shall meet the following requirements:

<u>Requirement</u>	<u>Test Standard</u>
A. Requirements and Corresponding Test Standards for All Encapsulants	
Flame Spread – 25, Smoke Emission – 50	ASTM E 84
Combustion Toxicity	University of Pittsburg Protocol

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Zero Mortality	University of Pittsburg Protocol
Life Expectancy – 20 years	ASTM C 732 (Accelerated Aging Test)
Permeability – Minimum 0.4 perms	ASTM E 96

B.	Additional Requirements and Corresponding Test Standards for Bridging Encapsulant	
	<u>Requirement</u>	<u>Test Standard</u>
	Cohesion/Adhesion Test – 50 pounds of force/foot	ASTM E 736
	FIRE RESISTANT	ASTM E 119
	Impact Resistance – Minimum 43 in/lb	ASTM D 2794 (Gardner Impact Test)
	Flexibility – no rupture or cracking	ASTM D 522 (Mandrel Bend Test)
C.	Additional Requirements and Corresponding Test Standards for Penetrating Encapsulant	
	<u>Requirement</u>	<u>Test Standard</u>
	Cohesion/Adhesion Test – 50 pounds of force/foot	ASTM E 736
	FIRE RESISTANT	ASTM E 119
	Impact Resistance – Minimum 43 in/lb	ASTM D 2794 (Gardner Impact Test)
	Flexibility – no rupture or cracking	ASTM D 522 (Mandrel Bend Test)
D.	Additional Requirements and Corresponding Test Standards for Bridging Encapsulant	
	<u>Requirement</u>	<u>Test Standard</u>
	Cohesion/Adhesion Test – 50 pounds of force/foot	ASTM E 736
	Fire Resistant	ASTM E 119
	Impact Resistance – Minimum 43 in/lb	ASTM D 2794 (Gardner Impact Test)
	Flexibility – no rupture or cracking	ASTM D 522 (Mandrel Bend Test)
E.	Additional Requirement and Corresponding Test Standards for Lock-Down Encapsulant	
	<u>Requirement</u>	<u>Test Standard</u>
	FIRE RESISTANT	ASTM E 119
	Bond Strength	ASTM E 736

PART 3 EXECUTION

3.01 GENERAL

Remove and dispose asbestos-containing material at an approved recycle facility. Obtain all required permits and approval documents. Provide approved containers, vehicles, equipment, labor, signs, placards, labels, manifests, and other documents necessary for accomplishing the work including materials necessary for spill cleanup from removal operations. Coordinate any additional sampling that may be necessary.

- A. Safety Guidelines
Personnel working inside and in the general vicinity of the cleanup area shall be trained and made thoroughly familiar with the safety precautions, procedures, and equipment required for controlling the potential hazards associated with this work. Personnel shall use proper protection and safety equipment during work in and around the asbestos regulated work area.

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B. Controls

Areas where asbestos abatement activities are conducted should be adequately secured as specified herein.

Perform work in accordance with the requirements and specifications and take direction only from the OWNER or Appointed Representative for this contract. Any other party that proposes to give direction to the CONTRACTOR shall be immediately referred to the OWNER or Appointed Representative.

C. Routine Cleaning

1. Package all loose asbestos-containing materials and debris and remove from the work area to the load-out area.
2. Vacuum work areas with HEPA vacuum or other high volume HEPA-filtered transfer equipment.
3. Inspect and maintain polyethylene and PVC in work and high traffic areas.
4. If air sample results exceed prescribed level, wipe clean containment and decontamination areas.

3.02 ABATEMENT PROCEDURES

A. Methods

Determine and implement the most efficient asbestos abatement method in conformance with this specification. Employ proper handling procedures in accordance with 29 CFR Part 1926 and 40 CFR Part 61, Subpart M, and the requirements specified herein. Abatement techniques and items identified shall be detailed in the Asbestos Abatement Plan including but not limited to details of construction materials, equipment, and handling procedures, and necessary safety precautions.

B. Revised Quantities

Before the contaminated debris has been removed, verify the previously submitted quantity estimates of other asbestos-containing materials and notify the OWNER or ENGINEER of any changes in the quantities.

C. Air Monitoring

CONTRACTOR will perform sampling and analysis for airborne concentration of asbestos fibers in accordance with 29 CFR Part 1926 Section 1926.1101 and as specified herein. Personal air monitoring samples will be collected to represent the work activities for each shift. Results of the personal samples shall be made available to the OWNER and/or duly appointed OWNER representative. The CONTRACTOR shall maintain a fiber concentration inside enclosed containment regulated work area equal to or less than 0.1 f/cc expressed as an 8 hour, TWA during asbestos abatement. If fiber concentration rises above 0.1 f/cc, OWNER and/or duly appointed OWNER representative may elect to examine work procedures to determine the cause and work with the foreman/competent person to implement corrective actions.

Workers shall not be exposed to an airborne fiber concentration in excess of 1.0 f/cc, as average over a sampling period of 30 minutes. If either an environmental concentration of 1.0 f/cc expressed as an 8-hour TWA or a personal excursion concentration of -1.0 f/cc

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expressed as a 30-minute sample occur inside the enclosed work area, ENGINEER and CONTRACTOR will be notified immediately. CONTRACTOR will immediately institute controls and work practices to reduce airborne fiber levels below prescribed limits in the work area.

CONTRACTOR will conduct personal sampling required by 29 CFR Part 1926 Section 1926.1101, in accordance with the NIOSH Method 7400, Phase Contrast Microscopy (PCM).

Per regulation, environmental and perimeter air monitoring outside of regulated containment areas shall not exceed clearance levels contained in 40 CFR part 763, subpart E, which is 0.01 f/cc or no more than background levels representing the same area before the asbestos work began.

For final clearance samples, CONTRACTOR will conduct CONTRACTOR appointed third party sampling at a sufficient velocity and time to collect a sample volume necessary to establish the limit of detection of the method used at the Michigan Clearance standard of 0.05 f/cc or background levels, whichever is higher. Background, environmental, quality assurance and final air clearance samples will be collected and analyzed according to NIOSH Method 7400 methodology.

1. Routine Air Sampling

CONTRACTOR will provide personal sampling as indicated in 29 CFR Part 1926 Section 1926.1101, state and local requirements. Areas may include, but not be limited to, sampling at least once during every shift outside the clean room entrance to the containment area, inside the clean room, outside the load-out unit exit, and at the exhaust discharge point of the local exhaust system.

2. Sampling After Final Clean-Up (Clearance Sampling)

Prior to conducting final air clearance monitoring, conduct a final visual inspection with OWNER and/or duly appointed OWNER representative. Final clearance air monitoring shall not begin until acceptance of this final cleaning by the CONTRACTOR appointed third party. Comply with the sampling and analytical methods provided in NIOSH-01 Method 7400 (PCM).

3. Failure to Meet Air Quality Requirements

If clearance sampling results fail to meet the final clean-up requirements, area will be re-cleaned and the area re-sampled until final clean-up requirements are met. Costs associated with additional samples, cleaning, and inspections will be paid by the CONTRACTOR.

D. Additional Bulk Asbestos Sampling

Bulk asbestos sampling and polarized light microscopy analysis (PLM) has been conducted for various materials located throughout the site. During debris removal, previously unidentified potential asbestos-containing material may be encountered, requiring bulk sampling and analysis. Additional bulk sample analyses as required under this Section shall be paid by the CONTRACTOR. Perform bulk sampling as required or

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as specified by ENGINEER. Employ a laboratory for testing and analysis which meets NVLAP/NIST accreditation requirements.

- E. **Asbestos Abatement**
Collect and place in sealed, leak-tight containers all asbestos waste, scrap, debris, bags, containers, equipment, and asbestos contaminated personal protective equipment. Use 6-mil, double wrapped polyethylene sheets, sealed fiberboard boxes, or other approved containers. Waste within the containers must be wetted in case the container is damaged. Affix a warning label and a Department of Transportation (DOT) label on each bag. Dispose waste material at an approved, licensed asbestos landfill. For temporary storage, keep sealed impermeable containers in asbestos waste load-out unit or in a storage/transportation conveyance (dumpsters or roll-off boxes) in a manner as accepted by and in an area as assigned by the OWNER or Appointed Representative. Procedure for hauling and disposal asbestos-containing material shall comply with 40 CFR Part 61, Subpart M, state, regional, and local standards and specifications.
- F. **Waste Records**
Provide final completed copies of the Waste Shipment Record for shipments of all waste material as specified in 40 CFR Part 61, Subpart M, and other required state waste manifest shipment records within 3 days of delivery to the landfill.
- G. **Final Cleaning**
Abate asbestos by collecting, packing, and storing all gross contamination in accordance with all references, regulations and specifications. Once cleaning has been completed, conduct a visual pre-inspection of the cleaned area. A final air monitoring event will be performed to verify adequacy of clean-up. Re-cleaning and follow-up inspections shall be at the CONTRACTOR's expense. Upon completion of the final cleaning, conduct a final visual inspection of the cleaned area with CONTRACTOR appointed third party. Document the results. If CONTRACTOR appointed third party determines that the abatement area does not meet final cleaning requirements, re-clean as necessary and conduct additional follow-up inspection with CONTRACTOR appointed third party.
- H. **Lock Down Encapsulant**
In areas where friable ACM was removed, after clean-up of gross contamination, and final visual inspection, but before removing plastic barriers, apply a post removal (lockdown) encapsulant to floor, walls, ceilings, and other surfaces in the removal area. When work was limited to glove bags only apply encapsulate to item within glove bag.

END OF SECTION

PCB-CONTAINING EQUIPMENT REMOVAL

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Removal and disposal requirements for PCB ballasts, suspect PCB ballasts, and oil filled ballasts. PCB and suspect PCB-containing light ballasts and other electrical equipment may be present at the subject property.

1.02 RELATED SECTIONS

- A. Section 01110 - Health, Safety, and Emergency Response
- B. Section 01570 – Temporary Controls

1.03 REFERENCE STANDARDS

The publications listed below form a part of this Section to the extent referenced. The publications are referenced in the text by basic designation only.

- A. American Petroleum Institute (API)
 - 1. APR Rp 2003, Protection Against Ignitions Arising out of Static, Lightning and Stray Currents.
 - 2. API Publ 2015, Safe Entry and Cleaning Petroleum Storage Tanks.
 - 3. API Publ 2217, Guidelines for Confined space Work in the Petroleum Industry.
 - 4. API Publ 2219, Safe Operation of Vacuum Trucks in Petroleum Service.
- B. Code of Federal Regulations (CFR)
 - 1. CFR 29 CFR 1910.146 OSHA - Permit Required Confined Spaces.
 - 2. CFR 29 CFR 1926/1910 Construction Industry Occupational Safety and Health Standards.
 - 3. CFR 40 CFR 260 General Regulations for Hazardous Waste Management.
 - 4. CFR 40 CFR Part 261 Identification and Listing of Hazardous Waste.
 - 5. CFR 40 CFR Part 262 Standards Applicable to Generators of Hazardous Waste.
 - 6. CFR 40 CFR Part 263 Standards Applicable to Transporters of Hazardous Waste.
 - 7. CFR 40 CFR Part 264 Standards for OWNERS and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities.
 - 8. CFR 40 CFR Part 265 Interim Status Standards for OWNERS and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities.
 - 9. CFR 49 CFR 171 Department of Transportation Regulations to Stipulate Requirements for Containers and Procedure for Shipment of Hazardous Waste.

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PCB-CONTAINING EQUIPMENT REMOVAL

10. CFR 40 CFR Part 761 Polychlorinated Biphenyls (PCB) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions.
 - C. National Fire Protection Association (NFPA)
 1. NFPA 30 (1990) Flammable and Combustible Liquids Code.
 2. NFPA 70 B (1990) Recommended Practice for Electrical Equipment Maintenance.
 3. NFPA 325M (1991) Fire Hazard Properties of Flammable Liquids, Gases, and Volatile Solids.
 4. NFPA 327 (1987) Standard Procedures for Cleaning or Safeguarding Small Tanks and Containers.
 - D. National Institute of Occupational Safety and Health (NIOSH)
 1. NIOSH 80-106 Criteria for a Recommended Standard for Working in Confined Spaces.
 - E. State of Michigan
 1. P.A. Act 451, Michigan Natural Resources and Environmental Protection Act
 2. MIOSHA Act 154 General Industry and Construction (as amended) Safety Standards.
 - F. United States Environmental Protection Agency (U.S. EPA)
 1. U.S. EPA SW-846, Test Methods for Evaluating Solid Waste.
- 1.04 MEASUREMENT
- A. Removal and Disposal of PCB-containing Light Ballasts and Equipment
 1. The removal and disposal of containerized PCB-containing light ballasts will be a lump sum pay item, consequently no measurements for payment will be conducted.
 2. Estimated quantities of PCB-containing Light Ballasts and Equipment are included in Pre-Demolition Hazardous Materials Survey Report. Note that the majority of light ballasts and transformers present within the subject buildings are labeled “Non-PCB” containing.
- 1.05 PAYMENT
- A. Removal and Disposal of PCB-containing Light Ballasts

All acceptably completed work as required under this Section for the removal and disposal of containerized PCB-containing light ballasts found on site will be paid as part of the lump sum cost as bid.

PCB-CONTAINING EQUIPMENT REMOVAL

1.06 SUBMITTALS

A. Work Plan

Before proceeding with any removal and disposal work, submit a work plan that includes the procedures proposed for the accomplishment of the removal and disposal work. The procedures shall provide for safe conduct of the work; careful removal and disposition of solid materials and liquid wastes; and property protection. The procedures shall provide a detailed description of the methods and equipment to be used for each operation, and the sequence of operations. The work plan shall be based on work experience, and the guidance provided in this specification.

B. Health and Safety Plan

Before proceeding with any removal and disposal work, submit a site-specific health and safety plan (HASP) that includes the necessary precautions and safety procedures proposed for the accomplishment of the removal and disposal work. Include detailed information regarding temporary controls, including lock-out/tag-out procedures, and hazardous material handling. The HASP shall include procedures specified in this Section and in Section 01110, Health, Safety, and Emergency Response.

C. Decommissioning Report

Provide as applicable, in a three ring binder, the following information within 14 days of completion of the project:

1. A cover letter signed by a responsible company official certifying that all services involved have been performed in accordance with the terms and conditions of this contract.
2. A narrative report briefly describing the tasks conducted, including:
 - a. Conditions of the material before storage.
 - b. Any visible evidence of leaks or stained soils.
 - c. Results of vapor monitoring readings, if applicable, or a statement that vapor monitoring was not required.
 - d. Actions taken including quantities of materials treated or removed.
3. Copies of all analyses performed for disposal.
4. Copies of all waste analyses or waste profile sheets.
5. Copies of all certifications of final disposal signed by the responsible disposal facility official.
6. Information on who sampled, analyzed, transported, and accepted all wastes encountered.
7. Information describing the sample method, rationale, results, and chain-of-custody documentation for all testing.

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8. Copies of all disposal manifests, bills-of-lading, load tickets and other transportation documentation.

D. Notice of Acceptance

After removing and disposing drums and small containers from the project site, submit the name and location of the properly licensed disposal facility and a copy of the written agreement from the disposal facility agreeing to accept contaminated materials for disposal. This documentation shall include manifests with quantities. The documentation is due 10 days after removal from the site.

E. Disposal Documents

Provide copies of all licenses, certificates, permits, agreements, manifests, chain of custody records, weigh tickets, meter recordings, delivery tickets, and receipts required or issued for material disposal. Provide a list of the equipment used, the methods used, and the disposal areas and facilities used for disposing ballasts. Provide a copy of the results of tests performed to comply with the requirements of each disposal facility.

F. Manifests

Submit a copy of the official manifest for each shipment of contaminated materials including, but not limited to, ballast contents and ballast carcasses evidencing delivery of the material to the approved licensed disposal facility. All manifests shall be in accordance with the requirements of 40 CFR, Part 262, 40 CFR, Part 761, Section 23 and State and local regulations. Manifests shall be signed by the OWNER or authorized official.

1.07 REGULATORY REQUIREMENTS

A. Statutes and Regulations

PCB-containing liquid removal, transportation, and disposal work shall be carried out in accordance with 29 CFR, Part 1910 and 1926, State of Michigan Act 64, Act 641, Act 307 and Act 136 wherever applicable. Hazardous material shall be transported in accordance with 40 CFR Part 263 to disposal facilities that operate in accordance with 40 CFR Part 264 and 40 CFR Part 265. Obtain all licenses, permits, certifications, receipts, etc., as required by such laws, regulations, codes, and ordinances.

B. General

All health and safety regulations relating to the removal, transportation, and disposal of ballasts available in 29 CFR, Parts 1926 and 1910 shall be complied with at all times. All pertinent regulations such as 29 CFR Parts 1910 and 1926 and 40 CFR 260, 261, 262, 263, 264, 761 and applicable state and local regulations shall be followed for storing, containing, and handling drums and small containers and for maintaining equipment for handling materials.

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PCB-CONTAINING EQUIPMENT REMOVAL

C. Protection of Employees and Visitors

Address the work in a manner such that its employees and site visitors will not be subjected to hazardous and unsafe conditions. Comply with all safety precautions, as required by 29 CFR Parts 1926 and 1910 and NFPA 329. Conduct and document the appropriate level of electrical lock-out/tag-out procedures.

D. Toxicity Considerations

Exercise care to minimize exposure to PCB-containing material and petroleum compounds when present during the handling of PCB-containing materials.

E. Flammability and Combustibility Considerations

Exercise caution by observing the following precautions: (a) eliminate all potential sources of ignition within the area; (b) present the discharge of static electricity during venting of flammable and combustible vapors; and (c) prevent the accumulation of vapors at ground level. Refer to API Publication 2015, 2015A and Recommended Practice 2003 for precautionary measures to follow during vapor evacuation activities. All open flame and spark-producing equipment is to be shut down and all electrical equipment must be explosion proof in compliance with NFPA 70B Class I, Division I, Group D or otherwise approved for use in potentially explosive atmospheres.

PART 2 PRODUCTS

2.01 GENERAL

Provide incidental equipment and materials necessary to complete specified activities, including, but not limited to, provision of drums for PCB-containing ballasts, and any scaffolding, cranes, or lifting equipment necessary to reach the areas for removal.

PART 3 EXECUTION

3.01 GENERAL

Disconnect or have disconnected power from ballasts and equipment being removed. Remove and containerize all PCB-containing light ballasts and equipment and dispose of properly. Obtain all required permits and approval documents. Provide approved containers, vehicles, equipment, labor, signs, placards, labels, manifests, and other documents necessary for accomplishing the work including materials necessary for spill cleanup for material from removal operations. Coordinate and pay for any additional sampling that may be necessary. Removal all PCB containing equipment discovered during demolition activities.

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PCB-CONTAINING EQUIPMENT REMOVAL

A. Safety Guidelines

Personnel working inside and in the general vicinity of the cleanup area shall be trained and made thoroughly familiar with the safety precautions, procedures, and equipment required for controlling the potential hazards associated with this work. Personnel shall use proper protection and safety equipment during work in and around the ballast, as specified in API Publication 2217, AP RP 1604, and in the site-specific health and safety plans. Proper guidelines regarding safety precautions shall be required for handling all other items. For further Health and Safety requirements, refer to Section 01110.

B. Control of the Work

Perform work in accordance with the requirements and specifications. Perform control measures as specified in Section 01570.

3.02 CONTENTS VERIFICATION

A. Sampling and Analytical Testing

Items identified are documented in the Bidding Documents and/or Hazardous Materials Survey.

Any additional testing necessary is the responsibility of the CONTRACTOR. If necessary, the CONTRACTOR shall collect samples to the extent required by the approved off-site disposal facility receiving the material. All analytical testing as required under this section shall be paid for by the CONTRACTOR and is incidental to the Contract. The analysis shall require a 5 working day completion time from the date of sample receipt at the laboratory. Meet all regulatory requirements, including chain-of-custody documentation. Provide testing results to OWNER and/or duly appointed OWNER representative.

3.03 EXAMINATION

A. Sampling and Testing Requirements of Others

Collect samples of all container contents as required by the approved disposal facility for the material to be disposed. Perform all testing as described in Subpart 3.02.A. All documentation regarding the sampling and analysis such as sample locations, rationale, chain-of-custody, test results, etc., shall be maintained by the CONTRACTOR. A copy of all such test reports shall be furnished to OWNER and/or duly appointed OWNER representative prior to removal of material.

3.04 DISPOSAL REQUIREMENTS

A. General

Materials requiring disposal shall become the property of the CONTRACTOR. Dispose light ballasts at a facility licensed to receive, clean, recycle, and dispose of PCB-containing electrical equipment. Dispose all wastes in accordance with all local, State, and Federal solid and liquid waste laws and regulations, including those for hazardous waste, when applicable, as well as the Resource Conservation and Recovery Act (RCRA), and conditions specified herein. These services shall include all necessary

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PCB-CONTAINING EQUIPMENT REMOVAL

personnel, labor, transportation, packaging materials, manifesting and/or completing waste profile sheets, equipment, and reports. Provide all disposal and recycle information to OWNER and/or duly appointed OWNER representative.

B. Records

Maintain disposal and recycle records for all waste determinations, including (1) appropriate results of analyses performed, (2) sample locations, (3) substances detected, (4) time of collection, and (5) other pertinent data as required by 40 CFR Part 280, Section 74 and 40 CFR Part 262 Subpart D. Record and make available information regarding method of transportation, method of treatment, method of disposal, quantities of waste, the names and addresses of each transporter, and the disposal or reclamation facility. Prepare and maintain copies and originals of disposal manifests, waste analyses or waste profile sheets, and certifications of final treatment/disposal signed by the responsible disposal facility official. Following contract completion, records shall become the property of the OWNER.

C. Hazardous/Special Waste Manifests

U.S. EPA waste generator's identification number for the site may be required due to the nature of the materials to be disposed. Work with the generator to obtain this or other generator identification numbers. For hazardous and non-hazardous contaminated liquid waste, utilize a State of Michigan approved manifest system in conformance with the requirements identified in 40 CFR Part 262, 40 CFR Part 263 and 40 CFR Part 761.

The manifests shall comply with all of the provisions of the transportation and disposal regulations. Prepare manifests for each load and obtain the appropriate identification numbers and signatures. The designated representative will sign all hazardous and non-hazardous waste manifests on behalf of the waste generator.

Before waste transportation, all of the established pre-transport requirements shall be met. The wastes shall be transported by a certified waste hauler (i.e., the hauler must have an appropriate State waste identification number) in approved containers. All transporters must sign the appropriate portions of the manifest and must comply with all of the provisions established in the applicable regulations. Hazardous waste manifests must be signed by the generator (OWNER or designated representative).

Provide the OWNER and/or duly appointed OWNER representative with manifests, certificates, and other such evidence as may be required by local, State, and Federal regulations, to demonstrate that waste materials of all types were properly transported to, received at, and disposed at approved disposal facilities. After delivery of the load, provide a copy of the manifest to the OWNER and/or duly appointed OWNER representative.

D. Documentation of Treatment and Disposal

Dispose hazardous wastes at an approved treatment, storage, or disposal facility. The disposal facility will maintain U.S. EPA or appropriate State permits and waste treatment identification numbers and will comply with all of the provisions of the disposal regulations. Documentation of acceptance of special waste by a facility legally permitted to treat or dispose those materials shall be furnished to the OWNER and/or duly

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appointed OWNER representative following the delivery of those materials to the facility.

3.05 SPILLS

A. Spill Responsibility

CONTRACTOR is responsible for cleaning up all the leaks and spills from decommissioning operations, drums, or other containers that occur because of CONTRACTOR's negligence. Immediate containment actions shall be taken as necessary to minimize the effect to natural surroundings. Notify OWNER and/or duly appointed OWNER representative and, where applicable, appropriate governmental authorities of the incident. Cleanup shall be in accordance with applicable local, State, and Federal laws and regulations at no additional cost to OWNER.

END OF SECTION

SECTION 13284

RECYCLING OF CHLOROFLUOROCARBONS (CFCs)

PART 1 GENERAL

1.1 GENERAL

- A. CONTRACTOR shall furnish all labor, material, equipment and incidentals required to remove, handle, transport and recycle residual refrigerants (assumed to be CFCs) contained in air conditioning units, drinking fountains, or other similar devices.
- B. CONTRACTOR shall submit to OWNER and/or duly appointed OWNER representative a copy of the applicable CONTRACTOR or subcontractor license for CFC removal and handling.
- C. Upon removal of CFCs, each unit will be affixed with a label to indicate the refrigerant has been recovered.
- D. CONTRACTOR shall provide record documents in accordance with 40 CFR 82 verifying the removal procedures and refrigerant amounts recovered.

1.2 MEASUREMENT

- A. Removal and Disposal of CFCs and Equipment
 - 1. The removal and disposal of CFCs and associated equipment will be a lump sum pay item, consequently no measurements for payment will be conducted.
 - 2. Estimated quantities of CFCs and equipment are included in the Pre-Demolition Hazardous Materials Survey Report.

PART 2 PRODUCTS

2.1 CONTAINERS AND LABELS

- A. Cylinders for CFC removal, storage, and transportation shall be provided to the CONTRACTOR by an approved recycling facility.
- B. CONTRACTOR shall provide labels that indicate that the refrigerant materials have been evacuated.

PART 3 EXECUTION

3.1 GENERAL

- A. CONTRACTOR shall identify the locations of all equipment at the Site that are believed to contain refrigerants and shall disconnect all utility services.
- B. Using a method acceptable to the approved recycling facility, CONTRACTOR shall evacuate each unit of all refrigerants and containerize the materials for recycling.

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RECYCLING OF CHLOROFLUOROCARBONS (CFCs)

- C. CONTRACTOR shall ensure that the CFC-containing units are de-pressurized and free of all refrigerants. This may be accomplished by subsequent flushing with pressurized nitrogen or another acceptable method.
- D. CONTRACTOR shall transport all cylinders containing CFCs in accordance with the applicable DOT regulations.
- E. CONTRACTOR shall record and provide to OWNER and/or duly appointed OWNER representative documentation of devices evaluated, procedures used, amounts recovered and other information as required by 40 CFR 82 upon completion of removal activities.

--END OF SECTION--

REGULATED ABATEMENT OF MISCELLANEOUS MATERIALS

PART 1 GENERAL

1.1 GENERAL

- A. CONTRACTOR shall furnish all labor, material, equipment, packaging, sampling, and testing, and incidentals required to remove/abate, transport and dispose/recycle all substances regulated under Federal, State and local statutes and land ban restrictions. These substances may include but are not limited to:
1. Chemical Fire Extinguishers
 2. Mercury Devices (i.e., switches, thermostats, vapor lamps).
 3. Non-hazardous Liquids and Equipment / Fuel Oil
 4. Regulated Batteries
 5. Non-PCB Liquid Cooled Electrical Equipment
 6. Hydraulic Oil Filled Equipment Including Automotive Hoists
 7. Hazardous Chemicals or Waste
- B. Estimated quantities of hazardous and/or regulated materials are provided in the Bidding Documents and/or Hazardous Materials Survey.
- C. CONTRACTOR shall be aware that the buildings may contain lead based paint and as such the potential for exposure exists. CONTRACTOR should assume painted surfaces are lead containing and handle as such in accordance with all federal, state, and local regulations.
- D. The Michigan Occupational Safety and Health Administration (MIOSHA) provides protection and regulations for the safety and health of workers. The Department of Labor and Regulatory Affairs (MDLARA) provides for the safety of workers. The Department of Community Health provides for the health of workers.
1. CONTRACTOR shall post any applicable State and/or Federal government regulations at the job sites in prominent locations.
 2. CONTRACTOR shall be responsible for training their workers in safe work practices and in proper removal methods when coming in contact with hazardous materials.
- E. Applicable Regulations (include but are not limited to):
1. RCRA, 1976 -Resource Conservation and Recovery Act: This federal statute regulates generation, transportation, treatment, storage or disposal of hazardous wastes nationally.
 2. Part 111, Act 451, 1994 -Michigan's Hazardous Waste Management Act: This statute regulates generation, transportation, treatment, storage and disposal of hazardous wastes in Michigan.

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REGULATED ABATEMENT OF MISCELLANEOUS MATERIALS

3. Part 121, Act 451, 1994 -Liquid Industrial Waste Act: This statute regulates the transportation of liquid industrial wastes in Michigan. This includes non-hazardous liquids and hazardous liquids, which are not subject to management under RCRA or Part 111, Act 451, 1994.
 4. Toxic Substances Control Act (TSCA), 1976. This statute regulates the generation, transportation, storage, and disposal of PCB wastes.
 5. The list provided in Section 01410 includes the regulations that are most frequently encountered.
- F. To use an off-site hazardous waste disposal facility, the CONTRACTOR must use the Uniform Hazardous Waste Manifest (shipping paper).
1. Hazardous wastes may not be disposed of in sanitary landfills used for solid waste.
 2. Hazardous waste manifests shall be signed by the OWNER and/or duly appointed OWNER representative.
- G. Federal, State and local laws and regulations may apply to the storage, handling, and disposal of hazardous materials and wastes generated at the Site. The list below provides topics and associated state or local agency responsible. Section 01410 cites the regulations that are most frequently applicable.

<u>Topic</u>	<u>Agency and Telephone Number</u>
Small quantity hazardous waste management, including hazardous waste stored in tanks	Resource Management Div., MDEQ (517) 373-9875 in Lansing, or District Office Certified County Health Department
Liquid industrial waste disposal (hazardous and non-hazardous)	Resource Management Div., MDEQ (517) 373-9875 in Lansing, or District Office
Disposal of hazardous waste into municipal sanitary sewers	Contact the superintendent of your wastewater treatment plant for permission
Discharges to surface water such as through a drain pipe or wastewater discharge	Water Division, MDEQ (517) 335-2690 in Lansing, or District Office
Discharges to groundwater, including septic systems	Water Resource Div., MDEQ (517) 241-1135 in Lansing, or District Office
Pollution Incident Prevention Plans (PIPP)	Resource Management Div., MDEQ (517) 335-2690 in Lansing, or District Office
Hazard Communication (for chemicals in the work place)	Michigan Department of Consumer and Industry Services (517) 373-1820
Burning of waste oil and other discharges to the air	Air Quality Div., MDEQ (517) 373-7023 in Lansing, or District Office
Registration of underground fuel storage tanks	Remediation Div., MDEQ (517) 335-7211 in Lansing, or District Office

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REGULATED ABATEMENT OF MISCELLANEOUS MATERIALS

<u>Topic</u>	<u>Agency and Telephone Number</u>
Installation, Inventory, testing & other requirements for above ground and underground storage tanks (for flammable and combustible)	Remediation Div., MDEQ (517) 335-7211 in Lansing, or District Office
Local fire prevention regulations and codes (including chemical storage requirements)	Local fire chief or fire marshal
Building and outdoor storage	Local government building or zoning official requirements (including setbacks)

1.2 MEASUREMENT

A. Removal and Disposal of Miscellaneous Materials

1. The removal and disposal of miscellaneous materials will be a lump sum pay item, consequently no measurements for payment will be conducted.
2. Estimated quantities of miscellaneous materials are included in the Pre-Demolition Hazardous Materials Survey Report.

PART 2 PRODUCTS

2.1 PACKAGING AND CONTAINERIZATION OF MATERIALS

- A. Packaging and containerization materials shall include but not be limited to the following:
1. Lab packing requirements per approved disposal or recycling facility.
 2. Fiberboard barrels
 3. DOT-approved removable head drums; roll-off boxes or equivalent
 4. Drum labels and marking which conform to 29 CFR 1926.58 K and all other Federal, State and local regulations
 5. Spill prevention countermeasure materials and control products consistent with 49 CFR 173 and CONTRACTOR approved SPCC plan.
 6. Sampling equipment and containers consistent with standard sampling techniques.

PART 3 EXECUTION

3.1 REMOVAL OF CHEMICAL FIRE EXTINGUISHERS

- A. Chemical fire extinguishers may be present at the Site. CONTRACTOR shall be responsible for the removal, proper handling, and disposal of all chemical fire extinguishers.

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REGULATED ABATEMENT OF MISCELLANEOUS MATERIALS

- B. CONTRACTOR shall properly collect, label and stage all chemical fire extinguishers throughout the Site. All chemical fire extinguishers shall be recycled or disposed at an approved facility. Chemical fire extinguishers shall be transported in a manner that minimizes the potential for discharge.

3.2 REMOVAL OF MERCURY DEVICES

- A. High intensity discharge lamps and fluorescent light bulbs that may contain mercury are present either in fixtures or stored in bulk. The approximate locations of these lamps/bulbs are identified in the Hazardous Materials Survey Report. CONTRACTOR shall remove all lamps/bulbs regardless of the estimated quantities provided in the Hazardous Materials Survey Report.
 - 1. Light fixtures and/or associated components may be suitable for recycling or resale. CONTRACTOR is encouraged to account for recycling or resale of such fixtures in its bid, if feasible.
 - 2. CONTRACTOR shall be responsible for the removal of all regulated lamps and bulbs from the associated lighting fixtures. All lamps and bulbs shall be carefully removed from the fixtures and placed in appropriate sized containers equipped with dividers.
 - 3. Containers intended for off-site recycling shall be either shrink-wrapped or placed in a secure crate to avoid accidental breakage. Containers shall be labeled as hazardous waste in accordance with applicable MDOT regulations.
 - 4. CONTRACTOR must use all precautions when handling lamps to avoid accidental breakage. Should accidental breakage of lamps occur, then the lamp debris shall be collected and placed in segregated reinforced drums or similar containers pending disposal.
 - 5. Light ballasts containing PCBs shall be managed in accordance with Section 13282 of this Bid Document.
- B. CONTRACTOR shall be responsible for the removal, transport and recycling or disposal of all mercury containing devices.

3.3 REMOVAL OF NON-HAZARDOUS EQUIPMENT OIL

- A. CONTRACTOR shall remove all oil filled equipment regardless of the estimated quantities provided in the Hazardous Materials Survey Report
- B. CONTRACTOR shall drain all free flowing oil from each oil-filled unit. All oil shall be drained into appropriate storage containers, consolidated, and staged on-site with appropriate labeling pending transport and disposition to an approved reclamation facility.
- C. Upon removal of all free-flowing oil, equipment will be released by OWNER and/or duly appointed OWNER representative for disposition.

SECTION 13285

REGULATED ABATEMENT OF MISCELLANEOUS MATERIALS

3.4 REMOVAL OF MISCELLANEOUS CHEMICALS, CONTAINERS, AND LIQUIDS

- A. Numerous liquid filled containers, miscellaneous chemicals, and other hazardous materials banned from landfill disposal may be present at the site. The approximate locations of these materials are identified in the Hazardous Materials Survey Report. CONTRACTOR shall remove all liquid filled containers, miscellaneous chemicals, and other hazardous materials banned from landfill disposal, regardless of the estimated quantities provided in the Hazardous Materials Survey Report
- B. CONTRACTOR shall remove all liquid filled containers, miscellaneous chemicals, and other hazardous materials banned from landfill disposal. All materials shall be staged on-site with appropriate labeling pending transport and disposition to an OWNER and/or OWNER representative approved reclamation/disposal facility.
- C. Upon removal of all free-flowing oil, equipment will be released by the OWNER and/or the duly appointed OWNER representative for disposition.

3.5 TRANSPORTATION

- A. CONTRACTOR shall evaluate all materials associated with demolition activities to designate material classifications for transportation purposes.
- B. CONTRACTOR shall package all hazardous materials for transportation and storage in accordance with 49 CFR 172.101 and applicable sections of 49 CFR 173. In addition, CONTRACTOR shall comply with any packaging requirements identified by the approved disposal or recycling facilities used for waste disposition.
- C. CONTRACTOR shall label and mark all hazardous materials packaged and temporarily staged for subsequent off-site transport. Hazardous materials that have been specifically prepared for off-site transport shall be labeled in accordance with 40 CFR 172.101 and 49 CFR 173 Subparts D and E. CONTRACTOR shall provide all labels.
- D. CONTRACTOR shall ensure that the transporter has applied all appropriate placards to the transport vehicle according to the requirements outlined in 49 CFR 172.101 and 49 CFR Subpart F and all applicable MDOT/DOT regulations. CONTRACTOR or transporter shall provide all such placards.
- E. CONTRACTOR shall submit the manifest to the OWNER and/or duly appointed OWNER representative for review prior to signature by the OWNER and/or duly appointed OWNER representative prior to removal of any material-

--END OF SECTION--

SECTION 13286

INSPECTION DAYS – AIR MONITORING

1. PART 1 GENERAL

1.1 SECTION INCLUDES

- A. The CONTRACTOR is responsible to provide abatement oversight and asbestos air monitoring/sampling. All inspection and monitoring during normal work hours will be provided by the CONTRACTOR.

1.2 RELATED SECTIONS

- A. Section 01100 – Safety, Health, and Emergency Response
- B. Section 13281 – Asbestos Abatement

1.3 REFERENCE STANDARDS

The publications listed below form a part of this Section to the extent referenced. The publications are referenced in the text by Basic designation only.

- A. American Society for Testing and Materials (ASTM)
 - 1. ASTM 1368 Visual Inspection of Asbestos Abatement Projects.
- B. Code of Federal Regulations (CFR)
 - 1. CFR 29 Part 1926/1910 Construction Industry Occupational Safety and Health Standards.
 - 2. CFR 40 Part 61 National Emissions Standards for Hazardous Air Pollutants.
 - 3. CFR 40 Part 763 Asbestos.
- C. National Institute of Occupational Safety and Health (NIOSH)
 - 1. NIOSH – 01 Manual of analytical Methods.
- D. State of Michigan
 - 1. P.A. Act 451, Michigan Natural Resources and Environmental Protection Act
 - 2. MIOSHA Act 154 General Industry and Construction (as amended) Safety Standards.

1.4 MEASUREMENT AND PAYMENT

- A. The CONTRACTOR will state on the Bid Form the number of Inspection – Air Monitoring Days required for the completion of this project. The days include one (1) Air Monitoring setup days shall be before abatement begins to allow the

CONTRACTOR to collect background samples in each structure and one (1) final clearance days which shall be after abatement activities are believed to be complete.

- B. The CONTRACTOR should write in the blank space provided the total number of Inspection – Air Monitoring Days he feels it will take to complete the project (i.e. the number of days asbestos abatement will occur).
- C. The total Inspection – Air Monitoring Day's fee bid will be part of the total contract price used to determine project funding and award.
- D. The CONTRACTOR is responsible to pay for the Inspection – Air Monitoring days required to complete the project and/or beyond the date of Substantial Completion or other date agreed in writing with OWNER prior to Award.

Final determination on number of Inspection – Air Monitoring Technicians necessary will be decided based on Work Plan submitted by CONTRACTOR and number of workers, regulated areas, buildings and shifts which will be utilized to complete the Work.

- E. Inspection – Air Monitoring Days will be paid direct by CONTRACTOR.

1.5 DEFINITIONS

- A. Time-Weighted Average
The Time Weighted Average (TWA) is an average of airborne concentration of fibers (longer than 5 micrometers) per cubic centimeter of air based on an 8-hour exposure duration, which represents the employee's 8-hour workday as defined in Appendix A of 29 CFR Part 1926, Section 1926.1101.
- B. Competent Person
As defined in 29 CFR Part 1926, should be experienced in administering and supervising asbestos abatement projects. A competent person should be familiar with safe and reasonable work practices, abatement methods, protective measures for personnel, inspection of asbestos abatement work areas, evaluating the adequacy of containment barriers, placement and operation of local exhaust systems, waste containment and disposal procedures, decontamination units, and site health and safety health requirements. The designated "competent person" will be responsible for compliance with applicable local State, and Federal requirements and for enforcing the site-specific Health and Safety Plan (HASP).

1.6 SUBMITTALS

- A. Air Sampling Results
CONTRACTOR shall conduct fiber counting for air quality during each sampling event and provide results within 24 hours of completion of each sampling event. CONTRACTOR shall notify OWNER and/or duly appointed OWNER representative immediately if any airborne levels of asbestos fibers are

encountered above levels established by regulation or these specifications. CONTRACTOR will provide a table including sampling results within 5 working days of the date of collection.

1.7 REGULATOR REQUIREMENTS

- A. Health and Safety Compliance
Comply with all applicable laws, ordinances, rules, regulations, and specifications described in this Section and Section 01110, Safety, Health and Emergency Response. While conducting all handling, storing, transporting, and disposing activities for asbestos waste materials, comply with the applicable requirements of 29 CFR Part 1910, 29 CFR Part 1926, 40 CFR Part 61, Subpart A, and 40 CFR Part 61, Subpart M, NFPA 10, NFPA 70, NFPA 90A, NFPA 101. In case of a discrepancy between the requirements of this specification, applicable laws, rules, criteria, ordinances, regulations, and referenced documents vary, the most stringent requirement as determined by the AKT PEERLESS shall apply.

2. PART 3 EXECUTION

2.1 Office / Power

- A. The CONTRACTOR is responsible for providing temporary staging / office space and electrical power to the OWNER and/or duly appointed OWNER representative.

2.2 Work Hours and Days

- A. An inspection day shall be up to a 10-hour day, Monday thru and including Friday and not a holiday day when an inspector or resident project representative is required to observe and collect air samples during all regulated asbestos abatement work. With prior approval of OWNER and/or duly appointed OWNER representative work may be conducted outside of the normal work hours shown.
- B. The CONTRACTOR shall be responsible for coordinating with the OWNER and/or duly appointed OWNER representative, all starting and stopping times for each workday. Unless approved in writing by OWNER and/or duly appointed OWNER representative in advance, any asbestos abatement work performed by the CONTRACTOR without the Inspection-Air Monitoring on-site will not be paid.

2.3 Air Monitoring

- A. CONTRACTOR will conduct personal air sampling as defined by the previously noted regulations. CONTRACTOR will also conduct baseline, contiguous, AFD discharge, final clearance and other air monitoring at his/her discretion for airborne asbestos fibers. Adhere to all permit and regulatory requirements for air quality and emissions control.

- B. CONTRACTOR will perform sampling and analysis for airborne concentration of asbestos fibers in accordance with 29 CFR Part 1926 Section 1926.1101 and as specified herein. Personal air monitoring samples will be collected to represent the work activities for each shift. Results of the personal samples shall be made available to the OWNER and/or duly appointed OWNER representative. The CONTRACTOR shall maintain a fiber concentration inside enclosed containment regulated work area equal to or less than 0.1 f/cc expressed as an 8 hour, TWA during asbestos abatement. If fiber concentration rises above 0.1 f/cc, the CONTRACTOR will notify OWNER and/or duly appointed OWNER representative and may elect to examine work procedures to determine the cause and work with the foreman/competent person to implement corrective actions.
- C. Workers shall not be exposed to an airborne fiber concentration in excess of 1.0 f/cc, as average over a sampling period of 30 minutes. If either an environmental concentration of 1.0 f/cc expressed as an 8-hour TWA or a personal excursion concentration of 1.0 f/cc expressed as a 30-minute sample occur inside the enclosed work area, OWNER and/or duly appointed OWNER representative will be notified immediately. CONTRACTOR will immediately institute controls and work practices to reduce airborne fiber levels below prescribed limits in the work area.
- D. CONTRACTOR will conduct personal sampling required by 29 CFR Part 1926 Section 1926.1101, in accordance with the NIOSH Method 7400, Phase Contrast Microscopy (PCM).
- E. Per regulation, environmental and perimeter air monitoring outside of regulated containment areas shall not exceed clearance levels contained in 40 CFR part 763, subpart E, which is 0.01 f/cc or no more than background levels representing the same area before the asbestos work began.
- F. For final clearance samples, CONTRACTOR is responsible for third party verification and CONTRACTOR appointed third party will conduct sampling at a sufficient velocity and time to collect a sample volume necessary to establish the limit of detection of the method used at the Michigan Clearance standard of 0.05 f/cc or background levels, whichever is higher. Background, environmental, quality assurance and final air clearance samples will be collected and analyzed according to NIOSH Method 7400 methodology.
 - 1. Routine Air Sampling
 - a. CONTRACTOR will provide personal sampling as indicated in 29 CFR Part 1926 Section 1926.1101, state and local requirements. Areas may include, but not be limited to, sampling at least once during every shift outside the clean room entrance to the containment area, inside the clean room, outside the load-out unit exit, and at the exhaust discharge point of the local exhaust system.
 - 2. Sampling After Final Clean-up (Clearance Sampling)
 - a. Prior to conducting final air clearance monitoring, CONTRACTOR is responsible to conduct a final visual

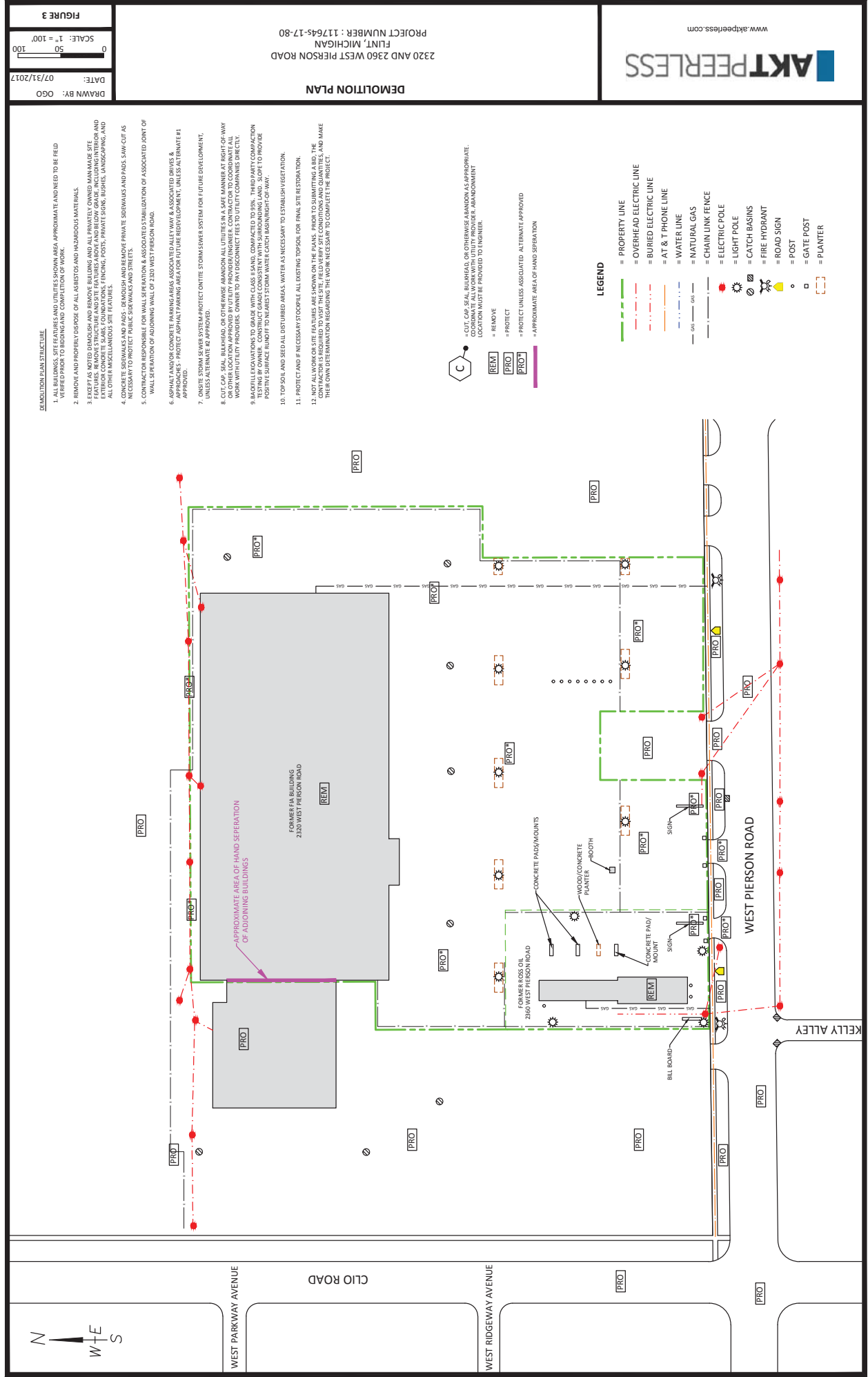
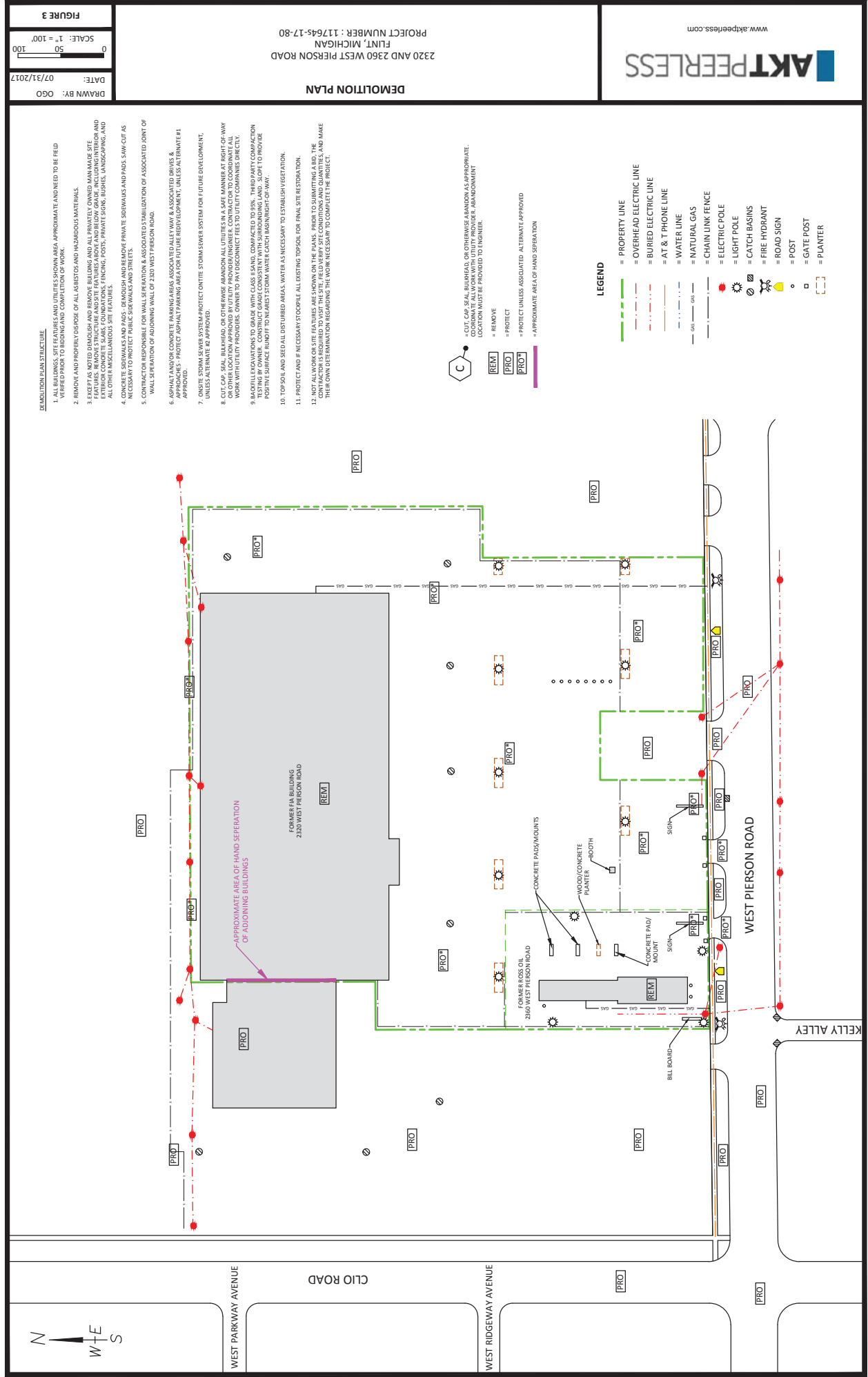
inspection performed by third party. Final clearance air monitoring shall not begin until acceptance of this final cleaning by the CONTRACTOR third party representative. Comply with the sampling and analytical methods provided in NIOSH-01 Method 7400 (PCM).

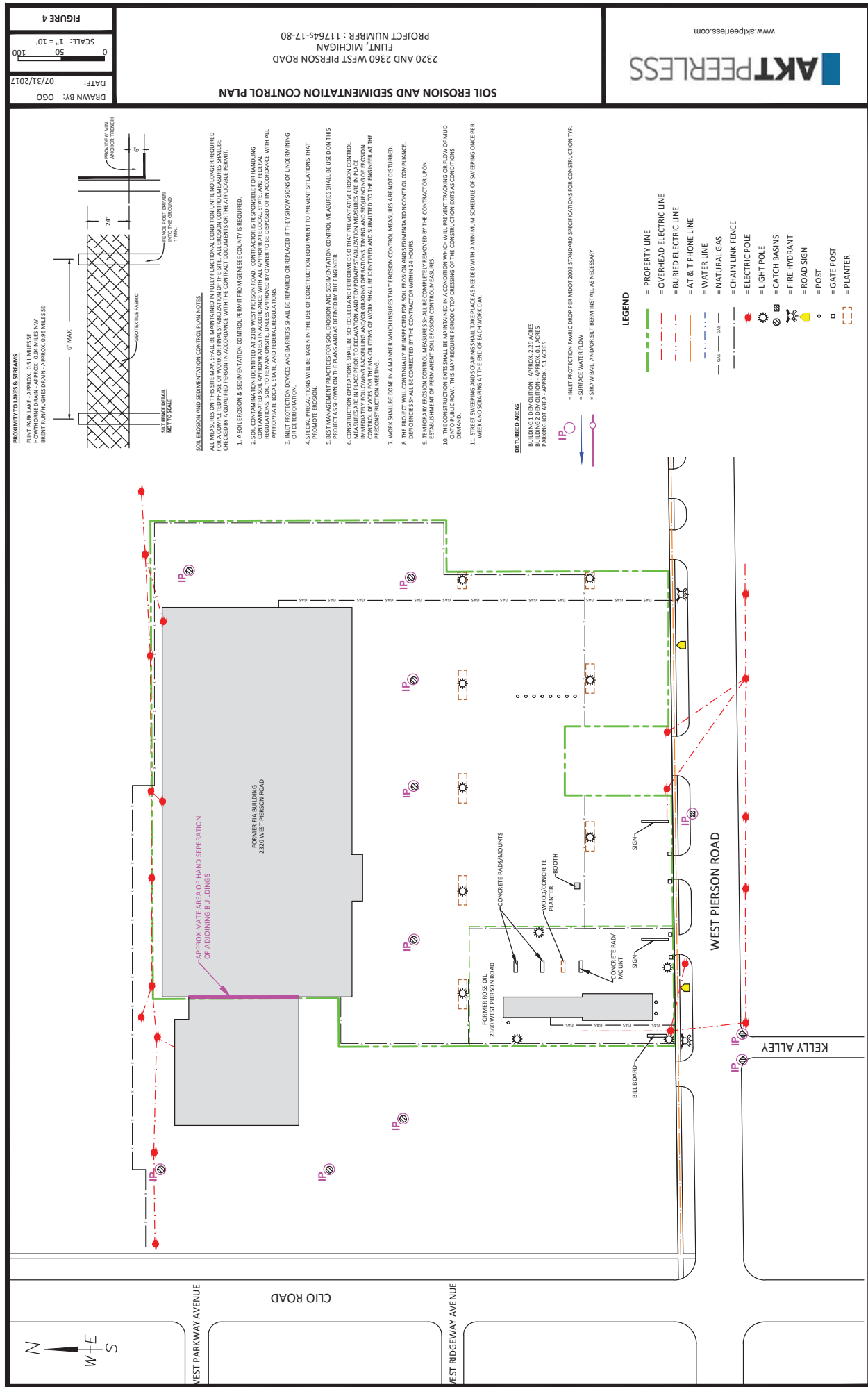
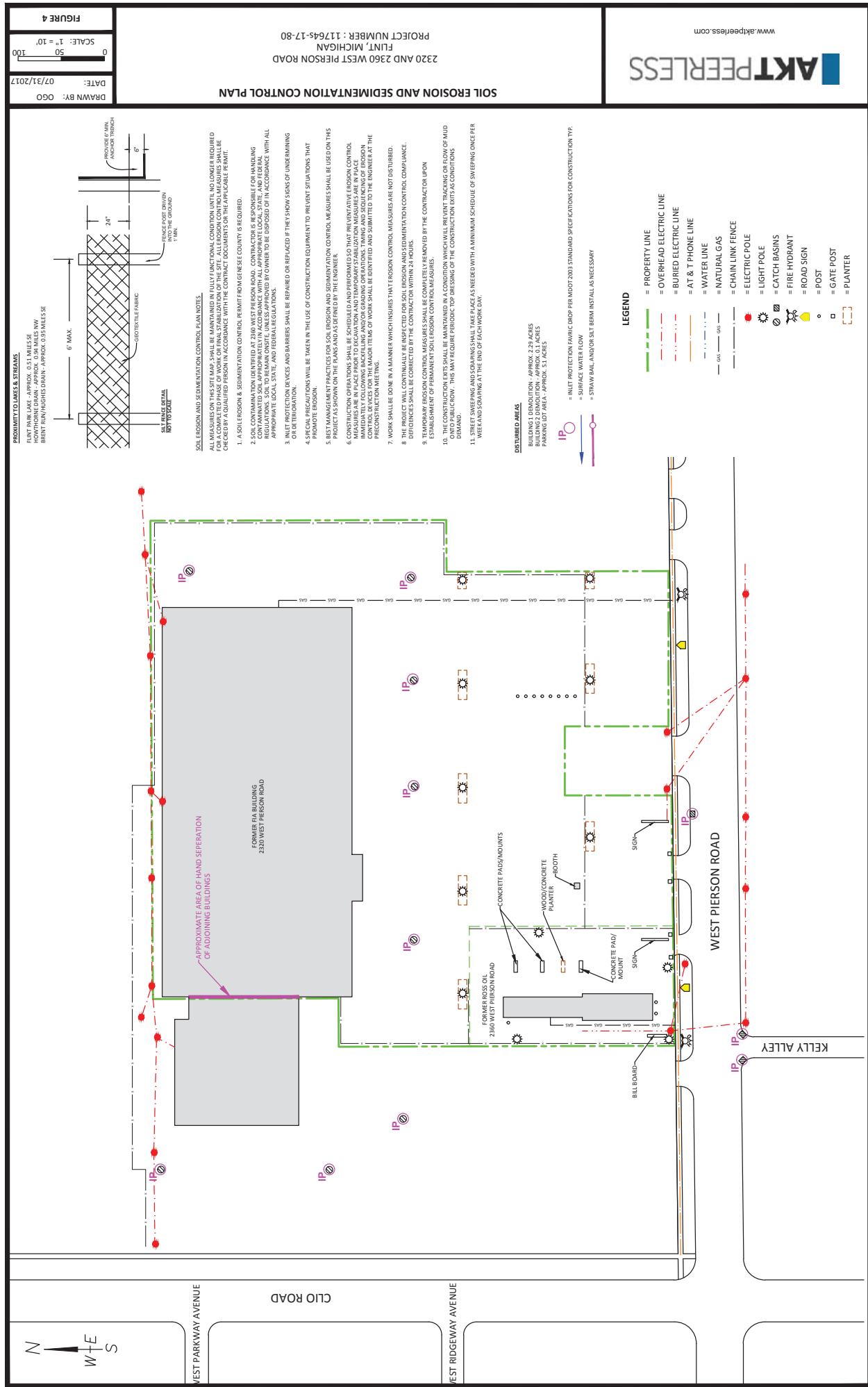
3. Failure to Meet Air Quality Requirements
 - a. If clearance sampling results fail to meet the final clean-up requirements, area will be re-cleaned and the area re-sampled until final clean-up requirements are met. Costs associated with additional samples, cleaning, and inspections will be paid by the CONTRACTOR.
4. Final Cleaning
 - a. Abate asbestos by collecting, packing, and storing all gross contamination in accordance with all references, regulations and specifications. Once cleaning has been completed, conduct a visual pre-inspection of the cleaned area. A final inspection and air monitoring event will be performed to verify adequacy of clean-up.
 - b. Re-cleaning and follow-up inspections shall be at the CONTRACTOR's expense. Upon completion of the final cleaning, conduct a final visual inspection of the cleaned area with the CONTRACTOR third party representative. Document the results.
 - c. If CONTRACOR third party representative determines that the abatement area does not meet final cleaning requirements, re-clean as necessary and conduct additional follow-up inspection with CONTRACTOR third party representative.

END OF SECTION

FIGURES – DRAWINGS







APPENDIX A

PHOTOGRAPHS



EXTERIOR VIEW OF SUBJECT BUILDING FACING NORTH



VIEW OF SUBJECT BUILDING FACING SOUTH WEST



VIEW OF SUBJECT BUILDING FACING NORTHEAST



INTERIOR VIEW OF WASH BAY #1 (FS-3) OF SUBJECT BUILDING



INTERIOR VIEW OF MAINTANANCE ROOM (FS-4) OF SUBJECT BUILDING



INTERIOR VIEW OF INTERIOR OF MAIN SERVICE BAY (FS-1) OF SUBJECT BUILDING



**REPRESENTATIVE VIEW OF SUBJECT BUILDING
EXTERIOR FACING NORTHEAST – SOUTHWEST CORNER OF BUILDING**



**REPRESENTATIVE VIEW OF SUBJECT BUILDING
EXTERIOR FACING NORTHWEST – SOUTH SIDE OF BUILDING**



PROPERTY PHOTOGRAPHS

COMMERCIAL PROPERTY
2320 WEST PIERSON ROAD
FLINT, MICHIGAN

TAKEN BY: AKT
DATE: JULY 2016

AKT PROJECT NUMBER:
11764s-2-194



**REPRESENTATIVE VIEW OF SUBJECT BUILDING
EXTERIOR FACING NORTH – SOUTH SIDE OF BUILDING**



**REPRESENTATIVE VIEW OF SUBJECT BUILDING
EXTERIOR FACING NORTHWEST – SOUTH SIDE OF BUILDING**



PROPERTY PHOTOGRAPHS

COMMERCIAL PROPERTY
2320 WEST PIERSON ROAD
FLINT, MICHIGAN

TAKEN BY: AKT
DATE: JULY 2016

AKT PROJECT NUMBER:
11764s-2-194



**REPRESENTATIVE VIEW OF SUBJECT BUILDING
EXTERIOR FACING NORTHWEST – SOUTHEAST CORNER OF BUILDING**



**REPRESENTATIVE VIEW OF SUBJECT BUILDING
EXTERIOR FACING SOUTHEAST – EAST END OF BUILDING**



PROPERTY PHOTOGRAPHS

COMMERCIAL PROPERTY
2320 WEST PIERSON ROAD
FLINT, MICHIGAN

TAKEN BY: AKT
DATE: JULY 2016

AKT PROJECT NUMBER:
11764s-2-194



REPRESENTATIVE VIEW OF SUBJECT BUILDING
EXTERIOR FACING SOUTHWEST – NORTH SIDE OF BUILDING



REPRESENTATIVE INTERIOR VIEW
FIRE DAMAGED AND COLLAPSED AREA



PROPERTY PHOTOGRAPHS

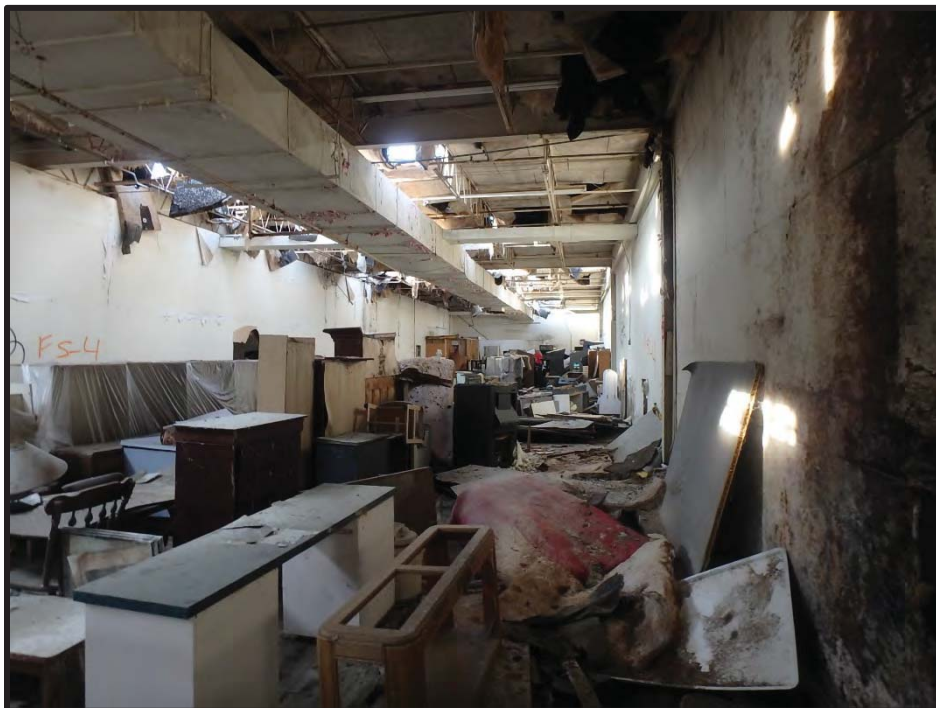
COMMERCIAL PROPERTY
2320 WEST PIERSON ROAD
FLINT, MICHIGAN

TAKEN BY: AKT
DATE: JULY 2016

AKT PROJECT NUMBER:
11764s-2-194



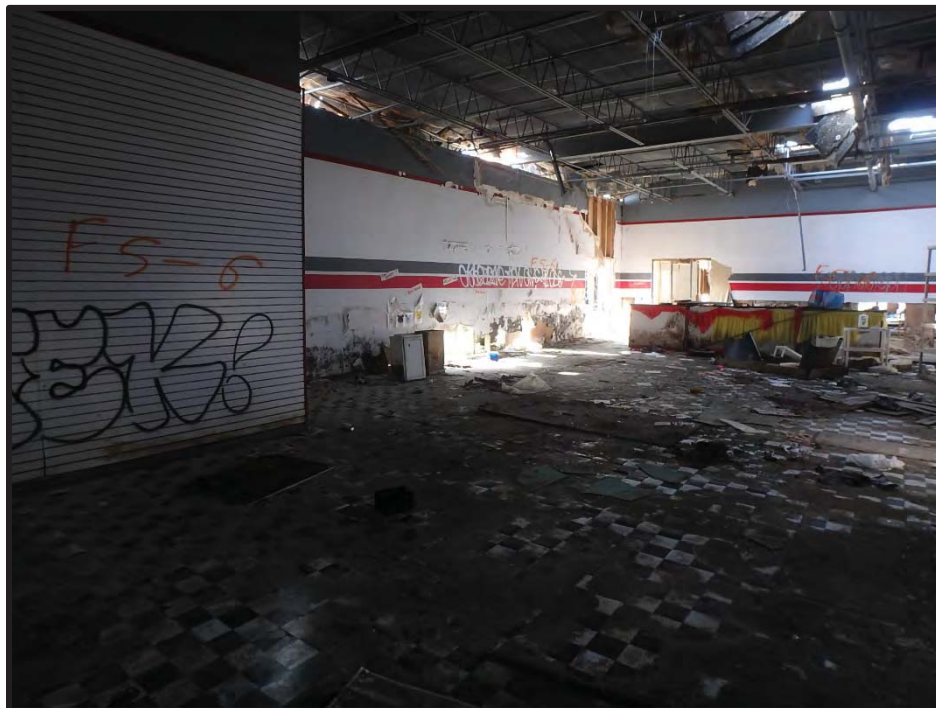
**REPRESENTATIVE INTERIOR VIEW
FIRE DAMAGED AND COLLAPSED AREA**



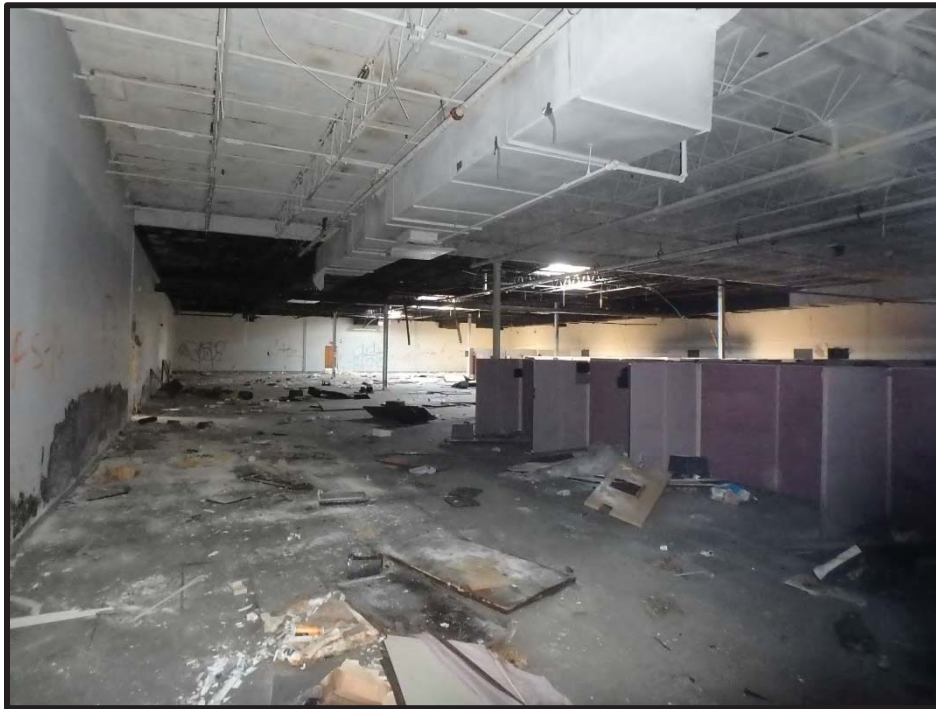
**REPRESENTATIVE INTERIOR VIEW
HEAVY DEBRIS AND ONSITE CONDITION**



REPRESENTATIVE INTERIOR VIEW
HEAVY DEBRIS AND CURRENT CONDITION



REPRESENTATIVE INTERIOR VIEW
ONSITE CONDITION



REPRESENTATIVE INTERIOR VIEW
ONSITE CONDITION



REPRESENTATIVE INTERIOR VIEW
ONSITE CONDITION



PROPERTY PHOTOGRAPHS

COMMERCIAL PROPERTY
2320 WEST PIERSON ROAD
FLINT, MICHIGAN

TAKEN BY: AKT
DATE: JULY 2016

AKT PROJECT NUMBER:
11764s-2-194



REPRESENTATIVE INTERIOR VIEW
HEAVY DEBRIS AND ONSITE CONDITION



REPRESENTATIVE INTERIOR VIEW
COLLAPSED ROOFING SYSTEM



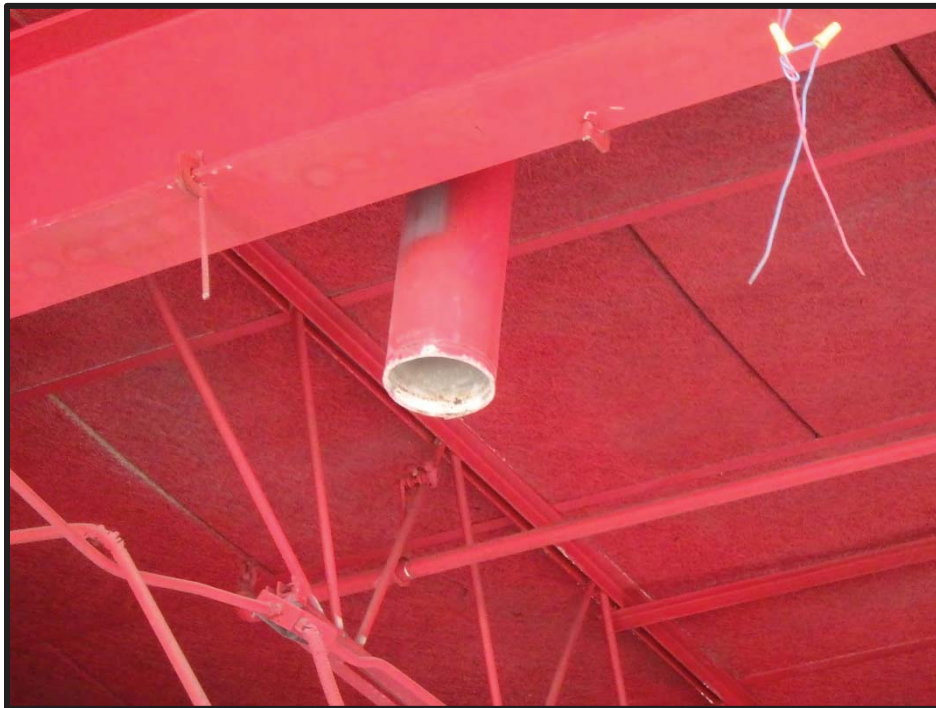
REPRESENTATIVE INTERIOR VIEW
ASSUMED ASBESTOS CONTAINING VERMICULITE AND ASSOCIATED DEBRIS



REPRESENTATIVE INTERIOR VIEW
ASSUMED ASBESTOS CONTAINING THERMAL COMPONENT



**REPRESENTATIVE INTERIOR VIEW
ASBESTOS CONTAINING TRANSITE PIPE AND ASSOCIATED DEBRIS**



**REPRESENTATIVE INTERIOR VIEW
ASBESTOS CONTAINING TRANSITE PIPE IN CEILING**



PROPERTY PHOTOGRAPHS

COMMERCIAL PROPERTY
2320 WEST PIERSON ROAD
FLINT, MICHIGAN

TAKEN BY: AKT
DATE: JULY 2016

AKT PROJECT NUMBER:
11764s-2-194

APPENDIX B

HAZARDOUS MATERIALS IDENTIFICATION SURVEYS



PRE-DEMOLITION HAZARDOUS MATERIALS SURVEY AND ORDERED DEMOLITION RECOMMENDATION

Report Date: October 14, 2016

Client: Genesee County Land Bank Authority
452 South Saginaw Street, 2nd Floor
Flint, Michigan 48502

Subject: Results of Pre-Demolition Hazardous Materials Survey and Ordered Demolition
Recommendation
AKT Peerless Project No.: 11957s-2-194

Location: 2360 West Pierson Road
Flint, Michigan

AKT Peerless Environmental & Energy Services (AKT Peerless) was retained by the Genesee County Land Bank Authority (the Client) to perform a Hazardous Material (HazMat) Survey of the structure located at 2360 West Pierson Road in Flint, Michigan. The purpose of the survey was to identify building materials containing asbestos and other obvious hazardous materials that will require special handling procedures or removal activities before conducting general building demolition activities. The inspection was performed on October 3, 2016. Photographs are included as Attachment 1.

AKT Peerless encountered building-specific limitations during the survey including, but not limited to, the following:

- The buildings lacked electrical lighting. AKT Peerless used portable spotlights and flashlights to improve general viewing conditions.
- No dismantling of electrical, mechanical, or hydraulic equipment was conducted.
- Interior observations of the basement in the main service bay (FS-1) were limited by approximately 3 to 4 feet of standing water; therefore, FS-1 could not be thoroughly inspected.

AKT Peerless' Pre-Demolition Hazmat Survey was performed for the benefit of the Genesee County Land Bank Authority (GCLBA), who may rely on the contents and conclusions in this report.

Quantities of identified Asbestos Containing Materials (ACM) reported in this document are provided for reference only and are not authorized to be relied upon for Contractor abatement bidding purposes. AKT Peerless strongly cautions against utilizing the reported material quantities without field verification. It is expected that contractors will utilize their own quantities when preparing bid pricing. AKT Peerless recommends that a contingency allowance be used to address estimating method uncertainties for quantified materials.

Scope of Work

The scope of work for AKT Peerless' asbestos survey is based on the Asbestos School Hazard Abatement Reauthorization Act (ASHARA). The purpose of ASHARA is to extend the Asbestos Hazard Emergency Response Act (AHERA) inspection and management requirements to commercial and industrial buildings. Further, the survey is based on the ASTM Standard E 1368, *Standard Practice for Assessment of Asbestos Containing Building Materials in Connection with Real Estate Transaction*. Since the buildings will be demolished, they are also subject to the EPA National Emission Standard for Hazardous Air Pollutants (NESHAP) regulation.

Asbestos Survey Procedures

The following sections of this survey outline the approach, procedures, and methods employed by AKT Peerless to complete the Asbestos Survey of the on-site buildings.

Description of Homogeneous Areas

During the asbestos survey, AKT Peerless identified Homogeneous Areas (HA) based on appearances and type of materials observed. As defined under AHERA, a homogeneous area is an area that appears similar throughout in terms of its color, texture, and date of material application. Five homogeneous areas were identified during the survey.

Description of Functional Spaces

AKT Peerless identified thirteen Functional Spaces (FS) in the building. In general, functional spaces are defined as spatially distinct units or areas within a building. These spaces can include office areas, storage spaces, services areas, etc. However, a functional space can also be delineated based on general building layout, facility use factors, and can be assigned using various arbitrary factors that were useful in the completion of this survey. Functional spaces can also include: utility areas, attics, tunnels and mechanical areas. Functional Spaces (rooms and room equivalents) are field marked inside the structure.

Bulk Sample Material Inventory

Based on the five homogeneous areas and thirteen functional spaces identified during the survey, AKT Peerless collected a total of fourteen bulk samples for laboratory analysis.

Samples were collected in polyethylene containers and labeled with an identification number. In general, AKT Peerless' sampling protocol consisted of: (a) extracting a sample with a clean knife, chisel, or coring tool and (b) placing the sample into its properly labeled sample container.

The sampling protocol used to procure the appropriate number of samples for an identified homogenous area of suspect ACM is based on sampling guidelines outlined under AHERA.

Laboratory Analytical Procedures

All samples collected were submitted to and analyzed by Apex Research of Whitmore Lake, Michigan. Apex Research is accredited by the American Industrial Hygiene Association (AIHA) and participates in the NVLAP. Chain-of-custody guidelines were followed to ensure proper handling and delivery of the samples. The samples were analyzed using Polarized Light Microscopy (PLM) with dispersion staining in accordance with the following USEPA guidance document titled: Determination of Asbestos in Bulk Building Materials: EPA/600/R-93/116, and dated July 1993.

The USEPA defines ACM as those materials that contain greater than one percent asbestos. Friable materials are defined as those that can be crumbled or reduced to powder by hand pressure. The National Emission Standards for Hazardous Air Pollutants (NESHAP) for asbestos, dated November 1990 stipulates that any friable material identified as containing asbestos in concentrations greater than one (1) percent must be considered ACM.

Percentages and types of fibrous components in these samples were determined by visual estimation of the amount of fibrous materials versus the total amount of material present. The Occupational Safety and Health Administration (OSHA) definition of an ACM is any material containing more than one (1) percent asbestos. Materials containing one (1) percent or less asbestos are considered non-asbestos containing.

