Specification for Asbestos Abatement, Lead Paint Awareness, and PCBs Remediation

Haddam Jailhouse, Haddam, Connecticut

Town of Haddam

Haddam, Connecticut

December 20, 2011

FUSS & O'NEILL
Disciplines to Deliver

Fuss & O'Neill EnviroScience, LLC
146 Hartford Road
Manchester, CT 06040

Project No. 20101276.A2E

FUSS & O'NEILL
EnviroScience, LLC

December 20, 2011

Mr. Thomas Giddis
Town of Haddam
30 Field Park Drive
Haddam, CT 06438

Re: Specifications for Asbestos Abatement, Lead Paint Awareness, and PCBs Remediation
Haddam Jailhouse
Haddam, Connecticut
Fuss & O'Neill EnviroScience Project No. 20101276.A2E

Dear Mr. Giddis:

Enclosed are the draft Specifications for the hazardous materials abatement for the Haddam Jailhouse in Haddam, Connecticut.

The hazardous materials survey was performed on September 7, 2005 by a Fuss & O'Neill EnviroScience, LLC licensed inspector and included an asbestos inspection, screening for lead-based paint, and assessment of PCB-containing ballasts, mercury hazards, and PCBs in window and door caulking.

The information summarized in this document is for the above-mentioned materials only. It does not include information on other hazardous materials that may exist in the property (such as underground storage tanks).

If you have any questions regarding the contents of this report, please do not hesitate to contact me at (860) 646-2469, extension 5565. Thank you for this opportunity to have served your environmental needs.

Sincerely,

Stephen W. Connelly
Senior Vice President

SWC/kr

Enclosure

146 Hartford Road
Manchester, CT
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www.fando.com

Connecticut
Massachusetts
Rhode Island
South Carolina

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ASBESTOS AND PCB ABATEMENT AT
FORMER HADDAM JAILHOUSE BUILDING
HADDAM, CONNECTICUT

FORM OF BID
BASE BID
(To Be Submitted in Triplicate)

To: Mr. Thomas Giddis
Town of Haddam
30 Field Park Drive
Haddam, CT 06438

A. The undersigned, having attended the Pre-Bid Meeting with the Town of Haddam and having verified the quantities and conditions affecting the cost of the work, and having reviewed in detail the specifications (including this bid form, the Form of Contract, the General Conditions, the General Scope of Work, the Technical Specifications and Drawings and Addenda, if applicable) as prepared by Fuss & O'Neill EnviroScience, LLC of Manchester, Connecticut, hereby proposes to furnish all labor, materials, equipment, and services required for the asbestos floor tile, black roof flashing/tar and door caulking abatement at the Former Haddam Jailhouse Building in Haddam, Connecticut, in accordance therewith, for the Contract Price specified below, subject to additions and deductions according to the terms of the Specifications.

B. This Bid includes Addenda numbered _____.

C. The proposed Contract Price for the Base Bid and Alternates for each School are as follows:

Base Bid _____
_____ Dollars ($_____)

Unit Prices per the following schedule. Unit prices shall include labor, disposal, and all necessary fees.

Item No. 1 –CONTAINMENT(s) PREPARATION TO ENCLOSE ASBESTOS ABATEMENT AREA'S-

$ _____ per containment

Item No. 2 – FLOOR TILE (includes carpet over floor tile) REMOVAL AND DISPOSAL AS ACM

$ _____ per square foot.

Item No. 3 – DOOR CAULKING REMOVAL AND DISPOSAL AS ACM

$ _____ per linear foot.

Item No. 4 – WINDOW WITH PCB CAULKING/GLAZING COMPOUND REMOVAL AND DISPOSAL AS PCB

$ _____ per window.

Item No. 5 – BRICK REMOVAL AS PCB REMEDIATION WASTE REMOVAL AND DISPOSAL AS PCB-CONTAINING MATERIAL

$ _____ per square foot.