AKT Peerless utilized the “positive-stop” method of sample analysis. In this method, analysis is stopped on a group of samples once the first positive (e.g., greater than 1% asbestos) sample is analyzed. According to the United States Environmental Protection Agency (USEPA), if one sample of a homogenous material is identified to be asbestos containing, the entire material must be considered asbestos containing.

Asbestos Sampling Results

The following materials were sampled at the site:

SAMPLED MATERIALS SUMMARY (Asbestos Containing Materials In Bold)

Material Description (HA)	Location (FS) (See Figure 2)	Approximate Quantity	F/NF	Asbestos Content
HA-1: White Exterior Stucco	FS-13 Building Exterior	2,400 SF	NF	1.75% CHR (PC)
HA-2: Drywall	FS-1 Main Service Bay FS-2 Office #1 FS-11 Bathroom #1 FS-12 Bathroom #2	3,100 SF	NF	NAD
HA-3: Fire Brick	FS-4 Maintenance Room (In Boilers and on Floor)	20 CF	F	5% CHR
HA-4: 2'x4' White Ceiling Tiles with Pinholes and Fissures	FS-1 Main Service Bay FS-4 Maintenance Room	50 CF	F	NAD
HA-5: Roofing Material	FS-13 Building Exterior	3,900 SF	NF	NAD

Table Notes:

F = Friable NF = Non-friable FS = Functional Space NAD = No Asbestos Detected CHR = Chrysotile
AMO = Amosite SF = Square Feet LF = Linear Feet PC= Point Count NE = Not Estimated
CRO= Crocidolite ACT= Actinolite CF= Cubic Feet NS = Not Sampled
ACM = Asbestos Containing Material (Greater than 1% Asbestos Content)

Samples were collected by Michigan Department of Licensing and Regulatory Affairs (MDLARA) accredited Asbestos Inspectors (Mark Breeden A44842). Laboratory results are included in Attachment 2.

Asbestos Recommendation:

Based on the findings of the site review and sampling, AKT Peerless recommends the following:

1. Based on the findings of the Asbestos Survey and the anticipated demolition of the building, AKT Peerless recommends that all identified ACMs be properly removed by a licensed contractor in accordance with applicable state and federal regulations.
2. Suspect materials discovered during the demolition are required to be assumed asbestos containing and handled appropriately in accordance with State and Federal Regulations.

Other Hazardous Materials Inventory Results

AKT Peerless conducted field identification of other potentially hazardous/regulated materials. Due to the extensive structure damage to the building which has resulted in the collapse of the structure, observations were limited. Only surficial observations were conducted by AKT Peerless. The following materials were identified at the site:

HAZARDOUS/ REGULATED MATERIALS SUMMARY

Material Description	Location	Number of Units	Approximate Quantity/ Comments
Spray Cans	FS-1 Main Service Bay	1	Aerosol.
High Pressure Sodium Lights	FS-1 Main Service Bay	3	May Contain Sodium or other Heavy Metal
	FS-3 Wash Bay #1	1	
	FS-13 Exterior	20	
Roof Cement	FS-4 Maintenance Room	1	1 Gallon Container / ½ Full
Light Ballasts	FS-1 Main Service Bay	11	Possibly Oil or PCB Containing
	FS-2 Office #1	2	
Paint	FS-4 Maintenance Room	1	1 Gallon Container / ½ Full
Tires	FS-1 Main Service Bay	1	Contains Rubber
	FS-4 Maintenance Room	2	
Fluorescent Tube Lighting	FS-1 Main Service Bay	2	Possibly Contains Mercury
	FS-2 Office #1	4	
Liquid (oil/water mixture) in basement	Basement	19,000-G	Petroleum containing

Hazardous Materials Recommendation:

These materials and others items banned from landfill disposal identified during the demolition should be properly removed and disposed of in accordance with applicable regulations. Furthermore, the basement liquid should be analyzed to determine the appropriate disposal methods prior to demolition activities.

Limitations

The information and opinions obtained in this report are for the exclusive use of the GCLBA. No distribution to or reliance by other parties may occur without the express written permission of AKT Peerless. AKT Peerless will not distribute this report without your written consent or as required by law or by a Court order. The information and opinions contained in the report are given in light of that

assignment. The report must be reviewed and relied upon only in conjunction with the terms and conditions expressly agreed upon by the parties and as limited therein. Any third parties who have been extended the right to rely on the contents of this report by AKT Peerless (which is expressly required prior to any third-party release), expressly agrees to be bound by the original terms and conditions entered into by AKT Peerless and the Client.

Subject to the above and the terms and conditions, AKT Peerless accepts responsibility for the competent performance of its duties in executing the assignment and preparing reports in accordance with the normal standards of the profession, but disclaims any responsibility for consequential damages. Although AKT Peerless believes that results contained herein are reliable, AKT Peerless cannot warrant or guarantee that the information provided is exhaustive or that the information provided by the Client, Property Owner, or third parties is complete or accurate.

Submitted by:**AKT Peerless Environmental and Energy Services**

Saginaw, Michigan Office

Phone: 989.754.9896

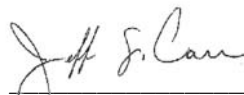
Fax: 989.754.3804

Report prepared by:



Mar Breeden
Environmental Consultant
MIOSHA CSHD Asbestos Inspector
Accreditation Number: A44842

Report reviewed by:



Jeff Carr
Project Manager
MIOSHA CSHD Asbestos Inspector
Accreditation Number: A36083

Attachments:

Attachment 1 Photographs
Attachment 2 Asbestos Laboratory Results and Chain of Custody

ATTACHMENT 1

Photographs



EXTERIOR VIEW OF SUBJECT BUILDING FACING NORTH



VIEW OF SUBJECT BUILDING FACING SOUTH WEST



VIEW OF SUBJECT BUILDING FACING NORTHEAST



INTERIOR VIEW OF WASH BAY #1 (FS-3) OF SUBJECT BUILDING



INTERIOR VIEW OF MAINTANANCE ROOM (FS-4) OF SUBJECT BUILDING



INTERIOR VIEW OF INTERIOR OF MAIN SERVICE BAY (FS-1) OF SUBJECT BUILDING

ATTACHMENT 2

Asbestos Laboratory Results and Chain of Custody



Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 2360 W. Pierson Rd., Flint, MI
Project # 11957s-2-194

Report To:

Mr. Mark Breeden
AKT Peerless
214 Janes Ave.
Saginaw, MI 48607

ARI Report # 16-67337
Date Collected: 10/03/16
Date Received: 10/05/16
Date Analyzed: 10/11/16
Date Reported: 10/11/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 67337 - 01 Cust. #: 1-1 Material: Exterior Stucco White Location: Appearance: grey, fibrous, homogenous Layer: 1 of 1	Asbestos Present: YES Chrysotile - 1.75% POINT COUNT RESULT	Other - 98.25%
Lab ID #: 67337 - 02 Cust. #: 1-2 Material: Exterior Stucco White Location: Appearance: Layer: of	Asbestos Present: NOT ANALYZED	
Lab ID #: 67337 - 03 Cust. #: 1-3 Material: Exterior Stucco White Location: Appearance: Layer: of	Asbestos Present: NOT ANALYZED	

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate may not be used by the customer to claim product endorsement by NVLAP or any agency of the US Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



NVLAP Lab Code 102118-0



Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 2360 W. Pierson Rd., Flint, MI
Project # 11957s-2-194

Report To:

Mr. Mark Breeden
AKT Peerless
214 Janes Ave.
Saginaw, MI 48607

ARI Report # 16-67337
Date Collected: 10/03/16
Date Received: 10/05/16
Date Analyzed: 10/11/16
Date Reported: 10/11/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 67337 - 04 Cust. #: 2-1 Material: Drywall Location: Appearance: white, fibrous, nonhomogenous Layer: 1 of 2	Asbestos Present: NO No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 67337 - 04a Cust. #: 2-1 Material: Joint Compound Location: Appearance: white, nonfibrous, homogenous Layer: 2 of 2	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 67337 - 05 Cust. #: 2-2 Material: Drywall Location: Appearance: white, fibrous, nonhomogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Cellulose - 20% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

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NVLAP Lab Code 102118-0



Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 2360 W. Pierson Rd., Flint, MI
Project # 11957s-2-194

Report To:

Mr. Mark Breeden
AKT Peerless
214 Janes Ave.
Saginaw, MI 48607

ARI Report # 16-67337
Date Collected: 10/03/16
Date Received: 10/05/16
Date Analyzed: 10/11/16
Date Reported: 10/11/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 67337 - 06 Cust. #: 2-3 Material: Drywall Location: Appearance: white, fibrous, nonhomogenous Layer: 1 of 2	Asbestos Present: NO No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 67337 - 06a Cust. #: 2-3 Material: Joint Compound Location: Appearance: white, nonfibrous, homogenous Layer: 2 of 2	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 67337 - 07 Cust. #: 3-1 Material: Fire Brick Inside Boilers Location: Appearance: brown, fibrous, homogenous Layer: 1 of 1	Asbestos Present: YES Chrysotile - 5%	Vermiculite - 20% Other - 75%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

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NVLAP Lab Code 102118-0



Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 2360 W. Pierson Rd., Flint, MI
Project # 11957s-2-194

Report To:

Mr. Mark Breeden
AKT Peerless
214 Janes Ave.
Saginaw, MI 48607

ARI Report # 16-67337
Date Collected: 10/03/16
Date Received: 10/05/16
Date Analyzed: 10/11/16
Date Reported: 10/11/16

Sample Information**Asbestos Type/Percent****Non-Asbestos**

Lab ID #: 67337 - 08
Cust. #: 3-2
Material: Fire Brick Inside Boilers
Location:
Appearance:
Layer: of

Asbestos Present:

NOT ANALYZED

Lab ID #: 67337 - 09
Cust. #: 3-3
Material: Fire Brick Inside Boilers
Location:
Appearance:
Layer: of

Asbestos Present:

NOT ANALYZED

Lab ID #: 67337 - 10
Cust. #: 4-1
Material: 2'x4' White Ceiling Tile w/ Fissures, Pinholes
Location:
Appearance: beige, fibrous, homogenous
Layer: 1 of 1

Asbestos Present: **NO**
No Asbestos Observed

Cellulose - 40%
Mineral Wool - 40%
Other - 20%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

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Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 2360 W. Pierson Rd., Flint, MI
Project # 11957s-2-194

Report To:

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AKT Peerless
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Saginaw, MI 48607

ARI Report # 16-67337
Date Collected: 10/03/16
Date Received: 10/05/16
Date Analyzed: 10/11/16
Date Reported: 10/11/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 67337 - 11 Cust. #: 4-2 Material: 2'x4' White Ceiling Tile w/ Fissures, Pinholes Location: Appearance: beige, fibrous, homogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Cellulose - 40% Mineral Wool - 40% Other - 20%
Lab ID #: 67337 - 12 Cust. #: 4-3 Material: 2'x4' White Ceiling Tile w/ Fissures, Pinholes Location: Appearance: beige, fibrous, homogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Cellulose - 40% Mineral Wool - 40% Other - 20%
Lab ID #: 67337 - 13 Cust. #: 5-1 Material: Roofing Material/Shingle Location: Appearance: black, fibrous, homogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Fiberglass - 30% Other - 70%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

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Test Method, Polarized Light Microscopy (PLM)

Project: 2360 W. Pierson Rd., Flint, MI
Project # 11957s-2-194

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ARI Report # 16-67337
Date Collected: 10/03/16
Date Received: 10/05/16
Date Analyzed: 10/11/16
Date Reported: 10/11/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 67337 - 14 Cust. #: 5-2 Material: Roofing Material/Shingle Location: Appearance: black, fibrous, homogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Fiberglass - 30% Other - 70%
Lab ID #: Cust. #: Material: Location: Appearance: Layer: of	Asbestos Present:	
Lab ID #: Cust. #: Material: Location: Appearance: Layer: of	Asbestos Present:	

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

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NVLAP Lab Code 102118-0

APEX Research, Inc.

fi Tech Drive, Whitmore Lake, MI 48189. Phone: (734) 449 - 9990, Fax (734) 449 - 9991.
Web Site: <http://apexresearch-inc.com>. Email: Robert.Letarte@apexresearchlab.com



Customer Name: AKT Peerless
Address: 214 Janes Avenue
City, St., Zip: Saginaw, MI 48607
Phone: 989-754-9896 Fax: 989-754-3804

Date of Survey: October 3, 2016
Project: 2360 W. Pierson Rd., Flint, MI
Project #: 11957s-2-194
Contact Person: Mark Breeden
Email: breedenm@aktpeerless.com

Lab Use Only
Log-In: _____
Report: _____
Fax: _____
Verbal: _____
Email: _____

Turn Around Times:

5 Days

TTP YES

(Test Till Positive)

Asbestos:

Lead:

Bulk	X
-------------	----------

Paint

Wipe PCM

Wipe

[illegible]

Relinquished By: [Signature]
Date: October 3, 2016 151pm
Revision Date: June/2011

Received By: Arle 10/7
Date: OCT 05 2016

APEX RESEARCH



Pre-Demolition Hazardous Materials Survey

2320 West Pierson Road
Flint, Michigan 48504

PREPARED FOR Genesee County Land Bank Authority
452 Saginaw Street, 2nd Floor
Flint, Michigan 48502

FUNDED BY Genesee County Land Bank Authority U.S. EPA 2014
Hazardous Substance Brownfield Assessment Grant
U.S. EPA Cooperative Agreement No.: BF-00E01382

PROJECT # 11764s-2-194

DATE July 27, 2016

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PRE-DEMOLITION HAZARDOUS MATERIALS SURVEY

2320 West Pierson Road, Flint, MI
AKT Peerless Project No. 11764s-2-194

1.0 Introduction

AKT Peerless Environmental & Energy Services (AKT Peerless) was retained by the Genesee County Land Bank Authority (GCLBA), (Client) to conduct a Pre-Demolition Hazardous Material (HazMat) Survey of a vacant, multi-unit commercial building, located at 2320 West Pierson Road, Flint, Michigan (the subject property). This HazMat Survey was performed under a United States Environmental Protection Agency (USEPA) Brownfield Assessment Grant for Hazardous Substances awarded to the Client. AKT Peerless' scope of work is based on its proposal PS-19519, dated July 1, 2016, and the terms and conditions of the agreement with the GCLBA. AKT Peerless' Pre-Demolition Survey was performed for the benefit of the GCLBA. AKT Peerless prepared a Subject Property Location Map as Figure 1 and a Functional Space Map of subject building as Figure 2. Photographs are included as Appendix A.

1.1 Purpose

The purpose of AKT Peerless' Pre-Demolition HazMat Survey was to identify the location and presence of: (1) asbestos-containing building materials (ACBMs); (2) potential polychlorinated biphenyls (PCBs) containing electrical or hydraulic equipment; (3) above and underground storage tanks (ASTs/USTs); (4) potentially hazardous or regulated materials/wastes located in containers and drums; (5) potential, mercury or radioactive-containing equipment or materials located at the subject property; and (6) any other materials that would require special handling or disposal requirements and should be segregated from demolition debris.

1.2 Scope of Work

The scope of work for this survey is specifically designed to support facility demolition, as identified within proposal PS-19519. AKT Peerless understands that the scope of demolition at the site includes one onsite subject building utilized as a strip mall, as well as associated parking lots and infrastructure.

Michigan LARA accredited Asbestos Inspectors, Mr. Heath Bobick (A43315) and Mr. Aaron Bigler (A45052) of AKT Peerless, conducted the Pre-Demolition HazMat Survey of the property.

1.2.1 Asbestos Survey

The scope of work for AKT Peerless' asbestos survey is based on the Asbestos School Hazard Abatement Reauthorization Act (ASHARA). The purpose of ASHARA is to extend the Asbestos Hazard Emergency Response Act (AHERA) inspection and management requirements to commercial and industrial buildings. Since the facility is slated for demolition, it is also subject to Environmental Protection Agency (EPA) National Emission Standards for Hazardous Air Pollutants (NESHAP) standards.

Asbestos Containing Material (ACM) survey activities were completed according to the following protocol:

1. Homogenous materials and functional spaces were identified for the purpose of assessing all suspect materials, as appropriate.
2. The ACM inspection was performed in an effort to determine the extent and location of ACM present at the subject building. This survey was qualitative and quantitative in that an attempt was made to locate accessible friable and non-friable ACM areas, as well as estimate the amount of ACM. All accessible locations of survey areas were inspected with exception of inaccessible areas or materials not surveyed that are identified in Section 1.3.
3. Bulk samples of suspect ACM were collected in accordance with professional standards by a Michigan-accredited Asbestos Building Inspector.
4. Bulk samples were collected in each homogeneous area in accordance with EPA-recommended sampling guidelines.
5. Samples of suspect ACM were analyzed by a National Voluntary Laboratory Accreditation Program (NVLAP)-accredited laboratory for analysis via Polarized Light Microscopy and dispersion staining (PLM) following the EPA Test Method (EPA-600/M4-82-020) and the National Institute of Standards and Technology (NIST) Bulk Asbestos Handbook.
6. In an effort to minimize costs, the laboratory analyses were performed using first positive stop analysis methodologies. First positive stop involves analyzing samples by homogeneous area groupings. Laboratory analyses proceeded sample by sample, within each homogeneous area grouping, until a sample was determined to be asbestos containing.
7. Upon completion of the field inspection and receipt of laboratory data, this report was prepared and includes: (a) a general description of the suspect ACM identified and non-suspect homogeneous materials that were visually evaluated; (b) quantity of suspect materials observed as able to be determined; and (c) laboratory testing results.

1.2.2 PCBs, Mercury, Lead, and Other Hazardous Materials

The survey for PCBs, potential lead/mercury-containing equipment, and containers that may contain universal hazardous wastes or regulated materials/wastes was completed according to the following procedures:

1. The building was inspected for potential hazardous materials such as PCBs-containing light ballasts, batteries, chlorofluorocarbon-containing equipment, smoke detectors, exit signs, as well as mercury light tubes and switches. No intrusive examination or contact with manufacturers, sample collection, or testing of this equipment was performed. Based on the scope of work and limitations identified during the survey. An inventory of the materials identified has been included that summarizes the quantities of the hazardous building materials observed.

During execution of this survey, the work was performed using commercially reasonable best efforts consistent with the level and skill ordinarily exercised by members of the profession currently practicing under similar conditions.

1.3 Limitations and Exceptions of the Survey

The following general limitations were encountered during the preparation of this survey:

- AKT Peerless uses trained and licensed inspectors in attempting to locate and identify materials potentially containing some form of hazardous material (i.e., asbestos, PCBs, etc.). The possibility exists that AKT Peerless did not identify all asbestos and hazardous materials within the building. Some buildings may have hidden spaces that may not be immediately obvious to a surveyor, who is not intimately familiar with the building and who has only a limited time in the building. There may be additional asbestos hazardous materials that were not found because they were not visible or accessible to the inspection team. Asbestos, PCBs, and mercury were used in a variety of building components and in many types of materials in the construction of buildings. In some of these materials, a hazardous material may be present, not as an intentional ingredient, but as a contaminant.

The following building-specific limitations apply to this HazMat Survey:

- Areas enclosed by fixed wall, ceiling systems, and roofing systems were restricted to limited visual access in identifying materials such as, but not limited to: pipe wrap, mud fittings, roof flashing, caulks, etc. Fixed wall and ceiling systems included plaster, drywall partitions, ceramic tile finish, concrete, and masonry. Roofing systems included multiple layers of materials. These systems are installed throughout the exterior and interior areas of the buildings. Due to pre-existing damage or destructive search techniques, limited inspections were performed of the internal ceiling and wall cavities, as well as roofing areas. Representative intrusive observations were made inside ceilings and walls, as well as below flooring materials such as floor tiles and roofing. As such, a complete survey and delineation of all hidden materials were not performed. **Due to these limitations, actual quantities of hazardous materials present may be greater than those inventoried as part of this survey.**
- AKT Peerless' proposed scope of work for this survey was specifically designed to support facility demolition.
- Inaccessible suspect materials observed were assumed to contain asbestos.
- Access to suspect ACM was restricted in areas defined as being located within a regulated confined space (i.e., such as crawl spaces, pipe chases, pipe trenches, attic, tunnel systems, etc.). These areas require the use of trained confined space professionals, personnel protective equipment, and rescue personnel. AKT Peerless did not access confined space areas.
- During the survey, lighting within the subject building was limited. AKT Peerless used portable spotlights and flashlights to improve general viewing conditions.
- During the survey, multiple areas of heavy debris, stored items, and building contents within building interiors and property exterior limited the inspection.
- During the survey, multiple collapsed and fire damaged areas were identified and limited the inspection.
- During the survey, no dismantling of electrical or mechanical equipment was conducted. The electrical and mechanical systems were deactivated and inoperable. Since trade personnel was not available (i.e. electricians, plumbers, boiler workers, etc.), no dismantling of equipment was performed to identify the existence of PCBs containing components, mercury switches or asbestos insulation was performed.

- Vandalism and building decay severely damaged and relocated ACMs as well as other potentially hazardous materials. Portions of the subject building was structurally unstable limiting access and inspection.
- During the survey, limitations existed due to safety concerns as a result of the fire damage; i.e. compromised structural integrity of the structure. AKT Peerless conducted reasonably ascertainable efforts to assess interior and exterior areas of subject building for homogenous materials and suspect hazardous materials.
- Estimated and not estimated quantities of materials reported are based on observations and estimates made by AKT Peerless at the time of the inspection. Specific materials including, but not limited to: roof flashing, roofing materials, tar coatings, building caulks, and wall adhesives were located in inaccessible areas such as behind fixed walls or ceilings, unsafe areas, confined spaces, and/or elevated heights (typically over 16-feet above ground level). **Due to these limitations, actual quantities may vary from those estimated as part of this survey.**

Other limitations pertaining to material accessibility or characterization may also be described in the survey data tables contained herein.

Quantities of identified ACM reported in this document are provided for reference only and are not authorized to be relied upon for Contractor abatement bidding purposes. AKT Peerless strongly cautions against utilizing the reported material quantities without field verification. It is expected that contractors will utilize their own quantities when preparing bid pricing. AKT Peerless recommends that a contingency allowance be used to address estimating method uncertainties for quantified materials.

2.0 Asbestos Survey Methodology

The following sections of this survey outline the approach, procedures, and methods employed by AKT Peerless to complete the ACM Survey of the subject property.

2.1 Description of Homogenous Areas

During the asbestos survey, AKT Peerless identified Homogeneous Areas (HA) based on appearances and type of materials observed. As defined under AHERA, a homogeneous area is an area (material) that appears similar throughout in terms of its color, texture, and date of material application.

In addition, building materials suspect for asbestos content are also described based on one of three following material classifications:

Surfacing Materials: A material that is sprayed-on, troweled-on, or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural members, or other materials on surfaces for acoustical, fireproofing, or other purposes. Glued-on ceiling panels are interpreted by the State of Michigan as a surfacing material.

Thermal System Insulation: A material that is applied to pipes, fittings, boilers, breeching, tanks, ducts, or other interior structural components to prevent heat loss or gain, water condensation, or for other purposes.

Miscellaneous Materials: A building material on structural components, structural members, or fixtures, such as floor and ceiling panels, and does not include surfacing material or thermal system insulation.

AKT Peerless identified homogeneous suspect ACMs at the subject property for sampling.

Homogeneous areas were identified based on the site inspection by AKT Peerless. Any materials that were identified, but were not sampled due to inaccessibility were recorded. A Homogenous Area Summary Table is identified as Appendix B.

2.2 Description of Functional Spaces

In general, functional spaces are defined as spatially distinct units or areas within the building, which contain identifiable populations of building occupants. Functional spaces can also include storage spaces, mechanical rooms, closets and services areas, etc. However, a functional space can also be delineated based on general building layout, facility use factors, and can be assigned using various arbitrary factors that were useful in the completion of this survey.

A Functional Space Table is included in Appendix C.

2.3 Bulk Sample Material Inventory

Based on homogeneous and functional areas identified during the survey, AKT Peerless collected bulk samples for analysis. Samples were collected in polyethylene containers and labeled with an identification number. In general, AKT Peerless' sampling protocol consisted of: (a) wetting or misting the sample as appropriate; (b) extracting a sample with a clean knife, chisel, or coring tool; and (c) placing the sample into its properly labeled sample container.

The sampling protocol used to procure the appropriate number of samples for an identified homogeneous area of suspect ACM is based on sampling guidelines outlined under AHERA or as proposed in the approved Scope of Work.

2.4 Laboratory Analytical Procedures

All samples collected by AKT Peerless were submitted to Apex Research, Inc. (Apex) of Whitmore Lake, Michigan for analysis. Apex is accredited by the American Industrial Hygiene Association (AIHA) and participates in the NVLAP. Samples were submitted under chain-of-custody guidelines to ensure proper handling and delivery of the samples. The samples were analyzed using PLM with dispersion staining in accordance with the following USEPA guidance document *Determination of Asbestos in Bulk Building Materials*: EPA/600/R-93/116, dated July 1993.

The USEPA defines ACM as those materials that contain **greater than one percent** asbestos. Friable materials are defined as those that can be crumbled or reduced to powder by hand pressure. The NESHAP for asbestos, dated November 1990, stipulates that any friable material identified as containing asbestos in concentrations greater than one percent must be considered ACM.

Materials containing one percent or less asbestos are generally considered non-asbestos-containing and therefore are not regulated by NESHAP. The OSHA definition of ACM is similarly any material containing more than one percent asbestos. However, specific work practices must be followed under OSHA regulations for materials containing less than one percent asbestos, if an individual layer exceeds one percent. Under the PLM method, percentages and types of fibrous components in these samples were determined by visual estimation of the amount of fibrous materials versus the total amount of material present.

Current USEPA guidelines specify that when initial laboratory analysis of friable or non-friable materials regulated under NESHAP detects the presence of asbestos in a quantity between less than trace (less

than one percent) and less than ten percent, a verification analysis using the point counting analytical method should be considered or the material in question should be treated as ACM as identified by PLM analysis.

AKT Peerless utilized the “positive-stop” method of sample analyses. In this method, the analyses of a homogeneous material is stopped on a group of samples once the first positive (e.g., greater than 1% asbestos) sample is analyzed. According to the USEPA, if one sample of a homogenous material is identified to be asbestos-containing, the entire material must be considered asbestos-containing.

Based on appearances and type of materials, suspect ACMs were grouped into homogeneous areas and functional spaces, as appropriate. Upon completion of these activities, representative bulk samples of the suspect materials were collected.

A copy of the bulk sample laboratory report and chain-of-custody record is presented in Appendix E.

3.0 Conclusions and Recommendations

AKT Peerless was retained to conduct a Pre-Demolition HazMat Survey of the subject building located at 2320 West Pierson Road, Flint, Michigan. The purpose of the survey was to identify hazardous materials that will require special handling procedures or removal activities prior to demolition activities. The following sections of this report summarize the findings of the HazMat Survey.

3.1 Homogeneous Area & Asbestos Containing Materials

Based on the results of the asbestos survey, the following ACMs were identified:

Summary of Homogeneous Areas With Asbestos Containing Materials (ACMs)

Material Description	HA	Identified Locations	Estimated Quantity (Including Associated Debris)	F/NF	Asbestos Content
Joint Compound and Associated Debris	2	Throughout	NE	NF	1.50% CHR (PC) Composite NAD
9" Red Floor Tile w/Mastic and Associated Debris	3	Throughout	45,000 SF	NF	Floor Tile 10% CHR Mastic NAD
9" Tan Floor Tile w/Mastic and Associated Debris	4	Throughout	45,000 SF	NF	Floor Tile 10% CHR Mastic NAD
Roofing Materials and Associated Debris	6	FS-21 Exterior	99,500 SF	NF	10% CHR
Suspect Transite Pipe and Associated Debris	8	Throughout	25 LF	NF	20% CHR 5% CRO

Material Description	HA	Identified Locations	Estimated Quantity (Including Associated Debris)	F/NF	Asbestos Content
12" Black and White Floor Tile w/Layers (HA-3, HA-4, w/Mastic) and Adhesives, and Associated Debris	9	FS-6 Unit 5	2,100 SF	NF	Black and White Floor Tiles 5% CHR Adhesives NAD Red and Tan Floor Tiles 10% CHR Mastic NAD
Cream Pattern Linoleum w/Layers (HA-3, HA-4, w/Mastic) and Associated Debris	10	FS-7 Unit 6	40 SF	NF	Cream Pattern Linoleum 5% CHR Red and Tan Floor Tiles 10% CHR Mastic NAD
12" Cream Floor Tiles w/Layers (HA-3, HA-4 w/Mastic) and Associated Debris	12	FS-2 Western Hallway	425 SF	NF	12" Cream Floor Tiles 5% CHR Red and Tan Floor Tiles 10% CHR Mastics NAD
12" Cream Pattern Floor Tile w/Adhesives, w/Layers (HA-3, HA-4, w/Mastic) and Associated Debris	14	FS-10 Unit 9	894 SF	NF	12" Cream Pattern Floor Tiles NAD Adhesives 5% CHR Red and Tan Floor Tiles 10% CHR Mastics NAD
Vermiculite and Associated Debris (In Walls and On Floors)	20	FS-11 Middle Hallway FS-13 Unit 10	NE	F	Assumed ACM

Material Description	HA	Identified Locations	Estimated Quantity (Including Associated Debris)	F/NF	Asbestos Content
12" Cream Floor Tiles w/Adhesives w/Layer (HA-3, HA-4, w/Mastic) and Associated Debris	22	FS-14 Unit 11	1,032 SF	NF	12" Cream Floor Tiles NAD Adhesives NAD Red and Tan Floor Tiles 10% CHR Mastics NAD
White Textured Ceiling Paint and Associated Debris	23	FS-12 Brick Unit Bathroom	156 SF	F	2% CHR
Suspect Transite Panels and Associated Debris	24	FS-21 Exterior FS-9 Unit 8 FS-11 Middle Hallway	692 SF	NF	30% CHR
12" Black and 12" White Floor Tile w/Layer of Linoleum and Associated Debris	26	FS-13 Unit 10	200 SF	NF	Flooring NAD Glue NAD Residue 10% CHR
12" Cream Pattern Floor Tile w/Layers (HA-3, HA-4, w/Mastic, and Discolored Floor Tile w/Mastic) and Associated Debris	27	FS-16 Unit 12 FS-17 Unit 13	19,448 SF	NF	12" Cream Pattern Floor Tile NAD Glue NAD Red and Tan Floor Tiles 10% CHR Mastic 10% CHR Discolored Floor Tile 10% CHR Mastic 10% CHR
12" Cream Floor Tile w/Adhesives and Associated Debris	29	FS-18 Unit 14	40 SF	NF	Floor Tile 10% CHR Glue NAD
18"- 24" Mud Fittings and Associated Debris-Elbows and Junctions	30	FS-18 Unit 14	1 CT	F	Assumed ACM

Material Description	HA	Identified Locations	Estimated Quantity (Including Associated Debris)	F/NF	Asbestos Content
4" - 18" Mud Fittings and Associated Debris-Elbows and Junctions	32	FS-13 Unit 10 FS-20 Unit 16	6 CT	F	10% CHR
9" Tan Floor Tile w/Mastic and Associated Debris	33	FS-20 Unit 6	1,361 SF	NF	Floor Tile 10% CHR Mastic NAD
12" Cream Floor Tile w/Adhesives and Associated Debris	35	FS-20 Unit 6	432 SF	NF	Floor Tile 1.25% CHR (PC) Adhesives NAD
Duct Wrap Seam	36	FS-3 Unit 2	14 LF	F	Assumed ACM
Window Caulk-Thin Black Bead and Associated Debris	43	FS-21 Exterior	NE	F	3% CHR
Fire Doors and Frames	45	FS-21 Exterior	14 CT	NF	Assumed ACM

Table Notes:

F= Friable NF= Non-Friable SF= Square Feet LF= Linear Feet NE= Not Estimated
 NAD= No Asbestos Detected CHR= Chrysotile AMO= Amosite CRO= Crocidolite
 CT= Count PC= Point Count
 ACM= Asbestos Containing Material (Greater than 1% Asbestos Content)
 Assumed= Suspect material that was not sampled but was assumed asbestos-containing

A summary of all homogenous areas and ACMs is presented in Appendix B.

The following summarizes our recommendations regarding the ACMs identified:

1. Based on findings of the Asbestos Survey, AKT Peerless recommends that in accordance to state and federal regulations the licensed contractor shall conduct destructive search techniques to identify, quantify, and remove all ACMs identified during the survey.
2. Based on the findings of the Asbestos Survey and the anticipated demolition of the building, AKT Peerless recommends that all identified ACMs be properly removed by a licensed contractor in accordance with applicable state and federal regulations.
3. Assumed ACMs (vermiculite, fire doors, mud fittings, duct wrap, etc.) not accessible or sampled as part of the survey, or other suspect materials discovered during the demolition are required to be assumed asbestos containing and handled appropriately in accordance with state and federal regulations. Assumed materials must be removed by a licensed contractor in accordance with applicable state and federal regulations or sampled to verify asbestos content.
4. Drywall and Associated Debris (HA-1) tested negative for ACM. In accordance with EPA rules and regulations walling materials in direct contact with Vermiculite is presumed RACM and must be abated prior to the demolition.

5. Certain ACM identified as part of this survey including, but not limited to; joint compounds, flooring, windows and associated caulks, etc., may have associated debris in conjunction to intact sections of ACM. Estimated quantities of ACM include the associated debris.
6. Due to extensive damage to certain portions of ACM materials and associated components throughout the subject building, all building debris that has come into contact with ACM debris and cannot be properly decontaminated is to be removed and handled as ACM and removed for disposal by a licensed contractor in accordance with applicable state and federal regulations.
7. Due to heavy debris and sections of the subject building that have collapsed AKT Peerless was unable to fully quantify materials. AKT Peerless attempted to quantify materials based on visual observations made during the survey. Further, it is AKT Peerless' opinion additional quantities of ACM may be identified during demolition and disposed of in accordance with State and Federal Regulations.
8. AKT Peerless identified the subject building with areas of extensive fire damage, areas of collapsed ceilings, walls, etc. and may pose imminent danger.

Any potentially unsafe portions of the structure may need to be demolished under the Order Demolition provisions of the NESHAP rule 40 CFR 61.145 (a)(3). AKT Peerless recommends the local municipality and/or a licensed building inspector be contracted to determine structural integrity prior to abatement.

3.2 Summary of Identified Other Potentially Hazardous Materials

During the Hazardous Material Survey, AKT Peerless observed the existence of various types of potentially hazardous materials in the building. In general, these materials were stored in containers of various capacities. An inventory of hazardous building materials and containers was prepared and is included in Appendix D.

The survey was conducted to identify universal hazardous wastes or regulated materials/wastes. The building was inspected for potential hazardous materials, such as PCBs or oil containing light ballasts, batteries, chlorofluorocarbon-containing equipment, smoke detectors, exit signs, mercury light tubes and switches, and USTs. No intrusive examination or contact with manufacturers, sample collection, or testing of this equipment was performed. No sampling of any hazardous component materials was performed.

AKT Peerless recommends that qualified contractors perform the removal of these materials and follow appropriate special handling and disposal measures, which are required before general building demolition. Based on the conditions observed, it is recommended that unknown waste materials, and oil stained concrete, and sump basins/potential storm water discharge pits are appropriately characterized for waste disposal or recycling purposes, if applicable.

Hazardous Materials Recommendation:

1. The materials included in Appendix D and other items banned from landfill disposal, identified during the demolition should be properly removed and disposed of in accordance with applicable regulations.
2. The contractor must identify and delineate any oil stained concrete and segregate from the recyclable materials. Oil stained concrete should be disposed at a licensed landfill.

Special attention should be paid to liquids accumulated in building components, site features, the sub grade areas and shall be removed prior to demolition of buildings in accordance with applicable regulations. For example, heating system, and fire suppression components are present within the building and may contain accumulated liquids. In addition, pipe chases, crawlspaces, and trucking bays may contain accumulated liquids. These and any other liquids encountered must be properly drained, containerized, and transported to a licensed waste disposal facility.

3.3 Electrical Transformers

AKT Peerless inspected the subject property for the presence of liquid-cooled electrical units such as transformers and large capacitors. Such units are notable since they may be potential sources of PCBs. AKT Peerless did not observe suspect PCBs-containing equipment at the subject property.

4.0 Limitations

The information and opinions obtained in this report are for the exclusive use of the GCLBA. No distribution to or reliance by other parties may occur without the express written permission of AKT Peerless. AKT Peerless will not distribute this report without written consent or as required by law or by a Court order. The information and opinions contained in the report are given in light of that assignment. The report must be reviewed and relied upon only in conjunction with the terms and conditions expressly agreed upon by the parties and as limited therein. Any third parties who have been extended the right to rely on the contents of this report by AKT Peerless (which is expressly required prior to any third-party release), agrees to be bound by the original terms and conditions entered into by AKT Peerless and the Client.

Subject to the above and the terms and conditions, AKT Peerless accepts responsibility for the competent performance of its duties in executing the assignment and preparing reports in accordance with the normal standards of the profession, but disclaims any responsibility for consequential damages. Although AKT Peerless believes that results contained herein are reliable, AKT Peerless cannot warrant or guarantee that the information provided is exhaustive or that the information provided by the client or third parties is complete or accurate.

5.0 Signatures of Environmental Professionals

The following individuals contributed to the completion of this report.

A handwritten signature in blue ink, appearing to read "Heath S. Bobick", written over a horizontal line.

Heath S. Bobick
Environmental Consultant
AKT Peerless
Great Lakes Bay Region
Phone: 989.754.9896
Fax: 989.754.3804

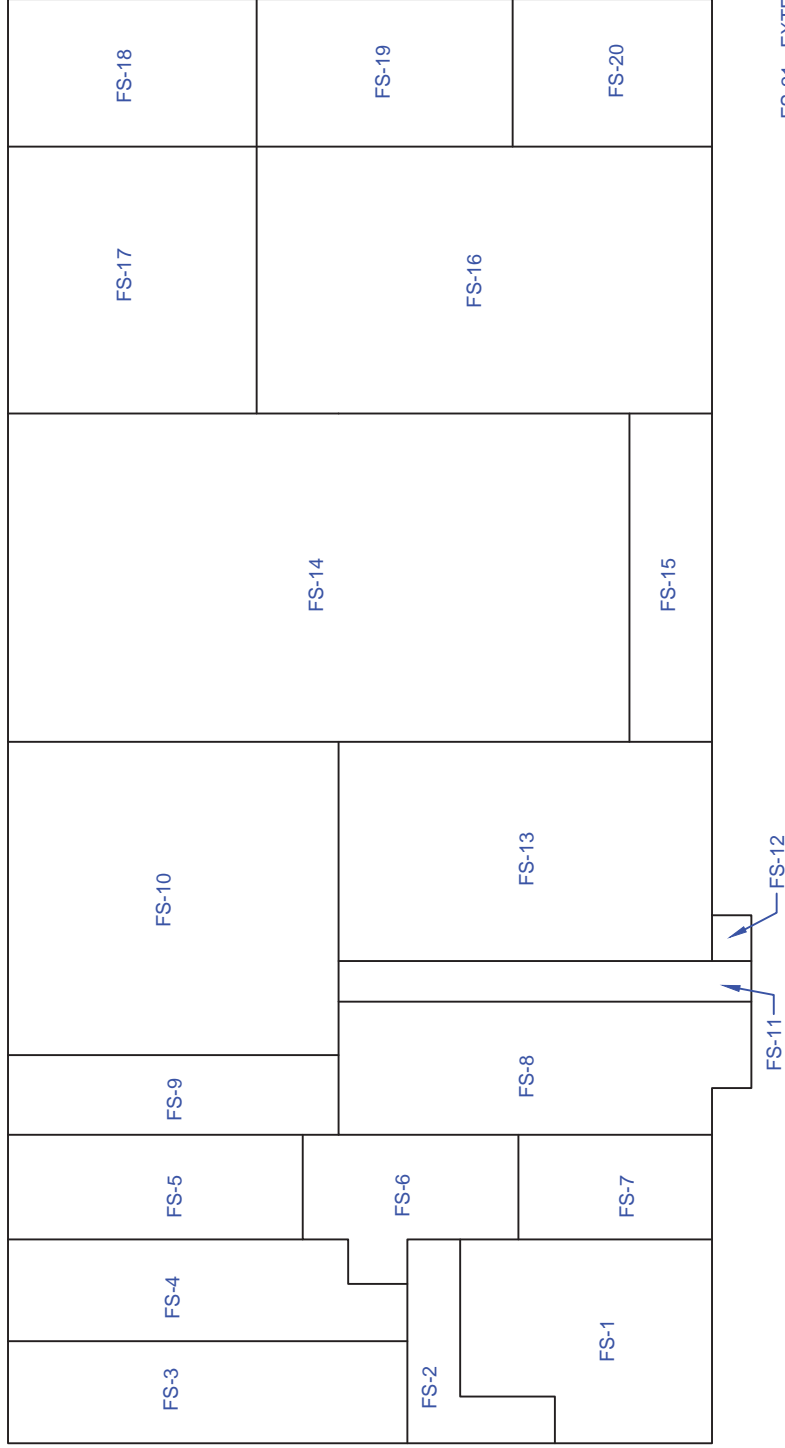
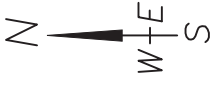
MIOSHA LARA CSHD Asbestos Inspector
Accreditation No. A43315

A handwritten signature in blue ink, appearing to read "Ryan T. Londrigan", written over a horizontal line.

Ryan T. Londrigan, CHMM
Project Manager
AKT Peerless
Great Lakes Bay Region
Phone: 989.754.9896
Fax: 989.754.3804

MIOSHA LARA CSHD Asbestos Inspector
Accreditation No. A25728

FIGURES



Scale is approximate, room locations area generalized



www.aktpeerless.com

FUNCTIONAL SPACE MAP

2320 WEST PIERSON ROAD
FLINT, MICHIGAN
PROJECT NUMBER : 11764s-2-194

DRAWN BY: OGO
DATE: 07/19/2016

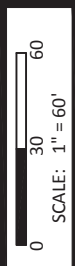


FIGURE 2

APPENDIX A

PHOTOGRAPHS



**REPRESENTATIVE VIEW OF SUBJECT BUILDING
EXTERIOR FACING NORTHEAST – SOUTHWEST CORNER OF BUILDING**



**REPRESENTATIVE VIEW OF SUBJECT BUILDING
EXTERIOR FACING NORTHWEST – SOUTH SIDE OF BUILDING**



PROPERTY PHOTOGRAPHS

COMMERCIAL PROPERTY
2320 WEST PIERSON ROAD
FLINT, MICHIGAN

TAKEN BY: AKT
DATE: JULY 2016

AKT PROJECT NUMBER:
11764s-2-194



**REPRESENTATIVE VIEW OF SUBJECT BUILDING
EXTERIOR FACING NORTH – SOUTH SIDE OF BUILDING**



**REPRESENTATIVE VIEW OF SUBJECT BUILDING
EXTERIOR FACING NORTHWEST – SOUTH SIDE OF BUILDING**



PROPERTY PHOTOGRAPHS

COMMERCIAL PROPERTY
2320 WEST PIERSON ROAD
FLINT, MICHIGAN

TAKEN BY: AKT
DATE: JULY 2016

AKT PROJECT NUMBER:
11764s-2-194



**REPRESENTATIVE VIEW OF SUBJECT BUILDING
EXTERIOR FACING NORTHWEST – SOUTHEAST CORNER OF BUILDING**



**REPRESENTATIVE VIEW OF SUBJECT BUILDING
EXTERIOR FACING SOUTHEAST – EAST END OF BUILDING**



PROPERTY PHOTOGRAPHS

COMMERCIAL PROPERTY
2320 WEST PIERSON ROAD
FLINT, MICHIGAN

TAKEN BY: AKT
DATE: JULY 2016

AKT PROJECT NUMBER:
11764s-2-194



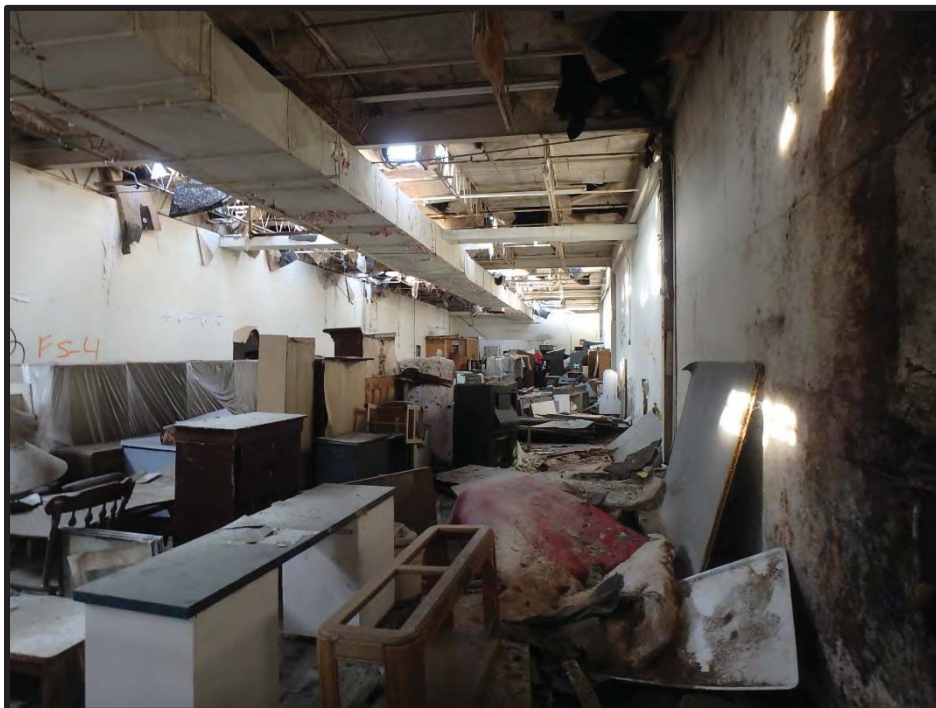
REPRESENTATIVE VIEW OF SUBJECT BUILDING
EXTERIOR FACING SOUTHWEST – NORTH SIDE OF BUILDING



REPRESENTATIVE INTERIOR VIEW
FIRE DAMAGED AND COLLAPSED AREA



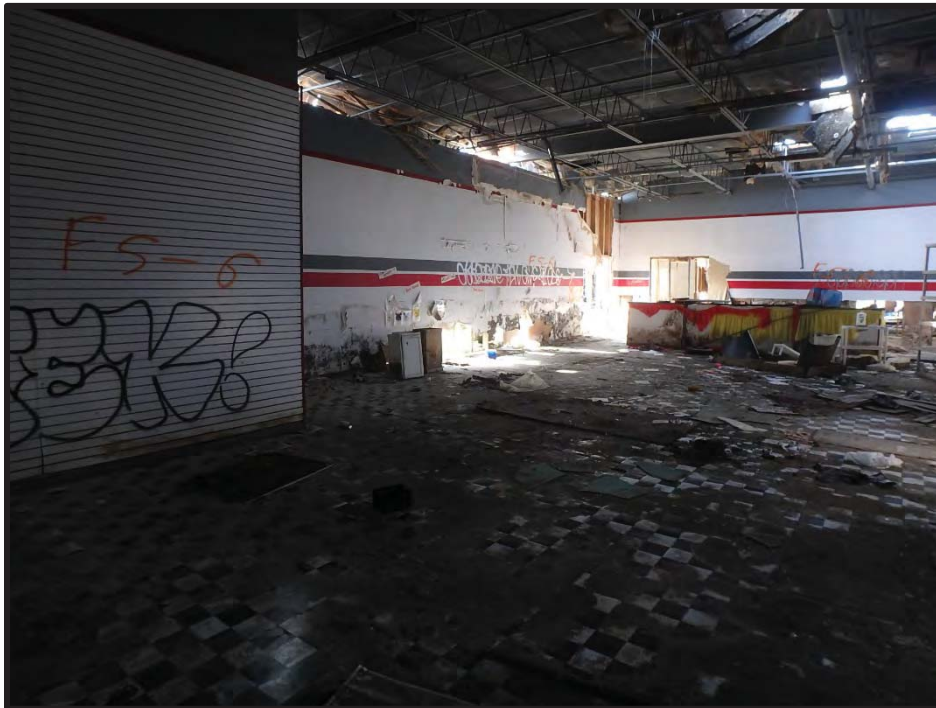
**REPRESENTATIVE INTERIOR VIEW
FIRE DAMAGED AND COLLAPSED AREA**



**REPRESENTATIVE INTERIOR VIEW
HEAVY DEBRIS AND ONSITE CONDITION**



REPRESENTATIVE INTERIOR VIEW
HEAVY DEBRIS AND CURRENT CONDITION



REPRESENTATIVE INTERIOR VIEW
ONSITE CONDITION



REPRESENTATIVE INTERIOR VIEW
ONSITE CONDITION



REPRESENTATIVE INTERIOR VIEW
ONSITE CONDITION



PROPERTY PHOTOGRAPHS

COMMERCIAL PROPERTY
2320 WEST PIERSON ROAD
FLINT, MICHIGAN

TAKEN BY: AKT
DATE: JULY 2016

AKT PROJECT NUMBER:
11764s-2-194



REPRESENTATIVE INTERIOR VIEW
HEAVY DEBRIS AND ONSITE CONDITION



REPRESENTATIVE INTERIOR VIEW
COLLAPSED ROOFING SYSTEM



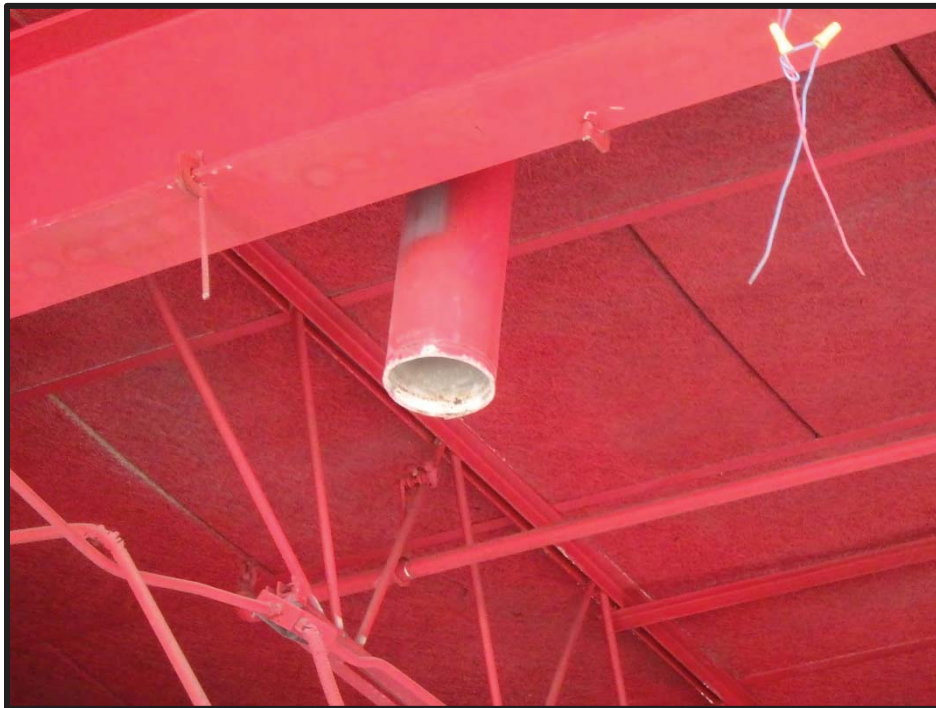
REPRESENTATIVE INTERIOR VIEW
ASSUMED ASBESTOS CONTAINING VERMICULITE AND ASSOCIATED DEBRIS



REPRESENTATIVE INTERIOR VIEW
ASSUMED ASBESTOS CONTAINING THERMAL COMPONENT



**REPRESENTATIVE INTERIOR VIEW
ASBESTOS CONTAINING TRANSITE PIPE AND ASSOCIATED DEBRIS**



**REPRESENTATIVE INTERIOR VIEW
ASBESTOS CONTAINING TRANSITE PIPE IN CEILING**



PROPERTY PHOTOGRAPHS

COMMERCIAL PROPERTY
2320 WEST PIERSON ROAD
FLINT, MICHIGAN

TAKEN BY: AKT
DATE: JULY 2016

AKT PROJECT NUMBER:
11764s-2-194

APPENDIX B

HOMOGENOUS AREA SUMMARY TABLE

Homogenous Area Summary Table

Client: GCLBA
 AKT Project No.: 11764s-2-194
 Site Address: 2320 West Pierson Road, Flint MI

HA No.	Material Description	Material Location	Material Class	Approx. Quantity	Friability	Asbestos Content
1	Drywall (and Joint Compound) and Associated Debris	Throughout	MM	NE	NF	Drywall NAD, Joint Compound NAD, Composite NAD
2	Joint Compound and Associated Debris	Throughout	MM	NE	NF	1.50% CHR (PC), Composite NAD
3	9" Red Floor Tile w/Mastic and Associated Debris	Throughout	MM	45,000 SF	NF	Floor Tile 10% CHR, Mastic NAD
4	9" Tan Floor Tile w/Mastic and Associated Debris	Throughout	MM	45,000 SF	NF	Floor Tile 10% CHR, Mastic NAD
5	Tan Colored (Painted Various Colors) Woven Ceiling Panels and Associated Debris	Throughout	MM	NE	F	NAD
6	Roofing Materials and Associated Debris	FS-21 Exterior	MM	99,500 SF	NF	10% CHR
7	Roof Flashing (Vents, Ducts, Piping, Etc.)	FS-21 Exterior	MM	NE	NF	NAD
8	Suspect Transite Pipe and Associated Debris	Throughout	TSI	25 LF	NF	20% CHR, 5% CRO

Homogenous Area Summary Table

Client: GCLBA
 AKT Project No.: 11764s-2-194
 Site Address: 2320 West Pierson Road, Flint MI

HA No.	Material Description	Material Location	Material Class	Approx. Quantity	Friability	Asbestos Content
9	12" Black and White Floor Tile w/Layers (HA-3, HA-4, w/Mastic) and Adhesives, and Associated Debris	FS-6 Unit 5	MM	2,100 SF	NF	Black and White Floor Tiles 5% CHR, Adhesives NAD, Red and Tan Floor Tiles 10% CHR, Mastic NAD
10	Cream Pattern Linoleum w/Layers (HA-3, HA-4, w/Mastic) and Associated Debris	FS-7 Unit 6	MM	40 SF	NF	Cream Pattern Linoleum 5% CHR, Red and Tan Floor Tiles 10% CHR, Mastic NAD
11	Drywall Adhesives on Studs (Wood and Metal) and Associated Debris	Throughout	SM	NE	NF	NAD
12	12" Cream Floor Tiles w/Layers (HA-3, HA-4 w/Mastic) and Associated Debris	FS-2 Western Hallway	MM	425 SF	NF	12" Cream Floor Tiles 5% CHR, Red and Tan Floor Tiles 10% CHR, Mastics NAD
13	Gray Base Cove w/Adhesive and Associated Debris	Throughout	MM	NE	NF	NAD

Homogenous Area Summary Table

Client: GCLBA
 AKT Project No.: 11764s-2-194
 Site Address: 2320 West Pierson Road, Flint MI

HA No.	Material Description	Material Location	Material Class	Approx. Quantity	Friability	Asbestos Content
14	12" Cream Pattern Floor Tile w/Adhesives, w/Layers (HA-3, HA-4, w/Mastic) and Associated Debris	FS-10 Unit 9	MM	894 SF	NF	12" Cream Pattern Floor Tiles NAD, Adhesives 5% CHR, Red and Tan Floor Tiles 10% CHR, Mastics NAD
15	Tan Base Cove w/Adhesives and Associated Debris	Throughout	MM	NE	NF	NAD
16	2x4 White Ceiling Tiles w/Fissures AND Pinholes and Associated Debris	FS-10 Unit 9 FS-13 Unit 10 FS-14 Unit 11 FS-18 Unit 14 FS-19 Unit 15	MM	NE	F	NAD
17	2x4 White Ceiling Tiles w/Fissures and Associated Debris	FS-20 Unit 16	MM	NE	F	NAD
18	12" Carpet Tiles w/Adhesives and Associated Debris	Throughout	MM	NE	NF	NAD
19	12" Cream Pattern Floor Tiles w/Adhesives w/Layer (9" Tan Floor Tiles) and Associated Debris	FS-10 Unit 9	MM	NE	NF	NAD

Homogenous Area Summary Table

Client: GCLBA
 AKT Project No.: 11764s-2-194
 Site Address: 2320 West Pierson Road, Flint MI

HA No.	Material Description	Material Location	Material Class	Approx. Quantity	Friability	Asbestos Content
20	Vermiculite and Associated Debris (In Walls and On Floors)	FS-11 Middle Hallway FS-13 Unit 10	TM	NE	F	Assumed ACM
21	12" Cream Pattern Floor Tiles and Associated Debris	FS-15 Unit 11 Reception Area	MM	NE	NF	NAD
22	12" Cream Floor Tiles w/Adhesives w/Layer (HA3, HA-4, w/Mastic) and Associated Debris	FS-14 Unit 11	MM	1,032 SF	NF	12" Cream Floor Tiles NAD, Adhesives NAD, Red and Tan Floor Tiles 10% CHR, Mastics NAD
23	White Textured Ceiling Paint and Associated Debris	FS-12 Brick Unit Bathroom	SM	156 SF	F	2% CHR
24	Suspect Transite Panels and Associated Debris	FS-21 Exterior FS-9 Unit 8 FS-11 Middle Hallway	TM	692 SF	NF	30% CHR
25	Brown Base Cove w/Adhesive and Associated Debris	Throughout	MM	NE	NF	NAD
26	12" Black and 12" White Floor Tile w/Layer of Linoleum and Associated Debris	FS-13 Unit 10	MM	200 SF	NF	Flooring NAD, Glue NAD, Residue 10% CHR

Homogenous Area Summary Table

Client: GCLBA
 AKT Project No.: 11764s-2-194
 Site Address: 2320 West Pierson Road, Flint MI

HA No.	Material Description	Material Location	Material Class	Approx. Quantity	Friability	Asbestos Content
27	12" Cream Pattern Floor Tile w/Layers (HA-3, HA-4, w/Mastic, and Discolored Floor Tile w/Mastic) and Associated Debris	FS-16 Unit 12 FS-17 Unit 13	MM	19,488 SF	NF	12" Cream Pattern Floor Tile NAD, Glue NAD, Red and Tan Floor Tiles 10% CHR, Mastic 10% CHR, Discolored Floor Tile 10% CHR, Mastic 10% CHR
28	Tan Drywall Adhesives and Associated Debris	Throughout	SM	NE	NF	NAD
29	12" Cream Floor Tile w/Adhesives and Associated Debris	FS-18 Unit 14	MM	40 SF	NF	Floor Tile 10% CHR, Glue NAD
30	18"-24" Mud Fittings and Associated Debris-Elbows and Junctions	FS-18 Unit 14	TM	1 CT	F	Assumed ACM
31	Tan Paneling Adhesive and Associated Debris	FS-19 Unit 15	SM	NE	NF	NAD
32	4"-18" Mud Fittings and Associated Debris-Elbows and Junctions	FS-13 Unit 10 FS-20 Unit 16	TM	6 CT	F	10% CHR

Homogenous Area Summary Table

Client: GCLBA
 AKT Project No.: 11764s-2-194
 Site Address: 2320 West Pierson Road, Flint MI

HA No.	Material Description	Material Location	Material Class	Approx. Quantity	Friability	Asbestos Content
33	9" Tan Floor Tile w/Mastic and Associated Debris	FS-20 Unit 6	MM	1,361 SF	NF	Floor Tile 10% CHR, Mastic NAD
34	Brown Paneling Adhesive and Associated Debris	FS-20 Unit 16	SM	NE	NF	NAD
35	12" Cream Floor Tile w/Adhesives and Associated Debris	FS-20 Unit 6	MM	432 SF	NF	Floor Tile 1.25% CHR (PC), Adhesives NAD
36	Duct Wrap Seam	FS-3 Unit 2	TM	14 LF	F	Assumed ACM
37	Peg Board and Associated Debris	FS-10 Unit 9 FS-15 Unit 11 Reception Area FS-17 Unit 13	MM	NE	NF	NAD
38	12" White Ceiling Tiles and Associated Debris	FS-13 Unit 10	MM	NE	F	NAD
39	Exterior Building Caulk - Thick Brown Bead and Associated Debris	FS-21 Exterior	SM	NE	F	NAD
40	Exterior Building Caulk - Thin Brown Bead and Associated Debris	FS-21 Exterior	SM	NE	F	NAD
41	Window Caulk - Thick Black Bead and Associated Debris	FS-21 Exterior	SM	NE	F	NAD
42	Exterior Building Caulk - Black and Sticky and Associated Debris	FS-21 Exterior	SM	NE	F	NAD
43	Window Caulk-Thin Black Bead and Associated Debris	FS-21 Exterior	SM	NE	F	3% CHR

Homogenous Area Summary Table

Client: GCLBA
AKT Project No.: 11764s-2-194
Site Address: 2320 West Pierson Road, Flint MI

HA No.	Material Description	Material Location	Material Class	Approx. Quantity	Friability	Asbestos Content
44	Exterior Building Caulk - Thick Burgundy Bead and Associated Debris	FS-21 Exterior	SM	NE	F	NAD
45	Fire Doors and Frames	FS-21 Exterior	MM	14 CT	NF	Assumed ACM

MM = Miscellaneous Material
SM = Surfacing Material
NF = Not Friable F = Friable
TSI = Thermal System Insulation
CT= Count
NE = Not Estimated

CHR = Chrysotile
CRO = Crocidolite
SF = Square Feet
LF = Linear Feet
NAD = No Asbestos Detected
PC = Point Count

APPENDIX C

FUNCTIONAL SPACE TABLE

Commercial Property

CLIENT: GCLBA
PROJECT NO: 11794s-2-194
PROJECT NAME: 2320 West Pierson Road, Flint, Michigan

Functional Space No.	Description
FS-1	Unit #1
FS-2	Western Hallway
FS-3	Unit #2
FS-4	Unit #3
FS-5	Unit #4
FS-6	Unit #5
FS-7	Unit #6
FS-8	Unit #7
FS-9	Unit #8
FS-10	Unit #9
FS-11	Middle Hallway
FS-12	Brick Bathroom
FS-13	Unit #10
FS-14	Unit #11
FS-15	Unit #11 Reception Area
FS-16	Unit #12
FS-17	Unit #13
FS-18	Unit #14
FS-19	Unit #15
FS-20	Unit #16
FS-21	Exterior

APPENDIX D

PCBs, MERCURY, AND OTHER HAZARDOUS MATERIALS

TABLE

Commercial Property

Subject Property and Subject Building

Project Address: 2320 West Pierson Road, Flint, Michigan Project #: 11764s-2-194

Functional Spaces Identified With Hazardous Materials-Inventory of Subject Property and Subject Building

Materials Location #	Miscellaneous Materials	Exit Signs w/Lighting & Battery	Types of Bulbs		Light Ballasts	Smoke Detectors	Door Actuator	Thermostat / Thermometer	Fire Extinguishers	Misc. Electronics (Television, Security Cameras, Kitchen	Misc. Adhesives	Aerosol Cans	Misc. Cleaners	Misc. Paints, Varnish, Stains, & Thinners	Misc. Auto Fluids	Misc. Lubricants	Tires	
			CFL's, Mercury Vapor, Halogen	Fluorescent Tube														
Quantities																		
1				42	21					6								
2					3					3								
3	Driveway Sealant			52	8			1		5	5	10		45	5			
4	Arcade Games (9			46	23					45				6				
5				36	18					15	3	15		30	2		1	
6	Arcade Games (2			25	12					8								
7				16	8					5							1	
8				36	18			1		5								
9				20	10					5								
10				116	40					25								
11				20	8					5								
12				4	2													
13				140	70			1		20				5				
14				100	50					20								
15	Security Alarm			20	10	1				5								
16	Liquid Sanitizer (1			100	50					5								
17				20	10													
18				50	25			1		10								
19				40	20			1		10								
20	Security Alarm			60	30					10								
21			19	45	20					4								
Totals																		
			0	19	994	456	1	0	5	0	211	8	25	0	86	7	0	2

CT=Count

APPENDIX E

ACM LABORATORY REPORTS AND CHAIN OF CUSTODY



Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 2320 W Pierson Road, Flint, MI
Project # 11764s-2-194

Report To:

Mr. Heath Bobick
AKT Peerless
214 Janes Ave.
Saginaw, MI 48607

ARI Report # 16-65977
Date Collected: 07/07/16
Date Received: 07/11/16
Date Analyzed: 07/18/16
Date Reported: 07/18/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65977 - 01 Cust. #: 11764s-1-1 Material: Drywall/Debris Location: Appearance: white, fibrous, nonhomogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Cellulose - 5% Fiberglass - 10% Other - 85%
Lab ID #: 65977 - 02 Cust. #: 11764s-1-2 Material: Drywall/Debris Location: Appearance: white, fibrous, nonhomogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Cellulose - 20% Fiberglass - 5% Other - 75%
Lab ID #: 65977 - 03 Cust. #: 11764s-1-3 Material: Drywall/Debris Location: Appearance: brown, fibrous, homogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Cellulose - 20% Fiberglass - 5% Other - 75%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate may not be used by the customer to claim product endorsement by NVLAP or any agency of the US Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



NVLAP Lab Code 102118-0



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Test Method, Polarized Light Microscopy (PLM)

Project: 2320 W Pierson Road, Flint, MI
Project # 11764s-2-194

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214 Janes Ave.
Saginaw, MI 48607

ARI Report # 16-65977
Date Collected: 07/07/16
Date Received: 07/11/16
Date Analyzed: 07/18/16
Date Reported: 07/18/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65977 - 04 Cust. #: 11764s-1-4 Material: Drywall/Debris Location: Appearance: brown, fibrous, homogenous Layer: 1 of 2	Asbestos Present: NO No Asbestos Observed	Cellulose - 70% Other - 30%
Lab ID #: 65977 - 04a Cust. #: 11764s-1-4 Material: Joint Compound Location: Appearance: white, nonfibrous, homogenous Layer: 2 of 2	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65977 - 05 Cust. #: 11764s-1-5 Material: Drywall/Debris Location: Appearance: white, fibrous, nonhomogenous Layer: 1 of 2	Asbestos Present: NO No Asbestos Observed	Cellulose - 20% Fiberglass - 5% Other - 75%

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Project: 2320 W Pierson Road, Flint, MI
Project # 11764s-2-194

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AKT Peerless
214 Janes Ave.
Saginaw, MI 48607

ARI Report # 16-65977
Date Collected: 07/07/16
Date Received: 07/11/16
Date Analyzed: 07/18/16
Date Reported: 07/18/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65977 - 05a Cust. #: 11764s-1-5 Material: Joint Compound Location: Appearance: white, nonfibrous, homogenous Layer: 2 of 2	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65977 - 06 Cust. #: 11764s-1-6 Material: Drywall/Debris Location: Appearance: white, fibrous, nonhomogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Cellulose - 20% Fiberglass - 5% Other - 75%
Lab ID #: 65977 - 07 Cust. #: 11764s-1-7 Material: Drywall/Debris Location: Appearance: white, fibrous, nonhomogenous Layer: 1 of 2	Asbestos Present: NO No Asbestos Observed	Cellulose - 20% Fiberglass - 5% Other - 75%

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ARI Report # 16-65977
Date Collected: 07/07/16
Date Received: 07/11/16
Date Analyzed: 07/18/16
Date Reported: 07/18/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65977 - 07a Cust. #: 11764s-1-7 Material: Joint Compound Location: Appearance: white, nonfibrous, homogenous Layer: 2 of 2	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65977 - 08 Cust. #: 11764s-1-8 Material: Drywall/Debris Location: Appearance: white, fibrous, nonhomogenous Layer: 1 of 2	Asbestos Present: NO No Asbestos Observed	Cellulose - 20% Fiberglass - 5% Other - 75%
Lab ID #: 65977 - 08a Cust. #: 11764s-1-8 Material: Joint Compound Location: Appearance: white, nonfibrous, homogenous Layer: 2 of 2	Asbestos Present: NO No Asbestos Observed	Other - 100%

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Date Collected: 07/07/16
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Date Analyzed: 07/18/16
Date Reported: 07/18/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65977 - 09 Cust. #: 11764s-1-9 Material: Drywall/Debris Location: Appearance: white, fibrous, nonhomogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Cellulose - 20% Fiberglass - 5% Other - 75%
Lab ID #: 65977 - 10 Cust. #: 11764s-1-10 Material: Drywall/Debris Location: Appearance: white, fibrous, nonhomogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Cellulose - 20% Fiberglass - 5% Other - 75%
Lab ID #: 65977 - 11 Cust. #: 11764s-1-11 Material: Drywall/Debris Location: Appearance: white, fibrous, nonhomogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Cellulose - 20% Fiberglass - 5% Other - 75%

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Date Collected: 07/07/16
Date Received: 07/11/16
Date Analyzed: 07/18/16
Date Reported: 07/18/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65977 - 12 Cust. #: 11764s-1-12 Material: Drywall/Debris Location: Appearance: white, fibrous, nonhomogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Cellulose - 20% Fiberglass - 5% Other - 75%
Lab ID #: 65977 - 13 Cust. #: 11764s-2-1 Material: Joint Compound/Debris Location: Appearance: white, nonfibrous, homogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65977 - 14 Cust. #: 11764s-2-2 Material: Joint Compound/Debris Location: Appearance: white, nonfibrous, homogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Cellulose - 1% Other - 99%

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Robert T. Letarte Jr., Laboratory Director

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Date Collected: 07/07/16
Date Received: 07/11/16
Date Analyzed: 07/18/16
Date Reported: 07/18/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65977 - 15 Cust. #: 11764s-2-3 Material: Joint Compound/Debris Location: Appearance: white, nonfibrous, homogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65977 - 16 Cust. #: 11764s-2-4 Material: Joint Compound/Debris/Drywall Location: Appearance: white, fibrous, nonhomogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Cellulose - 20% Fiberglass - 5% Other - 75%
Lab ID #: 65977 - 17 Cust. #: 11764s-2-5 Material: Joint Compound/Debris Location: Appearance: white, nonfibrous, homogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Other - 100%

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ARI Report # 16-65977
Date Collected: 07/07/16
Date Received: 07/11/16
Date Analyzed: 07/18/16
Date Reported: 07/18/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65977 - 18 Cust. #: 11764s-2-6 Material: Joint Compound/Debris Location: Appearance: white, fibrous, homogenous Layer: 1 of 1	Asbestos Present: YES Chrysotile - 1.50% POINT COUNT RESULT	Other - 98.50%
Lab ID #: 65977 - 19 Cust. #: 11764s-2-7 Material: Joint Compound/Debris Location: Appearance: white, nonfibrous, homogenous Layer: 1 of 1	Asbestos Present: NO Chrysotile - 0.75% POINT COUNT RESULT	Cellulose - 1% Other - 98.25%
Lab ID #: 65977 - 20 Cust. #: 11764s-2-8 Material: Joint Compound/Debris Location: Appearance: white, nonfibrous, homogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Other - 100%

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Robert T. Letarte Jr., Laboratory Director

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NVLAP Lab Code 102118-0



Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 2320 W Pierson Road, Flint, MI
Project # 11764s-2-194

Report To:

Mr. Heath Bobick
AKT Peerless
214 Janes Ave.
Saginaw, MI 48607

ARI Report # 16-65977
Date Collected: 07/07/16
Date Received: 07/11/16
Date Analyzed: 07/18/16
Date Reported: 07/18/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65977 - 21 Cust. #: 11764s-2-9 Material: Joint Compound/Debris Location: Appearance: white, nonfibrous, homogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65977 - 22 Cust. #: 11764s-3-1 Material: 9" Red Floor Tile/Debris Location: Appearance: red, fibrous, homogenous Layer: 1 of 2	Asbestos Present: YES Chrysotile - 10%	Other - 90%
Lab ID #: 65977 - 22a Cust. #: 11764s-3-1 Material: Mastic Location: Appearance: black, nonfibrous, homogenous Layer: 2 of 2	Asbestos Present: NO No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate may not be used by the customer to claim product endorsement by NVLAP or any agency of the US Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



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Sample Information**Asbestos Type/Percent****Non-Asbestos**

Lab ID #: 65977 - 23
Cust. #: 11764s-3-2
Material: 9" Red Floor Tile/Debris
Location:
Appearance:
Layer: 1 of 2

Asbestos Present:

NOT ANALYZED

Lab ID #: 65977 - 23a
Cust. #: 11764s-3-2
Material: Mastic
Location:
Appearance: black, nonfibrous, homogenous
Layer: 2 of 2

Asbestos Present: **NO**
No Asbestos Observed

Other - 100%

Lab ID #: 65977 - 24
Cust. #: 11764s-3-3
Material: 9" Red Floor Tile/Debris
Location:
Appearance:
Layer: 1 of 2

Asbestos Present:

NOT ANALYZED

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Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65977 - 24a Cust. #: 11764s-3-3 Material: Mastic Location: Appearance: black,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65977 - 25 Cust. #: 11764s-3-4 Material: 9" Red Floor Tile/Debris Location: Appearance: Layer: 1 of 2	Asbestos Present: NOT ANALYZED	
Lab ID #: 65977 - 25a Cust. #: 11764s-3-4 Material: Mastic Location: Appearance: black,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: NO No Asbestos Observed	Other - 100%

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Date Collected: 07/07/16
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Date Reported: 07/18/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65977 - 26 Cust. #: 11764s-3-5 Material: 9" Red Floor Tile/Debris Location: Appearance: Layer: 1 of 2	Asbestos Present: NOT ANALYZED	
Lab ID #: 65977 - 26a Cust. #: 11764s-3-5 Material: Mastic Location: Appearance: black,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65977 - 27 Cust. #: 11764s-4-1 Material: 9" Tan Floor Tile/Debris Location: Appearance: brown,fibrous,homogenous Layer: 1 of 2	Asbestos Present: YES Chrysotile - 10%	Other - 90%

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Date Reported: 07/18/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65977 - 27a Cust. #: 11764s-4-1 Material: Mastic Location: Appearance: black,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65977 - 28 Cust. #: 11764s-4-2 Material: 9" Tan Floor Tile/Debris Location: Appearance: Layer: 1 of 2	Asbestos Present: NOT ANALYZED	
Lab ID #: 65977 - 28a Cust. #: 11764s-4-2 Material: Mastic Location: Appearance: black,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: NO No Asbestos Observed	Other - 100%

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Date Received: 07/11/16
Date Analyzed: 07/18/16
Date Reported: 07/18/16

Sample Information**Asbestos Type/Percent****Non-Asbestos**

Lab ID #: 65977 - 29
Cust. #: 11764s-4-3
Material: 9" Tan Floor Tile/Debris
Location:
Appearance:
Layer: 1 of 2

Asbestos Present:

NOT ANALYZED

Lab ID #: 65977 - 29a
Cust. #: 11764s-4-3
Material: Mastic
Location:
Appearance: black, nonfibrous, homogenous
Layer: 2 of 2

Asbestos Present: **NO**
No Asbestos Observed

Other - 100%

Lab ID #: 65977 - 30
Cust. #: 11764s-4-4
Material: 9" Tan Floor Tile/Debris
Location:
Appearance:
Layer: 1 of 2

Asbestos Present:

NOT ANALYZED

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Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65977 - 30a Cust. #: 11764s-4-4 Material: Mastic Location: Appearance: black,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65977 - 31 Cust. #: 11764s-4-5 Material: 9" Tan Floor Tile/Debris Location: Appearance: Layer: 1 of 2	Asbestos Present: NOT ANALYZED	
Lab ID #: 65977 - 31a Cust. #: 11764s-4-5 Material: Mastic Location: Appearance: black,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: NO No Asbestos Observed	Other - 100%

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65977

Apex #

X Research, Inc.

Apex Research, Inc. 65977
 48189, Phone: (734) 449-9990, Fax (734) 449-9991
 Email: Robert.Letarte@apexresearchlab.com



Customer Name: AKI Peerless

Address: 214 James Avenue

City, St., Zip: Saginaw, MI 48607

Phone: 989-754-9896

Fax: 989-754-3804

Turn Around Times:

TTT YES

3-5 Days

Asbestos:

Lead:

Paint

Bulk X

Wipe

PCM

***Terms and conditions on the other side.

Email: bobickh@akipeerless.com

Contact Person: Heath Bobick

Project #11764s-2-194

Project: 2320 W Pierson Road, Flint, MI

Date of Survey: July 6 - 7, 2016

Lab Use Only

Log-In:

Report:

Fax:

Verbal:

Email:

Lab ID	Customer ID #	Material/Location	Results
--------	---------------	-------------------	---------

1	11764s-1-1	Drywall and Associated Debris	
2	11764s-1-2	Drywall and Associated Debris	
3	11764s-1-3	Drywall and Associated Debris	
4	11764s-1-4	Drywall and Associated Debris	
5	11764s-1-5	Drywall and Associated Debris	
6	11764s-1-6	Drywall and Associated Debris	
7	11764s-1-7	Drywall and Associated Debris	
8	11764s-1-8	Drywall and Associated Debris	
9	11764s-1-9	Drywall and Associated Debris	
10	11764s-1-10	Drywall and Associated Debris	
11	11764s-1-11	Drywall and Associated Debris	
12	11764s-1-12	Drywall and Associated Debris	
13	11764s-2-1	Joint Compound and Associated Debris	
14	11764s-2-2	Joint Compound and Associated Debris	
15	11764s-2-3	Joint Compound and Associated Debris	
16	11764s-2-4	Joint Compound and Associated Debris	
17	11764s-2-5	Joint Compound and Associated Debris	
18	11764s-2-6	Joint Compound and Associated Debris	
19	11764s-2-7	Joint Compound and Associated Debris	
20	11764s-2-8	Joint Compound and Associated Debris	
21	11764s-2-9	Joint Compound and Associated Debris	
22	11764s-3-1	Joint Compound and Associated Debris	
23	11764s-3-2	9" Red Floor Tile w/Mastic and Associated Debris	
24	11764s-3-3	9" Red Floor Tile w/Mastic and Associated Debris	
25	11764s-3-4	9" Red Floor Tile w/Mastic and Associated Debris	
26	11764s-3-5	9" Red Floor Tile w/Mastic and Associated Debris	
27	11764s-4-1	9" Tan Floor Tile w/Mastic and Associated Debris	
28	11764s-4-2	9" Tan Floor Tile w/Mastic and Associated Debris	
29	11764s-4-3	9" Tan Floor Tile w/Mastic and Associated Debris	
30	11764s-4-4	9" Tan Floor Tile w/Mastic and Associated Debris	
31	11764s-4-5	9" Tan Floor Tile w/Mastic and Associated Debris	

Relinquished By: _____
 Date: July 7, 2016
 Revision Date: June 2011

Date:

Received By: _____

JUL 17 2016

APEX RESEARCH



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Date Collected: 07/07/16
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Date Analyzed: 07/18/16
Date Reported: 07/18/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65978 - 01 Cust. #: 11764S-5-1 Material: Tan Colored (Painted) Woven Ceiling Panel Location: Appearance: brown, fibrous, homogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Cellulose - 80% Other - 20%
Lab ID #: 65978 - 02 Cust. #: 11764S-5-2 Material: Tan Colored (Painted) Woven Ceiling Panel Location: Appearance: beige, fibrous, homogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Cellulose - 80% Other - 20%
Lab ID #: 65978 - 03 Cust. #: 11764S-5-3 Material: Texture Location: Appearance: beige, fibrous, homogenous Layer: 1 of 2	Asbestos Present: NO No Asbestos Observed	Cellulose - 80% Other - 20%

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Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65978 - 03a Cust. #: 11764S-5-3 Material: Tan Colored (Painted) Woven Ceiling Panel Location: Appearance: grey, fibrous, homogenous Layer: 2 of 2	Asbestos Present: NO No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 65978 - 04 Cust. #: 11764S-5-4 Material: Tan Colored (Painted) Woven Ceiling Panel Location: Appearance: beige, fibrous, homogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 65978 - 05 Cust. #: 11764S-5-5 Material: Tan Colored (Painted) Woven Ceiling Panel Location: Appearance: brown, fibrous, homogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Cellulose - 20% Other - 80%

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Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65978 - 06 Cust. #: 11764S-6-1 Material: Roofing Materials/Debris Location: Appearance: black, fibrous, homogenous Layer: 1 of 2	Asbestos Present: NO No Asbestos Observed	Cellulose - 30% Fiberglass - 30% Other - 40%
Lab ID #: 65978 - 06a Cust. #: 11764S-6-1 Material: Insulation Location: Appearance: yellow, fibrous, homogenous Layer: 2 of 2	Asbestos Present: NO No Asbestos Observed	Mineral Wool - 80% Other - 20%
Lab ID #: 65978 - 07 Cust. #: 11764S-6-2 Material: Roofing Materials/Debris Location: Appearance: black, fibrous, homogenous Layer: 1 of 2	Asbestos Present: YES Chrysotile - 10%	Other - 90%

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Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65978 - 07a Cust. #: 11764S-6-2 Material: Layers Location: Appearance: black, fibrous, homogenous Layer: 2 of 2	Asbestos Present: NO No Asbestos Observed	Cellulose - 30% Other - 70%
Lab ID #: 65978 - 09 Cust. #: 11764S-6-3 Material: Roofing Materials/Debris Location: Appearance: Layer: of	Asbestos Present: NOT ANALYZED	
Lab ID #: 65978 - 09 Cust. #: 11764S-6-4 Material: Roofing Materials/Debris Location: Appearance: Layer: of	Asbestos Present: NOT ANALYZED	

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Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65978 - 10 Cust. #: 11764S-6-5 Material: Roofing Materials/Debris Location: Appearance: Layer: of	Asbestos Present: NOT ANALYZED	
Lab ID #: 65978 - 11 Cust. #: 11764S-7-1 Material: Roof Flashing (Vents, Ducts Piping)/Debris Location: Appearance: black, fibrous, homogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Cellulose - 10% Other - 90%
Lab ID #: 65978 - 12 Cust. #: 11764S-7-2 Material: Roof Flashing (Vents, Ducts Piping)/Debris Location: Appearance: black, fibrous, homogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Cellulose - 20% Other - 80%

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Lab ID #: 65978 - 13 Cust. #: 11764S-7-3 Material: Roof Flashing (Vents, Ducts Piping)/Debris Location: Appearance: black, fibrous, homogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Fiberglass - 30% Other - 70%
Lab ID #: 65978 - 14 Cust. #: 11764S-8-1 Material: Suspect Transite Pipe/Debris Location: Appearance: grey, fibrous, homogenous Layer: 1 of 1	Asbestos Present: YES Chrysotile - 20% Crocidolite - 5%	Other - 75%
Lab ID #: 65978 - 15 Cust. #: 11764S-8-2 Material: Suspect Transite Pipe/Debris Location: Appearance: Layer: of	Asbestos Present: NOT ANALYZED	

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Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65978 - 16 Cust. #: 11764S-8-3 Material: Suspect Transite Pipe/Debris Location: Appearance: Layer: of	Asbestos Present: NOT ANALYZED	
Lab ID #: 65978 - 17 Cust. #: 11764S-9-1 Material: 12" Black/White Floor Tile, Layered Location: Appearance: white, nonfibrous, homogenous Layer: 1 of 3	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65978 - 17a Cust. #: 11764S-9-1 Material: 12" Black/White Floor Tile, Layered Location: Appearance: beige, fibrous, homogenous Layer: 2 of 3	Asbestos Present: YES Chrysotile - 5%	Other - 95%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

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NVLAP Lab Code 102118-0



Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 2320 W Pierson Road, Flint, MI
Project # 11764s-2-194

Report To:

Mr. Heath Bobick
AKT Peerless
214 Janes Ave.
Saginaw, MI 48607

ARI Report # 16-65978
Date Collected: 07/07/16
Date Received: 07/11/16
Date Analyzed: 07/18/16
Date Reported: 07/18/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65978 - 17b Cust. #: 11764S-9-1 Material: Glue Location: Appearance: yellow, nonfibrous, homogenous Layer: 3 of 3	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65978 - 18 Cust. #: 11764S-9-2 Material: 12" Black/White Floor Tile, Layered Location: Appearance: Layer: of	Asbestos Present: NOT ANALYZED	
Lab ID #: 65978 - 19 Cust. #: 11764S-9-3 Material: 12" Black/White Floor Tile, Layered Location: Appearance: Layer: of	Asbestos Present: NOT ANALYZED	

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Date Collected: 07/07/16
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Date Analyzed: 07/18/16
Date Reported: 07/18/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65978 - 20 Cust. #: 11764S-10-1 Material: Cream Pattern Linoleum, Layered Location: Appearance: white, fibrous, homogenous Layer: 1 of 3	Asbestos Present: NO No Asbestos Observed	Cellulose - 20% Fiberglass - 5% Other - 75%
Lab ID #: 65978 - 20a Cust. #: 11764S-10-1 Material: Cream Pattern Linoleum, Layered Location: Appearance: brown, fibrous, homogenous Layer: 2 of 3	Asbestos Present: YES Chrysotile - 5%	Other - 95%
Lab ID #: 65978 - 20b Cust. #: 11764S-10-1 Material: Mastic Location: Appearance: black, fibrous, nonhomogenous Layer: 3 of 3	Asbestos Present: NO No Asbestos Observed	Cellulose - 2% Other - 98%

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Date Collected: 07/07/16
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Date Analyzed: 07/18/16
Date Reported: 07/18/16

Sample Information**Asbestos Type/Percent****Non-Asbestos**

Lab ID #: 65978 - 21
Cust. #: 11764S-10-2
Material: Cream Pattern Linoleum, Layered
Location:
Appearance:
Layer: of

Asbestos Present:

NOT ANALYZED

Lab ID #: 65978 - 22
Cust. #: 11764S-11-1
Material: Drywall Adhesives on Studs (Wood/Metal)
Location:
Appearance: beige, nonfibrous, homogenous
Layer: 1 of 1

Asbestos Present: **NO**
No Asbestos Observed

Other - 100%

Lab ID #: 65978 - 23
Cust. #: 11764S-11-2
Material: Drywall Adhesives on Studs (Wood/Metal)
Location:
Appearance: yellow, nonfibrous, homogenous
Layer: 1 of 1

Asbestos Present: **NO**
No Asbestos Observed

Other - 100%

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ARI Report # 16-65978
Date Collected: 07/07/16
Date Received: 07/11/16
Date Analyzed: 07/18/16
Date Reported: 07/18/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65978 - 24 Cust. #: 11764S-11-3 Material: Drywall Adhesives on Studs (Wood/Metal) Location: Appearance: yellow,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65978 - 25 Cust. #: 11764S-11-4 Material: Drywall Adhesives on Studs (Wood/Metal) Location: Appearance: yellow,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65978 - 26 Cust. #: 11764S-11-5 Material: Drywall Adhesives on Studs (Wood/Metal) Location: Appearance: yellow,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Other - 100%

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ARI Report # 16-65978
Date Collected: 07/07/16
Date Received: 07/11/16
Date Analyzed: 07/18/16
Date Reported: 07/18/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65978 - 27 Cust. #: 11764S-12-1 Material: 12" Cream Floor Tile, Layered Location: Appearance: grey, nonfibrous, homogenous Layer: 1 of 3	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65978 - 27a Cust. #: 11764S-12-1 Material: 12" Cream Floor Tile, Layered Location: Appearance: brown, fibrous, homogenous Layer: 2 of 3	Asbestos Present: YES Chrysotile - 5%	Other - 95%
Lab ID #: 65978 - 27b Cust. #: 11764S-12-1 Material: Mastic Location: Appearance: black, nonfibrous, homogenous Layer: 3 of 3	Asbestos Present: NO No Asbestos Observed	Other - 100%

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ARI Report # 16-65978
Date Collected: 07/07/16
Date Received: 07/11/16
Date Analyzed: 07/18/16
Date Reported: 07/18/16

Sample Information**Asbestos Type/Percent****Non-Asbestos**

Lab ID #: 65978 - 28
Cust. #: 11764S-12-2
Material: 12" Cream Floor Tile, Layered
Location:
Appearance:
Layer: of

Asbestos Present:

NOT ANALYZED

Lab ID #: 65978 - 29
Cust. #: 11764S-12-3
Material: 12" Cream Floor Tile, Layered
Location:
Appearance:
Layer: of

Asbestos Present:

NOT ANALYZED

Lab ID #:
Cust. #:
Material:
Location:
Appearance:
Layer: of

Asbestos Present:

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NVLAP Lab Code 102118-0

65978

APEX Research, Inc.

10000 West Drive, Whitmore Lake, MI 48189. Phone: (734) 449 - 9990, Fax (734) 449 - 9991.
Web Site: <http://apexresearch-inc.com> Email: Robert.Letarte@apexresearchlab.com



Customer Name: AKT Peerless
Address: 214 Janes Avenue
City, St., Zip: Saginaw, MI 48607
Phone: 989-754-9896 Fax: 989-754-3804

Date of Survey: July 6 - 7, 2016
Project: 2320 W Pierson Road, Flint, MI
Project #11764s-2-194
Contact Person: Heath Bobick
Email: bobickh@aktpeerless.com

Lab Use Only
Log-In: _____
Report: _____
Fax: _____
Verbal: _____
Email: _____

Turn Around Times:

***Terms and conditions on the other side.

3-5 Days

TTP YES
(Test Till Positive)

Asbestos:

Bulk X

Wipe _____ PCM _____

Lead:

Paint _____

Wipe _____

Lab ID	Customer ID #	Material/Location	Results
1	11764s-5-1	Tan Colored (Painted Various Colors) Woven Ceiling Panels and Associated Debris	
2	11764s-5-2	Tan Colored (Painted Various Colors) Woven Ceiling Panels and Associated Debris	
3	11764s-5-3	Tan Colored (Painted Various Colors) Woven Ceiling Panels and Associated Debris	
4	11764s-5-4	Tan Colored (Painted Various Colors) Woven Ceiling Panels and Associated Debris	
5	11764s-5-5	Tan Colored (Painted Various Colors) Woven Ceiling Panels and Associated Debris	
6	11764s-6-1	Roofing Materials and Associated Debris	
7	11764s-6-2	Roofing Materials and Associated Debris	
8	11764s-6-3	Roofing Materials and Associated Debris	
9	11764s-6-4	Roofing Materials and Associated Debris	
10	11764s-6-5	Roofing Materials and Associated Debris	
11	11764s-7-1	Roof Flashing (Vents, Ducts, Piping, Etc.) and Associated Debris	
12	11764s-7-2	Roof Flashing (Vents, Ducts, Piping, Etc.) and Associated Debris	
13	11764s-7-3	Roof Flashing (Vents, Ducts, Piping, Etc.) and Associated Debris	
14	11764s-8-1	Suspect Transite Pipe and Associated Debris	
15	11764s-8-2	Suspect Transite Pipe and Associated Debris	
16	11764s-8-3	Suspect Transite Pipe and Associated Debris	
17	11764s-9-1	12" Black and White Floor Tile w/Layer (9" Tan and Red w/Mastic) and Associated Debris	
18	11764s-9-2	12" Black and White Floor Tile w/Layer (9" Tan and Red w/Mastic) and Associated Debris	
19	11764s-9-3	12" Black and White Floor Tile w/Layer (9" Tan and Red w/Mastic) and Associated Debris	
20	11764s-10-1	Cream Pattern Linoleum w/Layer (9" Tan and Red w/Mastic) and Associated Debris	
21	11764s-10-2	Cream Pattern Linoleum w/Layer (9" Tan and Red w/Mastic) and Associated Debris	
22	11764s-11-1	Drywall Adhesives on Studs (Wood and Metal) and Associated Debris	
23	11764s-11-2	Drywall Adhesives on Studs (Wood and Metal) and Associated Debris	
24	11764s-11-3	Drywall Adhesives on Studs (Wood and Metal) and Associated Debris	
25	11764s-11-4	Drywall Adhesives on Studs (Wood and Metal) and Associated Debris	
26	11764s-11-5	Drywall Adhesives on Studs (Wood and Metal) and Associated Debris	
27	11764s-12-1	12" Cream Floor Tile w/Layer (9" Tan and Red w/Mastic) and Associated Debris	
28	11764s-12-2	12" Cream Floor Tile w/Layer (9" Tan and Red w/Mastic) and Associated Debris	
29	11764s-12-3	12" Cream Floor Tile w/Layer (9" Tan and Red w/Mastic) and Associated Debris	

Relinquished By: [Signature]
Date: July 7, 2016
Revision Date: June 2011

Received By: [Signature]
Date: JUL 11 2016

APEX RESEARCH



Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 2320 W Pierson Road, Flint, MI
Project # 11764s-2-194

Report To:

Mr. Heath Bobick
AKT Peerless
214 Janes Ave.
Saginaw, MI 48607

ARI Report # 16-65976
Date Collected: 07/07/16
Date Received: 07/11/16
Date Analyzed: 07/18/16
Date Reported: 07/18/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65976 - 01 Cust. #: 11764S-13-1 Material: Grey Base Cove Location: Appearance: grey,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65976 - 01a Cust. #: 11764S-13-1 Material: Adhesive Location: Appearance: beige,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65976 - 02 Cust. #: 11764S-13-2 Material: Grey Base Cove Location: Appearance: grey,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: NO No Asbestos Observed	Other - 100%

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Robert T. Letarte Jr., Laboratory Director

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NVLAP Lab Code 102118-0



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Date Collected: 07/07/16
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Date Analyzed: 07/18/16
Date Reported: 07/18/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65976 - 02a Cust. #: 11764S-13-2 Material: Adhesive Location: Appearance: beige, nonfibrous, homogenous Layer: 2 of 2	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65976 - 03 Cust. #: 11764S-14-1 Material: 12" Cream Pattern Floor Tile Location: Appearance: beige, nonfibrous, homogenous Layer: 1 of 2	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65976 - 03a Cust. #: 11764S-14-1 Material: Adhesive w/ Layers Location: Appearance: black, fibrous, homogenous Layer: 2 of 2	Asbestos Present: YES Chrysotile - 5%	Other - 95%

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Date Collected: 07/07/16
Date Received: 07/11/16
Date Analyzed: 07/18/16
Date Reported: 07/18/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65976 - 04 Cust. #: 11764S-14-2 Material: 12" Cream Pattern Floor Tile Location: Appearance: beige, nonfibrous, homogenous Layer: 1 of 2	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65976 - 04a Cust. #: 11764S-14-2 Material: Adhesive w/ Layers Location: Appearance: Layer: 2 of 2	Asbestos Present: NOT ANALYZED	
Lab ID #: 65976 - 05 Cust. #: 11764S-14-3 Material: 12" Cream Pattern Floor Tile Location: Appearance: beige, nonfibrous, homogenous Layer: 1 of 2	Asbestos Present: NO No Asbestos Observed	Other - 100%

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Date Collected: 07/07/16
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Date Analyzed: 07/18/16
Date Reported: 07/18/16

Sample Information**Asbestos Type/Percent****Non-Asbestos**

Lab ID #: 65976 - 05a
Cust. #: 11764S-14-3
Material: Adhesive w/ Layers
Location:
Appearance:
Layer: 2 of 2

Asbestos Present:

NOT ANALYZED

Lab ID #: 65976 - 06
Cust. #: 11764S-15-1
Material: Tan Base Cove
Location:
Appearance: beige, nonfibrous, homogenous
Layer: 1 of 2

Asbestos Present: **NO**
No Asbestos Observed

Other - 100%

Lab ID #: 65976 - 06a
Cust. #: 11764S-15-1
Material: Adhesive
Location:
Appearance: beige, nonfibrous, homogenous
Layer: 2 of 2

Asbestos Present: **NO**
No Asbestos Observed

Other - 100%

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Date Analyzed: 07/18/16
Date Reported: 07/18/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65976 - 07 Cust. #: 11764S-15-2 Material: Tan Base Cove Location: Appearance: beige, nonfibrous, homogenous Layer: 1 of 2	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65976 - 07a Cust. #: 11764S-15-2 Material: Adhesive Location: Appearance: beige, nonfibrous, homogenous Layer: 2 of 2	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65976 - 08 Cust. #: 11764S-16-1 Material: 2x4 White CT - Fissures/Pinholes/Debris Location: Appearance: beige, fibrous, homogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Cellulose - 65% Mineral Wool - 30% Other - 5%

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Date Collected: 07/07/16
Date Received: 07/11/16
Date Analyzed: 07/18/16
Date Reported: 07/18/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65976 - 09 Cust. #: 11764S-16-2 Material: 2x4 White CT - Fissures/Pinholes/Debris Location: Appearance: beige, fibrous, homogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Cellulose - 65% Mineral Wool - 30% Other - 5%
Lab ID #: 65976 - 10 Cust. #: 11764S-16-3 Material: 2x4 White CT - Fissures/Pinholes/Debris Location: Appearance: beige, fibrous, homogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Cellulose - 65% Mineral Wool - 30% Other - 5%
Lab ID #: 65976 - 11 Cust. #: 11764S-17-1 Material: 2x4 White Ceiling Tiles, Fissures, Debris Location: Appearance: brown, fibrous, homogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Cellulose - 95% Other - 5%

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Date Collected: 07/07/16
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Date Analyzed: 07/18/16
Date Reported: 07/18/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65976 - 12 Cust. #: 11764S-17-2 Material: 2x4 White Ceiling Tiles, Fissures, Debris Location: Appearance: brown, fibrous, homogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Cellulose - 95% Other - 5%
Lab ID #: 65976 - 13 Cust. #: 11764S-18-1 Material: 12" Carpet Tile Location: Appearance: blue, fibrous, nonhomogenous Layer: 1 of 2	Asbestos Present: NO No Asbestos Observed	Cellulose - 65% Other - 35%
Lab ID #: 65976 - 13a Cust. #: 11764S-18-1 Material: Adhesive Location: Appearance: yellow, nonfibrous, homogenous Layer: 2 of 2	Asbestos Present: NO No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

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NVLAP Lab Code 102118-0



Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 2320 W Pierson Road, Flint, MI
Project # 11764s-2-194

Report To:

Mr. Heath Bobick
AKT Peerless
214 Janes Ave.
Saginaw, MI 48607

ARI Report # 16-65976
Date Collected: 07/07/16
Date Received: 07/11/16
Date Analyzed: 07/18/16
Date Reported: 07/18/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65976 - 14 Cust. #: 11764S-18-2 Material: 12" Carpet Tile Location: Appearance: blue, fibrous, nonhomogenous Layer: 1 of 2	Asbestos Present: NO No Asbestos Observed	Cellulose - 65% Other - 35%
Lab ID #: 65976 - 14a Cust. #: 11764S-18-2 Material: Adhesive Location: Appearance: yellow, nonfibrous, homogenous Layer: 2 of 2	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65976 - 15 Cust. #: 11764S-18-3 Material: 12" Carpet Tile Location: Appearance: blue, fibrous, nonhomogenous Layer: 1 of 2	Asbestos Present: NO No Asbestos Observed	Cellulose - 65% Other - 35%

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Date Collected: 07/07/16
Date Received: 07/11/16
Date Analyzed: 07/18/16
Date Reported: 07/18/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65976 - 15a Cust. #: 11764S-18-3 Material: Adhesive Location: Appearance: yellow,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65976 - 16 Cust. #: 11764S-19-1 Material: 12" Cream Pattern Floor Tile Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 3	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65976 - 16a Cust. #: 11764S-19-1 Material: Adhesive w/ Layers Location: Appearance: clear,nonfibrous,homogenous Layer: 2 of 3	Asbestos Present: NO No Asbestos Observed	Other - 100%

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ARI Report # 16-65976
Date Collected: 07/07/16
Date Received: 07/11/16
Date Analyzed: 07/18/16
Date Reported: 07/18/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65976 - 16b Cust. #: 11764S-19-1 Material: Floor Leveler Location: Appearance: grey, fibrous, homogenous Layer: 3 of 3	Asbestos Present: NO No Asbestos Observed	Cellulose - 2% Other - 98%
Lab ID #: 65976 - 17 Cust. #: 11764S-19-2 Material: 12" Cream Pattern Floor Tile Location: Appearance: beige, nonfibrous, homogenous Layer: 1 of 3	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65976 - 17a Cust. #: 11764S-19-2 Material: Adhesive w/ Layers Location: Appearance: clear, nonfibrous, homogenous Layer: 2 of 3	Asbestos Present: NO No Asbestos Observed	Other - 100%

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Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65976 - 17b Cust. #: 11764S-19-2 Material: Floor Leveler Location: Appearance: grey, fibrous, homogenous Layer: 3 of 3	Asbestos Present: NO No Asbestos Observed	Cellulose - 2% Other - 98%
Lab ID #: 65976 - 18 Cust. #: 11764S-20-1 Material: Vermiculite (NOT SAMPLED) Location: Appearance: Layer: of	Asbestos Present: NO SAMPLE RECEIVED	
Lab ID #: 65976 - 19 Cust. #: 11764S-20-2 Material: Vermiculite (NOT SAMPLED) Location: Appearance: Layer: of	Asbestos Present: NO SAMPLE RECEIVED	

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Date Analyzed: 07/18/16
Date Reported: 07/18/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65976 - 20 Cust. #: 11764S-21-1 Material: 12" Cream Pattern Floor Tile Location: Appearance: beige, nonfibrous, homogenous Layer: 1 of 2	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65976 - 20a Cust. #: 11764S-21-1 Material: Mastic Location: Appearance: yellow, nonfibrous, nonhomogenous Layer: 2 of 2	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65976 - 21 Cust. #: 11764S-21-2 Material: 12" Cream Pattern Floor Tile Location: Appearance: beige, nonfibrous, homogenous Layer: 1 of 2	Asbestos Present: NO No Asbestos Observed	Other - 100%

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Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65976 - 21a Cust. #: 11764S-21-2 Material: Mastic Location: Appearance: yellow,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65976 - 22 Cust. #: 11764S-22-1 Material: 12" Cream Pattern Floor Tile Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 4	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65976 - 22a Cust. #: 11764S-22-1 Material: Adhesive w/ Layers Location: Appearance: yellow,nonfibrous,homogenous Layer: 2 of 4	Asbestos Present: NO No Asbestos Observed	Other - 100%

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Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65976 - 22b Cust. #: 11764S-22-1 Material: Floor Tile Location: Appearance: brown, fibrous, homogenous Layer: 3 of 4	Asbestos Present: YES Chrysotile - 10%	Other - 90%
Lab ID #: 65976 - 22c Cust. #: 11764S-22-1 Material: Mastic Location: Appearance: black, nonfibrous, homogenous Layer: 4 of 4	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65976 - 23 Cust. #: 11764S-22-2 Material: 12" Cream Pattern Floor Tile Location: Appearance: beige, nonfibrous, homogenous Layer: 1 of 4	Asbestos Present: NO No Asbestos Observed	Other - 100%

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Date Analyzed: 07/18/16
Date Reported: 07/18/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65976 - 23a Cust. #: 11764S-22-2 Material: Adhesive w/ Layers Location: Appearance: yellow,nonfibrous,homogenous Layer: 2 of 4	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65976 - 23b Cust. #: 11764S-22-2 Material: Floor Tile Location: Appearance: Layer: 3 of 4	Asbestos Present: NOT ANALYZED	
Lab ID #: 65976 - 23c Cust. #: 11764S-22-2 Material: Mastic Location: Appearance: black,nonfibrous,homogenous Layer: 4 of 4	Asbestos Present: NO No Asbestos Observed	Other - 100%

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Date Collected: 07/07/16
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Date Reported: 07/18/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65976 - 24 Cust. #: 11764S-23-1 Material: White Textured Ceiling Paint, Debris Location: Appearance: white, fibrous, homogenous Layer: 1 of 1	Asbestos Present: YES Chrysotile - 2%	Other - 98%
Lab ID #: 65976 - 25 Cust. #: 11764S-23-2 Material: White Textured Ceiling Paint, Debris Location: Appearance: Layer: of	Asbestos Present: NOT ANALYZED	
Lab ID #: 65976 - 26 Cust. #: 11764S-23-3 Material: White Textured Ceiling Paint, Debris Location: Appearance: Layer: of	Asbestos Present: NOT ANALYZED	

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Date Collected: 07/07/16
Date Received: 07/11/16
Date Analyzed: 07/18/16
Date Reported: 07/18/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65976 - 27 Cust. #: 11764S-24-1 Material: Suspect Transite Panels, Debris Location: Appearance: grey, fibrous, homogenous Layer: 1 of 1	Asbestos Present: YES Chrysotile - 30%	Other - 70%
Lab ID #: 65976 - 28 Cust. #: 11764S-24-2 Material: Suspect Transite Panels, Debris Location: Appearance: Layer: of	Asbestos Present: NOT ANALYZED	
Lab ID #: 65976 - 29 Cust. #: 11764S-24-3 Material: Suspect Transite Panels, Debris Location: Appearance: Layer: of	Asbestos Present: NOT ANALYZED	

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APEX Research, Inc.

54 Hi Tech Drive, Whitmore Lake, MI 48189. Phone: (734) 449 - 9990, Fax (734) 449 - 9991.

Web Site: <http://apexresearch-inc.com>. Email: Robert.Letarte@apexresearchlab.com

Customer Name: AKT Peerless
 Address: 214 Janes Avenue
 City, St., Zip: Saginaw, MI 48607
 Phone: 989-754-9896 Fax: 989-754-3804

Date of Survey: July 6 - 7, 2016
 Project: 2320 W Pierson Road, Flint, MI
 Project #11764s-2-194
 Contact Person: Heath Bobick
 Email: bobickh@aktpeerless.com

Lab Use Only
 Log-In: _____
 Report: _____
 Fax: _____
 Verbal: _____
 Email: _____

Turn Around Times:

***Terms and conditions on the other side.

3-5 Days

TTP YES
(Test Till Positive)

Asbestos:

Bulk X

Wipe _____ PCM _____

Lead:

Paint _____

Wipe _____

Lab ID	Customer ID #	Material/Location	Results
1	11764S-13-1	Gray Base Cove w/Adhesive and Associated Debris	
2	11764S-13-2	Gray Base Cove w/Adhesive and Associated Debris	
3	11764S-14-1	12" Cream Pattern Floor Tile w/Adhesives w/Layer (9" Tan and Red w/Mastic) and Associated Debris	
4	11764S-14-2	12" Cream Pattern Floor Tile w/Adhesives w/Layer (9" Tan and Red w/Mastic) and Associated Debris	
5	11764S-14-3	12" Cream Pattern Floor Tile w/Adhesives w/Layer (9" Tan and Red w/Mastic) and Associated Debris	
6	11764S-15-1	Tan Base Cove w/Adhesives and Associated Debris	
7	11764S-15-2	Tan Base Cove w/Adhesives and Associated Debris	
8	11764s-16-1	2x4 White Ceiling Tiles w/Fissures and Pinholes and Associated Debris	
9	11764s-16-2	2x4 White Ceiling Tiles w/Fissures and Pinholes and Associated Debris	
10	11764s-16-3	2x4 White Ceiling Tiles w/Fissures and Pinholes and Associated Debris	
11	11764s-17-1	2x4 White Ceiling Tiles w/Fissures and Associated Debris	
12	11764s-17-2	2x4 White Ceiling Tiles w/Fissures and Associated Debris	
13	11764s-18-1	12" Carpet Tiles w/Adhesives and Associated Debris	
14	11764s-18-2	12" Carpet Tiles w/Adhesives and Associated Debris	
15	11764s-18-3	12" Carpet Tiles w/Adhesives and Associated Debris	
16	11764s-19-1	12" Cream Pattern Floor Tiles w/Adhesives w/Layer (9" Tan Floor Tiles) and Associated Debris	
17	11764s-19-2	12" Cream Pattern Floor Tiles w/Adhesives w/Layer (9" Tan Floor Tiles) and Associated Debris	
18	11764s-20-1	Vermiculite (NOT SAMPLED)	
19	11764s-20-2	Vermiculite (NOT SAMPLED)	
20	11764s-21-1	12" Cream Pattern Floor Tiles and Associated Debris	
21	11764s-21-2	12" Cream Pattern Floor Tiles and Associated Debris	
22	11764s-22-1	12" Cream Floor Tile w/Adhesives w/Layer (9" Tan and Red w/Mastic) and Associated Debris	
23	11764s-22-2	12" Cream Floor Tile w/Adhesives w/Layer (9" Tan and Red w/Mastic) and Associated Debris	
24	11764s-23-1	White Textured Ceiling Paint and Associated Debris	
25	11764s-23-2	White Textured Ceiling Paint and Associated Debris	
26	11764s-23-3	White Textured Ceiling Paint and Associated Debris	
27	11764s-24-1	Suspect Transite Panels and Associated Debris	
28	11764s-24-2	Suspect Transite Panels and Associated Debris	
29	11764s-24-3	Suspect Transite Panels and Associated Debris	

Relinquished By: _____

Date: July 7, 2016

Revision Date: June/2011

Received By: _____

Date: _____

RECEIVED
 JUL 11 2016



Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 2320 W Pierson Road, Flint, MI
Project # 11764s-2-194

Report To:

Mr. Heath Bobick
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Saginaw, MI 48607

ARI Report # 16-65979
Date Collected: 07/07/16
Date Received: 07/11/16
Date Analyzed: 07/19/16
Date Reported: 07/19/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65979 - 01 Cust. #: 11764s-25-1 Material: Brown Base Cove/Debris Location: Appearance: brown,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65979 - 01a Cust. #: 11764s-25-1 Material: Adhesive Location: Appearance: yellow,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65979 - 02 Cust. #: 11764s-25-2 Material: Brown Base Cove/Debris Location: Appearance: brown,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: NO No Asbestos Observed	Other - 100%

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Date Reported: 07/19/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65979 - 02a Cust. #: 11764s-25-2 Material: Adhesive Location: Appearance: white, nonfibrous, homogenous Layer: 2 of 2	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65979 - 03 Cust. #: 11764s-26-1 Material: 12" White Floor Tile Location: Appearance: white, nonfibrous, homogenous Layer: 1 of 6	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65979 - 03a Cust. #: 11764s-26-1 Material: Glue Location: Appearance: yellow, nonfibrous, homogenous Layer: 2 of 6	Asbestos Present: NO No Asbestos Observed	Other - 100%

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Date Reported: 07/19/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65979 - 03b Cust. #: 11764s-26-1 Material: 12" Black Floor Tile Location: Appearance: black,nonfibrous,homogenous Layer: 3 of 6	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65979 - 03c Cust. #: 11764s-26-1 Material: Glue Location: Appearance: yellow,nonfibrous,homogenous Layer: 4 of 6	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65979 - 03d Cust. #: 11764s-26-1 Material: Layer of Linoleum Location: Appearance: beige,nonfibrous,nonhomogenous Layer: 5 of 6	Asbestos Present: NO No Asbestos Observed	Other - 100%

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Date Analyzed: 07/19/16
Date Reported: 07/19/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65979 - 03e Cust. #: 11764s-26-1 Material: Residue Location: Appearance: pink, fibrous, homogenous Layer: 6 of 6	Asbestos Present: YES Chrysotile - 10%	Other - 90%
Lab ID #: 65979 - 04 Cust. #: 11764s-26-2 Material: 12" White Floor Tile Location: Appearance: white, nonfibrous, homogenous Layer: 1 of 6	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65979 - 04a Cust. #: 11764s-26-2 Material: Glue Location: Appearance: yellow, nonfibrous, homogenous Layer: 2 of 6	Asbestos Present: NO No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

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NVLAP Lab Code 102118-0



Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 2320 W Pierson Road, Flint, MI
Project # 11764s-2-194

Report To:

Mr. Heath Bobick
AKT Peerless
214 Janes Ave.
Saginaw, MI 48607

ARI Report # 16-65979
Date Collected: 07/07/16
Date Received: 07/11/16
Date Analyzed: 07/19/16
Date Reported: 07/19/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65979 - 04b Cust. #: 11764s-26-2 Material: 12" Black Floor Tile Location: Appearance: black,nonfibrous,homogenous Layer: 3 of 6	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65979 - 04c Cust. #: 11764s-26-2 Material: Glue Location: Appearance: yellow,nonfibrous,homogenous Layer: 4 of 6	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65979 - 04d Cust. #: 11764s-26-2 Material: Layer of Linoleum Location: Appearance: beige,nonfibrous,nonhomogenous Layer: 5 of 6	Asbestos Present: NO No Asbestos Observed	Other - 100%

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Date Analyzed: 07/19/16
Date Reported: 07/19/16

Sample Information**Asbestos Type/Percent****Non-Asbestos**

Lab ID #: 65979 - 04e
Cust. #: 11764s-26-2
Material: Residue
Location:
Appearance:
Layer: 6 of 6

Asbestos Present:

NOT ANALYZED

Lab ID #: 65979 - 05
Cust. #: 11764s-27-1
Material: 12" Cream Pattern Floor Tile
Location:
Appearance: grey, nonfibrous, homogenous
Layer: 1 of 6

Asbestos Present: **NO**
No Asbestos Observed

Other - 100%

Lab ID #: 65979 - 05a
Cust. #: 11764s-27-1
Material: Glue
Location:
Appearance: yellow, nonfibrous, homogenous
Layer: 2 of 6

Asbestos Present: **NO**
No Asbestos Observed

Other - 100%

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Date Analyzed: 07/19/16
Date Reported: 07/19/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65979 - 05b Cust. #: 11764s-27-1 Material: 9" Tan/Red Floor Tile Location: Appearance: beige, fibrous, homogenous Layer: 3 of 6	Asbestos Present: YES Chrysotile - 10%	Other - 90%
Lab ID #: 65979 - 05c Cust. #: 11764s-27-1 Material: Mastic Location: Appearance: black, fibrous, nonhomogenous Layer: 4 of 6	Asbestos Present: YES Chrysotile - 10%	Other - 90%
Lab ID #: 65979 - 05d Cust. #: 11764s-27-1 Material: Discolored Floor Tile Location: Appearance: beige, fibrous, homogenous Layer: 5 of 6	Asbestos Present: YES Chrysotile - 10%	Other - 90%

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Date Analyzed: 07/19/16
Date Reported: 07/19/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65979 - 05e Cust. #: 11764s-27-1 Material: Mastic Location: Appearance: black,nonfibrous,homogenous Layer: 6 of 6	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65979 - 06 Cust. #: 11764s-27-2 Material: 12" Cream Pattern Floor Tile Location: Appearance: grey,nonfibrous,homogenous Layer: 1 of 6	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65979 - 06a Cust. #: 11764s-27-2 Material: Glue Location: Appearance: yellow,nonfibrous,homogenous Layer: 2 of 6	Asbestos Present: NO No Asbestos Observed	Other - 100%

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Date Analyzed: 07/19/16
Date Reported: 07/19/16

Sample Information**Asbestos Type/Percent****Non-Asbestos**

Lab ID #: 65979 - 06b
Cust. #: 11764s-27-2
Material: 9" Tan/Red Floor Tile
Location:
Appearance:
Layer: 3 of 6

Asbestos Present:

NOT ANALYZED

Lab ID #: 65979 - 06c
Cust. #: 11764s-27-2
Material: Mastic
Location:
Appearance:
Layer: 4 of 6

Asbestos Present:

NOT ANALYZED

Lab ID #: 65979 - 06d
Cust. #: 11764s-27-2
Material: Discolored Floor Tile
Location:
Appearance:
Layer: 5 of 6

Asbestos Present:

NOT ANALYZED

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Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65979 - 06e Cust. #: 11764s-27-2 Material: Mastic Location: Appearance: black,nonfibrous,homogenous Layer: 6 of 6	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65979 - 07 Cust. #: 11764s-27-3 Material: 12" Cream Pattern Floor Tile Location: Appearance: grey,nonfibrous,homogenous Layer: 1 of 7	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65979 - 07a Cust. #: 11764s-27-3 Material: Glue Location: Appearance: yellow,nonfibrous,homogenous Layer: 2 of 7	Asbestos Present: NO No Asbestos Observed	Other - 100%

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Date Reported: 07/19/16

Sample Information**Asbestos Type/Percent****Non-Asbestos**

Lab ID #: 65979 - 07b
Cust. #: 11764s-27-3
Material: 9" Tan/Red Floor Tile
Location:
Appearance:
Layer: 3 of 7

Asbestos Present:

NOT ANALYZED

Lab ID #: 65979 - 07c
Cust. #: 11764s-27-3
Material: Mastic
Location:
Appearance:
Layer: 4 of 7

Asbestos Present:

NOT ANALYZED

Lab ID #: 65979 - 07d
Cust. #: 11764s-27-3
Material: Top Glue
Location:
Appearance: yellow, fibrous, homogenous
Layer: 5 of 7

Asbestos Present: **NO**
No Asbestos Observed

Cellulose - 1%
Other - 99%

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Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65979 - 07e Cust. #: 11764s-27-3 Material: Floor Tile Location: Appearance: brown, fibrous, homogenous Layer: 6 of 7	Asbestos Present: NO Chrysotile - 0.50% POINT COUNT RESULT	Other - 99.5%
Lab ID #: 65979 - 07f Cust. #: 11764s-27-3 Material: Mastic Location: Appearance: black, fibrous, nonhomogenous Layer: 7 of 7	Asbestos Present: YES Chrysotile - 10%	Other - 90%
Lab ID #: 65979 - 08 Cust. #: 11764s-28-1 Material: Tan Drywall Adhesive/Debris Location: Appearance: yellow, nonfibrous, homogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Other - 100%

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Date Analyzed: 07/19/16
Date Reported: 07/19/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65979 - 09 Cust. #: 11764s-28-2 Material: Tan Drywall Adhesive/Debris Location: Appearance: yellow,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65979 - 10 Cust. #: 11764s-28-3 Material: Tan Drywall Adhesive/Debris Location: Appearance: yellow,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Cellulose - 1% Other - 99%
Lab ID #: 65979 - 11 Cust. #: 11764s-29-1 Material: 12" Cream Pattern Floor Tile/Debris Location: Appearance: yellow,fibrous,homogenous Layer: 1 of 2	Asbestos Present: YES Chrysotile - 5%	Other - 95%

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Date Analyzed: 07/19/16
Date Reported: 07/19/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65979 - 11a Cust. #: 11764s-29-1 Material: Glue Location: Appearance: yellow,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65979 - 12 Cust. #: 11764s-29-2 Material: 12" Cream Pattern Floor Tile/Debris Location: Appearance: Layer: 1 of 2	Asbestos Present: NOT ANALYZED	
Lab ID #: 65979 - 12a Cust. #: 11764s-29-2 Material: Glue Location: Appearance: yellow,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: NO No Asbestos Observed	Other - 100%

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Date Reported: 07/19/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65979 - 13 Cust. #: 11764s-30-1 Material: 18"-24" Mud Fittings/Debris-Elbow Location: Appearance: Layer: of	Asbestos Present: NO SAMPLE RECEIVED	
Lab ID #: 65979 - 14 Cust. #: 11764s-31-1 Material: Tan Paneling Adhesives/Debris Location: Appearance: yellow,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Cellulose - 1% Other - 99%
Lab ID #: 65979 - 15 Cust. #: 11764s-31-2 Material: Tan Paneling Adhesives/Debris Location: Appearance: yellow,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Cellulose - 1% Other - 99%

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Date Analyzed: 07/19/16
Date Reported: 07/19/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65979 - 16 Cust. #: 11764s-32-1 Material: 12" Mud Fittings/Debris-Elbows/Junctions Location: Appearance: grey, fibrous, homogenous Layer: 1 of 1	Asbestos Present: YES Chrysotile - 10%	Mineral Wool - 20% Other - 70%
Lab ID #: 65979 - 17 Cust. #: 11764s-32-2 Material: 12" Mud Fittings/Debris-Elbows/Junctions Location: Appearance: Layer: of	Asbestos Present: NOT ANALYZED	
Lab ID #: 65979 - 18 Cust. #: 11764s-33-1 Material: 9" Tan Floor Tile/Debris Location: Appearance: brown, fibrous, homogenous Layer: 1 of 2	Asbestos Present: YES Chrysotile - 10%	Other - 90%

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Date Analyzed: 07/19/16
Date Reported: 07/19/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65979 - 18a Cust. #: 11764s-33-1 Material: Mastic Location: Appearance: black,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: NO No Asbestos Observed	Cellulose - 1% Other - 99%
Lab ID #: 65979 - 19 Cust. #: 11764s-33-2 Material: 9" Tan Floor Tile/Debris Location: Appearance: Layer: 1 of 2	Asbestos Present: NOT ANALYZED	
Lab ID #: 65979 - 19a Cust. #: 11764s-33-2 Material: Mastic Location: Appearance: black,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: NO No Asbestos Observed	Other - 100%

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Date Reported: 07/19/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65979 - 20 Cust. #: 11764s-34-1 Material: Brown Paneling Adhesives/Debris Location: Appearance: brown,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65979 - 21 Cust. #: 11764s-34-2 Material: Brown Paneling Adhesives/Debris Location: Appearance: brown,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65979 - 22 Cust. #: 11764s-35-1 Material: 12" Cream Floor Tile/Debris Location: Appearance: white,fibrous,homogenous Layer: 1 of 2	Asbestos Present: YES Chrysotile - 1.25% POINT COUNT RESULT	Other - 98.75%

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Date Reported: 07/19/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65979 - 22a Cust. #: 11764s-35-1 Material: Adhesive Location: Appearance: black,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: NO No Asbestos Observed	Cellulose - 1% Other - 99%
Lab ID #: 65979 - 23 Cust. #: 11764s-35-2 Material: 12" Cream Floor Tile/Debris Location: Appearance: Layer: 1 of 2	Asbestos Present: NOT ANALYZED	
Lab ID #: 65979 - 23a Cust. #: 11764s-35-2 Material: Adhesive Location: Appearance: black,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: NO No Asbestos Observed	Cellulose - 1% Other - 99%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate may not be used by the customer to claim product endorsement by NVLAP or any agency of the US Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



NVLAP Lab Code 102118-0



Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 2320 W Pierson Road, Flint, MI
Project # 11764s-2-194

Report To:

Mr. Heath Bobick
AKT Peerless
214 Janes Ave.
Saginaw, MI 48607

ARI Report # 16-65979
Date Collected: 07/07/16
Date Received: 07/11/16
Date Analyzed: 07/19/16
Date Reported: 07/19/16

Sample Information**Asbestos Type/Percent****Non-Asbestos**

Lab ID #: 65979 - 24
Cust. #: 11764s-36-1
Material: Duct Wrap Seam (NOT SAMPLED)
Location:
Appearance:
Layer: of

Asbestos Present:

NO SAMPLE RECEIVED

Lab ID #: 65979 - 25
Cust. #: 11764s-37-1
Material: Peg Board/Debris
Location:
Appearance: brown, fibrous, homogenous
Layer: 1 of 1

Asbestos Present: **NO**
No Asbestos Observed

Cellulose - 65%
Other - 35%

Lab ID #: 65979 - 26
Cust. #: 11764s-37-2
Material: Peg Board/Debris
Location:
Appearance: brown, fibrous, homogenous
Layer: 1 of 1

Asbestos Present: **NO**
No Asbestos Observed

Cellulose - 65%
Other - 35%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate may not be used by the customer to claim product endorsement by NVLAP or any agency of the US Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



NVLAP Lab Code 102118-0



Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 2320 W Pierson Road, Flint, MI
Project # 11764s-2-194

Report To:

Mr. Heath Bobick
AKT Peerless
214 Janes Ave.
Saginaw, MI 48607

ARI Report # 16-65979
Date Collected: 07/07/16
Date Received: 07/11/16
Date Analyzed: 07/19/16
Date Reported: 07/19/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65979 - 27 Cust. #: 11764s-37-3 Material: Peg Board/Debris Location: Appearance: brown, fibrous, nonhomogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Cellulose - 65% Other - 35%
Lab ID #: 65979 - 28 Cust. #: 11764s-33-3 Material: 9" Tan Floor Tile/Debris Location: Appearance: Layer: 1 of 2	Asbestos Present: NOT ANALYZED	
Lab ID #: 65979 - 28a Cust. #: 11764s-33-3 Material: Mastic Location: Appearance: black, nonfibrous, homogenous Layer: 2 of 2	Asbestos Present: NO No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

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NVLAP Lab Code 102118-0

APEX Research, Inc.

4 Hi Tech Drive, Whitmore Lake, MI 48189. Phone: (734) 449 - 9990, Fax (734) 449 - 9991.
Web Site: <http://apexresearch-inc.com>. Email: Robert.Letarte@apexresearchlab.com



Customer Name: AKT Peerless
Address: 214 Janes Avenue
City, St., Zip: Saginaw, MI 48607
Phone: 989-754-9896 Fax: 989-754-3804

Date of Survey: July 6 - 7, 2016
Project: 2320 W Pierson Road, Flint, MI
Project #11764s-2-194
Contact Person: Heath Bobick
Email: bobickh@aktpeerless.com

Lab Use Only
Log-In: _____
Report: _____
Fax: _____
Verbal: _____
Email: _____

Turn Around Times:

3-5 Days

TTP YES
(Test Till Positive)

Asbestos:

Bulk X

Wipe _____ PCM _____

Lead:

Paint _____

Wipe _____

***Terms and conditions on the other side.

Lab ID	Customer ID #	Material/Location	Results
1	11764s-25-1	Brown Base Cove w/Adhesive and Associated Debris	
2	11764s-25-2	Brown Base Cove w/Adhesive and Associated Debris	
3	11764s-26-1	12" Black and 12" White Floor Tile w/Layer of Linoleum and Associated Debris	
4	11764s-26-2	12" Black and 12" White Floor Tile w/Layer of Linoleum and Associated Debris	
5	11764s-27-1	12" Cream Pattern Floor Tile w/Layers (Layer 1) 9" Tan and Red w/Mastic, Layer 2) Discolored Floor Tile) and Associated Debris	
6	11764s-27-2	12" Cream Pattern Floor Tile w/Layers (Layer 1) 9" Tan and Red w/Mastic, Layer 2) Discolored Floor Tile) and Associated Debris	
7	11764s-27-3	12" Cream Pattern Floor Tile w/Layers (Layer 1) 9" Tan and Red w/Mastic, Layer 2) Discolored Floor Tile) and Associated Debris	
8	11764s-28-1	Tan Drywall Adhesive and Associated Debris	
9	11764s-28-2	Tan Drywall Adhesive and Associated Debris	
10	11764s-28-3	Tan Drywall Adhesive and Associated Debris	
11	11764s-29-1	12" Cream Pattern Floor Tile and Associated Debris	
12	11764s-29-2	12" Cream Pattern Floor Tile and Associated Debris	
13	11764s-30-1	18" - 24" Mud Fittings and Associated Debris-Elbow (NOT SAMPLED)	
14	11764s-31-1	Tan Paneling Adhesives and Associated Debris	
15	11764s-31-2	Tan Paneling Adhesives and Associated Debris	
16	11764s-32-1	12" Mud Fittings and Associated Debris-Elbows and Junctions	
17	11764s-32-2	12" Mud Fittings and Associated Debris-Elbows and Junctions	
18	11764s-33-1	9" Tan Floor Tile w/Mastics and Associated Debris	
19	11764s-33-2	9" Tan Floor Tile w/Mastics and Associated Debris	
20	11764s-34-1	Brown Paneling Adhesives and Associated Debris	
21	11764s-34-2	Brown Paneling Adhesives and Associated Debris	
22	11764s-35-1	12" Cream Floor Tile w/Adhesives and Associated Debris	
23	11764s-35-2	12" Cream Floor Tile w/Adhesives and Associated Debris	
24	11764s-36-1	Duct Wrap Seam (NOT SAMPLED)	
25	11764s-37-1	Peg Board and Associated Debris	
26	11764s-37-2	Peg Board and Associated Debris	
27	11764s-37-3	Peg Board and Associated Debris	

Relinquished By: Heath Bobick

Date: July 7, 2016

Revision Date: June/2011

Received By: Heath Bobick
Date: JUL 11 2016

APEX RESEARCH



Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 2320 W Pierson Road, Flint, MI
Project # 11764s-2-194

Report To:

Mr. Heath Bobick
AKT Peerless
214 Janes Ave.
Saginaw, MI 48607

ARI Report # 16-65980
Date Collected: 07/07/16
Date Received: 07/11/16
Date Analyzed: 07/18/16
Date Reported: 07/18/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65980 - 01 Cust. #: 11764S-38-1 Material: 12" White Ceiling Tiles, Debris Location: Appearance: brown, fibrous, homogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Cellulose - 90% Fiberglass - 5% Other - 5%
Lab ID #: 65980 - 02 Cust. #: 11764S-38-2 Material: 12" White Ceiling Tiles, Debris Location: Appearance: brown, fibrous, homogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Cellulose - 90% Fiberglass - 5% Other - 5%
Lab ID #: 65980 - 03 Cust. #: 11764S-39-1 Material: Exterior Building Caulk, Thick Brown Bead Location: Appearance: brown, nonfibrous, nonhomogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

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NVLAP Lab Code 102118-0



Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 2320 W Pierson Road, Flint, MI
Project # 11764s-2-194

Report To:

Mr. Heath Bobick
AKT Peerless
214 Janes Ave.
Saginaw, MI 48607

ARI Report # 16-65980
Date Collected: 07/07/16
Date Received: 07/11/16
Date Analyzed: 07/18/16
Date Reported: 07/18/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65980 - 04 Cust. #: 11764S-39-2 Material: Exterior Building Caulk, Thick Brown Bead Location: Appearance: brown,nonfibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65980 - 05 Cust. #: 11764S-40-1 Material: Exterior Building Caulk, Thin Brown Bead Location: Appearance: brown,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65980 - 06 Cust. #: 11764S-40-2 Material: Exterior Building Caulk, Thin Brown Bead Location: Appearance: brown,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

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NVLAP Lab Code 102118-0



Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 2320 W Pierson Road, Flint, MI
Project # 11764s-2-194

Report To:

Mr. Heath Bobick
AKT Peerless
214 Janes Ave.
Saginaw, MI 48607

ARI Report # 16-65980
Date Collected: 07/07/16
Date Received: 07/11/16
Date Analyzed: 07/18/16
Date Reported: 07/18/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65980 - 07 Cust. #: 11764S-41-1 Material: Window Caulk, Thick Black Bead Location: Appearance: black, nonfibrous, homogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65980 - 08 Cust. #: 11764S-41-2 Material: Window Caulk, Thick Black Bead Location: Appearance: black, fibrous, nonhomogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Cellulose - 5% Other - 95%
Lab ID #: 65980 - 09 Cust. #: 11764S-42-1 Material: Exterior Building Caulk, Black, Sticky Location: Appearance: brown, nonfibrous, homogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

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NVLAP Lab Code 102118-0



Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 2320 W Pierson Road, Flint, MI
Project # 11764s-2-194

Report To:

Mr. Heath Bobick
AKT Peerless
214 Janes Ave.
Saginaw, MI 48607

ARI Report # 16-65980
Date Collected: 07/07/16
Date Received: 07/11/16
Date Analyzed: 07/18/16
Date Reported: 07/18/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 65980 - 10 Cust. #: 11764S-42-2 Material: Exterior Building Caulk, Black, Sticky Location: Appearance: brown, nonfibrous, homogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Other - 100%
Lab ID #: 65980 - 11 Cust. #: 11764S-43-1 Material: Window Caulk, Thin Black Bead Location: Appearance: black, fibrous, homogenous Layer: 1 of 1	Asbestos Present: YES Chrysotile - 3%	Cellulose - 10% Other - 87%
Lab ID #: 65980 - 12 Cust. #: 11764S-43-2 Material: Window Caulk, Thin Black Bead Location: Appearance: Layer: of	Asbestos Present: NOT ANALYZED	

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

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NVLAP Lab Code 102118-0



Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 2320 W Pierson Road, Flint, MI
Project # 11764s-2-194

Report To:

Mr. Heath Bobick
AKT Peerless
214 Janes Ave.
Saginaw, MI 48607

ARI Report # 16-65980
Date Collected: 07/07/16
Date Received: 07/11/16
Date Analyzed: 07/18/16
Date Reported: 07/18/16

Sample Information**Asbestos Type/Percent****Non-Asbestos**

Lab ID #: 65980 - 13
Cust. #: 11764S-44-1
Material: Exterior Building Caulk, Thick Burgundy Bea
Location:
Appearance: brown,nonfibrous,homogenous
Layer: 1 of 1

Asbestos Present: **NO**
No Asbestos Observed

Other - 100%

Lab ID #: 65980 - 14
Cust. #: 11764S-44-2
Material: Exterior Building Caulk, Thick Burgundy Bea
Location:
Appearance: brown,nonfibrous,homogenous
Layer: 1 of 1

Asbestos Present: **NO**
No Asbestos Observed

Other - 100%

Lab ID #: 65980 - 15
Cust. #: 11764S-45-1
Material: Fire Doors, Frames (NOT SAMPLED)
Location:
Appearance:
Layer: of

Asbestos Present:

NO SAMPLE RECEIVED

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

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NVLAP Lab Code 102118-0

65980

APEX Research, Inc.

i Tech Drive, Whitmore Lake, MI 48189. Phone: (734) 449 - 9990, Fax (734) 449 - 9991.
Web Site: <http://apexresearch-inc.com>. Email: Robert.Letarte@apexresearchlab.com



Customer Name: AKT Peerless
Address: 214 Janes Avenue
City, St., Zip: Saginaw, MI 48607
Phone: 989-754-9896 Fax: 989-754-3804

Date of Survey: July 6 - 7, 2016
Project: 2320 W Pierson Road, Flint, MI
Project #11764s-2-194
Contact Person: Heath Bobick
Email: bobickh@aktpeerless.com

Lab Use Only
Log-In: _____
Report: _____
Fax: _____
Verbal: _____
Email: _____

***Terms and conditions on the other side.

Turn Around Times:

3-5 Days

TTP YES
(Test Till Positive)

Asbestos:

Lead:

Bulk X

Paint

Wipe _____ PCM _____

Wipe _____

Lab ID	Customer ID #	Material/Location	Results
1	11764S-38-1	12" White Ceiling Tiles and Associated Debris and Associated Debris	
2	11764S-38-2	12" White Ceiling Tiles and Associated Debris and Associated Debris	
3	11764S-39-1	Exterior Building Caulk-Thick Brown Bead and Associated Debris	
4	11764S-39-2	Exterior Building Caulk-Thick Brown Bead and Associated Debris	
5	11764S-40-1	Exterior Building Caulk-Thin Brown Bead and Associated Debris	
6	11764S-40-2	Exterior Building Caulk-Thin Brown Bead and Associated Debris	
7	11764S-41-1	Window Caulk-Thick Black Bead and Associated Debris	
8	11764S-41-2	Window Caulk-Thick Black Bead and Associated Debris	
9	11764S-42-1	Exterior Building Caulk-Black and Sticky and Associated Debris	
10	11764S-42-2	Exterior Building Caulk-Black and Sticky and Associated Debris	
11	11764S-43-1	Window Caulk-Thin Black Bead and Associated Debris	
12	11764S-43-2	Window Caulk-Thin Black Bead and Associated Debris	
13	11764S-44-1	Exterior Building Caulk-Thick Burgandy Bead and Associated Debris	
14	11764S-44-2	Exterior Building Caulk-Thick Burgandy Bead and Associated Debris	
15	11764S-45-1	Fire Doors and Frames (NOT SAMPLED)	

Relinquished By: [Signature]
Date: July 7, 2016
Revision Date: June 2011

Received By: [Signature]
Date: JUL 11 2016

APEX RESEARCH



Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 2320 W Pierson Road, Flint, MI
Project # 11764s-2-194

Report To:

Mr. Heath Bobick
AKT Peerless
214 Janes Ave.
Saginaw, MI 48607

ARI Report # 16-66523
Date Collected: 08/10/16
Date Received: 08/12/16
Date Analyzed: 08/12/16
Date Reported: 08/12/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 66523 - 01 Cust. #: C-1 Material: Wall Material, Composite Location: Appearance: grey, fibrous, nonhomogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Cellulose - 20% Fiberglass - 5% Other - 75%
Lab ID #: 66523 - 02 Cust. #: C-2 Material: Wall Material, Composite Location: Appearance: grey, fibrous, nonhomogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Cellulose - 20% Fiberglass - 5% Other - 75%
Lab ID #: 66523 - 03 Cust. #: C-3 Material: Wall Material, Composite Location: Appearance: grey, fibrous, homogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Cellulose - 20% Fiberglass - 5% Other - 75%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

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NVLAP Lab Code 102118-0



Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 2320 W Pierson Road, Flint, MI
Project # 11764s-2-194

Report To:

Mr. Heath Bobick
AKT Peerless
214 Janes Ave.
Saginaw, MI 48607

ARI Report # 16-66523
Date Collected: 08/10/16
Date Received: 08/12/16
Date Analyzed: 08/12/16
Date Reported: 08/12/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 66523 - 04 Cust. #: C-4 Material: Wall Material, Composite Location: Appearance: white, fibrous, homogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Cellulose - 20% Fiberglass - 5% Other - 75%
Lab ID #: 66523 - 05 Cust. #: C-5 Material: Wall Material, Composite Location: Appearance: grey, fibrous, homogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Cellulose - 20% Fiberglass - 5% Other - 75%
Lab ID #: 66523 - 06 Cust. #: C-6 Material: Wall Material, Composite Location: Appearance: grey, fibrous, homogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Cellulose - 20% Fiberglass - 5% Other - 75%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate may not be used by the customer to claim product endorsement by NVLAP or any agency of the US Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



NVLAP Lab Code 102118-0



Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 2320 W Pierson Road, Flint, MI
Project # 11764s-2-194

Report To:

Mr. Heath Bobick
AKT Peerless
214 Janes Ave.
Saginaw, MI 48607

ARI Report # 16-66523
Date Collected: 08/10/16
Date Received: 08/12/16
Date Analyzed: 08/12/16
Date Reported: 08/12/16

Sample Information	Asbestos Type/Percent	Non-Asbestos
Lab ID #: 66523 - 07 Cust. #: C-7 Material: Wall Material, Composite Location: Appearance: grey, fibrous, homogenous Layer: 1 of 1	Asbestos Present: NO No Asbestos Observed	Cellulose - 20% Fiberglass - 5% Other - 75%
Lab ID #: Cust. #: Material: Location: Appearance: Layer: of	Asbestos Present:	
Lab ID #: Cust. #: Material: Location: Appearance: Layer: of	Asbestos Present:	

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate may not be used by the customer to claim product endorsement by NVLAP or any agency of the US Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.



NVLAP Lab Code 102118-0



APEX RESEARCH

APPENDIX C

Limited Phase II Environmental Assessments

November 7, 2016

Ms. Faith Finholm
Genesee County Land Bank Authority
452 South Saginaw Street, 2nd Floor
Flint, Michigan 48502

Subject: Limited Phase II Environmental Site Assessment (ESA)
2360 West Pierson Road
Flint, Michigan
AKT Peerless Project No. 11957s-3-20

Ms. Finholm:

The Genesee County Land Bank Authority (GCLBA) retained AKT Peerless Environmental & Energy Services (AKT Peerless) to conduct a Limited Phase II Environmental Site Assessment (ESA) of a property located at 2360 West Pierson Road in Flint, Michigan (subject property). This Limited Phase II ESA was conducted in accordance with AKT Peerless' Proposal for a Phase II ESA (Proposal Number PS-19918), dated October 6, 2016, and based on American Society for Testing and Materials (ASTM) Designation E 1903-97 "Standard Guide for Environmental Site Assessments: Phase II Environmental Site Assessment Process."

This Phase II ESA scope of work is intended to: (1) evaluate for the presence of contamination on the subject property based on the recognized environmental conditions (RECs) identified in AKT Peerless' September 20, 2016 Phase I ESA and (2) evaluate levels of contamination to determine if the subject property meets the definition of a "facility¹" as defined in Part 201 of Natural Resources and Environmental Protection Act (NREPA), Michigan Public Act (PA) 451, 1994, as amended. This letter report documents the field activities, sampling protocols, and laboratory results.

AKT Peerless' Phase II ESA was performed for the benefit of the GCLBA, who may rely on the contents and conclusions of this report.

Site Description

The subject property is located at 2360 West Pierson Road Street in Flint, Michigan and consists of one parcel (Parcel Identification Number 46-26-351-044), containing approximately 0.76 acres. The subject property contains one vacant commercial building. Exterior portions of the subject property consist of an asphalt parking lot.

¹ "Facility" means any area, place, or property where a hazardous substance in excess of the concentrations which satisfy the requirements of Sections 20120a(1)(a) or (17) or the cleanup criteria for unrestricted residential use under Part 213 has been released, deposited, disposed of, or otherwise comes to be located. Facility does not include any area, place, or property at which response activities have been completed which satisfy the cleanup criteria for the residential category provided for in section 20120a(1)(a) and (17) or at which corrective action has been completed under Part 213 which satisfies the cleanup criteria for unrestricted residential use.

Refer to Figure 1 for a topographic location map. See Figure 2 for a sample location map depicting subject property features.

Previous Environmental Investigations

AKT Peerless completed a Phase I ESA of the subject property on September 20, 2016. The purpose of AKT Peerless' Phase I ESA was to identify potential environmental issues associated with the subject property. AKT Peerless identified the following REC in connection with the subject property:

REC 1 - The subject property operated as an oil change/car wash from 1985 to 2009. According to the environmental database report, the subject property was identified on the Superfund Enterprise Management System (SEMS), Integrated Compliance Information System (ICIS), Enforcement and Compliance History Online (ECHO), and Resource Conservation and Recovery Act (RCRA) databases. Collectively, the databases indicated that the oil change bays were full of oil and water during a 2011 inspection completed by the Environmental Protection Agency. Furthermore, AKT Peerless observed standing oil/water within the basement of the subject building, as well as oil staining concrete within the subject building. No known investigations have been conducted to evaluate former site operations. The possibility exists that hazardous substances and/or petroleum products have impacted the subsurface of the subject property. Additional investigation and/or assessment is warranted in order to evaluate the nature, extent, magnitude, and materiality of this REC.

Scope of Assessment

To evaluate the identified RECs, AKT Peerless conducted a subsurface investigation of the subject property on October 17, 2016, that included: (1) the advancement of six soil borings, (2) the collection of four soil samples, (3) the installation of three temporary groundwater monitor wells, (4) the collection of three groundwater samples, and (5) the collection of one wastewater sample from standing water in the building basement. The following samples were submitted for laboratory analyses:

- One soil sample for volatile organic compounds (VOCs)
- One soil sample for VOCs and polynuclear aromatic hydrocarbons (PNAs)
- One soil sample for VOCs, PNAs, lead, cadmium, and chromium
- Two groundwater samples for VOCs, PNAs, lead, cadmium, and chromium
- One groundwater sample for VOCs, lead, cadmium, and chromium
- One wastewater sample for the analysis of VOCs, PNAs, polychlorinated biphenyls (PCBs); and lead, cadmium, and chromium

All samples were delivered to a laboratory under chain-of-custody documentation.

AKT Peerless used hydraulic drive/direct-push (Geoprobe®) sampling techniques and followed the drilling procedures outlined in ASTM publication D 6282-98 "Standard Guide for Direct Push Soil Sampling for Environmental Site Characterizations." AKT Peerless collected continuous soil samples from the soil borings in four-foot intervals to the maximum depth explored of 8.0 feet below ground surface (bgs). AKT Peerless personnel inspected, field-screened, and logged the samples collected at each soil boring location. Soil types were classified in accordance with ASTM publication D-2488 "Unified Soil Classification System." Refer to Figure 2 for a sample location map with soil boring locations. The soil boring logs are provided in Appendix A.

Quality Assurance/Quality Control

To ensure the accuracy of data collected during on-site activities, AKT Peerless implemented proper quality assurance/quality control (QA/QC) measures. The QA/QC procedures included, but were not limited to: (1) decontamination of sampling equipment before and between sampling events; (2) calibration of field equipment; (3) documentation of field activities; and (4) sample preservation techniques.

During sample collection, AKT Peerless adhered to proper decontamination procedures. Sampling equipment was decontaminated using the following methods to minimize potential cross-contamination of soil samples:

- Steam-cleaning or washing and scrubbing the equipment with non-phosphate detergent
- Rinsing the equipment
- Air-drying the equipment

A properly calibrated photoionization detector (PID) was used to field screen all soil samples. The PID was maintained in a calibrated condition using 100 ppm isobutylene span gas prior to subsurface investigations.

During AKT Peerless' Limited Phase II ESA activities, subject property conditions (i.e. soil boring locations, weather conditions) were documented. AKT Peerless visually inspected the soil samples and prepared a geologic log for each soil boring. The logs include soil characteristics such as: (1) color, (2) composition (e.g., sand, clay, or gravel), (3) soil moisture and water table depth, and (4) signs of possible contamination (i.e., stained or discolored soil, odors). See Appendix A for AKT Peerless' soil boring logs. See Figure 2 for a sample location map with soil boring locations.

AKT Peerless collected samples according to United States Environmental Protection Agency (USEPA) Publication SW-846, Testing Methods for Evaluating Solid Waste. Soil samples were collected in laboratory-supplied containers, stored on ice at approximately 4 degrees Celsius, and submitted under chain-of-custody documentation. Soil samples collected for VOCs were field preserved with methanol in accordance with U.S. EPA Method 5035. Soil samples collected for PNAs and metals analyses were stored in unpreserved, 4-ounce wide-mouth jars. Groundwater samples for VOCs were field preserved with hydrochloric acid. Groundwater samples collected for PNAs were stored in unpreserved 1-liter amber jars. The PCB sample was stored in an unpreserved 1-liter amber jar.

Local Geology/Hydrology

During drilling activities, AKT Peerless encountered the following soil types:

- SAND ranged from 0.5 inches to 5.0 feet bgs in select borings. This sand was fine to medium grain and was light brown and greenish gray in color, with trace gravel.
- SILT ranged from 4.5 feet bgs to 6.5 feet bgs in one boring. This silt was very fine grain and light brown in color.
- CLAY ranged from 4.5 inches to 8.0 feet bgs in select borings. The clay exhibited moderate stiffness and was yellowish brown or light brown in color.

AKT Peerless encountered groundwater within the all six soil borings from 2.0 feet to 5.0 feet bgs. Refer to Appendix A for soil boring logs.

Laboratory Analysis and Methods

AKT Peerless submitted three soil samples, three groundwater samples, one wastewater sample, and three QA/QC samples (one soil duplicate, a method blank, and a trip blank) for laboratory analysis. The laboratory analyzed the samples for: (1) VOCs in accordance with USEPA Method 8260B, (2) PNAs in accordance with USEPA Method 8270C, (3) PCBs in accordance with USEPA Method 608, and (4) lead, cadmium, and chromium in accordance with USEPA Method 6020A.

Analytical Results

AKT Peerless conducted limited soil and groundwater sampling in areas believed likely to be impacted by contaminants based upon the RECs, as identified within the September 2016 Phase I ESA. AKT Peerless compared the laboratory analytical results to the Michigan Department of Environmental Quality (MDEQ) Part 201 Generic Residential Cleanup Criteria (RCC). The results of the investigation indicate the following:

- 1,2,3-trimethylbenzene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and chromium were detected within a soil sample in excess of the MDEQ Part 201 Generic RCC; specifically, the Residential Drinking Water Protection Criteria and/or Groundwater Surface Water Interface Protection Criteria
- Lead, cadmium, and chromium were detected within select groundwater samples in excess of the MDEQ Part 201 Generic RCC; specifically, the Residential Drinking Water Criteria and/or Groundwater Surface Water Interface Criteria.

Based on laboratory analytical results, the subject property meets the definition of a *facility*, as defined in Part 201 of the NREPA, Michigan Public Act (PA) 451, 1994, as amended.

The water sample collected from the interior pits of the subject building were submitted for laboratory analysis of VOCs, PNAs, PCBs, lead, cadmium, and chromium. According to laboratory analysis, no detectable concentrations of any the analyzed parameters were present with the sample collected.

Refer to Figure 2 for a sample location map with soil boring and monitor well locations. Refer to Figure 3 and 4 for a site map with soil and groundwater analytical results exceeding MDEQ criteria. Refer to Table 1 for a summary of soil analytical results and Table 2 for a summary of groundwater analytical results. Refer to Appendix B for a complete analytical laboratory report, which contains all sampled parameters.

Conclusions and Recommendations

AKT Peerless completed six soil borings, the collection of three soil samples, installation of three temporary groundwater monitor wells, collection of three groundwater samples and one wastewater sample to evaluate the RECs identified in AKT Peerless' September 2016 Phase I ESA. Laboratory analytical results indicated that contaminant concentrations in soil and groundwater exceed MDEQ RCC. Therefore, the subject property meets the definition of a *facility*, as defined in Part 201 of the NREPA, Michigan Public Act (PA) 451, 1994, as amended.

AKT Peerless recommends any future owner(s)/operator(s) prepare a Baseline Environmental Assessment (BEA) report. Section 26(1)(c) of Part 201 provides certain liability protections to a person, who becomes an owner or operator of a *facility* on, or after June 5, 1995, if they comply with both of the following, or unless other defenses apply: a BEA is conducted prior to or within 45 days after the earlier of the date of purchase, occupancy, or foreclosure, and the owner or operator discloses the results of the BEA to the MDEQ and subsequent purchaser or transferee.

In addition, because the subject property meets the definition of a facility, AKT Peerless recommends conducting a Section 20107(a) Compliance Analysis to assure compliance with Due Care obligations. Due Care obligations include:

- Undertaking measures to prevent exacerbation of existing contamination.
- Exercising due care by undertaking response activities to mitigate unacceptable exposure to hazardous substances, mitigate fire and explosion hazards due to hazardous substances, and allow for the intended use of the subject property in a manner that protects health and safety.
- Taking reasonable precautions against the reasonably foreseeable acts or omissions of a third party and the consequences that could result from those acts or omissions.
- Provide notifications to the MDEQ and others in regard to mitigating fire and explosions hazards, discarded or abandoned containers, contamination migrating beyond property boundaries, as applicable.
- Comply with any land use or resource use restrictions established or relied on in connection with the response activities at the facility.
- Not impede the effectiveness or integrity of any land use or resource restriction employed at the facility in connection with response activities.

A future owner/operator may be required to conduct additional subsurface investigation to further evaluate for exposure pathways and screening levels at the subject property (i.e., drinking water, direct contact, indoor air inhalation, soil saturation) in connection with known contamination to comply with due care obligations.


Limitations

The information and opinions obtained in this report are for the exclusive use of the GCLBA. No distribution to or reliance by other parties may occur without the express written permission of AKT Peerless. AKT Peerless will not distribute this report without your written consent or as required by law or by a Court order. The information and opinions contained in the report are given in light of that assignment. The report must be reviewed and relied upon only in conjunction with the terms and conditions expressly agreed upon by the parties and as limited therein. Any third parties, who have been extended the right to rely on the contents of this report by AKT Peerless (which is expressly required prior to any third-party release), expressly agrees to be bound by the original terms and conditions entered into by AKT Peerless and the GCLBA.

Subject to the above and the terms and conditions, AKT Peerless accepts responsibility for the competent performance of its duties in executing the assignment and preparing reports in accordance with the normal standards of the profession, but disclaims any responsibility for consequential damages. Although AKT Peerless believes that results contained herein are reliable, AKT Peerless cannot warrant or guarantee that the information provided is exhaustive or that the information provided by the GCLBA or third parties is complete or accurate.

Signatures of Environmental Professionals

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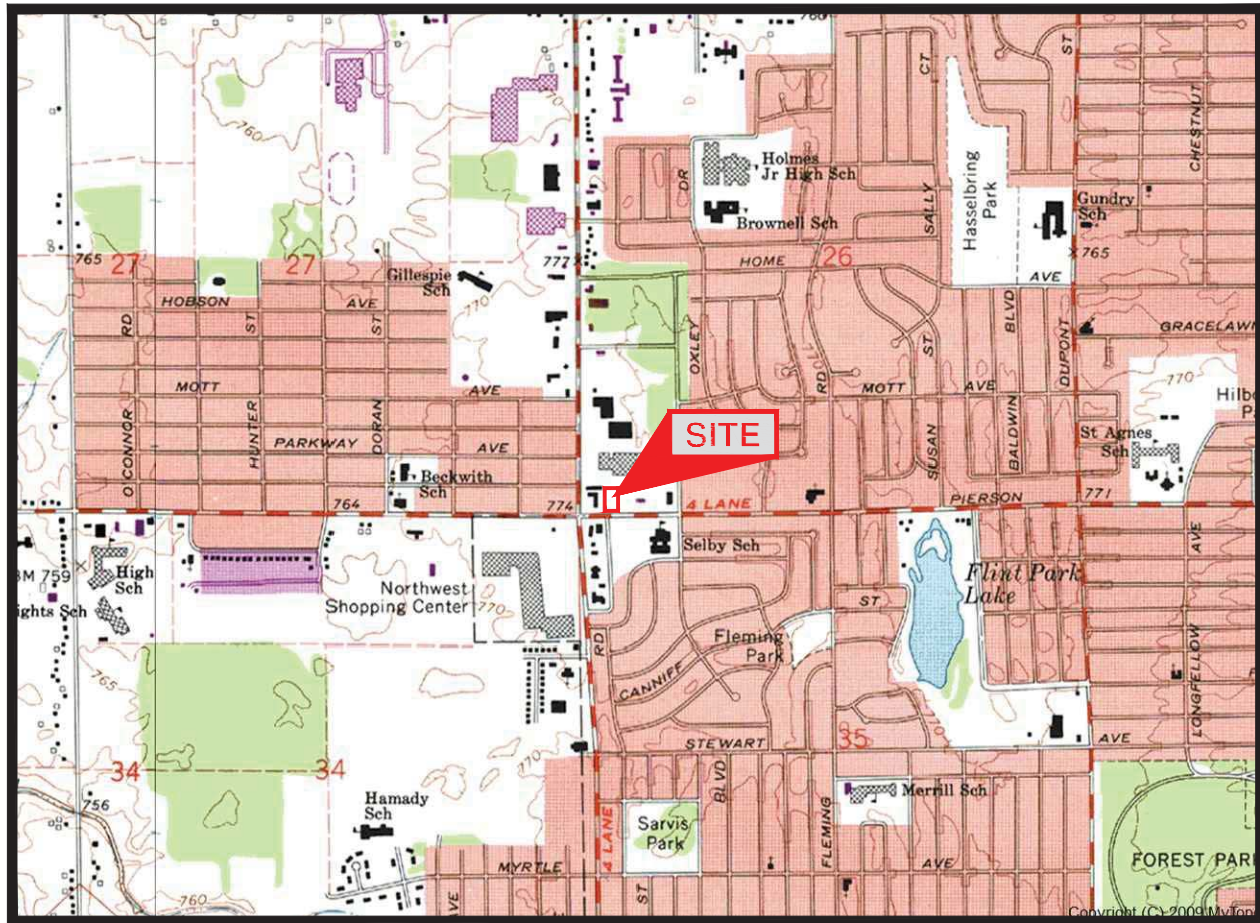
Enclosed

Figures: Figure 1 – Topographic Location Map
 Figure 2 – Sample Location Map
 Figure 3 – Soil Results Exceeding MDEQ RCC
 Figure 4 – Groundwater Results Exceeding MDEQ RCC

Tables: Table 1 – Summary of Soil Analytical Results
 Table 2 – Summary of Groundwater Analytical Results
 Table Footnotes

Appendix A: Soil Boring Logs
Appendix B: Laboratory Analytical Results

FLINT NORTH QUADRANGLE
MICHIGAN - GENESEE COUNTY
7.5 MINUTE SERIES (TOPOGRAPHIC)



T.8 N.-R.6 E.