Item No. 6 – CONTAINMENT(s) PREPARATION TO ENCLOSE PCBs EXTERIOR/INTERIOR REMEDATION AREAS

$ _____ per containment

D. The undersigned agrees that, if selected as Asbestos Abatement Contractor, he/she will, within ten days after presentation thereof by the Owner, execute a contract in accordance with the terms of this bid.

_____	_____
Company Name	Signature
_____	_____
Company Address	Name
_____	_____
	Title
_____	
Date	

AIA® Document A132™ – 2009

Standard Form of Agreement Between Owner and Contractor, Construction Manager as Adviser Edition

AGREEMENT made as of the day of in the year
(In words, indicate day, month and year.)

BETWEEN the Owner:
(Name, legal status, address and other information)

Town of Haddam
30 Field Park Drive
Haddam, CT 06438

and the Contractor:
(Name, legal status, address and other information)

for the following Project:
(Name, location and detailed description)

Former Haddam Jailhouse Building
11 Jail Hill Road, Haddam, CT
Hazardous Materials Abatement

The Construction Manager:
(Name, legal status, address and other information)

The Architect:
(Name, legal status, address and other information)

The Owner and Contractor agree as follows.

ADDITIONS AND DELETIONS:
The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

This document is intended to be used in conjunction with AIA Documents A232™–2009, General Conditions of the Contract for Construction, Construction Manager as Adviser Edition; B132™–2009, Standard Form of Agreement Between Owner and Architect, Construction Manager as Adviser Edition; and C132™–2009, Standard Form of Agreement Between Owner and Construction Manager as Adviser.

AIA Document A232™–2009 is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

Init.
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ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. An enumeration of the Contract Documents, other than Modifications, appears in Article 9.

ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be the date of this Agreement unless a different date is stated below or provision is made for the date to be fixed in a notice to proceed issued by the Owner.
(Insert the date of commencement, if it differs from the date of this Agreement or, if applicable, state that the date will be fixed in a notice to proceed.)

If, prior to the commencement of the Work, the Owner requires time to file mortgages, mechanics' liens and other security interests, the Owner's time requirement shall be as follows:

§ 3.2 The Contract Time shall be measured from the date of commencement.

§ 3.3 The Contractor shall achieve Substantial Completion of the entire Work not later than ( ) days from the date of commencement, or as follows:
(Insert number of calendar days. Alternatively, a calendar date may be used when coordinated with the date of commencement. If appropriate, insert requirements for earlier Substantial Completion of certain portions of the Work.)

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Portion of the Work	Substantial Completion Date

, subject to adjustments of this Contract Time as provided in the Contract Documents.
(Insert provisions, if any, for liquidated damages relating to failure to achieve Substantial Completion on time or for bonus payments for early completion of the Work.)

ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be one of the following:
(Check the appropriate box.)

[ ] Stipulated Sum, in accordance with Section 4.2 below

[ ] Cost of the Work plus the Contractor's Fee without a Guaranteed Maximum Price, in accordance with Section 4.3 below

[ ] Cost of the Work plus the Contractor's Fee with a Guaranteed Maximum Price, in accordance with Section 4.4 below

(Based on the selection above, complete Section 4.2, 4.3 or 4.4 below. Based on the selection above, also complete either Section 5.1.4, 5.1.5 or 5.1.6 below.)

§ 4.2 Stipulated Sum

§ 4.2.1 The Stipulated Sum shall be ($), subject to additions and deletions as provided in the Contract Documents.

§ 4.2.2 The Stipulated Sum is based on the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner:
(State the numbers or other identification of accepted alternates. If the bidding or proposal documents permit the Owner to accept other alternates subsequent to the execution of this Agreement, attach a schedule of such other alternates showing the amount for each and the date when that amount expires.)

§ 4.2.3 Unit prices, if any:
(Identify and state the unit price, and state the quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price per Unit ($0.00)

§ 4.2.4 Allowances included in the Stipulated Sum, if any:
(Identify allowance and state exclusions, if any, from the allowance price.)