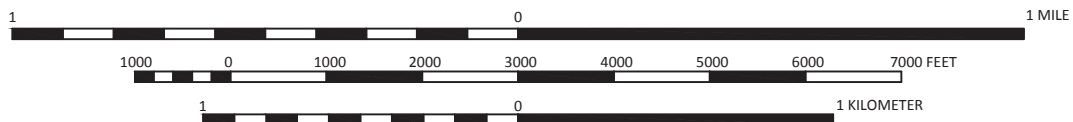
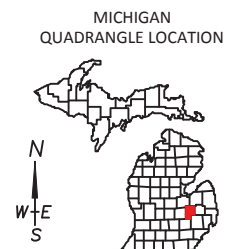


IMAGE TAKEN FROM 1969 U.S.G.S. TOPOGRAPHIC MAP
PHOTOREVISED 1975



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TOPOGRAPHIC LOCATION MAP

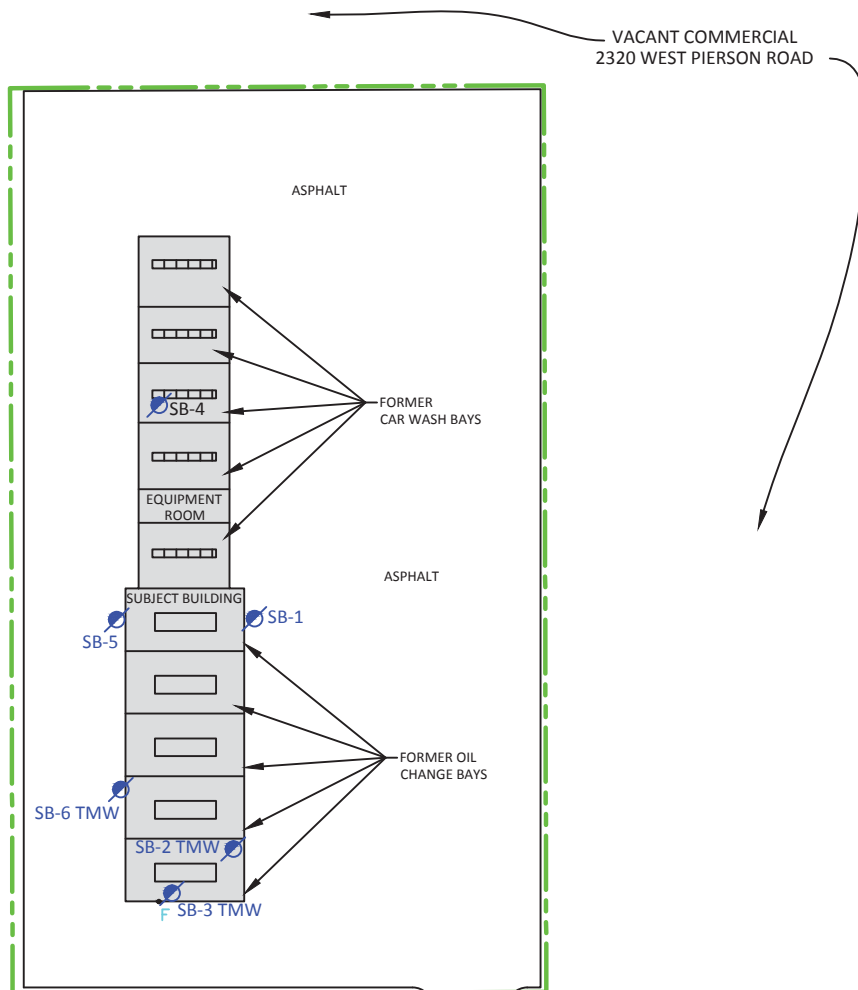
2360 WEST PIERSON ROAD
FLINT, MICHIGAN
PROJECT NUMBER : 11764s-11-26

DRAWN BY: OGO
DATE: 07/17/2017

FIGURE 1



MR. ALAN'S
5206 CLIO ROAD
(UST, LUST, BEA, WDS)
FORMER FILLING STATION



WEST PIERSON ROAD

RITE AID
5014 CLIO ROAD
(BEA)
FORMER FILLING STATION

KELLY ALLEY

EAGLE'S NEST ACADEMY
5005 CLOVER LAWN DRIVE

LEGEND

- = PROPERTY LINE
- = TRENCH DRAIN
- = SERVICE PIT
- = FILL PORT
- = SOIL BORING



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SAMPLE LOCATION MAP

2360 WEST PIERSON ROAD
FLINT, MICHIGAN
PROJECT NUMBER : 11764s-11-26

DRAWN BY: OGO
DATE: 07/17/2017

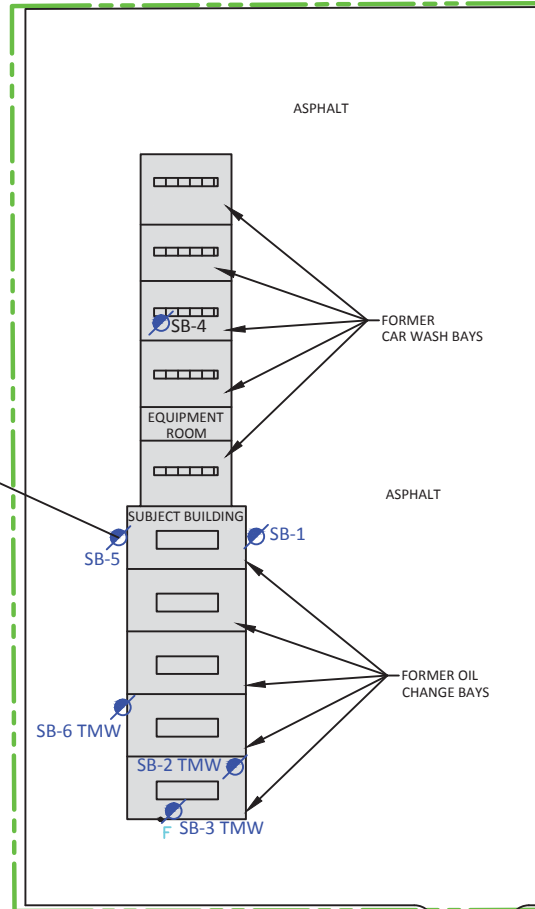
0 25 50
SCALE: 1" = 50'

FIGURE 2



SB-5 (3.5-4.5')	
10/17/2016	
1,2,3-Trimethylbenzene	770 ug/Kg (2)
Chromium	9,260 ug/Kg (2)
DUP-1 [SB-5 (3.5-4.5')]	
10/17/2016	
1,2,3-Trimethylbenzene	1,430 ug/Kg (2)
1,2,4-Trimethylbenzene	2,820 ug/Kg (1,2)
1,3,5-Trimethylbenzene	1,410 ug/Kg (2)

MR. ALAN'S
5206 CLIO ROAD
(UST, LUST, BEA, WDS)
FORMER FILLING STATION



VACANT COMMERCIAL
2320 WEST PIERSON ROAD

WEST PIERSON ROAD

RITE AID
5014 CLIO ROAD
(BEA)
FORMER FILLING STATION

KELLY ALLEY

EAGLE'S NEST ACADEMY
5005 CLOVER LAWN DRIVE

LEGEND

- = PROPERTY LINE
- = TRENCH DRAIN
- = SERVICE PIT
- = FILL PORT
- = SOIL BORING

CRITERIA NOTE

- (1) - Exceeds Residential Drinking Water Protection Criteria and RBSLs
- (2) - Exceeds Groundwater Surface Water Interface Protection Criteria and RBSLs

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SITE MAP WITH SOIL RESULTS EXCEEDING MDEQ RCC

2360 WEST PIERSON ROAD
FLINT, MICHIGAN

PROJECT NUMBER : 11764s-11-26

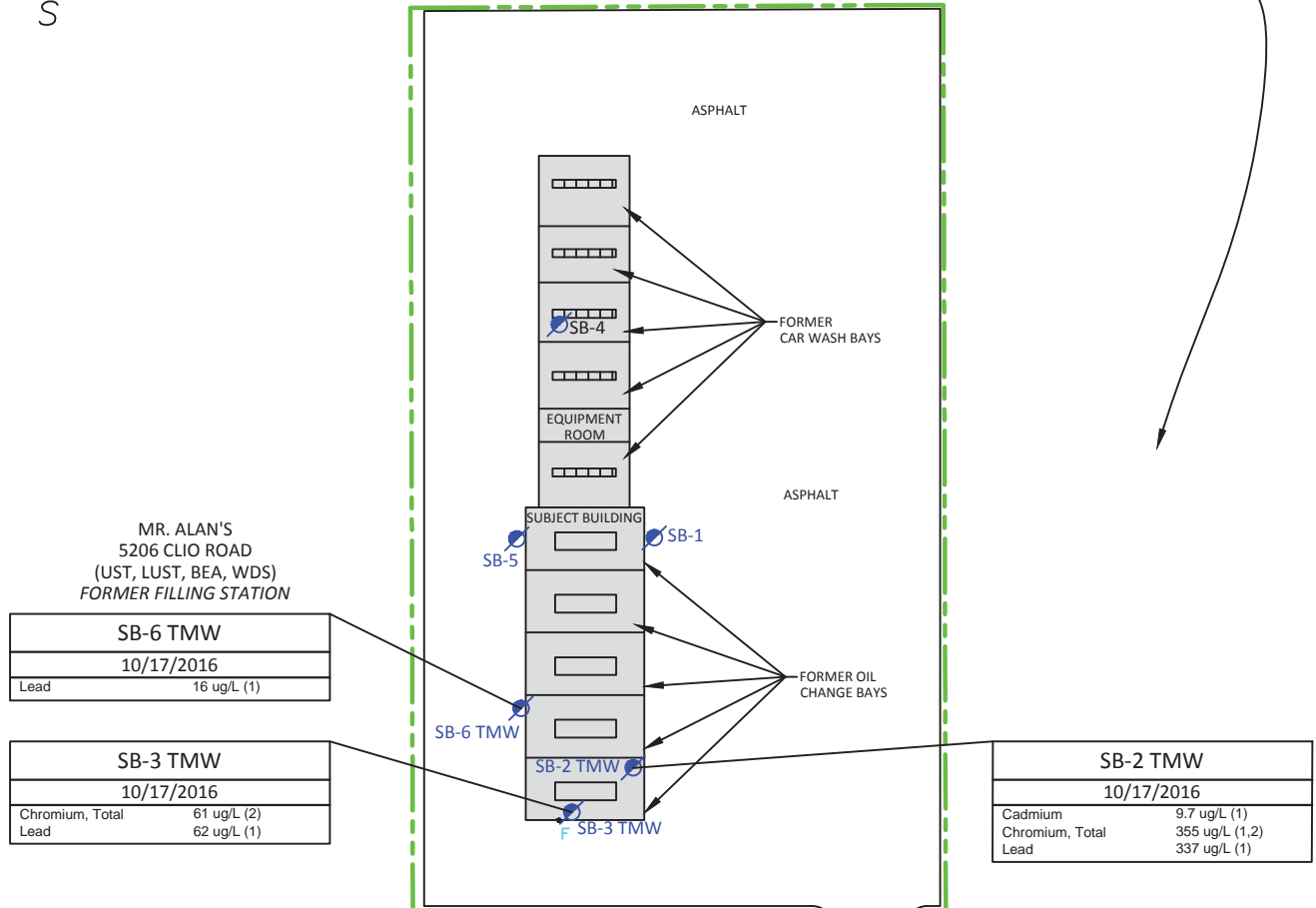
DRAWN BY: OGO
DATE: 07/17/2017

0 25 50
SCALE: 1" = 50'

FIGURE 3



VACANT COMMERCIAL
2320 WEST PIERSON ROAD



MR. ALAN'S
5206 CLIO ROAD
(UST, LUST, BEA, WDS)
FORMER FILLING STATION

SB-6 TMW	
10/17/2016	
Lead	16 ug/L (1)

SB-3 TMW	
10/17/2016	
Chromium, Total	61 ug/L (2)
Lead	62 ug/L (1)

SB-2 TMW	
10/17/2016	
Cadmium	9.7 ug/L (1)
Chromium, Total	355 ug/L (1,2)
Lead	337 ug/L (1)

WEST PIERSON ROAD

RITE AID
5014 CLIO ROAD
(BEA)
FORMER FILLING STATION

KELLY ALLEY

EAGLE'S NEST ACADEMY
5005 CLOVER LAWN DRIVE

LEGEND

- = PROPERTY LINE
- = TRENCH DRAIN
- = SERVICE PIT
- = FILL PORT
- = SOIL BORING

CRITERIA NOTE

- (1) - Exceeds Residential Drinking Water Criteria and RBSLs
- (2) - Exceeds Groundwater Surface Water Interface Criteria and RBSLs



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SITE MAP WITH GROUNDWATER RESULTS EXCEEDING MDEQ RCC

2360 WEST PIERSON ROAD
FLINT, MICHIGAN

PROJECT NUMBER : 11764s-11-26

DRAWN BY: OGO
DATE: 07/17/2017

0 25 50
SCALE: 1" = 50'

FIGURE 4

TABLES

Table 1: Summary of Soil Analytical Results
Former Ross Oil
2360 West Pierson Road
Flint, Michigan
AKT Peerless Project No. 11957s

Guidesheet Number →		#10	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20
Parameters*	Chemical Abstract Service Number	Statewide Default Background Levels	Residential Drinking Water Protection Criteria and RBSLs	Groundwater Surface Water Interface Protection Criteria and RBSLs	Groundwater Contact Protection Criteria and RBSLs	Residential Soil Volatilization to Indoor Air Inhalation Criteria and RBSLs	Residential Infinite Source Volatile Soil Inhalation Criteria (VSLC) and RBSLs	Residential Finite VSLC for 5 Meter Source Thickness	Residential Finite VSLC for 2 Meter Source Thickness	Residential Particulate Soil Inhalation Criteria and RBSLs	Residential Direct Contact Criteria and RBSLs	Residential Soil Saturation Screening Levels
	* (Refer to detailed laboratory report for method reference data)											
Metals ug/kg												
		7440-43-9	6,000	(G-X)	2.3E+8	NLV	NLV	NLV	NLV	1.7E+6	5.5E+5	NA
		7440-47-3	30,000	3,300	1.4E+8	NLV	NLV	NLV	NLV	2.6E+5	2.5E+6	NA
		7439-92-1	21,000	(G-X)	ID	NLV	NLV	NLV	NLV	1.0E+8	4.0E+5	NA
SemiVolatiles, PMAs ug/kg												
		83-32-9	3.0E+5	8,700	9.7E+5	1.9E+8	8.1E+7	8.1E+7	8.1E+7	1.4E+10	4.1E+7	NA
		208-96-8	5,900	ID	4.4E+5	1.6E+6	2.2E+6	2.2E+6	2.2E+6	2.3E+9	1.6E+6	NA
		120-12-7	41,000	ID	41,000	1.0E+9 (D)	1.4E+9	1.4E+9	1.4E+9	6.7E+10	2.3E+8	NA
		56-55-3	NA	NLL	NLL	NLV	NLV	NLV	NLV	ID	20,000	NA
		50-32-8	NA	NLL	NLL	NLV	NLV	NLV	NLV	1.5E+6	2,000	NA
		205-99-2	NA	NLL	NLL	ID	ID	ID	ID	ID	20,000	NA
		191-24-2	NA	NLL	NLL	NLV	NLV	NLV	NLV	8.0E+8	2.5E+6	NA
		207-08-9	NA	NLL	NLL	NLV	NLV	NLV	NLV	ID	2.0E+5	NA
		218-01-9	NA	NLL	NLL	ID	ID	ID	ID	ID	2.0E+6	NA
		53-70-3	NA	NLL	NLL	NLV	NLV	NLV	NLV	ID	2,000	NA
		206-44-0	NA	7.3E+5	7.3E+5	1.0E+9 (D)	7.4E+8	7.4E+8	7.4E+8	9.3E+9	4.6E+7	NA
		86-73-7	NA	3.9E+5	8.9E+5	5.8E+8	1.3E+8	1.3E+8	1.3E+8	9.3E+9	2.7E+7	NA
		193-39-5	NA	NLL	NLL	NLV	NLV	NLV	NLV	ID	20,000	NA
		91-57-6	NA	57,000	4,200	2.7E+6	1.5E+6	1.5E+6	1.5E+6	6.7E+8	8.1E+6	NA
		91-20-3	NA	35,000	730	2.5E+5	3.0E+5	3.0E+5	3.0E+5	2.0E+8	1.6E+7	NA
		85-01-8	NA	56,000	2,100	2.8E+6	1.6E+5	1.6E+5	1.6E+5	6.7E+6	1.6E+6	NA
		129-00-0	NA	4.8E+5	ID	1.0E+9 (D)	6.5E+8	6.5E+8	6.5E+8	6.7E+9	2.9E+7	NA
Volatiles, VOCs ug/kg												
		67-64-1	NA	15,000	1.1E+8 (C)	1.1E+8 (C)	1.3E+8	1.3E+8	1.9E+8	3.9E+11	2.3E+7	1.1E+8
		107-13-1	NA	100 (M); 52	2.8E+5	6,600	5,000	5,100	10,000	4.6E+7	16,000	8.3E+6
		71-43-2	NA	100	2.2E+5	1,600	13,000	34,000	79,000	3.8E+8	1.8E+5	4.0E+5
		108-86-1	NA	550	3.6E+5	3.1E+5	4.5E+5	4.5E+5	4.5E+5	5.3E+8	5.4E+5	7.6E+5
		75-27-4	NA	1,600 (W)	ID	2.8E+5	9,100	9,700	19,000	8.4E+7	1.1E+5	1.5E+6
		75-25-2	NA	1,600 (W)	ID	8.7E+5 (C)	9.0E+5	9.0E+5	9.0E+5	2.8E+9	8.2E+5	8.7E+5
		74-83-9	NA	200	1.4E+6	860	11,000	57,000	1.4E+5	3.3E+8	3.2E+5	2.2E+6
		78-93-3	NA	2.6E+5	44,000	2.7E+7 (C)	2.9E+7	2.9E+7	3.5E+7	6.7E+10	2.7E+7 (C,DD)	2.7E+7
		104-51-8	NA	1,600	ID	1.2E+5	ID	ID	ID	2.0E+9	2.5E+6	1.0E+7
		135-98-8	NA	1,600	ID	88,000	ID	ID	ID	4.0E+8	2.5E+6	1.0E+7
		98-06-6	NA	1,600	NA	1.8E+5	ID	ID	ID	6.7E+8	2.5E+6	1.0E+7
		Carbon disulfide (I,R)	NA	16,000	ID	2.8E+5 (C)	76,000	1.3E+6	1.9E+7	4.7E+10	2.8E+5 (C,DD)	2.8E+5

Table 1: Summary of Soil Analytical Results
Former Ross Oil
2360 West Pierson Road
Flint, Michigan
AKT Peerless Project No. 11957s

Guidesheet Number →		#10	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20	Sample Location		SB-1	SB-4	SB-5	Dup-1	
Parameters*	Chemical Abstract Service Number	Statewide Default Background Levels	Residential Drinking Water Protection Criteria and RBSLs	Groundwater Surface Water Interface Protection Criteria and RBSLs	Groundwater Contact Protection Criteria and RBSLs	Residential Soil Volatilization to Indoor Air Inhalation Criteria and RBSLs	Residential Infinite Source Volatile Soil Inhalation Criteria (VISC) and RBSLs	Residential Finite VISC for 5 Meter Source Thickness	Residential Finite VISC for 2 Meter Source Thickness	Residential Particulate Soil Inhalation Criteria and RBSLs	Residential Direct Contact Criteria and RBSLs	Residential Soil Saturation Screening Levels	Collection Date	Depth	2.3'	4-5'	3.5-4.5'	10/17/2016	10/17/2016
	*(Refer to detailed laboratory report for method reference data)																		
	Carbon tetrachloride	NA	100	900 (X)	92,000	190	3,500	12,000	28,000	1.3E+8	96,000	3.9E+5			<60	<60	<60	<70	
	Chlorobenzene (l)	NA	2,000	500	2.6E+5 (C)	1.2E+5	7.7E+5	9.9E+5	2.1E+6	4.7E+9	2.6E+5 (C)	2.6E+5			<60	<60	<60	<70	
	Chloroethane	NA	8,600	22,000 (X)	9.5E+5 (C)	9.5E+5 (C)	3.0E+7	1.2E+8	2.8E+8	6.7E+11	9.5E+5 (C)	9.5E+5			<300	<300	<300	<300	
	Chloroform	NA	1,600 (W)	7,000	1.5E+6 (C)	7,200	45,000	1.2E+5	2.7E+5	1.3E+9	1.2E+6	1.5E+6			<60	<60	<60	<70	
	Chloromethane (l)	NA	5,200	ID	1.1E+6 (C)	2,300	40,000	4.1E+5	1.0E+6	4.9E+9	1.1E+6 (C)	1.1E+6			<300	<300	<300	<300	
	Dibromochloromethane	NA	1,600 (W)	ID	3.6E+5	3,900	24,000	24,000	33,000	1.3E+8	1.1E+5	6.1E+5			<100	<100	<100	<100	
	Dibromomethane	NA	1,600	NA	2.0E+6 (C)	ID	ID	ID	ID	ID	2.0E+6 (C)	2.0E+6			<300	<300	<300	<300	
	1,2-Dichlorobenzene	NA	14,000	280	2.1E+5 (C)	2.1E+5 (C)	3.9E+7	3.9E+7	5.2E+7	1.0E+11	2.1E+5 (C)	2.1E+5			<100	<100	<100	<100	
	1,3-Dichlorobenzene	NA	170	680	51,000	26,000	79,000	79,000	1.1E+5	2.0E+8	1.7E+5 (C)	1.7E+5			<100	<100	<100	<100	
	1,4-Dichlorobenzene	NA	1,700	360	1.4E+5	19,000	77,000	77,000	1.1E+5	4.5E+8	4.0E+5	NA			<100	<100	<100	<100	
	Dichlorodifluoromethane	NA	95,000	ID	1.0E+6 (C)	9.0E+5	5.3E+7	5.5E+8	1.4E+9	3.3E+12	1.0E+6 (C)	1.0E+6			<300	<300	<300	<300	
	1,1-Dichloroethane	NA	18,000	15,000	8.9E+5 (C)	2.3E+5	2.1E+6	5.9E+6	1.4E+7	3.3E+10	8.9E+5 (C)	8.9E+5			<60	<60	<60	<70	
	1,2-Dichloroethane (l)	NA	100	7,200 (X)	3.8E+5	2,100	6,200	11,000	26,000	1.2E+8	91,000	1.2E+6			<60	<60	<60	<70	
	cis-1,2-Dichloroethylene	NA	1,400	12,000	6.4E+5 (C)	22,000	1.8E+5	4.2E+5	9.9E+5	2.3E+9	6.4E+5 (C)	6.4E+5			<60	<60	<60	<70	
	trans-1,2-Dichloroethylene	NA	2,000	30,000 (X)	1.4E+6 (C)	23,000	2.8E+5	8.3E+5	2.0E+6	4.7E+9	1.4E+6 (C)	1.4E+6			<60	<60	<60	<70	
	1,1-Dichloroethylene (l)	NA	140	2,600	2.2E+5	62	1,100	5,300	13,000	6.2E+7	2.0E+5	5.7E+5			<60	<60	<60	<70	
	1,2-Dichloropropane (l)	NA	100	4,600 (X)	3.2E+5	4,000	25,000	50,000	1.1E+5	2.7E+8	1.4E+5	5.5E+5			<60	<60	<60	<70	
	Diethyl ether	NA	200	ID	7.4E+6 (C)	7.4E+6 (C)	8.5E+7	1.5E+8	3.4E+8	8.0E+11	7.4E+6 (C)	7.4E+6			<300	<300	<200	<300	
	Ethylene dibromide	NA	20 (M); 1.0	110 (X)	500	670	1,700	1,700	3,300	1.4E+7	92	8.9E+5			<30	<30	<20	<30	
	Hexachloroethane	NA	430	1,800 (X)	1.1E+5	40,000	5.5E+5	9.3E+5	9.3E+5	2.3E+8	2.3E+5	NA			<400	<400	<400	<400	
	2-Hexanone	NA	20,000	ID	2.5E+6 (C)	9.9E+5	1.1E+6	1.1E+6	1.4E+6	2.7E+9	2.5E+6 (C)	2.5E+6			<3,000	<3,000	<3,000	<3,000	
	Isopropyl benzene	NA	91,000	3,200	3.9E+5 (C)	3.9E+5 (C)	1.7E+6	1.7E+6	2.8E+6	5.8E+9	3.9E+5 (C)	3.9E+5			<300	<300	<300	300	
	4-Methyl-2-pentanone (MIBK) (l)	NA	36,000	ID	2.7E+6 (C)	2.7E+6 (C)	4.5E+7	4.5E+7	6.7E+7	1.4E+11	2.7E+6 (C)	2.7E+6			<3,000	<3,000	<3,000	<3,000	
	Methylene chloride	NA	100	30,000 (X)	2.3E+6 (C)	45,000	2.1E+5	5.9E+5	1.4E+6	6.6E+9	1.3E+6	2.3E+6			<100	<100	<100	<100	
	2-Methylnaphthalene	NA	57,000	4,200	5.5E+6	2.7E+6	1.5E+6	1.5E+6	1.5E+6	6.7E+8	8.1E+6	NA			<100	<100	500	4,000	
	Methyl-tert-butyl ether (MTBE)	NA	800	1.4E+5 (X)	5.9E+6 (C)	5.9E+6 (C)	2.5E+7	3.9E+7	8.7E+7	2.0E+11	1.5E+6	5.9E+6			<300	<300	<200	<300	
	Naphthalene	NA	35,000	730	2.1E+6	2.5E+5	3.0E+5	3.0E+5	3.0E+5	2.0E+8	1.6E+7	NA			<300	<300	<300	<300	
	n-Propylbenzene (l)	NA	1,600	ID	3.0E+5	ID	ID	ID	ID	1.3E+9	2.5E+6	1.0E+7			<60	<60	230	280	
	Styrene	NA	2,700	2100 (X)	2.7E+5	2.5E+5	9.7E+5	9.7E+5	1.4E+6	5.5E+9	4.0E+5	5.2E+5			<60	<60	<60	<70	
	1,1,1,2-Tetrachloroethane	NA	1,500	ID	4.4E+5 (C)	6,200	36,000	54,000	1.0E+5	4.2E+8	4.4E+5 (C)	4.4E+5			<100	<100	<100	<100	
	1,1,2,2-Tetrachloroethane	NA	170	1,600 (X)	94,000	4,300	10,000	10,000	14,000	5.4E+7	53,000	8.7E+5			<60	<60	<60	<70	
	Tetrachloroethylene	NA	100	1,200 (X)	88,000 (C)	11,000	1.8E+5	4.8E+5	1.1E+6	5.4E+9	88,000 (C)	88,000			<60	<60	<60	<70	
	Tetrahydrofuran	NA	1,900	2.2E+5 (X)	3.2E+7	1.3E+6	1.3E+7	1.6E+8	1.6E+8	3.9E+11	2.9E+6	1.2E+8			<1,000	<1,000	<1,000	<1,000	
	Toluene (l)	NA	16,000	5,400	2.5E+5 (C)	2.5E+5 (C)	2.8E+6	5.1E+6	1.2E+7	2.7E+10	2.5E+5 (C)	2.5E+5			<60	<60	<60	<70	
	1,2,4-Trichlorobenzene	NA	4,200	5,900 (X)	1.1E+6	1.1E+6 (C)	2.8E+7	2.8E+7	2.8E+7	2.5E+10	9.9E+5 (DD)	1.1E+6			<430	<430	<400	<440	

Table 1: Summary of Soil Analytical Results
Former Ross Oil
2360 West Pierson Road
Flint, Michigan
AKT Peerless Project No. 11957s

Guidesheet Number →		#10	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20					
Parameters*	Chemical Abstract Service Number	Statewide Default Background Levels	Residential Drinking Water Protection Criteria and RBSLs	Groundwater Surface Water Interface Protection Criteria and RBSLs	Groundwater Contact Protection Criteria and RBSLs	Residential Soil Volatilization to Indoor Air Inhalation Criteria and RBSLs	Residential Infinite Source Volatile Soil Inhalation Criteria (VSIC) and RBSLs	Residential Finite VSIC for 5 Meter Source Thickness	Residential Finite VSIC for 2 Meter Source Thickness	Residential Particulate Soil Inhalation Criteria and RBSLs	Residential Direct Contact Criteria and RBSLs	Residential Soil Saturation Concentration Screening Levels	Sample Location	SB-1	SB-4	SB-5	Dup-1
	*(Refer to detailed laboratory report for method reference data)																
													Depth	2-3'	4-5'	3.5-4.5'	3.5-4.5'
	1,1,1-Trichloroethane	71-55-6	4,000	1,800	4.6E+5 (C)	2.5E+5	3.8E+6	1.2E+7	2.8E+7	6.7E+10	4.6E+5 (C)	4.6E+5		<60	<60	<60	<70
	1,1,2-Trichloroethane	79-00-5	100	6,600 (X)	4.2E+5	4,600	17,000	21,000	44,000	1.9E+8	1.8E+5	9.2E+5		<60	<60	<60	<70
	Trichloroethylene	79-01-6	100	4,000 (X)	4.4E+5	7,100	78,000	1.7E+5	3.9E+5	1.8E+9	5.0E+5 (C,DD)	5.0E+5		<60	<60	<60	<70
	Trichlorofluoromethane	75-69-4	52,000	NA	5.6E+5 (C)	5.6E+5 (C)	9.2E+7	6.3E+8	1.5E+9	3.8E+12	5.6E+5 (C)	5.6E+5		<100	<100	<100	<100
	1,2,3-Trichloropropane	96-18-4	840	NA	8.3E+5 (C)	4,000	9,200	9,200	11,000	2.0E+7	8.3E+5 (C)	8.3E+5		<100	<100	<100	<100
	1,2,3-Trimethylbenzene*	526-73-8	1,800	570	94,000 (C)	94,000 (C)	1.6E+7	3.8E+8	3.8E+8	8.2E+10	94,000 (C)	94,000		<60	<60	320	1,430
	1,2,4-Trimethylbenzene (I)	95-63-6	2,100	570	1.1E+5 (C)	1.1E+5 (C)	2.1E+7	5.0E+8	5.0E+8	8.2E+10	1.1E+5 (C)	1.1E+5		<60	<60	770	2,820
	1,3,5-Trimethylbenzene (I)	108-67-8	1,800	1,100	94,000 (C)	94,000 (C)	1.6E+7	3.8E+8	3.8E+8	8.2E+10	94,000 (C)	94,000		<60	<60	<60	1,410
	Vinyl chloride	75-01-4	40	260 (X)	20,000	270	4,200	30,000	73,000	3.5E+8	3,800	4.9E+5		<60	<60	<60	<70
	Xylenes (I)	1330-20-7	5,600	820	1.5E+5 (C)	1.5E+5 (C)	4.6E+7	6.1E+7	1.3E+8	2.9E+11	1.5E+5 (C)	1.5E+5		<160	<160	100	200

Table 2: Summary of Groundwater Analytical Results

Former Ross Oil
2360 West Pierson Road
Flint, Michigan
AKT Peerless Project No. 11957s

Parameters*	Guidesheet Number →	#1	#3	#4	#6	#7	#8	#9	Sample Location	SB-2 TMW	SB-3 TMW	SB-6 TMW	Waste Water
		Residential Drinking Water Criteria and RBSLs	Groundwater Surface Water Interface Protection Criteria and RBSLs	Residential Groundwater Volatilization to Indoor Air Inhalation Criteria and RBSLs	Groundwater Contact Criteria and RBSLs	Water Solubility	Flammability and Explosivity Screening Level	Acute Inhalation Screening Level	Collection Date	10/17/2016	10/17/2016	10/17/2016	10/17/2016
		Chemical Abstract Service Number							Depth	0-5'	0-5'	3-8'	NA
Metals ug/L													
Cadmium (B)	7440-43-9	5.0 (A)	(G,X)	NLV	1.9E+5	NA	ID	ID		9.7	0.8	<0.5	<0.5
Chromium, Total	7440-47-3	100 (A)	11	NLV	4.6E+5	NA	ID	ID		355	61	6	<5
Lead (B)	7439-92-1	4.0 (L)	(G,X)	NLV	ID	NA	ID	ID		337	62	16	<3
PCBs ug/L													
PCB, Aroclor 1016	12674-11-2	0.5 (A)	0.2 (M); 2.6E-5	45 (S)	3.3 (AA)	44.7	ID	ID		NS	NS	NS	<0.1
PCB, Aroclor 1221	11104-28-2	0.5 (A)	0.2 (M); 2.6E-5	45 (S)	3.3 (AA)	44.7	ID	ID		NS	NS	NS	<0.1
PCB, Aroclor 1232	11141-16-5	0.5 (A)	0.2 (M); 2.6E-5	45 (S)	3.3 (AA)	44.7	ID	ID		NS	NS	NS	<0.1
PCB, Aroclor 1242	53469-21-9	0.5 (A)	0.2 (M); 2.6E-5	45 (S)	3.3 (AA)	44.7	ID	ID		NS	NS	NS	<0.1
PCB, Aroclor 1248	12672-29-6	0.5 (A)	0.2 (M); 2.6E-5	45 (S)	3.3 (AA)	44.7	ID	ID		NS	NS	NS	<0.1
PCB, Aroclor 1254	11097-69-1	0.5 (A)	0.2 (M); 2.6E-5	45 (S)	3.3 (AA)	44.7	ID	ID		NS	NS	NS	<0.1
PCB, Aroclor 1260	11096-82-5	0.5 (A)	0.2 (M); 2.6E-5	45 (S)	3.3 (AA)	44.7	ID	ID		NS	NS	NS	<0.1
Semivolatiles, PNAs, ug/L													
Acenaphthene	83-32-9	1,300	38	4,200 (S)	4,200 (S)	4,240	ID	ID		<5	NS	<5	<5
Acenaphthylene	208-96-8	52	ID	3,900 (S)	3,900 (S)	3,930	ID	ID		<5	NS	<5	<5
Anthracene	120-12-7	43 (S)	ID	43 (S)	43 (S)	43.4	ID	ID		<5	NS	<5	<5
Benzo(a)anthracene (Q)	56-55-3	2.1	ID	NLV	9.4 (S,AA)	9.4	ID	ID		<1	NS	<1	<1
Benzo(a)pyrene (Q)	50-32-8	5.0 (A)	ID	NLV	1.0 (M,AA); 0.64	1.62	ID	ID		<1	NS	<1	<1
Benzo(b)fluoranthene (Q)	205-99-2	1.5 (S,AA)	ID	ID	1.5 (S,AA)	1.5	ID	ID		<1	NS	<1	<1
Benzo(g,h,i)perylene	191-24-2	1.0 (M); 0.26 (S)	ID	NLV	1.0 (M,AA); 0.26 (S)	0.26	ID	ID		<1	NS	<1	<1
Benzo(k)fluoranthene (Q)	207-08-9	1.0 (M); 0.8 (S)	NA	NLV	1.0 (M,AA); 0.8 (S)	0.8	ID	ID		<1	NS	<1	<1
Chrysene (Q)	218-01-9	1.6 (S)	ID	ID	1.6 (S,AA)	1.6	ID	ID		<1	NS	<1	<1
Dibenzo(a,h)anthracene (Q)	53-70-3	2.0 (M); 0.21	ID	NLV	2.0 (M,AA); 0.31	2.49	ID	ID		<2	NS	<2	<2
Fluoranthene	206-44-0	210 (S)	1.6	210 (S)	210 (S)	206	ID	ID		<1	NS	<1	<1
Fluorene	86-73-7	880	12	2,000 (S)	2,000 (S)	1,980	ID	ID		<5	NS	<5	<5
Indeno(1,2,3-cd)pyrene (Q)	193-39-5	2.0 (M); 0.022 (S)	ID	NLV	2.0 (M,AA); 0.022 (S)	0.022	ID	ID		<2	NS	<2	<2
2-Methylnaphthalene	91-57-6	260	19	25,000 (S)	25,000 (S)	24,600	ID	ID		<5	NS	<5	<5
Naphthalene	91-20-3	520	11	31,000 (S)	31,000 (S)	31,000	NA	31,000 (S)		<5	NS	<5	<5
Phenanthrene	85-01-8	52	2.0 (M); 1.4	1,000 (S)	1,000 (S)	1,000	ID	ID		<2	NS	<2	<2
Pyrene	129-00-0	140 (S)	ID	140 (S)	140 (S)	135	ID	ID		<5	NS	<5	<5
Volatiles, VOCs ug/L													
Acetone (l)	67-64-1	730	1,700	1.0E+9 (D,S)	3.1E+7	1.0E+9	1.5E+7	1.0E+9 (D)		<50	<50	<50	<50

Table 2: Summary of Groundwater Analytical Results

Former Ross Oil
2360 West Pierson Road
Flint, Michigan
AKT Peerless Project No. 11957s

Parameters*	Guidesheet Number →	#1	#3	#4	#6	#7	#8	#9	Sample Location	SB-2 TMW	SB-3 TMW	SB-6 TMW	Waste Water
		Residential Drinking Water Criteria and RBSLs	Groundwater Surface Water Interface Protection Criteria and RBSLs	Residential Groundwater Volatilization to Indoor Air Inhalation Criteria and RBSLs	Groundwater Contact Criteria and RBSLs	Water Solubility	Flammability and Explosivity Screening Level	Acute Inhalation Screening Level	Collection Date	10/17/2016	10/17/2016	10/17/2016	10/17/2016
									Depth	0-5'	0-5'	3-8'	NA
Acrylonitrile (I)	107-13-1	2.6	2.0 (M); 1.2	34,000	14,000	7.50E+7	6.4E+6	ID		<2	<2	<2	<2
Benzene (I)	71-43-2	5.0 (A)	200 (X)	5,600	11,000	1.75E+6	68,000	67,000		<1	<1	<1	<1
Bromobenzene (I)	108-86-1	18	NA	1.8E+5	12,000	4.13E+5	ID	ID		<1	<1	<1	<1
Bromodichloromethane	75-27-4	80 (A,W)	ID	4,800	14,000	6.74E+6	ID	ID		<1	<1	<1	<1
Bromoform	75-25-2	80 (A,W)	ID	4.7E+5	1.4E+5	3.10E+6	ID	ID		<1	<1	<1	<1
Bromomethane	74-83-9	10	35	4,000	70,000	1.45E+7	ID	ID		<5	<5	<5	<5
2-Butanone (MEK) (I)	78-93-3	13,000	2,200	2.4E+8 (S)	2.4E+8 (S)	2.40E+8	ID	2.4E+8 (S)		<25	<25	<25	<25
n-Butylbenzene	104-51-8	80	ID	ID	5,900	NA	ID	ID		<1	<1	<1	<1
sec-Butylbenzene	135-98-8	80	ID	ID	4,400	NA	ID	ID		<1	<1	<1	<1
tert-Butylbenzene (I)	98-06-6	80	ID	ID	8,900	NA	ID	ID		<1	<1	<1	<1
Carbon disulfide (I,R)	75-15-0	800	ID	2.5E+5	1.2E+6 (S)	1.19E+6	13,000	ID		<5	<5	<5	<5
Carbon tetrachloride	56-23-5	5.0 (A)	45 (X)	370	4,600	7.93E+5	ID	96,000		<1	<1	<1	<1
Chlorobenzene (I)	108-90-7	100 (A)	25	2.1E+5	86,000	4.72E+5	1.6E+5	ID		<1	<1	<1	<1
Chloroethane	75-00-3	430	1,100 (X)	5.7E+6 (S)	4.4E+5	5.74E+6	1.1E+5	ID		<5	<5	<5	<5
Chloroform	67-66-3	80 (A,W)	350	28,000	1.5E+5	7.92E+6	ID	ID		<1	<1	<1	<1
Chloromethane (I)	74-87-3	260	ID	8,600	4.9E+5	6.34E+6	36,000	2.1E+5		<5	<5	<5	<5
Dibromochloromethane	124-48-1	80 (A,W)	ID	14,000	18,000	2.60E+6	ID	ID		<5	<5	<5	<5
Dibromomethane	74-95-3	80	NA	ID	5.3E+5	1.10E+7	ID	ID		<5	<5	<5	<5
1,2-Dichlorobenzene	95-50-1	600 (A)	13	1.6E+5 (S)	1.6E+5 (S)	1.56E+5	NA	1.6E+5 (S)		<1	<1	<1	<1
1,3-Dichlorobenzene	541-73-1	6.6	28	18,000	2,000	1.11E+5	ID	ID		<1	<1	<1	<1
1,4-Dichlorobenzene	106-46-7	75 (A)	17	16,000	6,400	73,800	NA	ID		<1	<1	<1	<1
Dichlorodifluoromethane	75-71-8	1,700	ID	2.2E+5	3.0E+5 (S)	3.00E+5	ID	ID		<5	<5	<5	<5
1,1-Dichloroethane	75-34-3	880	740	1.0E+6	2.4E+6	5.06E+6	3.8E+5	ID		<1	<1	<1	<1
1,2-Dichloroethane (I)	107-06-2	5.0 (A)	360 (X)	9,600	19,000	8.52E+6	2.5E+6	ID		<1	<1	<1	<1
cis-1,2-Dichloroethylene	156-59-2	70 (A)	620	93,000	2.0E+5	3.50E+6	5.3E+5	ID		<1	<1	<1	<1
trans-1,2-Dichloroethylene	156-60-5	100 (A)	1,500 (X)	85,000	2.2E+5	6.30E+6	2.3E+5	ID		<1	<1	<1	<1
1,1-Dichloroethylene (I)	75-35-4	7.0 (A)	130	200	11,000	2.25E+6	97,000	1.4E+5		<1	<1	<1	<1
1,2-Dichloropropane (I)	78-87-5	5.0 (A)	230 (X)	16,000	16,000	2.80E+6	5.5E+5	2.8E+6 (S)		<1	<1	<1	<1
Diethyl ether	60-29-7	10 (E)	ID	6.1E+7 (S)	3.5E+7	6.10E+7	6.5E+5	6.1E+7 (S)		<10	<10	<10	<10
Ethylbenzene (I)	100-41-4	74 (E)	18	1.1E+5	1.7E+5 (S)	1.69E+5	43,000	1.7E+5 (S)		<1	<1	<1	<1
Ethylene dibromide	106-93-4	0.05 (A)	5.7 (X)	2,400	25	4.20E+6	ID	ID		<1	<1	<1	<1
Hexachloroethane	67-72-1	7.3	6.7 (X)	27,000	1,900	50,000	ID	ID		<5	<5	<5	<5

Table 2: Summary of Groundwater Analytical Results

Former Ross Oil
2360 West Pierson Road
Flint, Michigan
AKT Peerless Project No. 11957s



Parameters*	Guidesheet Number →	#1	#3	#4	#6	#7	#8	#9	Sample Location	SB-2 TMW	SB-3 TMW	SB-6 TMW	Waste Water
		Residential Drinking Water Criteria and RBSLs	Groundwater Surface Water Interface Protection Criteria and RBSLs	Residential Groundwater Volatilization to Indoor Air Inhalation Criteria and RBSLs	Groundwater Contact Criteria and RBSLs	Water Solubility	Flammability and Explosivity Screening Level	Acute Inhalation Screening Level	Collection Date	10/17/2016	10/17/2016	10/17/2016	10/17/2016
									Depth	0-5'	0-5'	3-8'	NA
2-Hexanone	591-78-6	1,000	ID	4.2E+6	5.2E+6	1.60E+7	NA	ID		<50	<50	<50	<50
Isopropyl benzene	98-82-8	800	28	56,000 (S)	56,000 (S)	56,000	29,000	ID		<5	<5	<5	<5
4-Methyl-2-pentanone (MIBK) (I)	108-10-1	1,800	ID	2.0E+7 (S)	1.3E+7	2.00E+7	ID	2.0E+7 (S)		<50	<50	<50	<50
Methylene chloride	75-09-2	5.0 (A)	1,500 (X)	2.2E+5	2.2E+5	1.70E+7	ID	ID		<5	<5	<5	<5
2-Methylnaphthalene	91-57-6	260	19	25,000 (S)	25,000 (S)	24,600	ID	ID		<5	<5	<5	<5
Methyl-tert-butyl ether (MTBE)	1634-04-4	40 (E)	7,100 (X)	4.7E+7 (S)	6.1E+5	4.68E+7	ID	ID		<5	<5	<5	<5
Naphthalene	91-20-3	520	11	31,000 (S)	31,000 (S)	31,000	NA	31,000 (S)		<5	<5	<5	<5
n-Propylbenzene (I)	103-65-1	80	ID	ID	15,000	NA	ID	ID		<1	<1	<1	<1
Styrene	100-42-5	100 (A)	80 (X)	1.7E+5	9,700	3.10E+5	1.4E+5	3.1E+5 (S)		<1	<1	<1	<1
1,1,1,2-Tetrachloroethane	630-20-6	77	ID (X)	15,000	30,000	1.10E+6	ID	ID		<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	79-34-5	8.5	78 (X)	12,000	4,700	2.97E+6	ID	ID		<1	<1	<1	<1
Tetrachloroethylene	127-18-4	5.0 (A)	60 (X)	25,000	12,000	2.0E+5	ID	2.0E+5 (S)		<1	<1	<1	<1
Tetrahydrofuran	109-99-9	95	11,000 (X)	6.9E+6	1.6E+6	1.0E+9	60,000	3.6E+6		<90	<90	<90	<90
Toluene (I)	108-88-3	790 (E)	270	5.3E+5 (S)	5.3E+5 (S)	5.26E+5	61,000	ID		<1	<1	<1	<1
1,2,4-Trichlorobenzene	120-82-1	70 (A)	99 (X)	3.0E+5 (S)	19,000	3.00E+5	NA	3.0E+5 (S)		<5	<5	<5	<5
1,1,1-Trichloroethane	71-55-6	200 (A)	89	6.6E+5	1.3E+6 (S)	1.33E+6	ID	1.3E+6 (S)		<1	<1	<1	<1
1,1,2-Trichloroethane	79-00-5	5.0 (A)	330 (X)	17,000	21,000	4.42E+6	NA	ID		<1	<1	<1	<1
Trichloroethylene	79-01-6	5.0 (A)	200 (X)	15,000	22,000	1.10E+6	ID	1.1E+6 (S)		<1	<1	<1	<1
Trichlorofluoromethane	75-69-4	2,600	NA	1.1E+6 (S)	1.1E+6 (S)	1.10E+6	ID	1.1E+6 (S)		<1	<1	<1	<1
1,2,3-Trichloropropane	96-18-4	42	NA	8,300	84,000	1.90E+6	NA	ID		<1	<1	<1	<1
1,2,3-Trimethylbenzene*	526-73-8	63 (E)	17	56,000 (S)	56,000 (S)	55,890	56,000 (S)	ID		<1	<1	<1	<1
1,2,4-Trimethylbenzene (I)	95-63-6	63 (E)	17	56,000 (S)	56,000 (S)	55,890	56,000 (S)	ID		<1	<1	<1	<1
1,3,5-Trimethylbenzene (I)	108-67-8	72 (E)	45	61,000 (S)	61,000 (S)	61,150	ID	ID		<1	<1	<1	<1
Vinyl chloride	75-01-4	2.0 (A)	13 (X)	1,100	1,000	2.76E+6	33,000	ID		<1	<1	<1	<1
Xylenes (I)	1330-20-7	280 (E)	41	1.9E+5 (S)	1.9E+5 (S)	1.86E+5	70,000	1.9E+5 (S)		<3	<3	<3	<3

- (A) Criterion is the state of Michigan drinking water standard established pursuant to Section 5 of 1976 PA 399, MCL 325.1005.
- (B) Background, as defined in R 299.1(b), may be substituted if higher than the calculated cleanup criterion. Background levels may be less than criteria for some inorganic compounds.
- (C) The criterion developed under R 299.20 to R 299.26 exceeds the chemical-specific soil saturation screening level (C_{sat}). The person proposing or implementing response activity shall document whether additional response activity is required to control free-phase liquids or NAPL to protect against risks associated with free-phase liquids by using methods appropriate for the free-phase liquids present. Development of a site-specific C_{sat} or methods presented in R 299.22, R 299.24(5), and R 299.26(8) may be conducted for the relevant exposure pathways.
- (D) Calculated criterion exceeds 100 percent, hence it is reduced to 100 percent or 1.0E+9 parts per billion (ppb).
- (E) Criterion is the aesthetic drinking water value, as required by Section 20120a(5) of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA). A notice of aesthetic impact may be employed as an institutional control mechanism if groundwater concentrations exceed the aesthetic drinking water criterion, but do not exceed the applicable health-based drinking water value [as provided in the table in Footnote (E) in R 299.49].
- (F) Criterion is based on adverse impacts to plant life and phytotoxicity.
- (G) Groundwater surface water interface (GSI) criterion depends on the pH or water hardness, or both, of the receiving surface water. The final chronic value (FCV) for the protection of aquatic life shall be calculated based on the pH or hardness of the receiving surface water. Where water hardness exceeds 400 mg CaCO_3/L , use 400 mg CaCO_3/L for the FCV calculation. The FCV formula provides values in units of $\mu\text{g}/\text{L}$ or ppb. The generic GSI criterion is the lesser of the calculated FCV, the wildlife value (WV), and the surface water human non-drinking water value (HNDV). The soil GSI protection criteria for these hazardous substances are the greater of 20 times the GSI criterion or the GSI soil-water partition values using the GSI criteria developed with the procedure described in this footnote. [See table in Footnote (G) in R 299.49]
- (H) Valence-specific chromium data (Cr III and Cr VI) shall be compared to the corresponding valence-specific cleanup criteria. If both Cr III and Cr VI are present in groundwater, the total concentration of both cannot exceed the drinking water criterion of 100 $\mu\text{g}/\text{L}$. If analytical data are provided for total chromium only, they shall be compared to the cleanup criteria for Cr VI. Cr III soil cleanup criterion for protection of drinking water can only be used at sites where groundwater is prevented from being used as a public water supply, currently and in the future, through an approved land or resource use restriction.
- (I) Hazardous substance may exhibit the characteristic of ignitability as defined in 40 C.F.R. §261.21 (revised as of July 1, 2001), which is adopted by reference in these rules.
- (J) Hazardous substance may be present in several isomer forms. Isomer-specific concentrations shall be added together for comparison to criteria.
- (K) Hazardous substance may be flammable or explosive, or both.
- (L) Criteria for lead are derived using a biologically based model, as allowed for under Section 20120a(9) of the NREPA, and are not calculated using the algorithms and assumptions specified in pathway-specific rules. The generic residential drinking water criterion of 4 $\mu\text{g}/\text{L}$ is linked to the generic residential soil direct contact criterion of 400 mg/kg. A higher concentration in the drinking water, up to the state action level of 15 $\mu\text{g}/\text{L}$, may be allowed as a site-specific remedy and still allow for drinking water use, under Section 20120a(2) of the NREPA if soil concentrations are appropriately lower than 400 mg/kg. If a site-specific criterion is approved based on this subdivision, a notice shall be filed on the deed for all property where the groundwater concentrations will exceed 4 $\mu\text{g}/\text{L}$ to provide notice of the potential for unacceptable risk if soil or groundwater concentrations increase. Acceptable concentrations of site-specific soil and drinking water concentrations are presented in the [table in Footnote (L) in R 299.49].
- (M) Calculated criterion is below the analytical target detection limit, therefore, the criterion defaults to the target detection limit.
- (N) The concentrations of all potential sources of nitrate-nitrogen (e.g., ammonia-N, nitrite-N, nitrate-N) in groundwater that is used as a source of drinking water shall not, when added together, exceed the nitrate drinking water criterion of 10,000 $\mu\text{g}/\text{L}$. Where leaching to groundwater is a relevant pathway, soil concentrations of all potential sources of nitrate-nitrogen shall not, when added together, exceed the nitrate drinking water protection criterion of 2.0E+5 $\mu\text{g}/\text{kg}$.
- (O) The concentration of all polychlorinated and polybrominated dibenzodioxin and dibenzofuran isomers present at a facility, expressed as an equivalent concentration of 2,3,7,8-tetrachlorodibenzo-p-dioxin based upon their relative potency, shall be added together and compared to the criterion for 2,3,7,8-tetrachlorodibenzo-p-dioxin. The generic cleanup criteria for 2,3,7,8-tetrachlorodibenzo-p-dioxin are not calculated according to the algorithms presented in R 299.14 to R 299.26. The generic cleanup criteria are being held at the values that the DEQ has used since August 1998, in recognition of the fact that national efforts to reassess risks posed by dioxin are not yet complete. Until these studies are complete, it is premature to select a revised slope factor and/or reference dose for calculation of generic cleanup criteria
- (P) Amenable cyanide methods or method OIA-1677 shall be used to quantify cyanide concentrations for compliance with all groundwater criteria. Total cyanide methods or method OIA-1677 shall be used to quantify cyanide concentrations for compliance with soil criteria. Nonresidential direct contact criteria may not be protective of the potential for release of hydrogen cyanide gas. Additional land or resource use restrictions may be necessary to protect for the acute inhalation concerns associated with hydrogen cyanide gas.
- (Q) Criteria for carcinogenic polycyclic aromatic hydrocarbons were developed using relative potential potencies to benzo(a)pyrene.
- (R) Hazardous substance may exhibit the characteristic of reactivity as defined in 40 C.F.R. §261.23 (revised as of July 1, 2001), which is adopted by reference in these rules.
- (S) Criterion defaults to the hazardous substance-specific water solubility limit.
- (T) Refer to the federal Toxic Substances Control Act (TSCA), 40 C.F.R. §761, subpart D and 40 C.F.R. §761, Subpart G, to determine the applicability of TSCA cleanup standards. Subpart D and subpart G of 40 C.F.R. §761 (July 1, 2001) are adopted by reference in these rules. Alternatives to compliance with the TSCA standards listed below are possible under 40 C.F.R. §761 Subpart D. New releases may be subject to the standards identified in 40 C.F.R. §761, Subpart G. Use Part 201 soil direct contact cleanup criteria in the following table if TSCA standards are not applicable. [See table in Footnote (T) in R 299.49].
- (U) Hazardous substance may exhibit the characteristic of corrosivity as defined in 40 C.F.R. §261.22 (revised as of July 1, 2001), which is adopted by reference in these rules.
- (V) Criterion is the aesthetic drinking water value as required by Section 20120a(5) of the NREPA. Concentrations up to 200 $\mu\text{g}/\text{L}$ may be acceptable, and still allow for drinking water use, as part of a site-specific cleanup under Section 20120a(2) and 20120b of the NREPA.
- (W) Concentrations of trihalomethanes in groundwater shall be added together to determine compliance with the Michigan drinking water standard of 80 $\mu\text{g}/\text{L}$. Concentrations of trihalomethanes in soil shall be added together to determine compliance with the drinking water protection criterion of 1,600 $\mu\text{g}/\text{kg}$.
- (X) The GSI criterion shown in the generic cleanup criteria tables is not protective for surface water that is used as a drinking water source. For a groundwater discharge to the Great Lakes and their connecting waters or discharge in close proximity to a water supply intake in inland surface waters, the generic GSI criterion shall be the surface water human drinking water value (HDV) listed in the [table in Footnote (X) in R 299.49], except for those HDV indicated with an asterisk. For HDV with an asterisk, the generic GSI criterion shall be the lowest of the HDV, the WV, and the calculated FCV. See formulas in [the table in Footnote (G) in R 299.49]. Soil protection criteria based on the HDV shall be as listed in the [table in Footnote (X) in R 299.49], except for those values with an asterisk. Soil GSI protection criteria based on the HDV shall be as listed in the [table in Footnote (X) in R 299.49], except for those values with an asterisk. Soil GSI protection criteria for compounds with an asterisk shall be the greater of 20 times the GSI criterion or the GSI soil-water partition values using the GSI criteria developed with the procedure described in this footnote.
- (Y) Source size modifiers shown in the [table in Footnote (Y) in R 299.49] shall be used to determine soil inhalation criteria for ambient air when the source size is not one-half acre. The modifier shall be multiplied by the generic soil inhalation criteria shown in the table of generic cleanup criteria to determine the applicable criterion. See Footnote (C) in R 299.49.
- (Z) Mercury is typically measured as total mercury. The generic cleanup criteria, however, are based on data for different species of mercury. Specifically, data for elemental mercury, chemical abstract service (CAS) number 7439976, serve as the basis for the soil volatilization to indoor air criteria, groundwater volatilization to indoor air, and soil inhalation criteria. Data for methyl mercury, CAS number 22967926, serve as the basis for the GSI criterion; and data for mercuric chloride, CAS number 7487947, serve as the basis for the drinking water, groundwater contact, soil direct contact, and the groundwater protection criteria. Comparison to criteria shall be based on species-specific analytical data only if sufficient facility characterization has been conducted to rule out the presence of other species of mercury.
- (AA) Use 10,000 $\mu\text{g}/\text{L}$ where groundwater enters a structure through the use of a water well, sump or other device. Use 28,000 $\mu\text{g}/\text{L}$ for all other uses.
- (BB) The state drinking water standard for asbestos (fibers greater than 10 micrometers in length) is in units of a million fibers per liter of water (MFL). Soil concentrations of asbestos are determined by polarized light microscopy.
- (CC) Groundwater: The generic GSI criteria are based on the toxicity of unionized ammonia (NH_3); the criteria are 29 $\mu\text{g}/\text{L}$ and 53 $\mu\text{g}/\text{L}$ for cold water and warm water surface water, respectively. As a result, the GSI criterion shall be compared to the percent of the total ammonia concentration in the groundwater that will become NH_3 in the surface water. This percent NH_3 is a function of the pH and temperature of the receiving surface water and can be estimated using the [table in Footnote (CC) in R 299.49], taken from Emerson, et al., (Journal of the Fisheries Research Board of Canada, Volume 32(12):2382, 1975). The generic approach for estimating NH_3 assumes a default pH of 8 and default temperatures of 68 °F and 85 °F for cold water and warm water surface water, respectively. The resulting NH_3 is 3.8 percent and 7.2 percent for cold water and warm water, respectively. This default percentage shall be multiplied by the total ammonia-nitrogen ($\text{NH}_3\text{-N}$) concentration in the groundwater and the resulting NH_3 concentration compared to the applicable GSI criterion. As an alternative, the maximum pH and temperature data from the specific receiving surface water can be used to estimate, from the [table in Footnote (CC) in R 299.49], a lower percent unionized ammonia concentration for comparison to the generic GSI.
Soil: The generic soil GSI protection criteria for unionized ammonia are 580 $\mu\text{g}/\text{kg}$ and 1,100 $\mu\text{g}/\text{kg}$ for cold water and warm water surface water, respectively.
- (DD) Hazardous substance causes developmental effects. Residential direct contact criteria are protective of both prenatal and postnatal exposure. Nonresidential direct contact criteria are protective for a pregnant adult receptor.
- (EE) The [values listed in the table in Footnote (EE) in 299.49] are applicable generic GSI criteria as required by Section 20120e of the NREPA.
- (FF) The chloride GSI criterion shall be 125 mg/L when the discharge is to surface waters of the state designated as public water supply sources or 50 mg/L when the discharge is to the Great Lakes or connecting waters. Chloride GSI criteria shall not apply for surface waters of the state that are not designated as a public water supply source, however, the total dissolved solids criterion is applicable.
- (GG) Risk-based criteria are not available for methane due to insufficient toxicity data. An acceptable soil gas concentration (presented for both residential and nonresidential land uses) was derived utilizing 25 percent of the lower explosive level for methane. This equates to 1.25 percent or 8.4E+6 $\mu\text{g}/\text{m}^3$.
- (HH) The residential criterion for sodium is 230,000 $\mu\text{g}/\text{L}$ in accordance with the Sodium Advisory Council recommendation and revised Groundwater Discharge Standards.
- ID Insufficient data to develop criterion.
- NA A criterion or value is not available or, in the case of background and CAS numbers, not applicable.
- NLL Hazardous substance is not likely to leach under most soil conditions.
- NLV Hazardous substance is not likely to volatilize under most conditions.
- $\mu\text{g}/\text{kg}$ Micrograms per kilogram
- $\mu\text{g}/\text{L}$ Micrograms per liter
- NS Not sampled
- BDL Below Laboratory Method Detection Limits
- BOLD** Exceeds highlighted criteria.

Appendix A

Soil Boring Logs



AKT PEERLESS		BORING LOG				SB-1		
		2360 West Pierson Road Flint, Michigan AKT Peerless Project No: 11957s-3-20				Drawn By: A. Bigler Date: 10/18/2016		
DRILLING COMPANY:		AKT Peerless			WEATHER:		65 °F, Partly Cloudy	
TECHNICIAN:		Bill Fox			BORING DEPTH:		8'	
DATE DRILLED:		10/17/16			DEPTH TO GW:		4'	
DRILLING METHOD:		Geoprobe			SCREEN INTERVAL:		NA	
FIELD GEOLOGIST:		Aaron Bigler			SCREEN MATERIAL:		NA	
DEPTH FEET	SAMPLE INTERVAL	% RECOVERY	PID VALUE	USCS SOIL CLASS.	COLOR	GEOLOGIC DESCRIPTION	MOISTURE	TEMPORARY WELL DIAGRAM
						Concrete		
			<0.1			Asphalt		
2		50		SW	Greenish Gray	Sand - fine to medium grain	D	
			<0.1					
4							S	
			NA					
6		70		CL	Yellowish Orange	Clay - medium stiff to stiff, trace light gray mottling		
			NA					
8						End of Boring		
10								
12								
14								
16								
18								
20								

		BORING LOG 2360 West Pierson Road Flint, Michigan AKT Peerless Project No: 11957s-3-20				SB-2/TMW		
						Drawn By: A. Bigler		
						Date: 10/18/2016		
DRILLING COMPANY:		AKT Peerless			WEATHER:		65 °F, Partly Cloudy	
TECHNICIAN:		Bill Fox			BORING DEPTH:		5'	
DATE DRILLED:		10/17/16			DEPTH TO GW:		3'	
DRILLING METHOD:		Hand Auger			SCREEN INTERVAL:		0' - 5'	
FIELD GEOLOGIST:		Aaron Bigler			SCREEN MATERIAL:		1" PVC - 10 Slot	
DEPTH FEET	SAMPLE INTERVAL	% RECOVERY	PID VALUE	USCS SOIL CLASS.	COLOR	GEOLOGIC DESCRIPTION	MOISTURE	TEMPORARY WELL DIAGRAM
2		95	<0.1	SW	Light Brown	Concrete Sand - fine to medium grain, trace brown sand throughout	D	
4			<0.1				S	
		80	NA					
6			NA			End of Boring		
8								
10								
12								
14								
16								
18								
20								

AKT PEERLESS				BORING LOG 2360 West Pierson Road Flint, Michigan AKT Peerless Project No: 11957s-3-20				SB-3/TMW Drawn By: A. Bigler Date: 10/18/2016	
DRILLING COMPANY:		AKT Peerless			WEATHER:		65 °F, Partly Cloudy		
TECHNICIAN:		Bill Fox			BORING DEPTH:		5'		
DATE DRILLED:		10/17/16			DEPTH TO GW:		3'		
DRILLING METHOD:		Hand Auger			SCREEN INTERVAL:		0' - 5'		
FIELD GEOLOGIST:		Aaron Bigler			SCREEN MATERIAL:		1" PVC - 10 Slot		
DEPTH FEET	SAMPLE INTERVAL	% RECOVERY	PID VALUE	USCS SOIL CLASS.	COLOR	GEOLOGIC DESCRIPTION	MOISTURE	TEMPORARY WELL DIAGRAM	
2		95	<0.1	SW	Light Brown	Concrete	D S		
			<0.1			Sand - fine to medium grain, trace brown sand throughout			
		95	<0.1			End of Boring			
			NA						
4		80	NA						
6									
8									
10									
12									
14									
16									
18									
20									

[illegible]

AKT PEERLESS		BORING LOG				SB-5		
		2360 West Pierson Road Flint, Michigan AKT Peerless Project No: 11957s-3-20				Drawn By: A. Bigler Date: 10/18/2016		
DRILLING COMPANY:		AKT Peerless			WEATHER:		65 °F, Partly Cloudy	
TECHNICIAN:		Bill Fox			BORING DEPTH:		8'	
DATE DRILLED:		10/17/16			DEPTH TO GW:		4.5'	
DRILLING METHOD:		Geoprobe			SCREEN INTERVAL:		NA	
FIELD GEOLOGIST:		Aaron Bigler			SCREEN MATERIAL:		NA	
DEPTH FEET	SAMPLE INTERVAL	% RECOVERY	PID VALUE	USCS SOIL CLASS.	COLOR	GEOLOGIC DESCRIPTION	MOISTURE	TEMPORARY WELL DIAGRAM
						Concrete		
2		80	<0.1	SW	Light Brown	Sand - fine to medium grain, trace pebbles	D	
4			<0.1					
				CH	Light Brown	Clay - medium stiff	D	
			<0.1	CL	Light Brown	Clay - stiff	S	
6		70						
			NA					
8								
						End of Boring		
10								
12								
14								
16								
18								
20								

		BORING LOG 2360 West Pierson Road Flint, Michigan AKT Peerless Project No: 11957s-3-20				SB-6/TMW		
						Drawn By: A. Bigler		
						Date: 10/18/2016		
DRILLING COMPANY:		AKT Peerless			WEATHER:		65 °F, Partly Cloudy	
TECHNICIAN:		Bill Fox			BORING DEPTH:		8'	
DATE DRILLED:		10/17/16			DEPTH TO GW:		4'	
DRILLING METHOD:		Geoprobe			SCREEN INTERVAL:		3' - 8'	
FIELD GEOLOGIST:		Aaron Bigler			SCREEN MATERIAL:		1" PVC - 10 Slot	
DEPTH FEET	SAMPLE INTERVAL	% RECOVERY	PID VALUE	USCS SOIL CLASS.	COLOR	GEOLOGIC DESCRIPTION	MOISTURE	<div style="text-align: center;">TEMPORARY WELL DIAGRAM</div> 
2		50	<0.1	SW	Light Brown	Concrete Sand - fine to medium grain, slight petroleum odor	D	
			<0.1					
4			NA				S	
6		95				Gravel		
			CL	Light Brown	Clay - stiff			
			NA					
8						End of Boring		
10								
12								
14								
16								
18								
20								

Appendix B

Laboratory Analytical Results



Analytical Laboratory Report

Report ID: S76953.01(01)

Generated on 10/26/2016

Report to

Attention: Jeff Carr
AKT Peerless Environmental
214 Janes
Saginaw, MI 48607

Phone: 989-754-9896 FAX: 989-754-3804

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Report Summary

Lab Sample ID(s): S76953.01-S76953.10

Project: 11957-GCLBA / 2360 Pierson

Collected Date: 10/17/2016

Submitted Date/Time: 10/19/2016 16:30

Sampled by: Aaron Bigler

P.O. #:

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Maya Murshak
Technical Director



Analytical Laboratory Report

General Report Notes

Analytical results relate only to the samples tested, in the condition received by the laboratory.
Methods may be modified for improved performance.
Results reported on a dry weight basis where applicable.
'Not detected' indicates that parameter was not found at a level equal to or greater than the reporting limit (RL).
40 CFR Part 136 Table II Required Containers, Preservation Techniques and Holding Times for the Clean Water Act specify that samples for acrolein and acrylonitrile need to be preserved at a pH in the range of 4 to 5 or if not preserved, analyzed within 3 days of sampling.
QA/QC corresponding to this analytical report is a separate document with the same Merit ID reference and is available upon request.
Full accreditation certificates are available upon request. Starred (*) analytes are not NELAP accredited.
Samples are held by the lab for 30 days from the final report date unless a written request to hold longer is provided by the client.
Report shall not be reproduced except in full, without the written approval of Merit Laboratories, Inc.

Report Narrative

There is no additional narrative for this analytical report



Analytical Laboratory Report

Laboratory Certifications

Authority	Certification ID
Michigan DEQ	#9956
DOD ELAP/ISO 17025	#69699
WBENC	#2005110032
Ohio VAP	#CL0002
Indiana DOH	#C-MI-07
New York NELAC	#11814
North Carolina DENR	#680
North Carolina DOH	#26702

Qualifier Descriptions

Qualifier	Description
!	Result is outside of stated limit criteria
B	Compound also found in associated method blank
E	Concentration exceeds calibration range
F	Analysis run outside of holding time
G	Estimated result due to extraction run outside of holding time
H	Sample submitted and run outside of holding time
I	Matrix interference with internal standard
J	Estimated value less than reporting limit, but greater than MDL
L	Elevated reporting limit due to low sample amount
M	Result reported to MDL not RDL
O	Analysis performed by outside laboratory. See attached report.
R	Preliminary result
S	Surrogate recovery outside of control limits
T	No correction for total solids
X	Elevated reporting limit due to matrix interference
Y	Elevated reporting limit due to high target concentration
b	Value detected less than reporting limit, but greater than MDL
e	Reported value estimated due to interference
j	Analyte also found in associated method blank
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
x	Preserved from bulk sample

Glossary of Abbreviations

Abbreviation	Description
RL/RDL	Reporting Limit
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
SW	EPA SW 846 (Soil and Wastewater) Methods
E	EPA Methods
SM	Standard Methods



Analytical Laboratory Report

Method Summary

Method	Version
E200.8	EPA Method 200.8 Revision 5.4
E608	EPA Method 608
N/A	Not Applicable
SM2540B	Standard Method 2540 B 20th Edition
SW3015A	SW 846 Method 3015A Revision 1 February 2007
SW3050B	SW 846 Method 3050B Revision 2 December 1996
SW3510C	SW 846 Method 3510C Revision 3 December 1996
SW3550C	SW 846 Method 3550C Revision 3 February 2007
SW5030C/8260C	SW 846 Method 8260C Revision 3 August 2006 / 5030C Revision 3 May 2003
SW5035A/8260C	SW 846 Method 8260C Revision 3 August 2006 / 5035A Revision 1 July 2002
SW6020A	SW 846 Method 6020A Revision 1 February 2007
SW8270D	SW 846 Method 8270D Revision 4 February 2007



Analytical Laboratory Report

Sample Summary (10 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S76953.01	SB-2 TMW	Groundwater	10/17/16 00:01
S76953.02	SB-3 TMW	Groundwater	10/17/16 00:01
S76953.03	SB-6 TMW	Groundwater	10/17/16 00:01
S76953.04	SB-1	Soil	10/17/16 00:01
S76953.05	SB-4	Soil	10/17/16 00:01
S76953.06	SB-5	Soil	10/17/16 00:01
S76953.07	Dup-1	Soil	10/17/16 00:01
S76953.08	Meth Blank	Methanol	10/17/16 00:01
S76953.09	Trip Blank	Water	10/17/16 00:01
S76953.10	Waste Water	Groundwater	10/17/16 00:01



Analytical Laboratory Report

Lab Sample ID: S76953.01
Sample Tag: SB-2 TMW
Collected Date/Time: 10/17/2016 00:01
Matrix: Groundwater
COC Reference: 92469

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	1L Amber	None	Yes	5.9	IR
1	125ml Plastic	HNO3	Yes	5.9	IR
2	40ml Glass	HCL	Yes	5.9	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Tech	CAS #	Flags
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Extraction / Prep.

Metal Digestion	Completed			SW3015A	10/25/16 13:30	CCM		
pH check for VOCs*	<2	STD Units		N/A	10/24/16 10:30	JML		
PNA Extraction	Completed			SW3510C	10/24/16 10:08	EMR		

Metals

Cadmium	0.0097	mg/L	0.0005	E200.8	10/25/16 14:23	CCM	7440-43-9	
Chromium	0.355	mg/L	0.005	E200.8	10/25/16 14:23	CCM	7440-47-3	
Lead	0.337	mg/L	0.003	E200.8	10/25/16 14:23	CCM	7439-92-1	

Organics - Semi-Volatiles

Polynuclear Aromatic Hydrocarbon

Acenaphthene	Not detected	ug/L	5	SW8270D	10/26/16 00:25	PL	83-32-9	
Acenaphthylene	Not detected	ug/L	5	SW8270D	10/26/16 00:25	PL	208-96-8	
Anthracene	Not detected	ug/L	5	SW8270D	10/26/16 00:25	PL	120-12-7	
Benzo(a)anthracene	Not detected	ug/L	1	SW8270D	10/26/16 00:25	PL	56-55-3	
Benzo(a)pyrene	Not detected	ug/L	1	SW8270D	10/26/16 00:25	PL	50-32-8	
Benzo(b)fluoranthene	Not detected	ug/L	1	SW8270D	10/26/16 00:25	PL	205-99-2	
Benzo(k)fluoranthene	Not detected	ug/L	1	SW8270D	10/26/16 00:25	PL	207-08-9	
Benzo(ghi)perylene	Not detected	ug/L	1	SW8270D	10/26/16 00:25	PL	191-24-2	
Chrysene	Not detected	ug/L	1	SW8270D	10/26/16 00:25	PL	218-01-9	
Dibenzo(ah)anthracene	Not detected	ug/L	2	SW8270D	10/26/16 00:25	PL	53-70-3	
Fluoranthene	Not detected	ug/L	1	SW8270D	10/26/16 00:25	PL	206-44-0	
Fluorene	Not detected	ug/L	5	SW8270D	10/26/16 00:25	PL	86-73-7	
Indeno(1,2,3-cd)pyrene	Not detected	ug/L	2	SW8270D	10/26/16 00:25	PL	193-39-5	
Naphthalene	Not detected	ug/L	5	SW8270D	10/26/16 00:25	PL	91-20-3	
Phenanthrene	Not detected	ug/L	2	SW8270D	10/26/16 00:25	PL	85-01-8	
Pyrene	Not detected	ug/L	5	SW8270D	10/26/16 00:25	PL	129-00-0	
2-Methylnaphthalene	Not detected	ug/L	5	SW8270D	10/26/16 00:25	PL	91-57-6	
1-Methylnaphthalene	Not detected	ug/L	5	SW8270D	10/26/16 00:25	PL	90-12-0	

Organics - Volatiles

Volatile Organics - DEQ List

Diethyl ether*	Not detected	ug/L	10	SW5030C/8260C	10/25/16 14:09	JGH	60-29-7	
Acetone	Not detected	ug/L	50	SW5030C/8260C	10/25/16 14:09	JGH	67-64-1	
Methyl iodide*	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:09	JGH	74-88-4	
Carbon disulfide	Not detected	ug/L	5	SW5030C/8260C	10/25/16 14:09	JGH	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	ug/L	5	SW5030C/8260C	10/25/16 14:09	JGH	1634-04-4	
Acrylonitrile	Not detected	ug/L	2	SW5030C/8260C	10/25/16 14:09	JGH	107-13-1	
2-Butanone (MEK)	Not detected	ug/L	25	SW5030C/8260C	10/25/16 14:09	JGH	78-93-3	
Dichlorodifluoromethane	Not detected	ug/L	5	SW5030C/8260C	10/25/16 14:09	JGH	75-71-8	
Chloromethane*	Not detected	ug/L	5	SW5030C/8260C	10/25/16 14:09	JGH	74-87-3	



Analytical Laboratory Report

Lab Sample ID: S76953.01 (continued)

Sample Tag: SB-2 TMW

Analysis	Results	Units	RL	Method	Run Date/Time	Tech	CAS #	Flags
Organics - Volatiles (continued)								
Volatile Organics - DEQ List (continued)								
Vinyl chloride	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:09	JGH	75-01-4	
Bromomethane	Not detected	ug/L	5	SW5030C/8260C	10/25/16 14:09	JGH	74-83-9	
Chloroethane	Not detected	ug/L	5	SW5030C/8260C	10/25/16 14:09	JGH	75-00-3	
Trichlorofluoromethane	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:09	JGH	75-69-4	
1,1-Dichloroethene	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:09	JGH	75-35-4	
Methylene chloride	Not detected	ug/L	5	SW5030C/8260C	10/25/16 14:09	JGH	75-09-2	
trans-1,2-Dichloroethene	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:09	JGH	156-60-5	
1,1-Dichloroethane	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:09	JGH	75-34-3	
cis-1,2-Dichloroethene	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:09	JGH	156-59-2	
Tetrahydrofuran*	Not detected	ug/L	90	SW5030C/8260C	10/25/16 14:09	JGH	109-99-9	
Chloroform	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:09	JGH	67-66-3	
Bromochloromethane	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:09	JGH	74-97-5	
1,1,1-Trichloroethane	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:09	JGH	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	ug/L	50	SW5030C/8260C	10/25/16 14:09	JGH	108-10-1	
2-Hexanone	Not detected	ug/L	50	SW5030C/8260C	10/25/16 14:09	JGH	591-78-6	
Carbon tetrachloride	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:09	JGH	56-23-5	
Benzene	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:09	JGH	71-43-2	
1,2-Dichloroethane	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:09	JGH	107-06-2	
Trichloroethene	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:09	JGH	79-01-6	
1,2-Dichloropropane	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:09	JGH	78-87-5	
Bromodichloromethane	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:09	JGH	75-27-4	
Dibromomethane	Not detected	ug/L	5	SW5030C/8260C	10/25/16 14:09	JGH	74-95-3	
cis-1,3-Dichloropropene	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:09	JGH	10061-01-5	
Toluene	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:09	JGH	108-88-3	
trans-1,3-Dichloropropene	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:09	JGH	10061-02-6	
1,1,2-Trichloroethane	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:09	JGH	79-00-5	
Tetrachloroethene	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:09	JGH	127-18-4	
trans-1,4-Dichloro-2-butene*	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:09	JGH	110-57-6	
Dibromochloromethane	Not detected	ug/L	5	SW5030C/8260C	10/25/16 14:09	JGH	124-48-1	
1,2-Dibromoethane	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:09	JGH	106-93-4	
Chlorobenzene	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:09	JGH	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:09	JGH	630-20-6	
Ethylbenzene	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:09	JGH	100-41-4	
p,m-Xylene*	Not detected	ug/L	2	SW5030C/8260C	10/25/16 14:09	JGH		
o-Xylene*	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:09	JGH	95-47-6	
Styrene	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:09	JGH	100-42-5	
Isopropylbenzene	Not detected	ug/L	5	SW5030C/8260C	10/25/16 14:09	JGH	98-82-8	
Bromoform	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:09	JGH	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:09	JGH	79-34-5	
1,2,3-Trichloropropane*	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:09	JGH	96-18-4	
n-Propylbenzene	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:09	JGH	103-65-1	
Bromobenzene	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:09	JGH	108-86-1	
1,3,5-Trimethylbenzene	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:09	JGH	108-67-8	
tert-Butylbenzene	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:09	JGH	98-06-6	
1,2,4-Trimethylbenzene	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:09	JGH	95-63-6	
sec-Butylbenzene	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:09	JGH	135-98-8	
p-Isopropyltoluene	Not detected	ug/L	5	SW5030C/8260C	10/25/16 14:09	JGH	99-87-6	
1,3-Dichlorobenzene	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:09	JGH	541-73-1	
1,4-Dichlorobenzene	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:09	JGH	106-46-7	



Analytical Laboratory Report

Lab Sample ID: S76953.01 (continued)

Sample Tag: SB-2 TMW

Analysis	Results	Units	RL	Method	Run Date/Time	Tech	CAS #	Flags
Organics - Volatiles (continued)								
Volatile Organics - DEQ List (continued)								
1,2-Dichlorobenzene	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:09	JGH	95-50-1	
1,2,3-Trimethylbenzene	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:09	JGH	526-73-8	
n-Butylbenzene	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:09	JGH	104-51-8	
Hexachloroethane	Not detected	ug/L	5	SW5030C/8260C	10/25/16 14:09	JGH	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	ug/L	5	SW5030C/8260C	10/25/16 14:09	JGH	96-12-8	
1,2,4-Trichlorobenzene	Not detected	ug/L	5	SW5030C/8260C	10/25/16 14:09	JGH	120-82-1	
1,2,3-Trichlorobenzene	Not detected	ug/L	5	SW5030C/8260C	10/25/16 14:09	JGH	87-61-6	
Naphthalene	Not detected	ug/L	5	SW5030C/8260C	10/25/16 14:09	JGH	91-20-3	
2-Methylnaphthalene	Not detected	ug/L	5	SW5030C/8260C	10/25/16 14:09	JGH	91-57-6	



Analytical Laboratory Report

Lab Sample ID: S76953.02
Sample Tag: SB-3 TMW
Collected Date/Time: 10/17/2016 00:01
Matrix: Groundwater
COC Reference: 92469

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	1L Amber	None	Yes	5.9	IR
1	125ml Plastic	HNO3	Yes	5.9	IR
2	40ml Glass	HCL	Yes	5.9	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Tech	CAS #	Flags
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Extraction / Prep.

Metal Digestion	Completed			SW3015A	10/25/16 13:30	CCM		
pH check for VOCs*	<2	STD Units		N/A	10/24/16 10:30	JML		

Metals

Cadmium	0.0008	mg/L	0.0005	E200.8	10/25/16 14:12	CCM	7440-43-9	
Chromium	0.061	mg/L	0.005	E200.8	10/25/16 14:12	CCM	7440-47-3	
Lead	0.062	mg/L	0.003	E200.8	10/25/16 14:12	CCM	7439-92-1	

Organics - Volatiles

Volatile Organics - DEQ List

Diethyl ether*	Not detected	ug/L	10	SW5030C/8260C	10/25/16 14:31	JGH	60-29-7	
Acetone	Not detected	ug/L	50	SW5030C/8260C	10/25/16 14:31	JGH	67-64-1	
Methyl iodide*	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:31	JGH	74-88-4	
Carbon disulfide	Not detected	ug/L	5	SW5030C/8260C	10/25/16 14:31	JGH	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	ug/L	5	SW5030C/8260C	10/25/16 14:31	JGH	1634-04-4	
Acrylonitrile	Not detected	ug/L	2	SW5030C/8260C	10/25/16 14:31	JGH	107-13-1	
2-Butanone (MEK)	Not detected	ug/L	25	SW5030C/8260C	10/25/16 14:31	JGH	78-93-3	
Dichlorodifluoromethane	Not detected	ug/L	5	SW5030C/8260C	10/25/16 14:31	JGH	75-71-8	
Chloromethane*	Not detected	ug/L	5	SW5030C/8260C	10/25/16 14:31	JGH	74-87-3	
Vinyl chloride	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:31	JGH	75-01-4	
Bromomethane	Not detected	ug/L	5	SW5030C/8260C	10/25/16 14:31	JGH	74-83-9	
Chloroethane	Not detected	ug/L	5	SW5030C/8260C	10/25/16 14:31	JGH	75-00-3	
Trichlorofluoromethane	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:31	JGH	75-69-4	
1,1-Dichloroethene	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:31	JGH	75-35-4	
Methylene chloride	Not detected	ug/L	5	SW5030C/8260C	10/25/16 14:31	JGH	75-09-2	
trans-1,2-Dichloroethene	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:31	JGH	156-60-5	
1,1-Dichloroethane	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:31	JGH	75-34-3	
cis-1,2-Dichloroethene	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:31	JGH	156-59-2	
Tetrahydrofuran*	Not detected	ug/L	90	SW5030C/8260C	10/25/16 14:31	JGH	109-99-9	
Chloroform	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:31	JGH	67-66-3	
Bromochloromethane	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:31	JGH	74-97-5	
1,1,1-Trichloroethane	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:31	JGH	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	ug/L	50	SW5030C/8260C	10/25/16 14:31	JGH	108-10-1	
2-Hexanone	Not detected	ug/L	50	SW5030C/8260C	10/25/16 14:31	JGH	591-78-6	
Carbon tetrachloride	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:31	JGH	56-23-5	
Benzene	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:31	JGH	71-43-2	
1,2-Dichloroethane	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:31	JGH	107-06-2	
Trichloroethene	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:31	JGH	79-01-6	
1,2-Dichloropropane	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:31	JGH	78-87-5	
Bromodichloromethane	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:31	JGH	75-27-4	
Dibromomethane	Not detected	ug/L	5	SW5030C/8260C	10/25/16 14:31	JGH	74-95-3	



Analytical Laboratory Report

Lab Sample ID: S76953.02 (continued)

Sample Tag: SB-3 TMW

Analysis	Results	Units	RL	Method	Run Date/Time	Tech	CAS #	Flags
Organics - Volatiles (continued)								
Volatile Organics - DEQ List (continued)								
cis-1,3-Dichloropropene	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:31	JGH	10061-01-5	
Toluene	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:31	JGH	108-88-3	
trans-1,3-Dichloropropene	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:31	JGH	10061-02-6	
1,1,2-Trichloroethane	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:31	JGH	79-00-5	
Tetrachloroethene	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:31	JGH	127-18-4	
trans-1,4-Dichloro-2-butene*	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:31	JGH	110-57-6	
Dibromochloromethane	Not detected	ug/L	5	SW5030C/8260C	10/25/16 14:31	JGH	124-48-1	
1,2-Dibromoethane	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:31	JGH	106-93-4	
Chlorobenzene	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:31	JGH	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:31	JGH	630-20-6	
Ethylbenzene	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:31	JGH	100-41-4	
p,m-Xylene*	Not detected	ug/L	2	SW5030C/8260C	10/25/16 14:31	JGH		
o-Xylene*	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:31	JGH	95-47-6	
Styrene	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:31	JGH	100-42-5	
Isopropylbenzene	Not detected	ug/L	5	SW5030C/8260C	10/25/16 14:31	JGH	98-82-8	
Bromoform	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:31	JGH	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:31	JGH	79-34-5	
1,2,3-Trichloropropane*	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:31	JGH	96-18-4	
n-Propylbenzene	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:31	JGH	103-65-1	
Bromobenzene	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:31	JGH	108-86-1	
1,3,5-Trimethylbenzene	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:31	JGH	108-67-8	
tert-Butylbenzene	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:31	JGH	98-06-6	
1,2,4-Trimethylbenzene	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:31	JGH	95-63-6	
sec-Butylbenzene	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:31	JGH	135-98-8	
p-Isopropyltoluene	Not detected	ug/L	5	SW5030C/8260C	10/25/16 14:31	JGH	99-87-6	
1,3-Dichlorobenzene	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:31	JGH	541-73-1	
1,4-Dichlorobenzene	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:31	JGH	106-46-7	
1,2-Dichlorobenzene	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:31	JGH	95-50-1	
1,2,3-Trimethylbenzene	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:31	JGH	526-73-8	
n-Butylbenzene	Not detected	ug/L	1	SW5030C/8260C	10/25/16 14:31	JGH	104-51-8	
Hexachloroethane	Not detected	ug/L	5	SW5030C/8260C	10/25/16 14:31	JGH	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	ug/L	5	SW5030C/8260C	10/25/16 14:31	JGH	96-12-8	
1,2,4-Trichlorobenzene	Not detected	ug/L	5	SW5030C/8260C	10/25/16 14:31	JGH	120-82-1	
1,2,3-Trichlorobenzene	Not detected	ug/L	5	SW5030C/8260C	10/25/16 14:31	JGH	87-61-6	
Naphthalene	Not detected	ug/L	5	SW5030C/8260C	10/25/16 14:31	JGH	91-20-3	
2-Methylnaphthalene	Not detected	ug/L	5	SW5030C/8260C	10/25/16 14:31	JGH	91-57-6	



Analytical Laboratory Report

Lab Sample ID: S76953.03
Sample Tag: SB-6 TMW
Collected Date/Time: 10/17/2016 00:01
Matrix: Groundwater
COC Reference: 92469

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	1L Amber	None	Yes	5.9	IR
1	125ml Plastic	HNO3	Yes	5.9	IR
2	40ml Glass	HCL	Yes	5.9	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Tech	CAS #	Flags
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Extraction / Prep.

Metal Digestion	Completed			SW3015A	10/25/16 13:30	CCM		
pH check for VOCs*	<2	STD Units		N/A	10/24/16 10:30	JML		
PNA Extraction	Completed			SW3510C	10/24/16 10:08	EMR		

Metals

Cadmium	Not detected	mg/L	0.0005	E200.8	10/25/16 14:10	CCM	7440-43-9	
Chromium	0.006	mg/L	0.005	E200.8	10/25/16 14:10	CCM	7440-47-3	
Lead	0.016	mg/L	0.003	E200.8	10/25/16 14:10	CCM	7439-92-1	

Organics - Semi-Volatiles

Polynuclear Aromatic Hydrocarbon

Acenaphthene	Not detected	ug/L	5	SW8270D	10/26/16 00:43	PL	83-32-9	
Acenaphthylene	Not detected	ug/L	5	SW8270D	10/26/16 00:43	PL	208-96-8	
Anthracene	Not detected	ug/L	5	SW8270D	10/26/16 00:43	PL	120-12-7	
Benzo(a)anthracene	Not detected	ug/L	1	SW8270D	10/26/16 00:43	PL	56-55-3	
Benzo(a)pyrene	Not detected	ug/L	1	SW8270D	10/26/16 00:43	PL	50-32-8	
Benzo(b)fluoranthene	Not detected	ug/L	1	SW8270D	10/26/16 00:43	PL	205-99-2	
Benzo(k)fluoranthene	Not detected	ug/L	1	SW8270D	10/26/16 00:43	PL	207-08-9	
Benzo(ghi)perylene	Not detected	ug/L	1	SW8270D	10/26/16 00:43	PL	191-24-2	
Chrysene	Not detected	ug/L	1	SW8270D	10/26/16 00:43	PL	218-01-9	
Dibenzo(ah)anthracene	Not detected	ug/L	2	SW8270D	10/26/16 00:43	PL	53-70-3	
Fluoranthene	Not detected	ug/L	1	SW8270D	10/26/16 00:43	PL	206-44-0	
Fluorene	Not detected	ug/L	5	SW8270D	10/26/16 00:43	PL	86-73-7	
Indeno(1,2,3-cd)pyrene	Not detected	ug/L	2	SW8270D	10/26/16 00:43	PL	193-39-5	
Naphthalene	Not detected	ug/L	5	SW8270D	10/26/16 00:43	PL	91-20-3	
Phenanthrene	Not detected	ug/L	2	SW8270D	10/26/16 00:43	PL	85-01-8	
Pyrene	Not detected	ug/L	5	SW8270D	10/26/16 00:43	PL	129-00-0	
2-Methylnaphthalene	Not detected	ug/L	5	SW8270D	10/26/16 00:43	PL	91-57-6	
1-Methylnaphthalene	Not detected	ug/L	5	SW8270D	10/26/16 00:43	PL	90-12-0	

Organics - Volatiles

Volatile Organics - DEQ List

Diethyl ether*	Not detected	ug/L	10	SW5030C/8260C	10/21/16 19:22	JGH	60-29-7	
Acetone	Not detected	ug/L	50	SW5030C/8260C	10/21/16 19:22	JGH	67-64-1	
Methyl iodide*	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:22	JGH	74-88-4	
Carbon disulfide	Not detected	ug/L	5	SW5030C/8260C	10/21/16 19:22	JGH	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	ug/L	5	SW5030C/8260C	10/21/16 19:22	JGH	1634-04-4	
Acrylonitrile	Not detected	ug/L	2	SW5030C/8260C	10/21/16 19:22	JGH	107-13-1	
2-Butanone (MEK)	Not detected	ug/L	25	SW5030C/8260C	10/21/16 19:22	JGH	78-93-3	
Dichlorodifluoromethane	Not detected	ug/L	5	SW5030C/8260C	10/21/16 19:22	JGH	75-71-8	
Chloromethane*	Not detected	ug/L	5	SW5030C/8260C	10/21/16 19:22	JGH	74-87-3	



Analytical Laboratory Report

Lab Sample ID: S76953.03 (continued)

Sample Tag: SB-6 TMW

Analysis	Results	Units	RL	Method	Run Date/Time	Tech	CAS #	Flags
Organics - Volatiles (continued)								
Volatile Organics - DEQ List (continued)								
Vinyl chloride	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:22	JGH	75-01-4	
Bromomethane	Not detected	ug/L	5	SW5030C/8260C	10/21/16 19:22	JGH	74-83-9	
Chloroethane	Not detected	ug/L	5	SW5030C/8260C	10/21/16 19:22	JGH	75-00-3	
Trichlorofluoromethane	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:22	JGH	75-69-4	
1,1-Dichloroethene	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:22	JGH	75-35-4	
Methylene chloride	Not detected	ug/L	5	SW5030C/8260C	10/21/16 19:22	JGH	75-09-2	
trans-1,2-Dichloroethene	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:22	JGH	156-60-5	
1,1-Dichloroethane	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:22	JGH	75-34-3	
cis-1,2-Dichloroethene	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:22	JGH	156-59-2	
Tetrahydrofuran*	Not detected	ug/L	90	SW5030C/8260C	10/21/16 19:22	JGH	109-99-9	
Chloroform	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:22	JGH	67-66-3	
Bromochloromethane	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:22	JGH	74-97-5	
1,1,1-Trichloroethane	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:22	JGH	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	ug/L	50	SW5030C/8260C	10/21/16 19:22	JGH	108-10-1	
2-Hexanone	Not detected	ug/L	50	SW5030C/8260C	10/21/16 19:22	JGH	591-78-6	
Carbon tetrachloride	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:22	JGH	56-23-5	
Benzene	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:22	JGH	71-43-2	
1,2-Dichloroethane	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:22	JGH	107-06-2	
Trichloroethene	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:22	JGH	79-01-6	
1,2-Dichloropropane	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:22	JGH	78-87-5	
Bromodichloromethane	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:22	JGH	75-27-4	
Dibromomethane	Not detected	ug/L	5	SW5030C/8260C	10/21/16 19:22	JGH	74-95-3	
cis-1,3-Dichloropropene	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:22	JGH	10061-01-5	
Toluene	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:22	JGH	108-88-3	
trans-1,3-Dichloropropene	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:22	JGH	10061-02-6	
1,1,2-Trichloroethane	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:22	JGH	79-00-5	
Tetrachloroethene	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:22	JGH	127-18-4	
trans-1,4-Dichloro-2-butene*	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:22	JGH	110-57-6	
Dibromochloromethane	Not detected	ug/L	5	SW5030C/8260C	10/21/16 19:22	JGH	124-48-1	
1,2-Dibromoethane	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:22	JGH	106-93-4	
Chlorobenzene	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:22	JGH	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:22	JGH	630-20-6	
Ethylbenzene	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:22	JGH	100-41-4	
p,m-Xylene*	Not detected	ug/L	2	SW5030C/8260C	10/21/16 19:22	JGH		
o-Xylene*	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:22	JGH	95-47-6	
Styrene	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:22	JGH	100-42-5	
Isopropylbenzene	Not detected	ug/L	5	SW5030C/8260C	10/21/16 19:22	JGH	98-82-8	
Bromoform	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:22	JGH	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:22	JGH	79-34-5	
1,2,3-Trichloropropane*	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:22	JGH	96-18-4	
n-Propylbenzene	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:22	JGH	103-65-1	
Bromobenzene	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:22	JGH	108-86-1	
1,3,5-Trimethylbenzene	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:22	JGH	108-67-8	
tert-Butylbenzene	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:22	JGH	98-06-6	
1,2,4-Trimethylbenzene	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:22	JGH	95-63-6	
sec-Butylbenzene	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:22	JGH	135-98-8	
p-Isopropyltoluene	Not detected	ug/L	5	SW5030C/8260C	10/21/16 19:22	JGH	99-87-6	
1,3-Dichlorobenzene	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:22	JGH	541-73-1	
1,4-Dichlorobenzene	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:22	JGH	106-46-7	



Analytical Laboratory Report

Lab Sample ID: S76953.03 (continued)

Sample Tag: SB-6 TMW

Analysis	Results	Units	RL	Method	Run Date/Time	Tech	CAS #	Flags
Organics - Volatiles (continued)								
Volatile Organics - DEQ List (continued)								
1,2-Dichlorobenzene	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:22	JGH	95-50-1	
1,2,3-Trimethylbenzene	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:22	JGH	526-73-8	
n-Butylbenzene	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:22	JGH	104-51-8	
Hexachloroethane	Not detected	ug/L	5	SW5030C/8260C	10/21/16 19:22	JGH	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	ug/L	5	SW5030C/8260C	10/21/16 19:22	JGH	96-12-8	
1,2,4-Trichlorobenzene	Not detected	ug/L	5	SW5030C/8260C	10/21/16 19:22	JGH	120-82-1	
1,2,3-Trichlorobenzene	Not detected	ug/L	5	SW5030C/8260C	10/21/16 19:22	JGH	87-61-6	
Naphthalene	Not detected	ug/L	5	SW5030C/8260C	10/21/16 19:22	JGH	91-20-3	
2-Methylnaphthalene	Not detected	ug/L	5	SW5030C/8260C	10/21/16 19:22	JGH	91-57-6	



Analytical Laboratory Report

Lab Sample ID: S76953.04
Sample Tag: SB-1
Collected Date/Time: 10/17/2016 00:01
Matrix: Soil
COC Reference: 92469

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	5.9	IR
1	40ml Glass	MeOH	Yes	5.9	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Tech	CAS #	Flags
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Inorganics

Total Solids*	86	%	1	SM2540B	10/20/16 15:30	WAR		
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Organics - Volatiles

Volatile Organics 5035

Diethyl ether*	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 04:21	JGH	60-29-7	
Acetone*	Not detected	ug/kg	1,000	SW5035A/8260C	10/21/16 04:21	JGH	67-64-1	
Methyl iodide*	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 04:21	JGH	74-88-4	
Carbon disulfide*	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 04:21	JGH	75-15-0	
tert-Methyl butyl ether (MTBE)*	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 04:21	JGH	1634-04-4	
Acrylonitrile	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 04:21	JGH	107-13-1	
2-Butanone (MEK)*	Not detected	ug/kg	940	SW5035A/8260C	10/21/16 04:21	JGH	78-93-3	
Dichlorodifluoromethane	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 04:21	JGH	75-71-8	
Chloromethane	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 04:21	JGH	74-87-3	
Vinyl chloride	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:21	JGH	75-01-4	
Bromomethane	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 04:21	JGH	74-83-9	
Chloroethane	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 04:21	JGH	75-00-3	
Trichlorofluoromethane	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 04:21	JGH	75-69-4	
1,1-Dichloroethene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:21	JGH	75-35-4	
Methylene chloride	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 04:21	JGH	75-09-2	
trans-1,2-Dichloroethene*	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:21	JGH	156-60-5	
1,1-Dichloroethane	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:21	JGH	75-34-3	
cis-1,2-Dichloroethene*	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:21	JGH	156-59-2	
Tetrahydrofuran*	Not detected	ug/kg	1,000	SW5035A/8260C	10/21/16 04:21	JGH	109-99-9	
Chloroform	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:21	JGH	67-66-3	
Bromochloromethane	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 04:21	JGH	74-97-5	
1,1,1-Trichloroethane	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:21	JGH	71-55-6	
4-Methyl-2-pentanone (MIBK)*	Not detected	ug/kg	3,000	SW5035A/8260C	10/21/16 04:21	JGH	108-10-1	
2-Hexanone*	Not detected	ug/kg	3,000	SW5035A/8260C	10/21/16 04:21	JGH	591-78-6	
Carbon tetrachloride	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:21	JGH	56-23-5	
Benzene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:21	JGH	71-43-2	
1,2-Dichloroethane	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:21	JGH	107-06-2	
Trichloroethene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:21	JGH	79-01-6	
1,2-Dichloropropane	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:21	JGH	78-87-5	
Bromodichloromethane	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 04:21	JGH	75-27-4	
Dibromomethane	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 04:21	JGH	74-95-3	
cis-1,3-Dichloropropene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:21	JGH	10061-01-5	
Toluene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:21	JGH	108-88-3	
trans-1,3-Dichloropropene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:21	JGH	10061-02-6	
1,1,2-Trichloroethane	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:21	JGH	79-00-5	
Tetrachloroethene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:21	JGH	127-18-4	
trans-1,4-Dichloro-2-butene*	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:21	JGH	110-57-6	
Dibromochloromethane	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 04:21	JGH	124-48-1	



Analytical Laboratory Report

Lab Sample ID: S76953.04 (continued)

Sample Tag: SB-1

Analysis	Results	Units	RL	Method	Run Date/Time	Tech	CAS #	Flags
Organics - Volatiles (continued)								
Volatile Organics 5035 (continued)								
1,2-Dibromoethane*	Not detected	ug/kg	30	SW5035A/8260C	10/21/16 04:21	JGH	106-93-4	M
Chlorobenzene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:21	JGH	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 04:21	JGH	630-20-6	
Ethylbenzene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:21	JGH	100-41-4	
p,m-Xylene*	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 04:21	JGH		
o-Xylene*	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:21	JGH	95-47-6	
Styrene*	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:21	JGH	100-42-5	
Isopropylbenzene	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 04:21	JGH	98-82-8	
Bromoform*	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 04:21	JGH	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:21	JGH	79-34-5	
1,2,3-Trichloropropane*	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 04:21	JGH	96-18-4	
n-Propylbenzene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:21	JGH	103-65-1	
Bromobenzene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 04:21	JGH	108-86-1	
1,3,5-Trimethylbenzene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:21	JGH	108-67-8	
tert-Butylbenzene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:21	JGH	98-06-6	
1,2,4-Trimethylbenzene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:21	JGH	95-63-6	
sec-Butylbenzene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:21	JGH	135-98-8	
p-Isopropyltoluene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 04:21	JGH	99-87-6	
1,3-Dichlorobenzene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 04:21	JGH	541-73-1	
1,4-Dichlorobenzene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 04:21	JGH	106-46-7	
1,2-Dichlorobenzene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 04:21	JGH	95-50-1	
1,2,3-Trimethylbenzene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:21	JGH	526-73-8	
n-Butylbenzene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:21	JGH	104-51-8	
Hexachloroethane	Not detected	ug/kg	400	SW5035A/8260C	10/21/16 04:21	JGH	67-72-1	
1,2-Dibromo-3-chloropropane*	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 04:21	JGH	96-12-8	
1,2,4-Trichlorobenzene	Not detected	ug/kg	410	SW5035A/8260C	10/21/16 04:21	JGH	120-82-1	
1,2,3-Trichlorobenzene	Not detected	ug/kg	410	SW5035A/8260C	10/21/16 04:21	JGH	87-61-6	
Naphthalene	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 04:21	JGH	91-20-3	
2-Methylnaphthalene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 04:21	JGH	91-57-6	

M-Result reported to MDL not RDL



Analytical Laboratory Report

Lab Sample ID: S76953.05
Sample Tag: SB-4
Collected Date/Time: 10/17/2016 00:01
Matrix: Soil
COC Reference: 92469

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	5.9	IR
1	40ml Glass	MeOH	Yes	5.9	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Tech	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			SW3050B	10/26/16 10:30	PER		
Inorganics								
Total Solids*	84	%	1	SM2540B	10/20/16 15:30	WAR		
Metals								
Cadmium	Not detected	mg/kg	0.20	SW6020A	10/26/16 13:53	PER	7440-43-9	
Chromium	2.36	mg/kg	0.50	SW6020A	10/26/16 13:53	PER	7440-47-3	
Lead	2.25	mg/kg	0.20	SW6020A	10/26/16 13:53	PER	7439-92-1	
Organics - Volatiles								
Volatile Organics 5035								
Diethyl ether*	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 04:41	JGH	60-29-7	
Acetone*	Not detected	ug/kg	1,000	SW5035A/8260C	10/21/16 04:41	JGH	67-64-1	
Methyl iodide*	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 04:41	JGH	74-88-4	
Carbon disulfide*	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 04:41	JGH	75-15-0	
tert-Methyl butyl ether (MTBE)*	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 04:41	JGH	1634-04-4	
Acrylonitrile	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 04:41	JGH	107-13-1	
2-Butanone (MEK)*	Not detected	ug/kg	970	SW5035A/8260C	10/21/16 04:41	JGH	78-93-3	
Dichlorodifluoromethane	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 04:41	JGH	75-71-8	
Chloromethane	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 04:41	JGH	74-87-3	
Vinyl chloride	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:41	JGH	75-01-4	
Bromomethane	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 04:41	JGH	74-83-9	
Chloroethane	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 04:41	JGH	75-00-3	
Trichlorofluoromethane	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 04:41	JGH	75-69-4	
1,1-Dichloroethene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:41	JGH	75-35-4	
Methylene chloride	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 04:41	JGH	75-09-2	
trans-1,2-Dichloroethene*	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:41	JGH	156-60-5	
1,1-Dichloroethane	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:41	JGH	75-34-3	
cis-1,2-Dichloroethene*	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:41	JGH	156-59-2	
Tetrahydrofuran*	Not detected	ug/kg	1,000	SW5035A/8260C	10/21/16 04:41	JGH	109-99-9	
Chloroform	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:41	JGH	67-66-3	
Bromochloromethane	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 04:41	JGH	74-97-5	
1,1,1-Trichloroethane	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:41	JGH	71-55-6	
4-Methyl-2-pentanone (MIBK)*	Not detected	ug/kg	3,000	SW5035A/8260C	10/21/16 04:41	JGH	108-10-1	
2-Hexanone*	Not detected	ug/kg	3,000	SW5035A/8260C	10/21/16 04:41	JGH	591-78-6	
Carbon tetrachloride	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:41	JGH	56-23-5	
Benzene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:41	JGH	71-43-2	
1,2-Dichloroethane	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:41	JGH	107-06-2	
Trichloroethene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:41	JGH	79-01-6	
1,2-Dichloropropane	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:41	JGH	78-87-5	
Bromodichloromethane	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 04:41	JGH	75-27-4	



Analytical Laboratory Report

Lab Sample ID: S76953.05 (continued)

Sample Tag: SB-4

Analysis	Results	Units	RL	Method	Run Date/Time	Tech	CAS #	Flags
Organics - Volatiles (continued)								
Volatile Organics 5035 (continued)								
Dibromomethane	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 04:41	JGH	74-95-3	
cis-1,3-Dichloropropene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:41	JGH	10061-01-5	
Toluene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:41	JGH	108-88-3	
trans-1,3-Dichloropropene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:41	JGH	10061-02-6	
1,1,2-Trichloroethane	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:41	JGH	79-00-5	
Tetrachloroethene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:41	JGH	127-18-4	
trans-1,4-Dichloro-2-butene*	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:41	JGH	110-57-6	
Dibromochloromethane	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 04:41	JGH	124-48-1	
1,2-Dibromoethane*	Not detected	ug/kg	30	SW5035A/8260C	10/21/16 04:41	JGH	106-93-4	M
Chlorobenzene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:41	JGH	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 04:41	JGH	630-20-6	
Ethylbenzene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:41	JGH	100-41-4	
p,m-Xylene*	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 04:41	JGH		
o-Xylene*	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:41	JGH	95-47-6	
Styrene*	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:41	JGH	100-42-5	
Isopropylbenzene	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 04:41	JGH	98-82-8	
Bromoform*	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 04:41	JGH	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:41	JGH	79-34-5	
1,2,3-Trichloropropane*	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 04:41	JGH	96-18-4	
n-Propylbenzene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:41	JGH	103-65-1	
Bromobenzene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 04:41	JGH	108-86-1	
1,3,5-Trimethylbenzene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:41	JGH	108-67-8	
tert-Butylbenzene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:41	JGH	98-06-6	
1,2,4-Trimethylbenzene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:41	JGH	95-63-6	
sec-Butylbenzene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:41	JGH	135-98-8	
p-Isopropyltoluene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 04:41	JGH	99-87-6	
1,3-Dichlorobenzene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 04:41	JGH	541-73-1	
1,4-Dichlorobenzene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 04:41	JGH	106-46-7	
1,2-Dichlorobenzene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 04:41	JGH	95-50-1	
1,2,3-Trimethylbenzene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:41	JGH	526-73-8	
n-Butylbenzene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 04:41	JGH	104-51-8	
Hexachloroethane	Not detected	ug/kg	400	SW5035A/8260C	10/21/16 04:41	JGH	67-72-1	
1,2-Dibromo-3-chloropropane*	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 04:41	JGH	96-12-8	
1,2,4-Trichlorobenzene	Not detected	ug/kg	430	SW5035A/8260C	10/21/16 04:41	JGH	120-82-1	
1,2,3-Trichlorobenzene	Not detected	ug/kg	430	SW5035A/8260C	10/21/16 04:41	JGH	87-61-6	
Naphthalene	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 04:41	JGH	91-20-3	
2-Methylnaphthalene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 04:41	JGH	91-57-6	

M-Result reported to MDL not RDL



Analytical Laboratory Report

Lab Sample ID: S76953.06
Sample Tag: SB-5
Collected Date/Time: 10/17/2016 00:01
Matrix: Soil
COC Reference: 92469

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	5.9	IR
1	40ml Glass	MeOH	Yes	5.9	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Tech	CAS #	Flags
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Extraction / Prep.

Metal Digestion	Completed			SW3050B	10/26/16 10:30	PER		
PNA Extraction	Completed			SW3550C	10/25/16 14:35	EMR		

Inorganics

Total Solids*	88	%	1	SM2540B	10/20/16 15:30	WAR		
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Metals

Cadmium	Not detected	mg/kg	0.20	SW6020A	10/26/16 13:54	PER	7440-43-9	
Chromium	9.26	mg/kg	0.50	SW6020A	10/26/16 13:54	PER	7440-47-3	
Lead	6.66	mg/kg	0.20	SW6020A	10/26/16 13:54	PER	7439-92-1	

Organics - Semi-Volatiles

Polynuclear Aromatics

Acenaphthene	Not detected	ug/kg	300	SW8270D	10/26/16 03:34	PL	83-32-9	
Acenaphthylene	Not detected	ug/kg	300	SW8270D	10/26/16 03:34	PL	208-96-8	
Anthracene	Not detected	ug/kg	300	SW8270D	10/26/16 03:34	PL	120-12-7	
Benzo(a)anthracene	Not detected	ug/kg	300	SW8270D	10/26/16 03:34	PL	56-55-3	
Benzo(a)pyrene	Not detected	ug/kg	300	SW8270D	10/26/16 03:34	PL	50-32-8	
Benzo(b)fluoranthene	Not detected	ug/kg	300	SW8270D	10/26/16 03:34	PL	205-99-2	
Benzo(k)fluoranthene	Not detected	ug/kg	300	SW8270D	10/26/16 03:34	PL	207-08-9	
Benzo(ghi)perylene	Not detected	ug/kg	300	SW8270D	10/26/16 03:34	PL	191-24-2	
Chrysene	Not detected	ug/kg	300	SW8270D	10/26/16 03:34	PL	218-01-9	
Dibenzo(ah)anthracene	Not detected	ug/kg	300	SW8270D	10/26/16 03:34	PL	53-70-3	
Fluoranthene	Not detected	ug/kg	300	SW8270D	10/26/16 03:34	PL	206-44-0	
Fluorene	Not detected	ug/kg	300	SW8270D	10/26/16 03:34	PL	86-73-7	
Indeno(1,2,3-cd)pyrene	Not detected	ug/kg	300	SW8270D	10/26/16 03:34	PL	193-39-5	
Naphthalene	Not detected	ug/kg	300	SW8270D	10/26/16 03:34	PL	91-20-3	
Phenanthrene	Not detected	ug/kg	300	SW8270D	10/26/16 03:34	PL	85-01-8	
Pyrene	Not detected	ug/kg	300	SW8270D	10/26/16 03:34	PL	129-00-0	
2-Methylnaphthalene	Not detected	ug/kg	300	SW8270D	10/26/16 03:34	PL	91-57-6	
1-Methylnaphthalene	Not detected	ug/kg	300	SW8270D	10/26/16 03:34	PL	90-12-0	

Organics - Volatiles

Volatile Organics 5035

Diethyl ether*	Not detected	ug/kg	200	SW5035A/8260C	10/21/16 05:01	JGH	60-29-7	
Acetone*	Not detected	ug/kg	1,000	SW5035A/8260C	10/21/16 05:01	JGH	67-64-1	
Methyl iodide*	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 05:01	JGH	74-88-4	
Carbon disulfide*	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 05:01	JGH	75-15-0	
tert-Methyl butyl ether (MTBE)*	Not detected	ug/kg	200	SW5035A/8260C	10/21/16 05:01	JGH	1634-04-4	
Acrylonitrile	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 05:01	JGH	107-13-1	
2-Butanone (MEK)*	Not detected	ug/kg	910	SW5035A/8260C	10/21/16 05:01	JGH	78-93-3	
Dichlorodifluoromethane	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 05:01	JGH	75-71-8	



Analytical Laboratory Report

Lab Sample ID: S76953.06 (continued)

Sample Tag: SB-5

Analysis	Results	Units	RL	Method	Run Date/Time	Tech	CAS #	Flags
Organics - Volatiles (continued)								
Volatile Organics 5035 (continued)								
Chloromethane	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 05:01	JGH	74-87-3	
Vinyl chloride	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:01	JGH	75-01-4	
Bromomethane	Not detected	ug/kg	200	SW5035A/8260C	10/21/16 05:01	JGH	74-83-9	
Chloroethane	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 05:01	JGH	75-00-3	
Trichlorofluoromethane	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 05:01	JGH	75-69-4	
1,1-Dichloroethene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:01	JGH	75-35-4	
Methylene chloride	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 05:01	JGH	75-09-2	
trans-1,2-Dichloroethene*	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:01	JGH	156-60-5	
1,1-Dichloroethane	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:01	JGH	75-34-3	
cis-1,2-Dichloroethene*	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:01	JGH	156-59-2	
Tetrahydrofuran*	Not detected	ug/kg	1,000	SW5035A/8260C	10/21/16 05:01	JGH	109-99-9	
Chloroform	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:01	JGH	67-66-3	
Bromochloromethane	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 05:01	JGH	74-97-5	
1,1,1-Trichloroethane	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:01	JGH	71-55-6	
4-Methyl-2-pentanone (MIBK)*	Not detected	ug/kg	3,000	SW5035A/8260C	10/21/16 05:01	JGH	108-10-1	
2-Hexanone*	Not detected	ug/kg	3,000	SW5035A/8260C	10/21/16 05:01	JGH	591-78-6	
Carbon tetrachloride	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:01	JGH	56-23-5	
Benzene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:01	JGH	71-43-2	
1,2-Dichloroethane	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:01	JGH	107-06-2	
Trichloroethene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:01	JGH	79-01-6	
1,2-Dichloropropane	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:01	JGH	78-87-5	
Bromodichloromethane	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 05:01	JGH	75-27-4	
Dibromomethane	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 05:01	JGH	74-95-3	
cis-1,3-Dichloropropene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:01	JGH	10061-01-5	
Toluene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:01	JGH	108-88-3	
trans-1,3-Dichloropropene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:01	JGH	10061-02-6	
1,1,2-Trichloroethane	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:01	JGH	79-00-5	
Tetrachloroethene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:01	JGH	127-18-4	
trans-1,4-Dichloro-2-butene*	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:01	JGH	110-57-6	
Dibromochloromethane	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 05:01	JGH	124-48-1	
1,2-Dibromoethane*	Not detected	ug/kg	20	SW5035A/8260C	10/21/16 05:01	JGH	106-93-4	M
Chlorobenzene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:01	JGH	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 05:01	JGH	630-20-6	
Ethylbenzene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:01	JGH	100-41-4	
p,m-Xylene*	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 05:01	JGH		
o-Xylene*	100	ug/kg	60	SW5035A/8260C	10/21/16 05:01	JGH	95-47-6	
Styrene*	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:01	JGH	100-42-5	
Isopropylbenzene	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 05:01	JGH	98-82-8	
Bromoform*	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 05:01	JGH	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:01	JGH	79-34-5	
1,2,3-Trichloropropane*	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 05:01	JGH	96-18-4	
n-Propylbenzene	230	ug/kg	60	SW5035A/8260C	10/21/16 05:01	JGH	103-65-1	
Bromobenzene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 05:01	JGH	108-86-1	
1,3,5-Trimethylbenzene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:01	JGH	108-67-8	
tert-Butylbenzene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:01	JGH	98-06-6	
1,2,4-Trimethylbenzene	770	ug/kg	60	SW5035A/8260C	10/21/16 05:01	JGH	95-63-6	
sec-Butylbenzene	330	ug/kg	60	SW5035A/8260C	10/21/16 05:01	JGH	135-98-8	
p-Isopropyltoluene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 05:01	JGH	99-87-6	

M-Result reported to MDL not RDL



Analytical Laboratory Report

Lab Sample ID: S76953.06 (continued)

Sample Tag: SB-5

Analysis	Results	Units	RL	Method	Run Date/Time	Tech	CAS #	Flags
Organics - Volatiles (continued)								
Volatile Organics 5035 (continued)								
1,3-Dichlorobenzene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 05:01	JGH	541-73-1	
1,4-Dichlorobenzene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 05:01	JGH	106-46-7	
1,2-Dichlorobenzene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 05:01	JGH	95-50-1	
1,2,3-Trimethylbenzene	320	ug/kg	60	SW5035A/8260C	10/21/16 05:01	JGH	526-73-8	
n-Butylbenzene	320	ug/kg	60	SW5035A/8260C	10/21/16 05:01	JGH	104-51-8	
Hexachloroethane	Not detected	ug/kg	400	SW5035A/8260C	10/21/16 05:01	JGH	67-72-1	
1,2-Dibromo-3-chloropropane*	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 05:01	JGH	96-12-8	
1,2,4-Trichlorobenzene	Not detected	ug/kg	400	SW5035A/8260C	10/21/16 05:01	JGH	120-82-1	
1,2,3-Trichlorobenzene	Not detected	ug/kg	400	SW5035A/8260C	10/21/16 05:01	JGH	87-61-6	
Naphthalene	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 05:01	JGH	91-20-3	
2-Methylnaphthalene	500	ug/kg	100	SW5035A/8260C	10/21/16 05:01	JGH	91-57-6	



Analytical Laboratory Report

Lab Sample ID: S76953.07
Sample Tag: Dup-1
Collected Date/Time: 10/17/2016 00:01
Matrix: Soil
COC Reference: 92469

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	5.9	IR
1	40ml Glass	MeOH	Yes	5.9	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Tech	CAS #	Flags
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Extraction / Prep.

Metal Digestion	Completed			SW3050B	10/26/16 10:30	PER		
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Inorganics

Total Solids*	85	%	1	SM2540B	10/20/16 15:30	WAR		
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Metals

Cadmium	Not detected	mg/kg	0.20	SW6020A	10/26/16 13:55	PER	7440-43-9	
Chromium	2.51	mg/kg	0.50	SW6020A	10/26/16 13:55	PER	7440-47-3	
Lead	2.02	mg/kg	0.20	SW6020A	10/26/16 13:55	PER	7439-92-1	

Organics - Volatiles

Volatile Organics 5035

Diethyl ether*	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 05:21	JGH	60-29-7	
Acetone*	Not detected	ug/kg	1,000	SW5035A/8260C	10/21/16 05:21	JGH	67-64-1	
Methyl iodide*	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 05:21	JGH	74-88-4	
Carbon disulfide*	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 05:21	JGH	75-15-0	
tert-Methyl butyl ether (MTBE)*	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 05:21	JGH	1634-04-4	
Acrylonitrile	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 05:21	JGH	107-13-1	
2-Butanone (MEK)*	Not detected	ug/kg	1,000	SW5035A/8260C	10/21/16 05:21	JGH	78-93-3	
Dichlorodifluoromethane	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 05:21	JGH	75-71-8	
Chloromethane	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 05:21	JGH	74-87-3	
Vinyl chloride	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 05:21	JGH	75-01-4	
Bromomethane	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 05:21	JGH	74-83-9	
Chloroethane	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 05:21	JGH	75-00-3	
Trichlorofluoromethane	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 05:21	JGH	75-69-4	
1,1-Dichloroethene	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 05:21	JGH	75-35-4	
Methylene chloride	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 05:21	JGH	75-09-2	
trans-1,2-Dichloroethene*	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 05:21	JGH	156-60-5	
1,1-Dichloroethane	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 05:21	JGH	75-34-3	
cis-1,2-Dichloroethene*	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 05:21	JGH	156-59-2	
Tetrahydrofuran*	Not detected	ug/kg	1,000	SW5035A/8260C	10/21/16 05:21	JGH	109-99-9	
Chloroform	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 05:21	JGH	67-66-3	
Bromochloromethane	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 05:21	JGH	74-97-5	
1,1,1-Trichloroethane	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 05:21	JGH	71-55-6	
4-Methyl-2-pentanone (MIBK)*	Not detected	ug/kg	3,000	SW5035A/8260C	10/21/16 05:21	JGH	108-10-1	
2-Hexanone*	Not detected	ug/kg	3,000	SW5035A/8260C	10/21/16 05:21	JGH	591-78-6	
Carbon tetrachloride	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 05:21	JGH	56-23-5	
Benzene	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 05:21	JGH	71-43-2	
1,2-Dichloroethane	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 05:21	JGH	107-06-2	
Trichloroethene	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 05:21	JGH	79-01-6	
1,2-Dichloropropane	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 05:21	JGH	78-87-5	
Bromodichloromethane	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 05:21	JGH	75-27-4	



Analytical Laboratory Report

Lab Sample ID: S76953.07 (continued)

Sample Tag: Dup-1

Analysis	Results	Units	RL	Method	Run Date/Time	Tech	CAS #	Flags
Organics - Volatiles (continued)								
Volatile Organics 5035 (continued)								
Dibromomethane	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 05:21	JGH	74-95-3	
cis-1,3-Dichloropropene	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 05:21	JGH	10061-01-5	
Toluene	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 05:21	JGH	108-88-3	
trans-1,3-Dichloropropene	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 05:21	JGH	10061-02-6	
1,1,2-Trichloroethane	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 05:21	JGH	79-00-5	
Tetrachloroethene	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 05:21	JGH	127-18-4	
trans-1,4-Dichloro-2-butene*	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 05:21	JGH	110-57-6	
Dibromochloromethane	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 05:21	JGH	124-48-1	
1,2-Dibromoethane*	Not detected	ug/kg	30	SW5035A/8260C	10/21/16 05:21	JGH	106-93-4	M
Chlorobenzene	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 05:21	JGH	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 05:21	JGH	630-20-6	
Ethylbenzene	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 05:21	JGH	100-41-4	
p,m-Xylene*	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 05:21	JGH		
o-Xylene*	200	ug/kg	70	SW5035A/8260C	10/21/16 05:21	JGH	95-47-6	
Styrene*	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 05:21	JGH	100-42-5	
Isopropylbenzene	300	ug/kg	300	SW5035A/8260C	10/21/16 05:21	JGH	98-82-8	
Bromoform*	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 05:21	JGH	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 05:21	JGH	79-34-5	
1,2,3-Trichloropropane*	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 05:21	JGH	96-18-4	
n-Propylbenzene	280	ug/kg	70	SW5035A/8260C	10/21/16 05:21	JGH	103-65-1	
Bromobenzene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 05:21	JGH	108-86-1	
1,3,5-Trimethylbenzene	1,410	ug/kg	70	SW5035A/8260C	10/21/16 05:21	JGH	108-67-8	
tert-Butylbenzene	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 05:21	JGH	98-06-6	
1,2,4-Trimethylbenzene	2,820	ug/kg	70	SW5035A/8260C	10/21/16 05:21	JGH	95-63-6	
sec-Butylbenzene	990	ug/kg	70	SW5035A/8260C	10/21/16 05:21	JGH	135-98-8	
p-Isopropyltoluene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 05:21	JGH	99-87-6	
1,3-Dichlorobenzene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 05:21	JGH	541-73-1	
1,4-Dichlorobenzene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 05:21	JGH	106-46-7	
1,2-Dichlorobenzene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 05:21	JGH	95-50-1	
1,2,3-Trimethylbenzene	1,430	ug/kg	70	SW5035A/8260C	10/21/16 05:21	JGH	526-73-8	
n-Butylbenzene	1,020	ug/kg	70	SW5035A/8260C	10/21/16 05:21	JGH	104-51-8	
Hexachloroethane	Not detected	ug/kg	400	SW5035A/8260C	10/21/16 05:21	JGH	67-72-1	
1,2-Dibromo-3-chloropropane*	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 05:21	JGH	96-12-8	
1,2,4-Trichlorobenzene	Not detected	ug/kg	440	SW5035A/8260C	10/21/16 05:21	JGH	120-82-1	
1,2,3-Trichlorobenzene	Not detected	ug/kg	440	SW5035A/8260C	10/21/16 05:21	JGH	87-61-6	
Naphthalene	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 05:21	JGH	91-20-3	
2-Methylnaphthalene	4,000	ug/kg	100	SW5035A/8260C	10/21/16 05:21	JGH	91-57-6	

M-Result reported to MDL not RDL



Analytical Laboratory Report

Lab Sample ID: S76953.08
Sample Tag: Meth Blank
Collected Date/Time: 10/17/2016 00:01
Matrix: Methanol
COC Reference: 92469

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	40ml Glass	MeOH	Yes	5.9	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Tech	CAS #	Flags
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Organics - Volatiles

Volatile Organics 5035

Diethyl ether*	Not detected	ug/kg	200	SW5035A/8260C	10/21/16 00:58	JGH	60-29-7	
Acetone*	Not detected	ug/kg	1,000	SW5035A/8260C	10/21/16 00:58	JGH	67-64-1	
Methyl iodide*	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 00:58	JGH	74-88-4	
Carbon disulfide*	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 00:58	JGH	75-15-0	
tert-Methyl butyl ether (MTBE)*	Not detected	ug/kg	200	SW5035A/8260C	10/21/16 00:58	JGH	1634-04-4	
Acrylonitrile	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 00:58	JGH	107-13-1	
2-Butanone (MEK)*	Not detected	ug/kg	750	SW5035A/8260C	10/21/16 00:58	JGH	78-93-3	
Dichlorodifluoromethane	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 00:58	JGH	75-71-8	
Chloromethane	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 00:58	JGH	74-87-3	
Vinyl chloride	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 00:58	JGH	75-01-4	
Bromomethane	Not detected	ug/kg	200	SW5035A/8260C	10/21/16 00:58	JGH	74-83-9	
Chloroethane	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 00:58	JGH	75-00-3	
Trichlorofluoromethane	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 00:58	JGH	75-69-4	
1,1-Dichloroethene	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 00:58	JGH	75-35-4	
Methylene chloride	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 00:58	JGH	75-09-2	
trans-1,2-Dichloroethene*	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 00:58	JGH	156-60-5	
1,1-Dichloroethane	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 00:58	JGH	75-34-3	
cis-1,2-Dichloroethene*	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 00:58	JGH	156-59-2	
Tetrahydrofuran*	Not detected	ug/kg	1,000	SW5035A/8260C	10/21/16 00:58	JGH	109-99-9	
Chloroform	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 00:58	JGH	67-66-3	
Bromochloromethane	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 00:58	JGH	74-97-5	
1,1,1-Trichloroethane	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 00:58	JGH	71-55-6	
4-Methyl-2-pentanone (MIBK)*	Not detected	ug/kg	3,000	SW5035A/8260C	10/21/16 00:58	JGH	108-10-1	
2-Hexanone*	Not detected	ug/kg	3,000	SW5035A/8260C	10/21/16 00:58	JGH	591-78-6	
Carbon tetrachloride	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 00:58	JGH	56-23-5	
Benzene	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 00:58	JGH	71-43-2	
1,2-Dichloroethane	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 00:58	JGH	107-06-2	
Trichloroethene	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 00:58	JGH	79-01-6	
1,2-Dichloropropane	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 00:58	JGH	78-87-5	
Bromodichloromethane	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 00:58	JGH	75-27-4	
Dibromomethane	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 00:58	JGH	74-95-3	
cis-1,3-Dichloropropene	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 00:58	JGH	10061-01-5	
Toluene	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 00:58	JGH	108-88-3	
trans-1,3-Dichloropropene	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 00:58	JGH	10061-02-6	
1,1,2-Trichloroethane	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 00:58	JGH	79-00-5	
Tetrachloroethene	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 00:58	JGH	127-18-4	
trans-1,4-Dichloro-2-butene*	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 00:58	JGH	110-57-6	
Dibromochloromethane	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 00:58	JGH	124-48-1	
1,2-Dibromoethane*	Not detected	ug/kg	20	SW5035A/8260C	10/21/16 00:58	JGH	106-93-4	M
Chlorobenzene	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 00:58	JGH	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 00:58	JGH	630-20-6	

M-Result reported to MDL not RDL



Analytical Laboratory Report

Lab Sample ID: S76953.08 (continued)

Sample Tag: Meth Blank

Analysis	Results	Units	RL	Method	Run Date/Time	Tech	CAS #	Flags
Organics - Volatiles (continued)								
Volatile Organics 5035 (continued)								
Ethylbenzene	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 00:58	JGH	100-41-4	
p,m-Xylene*	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 00:58	JGH		
o-Xylene*	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 00:58	JGH	95-47-6	
Styrene*	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 00:58	JGH	100-42-5	
Isopropylbenzene	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 00:58	JGH	98-82-8	
Bromoform*	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 00:58	JGH	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 00:58	JGH	79-34-5	
1,2,3-Trichloropropane*	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 00:58	JGH	96-18-4	
n-Propylbenzene	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 00:58	JGH	103-65-1	
Bromobenzene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 00:58	JGH	108-86-1	
1,3,5-Trimethylbenzene	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 00:58	JGH	108-67-8	
tert-Butylbenzene	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 00:58	JGH	98-06-6	
1,2,4-Trimethylbenzene	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 00:58	JGH	95-63-6	
sec-Butylbenzene	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 00:58	JGH	135-98-8	
p-Isopropyltoluene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 00:58	JGH	99-87-6	
1,3-Dichlorobenzene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 00:58	JGH	541-73-1	
1,4-Dichlorobenzene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 00:58	JGH	106-46-7	
1,2-Dichlorobenzene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 00:58	JGH	95-50-1	
1,2,3-Trimethylbenzene	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 00:58	JGH	526-73-8	
n-Butylbenzene	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 00:58	JGH	104-51-8	
Hexachloroethane	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 00:58	JGH	67-72-1	
1,2-Dibromo-3-chloropropane*	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 00:58	JGH	96-12-8	
1,2,4-Trichlorobenzene	Not detected	ug/kg	330	SW5035A/8260C	10/21/16 00:58	JGH	120-82-1	
1,2,3-Trichlorobenzene	Not detected	ug/kg	330	SW5035A/8260C	10/21/16 00:58	JGH	87-61-6	
Naphthalene	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 00:58	JGH	91-20-3	
2-Methylnaphthalene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 00:58	JGH	91-57-6	



Analytical Laboratory Report

Lab Sample ID: S76953.09
Sample Tag: Trip Blank
Collected Date/Time: 10/17/2016 00:01
Matrix: Water
COC Reference: 92469

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	40ml Glass	HCL	Yes	5.9	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Tech	CAS #	Flags
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Extraction / Prep.

pH check for VOCs*	<2	STD Units		N/A	10/24/16 10:30	JML		
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Organics - Volatiles

Volatile Organics - DEQ List

Diethyl ether*	Not detected	ug/L	10	SW5030C/8260C	10/26/16 15:35	JGH	60-29-7	
Acetone	Not detected	ug/L	50	SW5030C/8260C	10/26/16 15:35	JGH	67-64-1	
Methyl iodide*	Not detected	ug/L	1	SW5030C/8260C	10/26/16 15:35	JGH	74-88-4	
Carbon disulfide	Not detected	ug/L	5	SW5030C/8260C	10/26/16 15:35	JGH	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	ug/L	5	SW5030C/8260C	10/26/16 15:35	JGH	1634-04-4	
Acrylonitrile	Not detected	ug/L	2	SW5030C/8260C	10/26/16 15:35	JGH	107-13-1	
2-Butanone (MEK)	Not detected	ug/L	25	SW5030C/8260C	10/26/16 15:35	JGH	78-93-3	
Dichlorodifluoromethane	Not detected	ug/L	5	SW5030C/8260C	10/26/16 15:35	JGH	75-71-8	
Chloromethane*	7	ug/L	5	SW5030C/8260C	10/26/16 15:35	JGH	74-87-3	
Vinyl chloride	Not detected	ug/L	1	SW5030C/8260C	10/26/16 15:35	JGH	75-01-4	
Bromomethane	Not detected	ug/L	5	SW5030C/8260C	10/26/16 15:35	JGH	74-83-9	
Chloroethane	Not detected	ug/L	5	SW5030C/8260C	10/26/16 15:35	JGH	75-00-3	
Trichlorofluoromethane	Not detected	ug/L	1	SW5030C/8260C	10/26/16 15:35	JGH	75-69-4	
1,1-Dichloroethene	Not detected	ug/L	1	SW5030C/8260C	10/26/16 15:35	JGH	75-35-4	
Methylene chloride	Not detected	ug/L	5	SW5030C/8260C	10/26/16 15:35	JGH	75-09-2	
trans-1,2-Dichloroethene	Not detected	ug/L	1	SW5030C/8260C	10/26/16 15:35	JGH	156-60-5	
1,1-Dichloroethane	Not detected	ug/L	1	SW5030C/8260C	10/26/16 15:35	JGH	75-34-3	
cis-1,2-Dichloroethene	Not detected	ug/L	1	SW5030C/8260C	10/26/16 15:35	JGH	156-59-2	
Tetrahydrofuran*	Not detected	ug/L	90	SW5030C/8260C	10/26/16 15:35	JGH	109-99-9	
Chloroform	Not detected	ug/L	1	SW5030C/8260C	10/26/16 15:35	JGH	67-66-3	
Bromochloromethane	Not detected	ug/L	1	SW5030C/8260C	10/26/16 15:35	JGH	74-97-5	
1,1,1-Trichloroethane	Not detected	ug/L	1	SW5030C/8260C	10/26/16 15:35	JGH	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	ug/L	50	SW5030C/8260C	10/26/16 15:35	JGH	108-10-1	
2-Hexanone	Not detected	ug/L	50	SW5030C/8260C	10/26/16 15:35	JGH	591-78-6	
Carbon tetrachloride	Not detected	ug/L	1	SW5030C/8260C	10/26/16 15:35	JGH	56-23-5	
Benzene	Not detected	ug/L	1	SW5030C/8260C	10/26/16 15:35	JGH	71-43-2	
1,2-Dichloroethane	Not detected	ug/L	1	SW5030C/8260C	10/26/16 15:35	JGH	107-06-2	
Trichloroethene	Not detected	ug/L	1	SW5030C/8260C	10/26/16 15:35	JGH	79-01-6	
1,2-Dichloropropane	Not detected	ug/L	1	SW5030C/8260C	10/26/16 15:35	JGH	78-87-5	
Bromodichloromethane	Not detected	ug/L	1	SW5030C/8260C	10/26/16 15:35	JGH	75-27-4	
Dibromomethane	Not detected	ug/L	5	SW5030C/8260C	10/26/16 15:35	JGH	74-95-3	
cis-1,3-Dichloropropene	Not detected	ug/L	1	SW5030C/8260C	10/26/16 15:35	JGH	10061-01-5	
Toluene	Not detected	ug/L	1	SW5030C/8260C	10/26/16 15:35	JGH	108-88-3	
trans-1,3-Dichloropropene	Not detected	ug/L	1	SW5030C/8260C	10/26/16 15:35	JGH	10061-02-6	
1,1,2-Trichloroethane	Not detected	ug/L	1	SW5030C/8260C	10/26/16 15:35	JGH	79-00-5	
Tetrachloroethene	Not detected	ug/L	1	SW5030C/8260C	10/26/16 15:35	JGH	127-18-4	
trans-1,4-Dichloro-2-butene*	Not detected	ug/L	1	SW5030C/8260C	10/26/16 15:35	JGH	110-57-6	
Dibromochloromethane	Not detected	ug/L	5	SW5030C/8260C	10/26/16 15:35	JGH	124-48-1	
1,2-Dibromoethane	Not detected	ug/L	1	SW5030C/8260C	10/26/16 15:35	JGH	106-93-4	



Analytical Laboratory Report

Lab Sample ID: S76953.09 (continued)

Sample Tag: Trip Blank

Analysis	Results	Units	RL	Method	Run Date/Time	Tech	CAS #	Flags
Organics - Volatiles (continued)								
Volatile Organics - DEQ List (continued)								
Chlorobenzene	Not detected	ug/L	1	SW5030C/8260C	10/26/16 15:35	JGH	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	ug/L	1	SW5030C/8260C	10/26/16 15:35	JGH	630-20-6	
Ethylbenzene	Not detected	ug/L	1	SW5030C/8260C	10/26/16 15:35	JGH	100-41-4	
p,m-Xylene*	Not detected	ug/L	2	SW5030C/8260C	10/26/16 15:35	JGH		
o-Xylene*	Not detected	ug/L	1	SW5030C/8260C	10/26/16 15:35	JGH	95-47-6	
Styrene	Not detected	ug/L	1	SW5030C/8260C	10/26/16 15:35	JGH	100-42-5	
Isopropylbenzene	Not detected	ug/L	5	SW5030C/8260C	10/26/16 15:35	JGH	98-82-8	
Bromoform	Not detected	ug/L	1	SW5030C/8260C	10/26/16 15:35	JGH	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	ug/L	1	SW5030C/8260C	10/26/16 15:35	JGH	79-34-5	
1,2,3-Trichloropropane*	Not detected	ug/L	1	SW5030C/8260C	10/26/16 15:35	JGH	96-18-4	
n-Propylbenzene	Not detected	ug/L	1	SW5030C/8260C	10/26/16 15:35	JGH	103-65-1	
Bromobenzene	Not detected	ug/L	1	SW5030C/8260C	10/26/16 15:35	JGH	108-86-1	
1,3,5-Trimethylbenzene	Not detected	ug/L	1	SW5030C/8260C	10/26/16 15:35	JGH	108-67-8	
tert-Butylbenzene	Not detected	ug/L	1	SW5030C/8260C	10/26/16 15:35	JGH	98-06-6	
1,2,4-Trimethylbenzene	Not detected	ug/L	1	SW5030C/8260C	10/26/16 15:35	JGH	95-63-6	
sec-Butylbenzene	Not detected	ug/L	1	SW5030C/8260C	10/26/16 15:35	JGH	135-98-8	
p-Isopropyltoluene	Not detected	ug/L	5	SW5030C/8260C	10/26/16 15:35	JGH	99-87-6	
1,3-Dichlorobenzene	Not detected	ug/L	1	SW5030C/8260C	10/26/16 15:35	JGH	541-73-1	
1,4-Dichlorobenzene	Not detected	ug/L	1	SW5030C/8260C	10/26/16 15:35	JGH	106-46-7	
1,2-Dichlorobenzene	Not detected	ug/L	1	SW5030C/8260C	10/26/16 15:35	JGH	95-50-1	
1,2,3-Trimethylbenzene	Not detected	ug/L	1	SW5030C/8260C	10/26/16 15:35	JGH	526-73-8	
n-Butylbenzene	Not detected	ug/L	1	SW5030C/8260C	10/26/16 15:35	JGH	104-51-8	
Hexachloroethane	Not detected	ug/L	5	SW5030C/8260C	10/26/16 15:35	JGH	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	ug/L	5	SW5030C/8260C	10/26/16 15:35	JGH	96-12-8	
1,2,4-Trichlorobenzene	Not detected	ug/L	5	SW5030C/8260C	10/26/16 15:35	JGH	120-82-1	
1,2,3-Trichlorobenzene	Not detected	ug/L	5	SW5030C/8260C	10/26/16 15:35	JGH	87-61-6	
Naphthalene	Not detected	ug/L	5	SW5030C/8260C	10/26/16 15:35	JGH	91-20-3	
2-Methylnaphthalene	Not detected	ug/L	5	SW5030C/8260C	10/26/16 15:35	JGH	91-57-6	



Analytical Laboratory Report

Lab Sample ID: S76953.10
Sample Tag: Waste Water
Collected Date/Time: 10/17/2016 00:01
Matrix: Groundwater
COC Reference: 92469

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Amber	None	Yes	5.9	IR
1	125ml Plastic	HNO3	Yes	5.9	IR
2	40ml Glass	HCL	Yes	5.9	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Tech	CAS #	Flags
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Extraction / Prep.

Extraction, PCB	Completed			SW3510C	10/21/16 14:26	PLB		
Metal Digestion	Completed			SW3015A	10/25/16 13:30	CCM		
pH check for VOCs*	<2	STD Units		N/A	10/24/16 10:30	JML		
PNA Extraction	Completed			SW3510C	10/24/16 10:08	EMR		

Metals

Cadmium	Not detected	mg/L	0.0005	E200.8	10/25/16 14:15	CCM	7440-43-9	
Chromium	Not detected	mg/L	0.005	E200.8	10/25/16 14:15	CCM	7440-47-3	
Lead	Not detected	mg/L	0.003	E200.8	10/25/16 14:15	CCM	7439-92-1	

Organics - PCBs/Pesticides

PCB

PCB-1016	Not detected	ug/L	0.1	E608	10/24/16 21:44	JAN	12674-11-2	
PCB-1221	Not detected	ug/L	0.1	E608	10/24/16 21:44	JAN	11104-28-2	
PCB-1232	Not detected	ug/L	0.1	E608	10/24/16 21:44	JAN	11141-16-5	
PCB-1242	Not detected	ug/L	0.1	E608	10/24/16 21:44	JAN	53469-21-9	
PCB-1248	Not detected	ug/L	0.1	E608	10/24/16 21:44	JAN	12672-29-6	
PCB-1254	Not detected	ug/L	0.1	E608	10/24/16 21:44	JAN	11097-69-1	
PCB-1260	Not detected	ug/L	0.1	E608	10/24/16 21:44	JAN	11096-82-5	
PCB, Total*	Not detected	ug/L	0.1	E608	10/24/16 21:44	JAN	1336-36-3	

Organics - Semi-Volatiles

Polynuclear Aromatic Hydrocarbon

Acenaphthene	Not detected	ug/L	5	SW8270D	10/26/16 01:01	PL	83-32-9	
Acenaphthylene	Not detected	ug/L	5	SW8270D	10/26/16 01:01	PL	208-96-8	
Anthracene	Not detected	ug/L	5	SW8270D	10/26/16 01:01	PL	120-12-7	
Benzo(a)anthracene	Not detected	ug/L	1	SW8270D	10/26/16 01:01	PL	56-55-3	
Benzo(a)pyrene	Not detected	ug/L	1	SW8270D	10/26/16 01:01	PL	50-32-8	
Benzo(b)fluoranthene	Not detected	ug/L	1	SW8270D	10/26/16 01:01	PL	205-99-2	
Benzo(k)fluoranthene	Not detected	ug/L	1	SW8270D	10/26/16 01:01	PL	207-08-9	
Benzo(ghi)perylene	Not detected	ug/L	1	SW8270D	10/26/16 01:01	PL	191-24-2	
Chrysene	Not detected	ug/L	1	SW8270D	10/26/16 01:01	PL	218-01-9	
Dibenzo(ah)anthracene	Not detected	ug/L	2	SW8270D	10/26/16 01:01	PL	53-70-3	
Fluoranthene	Not detected	ug/L	1	SW8270D	10/26/16 01:01	PL	206-44-0	
Fluorene	Not detected	ug/L	5	SW8270D	10/26/16 01:01	PL	86-73-7	
Indeno(1,2,3-cd)pyrene	Not detected	ug/L	2	SW8270D	10/26/16 01:01	PL	193-39-5	
Naphthalene	Not detected	ug/L	5	SW8270D	10/26/16 01:01	PL	91-20-3	
Phenanthrene	Not detected	ug/L	2	SW8270D	10/26/16 01:01	PL	85-01-8	
Pyrene	Not detected	ug/L	5	SW8270D	10/26/16 01:01	PL	129-00-0	
2-Methylnaphthalene	Not detected	ug/L	5	SW8270D	10/26/16 01:01	PL	91-57-6	
1-Methylnaphthalene	Not detected	ug/L	5	SW8270D	10/26/16 01:01	PL	90-12-0	



Analytical Laboratory Report

Lab Sample ID: S76953.10 (continued)

Sample Tag: Waste Water

Analysis	Results	Units	RL	Method	Run Date/Time	Tech	CAS #	Flags
Organics - Volatiles								
Volatile Organics - DEQ List								
Diethyl ether*	Not detected	ug/L	10	SW5030C/8260C	10/21/16 19:44	JGH	60-29-7	
Acetone	Not detected	ug/L	50	SW5030C/8260C	10/21/16 19:44	JGH	67-64-1	
Methyl iodide*	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:44	JGH	74-88-4	
Carbon disulfide	Not detected	ug/L	5	SW5030C/8260C	10/21/16 19:44	JGH	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	ug/L	5	SW5030C/8260C	10/21/16 19:44	JGH	1634-04-4	
Acrylonitrile	Not detected	ug/L	2	SW5030C/8260C	10/21/16 19:44	JGH	107-13-1	
2-Butanone (MEK)	Not detected	ug/L	25	SW5030C/8260C	10/21/16 19:44	JGH	78-93-3	
Dichlorodifluoromethane	Not detected	ug/L	5	SW5030C/8260C	10/21/16 19:44	JGH	75-71-8	
Chloromethane*	Not detected	ug/L	5	SW5030C/8260C	10/21/16 19:44	JGH	74-87-3	
Vinyl chloride	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:44	JGH	75-01-4	
Bromomethane	Not detected	ug/L	5	SW5030C/8260C	10/21/16 19:44	JGH	74-83-9	
Chloroethane	Not detected	ug/L	5	SW5030C/8260C	10/21/16 19:44	JGH	75-00-3	
Trichlorofluoromethane	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:44	JGH	75-69-4	
1,1-Dichloroethene	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:44	JGH	75-35-4	
Methylene chloride	Not detected	ug/L	5	SW5030C/8260C	10/21/16 19:44	JGH	75-09-2	
trans-1,2-Dichloroethene	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:44	JGH	156-60-5	
1,1-Dichloroethane	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:44	JGH	75-34-3	
cis-1,2-Dichloroethene	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:44	JGH	156-59-2	
Tetrahydrofuran*	Not detected	ug/L	90	SW5030C/8260C	10/21/16 19:44	JGH	109-99-9	
Chloroform	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:44	JGH	67-66-3	
Bromochloromethane	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:44	JGH	74-97-5	
1,1,1-Trichloroethane	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:44	JGH	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	ug/L	50	SW5030C/8260C	10/21/16 19:44	JGH	108-10-1	
2-Hexanone	Not detected	ug/L	50	SW5030C/8260C	10/21/16 19:44	JGH	591-78-6	
Carbon tetrachloride	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:44	JGH	56-23-5	
Benzene	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:44	JGH	71-43-2	
1,2-Dichloroethane	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:44	JGH	107-06-2	
Trichloroethene	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:44	JGH	79-01-6	
1,2-Dichloropropane	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:44	JGH	78-87-5	
Bromodichloromethane	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:44	JGH	75-27-4	
Dibromomethane	Not detected	ug/L	5	SW5030C/8260C	10/21/16 19:44	JGH	74-95-3	
cis-1,3-Dichloropropene	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:44	JGH	10061-01-5	
Toluene	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:44	JGH	108-88-3	
trans-1,3-Dichloropropene	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:44	JGH	10061-02-6	
1,1,2-Trichloroethane	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:44	JGH	79-00-5	
Tetrachloroethene	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:44	JGH	127-18-4	
trans-1,4-Dichloro-2-butene*	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:44	JGH	110-57-6	
Dibromochloromethane	Not detected	ug/L	5	SW5030C/8260C	10/21/16 19:44	JGH	124-48-1	
1,2-Dibromoethane	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:44	JGH	106-93-4	
Chlorobenzene	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:44	JGH	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:44	JGH	630-20-6	
Ethylbenzene	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:44	JGH	100-41-4	
p,m-Xylene*	Not detected	ug/L	2	SW5030C/8260C	10/21/16 19:44	JGH		
o-Xylene*	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:44	JGH	95-47-6	
Styrene	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:44	JGH	100-42-5	
Isopropylbenzene	Not detected	ug/L	5	SW5030C/8260C	10/21/16 19:44	JGH	98-82-8	
Bromoform	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:44	JGH	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:44	JGH	79-34-5	
1,2,3-Trichloropropane*	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:44	JGH	96-18-4	



Analytical Laboratory Report

Lab Sample ID: S76953.10 (continued)

Sample Tag: Waste Water

Analysis	Results	Units	RL	Method	Run Date/Time	Tech	CAS #	Flags
Organics - Volatiles (continued)								
Volatile Organics - DEQ List (continued)								
n-Propylbenzene	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:44	JGH	103-65-1	
Bromobenzene	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:44	JGH	108-86-1	
1,3,5-Trimethylbenzene	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:44	JGH	108-67-8	
tert-Butylbenzene	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:44	JGH	98-06-6	
1,2,4-Trimethylbenzene	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:44	JGH	95-63-6	
sec-Butylbenzene	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:44	JGH	135-98-8	
p-Isopropyltoluene	Not detected	ug/L	5	SW5030C/8260C	10/21/16 19:44	JGH	99-87-6	
1,3-Dichlorobenzene	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:44	JGH	541-73-1	
1,4-Dichlorobenzene	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:44	JGH	106-46-7	
1,2-Dichlorobenzene	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:44	JGH	95-50-1	
1,2,3-Trimethylbenzene	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:44	JGH	526-73-8	
n-Butylbenzene	Not detected	ug/L	1	SW5030C/8260C	10/21/16 19:44	JGH	104-51-8	
Hexachloroethane	Not detected	ug/L	5	SW5030C/8260C	10/21/16 19:44	JGH	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	ug/L	5	SW5030C/8260C	10/21/16 19:44	JGH	96-12-8	
1,2,4-Trichlorobenzene	Not detected	ug/L	5	SW5030C/8260C	10/21/16 19:44	JGH	120-82-1	
1,2,3-Trichlorobenzene	Not detected	ug/L	5	SW5030C/8260C	10/21/16 19:44	JGH	87-61-6	
Naphthalene	Not detected	ug/L	5	SW5030C/8260C	10/21/16 19:44	JGH	91-20-3	
2-Methylnaphthalene	Not detected	ug/L	5	SW5030C/8260C	10/21/16 19:44	JGH	91-57-6	



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OF

92469

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November 7, 2016

Ms. Faith Finholm
Genesee County Land Bank Authority
452 South Saginaw Street, 2nd Floor
Flint, Michigan 48502

Subject: Limited Phase II Environmental Site Assessment (ESA)
2320 West Pierson Road
Flint, Michigan
AKT Peerless Project No. 11764s-3-20

Ms. Finholm:

The Genesee County Land Bank Authority (GCLBA) retained AKT Peerless Environmental & Energy Services (AKT Peerless) to conduct a Limited Phase II Environmental Site Assessment (ESA) of a property located at 2320 West Pierson Road in Flint, Michigan (subject property). This Limited Phase II ESA was conducted in accordance with AKT Peerless' Proposal for a Phase II ESA (Proposal Number PS-19656), dated August 9, 2016, and based on American Society for Testing and Materials (ASTM) Designation E 1903-97 "Standard Guide for Environmental Site Assessments: Phase II Environmental Site Assessment Process."

This Phase II ESA scope of work is intended to: (1) evaluate for the presence of contamination on the subject property based on the recognized environmental conditions (RECs) identified in AKT Peerless' August 5, 2016, Phase I ESA; and (2) evaluate levels of contamination to determine if the subject property meets the definition of a "facility¹" as defined in Part 201 of Natural Resources and Environmental Protection Act (NREPA), Michigan Public Act (PA) 451, 1994, as amended. This letter report documents the field activities, sampling protocols, and laboratory results.

AKT Peerless' Phase II ESA was performed for the benefit of the GCLBA, who may rely on the contents and conclusions of this report.

Site Description

The subject property is located at 2320 West Pierson Road, Flint, Michigan, and consists of one parcel (Parcel Identification Number 46-26-351-045), containing approximately 6.91 acres. The subject property contains one vacant commercial building. Exterior portions of the subject property consist of concrete paved and grassy areas.

¹ "Facility" means any area, place, or property where a hazardous substance in excess of the concentrations which satisfy the requirements of Sections 20120a(1)(a) or (17) or the cleanup criteria for unrestricted residential use under Part 213 has been released, deposited, disposed of, or otherwise comes to be located. Facility does not include any area, place, or property at which response activities have been completed which satisfy the cleanup criteria for the residential category provided for in section 20120a(1)(a) and (17) or at which corrective action has been completed under Part 213 which satisfies the cleanup criteria for unrestricted residential use.

Refer to Figure 1 for a topographic location map. See Figure 2 for a sample location map depicting subject property features.

Previous Environmental Investigations

AKT Peerless completed a Phase I ESA of the subject property, dated August 5, 2016. The purpose of AKT Peerless' Phase I ESA was to identify potential environmental issues associated with the subject and adjoining properties. AKT Peerless identified the following RECs in connection with the subject property:

- REC 1** - The northern adjoining property (5406, 5408 Clio Road) operated as a warehouse and manufacturing facility in the 2000s, a used car dealer in the 1980s, an auto detail/repair in the 1970s and early 1980s, as well as a gasoline filling station in the 1960s. A 1997 subsurface investigation identified concentrations of select petroleum compounds in excess of the Michigan Department of Environmental Quality (MDEQ) Generic Residential Cleanup Criteria (RCC). The possibility exists that hazardous substances and/or petroleum products have impacted the subsurface of the subject property.
- REC 2** - The southern adjoining property (2216 West Pierson Road) operated as a drycleaner in the 1970s and 1980s. AKT Peerless' research has not revealed detailed information regarding specific site operations including waste disposal, storage, and general housekeeping activities at the western adjoining property. No known investigations have been conducted to evaluate former site operations. The possibility exists that hazardous substances and/or petroleum products have impacted the subsurface of the subject property.
- REC 3** - The southwestern adjoining property (2360 West Pierson Road) operated as an oil change shop from in the 1980s to 2000s and as a gasoline filling station in the 1970s. No known investigations have been conducted to identify potential subsurface contamination. The possibility exists that hazardous substances and/or petroleum products have impacted the subsurface of the subject property.

Scope of Assessment

To evaluate the identified RECs, on October 17, 2016, AKT Peerless conducted a subsurface investigation of the subject property that included: (1) the advancement of three soil borings and (2) the collection of three soil samples. The following samples were submitted for laboratory analyses:

- One soil sample for volatile organic compounds (VOCs)
- One soil sample for VOCs, polynuclear aromatic hydrocarbons (PNAs), lead, cadmium, and chromium
- One soil samples for VOCs, lead, cadmium, and chromium

All samples were delivered to a laboratory under chain-of-custody documentation.

AKT Peerless used hydraulic drive/direct-push (Geoprobe®) and hand auger sampling techniques and followed the drilling procedures outlined in ASTM publication D 6282-98 "Standard Guide for Direct Push Soil Sampling for Environmental Site Characterizations." AKT Peerless advanced soil borings 8 feet below ground surface (bgs). AKT Peerless personnel inspected, field-screened, and logged the samples collected at each soil boring location. Soil types were classified in accordance with ASTM publication D-2488 "Unified Soil Classification System." Refer to Figure 2 for a sample location map with soil boring locations. The soil boring logs are provided in Appendix A.

Quality Assurance/Quality Control

To ensure the accuracy of data collected during on-site activities, AKT Peerless implemented proper quality assurance/quality control (QA/QC) measures. The QA/QC procedures included, but were not limited to: (1) decontamination of sampling equipment before and between sampling events; (2) calibration of field equipment; (3) documentation of field activities; and (4) sample preservation techniques.

During sample collection, AKT Peerless adhered to proper decontamination procedures. Sampling equipment was decontaminated using the following methods to minimize potential cross-contamination of soil samples:

- Steam-cleaning or washing and scrubbing the equipment with non-phosphate detergent
- Rinsing the equipment
- Air-drying the equipment

All field instruments were calibrated prior to first use on-site to ensure accuracy. Field instruments utilized during investigation activities at this subject property included a photoionization detector (PID), and a sample scale.

During AKT Peerless' Phase II ESA, a PID was used to screen all soil samples. The PID was maintained in a calibrated condition using 100 ppm isobutylene span gas prior to subsurface investigations.

During AKT Peerless' Limited Phase II ESA activities, subject property conditions (i.e. soil boring locations, weather conditions) were documented. AKT Peerless visually inspected the soil samples and prepared a geologic log for each soil boring. The logs include soil characteristics such as: (1) color, (2) composition (e.g., sand, clay, or gravel), (3) soil moisture and water table depth, and (4) signs of possible contamination (i.e., stained or discolored soil, odors). See Appendix A for AKT Peerless' soil boring logs. See Figure 2 for a sample location map with soil boring locations.

AKT Peerless collected samples according to USEPA Publication SW-846, Testing Methods for Evaluating Solid Waste. Soil samples were collected in laboratory-supplied containers, stored on ice at approximately 4 degrees Celsius, and submitted under chain-of-custody documentation. Soil samples collected for VOCs were field preserved with methanol in accordance with U.S. EPA Method 5035. Soil samples collected for PNAs and metals analyses were stored in unpreserved, 4-ounce wide-mouth jars.

Local Geology/Hydrology

During drilling activities, AKT Peerless encountered the following soil types:

- CLAY from 0.5 to 8.0 feet bgs in select borings. The clay was medium stiff to stiff, light brown, trace light gray, and yellowish and orange mottling throughout.
- CLAYEY SAND from 3.0 to 4.5 feet bgs in boring B-2. The clayey sand was soft to stiff, olive gray in color, with a slight petroleum odor.

AKT Peerless did not encounter groundwater within any of the soil borings advanced.

Laboratory Analysis and Methods

AKT Peerless submitted three soil samples for laboratory analysis. The laboratory analyzed the samples for: (1) VOCs in accordance with USEPA Method 8260B, (2) PNAs in accordance with USEPA Method 8270D, and (3) lead, cadmium, and chromium in accordance with USEPA Method 6020A.

Analytical Results

AKT Peerless conducted limited soil sampling in areas believed likely to be impacted by contaminants based upon the RECs, as identified within the August 2016 Phase I ESA. AKT Peerless compared the laboratory analytical results to the MDEQ Part 201 Generic RCC. The results of the investigation indicate all target parameters were below method detection limits (MDLs) and/or MDEQ Part 201 Generic RCC. Therefore, the subject property is not a “facility,” as defined in Part 201 of NREPA, Michigan Public Act (PA) 451, 1994, as amended.

Refer to Figure 2 for a sample location map with soil boring locations. Refer to Table 1 for a summary of soil analytical results. Refer to Appendix B for a complete analytical laboratory report, which contains all sampled parameters.

Conclusions and Recommendations

AKT Peerless completed three soil borings at the subject property to investigate the RECs identified in AKT Peerless’ August 2016 Phase I ESA. Laboratory analytical results from soil samples collected at the subject property indicate that target contaminant concentrations are below MDLs and/or MDEQ Part 201 Generic RCC. Therefore, the subject property is not a “facility,” as defined in Part 201 of NREPA, Michigan Public Act (PA) 451, 1994, as amended.

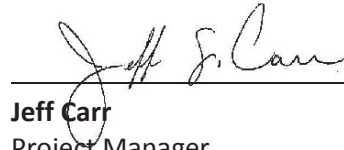
Limitations

The information and opinions obtained in this report are for the exclusive use of the GCLBA. No distribution to or reliance by other parties may occur without the express written permission of AKT Peerless. AKT Peerless will not distribute this report without your written consent or as required by law or by a Court order. The information and opinions contained in the report are given in light of that assignment. The report must be reviewed and relied upon only in conjunction with the terms and conditions expressly agreed upon by the parties and as limited therein. Any third parties, who have been extended the right to rely on the contents of this report by AKT Peerless (which is expressly required prior to any third-party release), expressly agrees to be bound by the original terms and conditions entered into by AKT Peerless and the GCLBA.

Subject to the above and the terms and conditions, AKT Peerless accepts responsibility for the competent performance of its duties in executing the assignment and preparing reports in accordance with the normal standards of the profession, but disclaims any responsibility for consequential damages. Although AKT Peerless believes that results contained herein are reliable, AKT Peerless cannot warrant or guarantee that the information provided is exhaustive or that the information provided by the GCLBA or third parties is complete or accurate.