Item	Allowance

§ 4.3 Cost of the Work Plus Contractor's Fee without a Guaranteed Maximum Price

§ 4.3.1 The Contract Sum is the Cost of the Work as defined in Exhibit A, Determination of the Cost of the Work, plus the Contractor's Fee.

§ 4.3.2 The Contractor's Fee:
(State a lump sum, percentage of Cost of the Work or other provision for determining the Contractor's Fee.)

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§ **4.3.3** The method of adjustment of the Contractor's Fee for changes in the Work:

§ **4.3.4** Limitations, if any, on a Subcontractor's overhead and profit for increases in the cost of its portion of the Work:

§ **4.3.5** Rental rates for Contractor-owned equipment shall not exceed percent (%) of the standard rate paid at the place of the Project.

§ **4.3.6** Unit prices, if any:
(Identify and state the unit price; state quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price per Unit ($0.00)

§ **4.3.7** The Contractor shall prepare and submit to the Construction Manager for the Owner, in writing, a Control Estimate within 14 days of executing this Agreement. The Control Estimate shall include the items in Section A.1 of Exhibit A, Determination of the Cost of the Work.

§ 4.4 Cost of the Work Plus Contractor's Fee with a Guaranteed Maximum Price
§ **4.4.1** The Contract Sum is the Cost of the Work as defined in Exhibit A, Determination of the Cost of the Work, plus the Contractor's Fee.

§ **4.4.2** The Contractor's Fee:
(State a lump sum, percentage of Cost of the Work or other provision for determining the Contractor's Fee.)

§ **4.4.3** The method of adjustment of the Contractor's Fee for changes in the Work:

§ **4.4.4** Limitations, if any, on a Subcontractor's overhead and profit for increases in the cost of its portion of the Work:

§ **4.4.5** Rental rates for Contractor-owned equipment shall not exceed percent (%) of the standard rate paid at the place of the Project.

§ **4.4.6** Unit Prices, if any:
(Identify and state the unit price, and state the quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price per Unit ($0.00)

§ 4.4.7 Guaranteed Maximum Price
§ **4.4.7.1** The sum of the Cost of the Work and the Contractor's Fee is guaranteed by the Contractor not to exceed ($), subject to additions and deductions by changes in the Work as provided in the Contract Documents. Such maximum sum is referred to in the Contract Documents as the Guaranteed Maximum Price. Costs which would cause the Guaranteed Maximum Price to be exceeded shall be paid by the Contractor without reimbursement by the Owner.
(Insert specific provisions if the Contractor is to participate in any savings.)

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§ 4.4.7.2 The Guaranteed Maximum Price is based on the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner:

§ 4.4.7.3 Allowances included in the Guaranteed Maximum Price, if any:
(Identify and state the amounts of any allowances, and state whether they include labor, materials, or both.)

Item	Allowance

§ 4.4.7.4 Assumptions, if any, on which the Guaranteed Maximum Price is based:

ARTICLE 5 PAYMENTS

§ 5.1 Progress Payments

§ 5.1.1 Based upon Applications for Payment submitted to the Construction Manager by the Contractor, and upon certification of the Project Application and Project Certificate for Payment or Application for Payment and Certificate for Payment by the Construction Manager and Architect and issuance by the Architect, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, or as follows:

§ 5.1.3 Provided that an Application for Payment is received by the Construction Manager not later than the day of a month, the Owner shall make payment of the certified amount in the Application for Payment to the Contractor not later than the day of the month. If an Application for Payment is received by the Construction Manager after the application date fixed above, payment shall be made by the Owner not later than ( ) days after the Construction Manager receives the Application for Payment.
(Federal, state or local laws may require payment within a certain period of time.)

§ 5.1.4 Progress Payments Where the Contract Sum is Based on a Stipulated Sum

§ 5.1.4.1 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work and be prepared in such form and supported by such data to substantiate its accuracy as the Construction Manager and Architect may require. This schedule, unless objected to by the Construction Manager or Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.4.2 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

§ 5.1.4.3 Subject to the provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

.1 Take that portion of the Contract Sum properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Work by the share of the total Contract Sum allocated to that portion of the Work in the schedule of values, less retainage of percent (%). Pending final determination of cost to the Owner of changes in the Work, amounts not in dispute may be included as provided in Section 7.3.9 of the General Conditions;

.2 Add that portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction (or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing), less retainage of percent (%);

.3 Subtract the aggregate of previous payments made by the Owner; and

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.4 Subtract amounts, if any, for which the Construction Manager or Architect has withheld or nullified a Certificate for Payment as provided in Section 9.5 of the General Conditions.

§ 5.1.4.4 The progress payment amount determined in accordance with Section 5.1.4.3 shall be further modified under the following circumstances:

.1 Add, upon Substantial Completion of the Work, a sum sufficient to increase the total payments to percent (%) of the Contract Sum, less such amounts as the Construction Manager recommends and the Architect determines for incomplete Work and unsettled claims; and

.2 Add, if final completion of the Work is thereafter materially delayed through no fault of the Contractor, any additional amounts payable in accordance with Section 9.10.3 of the General Conditions.

§ 5.1.4.5 Reduction or limitation of retainage, if any, shall be as follows:
(If it is intended, prior to Substantial Completion of the entire Work, to reduce or limit the retainage resulting from the percentages inserted in Sections 5.1.4.3.1 and 5.1.4.3.2 above, and this is not explained elsewhere in the Contract Documents, insert here provisions for such reduction or limitation.)

§ 5.1.5 Progress Payments Where the Contract Sum is Based on the Cost of the Work without a Guaranteed Maximum Price

§ 5.1.5.1 With each Application for Payment, the Contractor shall submit the cost control information required in Exhibit A, Determination of the Cost of the Work, along with payrolls, petty cash accounts, receipted invoices or invoices with check vouchers attached and any other evidence required by the Owner, Construction Manager or Architect to demonstrate that cash disbursements already made by the Contractor on account of the Cost of the Work equal or exceed (1) progress payments already received by the Contractor; less (2) that portion of those payments attributable to the Contractor's Fee; plus (3) payrolls for the period covered by the present Application for Payment.

§ 5.1.5.2 Applications for Payment shall show the Cost of the Work actually incurred by the Contractor through the end of the period covered by the Application for Payment and for which the Contractor has made or intends to make actual payment prior to the next Application for Payment.

§ 5.1.5.3 Subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

.1 Take the Cost of the Work as described in Exhibit A, Determination of the Cost of the Work;

.2 Add the Contractor's Fee, less retainage of percent (%). The Contractor's Fee shall be computed upon the Cost of the Work described in that Section at the rate stated in that Section; or if the Contractor's Fee is stated as a fixed sum, an amount which bears the same ratio to that fixed-sum Fee as the Cost of the Work bears to a reasonable estimate of the probable Cost of the Work upon its completion;

.3 Subtract retainage of percent (%) from that portion of the Work that the Contractor self-performs;

.4 Subtract the aggregate of previous payments made by the Owner;

.5 Subtract the shortfall, if any, indicated by the Contractor in the documentation required by Article 5 or resulting from errors subsequently discovered by the Owner's auditors in such documentation; and

.6 Subtract amounts, if any, for which the Construction Manager or Architect has withheld or withdrawn a Certificate for Payment as provided in Section 9.5 of AIA Document A232™–2009, General Conditions of the Contract for Construction, Construction Manager as Adviser Edition.

§ 5.1.5.4 The Owner, Construction Manager and Contractor shall agree upon (1) a mutually acceptable procedure for review and approval of payments to Subcontractors and (2) the percentage of retainage held on Subcontracts, and the Contractor shall execute subcontracts in accordance with those agreements.

§ 5.1.5.5 In taking action on the Contractor's Applications for Payment, the Construction Manager and Architect shall be entitled to rely on the accuracy and completeness of the information furnished by the Contractor and shall not be deemed to represent that the Construction Manager and Architect have made a detailed examination, audit or arithmetic verification of the documentation submitted in accordance with Article 5 or other supporting data; that the Construction Manager and Architect have made exhaustive or continuous on-site inspections; or that the Construction Manager and Architect have made examinations to ascertain how or for what purposes the Contractor has used

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amounts previously paid on account of the Contract. Such examinations, audits and verifications, if required by the Owner, will be performed by the Owner's auditors acting in the sole interest of the Owner.