Signatures of Environmental Professionals

The following individuals contributed to the completion of this report.

A handwritten signature in black ink, reading "Jeff Carr", written over a horizontal line.

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AKT Peerless

Great Lakes Bay, Michigan Region

Phone: 989.754.9896

Fax: 989.754.3804

A handwritten signature in black ink, reading "Jackie Luta", written over a horizontal line.

Jackie Luta

Environmental Consultant

AKT Peerless

Great Lakes Bay, Michigan Region

Phone: 989.754.9896

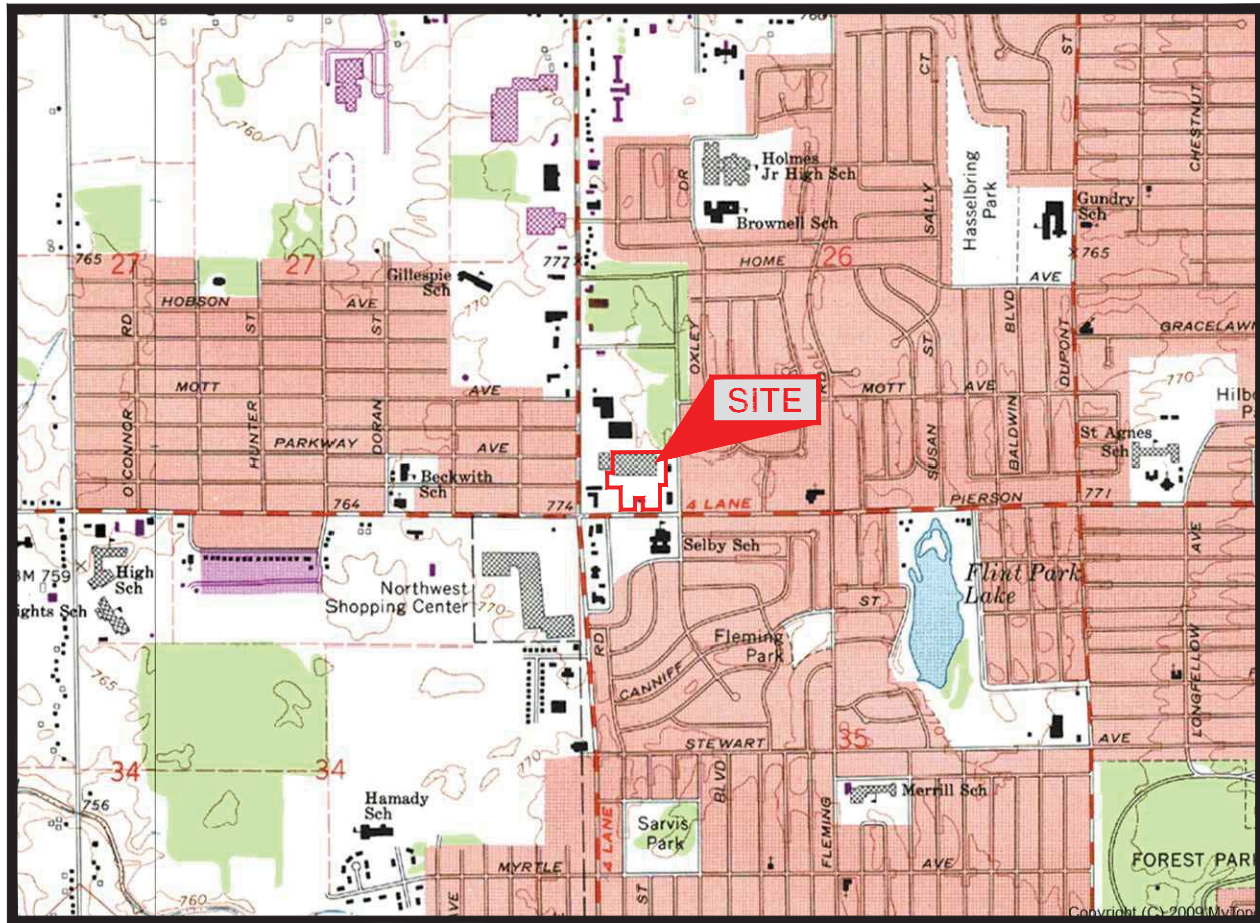
Fax: 989.754.3804

Enclosed

Figures: Figure 1 – Topographic Location Map
 Figure 2 – Sample Location Map
Tables: Table 1 – Summary of Soil Analytical Results
 Table Footnotes
Appendix A: Soil Boring Logs
Appendix B: Laboratory Analytical Results

FIGURES

FLINT NORTH QUADRANGLE
MICHIGAN - GENESEE COUNTY
7.5 MINUTE SERIES (TOPOGRAPHIC)



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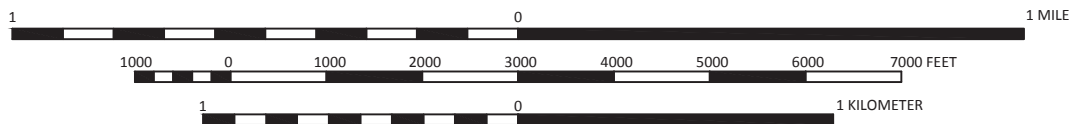
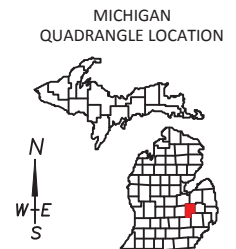


IMAGE TAKEN FROM 1969 U.S.G.S. TOPOGRAPHIC MAP
PHOTOREVISED 1975



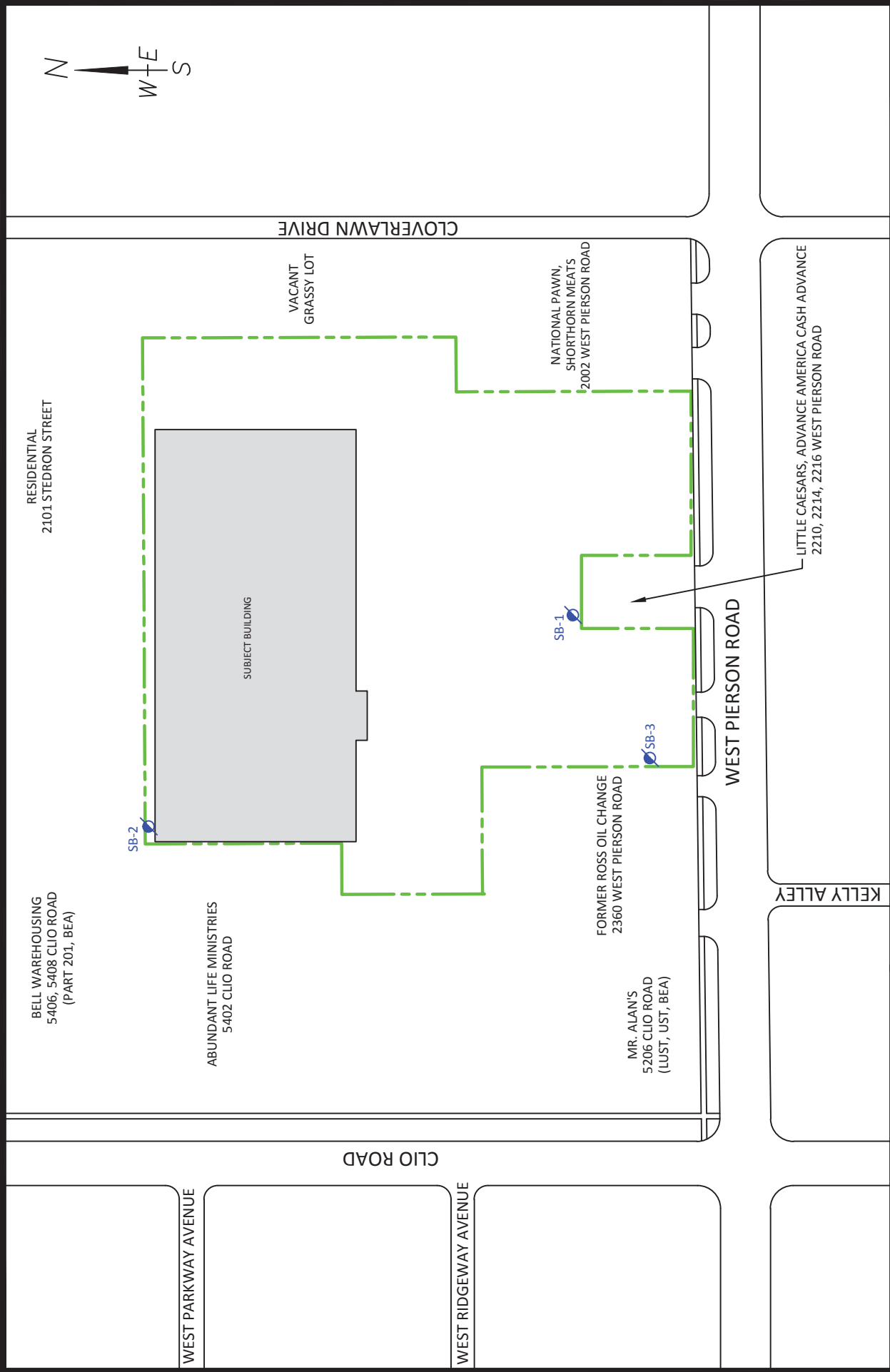
www.aktpeerless.com


TOPOGRAPHIC LOCATION MAP

2320 WEST PIERSON ROAD
FLINT, MICHIGAN
PROJECT NUMBER : 11764s-3-20

DRAWN BY: OGO
DATE: 10/28/2016

FIGURE 1



 www.aktpeerless.com	SAMPLE LOCATION MAP 2320 WEST PIERSON ROAD FLINT, MICHIGAN PROJECT NUMBER : 11764s-3-20		LEGEND --- = PROPERTY LINE ● = SOIL BORING	DRAWN BY: OGO DATE: 10/28/2016 SCALE: 1" = 150' FIGURE 2
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TABLES

Table 1: Summary of Soil Analytical Results
Former FIA Building
2320 West Pierson Road
Flint, Michigan
AKT Peerless Project No. 11764s

Guidesheet Number →		#10	#11	#12	#13	#14	#15	#16	#18	#19					
Parameters*	Chemical Abstract Service Number	Statewide Default Background Levels	Residential Drinking Water Protection Criteria and RBSLs	Groundwater Surface Water Interface Protection Criteria and RBSLs	Groundwater Contact Protection Criteria and RBSLs	Residential Soil Volatilization to Indoor Air Inhalation Criteria and RBSLs	Residential Infinite Source Volatile Soil Inhalation Criteria (VSLC) and RBSLs	Residential Finite VSLC for 5 Meter Source Thickness	Residential Particulate Soil Inhalation Criteria and RBSLs	Residential Direct Contact Criteria and RBSLs	Sample Location	SB-1	SB-2	SB-3	Dup-1
											Collection Date	10/17/2016	10/17/2016	10/17/2016	10/17/2016
*(Refer to detailed laboratory report for method reference data)															
Metals ug/kg															
	Cadmium (B)	1,200	6,000	(G,X)	2.3E+8	NLV	NLV	NLV	1.7E+6	5.5E+5		NS	450	<200	NS
	Chromium, Total	18,000 (total)	30,000	3,300	1.4E+8	NLV	NLV	NLV	2.6E+5	2.5E+6		NS	16,400	12,800	NS
	Lead (B)	21,000	7.0E+5	(G,X)	ID	NLV	NLV	NLV	1.0E+8	4.0E+5		NS	62,300	8,930	NS
Semivolatiles, PMAs ug/kg															
	Acenaphthene	NA	3.0E+5	8,700	9.7E+5	1.9E+8	8.1E+7	8.1E+7	1.4E+10	4.1E+7		NS	<300	NS	NS
	Acenaphthylene	NA	5,900	ID	4.4E+5	1.6E+6	2.2E+6	2.2E+6	2.3E+9	1.6E+6		NS	<300	NS	NS
	Anthracene	NA	41,000	ID	41,000	1.0E+9 (D)	1.4E+9	1.4E+9	6.7E+10	2.3E+8		NS	<300	NS	NS
	Benzol(a)anthracene (Q)	NA	NLL	NLL	NLL	NLV	NLV	NLV	ID	20,000		NS	<300	NS	NS
	Benzol(a)pyrene (Q)	NA	NLL	NLL	NLL	NLV	NLV	NLV	1.5E+6	2,000		NS	<300	NS	NS
	Benzol(b)fluoranthene (Q)	NA	NLL	NLL	NLL	ID	ID	ID	ID	20,000		NS	<300	NS	NS
	Benzol(g,h)iperylene	NA	NLL	NLL	NLL	NLV	NLV	NLV	8.0E+8	2.5E+6		NS	<300	NS	NS
	Benzol(k)fluoranthene (Q)	NA	NLL	NLL	NLL	NLV	NLV	NLV	ID	2.0E+5		NS	<300	NS	NS
	Chrysene (Q)	NA	NLL	NLL	NLL	ID	ID	ID	ID	2.0E+6		NS	<300	NS	NS
	Dibenzol(a,h)anthracene (Q)	NA	NLL	NLL	NLL	NLV	NLV	NLV	ID	2,000		NS	<300	NS	NS
	Fluoranthene	NA	7.3E+5	5,500	7.3E+5	1.0E+9 (D)	7.4E+8	7.4E+8	9.3E+9	4.6E+7		NS	<300	NS	NS
	Fluorene	NA	3.9E+5	5,300	8.9E+5	5.8E+8	1.3E+8	1.3E+8	9.3E+9	2.7E+7		NS	<300	NS	NS
	Indeno(1,2,3-cd)pyrene (Q)	NA	NLL	NLL	NLL	NLV	NLV	NLV	ID	20,000		NS	<300	NS	NS
	2-Methylnaphthalene	NA	57,000	4,200	5.5E+6	2.7E+6	1.5E+6	1.5E+6	6.7E+8	8.4E+6		NS	<300	NS	NS
	Naphthalene	NA	35,000	730	2.1E+6	2.5E+5	3.0E+5	3.0E+5	2.0E+8	1.6E+7		NS	<300	NS	NS
	Phenanthrene	NA	56,000	2,100	1.1E+6	2.8E+6	1.6E+5	1.6E+5	6.7E+6	1.6E+6		NS	<300	NS	NS
	Pyrene	NA	4.8E+5	ID	4.8E+5	1.0E+9 (D)	6.5E+8	6.5E+8	6.7E+9	2.9E+7		NS	<300	NS	NS
Volatiles, VOCs ug/kg															
	Acetone (I)	NA	15,000	34,000	1.1E+8 (C)	1.1E+8 (C)	1.3E+8	1.3E+8	3.9E+11	2.3E+7		<1,000	<1,000	<1,000	<1,000
	Acrylonitrile (I)	NA	100 (M); 52	100 (M); 40	2.8E+5	6,600	5,000	5,100	4.6E+7	16,000		<100	<100	<100	<100
	Benzene (I)	NA	100	4,000 (X)	2.2E+5	1,600	13,000	34,000	3.8E+8	1.8E+5		<60	<70	<60	<70
	Bromobenzene (I)	NA	550	NA	3.6E+5	3.1E+5	4.5E+5	4.5E+5	5.3E+8	5.4E+5		<100	<100	<100	<100
	Bromodichloromethane	NA	1,600 (W)	ID	2.8E+5	1,200	9,100	9,700	8.4E+7	1.1E+5		<100	<100	<100	<100
	Bromofom	NA	1,600 (W)	ID	8.7E+5 (C)	1.5E+5	9.0E+5	9.0E+5	2.8E+9	8.2E+5		<100	<100	<100	<100
	Bromomethane	NA	200	700	1.4E+6	860	11,000	57,000	3.3E+8	3.2E+5		<300	<300	<300	<300
	2-Butanone (MEK) (I)	NA	2.6E+5	44,000	2.7E+7 (C)	2.7E+7 (C)	2.9E+7	2.9E+7	6.7E+10	2.7E+7 (CDD)		<960	<1,000	<940	<980
	n-Butylbenzene	NA	1,600	ID	1.2E+5	ID	ID	ID	2.0E+9	2.5E+6		<60	<70	<60	<70
	sec-Butylbenzene	NA	1,600	ID	88,000	ID	ID	ID	4.0E+8	2.5E+6		<60	<70	<60	<70
	tert-Butylbenzene (I)	NA	1,600	NA	1.8E+5	ID	ID	ID	6.7E+8	2.5E+6		<60	<70	<60	<70

Table 1: Summary of Soil Analytical Results
Former FIA Building
2320 West Pierson Road
Flint, Michigan
AKT Peerless Project No. 11764s

Guidesheet Number →		#10	#11	#12	#13	#14	#15	#16	#18	#19					
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	*(Refer to detailed laboratory report for method reference data)														
	Carbon disulfide (L/R)	NA	16,000	ID	2.8E+5 (C)	76,000	1.3E+6	7.9E+6	4.7E+10	2.8E+5 (C/DD)		<300	<300	<300	<300
	Carbon tetrachloride	NA	100	900 (X)	92,000	190	3,500	12,000	1.3E+8	96,000		<60	<70	<60	<70
	Chlorobenzene (l)	NA	2,000	500	2.6E+5 (C)	1.2E+5	7.7E+5	9.9E+5	4.7E+9	2.6E+5 (C)		<60	<70	<60	<70
	Chloroethane	NA	8,600	22,000 (X)	9.5E+5 (C)	9.5E+5 (C)	3.0E+7	1.2E+8	6.7E+11	9.5E+5 (C)		<300	<300	<300	<300
	Chloroform	NA	1,600 (W)	7,000	1.5E+6 (C)	7,200	45,000	1.2E+5	1.3E+9	1.2E+6		<60	<70	<60	<70
	Chloromethane (l)	NA	5,200	ID	1.1E+6 (C)	2,300	40,000	4.1E+5	4.9E+9	1.1E+6 (C)		<300	<300	<300	<300
	Dibromochloromethane	NA	1,600 (W)	ID	3.6E+5	3,900	24,000	24,000	1.3E+8	1.1E+5		<100	<100	<100	<100
	Dibromomethane	NA	1,600	NA	2.0E+6 (C)	ID	ID	ID	ID	2.0E+6 (C)		<300	<300	<300	<300
	1,2-Dichlorobenzene	NA	14,000	280	2.1E+5 (C)	2.1E+5 (C)	3.9E+7	3.9E+7	1.0E+11	2.1E+5 (C)		<100	<100	<100	<100
	1,3-Dichlorobenzene	NA	170	680	51,000	26,000	79,000	79,000	2.0E+8	1.7E+5 (C)		<100	<100	<100	<100
	1,4-Dichlorobenzene	NA	1,700	360	1.4E+5	19,000	77,000	77,000	4.5E+8	4.0E+5		<100	<100	<100	<100
	Dichlorodifluoromethane	NA	95,000	ID	1.0E+6 (C)	9.0E+5	5.3E+7	5.5E+8	3.3E+12	1.0E+6 (C)		<300	<300	<300	<300
	1,1-Dichloroethane	NA	18,000	15,000	8.9E+5 (C)	2.3E+5	2.1E+6	5.9E+6	3.3E+10	8.9E+5 (C)		<60	<70	<60	<70
	1,2-Dichloroethane (l)	NA	100	7,200 (X)	3.8E+5	2,100	6,200	11,000	1.2E+8	91,000		<60	<70	<60	<70
	cis-1,2-Dichloroethylene	NA	1,400	12,000	6.4E+5 (C)	22,000	1.8E+5	4.2E+5	2.3E+9	6.4E+5 (C)		<60	<70	<60	<70
	trans-1,2-Dichloroethylene	NA	2,000	30,000 (X)	1.4E+6 (C)	23,000	2.8E+5	8.3E+5	4.7E+9	1.4E+6 (C)		<60	<70	<60	<70
	1,1-Dichloroethylene (l)	NA	140	2,600	2.2E+5	62	1,100	5,300	6.2E+7	2.0E+5		<60	<70	<60	<70
	1,2-Dichloropropane (l)	NA	100	4,600 (X)	3.2E+5	4,000	25,000	50,000	2.7E+8	1.4E+5		<60	<70	<60	<70
	Diethyl ether	NA	200	ID	7.4E+6 (C)	7.4E+6 (C)	8.5E+7	1.5E+8	8.0E+11	7.4E+6 (C)		<300	<300	<300	<300
	Ethylbenzene (l)	NA	1,500	360	1.4E+5 (C)	87,000	7.2E+5	1.0E+6	1.0E+10	1.4E+5 (C)		<60	<70	<60	<70
	Ethylene dibromide	NA	20 (M); 1.0	110 (X)	500	670	1,700	1,700	1.4E+7	92		<30	<30	<30	<30
	Hexachloroethane	NA	430	1,800 (X)	1.1E+5	40,000	5.5E+5	9.3E+5	2.3E+8	2.3E+5		<400	<400	<400	<400
	2-Hexanone	NA	20,000	ID	2.5E+6 (C)	9.9E+5	1.1E+6	1.1E+6	2.7E+9	2.5E+6 (C)		<3,000	<3,000	<3,000	<3,000
	Isopropyl benzene	NA	91,000	3,200	3.9E+5 (C)	3.9E+5 (C)	1.7E+6	1.7E+6	5.8E+9	3.9E+5 (C)		<300	<300	<300	<300
	4-Methyl-2-pentanone (MIBK) (l)	NA	36,000	ID	2.7E+6 (C)	2.7E+6 (C)	4.5E+7	4.5E+7	1.4E+11	2.7E+6 (C)		<3,000	<3,000	<3,000	<3,000
	Methylene chloride	NA	100	30,000 (X)	2.3E+6 (C)	45,000	2.1E+5	5.9E+5	6.6E+9	1.3E+6		<100	<100	<100	<100
	2-Methylnaphthalene	NA	57,000	4,200	5.5E+6	2.7E+6	1.5E+6	1.5E+6	6.7E+8	8.1E+6		<100	<100	<100	<100
	Methyl-tert-butyl ether (MTBE)	NA	800	1.4E+5 (X)	5.9E+6 (C)	5.9E+6 (C)	2.5E+7	3.9E+7	2.0E+11	1.5E+6		<300	<300	<300	<300
	Naphthalene	NA	35,000	730	2.1E+6	2.5E+5	3.0E+5	3.0E+5	2.0E+8	1.6E+7		<300	<300	<300	<300
	n-Propylbenzene (l)	NA	1,600	ID	3.0E+5	ID	ID	ID	1.3E+9	2.5E+6		<60	<70	<60	<70
	Styrene	NA	2,700	2100 (X)	2.7E+5	2.5E+5	9.7E+5	9.7E+5	5.5E+9	4.0E+5		<60	<70	<60	<70
	1,1,1,2-Tetrachloroethane	NA	1,500	ID	4.4E+5 (C)	6,200	36,000	54,000	4.2E+8	4.4E+5 (C)		<100	<100	<100	<100
	1,1,2,2-Tetrachloroethane	NA	170	1,600 (X)	94,000	4,300	10,000	10,000	5.4E+7	53,000		<60	<70	<60	<70
	Tetrachloroethylene	NA	100	1,200 (X)	88,000 (C)	11,000	1.8E+5	4.8E+5	5.4E+9	88,000 (C)		<60	<70	<60	<70

Table 1: Summary of Soil Analytical Results
Former FIA Building
2320 West Pierson Road
Flint, Michigan
AKT Peerless Project No. 11764s


Guidesheet Number →		#10	#11	#12	#13	#14	#15	#16	#18	#19	Sample Location				Dup-1
Parameters*	Chemical Abstract Service Number	Statewide Default Background Levels	Residential Drinking Water Protection Criteria and RBSLs	Groundwater Surface Water Interface Protection Criteria and RBSLs	Groundwater Contact Protection Criteria and RBSLs	Residential Soil Volatilization to Indoor Air Inhalation Criteria and RBSLs	Residential Infinite Source Volatile Soil Inhalation Criteria (VSIC) and RBSLs	Residential Finite VSIC for 5 Meter Source Thickness	Residential Particulate Soil Inhalation Criteria and RBSLs	Residential Direct Contact Criteria and RBSLs	Collection Date	SB-1	SB-2	SB-3	10/17/2016
	* (Refer to detailed laboratory report for method reference data)														
	Tetrahydrofuran	109-99-9	NA	1,900	2.2E+5 (X)	3.2E+7	1.3E+6	1.3E+7	6.7E+7	3.9E+11	2.9E+6	<1,000	<1,000	<1,000	<1,000
	Toluene (I)	108-88-3	NA	16,000	5,400	2.5E+5 (C)	2.5E+5 (C)	2.8E+6	5.1E+6	2.7E+10	2.5E+5 (C)	<60	<70	<60	<70
	1,2,4-Trichlorobenzene	120-82-1	NA	4,200	5,900 (X)	1.1E+6	1.1E+6 (C)	2.8E+7	2.8E+7	2.5E+10	9.9E+5 (DD)	<420	<440	<410	<430
	1,1,1-Trichloroethane	71-55-6	NA	4,000	1,800	4.6E+5 (C)	2.5E+5	3.8E+6	1.2E+7	6.7E+10	4.6E+5 (C)	<60	<70	<60	<70
	1,1,2-Trichloroethane	79-00-5	NA	100	6,600 (X)	4.2E+5	4,600	17,000	21,000	1.9E+8	1.8E+5	<60	<70	<60	<70
	Trichloroethylene	79-01-6	NA	100	4,000 (X)	4.4E+5	7,100	78,000	1.7E+5	1.8E+9	5.0E+5 (C,DD)	<60	<70	<60	<70
	Trichlorofluoromethane	75-69-4	NA	52,000	NA	5.6E+5 (C)	5.6E+5 (C)	9.2E+7	6.3E+8	3.8E+12	5.6E+5 (C)	<100	<100	<100	<100
	1,2,3-Trichloropropane	96-18-4	NA	840	NA	8.3E+5 (C)	4,000	9,200	9,200	2.0E+7	8.3E+5 (C)	<100	<100	<100	<100
	1,2,3-Trimethylbenzene*	526-73-8	NA	1,800	570	94,000 (C)	94,000 (C)	1.6E+7	3.8E+8	8.2E+10	94,000 (C)	<60	<70	<60	<70
	1,2,4-Trimethylbenzene (I)	95-63-6	NA	2,100	570	1.1E+5 (C)	1.1E+5 (C)	2.1E+7	5.0E+8	8.2E+10	1.1E+5 (C)	<60	<70	<60	<70
	1,3,5-Trimethylbenzene (I)	108-67-8	NA	1,800	1,100	94,000 (C)	94,000 (C)	1.6E+7	3.8E+8	8.2E+10	94,000 (C)	<60	<70	<60	<70
	Vinyl chloride	75-01-4	NA	40	260 (X)	20,000	270	4,200	30,000	3.5E+8	3,800	<60	<70	<60	<70
	Xylenes (I)	1330-20-7	NA	5,600	820	1.5E+5 (C)	1.5E+5 (C)	4.6E+7	6.1E+7	2.9E+11	1.5E+5 (C)	<160	<170	<160	<170

- (A) Criterion is the state of Michigan drinking water standard established pursuant to Section 5 of 1976 PA 399, MCL 325.1005.
- (B) Background, as defined in R 299.1(b), may be substituted if higher than the calculated cleanup criterion. Background levels may be less than criteria for some inorganic compounds.
- (C) The criterion developed under R 299.20 to R 299.26 exceeds the chemical-specific soil saturation screening level (C_{sat}). The person proposing or implementing response activity shall document whether additional response activity is required to control free-phase liquids or NAPL to protect against risks associated with free-phase liquids by using methods appropriate for the free-phase liquids present. Development of a site-specific C_{sat} or methods presented in R 299.22, R 299.24(5), and R 299.26(8) may be conducted for the relevant exposure pathways.
- (D) Calculated criterion exceeds 100 percent, hence it is reduced to 100 percent or 1.0E+9 parts per billion (ppb).
- (E) Criterion is the aesthetic drinking water value, as required by Section 20120a(5) of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA). A notice of aesthetic impact may be employed as an institutional control mechanism if groundwater concentrations exceed the aesthetic drinking water criterion, but do not exceed the applicable health-based drinking water value [as provided in the table in Footnote (E) in R 299.49].
- (F) Criterion is based on adverse impacts to plant life and phytotoxicity.
- (G) Groundwater surface water interface (GSI) criterion depends on the pH or water hardness, or both, of the receiving surface water. The final chronic value (FCV) for the protection of aquatic life shall be calculated based on the pH or hardness of the receiving surface water. Where water hardness exceeds 400 mg CaCO_3/L , use 400 mg CaCO_3/L for the FCV calculation. The FCV formula provides values in units of $\mu\text{g}/\text{L}$ or ppb. The generic GSI criterion is the lesser of the calculated FCV, the wildlife value (WV), and the surface water human non-drinking water value (HNDV). The soil GSI protection criteria for these hazardous substances are the greater of 20 times the GSI criterion or the GSI soil-water partition values using the GSI criteria developed with the procedure described in this footnote. [See table in Footnote (G) in R 299.49]
- (H) Valence-specific chromium data (Cr III and Cr VI) shall be compared to the corresponding valence-specific cleanup criteria. If both Cr III and Cr VI are present in groundwater, the total concentration of both cannot exceed the drinking water criterion of 100 $\mu\text{g}/\text{L}$. If analytical data are provided for total chromium only, they shall be compared to the cleanup criteria for Cr VI. Cr III soil cleanup criterion for protection of drinking water can only be used at sites where groundwater is prevented from being used as a public water supply, currently and in the future, through an approved land or resource use restriction.
- (I) Hazardous substance may exhibit the characteristic of ignitability as defined in 40 C.F.R. §261.21 (revised as of July 1, 2001), which is adopted by reference in these rules.
- (J) Hazardous substance may be present in several isomer forms. Isomer-specific concentrations shall be added together for comparison to criteria.
- (K) Hazardous substance may be flammable or explosive, or both.
- (L) Criteria for lead are derived using a biologically based model, as allowed for under Section 20120a(9) of the NREPA, and are not calculated using the algorithms and assumptions specified in pathway-specific rules. The generic residential drinking water criterion of 4 $\mu\text{g}/\text{L}$ is linked to the generic residential soil direct contact criterion of 400 mg/kg. A higher concentration in the drinking water, up to the state action level of 15 $\mu\text{g}/\text{L}$, may be allowed as a site-specific remedy and still allow for drinking water use, under Section 20120a(2) of the NREPA if soil concentrations are appropriately lower than 400 mg/kg. If a site-specific criterion is approved based on this subdivision, a notice shall be filed on the deed for all property where the groundwater concentrations will exceed 4 $\mu\text{g}/\text{L}$ to provide notice of the potential for unacceptable risk if soil or groundwater concentrations increase. Acceptable concentrations of site-specific soil and drinking water concentrations are presented in the [table in Footnote (L) in R 299.49].
- (M) Calculated criterion is below the analytical target detection limit, therefore, the criterion defaults to the target detection limit.
- (N) The concentrations of all potential sources of nitrate-nitrogen (e.g., ammonia-N, nitrite-N, nitrate-N) in groundwater that is used as a source of drinking water shall not, when added together, exceed the nitrate drinking water criterion of 10,000 $\mu\text{g}/\text{L}$. Where leaching to groundwater is a relevant pathway, soil concentrations of all potential sources of nitrate-nitrogen shall not, when added together, exceed the nitrate drinking water protection criterion of 2.0E+5 $\mu\text{g}/\text{kg}$.
- (O) The concentration of all polychlorinated and polybrominated dibenzodioxin and dibenzofuran isomers present at a facility, expressed as an equivalent concentration of 2,3,7,8-tetrachlorodibenzo-p-dioxin based upon their relative potency, shall be added together and compared to the criterion for 2,3,7,8-tetrachlorodibenzo-p-dioxin. The generic cleanup criteria for 2,3,7,8-tetrachlorodibenzo-p-dioxin are not calculated according to the algorithms presented in R 299.14 to R 299.26. The generic cleanup criteria are being held at the values that the DEQ has used since August 1998, in recognition of the fact that national efforts to reassess risks posed by dioxin are not yet complete. Until these studies are complete, it is premature to select a revised slope factor and/or reference dose for calculation of generic cleanup criteria
- (P) Amenable cyanide methods or method OIA-1677 shall be used to quantify cyanide concentrations for compliance with all groundwater criteria. Total cyanide methods or method OIA-1677 shall be used to quantify cyanide concentrations for compliance with soil criteria. Nonresidential direct contact criteria may not be protective of the potential for release of hydrogen cyanide gas. Additional land or resource use restrictions may be necessary to protect for the acute inhalation concerns associated with hydrogen cyanide gas.
- (Q) Criteria for carcinogenic polycyclic aromatic hydrocarbons were developed using relative potential potencies to benzo(a)pyrene.
- (R) Hazardous substance may exhibit the characteristic of reactivity as defined in 40 C.F.R. §261.23 (revised as of July 1, 2001), which is adopted by reference in these rules.
- (S) Criterion defaults to the hazardous substance-specific water solubility limit.
- (T) Refer to the federal Toxic Substances Control Act (TSCA), 40 C.F.R. §761, subpart D and 40 C.F.R. §761, Subpart G, to determine the applicability of TSCA cleanup standards. Subpart D and subpart G of 40 C.F.R. §761 (July 1, 2001) are adopted by reference in these rules. Alternatives to compliance with the TSCA standards listed below are possible under 40 C.F.R. §761 Subpart D. New releases may be subject to the standards identified in 40 C.F.R. §761, Subpart G. Use Part 201 soil direct contact cleanup criteria in the following table if TSCA standards are not applicable. [See table in Footnote (T) in R 299.49].
- (U) Hazardous substance may exhibit the characteristic of corrosivity as defined in 40 C.F.R. §261.22 (revised as of July 1, 2001), which is adopted by reference in these rules.
- (V) Criterion is the aesthetic drinking water value as required by Section 20120a(5) of the NREPA. Concentrations up to 200 $\mu\text{g}/\text{L}$ may be acceptable, and still allow for drinking water use, as part of a site-specific cleanup under Section 20120a(2) and 20120b of the NREPA.
- (W) Concentrations of trihalomethanes in groundwater shall be added together to determine compliance with the Michigan drinking water standard of 80 $\mu\text{g}/\text{L}$. Concentrations of trihalomethanes in soil shall be added together to determine compliance with the drinking water protection criterion of 1,600 $\mu\text{g}/\text{kg}$.
- (X) The GSI criterion shown in the generic cleanup criteria tables is not protective for surface water that is used as a drinking water source. For a groundwater discharge to the Great Lakes and their connecting waters or discharge in close proximity to a water supply intake in inland surface waters, the generic GSI criterion shall be the surface water human drinking water value (HDV) listed in the [table in Footnote (X) in R 299.49], except for those HDV indicated with an asterisk. For HDV with an asterisk, the generic GSI criterion shall be the lowest of the HDV, the WV, and the calculated FCV. See formulas in [the table in Footnote (G) in R 299.49]. Soil protection criteria based on the HDV shall be as listed in the [table in Footnote (X) in R 299.49], except for those values with an asterisk. Soil GSI protection criteria based on the HDV shall be as listed in the [table in Footnote (X) in R 299.49], except for those values with an asterisk. Soil GSI protection criteria for compounds with an asterisk shall be the greater of 20 times the GSI criterion or the GSI soil-water partition values using the GSI criteria developed with the procedure described in this footnote.
- (Y) Source size modifiers shown in the [table in Footnote (Y) in R 299.49] shall be used to determine soil inhalation criteria for ambient air when the source size is not one-half acre. The modifier shall be multiplied by the generic soil inhalation criteria shown in the table of generic cleanup criteria to determine the applicable criterion. See Footnote (C) in R 299.49.
- (Z) Mercury is typically measured as total mercury. The generic cleanup criteria, however, are based on data for different species of mercury. Specifically, data for elemental mercury, chemical abstract service (CAS) number 7439976, serve as the basis for the soil volatilization to indoor air criteria, groundwater volatilization to indoor air, and soil inhalation criteria. Data for methyl mercury, CAS number 22967926, serve as the basis for the GSI criterion; and data for mercuric chloride, CAS number 7487947, serve as the basis for the drinking water, groundwater contact, soil direct contact, and the groundwater protection criteria. Comparison to criteria shall be based on species-specific analytical data only if sufficient facility characterization has been conducted to rule out the presence of other species of mercury.
- (AA) Use 10,000 $\mu\text{g}/\text{L}$ where groundwater enters a structure through the use of a water well, sump or other device. Use 28,000 $\mu\text{g}/\text{L}$ for all other uses.
- (BB) The state drinking water standard for asbestos (fibers greater than 10 micrometers in length) is in units of a million fibers per liter of water (MFL). Soil concentrations of asbestos are determined by polarized light microscopy.
- (CC) Groundwater: The generic GSI criteria are based on the toxicity of unionized ammonia (NH_3); the criteria are 29 $\mu\text{g}/\text{L}$ and 53 $\mu\text{g}/\text{L}$ for cold water and warm water surface water, respectively. As a result, the GSI criterion shall be compared to the percent of the total ammonia concentration in the groundwater that will become NH_3 in the surface water. This percent NH_3 is a function of the pH and temperature of the receiving surface water and can be estimated using the [table in Footnote (CC) in R 299.49], taken from Emerson, et al., (Journal of the Fisheries Research Board of Canada, Volume 32(12):2382, 1975). The generic approach for estimating NH_3 assumes a default pH of 8 and default temperatures of 68 °F and 85 °F for cold water and warm water surface water, respectively. The resulting NH_3 is 3.8 percent and 7.2 percent for cold water and warm water, respectively. This default percentage shall be multiplied by the total ammonia-nitrogen ($\text{NH}_3\text{-N}$) concentration in the groundwater and the resulting NH_3 concentration compared to the applicable GSI criterion. As an alternative, the maximum pH and temperature data from the specific receiving surface water can be used to estimate, from the [table in Footnote (CC) in R 299.49], a lower percent unionized ammonia concentration for comparison to the generic GSI.
Soil: The generic soil GSI protection criteria for unionized ammonia are 580 $\mu\text{g}/\text{kg}$ and 1,100 $\mu\text{g}/\text{kg}$ for cold water and warm water surface water, respectively.
- (DD) Hazardous substance causes developmental effects. Residential direct contact criteria are protective of both prenatal and postnatal exposure. Nonresidential direct contact criteria are protective for a pregnant adult receptor.
- (EE) The [values listed in the table in Footnote (EE) in 299.49] are applicable generic GSI criteria as required by Section 20120e of the NREPA.
- (FF) The chloride GSI criterion shall be 125 mg/L when the discharge is to surface waters of the state designated as public water supply sources or 50 mg/L when the discharge is to the Great Lakes or connecting waters. Chloride GSI criteria shall not apply for surface waters of the state that are not designated as a public water supply source, however, the total dissolved solids criterion is applicable.
- (GG) Risk-based criteria are not available for methane due to insufficient toxicity data. An acceptable soil gas concentration (presented for both residential and nonresidential land uses) was derived utilizing 25 percent of the lower explosive level for methane. This equates to 1.25 percent or 8.4E+6 $\mu\text{g}/\text{m}^3$.
- (HH) The residential criterion for sodium is 230,000 $\mu\text{g}/\text{L}$ in accordance with the Sodium Advisory Council recommendation and revised Groundwater Discharge Standards.
- ID Insufficient data to develop criterion.
- NA A criterion or value is not available or, in the case of background and CAS numbers, not applicable.
- NLL Hazardous substance is not likely to leach under most soil conditions.
- NLV Hazardous substance is not likely to volatilize under most conditions.
- $\mu\text{g}/\text{kg}$ Micrograms per kilogram
- $\mu\text{g}/\text{L}$ Micrograms per liter
- NS Not sampled
- BDL Below Laboratory Method Detection Limits
- BOLD** Exceeds highlighted criteria.

Appendix A

Soil Boring Logs

AKT PEERLESS		BORING LOG 2320 West Pierson Road Flint, Michigan AKT Peerless Project No: 11764s-3-20				SB-1 Drawn By: A. Bigler Date: 10/18/2016		
DRILLING COMPANY:		AKT Peerless		WEATHER:		70 °F, Mostly Cloudy		
TECHNICIAN:		Bill Fox		BORING DEPTH:		8'		
DATE DRILLED:		10/17/16		DEPTH TO GW:		NA		
DRILLING METHOD:		Geoprobe		SCREEN INTERVAL:		NA		
FIELD GEOLOGIST:		Aaron Bigler		SCREEN MATERIAL:		NA		
DEPTH FEET	SAMPLE INTERVAL	% RECOVERY	PID VALUE	USCS SOIL CLASS.	COLOR	GEOLOGIC DESCRIPTION	MOISTURE	TEMPORARY WELL DIAGRAM
						Asphalt		
2		90	<0.1	CL	Light Brown	Clay - stiff, trace light gray and yellowish orange mottling throughout	D	
4			<0.1					
6		95	<0.1					
8			<0.1					
10								
12								
14								
16								
18								
20						End of Boring		

		BORING LOG 2320 West Pierson Road Flint, Michigan AKT Peerless Project No: 11764s-3-20				SB-2		
						Drawn By: A. Bigler		
						Date: 10/18/2016		
DRILLING COMPANY: AKT Peerless		WEATHER: 70 °F, Mostly Cloudy						
TECHNICIAN: Bill Fox		BORING DEPTH: 8'						
DATE DRILLED: 10/17/16		DEPTH TO GW: NA						
DRILLING METHOD: Geoprobe		SCREEN INTERVAL: NA						
FIELD GEOLOGIST: Aaron Bigler		SCREEN MATERIAL: NA						
DEPTH FEET	SAMPLE INTERVAL	% RECOVERY	PID VALUE	USCS SOIL CLASS.	COLOR	GEOLOGIC DESCRIPTION	MOISTURE	TEMPORARY WELL DIAGRAM
						Asphalt		
2		95	<0.1	CL	Light Brown	Clay - stiff, trace black mottling	D	
4			<0.1	SC	Olive Gray	Clayey sand - soft to stiff, slight petroleum odor	D	
6		95	<0.1	CL	Light Brown	Clay - stiff	D	
8			<0.1					
						End of Boring		
10								
12								
14								
16								
18								
20								

AKT PEERLESS				BORING LOG 2320 West Pierson Road Flint, Michigan AKT Peerless Project No: 11764s-3-20				SB-3 Drawn By: A. Bigler Date: 10/18/2016	
DRILLING COMPANY:				AKT Peerless		WEATHER:		70 °F, Mostly Cloudy	
TECHNICIAN:				Bill Fox		BORING DEPTH:		8'	
DATE DRILLED:				10/17/16		DEPTH TO GW:		NA	
DRILLING METHOD:				Geoprobe		SCREEN INTERVAL:		NA	
FIELD GEOLOGIST:				Aaron Bigler		SCREEN MATERIAL:		NA	
DEPTH FEET	SAMPLE INTERVAL	% RECOVERY	PID VALUE	USCS SOIL CLASS.	COLOR	GEOLOGIC DESCRIPTION	MOISTURE	TEMPORARY WELL DIAGRAM	
						Asphalt			
2		90	0	CL	Light Brown	Clay - medium stiff to stiff, trace light gray and yellowish orange mottling throughout	D		
			0						
4			0						
6		95	0						
			0						
8									
10									
12									
14									
16									
18									
20									
						End of Boring			

Appendix B

Laboratory Analytical Results



Analytical Laboratory Report

Report ID: S76956.01(01)

Generated on 10/26/2016

Report to

Attention: Jeff Carr
AKT Peerless Environmental
214 Janes
Saginaw, MI 48607

Phone: 989-754-9896 FAX: 989-754-3804

Email: carrj@aktpeerless.com

Report produced by

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Report Summary

Lab Sample ID(s): S76956.01-S76956.05

Project: 11764s - GCLBA / 2320 Pierson

Collected Date: 10/17/2016

Submitted Date/Time: 10/19/2016 16:30

Sampled by: Unknown

P.O. #:

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Maya Murshak
Technical Director



Analytical Laboratory Report

General Report Notes

Analytical results relate only to the samples tested, in the condition received by the laboratory.

Methods may be modified for improved performance.

Results reported on a dry weight basis where applicable.

'Not detected' indicates that parameter was not found at a level equal to or greater than the reporting limit (RL).

40 CFR Part 136 Table II Required Containers, Preservation Techniques and Holding Times for the Clean Water Act specify that samples for acrolein and acrylonitrile need to be preserved at a pH in the range of 4 to 5 or if not preserved, analyzed within 3 days of sampling.

QA/QC corresponding to this analytical report is a separate document with the same Merit ID reference and is available upon request.

Full accreditation certificates are available upon request. Starred (*) analytes are not NELAP accredited.

Samples are held by the lab for 30 days from the final report date unless a written request to hold longer is provided by the client.

Report shall not be reproduced except in full, without the written approval of Merit Laboratories, Inc.

Report Narrative

There is no additional narrative for this analytical report



Analytical Laboratory Report

Laboratory Certifications

Authority	Certification ID
Michigan DEQ	#9956
DOD ELAP/ISO 17025	#69699
WBENC	#2005110032
Ohio VAP	#CL0002
Indiana DOH	#C-MI-07
New York NELAC	#11814
North Carolina DENR	#680
North Carolina DOH	#26702

Qualifier Descriptions

Qualifier	Description
!	Result is outside of stated limit criteria
B	Compound also found in associated method blank
E	Concentration exceeds calibration range
F	Analysis run outside of holding time
G	Estimated result due to extraction run outside of holding time
H	Sample submitted and run outside of holding time
I	Matrix interference with internal standard
J	Estimated value less than reporting limit, but greater than MDL
L	Elevated reporting limit due to low sample amount
M	Result reported to MDL not RDL
O	Analysis performed by outside laboratory. See attached report.
R	Preliminary result
S	Surrogate recovery outside of control limits
T	No correction for total solids
X	Elevated reporting limit due to matrix interference
Y	Elevated reporting limit due to high target concentration
b	Value detected less than reporting limit, but greater than MDL
e	Reported value estimated due to interference
j	Analyte also found in associated method blank
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
x	Preserved from bulk sample

Glossary of Abbreviations

Abbreviation	Description
RL/RDL	Reporting Limit
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
SW	EPA SW 846 (Soil and Wastewater) Methods
E	EPA Methods
SM	Standard Methods



Analytical Laboratory Report

Method Summary

Method	Version
SM2540B	Standard Method 2540 B 20th Edition
SW3050B	SW 846 Method 3050B Revision 2 December 1996
SW3550C	SW 846 Method 3550C Revision 3 February 2007
SW5035A/8260C	SW 846 Method 8260C Revision 3 August 2006 / 5035A Revision 1 July 2002
SW6020A	SW 846 Method 6020A Revision 1 February 2007
SW8270D	SW 846 Method 8270D Revision 4 February 2007



Analytical Laboratory Report

Sample Summary (5 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S76956.01	SB-1	Soil	10/17/16 00:01
S76956.02	SB-2	Soil	10/17/16 00:01
S76956.03	SB-3	Soil	10/17/16 00:01
S76956.04	Dup-1	Soil	10/17/16 00:01
S76956.05	Meth Blank	Methanol	10/17/16 00:01



Analytical Laboratory Report

Lab Sample ID: S76956.01
Sample Tag: SB-1
Collected Date/Time: 10/17/2016 00:01
Matrix: Soil
COC Reference: 92468

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	5.9	IR
1	40ml Glass	MeOH	Yes	5.9	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Tech	CAS #	Flags
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Inorganics

Total Solids*	87	%	1	SM2540B	10/26/16 10:05	JBL		
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Organics - Volatiles

Volatile Organics 5035

Diethyl ether*	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 05:41	JGH	60-29-7	
Acetone*	Not detected	ug/kg	1,000	SW5035A/8260C	10/21/16 05:41	JGH	67-64-1	
Methyl iodide*	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 05:41	JGH	74-88-4	
Carbon disulfide*	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 05:41	JGH	75-15-0	
tert-Methyl butyl ether (MTBE)*	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 05:41	JGH	1634-04-4	
Acrylonitrile	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 05:41	JGH	107-13-1	
2-Butanone (MEK)*	Not detected	ug/kg	960	SW5035A/8260C	10/21/16 05:41	JGH	78-93-3	
Dichlorodifluoromethane	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 05:41	JGH	75-71-8	
Chloromethane	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 05:41	JGH	74-87-3	
Vinyl chloride	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:41	JGH	75-01-4	
Bromomethane	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 05:41	JGH	74-83-9	
Chloroethane	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 05:41	JGH	75-00-3	
Trichlorofluoromethane	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 05:41	JGH	75-69-4	
1,1-Dichloroethene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:41	JGH	75-35-4	
Methylene chloride	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 05:41	JGH	75-09-2	
trans-1,2-Dichloroethene*	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:41	JGH	156-60-5	
1,1-Dichloroethane	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:41	JGH	75-34-3	
cis-1,2-Dichloroethene*	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:41	JGH	156-59-2	
Tetrahydrofuran*	Not detected	ug/kg	1,000	SW5035A/8260C	10/21/16 05:41	JGH	109-99-9	
Chloroform	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:41	JGH	67-66-3	
Bromochloromethane	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 05:41	JGH	74-97-5	
1,1,1-Trichloroethane	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:41	JGH	71-55-6	
4-Methyl-2-pentanone (MIBK)*	Not detected	ug/kg	3,000	SW5035A/8260C	10/21/16 05:41	JGH	108-10-1	
2-Hexanone*	Not detected	ug/kg	3,000	SW5035A/8260C	10/21/16 05:41	JGH	591-78-6	
Carbon tetrachloride	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:41	JGH	56-23-5	
Benzene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:41	JGH	71-43-2	
1,2-Dichloroethane	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:41	JGH	107-06-2	
Trichloroethene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:41	JGH	79-01-6	
1,2-Dichloropropane	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:41	JGH	78-87-5	
Bromodichloromethane	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 05:41	JGH	75-27-4	
Dibromomethane	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 05:41	JGH	74-95-3	
cis-1,3-Dichloropropene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:41	JGH	10061-01-5	
Toluene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:41	JGH	108-88-3	
trans-1,3-Dichloropropene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:41	JGH	10061-02-6	
1,1,2-Trichloroethane	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:41	JGH	79-00-5	
Tetrachloroethene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:41	JGH	127-18-4	
trans-1,4-Dichloro-2-butene*	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:41	JGH	110-57-6	
Dibromochloromethane	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 05:41	JGH	124-48-1	



Analytical Laboratory Report

Lab Sample ID: S76956.01 (continued)

Sample Tag: SB-1

Analysis	Results	Units	RL	Method	Run Date/Time	Tech	CAS #	Flags
Organics - Volatiles (continued)								
Volatile Organics 5035 (continued)								
1,2-Dibromoethane*	Not detected	ug/kg	30	SW5035A/8260C	10/21/16 05:41	JGH	106-93-4	M
Chlorobenzene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:41	JGH	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 05:41	JGH	630-20-6	
Ethylbenzene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:41	JGH	100-41-4	
p,m-Xylene*	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 05:41	JGH		
o-Xylene*	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:41	JGH	95-47-6	
Styrene*	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:41	JGH	100-42-5	
Isopropylbenzene	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 05:41	JGH	98-82-8	
Bromoform*	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 05:41	JGH	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:41	JGH	79-34-5	
1,2,3-Trichloropropane*	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 05:41	JGH	96-18-4	
n-Propylbenzene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:41	JGH	103-65-1	
Bromobenzene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 05:41	JGH	108-86-1	
1,3,5-Trimethylbenzene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:41	JGH	108-67-8	
tert-Butylbenzene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:41	JGH	98-06-6	
1,2,4-Trimethylbenzene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:41	JGH	95-63-6	
sec-Butylbenzene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:41	JGH	135-98-8	
p-Isopropyltoluene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 05:41	JGH	99-87-6	
1,3-Dichlorobenzene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 05:41	JGH	541-73-1	
1,4-Dichlorobenzene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 05:41	JGH	106-46-7	
1,2-Dichlorobenzene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 05:41	JGH	95-50-1	
1,2,3-Trimethylbenzene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:41	JGH	526-73-8	
n-Butylbenzene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 05:41	JGH	104-51-8	
Hexachloroethane	Not detected	ug/kg	400	SW5035A/8260C	10/21/16 05:41	JGH	67-72-1	
1,2-Dibromo-3-chloropropane*	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 05:41	JGH	96-12-8	
1,2,4-Trichlorobenzene	Not detected	ug/kg	420	SW5035A/8260C	10/21/16 05:41	JGH	120-82-1	
1,2,3-Trichlorobenzene	Not detected	ug/kg	420	SW5035A/8260C	10/21/16 05:41	JGH	87-61-6	
Naphthalene	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 05:41	JGH	91-20-3	
2-Methylnaphthalene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 05:41	JGH	91-57-6	

M-Result reported to MDL not RDL



Analytical Laboratory Report

Lab Sample ID: S76956.02
Sample Tag: SB-2
Collected Date/Time: 10/17/2016 00:01
Matrix: Soil
COC Reference: 92468

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	5.9	IR
1	40ml Glass	MeOH	Yes	5.9	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Tech	CAS #	Flags
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Extraction / Prep.

Metal Digestion	Completed			SW3050B	10/26/16 10:30	PER		
PNA Extraction	Completed			SW3550C	10/25/16 14:35	EMR		

Inorganics

Total Solids*	83	%	1	SM2540B	10/20/16 15:30	WAR		
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Metals

Cadmium	0.45	mg/kg	0.20	SW6020A	10/26/16 13:59	PER	7440-43-9	
Chromium	16.4	mg/kg	0.50	SW6020A	10/26/16 13:59	PER	7440-47-3	
Lead	62.3	mg/kg	0.20	SW6020A	10/26/16 13:59	PER	7439-92-1	

Organics - Semi-Volatiles

Polynuclear Aromatics

Acenaphthene	Not detected	ug/kg	300	SW8270D	10/26/16 03:15	PL	83-32-9	
Acenaphthylene	Not detected	ug/kg	300	SW8270D	10/26/16 03:15	PL	208-96-8	
Anthracene	Not detected	ug/kg	300	SW8270D	10/26/16 03:15	PL	120-12-7	
Benzo(a)anthracene	Not detected	ug/kg	300	SW8270D	10/26/16 03:15	PL	56-55-3	
Benzo(a)pyrene	Not detected	ug/kg	300	SW8270D	10/26/16 03:15	PL	50-32-8	
Benzo(b)fluoranthene	Not detected	ug/kg	300	SW8270D	10/26/16 03:15	PL	205-99-2	
Benzo(k)fluoranthene	Not detected	ug/kg	300	SW8270D	10/26/16 03:15	PL	207-08-9	
Benzo(ghi)perylene	Not detected	ug/kg	300	SW8270D	10/26/16 03:15	PL	191-24-2	
Chrysene	Not detected	ug/kg	300	SW8270D	10/26/16 03:15	PL	218-01-9	
Dibenzo(ah)anthracene	Not detected	ug/kg	300	SW8270D	10/26/16 03:15	PL	53-70-3	
Fluoranthene	Not detected	ug/kg	300	SW8270D	10/26/16 03:15	PL	206-44-0	
Fluorene	Not detected	ug/kg	300	SW8270D	10/26/16 03:15	PL	86-73-7	
Indeno(1,2,3-cd)pyrene	Not detected	ug/kg	300	SW8270D	10/26/16 03:15	PL	193-39-5	
Naphthalene	Not detected	ug/kg	300	SW8270D	10/26/16 03:15	PL	91-20-3	
Phenanthrene	Not detected	ug/kg	300	SW8270D	10/26/16 03:15	PL	85-01-8	
Pyrene	Not detected	ug/kg	300	SW8270D	10/26/16 03:15	PL	129-00-0	
2-Methylnaphthalene	Not detected	ug/kg	300	SW8270D	10/26/16 03:15	PL	91-57-6	
1-Methylnaphthalene	Not detected	ug/kg	300	SW8270D	10/26/16 03:15	PL	90-12-0	

Organics - Volatiles

Volatile Organics 5035

Diethyl ether*	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 06:01	JGH	60-29-7	
Acetone*	Not detected	ug/kg	1,000	SW5035A/8260C	10/21/16 06:01	JGH	67-64-1	
Methyl iodide*	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 06:01	JGH	74-88-4	
Carbon disulfide*	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 06:01	JGH	75-15-0	
tert-Methyl butyl ether (MTBE)*	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 06:01	JGH	1634-04-4	
Acrylonitrile	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 06:01	JGH	107-13-1	
2-Butanone (MEK)*	Not detected	ug/kg	1,000	SW5035A/8260C	10/21/16 06:01	JGH	78-93-3	
Dichlorodifluoromethane	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 06:01	JGH	75-71-8	



Analytical Laboratory Report

Lab Sample ID: S76956.02 (continued)

Sample Tag: SB-2

Analysis	Results	Units	RL	Method	Run Date/Time	Tech	CAS #	Flags
Organics - Volatiles (continued)								
Volatile Organics 5035 (continued)								
Chloromethane	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 06:01	JGH	74-87-3	
Vinyl chloride	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:01	JGH	75-01-4	
Bromomethane	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 06:01	JGH	74-83-9	
Chloroethane	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 06:01	JGH	75-00-3	
Trichlorofluoromethane	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 06:01	JGH	75-69-4	
1,1-Dichloroethene	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:01	JGH	75-35-4	
Methylene chloride	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 06:01	JGH	75-09-2	
trans-1,2-Dichloroethene*	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:01	JGH	156-60-5	
1,1-Dichloroethane	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:01	JGH	75-34-3	
cis-1,2-Dichloroethene*	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:01	JGH	156-59-2	
Tetrahydrofuran*	Not detected	ug/kg	1,000	SW5035A/8260C	10/21/16 06:01	JGH	109-99-9	
Chloroform	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:01	JGH	67-66-3	
Bromochloromethane	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 06:01	JGH	74-97-5	
1,1,1-Trichloroethane	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:01	JGH	71-55-6	
4-Methyl-2-pentanone (MIBK)*	Not detected	ug/kg	3,000	SW5035A/8260C	10/21/16 06:01	JGH	108-10-1	
2-Hexanone*	Not detected	ug/kg	3,000	SW5035A/8260C	10/21/16 06:01	JGH	591-78-6	
Carbon tetrachloride	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:01	JGH	56-23-5	
Benzene	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:01	JGH	71-43-2	
1,2-Dichloroethane	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:01	JGH	107-06-2	
Trichloroethene	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:01	JGH	79-01-6	
1,2-Dichloropropane	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:01	JGH	78-87-5	
Bromodichloromethane	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 06:01	JGH	75-27-4	
Dibromomethane	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 06:01	JGH	74-95-3	
cis-1,3-Dichloropropene	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:01	JGH	10061-01-5	
Toluene	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:01	JGH	108-88-3	
trans-1,3-Dichloropropene	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:01	JGH	10061-02-6	
1,1,2-Trichloroethane	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:01	JGH	79-00-5	
Tetrachloroethene	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:01	JGH	127-18-4	
trans-1,4-Dichloro-2-butene*	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:01	JGH	110-57-6	
Dibromochloromethane	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 06:01	JGH	124-48-1	
1,2-Dibromoethane*	Not detected	ug/kg	30	SW5035A/8260C	10/21/16 06:01	JGH	106-93-4	M
Chlorobenzene	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:01	JGH	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 06:01	JGH	630-20-6	
Ethylbenzene	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:01	JGH	100-41-4	
p,m-Xylene*	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 06:01	JGH		
o-Xylene*	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:01	JGH	95-47-6	
Styrene*	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:01	JGH	100-42-5	
Isopropylbenzene	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 06:01	JGH	98-82-8	
Bromoform*	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 06:01	JGH	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:01	JGH	79-34-5	
1,2,3-Trichloropropane*	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 06:01	JGH	96-18-4	
n-Propylbenzene	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:01	JGH	103-65-1	
Bromobenzene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 06:01	JGH	108-86-1	
1,3,5-Trimethylbenzene	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:01	JGH	108-67-8	
tert-Butylbenzene	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:01	JGH	98-06-6	
1,2,4-Trimethylbenzene	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:01	JGH	95-63-6	
sec-Butylbenzene	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:01	JGH	135-98-8	
p-Isopropyltoluene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 06:01	JGH	99-87-6	

M-Result reported to MDL not RDL



Analytical Laboratory Report

Lab Sample ID: S76956.02 (continued)

Sample Tag: SB-2

Analysis	Results	Units	RL	Method	Run Date/Time	Tech	CAS #	Flags
Organics - Volatiles (continued)								
Volatile Organics 5035 (continued)								
1,3-Dichlorobenzene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 06:01	JGH	541-73-1	
1,4-Dichlorobenzene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 06:01	JGH	106-46-7	
1,2-Dichlorobenzene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 06:01	JGH	95-50-1	
1,2,3-Trimethylbenzene	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:01	JGH	526-73-8	
n-Butylbenzene	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:01	JGH	104-51-8	
Hexachloroethane	Not detected	ug/kg	400	SW5035A/8260C	10/21/16 06:01	JGH	67-72-1	
1,2-Dibromo-3-chloropropane*	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 06:01	JGH	96-12-8	
1,2,4-Trichlorobenzene	Not detected	ug/kg	440	SW5035A/8260C	10/21/16 06:01	JGH	120-82-1	
1,2,3-Trichlorobenzene	Not detected	ug/kg	440	SW5035A/8260C	10/21/16 06:01	JGH	87-61-6	
Naphthalene	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 06:01	JGH	91-20-3	
2-Methylnaphthalene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 06:01	JGH	91-57-6	



Analytical Laboratory Report

Lab Sample ID: S76956.03
Sample Tag: SB-3
Collected Date/Time: 10/17/2016 00:01
Matrix: Soil
COC Reference: 92468

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	5.9	IR
1	40ml Glass	MeOH	Yes	5.9	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Tech	CAS #	Flags
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Extraction / Prep.

Metal Digestion	Completed			SW3050B	10/26/16 10:30	PER		
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Inorganics

Total Solids*	87	%	1	SM2540B	10/20/16 15:30	WAR		
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Metals

Cadmium	Not detected	mg/kg	0.20	SW6020A	10/26/16 14:00	PER	7440-43-9	
Chromium	12.8	mg/kg	0.50	SW6020A	10/26/16 14:00	PER	7440-47-3	
Lead	8.93	mg/kg	0.20	SW6020A	10/26/16 14:00	PER	7439-92-1	

Organics - Volatiles

Volatile Organics 5035

Diethyl ether*	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 06:21	JGH	60-29-7	
Acetone*	Not detected	ug/kg	1,000	SW5035A/8260C	10/21/16 06:21	JGH	67-64-1	
Methyl iodide*	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 06:21	JGH	74-88-4	
Carbon disulfide*	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 06:21	JGH	75-15-0	
tert-Methyl butyl ether (MTBE)*	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 06:21	JGH	1634-04-4	
Acrylonitrile	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 06:21	JGH	107-13-1	
2-Butanone (MEK)*	Not detected	ug/kg	940	SW5035A/8260C	10/21/16 06:21	JGH	78-93-3	
Dichlorodifluoromethane	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 06:21	JGH	75-71-8	
Chloromethane	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 06:21	JGH	74-87-3	
Vinyl chloride	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 06:21	JGH	75-01-4	
Bromomethane	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 06:21	JGH	74-83-9	
Chloroethane	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 06:21	JGH	75-00-3	
Trichlorofluoromethane	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 06:21	JGH	75-69-4	
1,1-Dichloroethene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 06:21	JGH	75-35-4	
Methylene chloride	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 06:21	JGH	75-09-2	
trans-1,2-Dichloroethene*	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 06:21	JGH	156-60-5	
1,1-Dichloroethane	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 06:21	JGH	75-34-3	
cis-1,2-Dichloroethene*	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 06:21	JGH	156-59-2	
Tetrahydrofuran*	Not detected	ug/kg	1,000	SW5035A/8260C	10/21/16 06:21	JGH	109-99-9	
Chloroform	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 06:21	JGH	67-66-3	
Bromochloromethane	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 06:21	JGH	74-97-5	
1,1,1-Trichloroethane	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 06:21	JGH	71-55-6	
4-Methyl-2-pentanone (MIBK)*	Not detected	ug/kg	3,000	SW5035A/8260C	10/21/16 06:21	JGH	108-10-1	
2-Hexanone*	Not detected	ug/kg	3,000	SW5035A/8260C	10/21/16 06:21	JGH	591-78-6	
Carbon tetrachloride	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 06:21	JGH	56-23-5	
Benzene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 06:21	JGH	71-43-2	
1,2-Dichloroethane	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 06:21	JGH	107-06-2	
Trichloroethene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 06:21	JGH	79-01-6	
1,2-Dichloropropane	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 06:21	JGH	78-87-5	
Bromodichloromethane	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 06:21	JGH	75-27-4	



Analytical Laboratory Report

Lab Sample ID: S76956.03 (continued)

Sample Tag: SB-3

Analysis	Results	Units	RL	Method	Run Date/Time	Tech	CAS #	Flags
Organics - Volatiles (continued)								
Volatile Organics 5035 (continued)								
Dibromomethane	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 06:21	JGH	74-95-3	
cis-1,3-Dichloropropene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 06:21	JGH	10061-01-5	
Toluene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 06:21	JGH	108-88-3	
trans-1,3-Dichloropropene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 06:21	JGH	10061-02-6	
1,1,2-Trichloroethane	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 06:21	JGH	79-00-5	
Tetrachloroethene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 06:21	JGH	127-18-4	
trans-1,4-Dichloro-2-butene*	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 06:21	JGH	110-57-6	
Dibromochloromethane	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 06:21	JGH	124-48-1	
1,2-Dibromoethane*	Not detected	ug/kg	30	SW5035A/8260C	10/21/16 06:21	JGH	106-93-4	M
Chlorobenzene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 06:21	JGH	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 06:21	JGH	630-20-6	
Ethylbenzene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 06:21	JGH	100-41-4	
p,m-Xylene*	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 06:21	JGH		
o-Xylene*	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 06:21	JGH	95-47-6	
Styrene*	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 06:21	JGH	100-42-5	
Isopropylbenzene	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 06:21	JGH	98-82-8	
Bromoform*	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 06:21	JGH	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 06:21	JGH	79-34-5	
1,2,3-Trichloropropane*	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 06:21	JGH	96-18-4	
n-Propylbenzene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 06:21	JGH	103-65-1	
Bromobenzene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 06:21	JGH	108-86-1	
1,3,5-Trimethylbenzene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 06:21	JGH	108-67-8	
tert-Butylbenzene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 06:21	JGH	98-06-6	
1,2,4-Trimethylbenzene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 06:21	JGH	95-63-6	
sec-Butylbenzene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 06:21	JGH	135-98-8	
p-Isopropyltoluene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 06:21	JGH	99-87-6	
1,3-Dichlorobenzene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 06:21	JGH	541-73-1	
1,4-Dichlorobenzene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 06:21	JGH	106-46-7	
1,2-Dichlorobenzene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 06:21	JGH	95-50-1	
1,2,3-Trimethylbenzene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 06:21	JGH	526-73-8	
n-Butylbenzene	Not detected	ug/kg	60	SW5035A/8260C	10/21/16 06:21	JGH	104-51-8	
Hexachloroethane	Not detected	ug/kg	400	SW5035A/8260C	10/21/16 06:21	JGH	67-72-1	
1,2-Dibromo-3-chloropropane*	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 06:21	JGH	96-12-8	
1,2,4-Trichlorobenzene	Not detected	ug/kg	410	SW5035A/8260C	10/21/16 06:21	JGH	120-82-1	
1,2,3-Trichlorobenzene	Not detected	ug/kg	410	SW5035A/8260C	10/21/16 06:21	JGH	87-61-6	
Naphthalene	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 06:21	JGH	91-20-3	
2-Methylnaphthalene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 06:21	JGH	91-57-6	

M-Result reported to MDL not RDL



Analytical Laboratory Report

Lab Sample ID: S76956.04
Sample Tag: Dup-1
Collected Date/Time: 10/17/2016 00:01
Matrix: Soil
COC Reference: 92468

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	5.9	IR
1	40ml Glass	MeOH	Yes	5.9	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Tech	CAS #	Flags
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Inorganics

Total Solids*	86	%	1	SM2540B	10/20/16 15:30	WAR		
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Organics - Volatiles

Volatile Organics 5035

Diethyl ether*	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 06:41	JGH	60-29-7	
Acetone*	Not detected	ug/kg	1,000	SW5035A/8260C	10/21/16 06:41	JGH	67-64-1	
Methyl iodide*	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 06:41	JGH	74-88-4	
Carbon disulfide*	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 06:41	JGH	75-15-0	
tert-Methyl butyl ether (MTBE)*	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 06:41	JGH	1634-04-4	
Acrylonitrile	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 06:41	JGH	107-13-1	
2-Butanone (MEK)*	Not detected	ug/kg	980	SW5035A/8260C	10/21/16 06:41	JGH	78-93-3	
Dichlorodifluoromethane	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 06:41	JGH	75-71-8	
Chloromethane	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 06:41	JGH	74-87-3	
Vinyl chloride	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:41	JGH	75-01-4	
Bromomethane	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 06:41	JGH	74-83-9	
Chloroethane	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 06:41	JGH	75-00-3	
Trichlorofluoromethane	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 06:41	JGH	75-69-4	
1,1-Dichloroethene	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:41	JGH	75-35-4	
Methylene chloride	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 06:41	JGH	75-09-2	
trans-1,2-Dichloroethene*	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:41	JGH	156-60-5	
1,1-Dichloroethane	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:41	JGH	75-34-3	
cis-1,2-Dichloroethene*	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:41	JGH	156-59-2	
Tetrahydrofuran*	Not detected	ug/kg	1,000	SW5035A/8260C	10/21/16 06:41	JGH	109-99-9	
Chloroform	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:41	JGH	67-66-3	
Bromochloromethane	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 06:41	JGH	74-97-5	
1,1,1-Trichloroethane	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:41	JGH	71-55-6	
4-Methyl-2-pentanone (MIBK)*	Not detected	ug/kg	3,000	SW5035A/8260C	10/21/16 06:41	JGH	108-10-1	
2-Hexanone*	Not detected	ug/kg	3,000	SW5035A/8260C	10/21/16 06:41	JGH	591-78-6	
Carbon tetrachloride	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:41	JGH	56-23-5	
Benzene	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:41	JGH	71-43-2	
1,2-Dichloroethane	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:41	JGH	107-06-2	
Trichloroethene	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:41	JGH	79-01-6	
1,2-Dichloropropane	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:41	JGH	78-87-5	
Bromodichloromethane	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 06:41	JGH	75-27-4	
Dibromomethane	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 06:41	JGH	74-95-3	
cis-1,3-Dichloropropene	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:41	JGH	10061-01-5	
Toluene	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:41	JGH	108-88-3	
trans-1,3-Dichloropropene	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:41	JGH	10061-02-6	
1,1,2-Trichloroethane	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:41	JGH	79-00-5	
Tetrachloroethene	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:41	JGH	127-18-4	
trans-1,4-Dichloro-2-butene*	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:41	JGH	110-57-6	
Dibromochloromethane	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 06:41	JGH	124-48-1	



Analytical Laboratory Report

Lab Sample ID: S76956.04 (continued)

Sample Tag: Dup-1

Analysis	Results	Units	RL	Method	Run Date/Time	Tech	CAS #	Flags
Organics - Volatiles (continued)								
Volatile Organics 5035 (continued)								
1,2-Dibromoethane*	Not detected	ug/kg	30	SW5035A/8260C	10/21/16 06:41	JGH	106-93-4	M
Chlorobenzene	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:41	JGH	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 06:41	JGH	630-20-6	
Ethylbenzene	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:41	JGH	100-41-4	
p,m-Xylene*	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 06:41	JGH		
o-Xylene*	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:41	JGH	95-47-6	
Styrene*	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:41	JGH	100-42-5	
Isopropylbenzene	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 06:41	JGH	98-82-8	
Bromoform*	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 06:41	JGH	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:41	JGH	79-34-5	
1,2,3-Trichloropropane*	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 06:41	JGH	96-18-4	
n-Propylbenzene	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:41	JGH	103-65-1	
Bromobenzene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 06:41	JGH	108-86-1	
1,3,5-Trimethylbenzene	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:41	JGH	108-67-8	
tert-Butylbenzene	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:41	JGH	98-06-6	
1,2,4-Trimethylbenzene	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:41	JGH	95-63-6	
sec-Butylbenzene	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:41	JGH	135-98-8	
p-Isopropyltoluene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 06:41	JGH	99-87-6	
1,3-Dichlorobenzene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 06:41	JGH	541-73-1	
1,4-Dichlorobenzene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 06:41	JGH	106-46-7	
1,2-Dichlorobenzene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 06:41	JGH	95-50-1	
1,2,3-Trimethylbenzene	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:41	JGH	526-73-8	
n-Butylbenzene	Not detected	ug/kg	70	SW5035A/8260C	10/21/16 06:41	JGH	104-51-8	
Hexachloroethane	Not detected	ug/kg	400	SW5035A/8260C	10/21/16 06:41	JGH	67-72-1	
1,2-Dibromo-3-chloropropane*	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 06:41	JGH	96-12-8	
1,2,4-Trichlorobenzene	Not detected	ug/kg	430	SW5035A/8260C	10/21/16 06:41	JGH	120-82-1	
1,2,3-Trichlorobenzene	Not detected	ug/kg	430	SW5035A/8260C	10/21/16 06:41	JGH	87-61-6	
Naphthalene	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 06:41	JGH	91-20-3	
2-Methylnaphthalene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 06:41	JGH	91-57-6	

M-Result reported to MDL not RDL



Analytical Laboratory Report

Lab Sample ID: S76956.05
Sample Tag: Meth Blank
Collected Date/Time: 10/17/2016 00:01
Matrix: Methanol
COC Reference: 92468

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	40ml Glass	MeOH	Yes	5.9	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Tech	CAS #	Flags
Organics - Volatiles								
Volatile Organics 5035								
Diethyl ether*	Not detected	ug/kg	200	SW5035A/8260C	10/21/16 01:19	JGH	60-29-7	
Acetone*	Not detected	ug/kg	1,000	SW5035A/8260C	10/21/16 01:19	JGH	67-64-1	
Methyl iodide*	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 01:19	JGH	74-88-4	
Carbon disulfide*	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 01:19	JGH	75-15-0	
tert-Methyl butyl ether (MTBE)*	Not detected	ug/kg	200	SW5035A/8260C	10/21/16 01:19	JGH	1634-04-4	
Acrylonitrile	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 01:19	JGH	107-13-1	
2-Butanone (MEK)*	Not detected	ug/kg	750	SW5035A/8260C	10/21/16 01:19	JGH	78-93-3	
Dichlorodifluoromethane	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 01:19	JGH	75-71-8	
Chloromethane	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 01:19	JGH	74-87-3	
Vinyl chloride	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 01:19	JGH	75-01-4	
Bromomethane	Not detected	ug/kg	200	SW5035A/8260C	10/21/16 01:19	JGH	74-83-9	
Chloroethane	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 01:19	JGH	75-00-3	
Trichlorofluoromethane	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 01:19	JGH	75-69-4	
1,1-Dichloroethene	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 01:19	JGH	75-35-4	
Methylene chloride	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 01:19	JGH	75-09-2	
trans-1,2-Dichloroethene*	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 01:19	JGH	156-60-5	
1,1-Dichloroethane	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 01:19	JGH	75-34-3	
cis-1,2-Dichloroethene*	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 01:19	JGH	156-59-2	
Tetrahydrofuran*	Not detected	ug/kg	1,000	SW5035A/8260C	10/21/16 01:19	JGH	109-99-9	
Chloroform	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 01:19	JGH	67-66-3	
Bromochloromethane	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 01:19	JGH	74-97-5	
1,1,1-Trichloroethane	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 01:19	JGH	71-55-6	
4-Methyl-2-pentanone (MIBK)*	Not detected	ug/kg	3,000	SW5035A/8260C	10/21/16 01:19	JGH	108-10-1	
2-Hexanone*	Not detected	ug/kg	3,000	SW5035A/8260C	10/21/16 01:19	JGH	591-78-6	
Carbon tetrachloride	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 01:19	JGH	56-23-5	
Benzene	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 01:19	JGH	71-43-2	
1,2-Dichloroethane	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 01:19	JGH	107-06-2	
Trichloroethene	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 01:19	JGH	79-01-6	
1,2-Dichloropropane	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 01:19	JGH	78-87-5	
Bromodichloromethane	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 01:19	JGH	75-27-4	
Dibromomethane	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 01:19	JGH	74-95-3	
cis-1,3-Dichloropropene	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 01:19	JGH	10061-01-5	
Toluene	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 01:19	JGH	108-88-3	
trans-1,3-Dichloropropene	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 01:19	JGH	10061-02-6	
1,1,2-Trichloroethane	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 01:19	JGH	79-00-5	
Tetrachloroethene	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 01:19	JGH	127-18-4	
trans-1,4-Dichloro-2-butene*	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 01:19	JGH	110-57-6	
Dibromochloromethane	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 01:19	JGH	124-48-1	
1,2-Dibromoethane*	Not detected	ug/kg	20	SW5035A/8260C	10/21/16 01:19	JGH	106-93-4	M
Chlorobenzene	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 01:19	JGH	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 01:19	JGH	630-20-6	

M-Result reported to MDL not RDL



Analytical Laboratory Report

Lab Sample ID: S76956.05 (continued)

Sample Tag: Meth Blank

Analysis	Results	Units	RL	Method	Run Date/Time	Tech	CAS #	Flags
Organics - Volatiles (continued)								
Volatile Organics 5035 (continued)								
Ethylbenzene	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 01:19	JGH	100-41-4	
p,m-Xylene*	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 01:19	JGH		
o-Xylene*	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 01:19	JGH	95-47-6	
Styrene*	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 01:19	JGH	100-42-5	
Isopropylbenzene	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 01:19	JGH	98-82-8	
Bromoform*	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 01:19	JGH	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 01:19	JGH	79-34-5	
1,2,3-Trichloropropane*	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 01:19	JGH	96-18-4	
n-Propylbenzene	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 01:19	JGH	103-65-1	
Bromobenzene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 01:19	JGH	108-86-1	
1,3,5-Trimethylbenzene	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 01:19	JGH	108-67-8	
tert-Butylbenzene	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 01:19	JGH	98-06-6	
1,2,4-Trimethylbenzene	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 01:19	JGH	95-63-6	
sec-Butylbenzene	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 01:19	JGH	135-98-8	
p-Isopropyltoluene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 01:19	JGH	99-87-6	
1,3-Dichlorobenzene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 01:19	JGH	541-73-1	
1,4-Dichlorobenzene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 01:19	JGH	106-46-7	
1,2-Dichlorobenzene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 01:19	JGH	95-50-1	
1,2,3-Trimethylbenzene	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 01:19	JGH	526-73-8	
n-Butylbenzene	Not detected	ug/kg	50	SW5035A/8260C	10/21/16 01:19	JGH	104-51-8	
Hexachloroethane	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 01:19	JGH	67-72-1	
1,2-Dibromo-3-chloropropane*	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 01:19	JGH	96-12-8	
1,2,4-Trichlorobenzene	Not detected	ug/kg	330	SW5035A/8260C	10/21/16 01:19	JGH	120-82-1	
1,2,3-Trichlorobenzene	Not detected	ug/kg	330	SW5035A/8260C	10/21/16 01:19	JGH	87-61-6	
Naphthalene	Not detected	ug/kg	300	SW5035A/8260C	10/21/16 01:19	JGH	91-20-3	
2-Methylnaphthalene	Not detected	ug/kg	100	SW5035A/8260C	10/21/16 01:19	JGH	91-57-6	



C.O.C. PAGE # 1 OF 1

92468

CHAIN OF CUSTODY RECORD

INVOICE TO

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE

APPENDIX D

PREVAILING WAGE POLICY

GENESEEE COUNTY POLICIES PREVAILING WAGE POLICY

1. Every contract executed with the County of Genesee or with a contracting agent must contain express terms as follows:

a. That the rates of wages and fringe benefits to be paid to each class of construction mechanics by the contractor and all of his subcontractors, on the project which is the subject of the contract, shall not be less than the wage and fringe benefits currently prevailing in the County of Genesee.

b. That the contractor and all of his subcontractors shall not discriminate against any employee or applicant for employment with respect to hire, tenure, terms, conditions, or privileges of employment because of race, color, religion, national origin, ancestry, sex, or age.

2. Each contracting agent, before awarding any contract, shall determine the schedule of prevailing wages and fringe benefits for all classes of construction mechanics called for in the contract. Such wages and fringe benefits shall be those prevailing in the County of Genesee, on projects of a character similar to that being contracted, under collective agreements or understandings between bona fide organizations or construction mechanics and their employers. Such agreements and understandings, to meet the requirements of this section, shall not be controlled in any way by either an employee or employer organization. Such schedule of prevailing rates or wages and fringe benefits shall be made a part of the specifications for the work to be performed. Such schedule may be the minimum wage and fringe benefit scale for Genesee County compiled and published by the Building and Construction Trades Department of the AFL-CIO.

3. Every contractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates prescribed in the contract and shall keep an accurate record showing the names and occupation of, and actual wages and benefits paid to, each construction mechanic employed by him in connection with said contract.

4. If the contractor or subcontractor is in default in the performance of the covenants set forth in paragraph 1 above, the contracting agent shall proceed to enforce said covenants, and upon the failure of the contractor or subcontractor to abide by said covenants, the contracting agent shall proceed with its remedies as provided by state and federal law.

5. Any interested party may challenge the performance of the contractor or subcontractor of the covenants of paragraph 2 above by filing a written complaint with the contracting agent. The contracting agent shall then conduct an investigation, which may include a public hearing, to determine whether it will proceed as provided in paragraph 4 above.

6. As used herein,

a. "Contracting agent" means any officer, board, commission, or organization which receives directly or indirectly monies or properties from or on behalf of the County of Genesee, including without limitation a lessee or sub-lessee of land owned by Genesee County.

b. "Contract" means any agreement, as a result of competitive Proposals or otherwise, for new construction, alteration, repair, installation, painting, decorating, completion, demolition, conditioning, reconditioning, or improvement of public buildings, works, bridges, highways or roads, which is to be performed in Genesee County and either on County of Genesee property or financed by or through the County of Genesee.

c. "Construction mechanic" means any skilled or unskilled mechanic, laborer, worker, helper, assistant, apprentice or driver, but shall not include executive, administrative, professional, office, or custodial employees, and shall not include Genesee County employees who are working pursuant to a collective bargaining agreement between said County and a bona fide labor organization.

7. Contracts which contain provisions requiring the payment of prevailing wages as determined by the United States Secretary of Labor pursuant to the Federal Davis-Bacon Act (United States Code, title 40, section 276a et seq.) or which contain provisions requiring the payment of prevailing wages as determined by the Department of Labor pursuant to P.A. 166 of 1965, as amended, MCL 408.551 et seq., or which contain minimum wage schedules which are the same as prevailing wages in the locality as determined by collective bargaining agreements or understandings between bona fide organizations or construction mechanics and their employers, are exempt from the provisions of this resolution.

8. Any lease of property owned by Genesee County shall include a provision that new construction, alteration, repair, installation, painting, decorating, completion, demolition, conditioning, reconditioning, or improvement of buildings, works, bridges, highways, or roads on such property shall be considered work on public buildings, works, bridges, highways, or roads, within the meaning or provision 6(b) of this resolution and that the lessee or any sub-lessee will be bound by the provisions of this resolution.

9. It is the intent of this Board of Commissioners that every contracting agent shall adopt the preceding paragraphs of this resolution.

10. The Genesee County Purchasing Agent, the Genesee County Controller, and the Genesee County Chief Engineer, are hereby directed to effectuate this resolution, on behalf of this Board, within their respective spheres of responsibility.

11. The Genesee County Clerk is hereby directed to forward to each Genesee County board, commission, elected official, agency, and department, a copy of this resolution and a notation of the adoption of same.

12. The previous resolution of this Board concerning payment of prevailing wages, as adopted on June 23, 1969, and as set forth as pages 337 through 339 of the compiled 1969 Proceedings of this Board, is hereby rescinded."

Resol. #79-558

Approved 10/23/79

forms2\prevwage

5/94

2017 Prevailing Wage Rates for State Funded Projects**Unofficial Rates For Informational Purposes Only****Genesee County**

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<u>Classification</u>		Straight	Time and	Double	Overtime Provision
Name	Description	Hourly	a Half	Time	
Asbestos, Lead and Mold Abatement Laborer					
Asbestos, Lead and Mold Abatement Laborer 4 ten hour days @ straight time allowed Monday-Saturday, must be consecutive calendar days	MLDC	\$41.25	\$55.00	\$68.75	H H H X X X D Y
Asbestos, Lead and Mold Abatement, Hazardous Material Handler					
Asbestos, Lead and Mold Abatement, Hazardous Material Handler 4 ten hour days @ straight time allowed Monday-Saturday, must be consecutive calendar days	AS207	\$40.75	\$54.25	\$67.75	H H H X X X D Y
Boilermaker					
Boilermaker	BO169	\$54.70	\$81.08	\$107.45	H H H H H H D Y
Apprentice Rates:					
1st 6 months		\$40.31	\$59.49	\$78.67	
2nd 6 months		\$41.45	\$61.21	\$80.95	
3rd 6 months		\$42.57	\$62.88	\$83.19	
4th 6 months		\$43.69	\$64.57	\$85.43	
5th 6 months		\$44.81	\$66.24	\$87.67	
6th 6 months		\$48.63	\$72.50	\$96.36	
7th 6 months		\$49.32	\$73.01	\$96.69	
8th 6 months		\$51.58	\$76.40	\$101.21	

Unofficial Rates For Informational Purposes Only

County: Genesee

Date Rendered: 8/1/2017

Genesee County

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<u>Classification</u>		Straight Hourly	Time and a Half	Double Time	Overtime Provision
Name	Description				
Bricklayer					
Bricklayer and Block	BR9-12-BL	\$49.69	\$63.74	\$77.80	H H H H H H D Y
Make up day allowed	Comment				
	4 10s allowed M-F; Saturday make up day				
	Apprentice Rates:				
	0 - 749 hours	\$37.45	\$45.68	\$53.92	
	750 - 1,499 hours	\$38.98	\$47.98	\$56.98	
	1,500 - 2,249 hours	\$40.51	\$50.27	\$60.04	
	2,250 - 2,999 hours	\$42.04	\$52.56	\$63.10	
	3,000 - 3,749 hours	\$43.57	\$54.86	\$66.16	
	3,750 - 4,499 hours	\$45.10	\$57.16	\$69.22	
	4,500 - 5,249 hours	\$46.63	\$59.45	\$72.28	
	5,250 - 6,000 hours	\$48.16	\$61.74	\$75.34	
Stone Mason, Artificial Masonry, Marble Masonry, and Pointing, Cleaning and Caulking	BR9-12-S	\$49.69	\$63.74	\$77.80	H H H H H H D Y
4 10s allowed M-F					
	Apprentice Rates:				
	0-749 hours	\$38.98	\$47.98	\$56.98	
	750-1499 hours	\$40.51	\$50.27	\$60.04	
	1500-2249 hours	\$42.04	\$52.56	\$63.10	
	2250-2999 hours	\$43.57	\$54.86	\$66.16	
	3000-3749 hours	\$45.10	\$57.16	\$69.22	
	3750-4499 hours	\$46.63	\$59.45	\$72.28	

Unofficial Rates For Informational Purposes Only

County: Genesee

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Genesee County

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<u>Classification</u>		Straight Hourly	Time and a Half	Double Time	Overtime Provision
Name	Description				
Carpenter					
Carpet and Resilient Floor Layer, (does not include installation of prefabricated formica & parquet flooring which is to be paid carpenter rate)	CA1045	\$51.94	\$73.28	\$94.62	X X H X X X D Y
Apprentice Rates:					
1st 6 months		\$25.87	\$34.92	\$43.98	
2nd 6 months		\$29.86	\$40.92	\$51.96	
3rd 6 months		\$32.07	\$44.23	\$56.38	
4th 6 months		\$34.27	\$47.52	\$60.78	
5th 6 months		\$36.47	\$50.83	\$65.18	
6th 6 months		\$38.69	\$54.16	\$69.62	
7th 6 months		\$40.90	\$57.48	\$74.04	
8th 6 months		\$43.10	\$60.77	\$78.44	
Carpenter, Acoustical Ceiling Tile Erector, Piledriver	CA706F	\$44.75	\$57.22	\$69.69	X X H H H H D N
Apprentice Rates:					
1st year		\$34.77	\$42.25	\$49.73	
2nd year		\$37.27	\$46.00	\$54.73	
3rd year		\$38.52	\$47.88	\$57.23	
4th year		\$41.01	\$51.61	\$62.21	
Cement Finisher					
Cement Finisher - 4 10s allowed M-F	BR9-12-CF	\$44.02	\$56.73	\$69.43	X X H X X X H D Y
Apprentice Rates:					
0-749 hours		\$34.36	\$42.49	\$50.64	
750-1499 hours		\$35.74	\$44.57	\$53.40	
1500-2249 hours		\$37.12	\$46.63	\$56.16	
2250-2999 hours		\$38.50	\$48.71	\$58.92	
3000-3749 hours		\$39.88	\$50.77	\$61.68	
3750-4499 hours		\$41.26	\$52.85	\$64.44	

Unofficial Rates For Informational Purposes Only

County: Genesee

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Genesee County

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<u>Classification</u>		Straight Hourly	Time and a Half	Double Time	Overtime Provision
Name	Description				
Cement Mason					
Cement Mason	PL16-6	\$41.92	\$55.93	\$69.94	H H H H H H D Y
Four 10s allowed Monday-Thursday with Friday or Saturday inclement weather make up days. Saturday hours for inclement weather make up shall be paid straight rate unless over 40 hours worked.					
Make up day allowed	Comment Friday or Saturday for inclement weather				
Apprentice Rates:					
1st year		\$32.11	\$41.22	\$50.32	
2nd year		\$34.92	\$45.43	\$55.94	
3rd year		\$37.72	\$49.63	\$61.54	
Drywall					
Finisher-hand finishing	PT-1052-DF	\$37.97	\$50.98	\$63.99	X X H X X X H D Y
The regular weekly work schedule may consist of 4 10s on consecutive days, Monday thru Saturday. A make-up day may be scheduled for work missed due to holiday or inclement weather.					
Make up day allowed					
Apprentice Rates:					
1st year		\$24.96	\$31.47	\$37.97	
2nd year, 1st 6 months		\$27.56	\$35.37	\$43.17	
2nd year, 2nd 6 months		\$30.16	\$39.27	\$48.37	
3rd year, 1st 6 months		\$32.77	\$43.18	\$53.59	
Until completion		\$35.37	\$47.08	\$58.79	
Electrician					
Inside Wireman	EC-948-IW	\$56.65	\$81.15	\$105.65	H H H H H H D Y
Apprentice Rates:					
1st period		\$22.83	\$31.29	\$39.75	
2nd period		\$24.95	\$34.48	\$43.99	
3rd period		\$27.06	\$37.64	\$48.21	
4th period		\$31.29	\$43.98	\$56.67	
5th period		\$33.41	\$47.17	\$60.91	
6th period		\$37.64	\$53.50	\$69.37	

Unofficial Rates For Informational Purposes Only

County: Genesee

Date Rendered: 8/1/2017

Genesee County

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<u>Classification</u>		Straight Hourly	Time and a Half	Double Time	Overtime Provision
Name	Description				
Sound and Communication Installer/Technician Four 10s may be worked Monday-Thursday or Tuesday-Friday.	EC-948-SC	\$42.76	\$60.44	\$78.11	H H H H H H D Y
Apprentice Rates:					
	1st year	\$15.44	\$21.90	\$28.37	
	2nd year	\$16.87	\$24.05	\$31.23	
	3rd year	\$21.02	\$30.45	\$39.88	
	4th year	\$24.15	\$35.70	\$46.88	
Elevator Constructor					
Elevator Constructor Mechanic	EL-85	\$70.77		\$116.32	D D D D D D D Y
Comment 4 tens allowed M-TH					
Apprentice Rates:					
	1st year	\$50.27		\$75.32	
	2nd year	\$54.83		\$84.44	
	3rd year	\$57.10		\$88.98	
	4th year	\$61.66		\$98.10	
Glazier					
Glazier 4 tens allowed on consecutive days	GL-826	\$44.78	\$60.87	\$76.95	H H H H H H D Y
Apprentice Rates:					
	1st 6 months	\$31.91	\$41.57	\$51.21	
	2nd 6 months	\$33.52	\$43.98	\$54.43	
	3rd 6 months	\$35.12	\$46.38	\$57.63	
	4th 6 months	\$36.74	\$48.81	\$60.87	
	5th 6 months	\$38.35	\$51.22	\$64.09	
	6th 6 months	\$39.96	\$53.64	\$67.31	
	7th 6 months	\$41.57	\$56.05	\$70.53	
	8th 6 months	\$43.17	\$58.45	\$73.73	

Unofficial Rates For Informational Purposes Only

County: Genesee

Date Rendered: 8/1/2017

Statewide County

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<u>Classification</u>		Straight Hourly	Time and a Half	Double Time	Overtime Provision
Name	Description				
Heat and Frost Insulator					
Spray Insulation - all products	Qualified Senior Sprayer, application of AS25S	\$29.04	\$42.35		X X X H H H H N
Heat and Frost Insulator and Asbestos Worker					
Heat and Frost Insulator and Asbestos Worker	AS47	\$47.75	\$63.01	\$78.27	H H H H H H D Y
Make up day allowed	Comment				
	Friday for cancelled work in a 4 10 schedule				
Apprentice Rates:					
	1st year	\$27.88	\$35.51	\$43.14	
	2nd year	\$31.85	\$41.00	\$50.16	
	3rd year	\$35.82	\$46.50	\$57.18	
	4th year	\$39.80	\$52.01	\$64.22	
	5th year	\$43.78	\$57.51	\$71.25	
Ironworker					
Fence, Sound Barrier & Guardrail erection/installation and Exterior Signage work	IR-25-F1	\$35.95	\$48.05	\$60.15	X X H X X X H D Y
Four ten hour work days may be worked during Monday-Saturday.					
Apprentice Rates:					
	60% Level	\$25.39	\$32.65	\$39.91	
	65% Level	\$26.71	\$34.58	\$42.44	
	70% Level	\$28.03	\$36.51	\$44.98	
	75% Level	\$29.35	\$38.42	\$47.50	
	80% Level	\$30.67	\$40.35	\$50.03	
	85% Level	\$31.99	\$42.28	\$52.56	

Unofficial Rates For Informational Purposes Only

County: Genesee

Date Rendered: 8/1/2017

Genesee County

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<u>Classification</u>		Straight Hourly	Time and a Half	Double Time	Overtime Provision
Name	Description				
Siding, Glazing, Curtain Wall 4 tens may be worked Monday thru Thursday @ straight time. Make up day allowed Comment Friday	IR-25-GZ2	\$48.13	\$59.92	\$71.70	X X H H H H D D Y
Apprentice Rates:					
	Level 1	\$31.20	\$37.93	\$44.65	
	Level 2	\$33.31	\$40.67	\$48.02	
	Level 3	\$35.42	\$43.41	\$51.39	
	Level 4	\$37.54	\$46.16	\$54.77	
	Level 5	\$39.66	\$48.92	\$58.17	
	Level 6	\$41.78	\$51.67	\$61.55	
Pre-engineered Metal Work Make up day allowed Comment 4 tens allowed M-Th with Saturday make up day	IR-25-PE-Z1	\$48.09	\$58.86	\$69.63	X X H X X X X D Y
Apprentice Rates:					
	Probation 1st Year	\$26.83	\$32.03	\$37.23	
	1st Level	\$28.96	\$34.92	\$40.88	
	2nd Level	\$28.96	\$34.92	\$40.88	
	3rd Level	\$31.08	\$37.79	\$44.50	
	4th Level	\$33.21	\$40.68	\$48.15	
	5th Level	\$35.33	\$43.55	\$51.77	
	6th Level	\$37.46	\$46.43	\$55.41	
Reinforced Iron Work Make up day allowed	IR-25-RF	\$57.30	\$85.66	\$114.02	H H D H D D D D N
Apprentice Rates:					
	Level 1	\$40.32	\$59.89	\$79.46	
	Level 2	\$42.68	\$63.43	\$84.18	
	Level 3	\$45.22	\$67.24	\$89.26	
	Level 4	\$47.75	\$71.04	\$94.32	
	Level 5	\$50.29	\$74.84	\$99.40	
	Level 6	\$50.29	\$74.84	\$99.40	

Unofficial Rates For Informational Purposes Only

County: Genesee

Date Rendered: 8/1/2017

Genesee County

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<u>Classification</u>		Straight Hourly	Time and a Half	Double Time	Overtime Provision
Name	Description				
Rigging Work	IR-25-RIG	\$63.51	\$95.00	\$126.49	H H H H H H D N
Apprentice Rates:					
	Level 1 & 2	\$38.22	\$56.16	\$74.85	
	Level 3	\$41.05	\$61.54	\$82.01	
	Level 4	\$43.87	\$65.76	\$87.65	
	Level 5	\$46.70	\$70.01	\$93.31	
	Level 6	\$49.53	\$74.25	\$98.97	
Decking 4 tens may be worked Monday thru Thursday @ straight time. If bad weather, Friday may be a make up day. If holiday celebrated on a Monday, 4 10s may be worked Tuesday thru Friday. Work in excess of 12 hours per day must be paid @ double time.	IR-25-SD	\$55.47	\$82.87	\$110.26	X X H H H H D D Y
Make up day allowed	Comment Friday for 4 tens M-Th Saturday for 5 eights M-F				
Structural, ornamental, welder and pre-cast 4 tens may be worked Monday thru Thursday @ straight time. If bad weather, Friday may be a make up day. If holiday celebrated on a Monday, 4 10s may be worked Tuesday thru Friday. Work in excess of 12 hours per day must be paid @ double time.	IR-25-STR	\$63.64	\$95.12	\$126.60	H H H H H H D D Y
Make up day allowed					
Apprentice Rates:					
	Levels 1 & 2	\$38.22	\$56.99	\$75.75	
	Level 3	\$41.05	\$61.24	\$81.41	
	Level 4	\$43.87	\$65.46	\$87.05	
	Level 5	\$46.70	\$69.71	\$92.71	
	Level 6	\$49.53	\$73.95	\$98.37	
	Level 7	\$52.35	\$78.18	\$104.01	
	Level 8	\$55.18	\$82.43	\$109.67	
Industrial Door erection & construction	IR-25-STR-D	\$43.74	\$65.27	\$86.80	H H H H H H D D Y
Make up day allowed	Comment Friday for bad weather when 4 tens scheduled for M-Th. If holiday celebrated on M, 4 tens may be worked T-F. Work in excess of 12 hours per day must be paid @ double time.				

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<u>Classification</u>		Straight Hourly	Time and a Half	Double Time	Overtime Provision	
Name	Description					
Laborer						
	Carpenter tender, mason tender, cement finisher tender, plasterer tender, signal man & top man (sewer work), watchman, tunnel mucker, jackhammer & air spade operator, tunnel man (concrete shoveler, car pusher) bottom man (sewer work), windlass operator (caisson work), demolition laborer, mortar mixer, air, electric, gas tool operator, pump operator (all 3" pumps and below), air & electric bush hammers, concrete gas buggy, concrete saw operator, crock and pipe layers (conduit & vitrified tile, except 4" drain tile around buildings), & Caisson work inside building.	L1075	\$36.26	\$47.57	\$58.87	X X H H H H D Y
	Make up day allowed	Comment				
	Saturday					
	Apprentice Rates:					
	0-1,000 work hours		\$30.61	\$39.09	\$47.57	
	1,001-2,000 work hours		\$31.74	\$40.79	\$49.83	
	2,001-3,000 work hours		\$32.87	\$42.48	\$52.09	
	3,001-4,000 work hours		\$35.13	\$45.87	\$56.61	
Cleaner/Sweeper		L1075-CLN	\$27.22	\$34.29	\$41.35	X X H H H H D Y
	Make up day allowed	Comment				
	Saturday					
Laborer - Hazardous						
	Class A Laborer - performing work in conjunction with site preparation and other preliminary work prior to actual removal, handling, or containment of hazardous waste substances not requiring use of personal protective equipment required by state or federal regulations; or a laborer performing work in conjunction with the removal, handling, or containment of hazardous waste substances when use of personal protective equipment level "D" is required.	LHAZ-Z7-A	\$35.24	\$49.96	\$64.68	H H H H H H D Y
	Make up day allowed	Comment				
	4 10s allowed M-Th or T-F; inclement weather makeup day Friday					
	Apprentice Rates:					
	0-1,000 work hours		\$29.64	\$41.56	\$53.48	
	1,001-2,000 work hours		\$30.76	\$43.24	\$55.72	
	2,001-3,000 work hours		\$31.88	\$44.92	\$57.96	
	3,001-4,000 work hours		\$34.12	\$48.28	\$62.44	

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<u>Classification</u>		Straight Hourly	Time and a Half	Double Time	Overtime Provision
Name	Description				
Class B Laborer - performing work in conjunction with the removal, handling, or containment of hazardous waste substances when the use of personal protective equipment levels "A", "B" or "C" is required.	LHAZ-Z7-B	\$36.24	\$51.46	\$66.68	H H H H H H D Y
Make up day allowed	Comment				
	4 10s allowed M-Th or T-F; inclement weather makeup day Friday				
	Apprentice Rates:				
	0-1,000 work hours	\$30.39	\$42.68	\$54.98	
	1,001-2,000 work hours	\$31.56	\$44.44	\$57.32	
	2,001-3,000 work hours	\$32.73	\$46.20	\$59.66	
	3,001-4,000 work hours	\$35.07	\$49.70	\$64.34	
Laborer Underground - Tunnel, Shaft and Caisson					
Class I - Tunnel, shaft and caisson laborer, dump man, shanty man, hog house tender, testing man (on gas), and watchman.	LAUCT-Z2-1	\$35.67	\$47.07	\$58.47	X X X X X X D Y
	Apprentice Rates:				
	0-1,000 work hours	\$30.52	\$39.35	\$48.17	
	1,001-2,000 work hours	\$31.55	\$40.90	\$50.23	
	2,001-3,000 work hours	\$32.58	\$42.44	\$52.29	
	3,001-4,000 work hours	\$34.64	\$45.53	\$56.41	
Class II - Manhole, headwall, catch basin builder, bricklayer tender, mortar man, material mixer, fence erector, and guard rail builder	LAUCT-Z2-2	\$35.76	\$47.21	\$58.65	X X X X X X D Y
	Apprentice Rates:				
	0-1,000 work hours	\$30.58	\$39.44	\$48.29	
	1,001-2,000 work hours	\$31.62	\$41.00	\$50.37	
	2,001-3,000 work hours	\$32.66	\$42.56	\$52.45	
	3,001-4,000 work hours	\$34.72	\$45.65	\$56.57	

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<u>Classification</u>		Straight Hourly	Time and a Half	Double Time	Overtime Provision	
Name	Description					
	Class III - Air tool operator (jack hammer man, bush hammer man and grinding man), first bottom man, second bottom man, cage tender, car pusher, carrier man, concrete man, concrete form man, concrete repair man, cement invert laborer, cement finisher, concrete shoveler, conveyor man, floor man, gasoline and electric tool operator, gunnite man, grout operator, welder, heading dinky man, inside lock tender, pea gravel operator, pump man, outside lock tender, scaffold man, top signal man, switch man, track man, tugger man, utility man, vibrator man, winch operator, pipe jacking man, wagon drill and air track operator and concrete saw operator (under 40 h.p.).	LAUCT-Z2-3	\$35.86	\$47.36	\$58.85	X X X X X X X D Y
	Apprentice Rates:					
	0-1,000 work hours		\$30.66	\$39.56	\$48.45	
	1,001-2,000 work hours		\$31.70	\$41.12	\$50.53	
	2,001-3,000 work hours		\$32.74	\$42.68	\$52.61	
	3,001-4,000 work hours		\$34.82	\$45.80	\$56.77	
	Class IV - Tunnel, shaft and caisson mucker, bracer man, liner plate man, long haul dinky driver and well point man.	LAUCT-Z2-4	\$36.02	\$47.60	\$59.17	X X X X X X X D Y
	Apprentice Rates:					
	0-1,000 work hours		\$30.78	\$39.74	\$48.69	
	1,001-2,000 work hours		\$31.83	\$41.32	\$50.79	
	2,001-3,000 work hours		\$32.88	\$42.89	\$52.89	
	3,001-4,000 work hours		\$34.97	\$46.02	\$57.07	
	Class V - Tunnel, shaft and caisson miner, drill runner, keyboard operator, power knife operator, reinforced steel or mesh man (e.g. wire mesh, steel mats, dowel bars)	LAUCT-Z2-5	\$36.28	\$47.99	\$59.69	X X X X X X X D Y
	Apprentice Rates:					
	0-1,000 work hours		\$30.98	\$40.04	\$49.09	
	1,001-2,000 work hours		\$32.04	\$41.63	\$51.21	
	2,001-3,000 work hours		\$33.10	\$43.22	\$53.33	
	3,001-4,000 work hours		\$35.22	\$46.40	\$57.57	

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<u>Classification</u>		Straight Hourly	Time and a Half	Double Time	Overtime Provision
Name	Description				
Class VI - Dynamite man and powder man.	LAUCT-Z2-6	\$36.59	\$48.45	\$60.31	X X X X X X D Y
Apprentice Rates:					
	0-1,000 work hours	\$31.21	\$40.38	\$49.55	
	1,001-2,000 work hours	\$32.28	\$41.99	\$51.69	
	2,001-3,000 work hours	\$33.36	\$43.61	\$53.85	
	3,001-4,000 work hours	\$35.51	\$46.84	\$58.15	
Class VII - Restoration laborer, seeding, sodding, planting, cutting, mulching and topsoil grading and the restoration of property such as replacing mail boxes, wood chips, planter boxes and flagstones.	LAUCT-Z2-7	\$28.86	\$36.86	\$44.85	X X X X X X D Y
Apprentice Rates:					
	0-1,000 work hours	\$25.41	\$31.68	\$37.95	
	1,001-2,000 work hours	\$26.10	\$32.72	\$39.33	
	2,001-3,000 work hours	\$26.79	\$33.76	\$40.71	
	3,001-4,000 work hours	\$28.17	\$35.82	\$43.47	
Landscape Laborer					
Landscape Specialist includes air, gas, and diesel equipment operator, skidsteer (or equivalent), lawn sprinkler installer on landscaping work where seeding, sodding, planting, cutting, trimming, backfilling, rough grading or maintenance of landscape projects occurs.	LLAN-Z1-A	\$28.98	\$40.04	\$51.09	X X H X X X H D Y
Sundays paid at time & one half. Holidays paid at double time.					
Skilled Landscape Laborer: small power tool operator, lawn sprinkler installers' tender, material mover, truck driver when seeding, sodding, planting, cutting, trimming, backfilling, rough grading or maintaining of landscape projects occurs	LLAN-Z1-B	\$24.76	\$33.71	\$42.65	X X H X X X H D Y
Sundays paid at time & one half. Holidays paid at double time.					

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<u>Classification</u>		Straight Hourly	Time and a Half	Double Time	Overtime Provision
Name	Description				
Marble, Mosaic, Tile and Terrazzo Setter					
Marble, Mosaic, Tile and Terrazzo Setter - 4 10s allowed M-F	BR9-12-TL	\$43.37	\$55.83	\$68.29	H H H H H H D Y
Apprentice Rates:					
	0-749 hours	\$33.89	\$41.87	\$49.85	
	750-1499 hours	\$35.25	\$43.91	\$52.57	
	1500-2249 hours	\$36.60	\$45.93	\$55.27	
	2250-2999 hours	\$37.95	\$47.96	\$57.97	
	3000-3749 hours	\$39.31	\$50.00	\$60.69	
	3750-4499 hours	\$40.66	\$52.03	\$63.39	
Operating Engineer					
Compressor or Welding Machine	EN-AC	\$46.07	\$57.38	\$68.68	X X H H D D D D Y
Four 10 hour days may be scheduled Monday-Thursday or Tuesday-Friday. Work not performed due to weather, Monday-Thursday may be scheduled on Friday.					
Make up day allowed	Comment				
	Friday				
Forklift or Straight Mast	EN-F	\$47.52	\$59.55	\$71.58	X X H H D D D D Y
Four 10 hour days may be scheduled M-Th or T-F. Work not performed due to weather on M-Th may be scheduled on Friday					
Make up day allowed	Comment				
	Friday				
Fireman or Oiler	EN-FO	\$45.04	\$55.83	\$66.62	X X H H D D D D Y
Four 10 hour days may be scheduled Monday-Thursday or Tuesday-Friday. Work not performed due to weather, Monday-Thursday may be scheduled on Friday.					
Make up day allowed	Comment				
	Friday				
Lull or Extend-a-Boom Forklift	en-l	\$53.38	\$68.34	\$83.30	X X H H D D D D Y
Four 10 hour days may be scheduled M-Th or T-F. Work not performed due to weather on M-Th may be scheduled on Friday					
Make up day allowed	Comment				
	Friday				

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<u>Classification</u>		Straight Hourly	Time and a Half	Double Time	Overtime Provision
Name	Description				
Crane with main boom & jib 120' or longer	en-os120	\$56.92	\$80.60	\$104.28	X X H H D D D D Y
Four 10 hour days may be scheduled Monday-Thursday or Tuesday-Friday. Worked not performed due to weather, Monday-Thursday may be scheuled Friday					
Make up day allowed Comment Friday					
Crane w/ main Boom & Jib 220' or longer	EN-OSA	\$58.03	\$75.32	\$92.60	X X H H D D D D Y
Four 10 hour days may be scheduled Monday-Thursday or Tuesday-Friday. Work not performed due to weather, Monday-Thursday may be scheduled on Friday.					
Make up day allowed Comment Friday					
Crane w/ main Boom & Jib 300' or longer	EN-OSA3	\$59.54	\$74.73	\$90.41	X X H H D D D D Y
Four 10 hour days may be scheduled Monday-Thursday or Tuesday-Friday. Work unable to be performed due to weather, Monday-Thursday may be scheduled on Friday.					
Make up day allowed Comment Friday					
Crane w/ main Boom & Jib 400' or longer	EN-OSA4	\$61.04	\$79.83	\$98.62	X X H H D D D D Y
Four 10 hour days may be scheduled Monday-Thursday or Tuesday-Friday. Work not performed due to weather, Monday-Thursday may be scheduled on Friday.					
Make up day allowed Comment Friday					
Crane with main boom and jib 140' or longer	EN-OSB	\$57.74	\$74.88	\$92.02	X X H H D D D D Y
Four 10 hour days may be scheduled Monday-Thursday or Tuesday-Friday. Work unable to be performed due to weather, Monday-Thursday may be scheduled on Friday.					
Make up day allowed Comment Friday					

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<u>Classification</u>		Straight Hourly	Time and a Half	Double Time	Overtime Provision
Name	Description				
Regular Crane Operator, Job Mechanic, Concrete Pump with Boom	EN-RC	\$56.06	\$72.36	\$88.66	X X H H D D D D Y
Four 10 hour days may be scheduled Monday-Thursday or Tuesday-Friday. Work not performed due to weather, Monday-Thursday may be scheduled on Friday.					
Make up day allowed	Comment				
	Friday				
Apprentice Rates:					
0-999 hours		\$44.78	\$56.19	\$67.60	
1,000-1,999 hours		\$46.41	\$58.64	\$70.86	
2,000-2,999 hours		\$48.04	\$61.08	\$74.12	
3,000-3,999 hours		\$49.67	\$63.53	\$77.38	
4,000-4,999 hours		\$51.31	\$65.98	\$80.66	
5,000-5,999 hours		\$52.93	\$68.42	\$83.90	
Regular Engineer, Hydro Excavator & Remote Controlled Concrete Breaker	en-re	\$55.11	\$70.94	\$86.76	X X H H D D D D Y
Four 10 hour days may be scheduled Monday-Thursday or Tuesday-Friday. Work not performed due to weather, Monday-Thursday may be scheduled on Friday.					
Make up day allowed	Comment				
	Friday				
Operating Engineer - DIVER					
Diver/Wet Tender/Tender/Rov Pilot/Rov Tender	GLF D	\$52.80	\$79.20	\$105.60	H H H H H H H D N
Operating Engineer - Marine Construction					
Diver/Wet Tender, Engineer (hydraulic dredge)	GLF-1	\$72.32	\$93.82	\$115.32	X X H H H H H D Y
Holiday pay = 2.5 times the straight hourly rate					
Make up day allowed					
Subdivision of county	all Great Lakes, islands therein, & connecting & tributary waters				
Crane/Backhoe Operator, 70 ton or over Tug Operator, Mechanic/Welder, Assistant Engineer (hydraulic dredge), Leverman (hydraulic dredge), Diver Tender	GLF-2	\$70.82	\$91.57	\$112.32	X X H H H H H D Y
Holiday pay = 2.5 times the straight hourly rate					
Make up day allowed					
Subdivision of county	All Great Lakes, islands therein, & connecting & tributary waters				

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Classification		Straight Hourly	Time and a Half	Double Time	Overtime Provision
Name	Description				
Friction, Lattice Boom or Crane License Certification	GLF-2B	\$72.32	\$93.82	\$115.32	X X H H H H D Y
Holiday pay = 2.5 times the straight hourly rate					
Make up day allowed					
<u>Subdivision of county</u>	All Great Lakes, islands, therein, & connecting & tributary waters				
Deck Equipment Operator, Machineryman, Maintenance of Crane (over 50 ton capacity) or Backhoe (115,000 lbs or more), Tug/Launch Operator, Loader, Dozer on Barge, Deck Machinery	GLF-3	\$66.27	\$84.75	\$103.22	X X H H H H D Y
Holiday pay = 2.5 times the straight hourly rate					
Make up day allowed					
<u>Subdivision of county</u>	All Great Lakes, islands therein, & connecting & tributary waters				
Deck Equipment Operator, (Machineryman/Fireman), (4 equipment units or more), Off Road Trucks, Deck Hand, Tug Engineer, & Crane Maintenance 50 ton capacity and under or Backhoe 115,000 lbs or less, Assistant Tug Operator	GLF-4	\$60.07	\$75.45	\$90.82	X X H H H H D Y
Holiday pay = 2.5 times the straight hourly rate					
Make up day allowed					
<u>Subdivision of county</u>	All Great Lakes, islands therein, & connecting & tributary waters				
Operating Engineer Steel Work					
Forklift, 1 Drum Hoist	EN-324-ef	\$60.41	\$79.00	\$97.58	H H D H H H D D Y
Make up day allowed	Comment				
	4 10s allowed M-Th with Friday makeup day because of bad weather				
Crane w/ 120' boom or longer	EN-324-SW120	\$63.11	\$83.05	\$102.98	H H D H H H D D Y
Make up day allowed	Comment				
	4 10s allowed M-Th with Friday makeup day because of bad weather				
Crane w/ 120' boom or longer w/ Oiler	EN-324-SW120-O	\$64.11	\$84.55	\$104.98	H H D H H H D D Y
Make up day allowed	Comment				
	4 10s allowed M-Th with Friday makeup day because of bad weather				
Crane w/ 140' boom or longer	EN-324-SW140	\$64.29	\$84.82	\$105.34	H H D H H H D D Y
Make up day allowed	Comment				
	4 10s allowed M-Th with Friday makeup day because of bad weather				
Crane w/ 140' boom or longer W/ Oiler	EN-324-SW140-O	\$65.29	\$86.32	\$107.34	H H D H H H D D Y
Make up day allowed	Comment				
	4 10s allowed M-Th with Friday makeup day because of bad weather				

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<u>Classification</u>		Straight Hourly	Time and a Half	Double Time	Overtime Provision
Name	Description				
Boom & Jib 220' or longer	EN-324-SW220	\$64.56	\$85.22	\$105.88	H H D H H H D D Y
Make up day allowed	Comment 4 10s allowed M-Th with Friday makeup day because of bad weather				
Crane w/ 220' boom or longer w/ Oiler	EN-324-SW220-O	\$65.56	\$86.72	\$107.88	H H D H H H D D Y
Make up day allowed	Comment 4 10s allowed M-Th with Friday makeup day because of bad weather				
Boom & Jib 300' or longer	EN-324-SW300	\$66.06	\$87.47	\$108.88	H H D H H H D D Y
Make up day allowed	Comment 4 10s allowed M-Th with Friday makeup day because of bad weather				
Crane w/ 300' boom or longer w/ Oiler	EN-324-SW300-O	\$67.06	\$88.97	\$110.88	H H D H H H D D Y
Make up day allowed	Comment 4 10s allowed M-Th with Friday makeup day because of bad weather				
Boom & Jib 400' or longer	EN-324-SW400	\$67.56	\$89.72	\$111.88	H H D H H H D D Y
Make up day allowed	Comment 4 10s allowed M-Th with Friday makeup day because of bad weather				
Crane w/ 400' boom or longer w/ Oiler	EN-324-SW400-O	\$68.56	\$91.22	\$113.88	H H D H H H D D Y
Make up day allowed	Comment 4 10s allowed M-Th with Friday makeup day because of bad weather				
Crane Operator, Job Mechanic, 3 Drum Hoist & Excavator	EN-324-SWCO	\$62.75	\$82.51	\$102.26	H H D H H H D D Y
Make up day allowed	Comment 4 10s allowed M-Th with Friday makeup day because of bad weather				
Apprentice Rates:					
	0-999 hours	\$49.40	\$63.26	\$77.11	
	1,000-1,999 hours	\$51.38	\$66.23	\$81.07	
	2,000-2,999 hours	\$53.35	\$69.19	\$85.01	
	3,000-3,999 hours	\$55.33	\$72.16	\$88.97	
	4,000-4,999 hours	\$57.30	\$75.11	\$92.91	
	5,000 hours	\$59.28	\$78.08	\$96.87	
Crane Operator w/ Oiler	EN-324-SWCO-O	\$63.75	\$84.01	\$104.26	H H D H H H D D Y
Make up day allowed	Comment 4 10s allowed M-Th with Friday makeup day because of bad weather				

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Classification		Straight Hourly	Time and a Half	Double Time	Overtime Provision
Name	Description				
Compressor or Welder Operator	EN-324-SWCW	\$55.30	\$71.33	\$87.36	H H D H H H D D Y
Make up day allowed	Comment 4 10s allowed M-Th with Friday makeup day because of bad weather				
Hoisting Operator, 2 Drum Hoist, & Rubber Tire Backhoe	EN-324-SWHO	\$62.11	\$81.55	\$100.98	H H D H H H D D Y
Make up day allowed	Comment 4 10s allowed M-Th with Friday makeup day because of bad weather				
Oiler	EN-324-SWO	\$53.89	\$69.22	\$84.54	H H D H H H D D Y
Make up day allowed	Comment 4 10s allowed M-Th with Friday makeup day because of bad weather				
Tower Crane & Derrick where work is 50' or more	EN-324-SWTD50	\$63.84	\$84.14	\$104.44	H H D H H H D D Y
Make up day allowed	Comment 4 10s allowed M-Th with Friday makeup day because of bad weather				
Tower Crane & Derrick 50' or more w/ Oiler	EN-324-SWTD50-O	\$64.84	\$85.64	\$106.44	H H D H H H D D Y
Make up day allowed	Comment 4 10s allowed M-Th with Friday makeup day because of bad weather				
Operating Engineer Underground					
Class I Equipment	EN-324A1-UC1	\$54.54	\$70.33	\$86.12	H H H H H H H D Y
Apprentice Rates:					
	0-999 hours	\$43.26	\$54.31	\$65.36	
	1,000-1,999 hours	\$44.84	\$56.68	\$68.52	
	2,000-2,999 hours	\$46.43	\$59.07	\$71.70	
	3,000-3,999 hours	\$48.00	\$61.42	\$74.84	
	4,000-4,999 hours	\$49.58	\$63.79	\$78.00	
	5,000-5,999 hours	\$51.16	\$66.17	\$81.16	
Class II Equipment	EN-324A1-UC2	\$49.81	\$63.24	\$76.66	H H H H H H H D Y
Class III Equipment	EN-324A1-UC3	\$49.08	\$62.14	\$75.20	H H H H H H H D Y
Class IV Equipment	EN-324A1-UC4	\$48.51	\$61.29	\$74.06	H H H H H H H D Y

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<u>Classification</u>		Straight Hourly	Time and a Half	Double Time	Overtime Provision
Name	Description				
Master Mechanic	EN-324A1-UMM	\$54.79	\$70.71	\$86.62	H H H H H H D Y

Painter

Painter	PT-1052-BR	\$35.80	\$47.68	\$59.55	X X H X X X H D Y
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The regular weekly work schedule may consist of 4 10s on consecutive days, Monday thru Saturday.

Make up day allowed Comment

A make-up day may be scheduled for work missed due to holiday or inclement weather.

Apprentice Rates:

1st year	\$23.93	\$29.87	\$35.81
2nd year, 1st 6 months	\$26.30	\$33.43	\$40.55
2nd year, 2nd 6 months	\$28.67	\$36.98	\$45.29
3rd year, 1st 6 months	\$31.05	\$40.55	\$50.05
Until completion	\$33.43	\$44.12	\$54.81

Work of a high risk nature of a falling height up to 30 feet	PT-1052-HR	\$36.10	\$48.48	\$60.85	X X H X X X H D Y
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The regular weekly work schedule may consist of 4 10s on consecutive days, Monday thru Saturday.

Make up day allowed Comment

A make-up day may be scheduled for work missed due to holiday or inclement weather.

Apprentice Rates:

1st year	\$23.73	\$29.92	\$36.11
2nd year, 1st 6 months	\$26.20	\$33.63	\$41.05
2nd year, 2nd 6 months	\$28.67	\$37.33	\$45.99
3rd year, 1st 6 months	\$31.15	\$41.05	\$50.95
Until completion	\$33.63	\$44.77	\$55.91

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<u>Classification</u>		Straight Hourly	Time and a Half	Double Time	Overtime Provision
Name	Description				
All work of a falling height of 31 - 44 feet	PT-1052-HR01	\$36.40	\$48.93	\$61.45	X X H X X X H D Y
The regular weekly work schedule may consist of 4 10s on consecutive days, Monday thru Saturday.					
Make up day allowed Comment					
A make-up day may be scheduled for work missed due to holiday or inclement weather.					
Apprentice Rates:					
1st year		\$23.87	\$30.13	\$36.39	
2nd year, 1st 6 months		\$26.38	\$33.89	\$41.41	
2nd year, 2nd 6 months		\$28.89	\$37.66	\$46.43	
3rd year, 1st 6 months		\$31.39	\$41.41	\$51.43	
Until completion		\$33.89	\$45.16	\$56.43	
All work of a falling height of 45 - 59 feet	PT-1052-HR02	\$36.50	\$49.08	\$61.65	X X H X X X H D Y
The regular weekly work schedule may consist of 4 10s on consecutive days, Monday thru Saturday.					
Make up day allowed Comment					
A make-up day may be scheduled for work missed due to holiday or inclement weather.					
Apprentice Rates:					
1st year		\$23.93	\$30.22	\$36.51	
2nd year, 1st 6 months		\$26.44	\$33.99	\$41.53	
2nd year, 2nd 6 months		\$28.95	\$37.75	\$46.55	
3rd year, 1st 6 months		\$31.47	\$41.53	\$51.59	
Until completion		\$33.99	\$45.31	\$56.63	
All work of a falling height of 60 - 74 feet	PT-1052-HR03	\$36.60	\$49.23	\$61.85	X X H X X X H D Y
The regular weekly work schedule may consist of 4 10s on consecutive days, Monday thru Saturday.					
Make up day allowed Comment					
A make-up day may be scheduled for work missed due to holiday or inclement weather.					
Apprentice Rates:					
1st year		\$23.97	\$30.28	\$36.59	
2nd year, 1st 6 months		\$26.50	\$34.07	\$41.65	
2nd year, 2nd 6 months		\$29.02	\$37.85	\$46.69	
3rd year, 1st 6 months		\$31.55	\$41.65	\$51.75	
Until completion		\$34.07	\$45.43	\$56.79	

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<u>Classification</u>		Straight Hourly	Time and a Half	Double Time	Overtime Provision
Name	Description				
All work of a falling height of 75 - 89 feet	PT-1052-HR04	\$36.70	\$49.38	\$62.05	X X H X X X H D Y
The regular weekly work schedule may consist of 4 10s on consecutive days, Monday thru Saturday.					
Make up day allowed Comment					
A make-up day may be scheduled for work missed due to holiday or inclement weather.					
Apprentice Rates:					
1st year		\$24.03	\$30.37	\$36.71	
2nd year, 1st 6 months		\$26.56	\$34.17	\$41.77	
2nd year, 2nd 6 months		\$29.09	\$37.96	\$46.83	
3rd year, 1st 6 months		\$31.63	\$41.77	\$51.91	
Until completion		\$34.17	\$45.58	\$56.99	
All work of a falling height of 90 - 104 feet	PT-1052-HR05	\$36.80	\$49.53	\$62.25	X X H X X X H D Y
The regular weekly work schedule may consist of 4 10s on consecutive days, Monday thru Saturday.					
Make up day allowed Comment					
A make-up day may be scheduled for work missed due to holiday or inclement weather.					
Apprentice Rates:					
1st year		\$24.07	\$30.43	\$36.79	
2nd year, 1st 6 months		\$26.62	\$34.25	\$41.89	
2nd year, 2nd 6 months		\$29.16	\$38.07	\$46.97	
3rd year, 1st 6 months		\$31.71	\$41.89	\$52.07	
Until completion		\$34.25	\$45.70	\$57.15	
All work of a falling height of 105 - 119 feet	PT-1052-HR06	\$36.90	\$49.68	\$62.45	X X H X X X H D Y
The regular weekly work schedule may consist of 4 10s on consecutive days, Monday thru Saturday.					
Make up day allowed Comment					
A make-up day may be scheduled for work missed due to holiday or inclement weather.					
Apprentice Rates:					
1st year		\$24.13	\$30.52	\$36.91	
2nd year, 1st 6 months		\$26.68	\$34.35	\$42.01	
2nd year, 2nd 6 months		\$29.23	\$38.17	\$47.11	
3rd year, 1st 6 months		\$31.79	\$42.01	\$52.23	
Until completion		\$34.35	\$45.85	\$57.35	

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<u>Classification</u>		Straight Hourly	Time and a Half	Double Time	Overtime Provision
Name	Description				
All work of a falling height of 120 - 134 feet	PT-1052-HR07	\$37.00	\$49.83	\$62.65	X X H X X X H D Y
The regular weekly work schedule may consist of 4 10s on consecutive days, Monday thru Saturday.					
Make up day allowed Comment					
A make-up day may be scheduled for work missed due to holiday or inclement weather.					
Apprentice Rates:					
1st year		\$24.17	\$30.58	\$36.99	
2nd year, 1st 6 months		\$26.74	\$34.43	\$42.13	
2nd year, 2nd 6 months		\$29.30	\$38.27	\$47.25	
3rd year, 1st 6 months		\$31.87	\$42.13	\$52.39	
Until completion		\$34.43	\$45.97	\$57.51	
All work of a falling height of 135 - 149 feet	PT-1052-HR08	\$37.10	\$49.98	\$62.85	X X H X X X H D Y
The regular weekly work schedule may consist of 4 10s on consecutive days, Monday thru Saturday.					
Make up day allowed Comment					
A make-up day may be scheduled for work missed due to holiday or inclement weather.					
Apprentice Rates:					
1st year		\$24.23	\$30.67	\$37.11	
2nd year, 1st 6 months		\$26.80	\$34.53	\$42.25	
2nd year, 2nd 6 months		\$29.37	\$38.38	\$47.39	
3rd year, 1st 6 months		\$31.95	\$42.25	\$52.55	
Until completion		\$34.53	\$46.12	\$57.71	
All work of a falling height of 150 - 164 feet	PT-1052-HR09	\$37.20	\$50.13	\$63.05	X X H X X X H D Y
The regular weekly work schedule may consist of 4 10s on consecutive days, Monday thru Saturday.					
Make up day allowed Comment					
A make-up day may be scheduled for work missed due to holiday or inclement weather.					
Apprentice Rates:					
1st year		\$24.27	\$30.73	\$37.19	
2nd year, 1st 6 months		\$26.86	\$34.61	\$42.37	
2nd year, 2nd 6 months		\$29.45	\$38.50	\$47.55	
3rd year, 1st 6 months		\$32.03	\$42.37	\$52.71	
Until completion		\$34.61	\$46.24	\$57.87	

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<u>Classification</u>		Straight Hourly	Time and a Half	Double Time	Overtime Provision
Name	Description				
All work of a falling height of 165 - 179 feet	PT-1052-HR10	\$37.30	\$50.28	\$63.25	X X H X X X H D Y
The regular weekly work schedule may consist of 4 10s on consecutive days, Monday thru Saturday.					
Make up day allowed Comment					
A make-up day may be scheduled for work missed due to holiday or inclement weather.					
Apprentice Rates:					
1st year		\$24.33	\$30.82	\$37.31	
2nd year, 1st 6 months		\$26.92	\$34.71	\$42.49	
2nd year, 2nd 6 months		\$29.51	\$38.59	\$47.67	
3rd year, 1st 6 months		\$32.11	\$42.49	\$52.87	
Until completion		\$34.71	\$46.39	\$58.07	
All work of a falling height of 180 - 194 feet	PT-1052-HR11	\$37.40	\$50.43	\$63.45	X X H X X X H D Y
The regular weekly work schedule may consist of 4 10s on consecutive days, Monday thru Saturday.					
Make up day allowed Comment					
A make-up day may be scheduled for work missed due to holiday or inclement weather.					
Apprentice Rates:					
1st year		\$24.37	\$30.88	\$37.39	
2nd year, 1st 6 months		\$26.98	\$34.79	\$42.61	
2nd year, 2nd 6 months		\$29.59	\$38.71	\$47.83	
3rd year, 1st 6 months		\$32.19	\$42.61	\$53.03	
Until completion		\$34.79	\$46.51	\$58.23	
All work of a falling height of 195 - 209 feet	PT-1052-HR12	\$37.50	\$50.58	\$63.65	X X H X X X H D Y
The regular weekly work schedule may consist of 4 10s on consecutive days, Monday thru Saturday.					
Make up day allowed Comment					
A make-up day may be scheduled for work missed due to holiday or inclement weather.					
Apprentice Rates:					
1st year		\$24.43	\$30.97	\$37.51	
2nd year, 1st 6 months		\$27.04	\$34.89	\$42.73	
2nd year, 2nd 6 months		\$29.65	\$38.80	\$47.95	
3rd year, 1st 6 months		\$32.27	\$42.73	\$53.19	
Until completion		\$34.89	\$46.66	\$58.43	

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<u>Classification</u>		Straight Hourly	Time and a Half	Double Time	Overtime Provision
Name	Description				
All work of a falling height of 210 - 224 feet	PT-1052-HR13	\$37.60	\$50.73	\$63.85	X X H X X X H D Y
The regular weekly work schedule may consist of 4 10s on consecutive days, Monday thru Saturday.					
Make up day allowed	Comment	A make-up day may be scheduled for work missed due to holiday or inclement weather.			
Apprentice Rates:					
1st year		\$24.47	\$31.03	\$37.59	
2nd year, 1st 6 months		\$27.10	\$34.97	\$42.85	
2nd year, 2nd 6 months		\$29.73	\$38.92	\$48.11	
3rd year, 1st 6 months		\$32.35	\$42.85	\$53.35	
Until completion		\$34.97	\$46.78	\$58.59	
Pipe and Manhole Rehab					
General Laborer for rehab work or normal cleaning and cctv work-top man, scaffold man, CCTV assistant, jetter-vac assistant	TM247	\$28.20	\$38.20		H H H H H H H H N
Tap cutter/CCTV Tech/Grout Equipment Operator: unit driver and operator of CCTV; grouting equipment and tap cutting equipment	TM247-2	\$32.70	\$44.95		H H H H H H H H N
CCTV Technician/Combo Unit Operator: unit driver and operator of cctv unit or combo unit in connection with normal cleaning and televising work	TM247-3	\$31.45	\$43.07		H H H H H H H H N
Boiler Operator: unit driver and operator of steam/water heater units and all ancillary equipment associated	TM247-4	\$33.20	\$45.70		H H H H H H H H N
Combo Unit driver & Jetter-Vac Operator	TM247-5	\$33.20	\$45.70		H H H H H H H H N
Pipe Bursting & Slip-lining Equipment Operator	TM247-6	\$34.20	\$47.20		H H H H H H H H N

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<u>Classification</u>						
Name	Description		Straight Hourly	Time and a Half	Double Time	Overtime Provision
Plasterer						
Plasterer - 4 10s allowed M-F	BR9-12-PL		\$44.02	\$56.73	\$69.43	H H H H H H D Y
	Apprentice Rates:					
	0-749 hours		\$34.36	\$42.49	\$50.64	
	750-1499 hours		\$35.74	\$44.57	\$53.40	
	1500-2249 hours		\$37.12	\$46.63	\$56.16	
	2250-2999 hours		\$38.50	\$48.71	\$58.92	
	3000-3749 hours		\$39.88	\$50.77	\$61.68	
	3750-4499 hours		\$41.26	\$52.85	\$64.44	
Plasterer	PL16-3		\$36.61	\$48.48	\$60.34	H H H H H H D N
	Apprentice Rates:					
	1st year		\$28.30	\$36.01	\$43.72	
	2nd year		\$30.68	\$39.58	\$48.48	
	3rd year		\$33.05	\$43.14	\$53.22	
Plumber, Pipefitter, HVAC & Refrigeration						
Pipe Trades Helper (Mechanical Helper) 4 10s allowed M-F	PL-370-PFH		\$22.69	\$34.04	\$45.38	H H H H H H D Y
Plumber trainee helper 4 10s allowed M-F	PL-370-PLH		\$22.69	\$34.04	\$45.38	H H H H H H D Y

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<u>Classification</u>		Straight Hourly	Time and a Half	Double Time	Overtime Provision
Name	Description				
Plumber, Pipefitter, Welder, HVAC & Refrigeration					
Plumber, Pipefitter, Welder, HVAC & Refrigeration 4 10s allowed M-F	PL-370	\$55.01	\$82.07	\$109.12	H H H H H H D Y
Apprentice Rates:					
	1st 6 months	\$26.19	\$39.01	\$51.83	
	2nd 6 months	\$27.99	\$41.71	\$55.43	
	3rd 6 months	\$34.80	\$51.93	\$69.05	
	4th 6 months	\$36.61	\$54.64	\$72.67	
	5th 6 months	\$38.41	\$57.34	\$76.27	
	6th 6 months	\$40.22	\$60.05	\$79.89	
	7th 6 months	\$42.02	\$62.75	\$83.49	
	8th 6 months	\$43.83	\$65.47	\$87.11	
	9th 6 months	\$45.63	\$68.17	\$90.71	
	final 6 months	\$47.44	\$70.89	\$94.33	
Roofer					
Commercial Roofer	RO-149-MMA	\$38.61	\$50.72	\$62.82	H H H H H H D Y
Straight time is not to exceed ten (10) hours per day or forty (40) hours per week.					
Make up day allowed					
Apprentice Rates:					
	Apprentice 1	\$23.23	\$27.64	\$32.06	
	Apprentice 2	\$25.14	\$30.51	\$35.88	
	Apprentice 3	\$27.09	\$33.44	\$39.78	
	Apprentice 4	\$29.00	\$36.30	\$43.60	
	Apprentice 5	\$30.92	\$39.18	\$47.44	
	Apprentice 6	\$32.83	\$42.04	\$51.26	
Sewer Relining					
Class I-Operator of audio visual CCTV system including remote in-ground cutter and other equipment used in conjunction with CCTV system.	SR-I	\$43.66	\$59.01	\$74.36	H H H H H H D N

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<u>Classification</u>		Straight Hourly	Time and a Half	Double Time	Overtime Provision
Name	Description				
Class II-Operator of hot water heaters and circulation system; water jetters; and vacuum and mechanical debris removal systems and those assisting.	SR-II	\$42.13	\$56.72	\$71.30	H H H H H H D N

Sheet Metal Worker

Sheet Metal Worker	SHM-7-4	\$51.40	\$65.95	\$80.49	H H H X H H D Y
4 10s allowed as consecutive days, M-Th or T-F					
Make up day allowed	Comment				
	Saturday				

Apprentice Rates:

1st 6 months	\$26.68	\$33.23	\$39.77
2nd 6 months	\$28.14	\$35.42	\$42.69
3rd 6 months	\$29.59	\$37.59	\$45.59
4th 6 months	\$31.04	\$39.77	\$48.49
5th 6 months	\$40.77	\$50.23	\$59.68
6th 6 months	\$42.22	\$52.40	\$62.58
7th 6 months	\$43.68	\$54.59	\$65.50
8th 6 months	\$45.13	\$56.77	\$68.40

Sprinkler Fitter

Sprinkler Fitter	SP 669	\$51.64	\$68.45	\$85.26	H H H H H H D Y
Make up day allowed					

Apprentice Rates:

Class 1	\$23.03	\$30.60	\$38.16
Class 2	\$24.71	\$33.12	\$41.52
Class 3	\$34.01	\$43.26	\$52.50
Class 4	\$35.69	\$45.78	\$55.86
Class 5	\$37.62	\$48.55	\$59.47
Class 6	\$39.30	\$51.07	\$62.83
Class 7	\$40.99	\$53.60	\$66.21
Class 8	\$42.67	\$56.12	\$69.57
Class 9	\$44.35	\$58.64	\$72.93
Class 10	\$46.03	\$61.16	\$76.29

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Classification		Straight Hourly	Time and a Half	Double Time	Overtime Provision
Name	Description				
Tile, Marble and Terrazzo Finisher					
Finisher - 4 10s allowed M-F	BR9-12-TF	\$36.72	\$47.07	\$57.42	H H H H H H D Y
Apprentice Rates:					
	0-749 hours	\$28.83	\$35.45	\$42.08	
	750-1499 hours	\$29.96	\$37.15	\$44.34	
	1500-2249 hours	\$31.09	\$38.84	\$46.60	
	2250-2999 hours	\$32.21	\$40.52	\$48.84	
	3000-3749 hours	\$33.34	\$42.21	\$51.10	
	3750-4499 hours	\$34.47	\$43.91	\$53.36	
Truck Driver					
on all trucks of 8 cubic yard capacity or less (except dump trucks of 8 cubic yard capacity or over, tandem axle trucks, transit mix and semis, euclid type equipment, double bottoms and low boys)	TM-RB1	\$44.10	\$48.81		H H H H H H H Y
of all trucks of 8 cubic yard capacity or over	TM-RB1A	\$44.20	\$48.96		H H H H H H H Y
on euclid type equipment Make up day allowed	TM-RB1B	\$44.35	\$49.19		H H H H H H H Y
Underground Laborer Open Cut, Class I					
Construction Laborer	LAUC-Z3-1	\$33.61	\$43.93	\$54.25	X X X X X X D Y
Apprentice Rates:					
	0-1,000 work hours	\$29.08	\$37.14	\$45.19	
	1,001-2,000 work hours	\$29.98	\$38.49	\$46.99	
	2,001-3,000 work hours	\$30.89	\$39.86	\$48.81	
	3,001-4,000 work hours	\$32.70	\$42.57	\$52.43	

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<u>Classification</u>		Straight Hourly	Time and a Half	Double Time	Overtime Provision
Name	Description				
Underground Laborer Open Cut, Class II					
Mortar and material mixer, concrete form man, signal man, well point man, manhole, headwall and catch basin builder, guard rail builders, headwall, seawall, breakwall, dock builder and fence erector.	LAUC-Z3-2	\$33.75	\$44.14	\$54.53	X X X X X X D Y
Apprentice Rates:					
	0-1,000 work hours	\$29.18	\$37.29	\$45.39	
	1,001-2,000 work hours	\$30.10	\$38.67	\$47.23	
	2,001-3,000 work hours	\$31.01	\$40.04	\$49.05	
	3,001-4,000 work hours	\$32.84	\$42.78	\$52.71	
Underground Laborer Open Cut, Class III					
Air, gasoline and electric tool operator, vibrator operator, drillers, pump man, tar kettle operator, bracers, rodder, reinforced steel or mesh man (e.g. wire mesh, steel mats, dowel bars, etc.), cement finisher, welder, pipe jacking and boring man, wagon drill and air track operator and concrete saw operator (under 40 h.p.), windlass and tugger man, and directional boring man.	LAUC-Z3-3	\$33.87	\$44.32	\$54.77	X X X X X X D Y
Apprentice Rates:					
	0-1,000 work hours	\$29.27	\$37.42	\$45.57	
	1,001-2,000 work hous	\$30.19	\$38.80	\$47.41	
	2,001-3,000 work hours	\$31.11	\$40.18	\$49.25	
	3,001-4,000 work hours	\$32.95	\$42.94	\$52.93	
Underground Laborer Open Cut, Class IV					
Trench or excavating grade man.	LAUC-Z3-4	\$33.92	\$44.40	\$54.87	X X X X X X D Y
Apprentice Rates:					
	0-1,000 work hours	\$29.31	\$37.48	\$45.65	
	1,001-2,000 work hours	\$30.23	\$38.86	\$47.49	
	2,001-3,000 work hours	\$31.15	\$40.24	\$49.33	
	3,001-4,000 work hours	\$33.00	\$43.02	\$53.03	

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Classification		Straight Hourly	Time and a Half	Double Time	Overtime Provision
Name	Description				
Underground Laborer Open Cut, Class V					
Pipe Layer	LAUC-Z3-5	\$34.06	\$44.61	\$55.15	X X X X X X D Y
Apprentice Rates:					
	0-1,000 work hours	\$29.41	\$37.64	\$45.85	
	1,001-2,000 work hours	\$30.34	\$39.03	\$47.71	
	2,001-3,000 work hours	\$31.27	\$40.42	\$49.57	
	3,001-4,000 work hours	\$33.13	\$43.22	\$53.29	
Underground Laborer Open Cut, Class VI					
Grouting man, top man assistant, audio visual television operations and all other operations in connection with closed circuit television inspection, pipe cleaning and pipe relining work and the installation & repair of water service pipe & appurtenances	LAUC-Z3-6	\$31.36	\$40.56	\$49.75	X X X X X X D Y
Apprentice Rates:					
	0-1,000 work hours	\$27.39	\$34.60	\$41.81	
	1,001-2,000 work hours	\$28.18	\$35.79	\$43.39	
	2,001-3,000 work hours	\$28.98	\$36.99	\$44.99	
	3,001-4,000 work hours	\$30.57	\$39.38	\$48.17	
Underground Laborer Open Cut, Class VII					
Restoration laborer, seeding, sodding, planting, cutting, mulching and topsoil grading and the restoration of property such as replacing mail boxes, wood chips, planter boxes, flagstones etc.	LAUC-Z3-7	\$28.51	\$36.28	\$44.05	X X X X X X D Y
Apprentice Rates:					
	0-1,000 work hours	\$25.25	\$31.40	\$37.53	
	1,001-2,000 work hours	\$25.90	\$32.37	\$38.83	
	2,001-3,000 work hours	\$26.56	\$33.36	\$40.15	
	3,001-4,000 work hours	\$27.86	\$35.31	\$42.75	

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APPENDIX E

MIOSHA DEMOLITION/RENNOVATION OF A BUILDING/STRUCTURE

DEMOLITION/RENOVATION OF A BUILDING/STRUCTURE

Pre-1981 Buildings - Asbestos Building Survey by Michigan Accredited Asbestos Building Inspector or CIH

Note, the inspection must identify, locate and quantify all PACM and also other materials that may contain asbestos based upon the inspector's/CIH's past knowledge and due diligence

Notify contractors/employees of inspection results

No Asbestos Present					Asbestos-Containing Material Present						
Requirements		Requirements for Class I		Requirements for Class II		Requirements for Class III		Requirements for Class IV		G(11) Materials	
TSI & Surfacing Materials		All Other ACM		Disturbance or removal of Class I or II materials not to exceed contents of 1 glovebag (60" x 60")		Custodial and Maintenance work activities that contact but do not disturb ACM/PACM		Intact Roofing and Pipeline Coating Materials		Competent person adequately trained [see 1926.1101(g)(11)(i) and (g)(11)(ii)]	
• Licensed asbestos abatement contractor or exempt licensed trade group performing asbestos abatement work incidental to primary licensed trade and <260' or 160 ft ² if friable and work contracted out		• Licensed asbestos abatement contractor or exempt licensed trade group performing asbestos abatement work incidental to primary licensed trade and <260' or 160 ft ² if friable and work contracted out		• Project notification on friable project > 10' or 15 ft ² and work contracted out		• Project notification on friable project > 10' or 15 ft ² and work contracted out		• At least 2 hour initial and annual refresher training		• Workers trained [see 1926.1101(g)(11)(iii)]	
• 40-hour initially trained and accredited (if friable) competent person and 8-hour annual refresher training and accreditation (if friable) - accreditation excludes < 10 residential units or exterior ACM		• 40-hour initially trained and accredited (if friable) competent person and 8-hour annual refresher training and accreditation (if friable) - accreditation excludes < 10 residential units or exterior ACM		• 12-hour trained competent person if only supervising intact ACM flooring projects utilizing compliant work practices		• 16-hour initial competent person training and annual refresher training		• Work practices [see 1926.1101(g)(11)(i)-(v)] if intact		• Non-Intact Roofing and Pipeline Coating Materials - Refer back to Class II requirements	
• 32-hour initially trained and accredited worker(s) and 8-hour annual refresher training and accreditation - accreditation excludes <10 residential units or exterior ACM		• 32-hour initially trained (if friable, if substantially non-intact interior project, or interior project w/o NEA) and 8-hour annual refresher training (if friable, if substantially non-intact interior project, or interior project w/o NEA) and accreditation (if friable) - accreditation excludes < 10 residential units or exterior ACM		• 8 or more hours initial worker training and annual refresher training for one Class II material (non-friable and intact roofing materials, flooring materials, siding materials, ceiling tiles, or transite materials)		• 8 or more hours initial worker training and annual refresher training for one Class II material (non-friable and intact roofing materials, flooring materials, siding materials, ceiling tiles, or transite materials)		• Regulated area (restrict access to work area)		• Personal air monitoring or NEA	
• Regulated area (restrict access to work site)		• Personal air monitoring or NEA		• Wet methods [unless not feasible (e.g., electrical hazard, equipment malfunction, or creates roofing safety hazard)]		• Decontamination area (drop cloth + HEPA vacuum) if no NEA		• Personal air monitoring or NEA		• Wet methods [unless not feasible (e.g., electrical hazard, equipment malfunction, or creates roofing safety hazard)]	
• Decontamination area (equipment room, shower and clean room if project > 25' or 10 ft ² ; drop cloth & HEPA vacuum < 25' or 10ft ²)		• Decontamination area (equipment room, shower and clean room if project > 25' or 10 ft ² ; drop cloth & HEPA vacuum < 25' or 10ft ²)		• For non-friable intact Class II materials other than those above, no specified time for initial or refresher training		• For non-friable intact Class II materials other than those above, no specified time for initial or refresher training		• Waste Disposal (labeled sealed impermeable bags/containers)		• Waste Disposal (labeled sealed impermeable bags/containers)	
• Respirators (establish and implement a written respirator program)		• Respirators (establish and implement a written respirator program)		• Medical surveillance***		• Medical surveillance***		• Waste Disposal (labeled sealed impermeable bags/containers)		• Waste Disposal (labeled sealed impermeable bags/containers)	
• Protective clothing***		• Protective clothing***		• Protective clothing***		• Protective clothing***		• Waste Disposal (labeled sealed impermeable bags/containers)		• Waste Disposal (labeled sealed impermeable bags/containers)	
• Waste disposal (labeled sealed impermeable bags/containers)		• Waste disposal (labeled sealed impermeable bags/containers)		• Waste transport requirements, if friable (USDOT Hazardous Materials for Asbestos, 49 CFR Parts 100-180) - contact State Police Motor Carrier Division for information		• Waste transport requirements, if friable (USDOT Hazardous Materials for Asbestos, 49 CFR Parts 100-180) - contact State Police Motor Carrier Division for information		• Engineering and work practice controls for repair and maintenance operations [isolation/containment, see Part 602, 29 CFR 1926.1101 (g)(1), (g)(2), and (g)(9)(i)-(v) for specific controls]		• Engineering and work practice controls for repair and maintenance operations [isolation/containment, see Part 602, 29 CFR 1926.1101 (g)(1), (g)(2), and (g)(9)(i)-(v) for specific controls]	
• Engineering and work practice controls for renovations and pre-building demolition interior removals [see Part 602, 29 CFR 1926.1101 (g)(1), (g)(2), (g)(4)(i)-(vi) and (g)(5)]		• Engineering and work practice controls for renovations and pre-building demolition interior removals [see Part 602, 29 CFR 1926.1101 (g)(1), (g)(2), (g)(4)(i)-(vi) and (g)(5)]		• Engineering controls for demolition of building where ACM remains [see Part 602, 29 CFR 1926.1101 (g)(8)(vi)]		• Engineering controls for demolition of building where ACM remains [see Part 602, 29 CFR 1926.1101 (g)(8)(vi)]		• Engineering and work practice controls for renovations and pre-building demolition interior removals [see Part 602, 29 CFR 1926.1101 (g)(1), (g)(2), (g)(7)(i)-(iv) and (g)(8)(i)-(v) for specific controls]		• Engineering controls for demolition of building where ACM remains [see Part 602, 29 CFR 1926.1101 (g)(8)(vi)]	
• NESHAP Requirements (contact DEQ)		• NESHAP Requirements (contact DEQ)		• NESHAP Requirements (contact DEQ)		• NESHAP Requirements (contact DEQ)		• NESHAP Requirements (contact DEQ)		• NESHAP Requirements (contact DEQ)	
• No MIOSHA Asbestos Requirements		• No MIOSHA Asbestos Requirements		• No MIOSHA Asbestos Requirements		• No MIOSHA Asbestos Requirements		• No MIOSHA Asbestos Requirements		• No MIOSHA Asbestos Requirements	
• MIOSHA Part 20 Demolition, Construction Safety Standard Requirements		• MIOSHA Part 20 Demolition, Construction Safety Standard Requirements		• MIOSHA Part 20 Demolition, Construction Safety Standard Requirements		• MIOSHA Part 20 Demolition, Construction Safety Standard Requirements		• MIOSHA Part 20 Demolition, Construction Safety Standard Requirements		• MIOSHA Part 20 Demolition, Construction Safety Standard Requirements	
• National Emission Standards for Hazardous Air Pollutants (NESHAP) Asbestos Requirements		• National Emission Standards for Hazardous Air Pollutants (NESHAP) Asbestos Requirements		• National Emission Standards for Hazardous Air Pollutants (NESHAP) Asbestos Requirements		• National Emission Standards for Hazardous Air Pollutants (NESHAP) Asbestos Requirements		• National Emission Standards for Hazardous Air Pollutants (NESHAP) Asbestos Requirements		• National Emission Standards for Hazardous Air Pollutants (NESHAP) Asbestos Requirements	
• Notification for demolition of a facility - confirm applicability with Department of Environmental Quality's (DEQ's) Air Quality Division.		• Notification for demolition of a facility - confirm applicability with Department of Environmental Quality's (DEQ's) Air Quality Division.		• Notification for demolition of a facility - confirm applicability with Department of Environmental Quality's (DEQ's) Air Quality Division.		• Notification for demolition of a facility - confirm applicability with Department of Environmental Quality's (DEQ's) Air Quality Division.		• Notification for demolition of a facility - confirm applicability with Department of Environmental Quality's (DEQ's) Air Quality Division.		• Notification for demolition of a facility - confirm applicability with Department of Environmental Quality's (DEQ's) Air Quality Division.	
• No NESHAP Asbestos Requirements on renovations.		• No NESHAP Asbestos Requirements on renovations.		• No NESHAP Asbestos Requirements on renovations.		• No NESHAP Asbestos Requirements on renovations.		• No NESHAP Asbestos Requirements on renovations.		• No NESHAP Asbestos Requirements on renovations.	
• Respirators		• Respirators		• Respirators		• Respirators		• Respirators		• Respirators	
Mandatory if		Mandatory if		Mandatory if		Mandatory if		Mandatory if		Mandatory if	
• Class I or		• Class I or		• Class I or		• Class I or		• Class I or		• Class I or	
• Class II substantially non-intact removal, or		• Class II substantially non-intact removal, or		• Class II substantially non-intact removal, or		• Class II substantially non-intact removal, or		• Class II substantially non-intact removal, or		• Class II substantially non-intact removal, or	
• Class II or III no NEA, or		• Class II or III no NEA, or		• Class II or III no NEA, or		• Class II or III no NEA, or		• Class II or III no NEA, or		• Class II or III no NEA, or	
• > PEL or		• > PEL or		• > PEL or		• > PEL or		• > PEL or		• > PEL or	
• Class I or II dry removal (except for intact sloped roofing projects where NEA obtained), or		• Class I or II dry removal (except for intact sloped roofing projects where NEA obtained), or		• Class I or II dry removal (except for intact sloped roofing projects where NEA obtained), or		• Class I or II dry removal (except for intact sloped roofing projects where NEA obtained), or		• Class I or II dry removal (except for intact sloped roofing projects where NEA obtained), or		• Class I or II dry removal (except for intact sloped roofing projects where NEA obtained), or	
• In emergencies, or		• In emergencies, or		• In emergencies, or		• In emergencies, or		• In emergencies, or		• In emergencies, or	
• Class II asbestos work when TSI or Surfacing Material ACM/PACM is being disturbed, or		• Class II asbestos work when TSI or Surfacing Material ACM/PACM is being disturbed, or		• Class II asbestos work when TSI or Surfacing Material ACM/PACM is being disturbed, or		• Class II asbestos work when TSI or Surfacing Material ACM/PACM is being disturbed, or		• Class II asbestos work when TSI or Surfacing Material ACM/PACM is being disturbed, or		• Class II asbestos work when TSI or Surfacing Material ACM/PACM is being disturbed, or	
• Class IV within regulated area where other employees required to wear respirators		• Class IV within regulated area where other employees required to wear respirators		• Class IV within regulated area where other employees required to wear respirators		• Class IV within regulated area where other employees required to wear respirators		• Class IV within regulated area where other employees required to wear respirators		• Class IV within regulated area where other employees required to wear respirators	
• Medical Surveillance		• Medical Surveillance		• Medical Surveillance		• Medical Surveillance		• Medical Surveillance		• Medical Surveillance	
Mandatory if		Mandatory if		Mandatory if		Mandatory if		Mandatory if		Mandatory if	
• Wearing negative-pressure respirator, or		• Wearing negative-pressure respirator, or		• Wearing negative-pressure respirator, or		• Wearing negative-pressure respirator, or		• Wearing negative-pressure respirator, or		• Wearing negative-pressure respirator, or	
• Exposed ≥ 30 days of work/year, or		• Exposed ≥ 30 days of work/year, or		• Exposed ≥ 30 days of work/year, or		• Exposed ≥ 30 days of work/year, or		• Exposed ≥ 30 days of work/year, or		• Exposed ≥ 30 days of work/year, or	
• Class I, II, or III work ≥ 30 days/yr.		• Class I, II, or III work ≥ 30 days/yr.		• Class I, II, or III work ≥ 30 days/yr.		• Class I, II, or III work ≥ 30 days/yr.		• Class I, II, or III work ≥ 30 days/yr.		• Class I, II, or III work ≥ 30 days/yr.	
• Protective Clothing		• Protective Clothing		• Protective Clothing		• Protective Clothing		• Protective Clothing		• Protective Clothing	
Protective clothing is coveralls or similar whole body clothing, head-coverings, gloves and foot coverings.		Protective clothing is coveralls or similar whole body clothing, head-coverings, gloves and foot coverings.		Protective clothing is coveralls or similar whole body clothing, head-coverings, gloves and foot coverings.		Protective clothing is coveralls or similar whole body clothing, head-coverings, gloves and foot coverings.		Protective clothing is coveralls or similar whole body clothing, head-coverings, gloves and foot coverings.		Protective clothing is coveralls or similar whole body clothing, head-coverings, gloves and foot coverings.	
Mandatory if		Mandatory if		Mandatory if		Mandatory if		Mandatory if		Mandatory if	
• Class I > 25' or 10ft ² or		• Class I > 25' or 10ft ² or		• Class I > 25' or 10ft ² or		• Class I > 25' or 10ft ² or		• Class I > 25' or 10ft ² or		• Class I > 25' or 10ft ² or	
• Class I < 25' or 10ft ² ; Class II and Class III with No NEA, or		• Class I < 25' or 10ft ² ; Class II and Class III with No NEA, or		• Class I < 25' or 10ft ² ; Class II and Class III with No NEA, or		• Class I < 25' or 10ft ² ; Class II and Class III with No NEA, or		• Class I < 25' or 10ft ² ; Class II and Class III with No NEA, or		• Class I < 25' or 10ft ² ; Class II and Class III with No NEA, or	
• > PEL		• > PEL		• > PEL		• > PEL		• > PEL		• > PEL	
• MIOSHA Regulations:		• MIOSHA Regulations:		• MIOSHA Regulations:		• MIOSHA Regulations:		• MIOSHA Regulations:		• MIOSHA Regulations:	
• Part 602, 29 CFR 1926.1101, Asbestos Standards for Construction		• Part 602, 29 CFR 1926.1101, Asbestos Standards for Construction		• Part 602, 29 CFR 1926.1101, Asbestos Standards for Construction		• Part 602, 29 CFR 1926.1101, Asbestos Standards for Construction		• Part 602, 29 CFR 1926.1101, Asbestos Standards for Construction		• Part 602, 29 CFR 1926.1101, Asbestos Standards for Construction	
• Act 135, Asbestos Abatement Contractors Licensing Act, P.A. 1986, as amended		• Act 135, Asbestos Abatement Contractors Licensing Act, P.A. 1986, as amended		• Act 135, Asbestos Abatement Contractors Licensing Act, P.A. 1986, as amended		• Act 135, Asbestos Abatement Contractors Licensing Act, P.A. 1986, as amended		• Act 135, Asbestos Abatement Contractors Licensing Act, P.A. 1986, as amended		• Act 135, Asbestos Abatement Contractors Licensing Act, P.A. 1986, as amended	
• Act 440, Asbestos Workers Accreditation Act, P.A. 1988, as amended		• Act 440, Asbestos Workers Accreditation Act, P.A. 1988, as amended		• Act 440, Asbestos Workers Accreditation Act, P.A. 1988, as amended		• Act 440, Asbestos Workers Accreditation Act, P.A. 1988, as amended		• Act 440, Asbestos Workers Accreditation Act, P.A. 1988, as amended		• Act 440, Asbestos Workers Accreditation Act, P.A. 1988, as amended	
• Definitions:		• Definitions:		• Definitions:		• Definitions:		• Definitions:		• Definitions:	
Accredited: means individuals accredited under the Asbestos Workers Accreditation Act (Act 440, P.A. 1988, as amended).		Accredited: means individuals accredited under the Asbestos Workers Accreditation Act (Act 440, P.A. 1988, as amended).		Accredited: means individuals accredited under the Asbestos Workers Accreditation Act (Act 440, P.A. 1988, as amended).		Accredited: means individuals accredited under the Asbestos Workers Accreditation Act (Act 440, P.A. 1988, as amended).		Accredited: means individuals accredited under the Asbestos Workers Accreditation Act (Act 440, P.A. 1988, as amended).		Accredited: means individuals accredited under the Asbestos Workers Accreditation Act (Act 440, P.A. 1988, as amended).	
Asbestos-Containing Material: means any material containing more than one percent asbestos (Part 602).		Asbestos-Containing Material: means any material containing more than one percent asbestos (Part 602).		Asbestos-Containing Material: means any material containing more than one percent asbestos (Part 602).		Asbestos-Containing Material: means any material containing more than one percent asbestos (Part 602).		Asbestos-Containing Material: means any material containing more than one percent asbestos (Part 602).		Asbestos-Containing Material: means any material containing more than one percent asbestos (Part 602).	
Class I Asbestos Work: means activities involving the removal of TSI and surfacing ACM or Class I asbestos (Part 602).		Class I Asbestos Work: means activities involving the removal of TSI and surfacing ACM or Class I asbestos (Part 602).		Class I Asbestos Work: means activities involving the removal of TSI and surfacing ACM or Class I asbestos (Part 602).		Class I Asbestos Work: means activities involving the removal of TSI and surfacing ACM or Class I asbestos (Part 602).		Class I Asbestos Work: means activities involving the removal of TSI and surfacing ACM or Class I asbestos (Part 602).		Class I Asbestos Work: means activities involving the removal of TSI and surfacing ACM or Class I asbestos (Part 602).	
Class II Asbestos Work: means activities involving the removal of ACM which is not TSI or surfacing material (Part 602).		Class II Asbestos Work: means activities involving the removal of ACM which is not TSI or surfacing material (Part 602).		Class II Asbestos Work: means activities involving the removal of ACM which is not TSI or surfacing material (Part 602).		Class II Asbestos Work: means activities involving the removal of ACM which is not TSI or surfacing material (Part 602).		Class II Asbestos Work: means activities involving the removal of ACM which is not TSI or surfacing material (Part 602).		Class II Asbestos Work: means activities involving the removal of ACM which is not TSI or surfacing material (Part 602).	
Class III Asbestos Work: means repair and maintenance operations where "ACM", including TSI and surfacing ACM or PACM, may be disturbed (Part 602).		Class III Asbestos Work: means repair and maintenance operations where "ACM", including TSI and surfacing ACM or PACM, may be disturbed (Part 602).		Class III Asbestos Work: means repair and maintenance operations where "ACM", including TSI and surfacing ACM or PACM, may be disturbed (Part 602).		Class III Asbestos Work: means repair and maintenance operations where "ACM", including TSI and surfacing ACM or PACM, may be disturbed (Part 602).		Class III Asbestos Work: means repair and maintenance operations where "ACM", including TSI and surfacing ACM or PACM, may be disturbed (Part 602).		Class III Asbestos Work: means repair and maintenance operations where "ACM", including TSI and surfacing ACM or PACM, may be disturbed (Part 602).	
Class IV Asbestos Work: means maintenance and custodial activities during which employees contact but do not disturb ACM or PACM (Part 602).		Class IV Asbestos Work: means maintenance and custodial activities during which employees contact but do not disturb ACM or PACM (Part 602).		Class IV Asbestos Work: means maintenance and custodial activities during which employees contact but do not disturb ACM or PACM (Part 602).		Class IV Asbestos Work: means maintenance and custodial activities during which employees contact but do not disturb ACM or PACM (Part 602).		Class IV Asbestos Work: means maintenance and custodial activities during which employees contact but do not disturb ACM or PACM (Part 602).		Class IV Asbestos Work: means maintenance and custodial activities during which employees contact but do not disturb ACM or PACM (Part 602).	
Disturbance: means any activity involving the removal of ACM or TSI by a structural member and any related removing or stripping of friable asbestos material (Act 135)/asbestos products (Part 602).		Disturbance: means any activity involving the removal of ACM or TSI by a structural member and any related removing or stripping of friable asbestos material (Act 135)/asbestos products (Part 602).		Disturbance: means any activity involving the removal of ACM or TSI by a structural member and any related removing or stripping of friable asbestos material (Act 135)/asbestos products (Part 602).		Disturbance: means any activity involving the removal of ACM or TSI by a structural member and any related removing or stripping of friable asbestos material (Act 135)/asbestos products (Part 602).		Disturbance: means any activity involving the removal of ACM or TSI by a structural member and any related removing or stripping of friable asbestos material (Act 135)/asbestos products (Part 602).		Disturbance: means any activity involving the removal of ACM or TSI by a structural member and any related removing or stripping of friable asbestos material (Act 135)/asbestos products (Part 602).	
Disruption: means activities that disrupt the matrix of ACM or PACM, crumble or pulverize ACM or PACM or generate visible debris from ACM or PACM (Part 602).		Disruption: means activities that disrupt the matrix of ACM or PACM, crumble or pulverize ACM or PACM or generate visible debris from ACM or PACM (Part 602).		Disruption: means activities that disrupt the matrix of ACM or PACM, crumble or pulverize ACM or PACM or generate visible debris from ACM or PACM (Part 602).		Disruption: means activities that disrupt the matrix of ACM or PACM, crumble or pulverize ACM or PACM or generate visible debris from ACM or PACM (Part 602).		Disruption: means activities that disrupt the matrix of ACM or PACM, crumble or pulverize ACM or PACM or generate visible debris from ACM or PACM (Part 602).		Disruption: means activities that disrupt the matrix of ACM or PACM, crumble or pulverize ACM or PACM or generate visible debris from ACM or PACM (Part 602).	
Exempt Licensed Trades: means Michigan licensed plumber, electrician, mechanical contractor, residential building or residential maintenance alteration contractor (Act 135), hand pressure (Act 135 and Act 440).		Exempt Licensed Trades: means Michigan licensed plumber, electrician, mechanical contractor, residential building or residential maintenance alteration contractor (Act 135), hand pressure (Act 135 and Act 440).		Exempt Licensed Trades: means Michigan licensed plumber, electrician, mechanical contractor, residential building or residential maintenance alteration contractor (Act 135), hand pressure (Act 135 and Act 440).		Exempt Licensed Trades: means Michigan licensed plumber, electrician, mechanical contractor, residential building or residential maintenance alteration contractor (Act 135), hand pressure (Act 135 and Act 440).		Exempt Licensed Trades: means Michigan licensed plumber, electrician, mechanical contractor, residential building or residential maintenance alteration contractor (Act 135), hand pressure (Act 135 and Act 440).		Exempt Licensed Trades: means Michigan licensed plumber, electrician, mechanical contractor, residential building or residential maintenance alteration contractor (Act 135), hand pressure (Act 135 and Act 440).	
Friable: means ACM that can be crumbled, pulverized, or reduced to powder when dry, by hand pressure (Act 135 and Act 440).		Friable: means ACM that can be crumbled, pulverized, or reduced to powder when dry, by hand pressure (Act 135 and Act 440).		Friable: means ACM that can be crumbled, pulverized, or reduced to powder when dry, by hand pressure (Act 135 and Act 440).		Friable: means ACM that can be crumbled, pulverized, or reduced to powder when dry, by hand pressure (Act 135 and Act 440).		Friable: means ACM that can be crumbled, pulverized, or reduced to powder when dry, by hand pressure (Act 135 and Act 440).		Friable: means ACM that can be crumbled, pulverized, or reduced to powder when dry, by hand pressure (Act 135 and Act 440).	
G(11) Materials: means intact roofing (i.e., roof cements, mastics, coatings or flashings with asbestos encapsulated or coated by bituminous or resinous compounds) and pipeline (i.e., asphaltic wrap) coating materials (Part 602).		G(11) Materials: means intact roofing (i.e., roof cements, mastics, coatings or flashings with asbestos encapsulated or coated by bituminous or resinous compounds) and pipeline (i.e., asphaltic wrap) coating materials (Part 602).		G(11) Materials: means intact roofing (i.e., roof cements, mastics, coatings or flashings with asbestos encapsulated or coated by bituminous or resinous compounds) and pipeline (i.e., asphaltic wrap) coating materials (Part 602).		G(11) Materials: means intact roofing (i.e., roof cements, mastics, coatings or flashings with asbestos encapsulated or coated by bituminous or resinous compounds) and pipeline (i.e., asphaltic wrap) coating materials (Part 602).		G(11) Materials: means intact roofing (i.e., roof cements, mastics, coatings or flashings with asbestos encapsulated or coated by bituminous or resinous compounds) and pipeline (i.e., asphaltic wrap) coating materials (Part 602).		G(11) Materials: means intact roofing (i.e., roof cements, mastics, coatings or flashings with asbestos encapsulated or coated by bituminous or resinous compounds) and pipeline (i.e., asphaltic wrap) coating materials (Part 602).	
Intact: means that the ACM has not crumbled, been pulverized, or otherwise deteriorated so that asbestos is no longer likely to be bound to its matrix (Part 602).		Intact: means that the ACM has not crumbled, been pulverized, or otherwise deteriorated so that asbestos is no longer likely to be bound to its matrix (Part 602).		Intact: means that the ACM has not crumbled, been pulverized, or otherwise deteriorated so that asbestos is no longer likely to be bound to its matrix (Part 602).		Intact: means that the ACM has not crumbled, been pulverized, or otherwise deteriorated so that asbestos is no longer likely to be bound to its matrix (Part 602).		Intact: means that the ACM has not crumbled, been pulverized, or otherwise deteriorated so that asbestos is no longer likely to be bound to its matrix (Part 602).		Intact: means that the ACM has not crumbled, been pulverized, or otherwise deteriorated so that asbestos is no longer likely to be bound to its matrix (Part 602).	
Written Respirator Program: means a demonstration by the employer in accordance with Part 602/1926.1101 that the employer has established a written respirator program.		Written Respirator Program: means a demonstration by the employer in accordance with Part 602/1926.1101 that the employer has established a written respirator program.		Written Respirator Program: means a demonstration by the employer in accordance with Part 602/1926.1101 that the employer has established a written respirator program.		Written Respirator Program: means a demonstration by the employer in accordance with Part 602/1926.1101 that the employer has established a written respirator program.		Written Respirator Program: means a demonstration by the employer in accordance with Part 602/1926.1101 that the employer has established a written respirator program.		Written Respirator Program: means a demonstration by the employer in accordance with Part 602/1926.1101 that the employer has established a written respirator program.	
Permissible Exposure Limits (PEL): 1) Time Weighted Average (TWA) - 0.1 fibers/cubic centimeter of air (f/cc) as an 8 hour TWA; 2) Excursion limit - 1.0 f/cc averaged over 30 minute period (Part 602).		Permissible Exposure Limits (PEL): 1) Time Weighted Average (TWA) - 0.1 fibers/cubic centimeter of air (f/cc) as an 8 hour TWA; 2) Excursion limit - 1.0 f/cc averaged over 30 minute period (Part 602).		Permissible Exposure Limits (PEL): 1) Time Weighted Average (TWA) - 0.1 fibers/cubic centimeter of air (f/cc) as an 8 hour TWA; 2) Excursion limit - 1.0 f/cc averaged over 30 minute period (Part 602).		Permissible Exposure Limits (PEL): 1) Time Weighted Average (TWA) - 0.1 fibers/cubic centimeter of air (f/cc) as an 8 hour TWA; 2) Excursion limit - 1.0 f/cc averaged over 30 minute period (Part 602).		Permissible Exposure Limits (PEL): 1) Time Weighted Average (TWA) - 0.1 fibers/cubic centimeter of air (f/cc) as an 8 hour TWA; 2) Excursion limit - 1.0 f/cc averaged over 30 minute period (Part 602).		Permissible Exposure Limits (PEL): 1) Time Weighted Average (TWA) - 0.1 fibers/cubic centimeter of air (f/cc) as an 8 hour TWA; 2) Excursion limit - 1.0 f/cc averaged over 30 minute period (Part 602).	
Presumed Asbestos Containing Material: means thermal system insulation (TSI) and surfacing materials found in pre-1981 buildings. Note, asphalt and vinyl flooring material found in pre-1981 buildings is also assumed to be an asbestos-containing material (Part 602).		Presumed Asbestos Containing Material: means thermal system insulation (TSI) and surfacing materials found in pre-1981 buildings. Note, asphalt and vinyl flooring material found in pre-1981 buildings is also assumed to be an asbestos-containing material (Part 602).		Presumed Asbestos Containing Material: means thermal system insulation (TSI) and surfacing materials found in pre-1981 buildings. Note, asphalt and vinyl flooring material found in pre-1981 buildings is also assumed to be an asbestos-containing material (Part 602).		Presumed Asbestos Containing Material: means thermal system insulation (TSI) and surfacing materials found in pre-1981 buildings. Note, asphalt and vinyl flooring material found in pre-1981 buildings is also assumed to be an asbestos-containing material (Part 602).		Presumed Asbestos Containing Material: means thermal system insulation (TSI) and surfacing materials found in pre-1981 buildings. Note, asphalt and vinyl flooring material found in pre-1981 buildings is also assumed to be an asbestos-containing material (Part 602).		Presumed Asbestos Containing Material: means thermal system insulation (TSI) and surfacing materials found in pre-1981 buildings. Note, asphalt and vinyl flooring material found in pre-1981 buildings is also assumed to be an asbestos-containing material (Part 602).	
Surfacing Material: means material that is sprayed, troweled-on or otherwise applied to surfaces (Part 602).		Surfacing Material: means material that is sprayed, troweled-on or otherwise applied to surfaces (Part 602).		Surfacing Material: means material that is sprayed, troweled-on or otherwise applied to surfaces (Part 602).		Surfacing Material: means material that is sprayed, troweled-on or otherwise applied to surfaces (Part 602).		Surfacing Material: means material that is sprayed, troweled-on or otherwise applied to surfaces (Part 602).		Surfacing Material: means material that is sprayed, troweled-on or otherwise applied to surfaces (Part 602).	
Thermal System Insulation (TSI): means ACM applied to pipe fittings, boilers, breeching, tanks, ducts, and other structural components to prevent heat loss or gain (Part 602).		Thermal System Insulation (TSI): means ACM applied to pipe fittings, boilers, breeching, tanks, ducts, and other structural components to prevent heat loss or gain (Part 602).		Thermal System Insulation (TSI): means ACM applied to pipe fittings, boilers, breeching, tanks, ducts, and other structural components to prevent heat loss or gain (Part 602).		Thermal System Insulation (TSI): means ACM applied to pipe fittings, boilers, breeching, tanks, ducts, and other structural components to prevent heat loss or gain (Part 602).		Thermal System Insulation (TSI): means ACM applied to pipe fittings, boilers, breeching, tanks, ducts, and other structural components to prevent heat loss or gain (Part 602).		Thermal System Insulation (TSI): means ACM applied to pipe fittings, boilers, breeching, tanks, ducts, and other structural components to prevent heat loss or gain (Part 602).	
Key:		Key:		Key:		Key:		Key:		Key:	
• ACM: Asbestos-Containing Material		• ACM: Asbestos-Containing Material		• ACM: Asbestos-Containing Material		• ACM: Asbestos-Containing Material		• ACM: Asbestos-Containing Material		• ACM: Asbestos-Containing Material	
• CIH: Certified Industrial Hygienist		• CIH: Certified Industrial Hygienist		• CIH: Certified Industrial Hygienist		• CIH: Certified Industrial Hygienist		• CIH: Certified Industrial Hygienist		• CIH: Certified Industrial Hygienist	
• PACM: Presumed Asbestos-Containing Material		• PACM: Presumed Asbestos-Containing Material		• PACM: Presumed Asbestos-Containing Material		• PACM: Presumed Asbestos-Containing Material		• PACM: Presumed Asbestos-Containing Material		• PACM: Presumed Asbestos-Containing Material	
• HEPA: High Efficiency Particulate Air Filter		• HEPA: High Efficiency Particulate Air Filter		• HEPA: High Efficiency Particulate Air Filter		• HEPA: High Efficiency Particulate Air Filter		• HEPA: High Efficiency Particulate Air Filter		• HEPA: High Efficiency Particulate Air Filter	
• NEA: Negative Exposure Assessment		• NEA: Negative Exposure Assessment		• NEA: Negative Exposure Assessment		• NEA: Negative Exposure Assessment		• NEA: Negative Exposure Assessment		• NEA: Negative Exposure Assessment	
• > PEL: Greater than Permissible Exposure Limits		• > PEL: Greater than Permissible Exposure Limits		• > PEL: Greater than Permissible Exposure Limits		• > PEL: Greater than Permissible Exposure Limits		• > PEL: Greater than Permissible Exposure Limits		• > PEL: Greater than Permissible Exposure Limits	
• TSI: Thermal System Insulation		• TSI: Thermal System Insulation		• TSI: Thermal System Insulation		• TSI: Thermal System Insulation		• TSI: Thermal System Insulation		• TSI: Thermal System Insulation	

MIOSHA's Requirements

This brochure is provided as a general summary of the responsibilities of demolition and renovation contractors in regard to the Michigan Occupational Safety and Health Administration (MIOSHA) asbestos regulations. This brochure does not address the specific asbestos National Emission Standards for Hazardous Air Pollutants (NESHAP) requirements for demolition.

Part 602, the *OSHA Asbestos Standards for Construction* [29 CFR 1926.1101(k)(2)(ii)] requires that a thorough asbestos inspection must be conducted of all pre-1981 building facilities. This survey must identify the presence, location, and quantity of asbestos-containing materials (ACM) and/or presumed asbestos-containing materials (PACM) within the building.

A building that is slated for demolition and/or renovation may contain ACM that will remain within the building during the work activities. Please contact the Asbestos Program of the Michigan Department of Environmental Quality (DEQ) if you have questions in regard to the types of asbestos materials that may remain in a building that is to be demolished or renovated and for any additional NESHAP requirements.

If a contractor demolishes or renovates a building containing ACM, what does MIOSHA require?

To minimize obligations under MIOSHA, removal of ACM prior to initiating demolition and/or renovation work is encouraged. When this does not occur then the demolition and/or renovation activities are potentially regulated by Part 602, Act 135 and Act 440. Please note, a contractor must comply with Part 602 regardless of the amount of ACM being removed or disturbed. In addition, the following requirements must be in place prior to the disturbance of ACM:



ASBESTOS AWARENESS TRAINING

MUST BE PROVIDED ANNUALLY

Training

Whether the facility contains Class I or Class II ACM, demolition and/or renovation involving ACM removal requires a 40-hour trained competent person. Accreditation in accordance with Act 440 is also required for Class I and friable Class II projects. There is one exception to this competent person training requirement involving flooring that is removed intact utilizing the compliant work practices specified in Part 602 for these materials; 12 hours competent person training is required.

Demolition and/or renovation involving the removal of Class I materials and Class II projects that are friable; that are non-intact interior projects or an interior project without a negative exposure assessment requires 32-hour trained and accredited workers (if friable). Removal of non-friable/intact Class II materials require workers be trained 8 or more hours depending on number of Class II materials involved.

Work Practices and Engineering Controls

All projects involving the removal or disturbance of ACM must address establishment of a regulated area. Contractors must also address the need for engineering controls, air monitoring, respiratory protection, personal protective equipment, decontamination area, worker/supervisor training, and potentially medical surveillance. Many of these specific work practices and procedures are dependent upon whether the ACM being removed remains intact and/or whether a negative exposure assessment (NEA) has been produced.

Licensure/Project Notification

If the ACM being removed by a contractor is or will become friable during any part of the demolition or renovation project, then a licensed asbestos abatement contractor or licensed exempt trade group as specified in Michigan Public Act 135 of 1986, as amended, the *Asbestos Abatement Contractor Licensing Act*, must be utilized to perform work activities. The licensed



If inhaled, these needle-like fibers can cause three aspecific asbestos-related diseases: *Asbestosis* (a fibrotic scarring of the lungs), *Lung Cancer*, and *Mesothelioma* (a cancer of the lining of the chest

building environment.

Asbestos is the name of a group of naturally occurring minerals that can separate into microscopic needle-like fibers. The most common of these minerals are *Chrysotile*, *Amosite*, and *Crocidolite*. Once released into the atmosphere, the size and shape of these fibers permit them to remain airborne for long periods of time and thus contaminate the

Background of Asbestos

found and their location.

(b) Ensure that there is a written report of the engineering survey at the field office until the completion of the job. The report shall include information such as the name of the person conducting the survey, date of the survey, and hazardous substances and dangerous conditions near the safety of an employee.

(iv) Any other conditions and equipment affecting

(iii) The utility service entering the building.

— 10 —

(iii) Whether any adjacent structure will be affected

(i) The condition of the foundation, roof, walls,

(a) An engineering survey of the structure and equipment is conducted by a competent person

below:
Rule 2031. (1) Before the start of a demolition operation, an employer shall ensure that all of the following are done:

MIOSH's Demolition Standard, Part 20, also regulates demolition activities. Specific information regarding this standard is listed

area where Class I or non-intact Class II work is being performed or where an NEA has not been obtained on intact Class II work



exempt trades (plumbers, electrician, mechanical contractors, residential building, and maintenance alteration contractors) are limited to projects that are incidental to their primary licensed trade that do not exceed 260 linear feet or 160 square feet of friable ACM.

Regarding project notifications, licensed asbestos abatement contractors must notify the Department of Licensing and Regulatory Affairs' Asbestos Program of all projects exceeding 10 linear feet or 15 square feet of friable materials at least 10 days before beginning the project. Exempt licensed trades must also notify before beginning these projects.

What should a compliance officer see when conducting an inspection at a demolition and/or renovation site?

- Restricted access to the site (i.e., regulated area).
- Wet methods (i.e., a water hose spraying water on the building debris).
- Labeled, lined dumpsters for ACM wastes
- A means of personal decontamination (i.e., shower or drop cloth and HEPA vacuum - whatever applies) for employees unless only Class II or III ACM is involved and an NEA is obtained.
- Demolition and/or renovation workers wearing respirators and personal protective clothing unless it is intact Class II or III work and an NEA has been obtained.

What should a compliance officer not see when conducting an inspection at a demolition and/or renovation site?

- An unregulated demolition site with unauthorized persons on the site.
- A concrete crusher if there is floor tile remaining on the concrete slab.
- Persons without respirators within the regulated

APPENDIX F

CITY OF FLINT BUILDING PERMIT AND SIDEWALK SPECIFICATIONS

DEVELOPMENT DIVISION, FLINT, MICHIGAN

(formerly Building Inspections)

PHONE: (810) 766-7284

APPLICATION FOR BUILDING PERMIT

MICHIGAN BUILDING CODE: RESIDENTIAL - 2009 / COMMERCIAL - 2012

Date _____ Plan File No.: _____ Permit No. _____

IMPORTANT - Applicant to complete all items in Sections: I, II, III, IV and V**I. LOCATION OF BUILDING**

At (Location) _____ Zoning District _____
 (No.) _____ (Street) _____
 Between _____ And _____
 (Cross Street) _____ (Cross Street) _____
 Legal Description _____

II. TYPE AND COST OF BUILDING - IF WORK IS STARTED PRIOR TO OBTAINING PROPER PERMIT, FINES MAY BE CHARGED UP TO \$825.00**A. OWNERSHIP**

1. Private (individual, corporation, nonprofit institution, etc.)
2. Public (Federal, State or Local Government)

- 493.4 Institutional Buildings - Jails, Hospitals
 493.5 Storage Buildings - Public Garages
 493.6 Mercantile Buildings - Retail Stores, Shops
 493.7 Business Buildings - Offices, Serv. Stations
 493.8 Assembly Buildings - Churches, Restaurant
 494.6 Industrial Buildings - Bakery, Assembly Plants

B. TYPE OF IMPROVEMENT

3. New Buildings

Complete the following for the use of the building

493.0 Miscellaneous - Specify _____

493.1 One Family Dwelling

493.2 Multi Family Dwelling

Enter # of units _____

493.3 Residential Buildings - Residential Garages, Hotels

Enter # of units _____

4. Repairs, Alterations and Additions

494.7 Residential Repairs, Additions and Alterations

494.8 Nonresidential Repairs, Additions and Alterations

5. Wrecking and Moving - Utilities Sealed

495.3 Wrecking & Moving

Type of building wrecked or moved _____

6. Foundation Only

7. 495.2 Sign Permit

\$ 75.00 of PERMIT FEE IS NON-REFUNDABLE**C. COST BREAKDOWN MUST BE PROVIDED IF APPLICABLE**

Permit Fee:

Plan Review Fee:

Total:

- (Omit Cents)
- a. General Construction \$
- b. Electrical \$
- c. Plumbing \$
- d. Heating, air conditioning \$
- e. Other (elevator, etc.) \$

TOTAL COST OF IMPROVEMENT \$

TYPE OF WORK:

COMMENTS:

III. SELECTED CHARACTERISTICS OF BUILDING**D. PRINCIPAL TYPE OF FRAME**

Masonry (wall bearing)

Wood Frame

Structural steel

Reinforced concrete

Other - Specify _____

G. DIMENSIONS

Number of stories.....

Total square feet of floor area, all floors, based on exterior dimensions

Total land area sq. ft.....

E. PRINCIPAL TYPE OF HEATING

Gas

Oil

Electricity

Coal

Other - Specify _____

F. TYPE OF MECHANICAL

Will there be air conditioning?

Yes or No

Will there be an elevator?

Yes or No

NUMBER OF PARKING SPACES:

Enclosed

Outdoors

RESIDENTIAL BUILDINGS ONLY:

of Bedrooms

of Bathrooms

Full ____ Half ____

IV. OWNER OR LESSEE

NAME		TELEPHONE NO.	
ADDRESS	CITY	STATE	ZIP CODE

B. ARCHITECT OR ENGINEER

NAME		TELEPHONE NO.	
ADDRESS	CITY	STATE	ZIP CODE

C. CONTRACTOR

NAME		TELEPHONE NO.	
ADDRESS	CITY	STATE	ZIP CODE

EMAIL ADDRESS

BUILDERS LICENSE #		EXPIRATION DATE
FED. EMP. ID# OR REASON FOR EXEMPTION		
WORKERS COMP. INSURANCE CARRIER OR REASON FOR EXEMP.		
MESC EMPLOYER NUMBER OR REASON FOR EXEMPTION		

V. APPLICANT INFORMATION

Applicant is responsible for the payment of all fees and charges applicable to this application and must provide the following information.

Name of person responsible (Not company name)		Telephone No.	
Address	City	State	Zip
Federal ID # / Social Security Number			

I hereby certify that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his authorized agent, and we agree to conform to all applicable laws of the State of Michigan. All information submitted on this application is accurate to the best of my knowledge.

Section 23a of the State Construction Code Act of 1972, Act No. 230 of the Public Acts of 1972, being Section 125.1523a of the Michigan Compiled Laws, prohibits a person from conspiring to circumvent the licensing requirements of this state relating to persons who are to perform work on a residential building or a residential structure. Violators of Section 23a are subject to civil fines.

I HEREBY STATE UNDER OATH THAT THE INFORMATION SUBMITTED IS TRUE AND COMPLETE AND CONTAINS A CORRECT DESCRIPTION OF THE BUILDING OR STRUCTURE, LOT AND PROPOSED WORK.

PERSON MAKING THIS STATEMENT (check one)

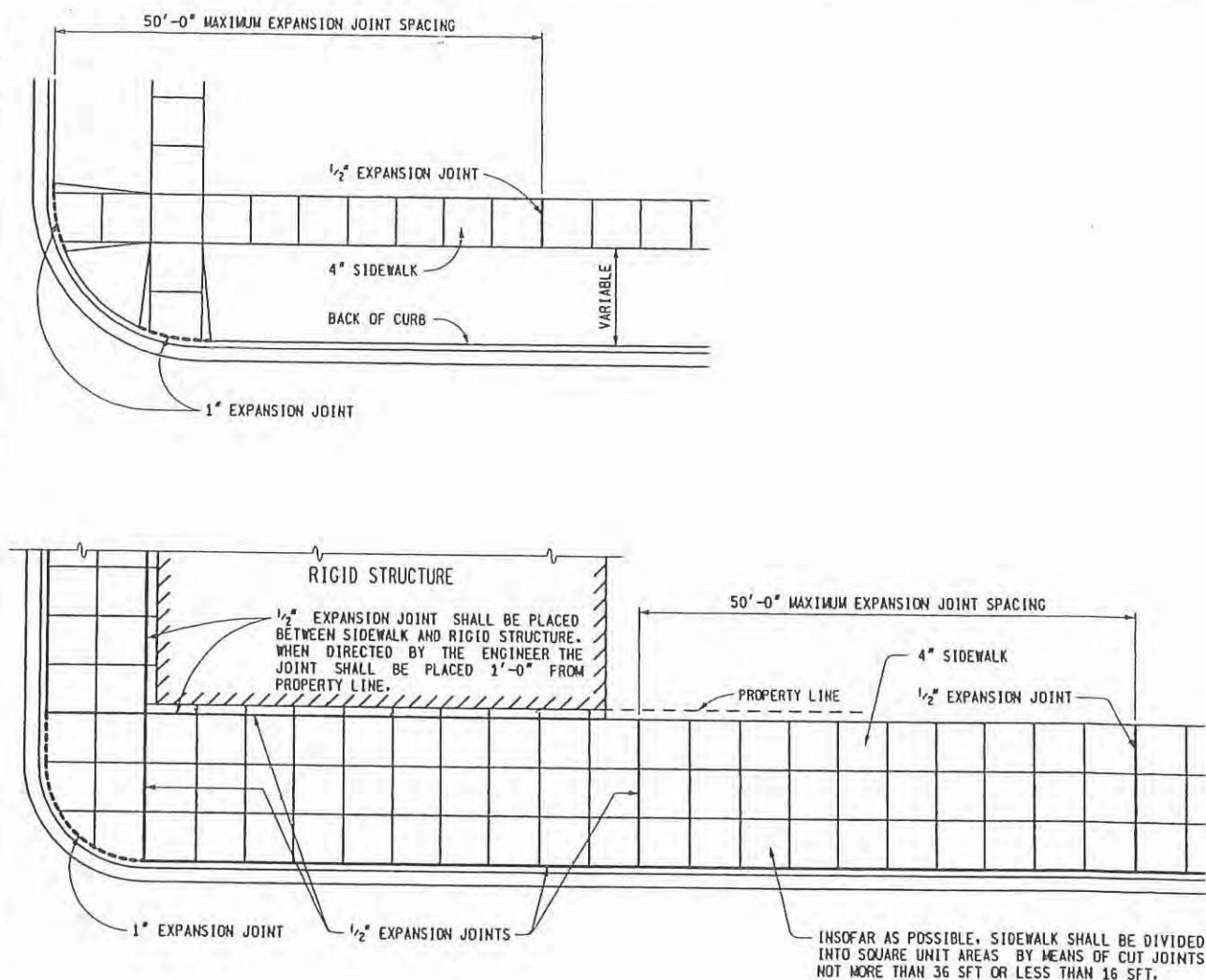
Owner _____ Attorney _____ Agent _____ Architect/ Engineer _____ Contractor _____

SIGNATURE OF APPLICANT

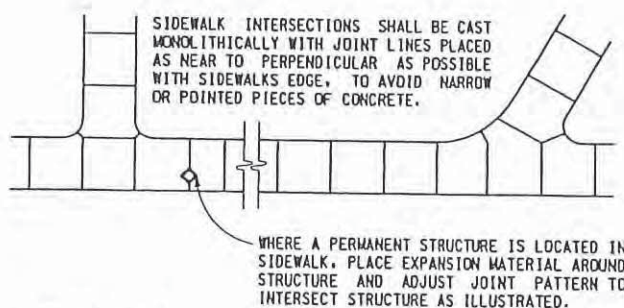
WITNESSED BY:

VI.

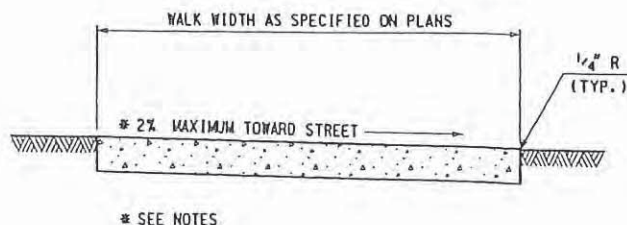
APPROVED FOR ISSUE OF PERMIT	_____	DATE
	BY	
NOT APPROVED FOR ISSUE OF PERMIT	_____	DATE
	BY	
REASON FOR REJECTION:		



LOCATION OF JOINTS IN CONCRETE SIDEWALK



TYPICAL SIDEWALK JOINT LAYOUTS



4" CONCRETE SIDEWALK



PREPARED
BY
DESIGN DIVISION

DRAWN BY: B.L.T.

CHECKED BY: W.K.P.

DEPARTMENT DIRECTOR
Kirk T. Steudle

APPROVED BY: *John C. Friend*
ENGINEER OF DELIVERY

APPROVED BY: *Paul A. Van Pelt*
ENGINEER OF DEVELOPMENT

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

DRIVEWAY OPENINGS & APPROACHES, AND CONCRETE SIDEWALK

9-16-2009

F.H.V.A. APPROVAL

2-12-2009

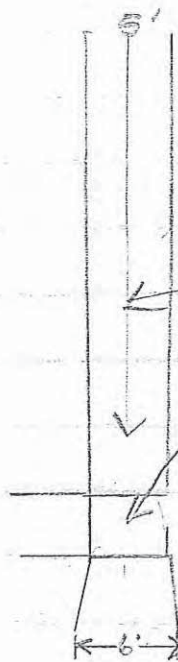
PLAN DATE

R-29-F

SHEET
1 OF 4

NOTE: THIS PLAN IS NOT A LEGAL ENGINEERING DOCUMENT BUT AN ELECTRONIC DUPLICATE. THE ORIGINAL SIGNED COPY APPROVED FOR PUBLICATION, IS KEPT ON FILE AT THE MICHIGAN DEPARTMENT OF TRANSPORTATION.

Sidewalk Specifications



Slope/Fall

NO greater than 8.3% within
15 L.F.

LANDING:

NO more than 2% FALL IN
ANY direction

2" in a foot

OR MAX. of 8.3%
design at a lesser slope

MAX Grade \rightarrow 1.12 (8.3%)

Recommended MAX grade to ALLOW for
construction tolerance: 1.14 (7.1%)

ENGINEERING DIVISION

Photocopies	Letter/Legal	\$1.00
	Ledger	\$2.00
Blueprints	12" x 24"	\$2.00
	18" x 36"	\$4.50
	24" x 36"	\$6.00
	Large (per SFT)	\$1.00

PERMITS AND FEES

CURRENT FEE

Soil Borings	\$100.00
Sidewalk & Approach Permit	\$ 42.00
Excavation Permit	\$ 28.00
Curb Cut Permit	\$ 12.50/LFT
Storm Sewer Tap Inspection	\$ 236.00
Sanitary Wye Connection	\$ 482.00
Grade Stakes	Time and Material
Pavement Break Permit	per following table

AREA (SFT)

AMOUNT

0 - 16	\$ 828.00
17 - 49	\$1,243.00
50 - 81	\$1,656.00
82 - 100	\$2,208.00 (+ \$100 for Major Roads)
101 - 144	\$2,611.00
145 and over	\$3,036.00

These permits and fees are in addition to others that may be required by other Departments and Divisions.

If work is started prior to obtaining permit, the City may:

- a. Double the fee.
- b. Stop the work until a permit is obtained.
- c. Issue an appearance ticket requiring the contractor or owner to appear in District Court, where a fine and/or jail sentence may be imposed.
- d. Refer the information to the City, County, or State Attorney's Office for appropriate action.
- e. Any combination or all the above.

Notes:

- (1) Work must be scheduled through Street maintenance Division (810) 766-7343.
- (2) Work must be scheduled through Sewer Division (810) 766-7079.

APPENDIX G

FEDERAL REQUIREMENTS NOTICES

CONTRACT PROVISIONS

A grantee's and subgrantee's contracts must contain provisions in paragraph (i) of this section. Federal agencies are permitted to require changes, remedies, changed conditions, access and records retention, suspension of work, and other clauses approved by the Office of Federal Procurement Policy.

1. Administrative, contractual, or legal remedies in instances where contractors violate or breach contract terms, and provide for such sanctions and penalties as may be appropriate. (Contracts more than the simplified acquisition threshold)
2. Termination for cause and for convenience by the grantee or subgrantee including the manner by which it will be effected and the basis for settlement. (All contracts in excess of \$10,000)
3. Compliance with Executive Order 11246 of September 24, 1965, entitled "Equal Employment Opportunity", as amended by Executive Order 11375 of October 13, 1967, and as supplemented in Department of Labor regulations (41 CFR chapter 60). (All construction contracts awarded in excess of \$10,000 by grantees and their contractors or subgrantees)
4. Compliance with the Copeland "Anti-Kickback" Act (18 U.S.C. 874) as supplemented in Department of Labor regulations (29 CFR part 3). (All contracts and subgrants for construction or repair)
5. Compliance with the Davis-Bacon Act (40 U.S.C. 276a to 276a-7) as supplemented by Department of Labor regulations (29 CFR part 5). (Construction contracts in excess of \$2000 awarded by grantees and subgrantees when required by Federal grant program legislation)
6. Compliance with Sections 103 and 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 327A 330) as supplemented by Department of Labor regulations (29 CFR part 5). (Construction contracts awarded by grantees and subgrantees in excess of \$2000, and in excess of \$2500 for other contracts which involve the employment of mechanics or laborers)
7. Notice of awarding agency requirements and regulations pertaining to reporting.
8. Notice of awarding agency requirements and regulations pertaining to patent rights with respect to any discovery or invention which arises or is developed in the course of or under such contract.
9. Awarding agency requirements and regulations pertaining to copyrights and rights in data.
10. Access by the grantee, the subgrantee, the Federal grantor agency, the Comptroller General of the United States, or any of their duly authorized representatives to any books, documents, papers, and records of the contractor which are directly pertinent to that specific contract for the purpose of making audit, examination, excerpts, and transcriptions.
11. Retention of all required records for three years after grantees or subgrantees make final payments and all other pending matters are closed.
12. Compliance with all applicable standards, orders, or requirements issued under section 306 of the Clean Air Act (42 U.S.C. 1857 (h)), section 508 of the Clean Water Act (33 U.S.C. 1368), Executive Order 11738, and Environmental Protection Agency regulations (40 CFR part 15). (Contracts, subcontracts, and subgrants of amounts in excess of \$100,000).

13. Mandatory standards and policies relating to energy efficiency which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (Pub. L. 94A 163, 89 Stat. 871).

[53 FR 8068, 8087, Mar. 11, 1988, as amended at 60 FR 19639, 19642, Apr. 19, 1995]

EQUAL EMPLOYMENT OPPORTUNITY
(Executive Order 11246, as amended -41 CFR Part 60-1.4(b))

During the performance of this contract, the contractor agrees as follows:

1. The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
2. The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive considerations for employment without regard to race, color, religion, sex, or national origin.
3. The contractor will send to each labor union or representative of workers with which s/he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
4. The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, as amended, and of the rules, regulations, and relevant orders of the Secretary of Labor.
5. The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
6. In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedure authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
7. The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (7) in every subcontract or

purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provision, including sanctions for noncompliance: *Provided, however,* that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency the contractor may request the United States to enter into such litigation to protect the interests of the United States.

STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY
CONSTRUCTION CONTRACT SPECIFICATIONS
(Executive Order 11246 - 41 CFR Part 60.4.3)

1. As used in these specifications:

a. "Covered area" means the geographical area described in the solicitation from which this contract resulted;

b. "Director" means Director, Office of Federal Contract Compliance Programs (OFCCP), U.S. Department of Labor, or any person to whom the Director delegates authority;

c. "Employer identification number" means the Federal social security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941;

d. "Minority" includes:

(1) Black (all) persons having origins in any of the Black African racial groups not of Hispanic origin);

(2) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin regardless of race);

(3) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and

(4) American Indian or Alaskan native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

2. Whenever the contractor, or any subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.

3. If the contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors shall be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each contractor or subcontractor participating in an approved plan is individually required to comply with its obligations under the EEO clause and to make a good faith

effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other contractors or subcontractors toward a goal in an approved Plan does not excuse any covered contractor's or subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.

4. The contractor shall implement the specific affirmative action standards provided in paragraphs 18.7a through 18.7p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered construction contractors performing construction work in a geographical area where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. Goals are published periodically in the Federal Register in notice form, and such notices may be obtained from any Office of Federal Contract Compliance Programs office or from Federal procurement contracting officers. The contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.

5. Neither the provisions of any collective bargaining agreement nor the failure by a union with whom the contractor has a collective bargaining agreement to refer either minorities or women shall excuse the contractor's obligations under these specifications, Executive Order 11246 or the regulations promulgated pursuant thereto.

6. In order for the non-working training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees shall be employed by the contractor during the training period and the contractor shall have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees shall be trained pursuant to training programs approved by the U.S. Department of Labor.

7. The contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The contractor shall document these efforts fully and shall implement affirmative action steps at least as extensive as the following:

- a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the contractor's employees are assigned to work. The contractor, where possible, will assign two or more women to each construction project. The contractor shall specifically ensure that all foremen, superintendents, and other onsite supervisory personnel are aware of and carry out the contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.

b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

c. Maintain a current file of the names, addresses, and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source, or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the contractor by the union or, if referred, not employed by the contractor, this shall be documented in the file with the reason therefore along with whatever additional actions the contractor may have taken.

d. Provide immediate written notification to the Director when the union or unions with which the contractor has a collective bargaining agreement has not referred to the contractor a minority person or female sent by the contractor, or when the contractor has other information that the union referral process has impeded the contractor's efforts to meet its obligations.

e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the contractor's employment needs, especially those programs funded or approved by the Department of Labor. The contractor shall provide notice of these programs to the sources compiled under 7b above.

f. Disseminate the contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.

g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination, or other employment decisions including specific review of these items with onsite supervisory personnel such as superintendents, general foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

h. Disseminate the contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the contractor's EEO policy with other contractors and subcontractors with whom the contractor does or anticipates doing business.

i. Direct its recruitment efforts, both oral and written, to minority, female, and community organizations, to schools with minority and female students; and to minority and female recruitment and training organizations serving the contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the contractor shall send written notification to organizations, such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable provide after school, summer, and vacation employment to minority and female youth both on the site and in other areas of a contractor's workforce.

k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.

l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel, for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.

m. Ensure that seniority practices, job classifications, work assignments, and other personnel practices do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the contractor's obligations under these specifications are being carried out.

n. Ensure that all facilities and company activities are non-segregated except that separate or single user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

p. Conduct a review, at least annually, of all supervisor's adherence to and performance under the contractor's EEO policies and affirmative action obligations.

8. Contractors are encouraged to participate in voluntary associations, which assist in fulfilling one or more of their affirmative action obligations (18.7a through 18.7p). The efforts of a contractor association, joint contractor union, contractor community, or other similar groups of which the contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 18.7a through 18.7p of these specifications provided that the contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the contractor. The obligation to comply, however, is the contractor's and failure of such a group to fulfill an obligation shall not be a defense for the contractor's noncompliance.

9. A single goal for minorities and a separate single goal for women have been established. The contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, if the particular group is employed in a substantially disparate manner (for example, even though the contractor has achieved its goals for women generally,) the contractor may be in violation of the Executive Order if a specific minority group of women is underutilized.

10. The contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.

11. The contractor shall not enter into any subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.

12. The contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination, and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

13. The contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 18.7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.

14. The contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government, and to

keep records. Records shall at least include for each employee, the name, address, telephone number, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.

15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION
TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY
(Executive Order 11246 - 41 CFR PART 60-2)

1. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.
2. The goals and timetables for minority and female participation, expressed in percentage terms for the contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Goals for Minority Participation in Each Trade

Time Table: Until Further Notice Trade: All Trades Goal (Percent): 12.6%

Goals for Female Participation in Each Trade

Time Table: Until Further Notice Trade: All Trades Goal (Percent): 7.0%

These goals are applicable to all the contractor's construction work (whether or not it is Federal or federally-assisted) performed in the covered area. If the contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the contractor also is subject to the goals for both its Federally involved and non-federally involved construction.

The contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals. The hours of minority and female employment and training shall be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from contractor to contractor or from project to project, for the sole purpose of meeting the contractor's goals, shall be a violation of the contract, the Executive Order, and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The contractor shall provide written notification to the Director, OFCCP, within 10 working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address, and telephone number of the subcontractor; employer identification number of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of subcontract; and the geographical area in which the subcontract is to be performed.
4. As used in this notice and in the contract resulting from this solicitation, the "covered area" is [insert description of the geographical areas where the contract is to be performed giving the state, county, and city, if any].

PARTICIPATION GOALS FOR MINORITIES AND FEMALES
(Office of Federal Contract Compliance Programs (OFCCP)
Technical Assistance Guide for Federal Construction Contractors, Appendix E)

Contractors may establish higher goals if they desire. Although a contractor is required to make good faith efforts to meet their goals, the goals are not quotas and no sanctions are imposed solely for failure to meet them. The following factors explain the difference between permissible goals, on the one hand, and unlawful preferences, on the other:

- Participation rate goals are not designed to be, nor may they properly or lawfully be interpreted as, permitting unlawful preferential treatment and quotas with respect to persons of any race, color, religion, sex, or national origin.
- Goals are neither quotas, set-asides, nor a device to achieve proportional representation or equal results. Rather, the goal-setting process is used to target and measure the effectiveness of affirmative action efforts to eradicate and prevent barriers to equal employment opportunity.
- Goals under Executive Order 11246, as amended, do not require that any specific position be filled by a person of a particular gender, race, or ethnicity. Instead, the requirement is that contractors engage in outreach and other efforts to broaden the pool of qualified candidates to include minorities and women.
- The use of goals is consistent with principles of merit, because goals do not require an employer to hire a person who does not have the qualifications needed to perform the job successfully, hire an unqualified person in preference to another applicant who is qualified, or hire a less qualified person in preference to a more qualified person.
- Goals may not be treated as a ceiling or a floor for the employment of members of particular groups.
- A contractor's compliance is measured by whether it has made good faith efforts to meet its goals, and failure to meet goals, by itself, is not a violation of the Executive Order.

APPENDIX H

MBE-WBE OUTREACH FORM

GENESEE COUNTY MBE/WBE/HBE OUTREACH REPORT
FOR LOCAL UNITS OF GOVERNMENT, CONTRACTORS AND SUBCONTRACTORS

Date: _____

Local Unit of Government: _____

Prime Contractor: _____

Subcontractor: _____

Contact Person: _____ Telephone Number: _____

Name of Project: _____

Type (Construction, Materials, Services OR Supplies): _____

To comply with federal Procurement and MBE/WBE/HBE outreach requirements, local units of government; non-profit agencies; prime contractors; and subcontractors are required to select three businesses for each category, (i.e., materials, supplies, services, design/engineering/architectural services, construction trades, etc.). Of these three businesses, one business must be selected for solicitation from a MBE/WBE/HBE. This form may be reproduced if necessary for additional contacts.

The following information is required. If the proper documentation is not provided, your bid documentation will be considered as incomplete, and therefore will not be considered acceptable.

Proper documentation includes: name of company, name of person contacted, date of contact, registered mail slip, and identification of selected MBE/WBE/HBE's.

1) Contractor Name: _____

Contact Person: _____

Form of Contact: _____ Date: _____

Supporting Documentation: _____

Written Bid Received: YES NO Amount: _____

Were they Selected for Contract?: YES NO

If No, Why? _____

MBE/WBE/HBE: YES NO

Section 3: YES NO If yes, please fill out Section 3 forms.

2) Contractor Name: _____
Contact Person: _____
Form of Contact: _____ Date: _____
Supporting Documentation: _____
Written Bid Received: YES NO Amount: _____
Were they Selected for Contract?: YES NO
If No, Why? _____
MBE/WBE/HBE: YES NO
Section 3: YES NO If yes, please fill out Section 3 forms.

3) Contractor Name: _____
Contact Person: _____
Form of Contact: _____ Date: _____
Supporting Documentation: _____
Written Bid Received: YES NO Amount: _____
Were they Selected for Contract?: YES NO
If No, Why? _____
MBE/WBE/HBE: YES NO
Section 3: YES NO If yes, please fill out Section 3 forms.

Local Unit of Government Signature: _____ Date: _____

Prime Contractor Signature: _____ Date: _____

Subcontractor Signature: _____ Date: _____

APPENDIX I

SECTION 3 REQUIREMENTS AND FORMS

SECTION 3 CLAUSE
(24 CFR Part 135.38)

All section 3 covered contracts shall include the following clause (referred to as the section 3 clause):

A. The work to be performed under this contract is subject to the requirements of section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701u (section 3). The purpose of section 3 is to ensure that employment and other economic opportunities generated by HUD assistance or HUD-assisted projects covered by section 3, shall, to the greatest extent feasible, be directed to low- and very low-income persons, particularly persons who are recipients of HUD assistance for housing.

B. The parties to this contract agree to comply with HUD's regulations in 24 CFR part 135, which implement section 3. As evidenced by their execution of this contract, the parties to this contract certify that they are under no contractual or other impediment that would prevent them from complying with the part 135 regulations.

C. The contractor agrees to send to each labor organization or representative of workers with which the contractor has a collective bargaining agreement or other understanding, if any, a notice advising the labor organization or workers' representative of the contractor's commitments under this section 3 clause, and will post copies of the notice in conspicuous places at the work site where both employees and applicants for training and employment positions can see the notice. The notice shall describe the section 3 preference, shall set forth minimum number and job titles subject to hire, availability of apprenticeship and training positions, the qualifications for each; and the name and location of the person(s) taking applications for each of the positions; and the anticipated date the work shall begin.

D. The contractor agrees to include this section 3 clause in every subcontract subject to compliance with regulations in 24 CFR part 135, and agrees to take appropriate action, as provided in an applicable provision of the subcontract or in this section 3 clause, upon a finding that the subcontractor is in violation of the regulations in 24 CFR part 135. The contractor will not subcontract with any subcontractor where the contractor has notice or knowledge that the subcontractor has been found in violation of the regulations in 24 CFR part 135.

E. The contractor will certify that any vacant employment positions, including training positions, that are filled (1) after the contractor is selected but before the contract is executed, and (2) with persons other than those to whom the regulations of 24 CFR part 135 require employment opportunities to be directed, were not filled to circumvent the contractor's obligations under 24 CFR part 135.

F. Noncompliance with HUD's regulations in 24 CFR part 135 may result in sanctions, termination of this contract for default, and debarment or suspension from future HUD assisted contracts.

G. With respect to work performed in connection with section 3 covered Indian housing assistance, section 7(b) of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450e) also applies to the work to be performed under this contract. Section 7(b) requires that to the greatest extent feasible (i) preference and opportunities for training and employment shall be given to Indians, and (ii) preference in the award of contracts and subcontracts shall be given to Indian organizations and Indian-owned Economic Enterprises. Parties to this contract that are subject to the provisions of section 3 and section 7(b) agree to comply with section 3 to the maximum extent feasible, but not in derogation of compliance with section 7(b).

Date _____

Attach the following documentation, as applicable, as evidence of status. Not all may apply to your firm or circumstance, although at least one will apply.

For business claiming status as a Section 3 resident-owned business concern:

- | | |
|---|---|
| <input type="checkbox"/> Copy of resident lease | <input type="checkbox"/> Copy of receipt of public assistance |
| <input type="checkbox"/> Copy of evidence of participation in a public assistance program | <input type="checkbox"/> Copy of previous year's income tax filings for Section 3 residents |

For business claiming Section 3 status due to at least 30% of its current workforce is Section 3 residents, or were Section 3 residents when first hired (if within the last three years) please provide:

- | | |
|---|---|
| <input type="checkbox"/> List of all current full-time employees | <input type="checkbox"/> List of employees claiming Section 3 status |
| <input type="checkbox"/> PHA/IHA Residential lease less than 3 tax years from day of employment | <input type="checkbox"/> Copy of previous year's income filings for Section 3 residents |

For business claiming Section 3 status by subcontracting 25% of the dollar amount awarded to qualified Section 3 businesses:

- | |
|---|
| <input type="checkbox"/> List of subcontracted Section 3 business (es), subcontract amount, and date of subcontract |
| <input type="checkbox"/> Copy of all Subcontractors' previous year's income tax filings |

FY 2015 Median Family Income for Flint and Genesee County MSA - \$53,800		
Section 3 Maximum Income Limits		
Number in Household	Very-Low Income	Low Income
One Person	\$19,000	\$30,350
Two Person	\$21,700	\$34,700
Three Person	\$24,400	\$39,050
Four Person	\$27,100	\$43,350
Five Person	\$29,300	\$46,850
Six Person	\$31,450	\$50,000
Seven Person	\$33,650	\$53,800
Eight Person	\$35,800	\$57,250

Genesee County
Section 3 RESIDENT EMPLOYMENT OPPORTUNITY
ELIGIBILITY FOR PREFERENCE

Eligibility for Preference

A section 3 resident seeking the preference in training and employment provided by Section 3 will certify, or submit evidence to Genesee County, subrecipient, subgrantee, contractor or subcontractor, that the person is a Section 3 resident, as defined in Section 135.5. (Examples of evidence of eligibility for the preference include demonstration of receipt of public assistance; or evidence of participation in a public assistance program; or previous year's income tax filings.) All residents of public housing developments located in Genesee County qualify as Section 3 residents. Additionally, individuals residing in Genesee County who meet the annual income limits set forth in the following table can also qualify for Section 3 status.

A picture identification card and proof of current residency is required.

Certification for Resident Seeking Section 3 Preference in Training and Employment

I, _____, am a legal resident of _____

_____ and meet the income eligibility guidelines for a low- or very-low-income person as included in this Certification.

My permanent address is: _____

I have attached the following documentation as evidence of my status:

† Copy of lease

† Copy of receipt of public assistance

† Copy of Evidence of participation
in a public assistance program

† Copy of the most recent year's income tax filings

† Other evidence _____

Warning: This program is funded through Federal funds provided by the U.S. Department of Housing and Urban Development. Any person who knowingly presents a false, fictitious, or fraudulent statement or claim in a matter within the jurisdiction of the U.S. Department of Housing and Urban Development is subject to criminal penalties, civil liability, and administrative sanctions, including but not limited to : (i) fines and imprisonment under 18 U.S.C. §§ 287, 1001, 1010 and 1012; (ii) civil penalties and damages under 31 U.S.C. § 3729; and (iii) administrative sanctions, claims, and penalties under 24 C.F.R. parts 24, 28 and 30. Section 1001 of Title 18 U.S. Code makes it a criminal offense to make willful, false statements or misrepresentation of any material fact involving the use of or to obtain federal funds.

Print Name

Date

Signature

Date

FY 2015 Median Family Income for Flint and Genesee County MSA - \$53,800

**Section 3
Maximum Income Limits**

Number in Household	Very-Low Income	Low Income
One Person	\$19,000	\$30,350
Two Person	\$21,700	\$34,700
Three Person	\$24,400	\$39,050
Four Person	\$27,100	\$43,350
Five Person	\$29,300	\$46,850
Six Person	\$31,450	\$50,000
Seven Person	\$33,650	\$53,800
Eight Person	\$35,800	\$57,250

Business Concern Name: _____

Project Name: _____

Period Covered: _____

Date Submitted: _____

[illegible]

Genesee County
STATEMENT OF QUALIFICATIONS SECTION 3
CERTIFICATION – BUSINESS CONCERN

Name of Business Concern: _____

List any/all Doing Business As (DBA) _____

Address: _____

The Company is a:

☐ Sole Proprietorship

☐ Joint Venture

☐ Limited Liability Corporation (LLC)

☐ Partnership

☐ Corporation

Contact Information – Name: _____

Phone: _____ Fax: _____

Email: _____

Submitted by: _____
Signature *Date*

1. List Owners of Business and Percentage of Ownership
Name % Ownership

_____	_____
_____	_____
_____	_____

2. List All Employees of the Business Concern and their Job Category

Please note: A computer generated employee list can be submitted as long as it lists the employee name, job category, Part-time or Full-time status and Section 3 Resident status.

Name	Full (FT)/ Part (P)	Job Category	Section 3 Resident?
1) _____	_____	_____	<input type="checkbox"/>
2) _____	_____	_____	<input type="checkbox"/>
3) _____	_____	_____	<input type="checkbox"/>
4) _____	_____	_____	<input type="checkbox"/>
5) _____	_____	_____	<input type="checkbox"/>
6) _____	_____	_____	<input type="checkbox"/>
7) _____	_____	_____	<input type="checkbox"/>

If any current employees are considered Section 3 Residents, please provide documentation as evidence of status, as described in the Business Concern Certification Form.

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APPENDIX J

GENESEE COUNTY SECS REQUIREMENTS



Genesee County
Drain Commissioner
Water & Waste Services

G-4610 Beecher Road Flint, MI 48532
Phone (810) 732-7870 Fax (810) 732-9773
www.gcdcwvs.com

COMMERCIAL SOIL EROSION & SEDIMENTATION CONTROL PERMIT APPLICATION

1. APPLICANT (Please check if applicant is the landowner or designated agent*)

<input type="checkbox"/> Landowner <input type="checkbox"/> Designated Agent	NAME:	EMAIL:	
ADDRESS:			
CITY:	STATE:	ZIP:	PHONE:

2. LOCATION

SECTION	<input type="checkbox"/> CITY <input type="checkbox"/> TOWNSHIP <input type="checkbox"/> VILLAGE	PROPERTY TAX ID #
SUBDIVISION:	LOT #	STREET ADDRESS:

3. PROPOSED EARTH CHANGE

Project Type: Residential <input type="checkbox"/> Industrial <input type="checkbox"/> Multi-Family <input type="checkbox"/> Land Balancing <input type="checkbox"/> Commercial <input type="checkbox"/>		
Describe Project	Size of Earth Change (Acres, Linear feet or square feet)	
Name of and distance to nearest Lake, Stream, or Drain	Date Project to start	Date Project to be complete

4. SOIL EROSION AND SEDIMENTATION CONTROL PLAN (Refer to Rule 323.1703 of Part 91)

Note: One complete set of plans must be attached.	Estimated Cost of Erosion and Sedimentation Control	
	Plan Preparer's Name	Phone #

5. PARTIES RESPONSIBLE FOR EARTH CHANGE

Name of Landowner (if not provided in Box. 1 above)		Address		
Email:				
City	State	Zip	Phone #	
Name of Individual "On Site" Responsible for Earth Change			Company Name	
Email:				
Address	City	State	Zip	Phone

6. PERFORMANCE DEPOSIT (If required by the permitting agency)

Amount Required \$:				
Name of Surety Company:				
Address	City	State	Zip	Phone

7. NOTICE TO APPLICANT

I hereby acknowledge that if a soil and sedimentation permit is issued, I hereby voluntarily grant the employees of the Genesee County Drain Commissioner's Office, Division of Water and Waste Services, or their designated agents permission to enter onto my property to ensure that the project conforms to the soil erosion and sedimentation permit issued. I further understand that if I revoke my consent for the employees of the Genesee County Drain Commissioner's Office, Division of Water and Waste Services, or their designated agents to enter onto the property set forth herein, the permit is automatically revoked, I will need to resubmit a new soil erosion and sedimentation permit application and I must cease all earth moving activities on the property.

I further understand that if I continue to perform earth moving activities on the property after revoking my consent for the employees of the Genesee County Drain Commissioner's Office, Division of Water and Waste Services, or their designated agents to enter onto the property set forth herein, I may be subject to one or more of the enforcement procedures set forth in Part 91 of Act No. 451 of the Public Acts of 1994, as amended, and the administrative rules promulgated thereunder, including, but not limited to, being issued a civil infraction citation, having an injunction issued to prevent any further earth moving activities on the aforementioned property, the right of the Genesee County Drain Commissioner's Office, Division of Water and Waste Services or its agents to enter onto my property to install soil erosion and sedimentation control procedures and lien the property for all costs associated with installing the soil erosion and sedimentation control procedures, and/or the forfeiture of any security submitted in the amount required to bring the property into compliance with Part 91 of Act No. 451 of the Public Acts of 1994, as amended.

I hereby acknowledge that the information contained herein is truthful and accurate to the best of my knowledge. I understand that if I knowingly make any false statement in this application it may result in a civil fine of not more than \$10,000.00 per day for each violation.

I (we) affirm that the above information is accurate and that I (we) will conduct the above-described earth change in accordance with Part 91, Soil Erosion and Sedimentation Control, of the Natural Resource and Environmental Protection Act, 1994 PA 451, as amended, applicable local ordinances, and the documents accompanying this application.		
Landowner's Signature	Print Name	Date
Designated Agent's Signature*	Print Name	Date

* Designated agent must have a written statement from landowner authorizing him/her to secure a permit in the landowner's name.

LOG NO: _____

DATE: _____

Genesee County Drain Commissioner Division of Water and Waste Services
Soil Erosion and Sedimentation Control Plan Submittal Checklist

All SESC plans submitted to this office shall at a minimum be accompanied by the following information.

1. ____ Legal description, tax I.D. number and/or survey of site.
2. ____ A SESC site plan (scale of not more than 1"=200' on 24"x36" sheets) of the property with the items below clearly labeled :(Residential can be submitted on letter or legal paper)
 - A. ____ Name and address of Applicant. Name and address of landowner.
 - B. ____ Project Name, location, proximity to waters of the State (lake, stream, drain, wetlands) and (the 100 year floodplain contour for those waters for commercial applications only).
 - C. ____ Location map, NORTH arrow and drawing scale.
 - D. ____ Limits of earth change delineated and clearly labeled.
 - E. ____ Existing and proposed contours. If unchanged so state.
 - F. ____ Existing and proposed on-site and off-site (within drainage area of earth change) drainage and dewatering facilities including temporary dewatering shall be clearly labeled and identified.
 - G. ____ Existing on-site vegetation (type and location).
 - H. ____ Soil stock pile locations.
 - I. ____ Description of installation and location of all temporary and permanent erosion control measures, with measures clearly drafted and labeled with the (Michigan Unified Keying System and GCDC-WWS Specifications for commercial applications only).
 - J. ____ A program proposal for the continued maintenance of all permanent soil erosion and sediment control measures that remain after project completion.
 - K. ____ Person responsible for continued maintenance once permit is closed

Name: _____
Address: _____

Phone #: _____
Email address: _____

- 3.____ A topographic map with the affected area clearly labeled.
- 4.____ Existing soils information, with project area clearly labeled. (Soils Map)
- 5.____ A completed Soil Erosion and Sedimentation Control application.
- 6.____ A completed construction and maintenance schedule including a plan for permanent stabilization.
- 7.____ A copy of any submitted MDEQ permit applications (as applicable) required for completing earthwork within the boundaries of waters of the state.

I hereby certify that the above information has been provided with the submitted plans.

Name of Party Preparing Checklist: _____

Signature: _____ Date: _____

OFFICE USE ONLY

This application review packet will be reviewed for completeness within 5 business days of being received. If the application review packet is found to be incomplete it will be returned in its entirety to the entity that made the submission.

Dated Received: _____

Is this application complete? YES ☐ NO ☐

Dated Verified: _____

SESC Detailed Review:

Sign: _____ Date: _____

Project Engineer Authorization to issue SESC Permit: _____
(Commercial SESC ONLY)

Date: _____

Note: It is necessary to submit only one set of plans for review

SESC CONSTRUCTION AND MAINTENANCE SCHEDULE

Project Name: _____
 Anticipated Start Date: _____
 Anticipated End Date: _____

Construction Schedule

Construction Sequence	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Notes
Temporary SESC Measures													
Strip and Stockpile													
Rough Grading													
Underground Utilities													
Road Installation													
Building Construction													
Permanent SESC Measures													
Final Grade													
Landscaping													

Maintenance Schedule

Maintenance Sequence	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Notes
Street Sweeping													
Silt Fencing													
Maintain Buffer Strips													
Inlet Structures													
Seeding and Mulch													
Sediment Basins													
Rip-Rap													
Remove Temporary Measures													

Seeding and Planting Schedule

Temporary: (Refer to Tables 4 & 6 in MDEQ "Guidelines for Vegetative Erosion control" included with this packet)

Area on Plan	Mix #	Common Name	Natural Drainage Class Suitability	Suitable Uses	Rate lb/acre

Permanent: (Refer to Tables 4 & 6 in MDEQ "Guidelines for Vegetative Erosion control" included with this packet)

Area on Plan	Mix #	Common Name	Natural Drainage Class Suitability	Suitable Uses	Rate lb/acre

Trees and Shrubs: (Refer to Table 7 in MDEQ "Guidelines for Vegetative Erosion control" included with this packet)

Area on Plan	Quantity	Common Name	Scientific Name	Drainage Class	Notes

GENESEE COUNTY DRAIN COMMISSIONER
SOIL EROSION BOND
(To Accompany Application for Permit)

Bond NO. _____

(Name of development)

(S-Permit) / Log #

KNOW ALL MEN BY THESE PRESENTS, that _____
as principal and _____ as surety, are held and firmly bound unto
the Genesee County Drain Commissioner in the penal sum of _____
dollars, for the payment of which, well and truly to be made, we bind ourselves and our heirs, executors
and administrators, jointly and severally, firmly by these presents.

Sealed with our seals and dated this _____ day of _____ A.D. 20____.

WHEREAS, the above bounded _____ has made application to said Drain
Commissioner for a permit as stated in the application therefore.

NOW THEREFORE, the condition of this obligation is such that if the above bounded shall perform the
undertakings of said application in the manner prescribed in the permit therefore issued by said Drain
Commissioner and shall well and truly pay for all damages on account of such construction, earth moving
and all other damages fines and penalties which he shall become liable to pay and shall save said Genesee
County Drain Commissioner harmless and indemnify them from all suits, claims, damages and proceedings
of every kind arising out of the aforesaid damages and injuries and shall observe all the terms and
conditions of the permit to be issued, then this obligation to be void, otherwise of full force and effect.

Principal _____
(Seal)

Principal's Mailing address

Surety _____
(Seal)

Surety's Mailing Address

.....
NOTICE TO SURETY OF
ISSUANCE OF PERMIT

This is to inform you that a permit,
covered by the above bond has been
issued as follows:

Applicant _____

Contractor _____

Permit No. _____

Permit Date _____

Please include this information on all
correspondence concerning the bond.

NOTICE OF TERMINATION
OF LIABILITY

This is to inform you that:

The permit operations
covered by the above bond
have been completed
satisfactorily.

The permit covered by
above has been canceled.

Liability under the bond is
therefore terminated effective

(Date)

By: _____

Table 4. Example Seeding Mixtures for Introduced Species

Mix #	Common Name	Natural Drainage Class Suitability	Suitable Uses	Rate lbs/acre
1	Creeping red fescue	WD, MWD	A, C/F, WW	40
2	Creeping red fescue White clover, red clover, or alfalfa	WD, MWD	C/F	30 4
3	Smooth brome grass Creeping red fescue White clover, red clover, or alfalfa	WD, MWD	C/F	15 15 4
4	Smooth brome grass alfalfa	WD, MWD	C/F, WW	30 4
5	Smooth brome grass Creeping red fescue	WD, MWD	C/F, WW	20 20
6	Kentucky blue grass Creeping red fescue	MWD	A, C/F	20 20
7	Creeping red fescue Tall fescue	MWD	C/F, WW	20 20
8	Creeping red fescue Creeping bentgrass	MWD, SPD	A, C/F	40 1
9	Smooth brome grass Tall Fescue	MWD, SPD	C/F, WW	20 20
10	Smooth brome grass Timothy Red clover	MWD, SPD	C/F, WW	15 4 4
11	Smooth brome grass Creeping red fescue Kentucky blue grass Birdfoot trefoil	MWD, SPD	C/F, WW	10 10 10 4
12	Tall fescue Creeping bentgrass	SPD, PD	C/F, WW	40 1
13	Tall fescue Alsike clover or birdfoot trefoil	SPD, PD	C/F, WW	40 1
14	Redtop Timothy Alsike clover or birdfoot trefoil	SPD, PD	C/F	2 5 2
15	Tall Fescue Smooth Brome grass Creeping bentgrass Birdfoot trefoil	SPD, PD	C/F, WW	12 12 1 6
16	Tall fescue Redtop	SPD, PD, VPD	C/F, WW	20 2

Mix #	Common Name	Natural Drainage Class Suitability	Suitable Uses	Rate lbs/acre
17	Redtop Alsike clover or birdfoot trefoil	PD, VPD	C/F	4 2
18	Creeping red fescue Kentucky bluegrass Redtop Timothy Alsike clover	See Note #1	C/F	8 8 1 2 3
19	Creeping red fescue Redtop Tall fescue Smooth Brome grass Alsike clover or birdfoot trefoil White clover, red clover, or alfalfa	See Note #1	C/F, WW	6 1 6 6 3 3

Five pounds of annual or perennial ryegrass may be added to any mixture if quick cover is desired.

1 - These mixtures are suitable for large or linear projects where several soil types may be encountered, but a single seed mixture is desired for the entire project.

Table 6. Seed Selection Guide for some Commonly Available Native Grasses

Common Name	Scientific Name	Seeding Rate lbs/acre	Drainage Class Suitability	Notes
American beachgrass	<i>Ammophila breviligulata</i>		Dunes, WD sands	1
"Tioga" Deer tongue	<i>Panicum clandestinum</i>	15	WD, MWD	2, 3
Little bluestem	<i>Schizachyrium scoparius</i>	12	WD, MWD	2
Big bluestem	<i>Andropogon gerardii</i>	15	WD, MWD, SPD	2
Switch grass	<i>Panicum virgatum</i>	10	WD, MWD, SPD	2
Indian grass	<i>Sorghastrum nutans</i>	10	WD, MWD, SPD	2

Notes:

- 1 - Beachgrass is planted vegetatively; see text.
- 2 - Warm season grasses.
- 3 - Suitable for sand and gravel pit and mine reclamation.

A great variety of native species are available; consult suppliers for cultural information.

KEY FOR Information in Tables 4, 5, 6, and 7

Abbreviations for *Soil Natural Drainage Closses*

WD = Well Drained

MWD = Moderately Well Drained

SPD = Somewhat Poorly Drained

PD = Poorly Drained

VPD = Very Poorly Drained

Abbreviations for *Suitable Uses* (Table 4)

A = Sites maintained as a lawn

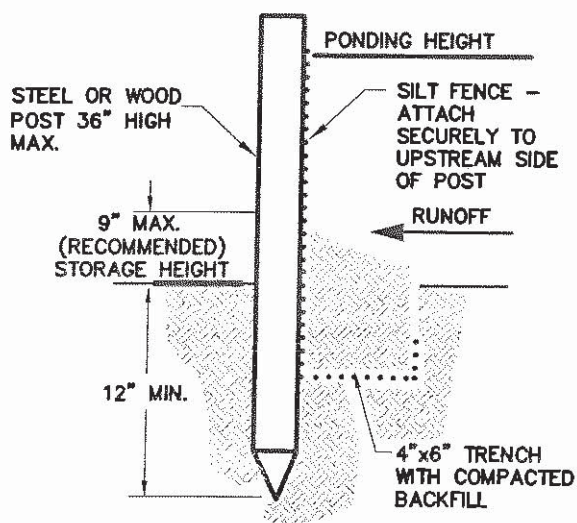
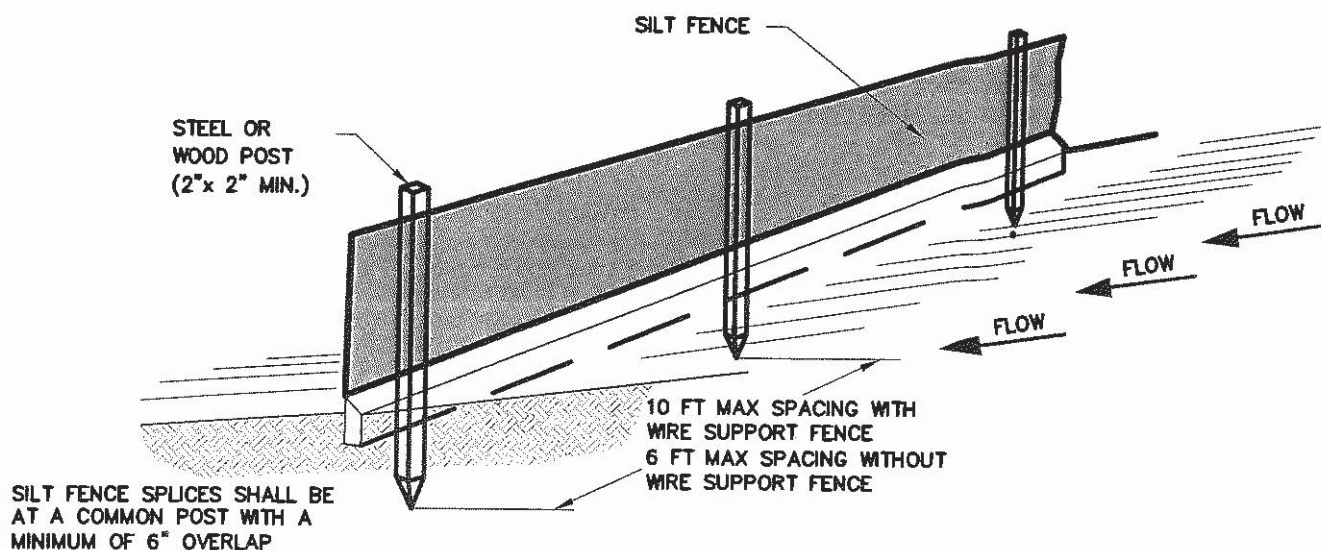
C/F = Cut and fill, slopes, ditch banks

WW = Areas subject to periodic storm water flow such as grassed waterways,
ditch bottoms, diversions

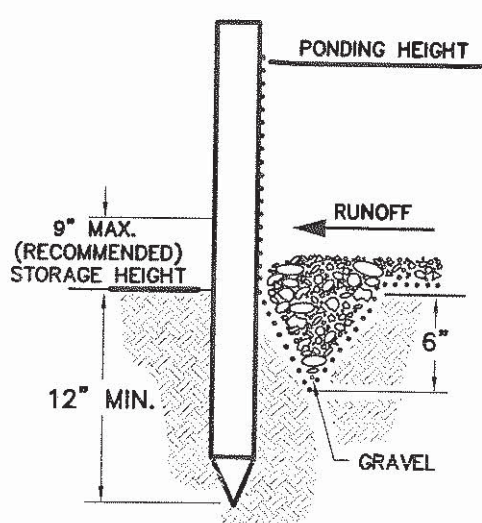
Species shown in **bold face** may be invasive and should not be planted where they can escape into sensitive natural areas.

Table 7. Selected Trees and Shrubs for Erosion Control

Common Name	Scientific Name	Drainage Class Suitability	Notes
Evergreen Trees			
Jack Pine	<i>Pinus banksiana</i>	WD, MWD, SPD	
Red Pine	<i>Pinus resinosa</i>	WD, MWD	
White Pine	<i>Pinus strobus</i>	MWD, SPD	
Norway Spruce	<i>Picea abies</i>	WD, MWD	1
Deciduous Trees			
Quaking aspen	<i>Populus tremuloides</i>	WD, MWD, SPD	
Bigtooth aspen	<i>Populus grandidentata</i>	WD, MWD	
Hybrid poplar	<i>Populus spp.</i>	WD, MWD, SPD	1
Red maple	<i>Acer rubrum</i>	ADAPTABLE	
Silver maple	<i>Acer saccharinum</i>	MWD, SPD, PD	
Hawthorn	<i>Crataegus spp.</i>	varies by species	3
Black willow	<i>Salix nigra</i>	SPD, PD, VPD	
With the exception of hawthorn, the trees listed above are fast growing and selected for their potential use in windbreaks.			
Shrubs			
Northern bayberry	<i>Myrica pensylvanica</i>	WD, MWD	1,2
Fragrant sumac	<i>Rhus aromatica</i>	WD, MWD	2
Staghorn sumac	<i>Rhus typhina</i>	WD, MWD	
Gray dogwood	<i>Cornus foemina (racemosa)</i>	WD, MWD, SPD	
Red-osier dogwood	<i>Cornus Stolonifera</i>	SPD, PD, VPD	
Cranberry-bush viburnum	<i>Viburnum opulus (trilobum)</i>	SPD, PD, VPD	
Scrub willows	<i>Salix spp.</i>	SPD, PD, VPD	
Blackberry/raspberry	<i>Rubus spp.</i>	varies by species	3
The shrubs listed above are selected for vigorous and extensive root growth, Willows are particularly useful for stream bank stabilization; they will sprout from cuttings or branch bundles if moisture is adequate.			
Notes -			
1 - These species are not native to Michigan (bayberry is native, but very rare).			
2 - These species may not be cold hardy in the Northern Lower or Upper Peninsula.			
3 - Thorny species are useful for excluding humans where foot traffic may create erosion sites.			



STANDARD DETAIL
TRENCH WITH NATIVE BACKFILL



ALTERNATE DETAIL
TRENCH WITH GRAVEL

APPLICATIONS

1. INSTALLED TO REDUCE SEDIMENT LADEN SURFACE RUNOFF FROM LEAVING THE PROPERTY OF A CONSTRUCTION SITE INVOLVING DISTURBED EARTH.
2. DIVERSIONARY STRUCTURE.

DESIGN

1. INSTALL AROUND THE BASE OF SOIL STOCKPILES.
2. UTILIZE FOR SHEET FLOW ONLY.

DESIGN (CONT)

3. INSTALL ON DOWN STREAM SIDE OF CONSTRUCTION.
4. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.
5. IF POSSIBLE LOCATE FENCE 10-FT. FROM TOP OF SLOPE, WETLAND OR WATER BODY.