§ 5.1.5.6 Except with the Owner's prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

§ 5.1.6 Progress Payments Where the Contract Sum is Based on the Cost of the Work with a Guaranteed Maximum Price

§ 5.1.6.1 With each Application for Payment, the Contractor shall submit payrolls, petty cash accounts, receipted invoices or invoices with check vouchers attached, and any other evidence required by the Owner or Architect to demonstrate that cash disbursements already made by the Contractor on account of the Cost of the Work equal or exceed (1) progress payments already received by the Contractor; less (2) that portion of those payments attributable to the Contractor's Fee; plus (3) payrolls for the period covered by the present Application for Payment.

§ 5.1.6.2 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work and be prepared in such form and supported by such data to substantiate its accuracy as the Construction Manager and Architect may require. This schedule, unless objected to by the Construction Manager or Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.6.3 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment. The percentage of completion shall be the lesser of (1) the percentage of that portion of the Work which has actually been completed; or (2) the percentage obtained by dividing (a) the expense that has actually been incurred by the Contractor on account of that portion of the Work for which the Contractor has made or intends to make actual payment prior to the next Application for Payment by (b) the share of the Guaranteed Maximum Price allocated to that portion of the Work in the schedule of values.

§ 5.1.6.4 Subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

.1 Take that portion of the Guaranteed Maximum Price properly allocable to completed Work as determined by multiplying the percentage of completion of each portion of the Work by the share of the Guaranteed Maximum Price allocated to that portion of the Work in the schedule of values. Pending final determination of cost to the Owner of changes in the Work, amounts not in dispute shall be included as provided in Section 7.3.10 of AIA Document A232–2009;

.2 Add that portion of the Guaranteed Maximum Price properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work, or if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing;

.3 Add the Contractor's Fee, less retainage of percent (%). The Contractor's Fee shall be computed upon the Cost of the Work at the rate stated in Section 4.4.2 or, if the Contractor's Fee is stated as a fixed sum in that Section, shall be an amount that bears the same ratio to that fixed-sum fee as the Cost of the Work bears to a reasonable estimate of the probable Cost of the Work upon its completion;

.4 Subtract retainage of percent (%) from that portion of the Work that the Contractor self-performs;

.5 Subtract the aggregate of previous payments made by the Owner;

.6 Subtract the shortfall, if any, indicated by the Contractor in the documentation required by Section 5.1.6.1 to substantiate prior Applications for Payment, or resulting from errors subsequently discovered by the Owner's auditors in such documentation; and

.7 Subtract amounts, if any, for which the Construction Manager or Architect have withheld or nullified a Certificate for Payment as provided in Section 9.5 of AIA Document A232–2009.

§ 5.1.6.5 The Owner and the Contractor shall agree upon a (1) mutually acceptable procedure for review and approval of payments to Subcontractors and (2) the percentage of retainage held on Subcontracts, and the Contractor shall execute subcontracts in accordance with those agreements.

§ 5.1.6.6 In taking action on the Contractor's Applications for Payment, the Construction Manager and Architect shall be entitled to rely on the accuracy and completeness of the information furnished by the Contractor and shall not be deemed to represent that the Construction Manager or Architect have made a detailed examination, audit or arithmetic verification of the documentation submitted in accordance with Section 5.1.6.1 or other supporting data; that the

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Construction Manager or Architect have made exhaustive or continuous on-site inspections; or that the Construction Manager or Architect have made examinations to ascertain how or for what purposes the Contractor has used amounts previously paid on account of the Contract. Such examinations, audits and verifications, if required by the Owner, will be performed by the Owner's auditors acting in the sole interest of the Owner.

§ 5.1.6.7 Except with the Owner's prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

§ 5.2 Final Payment

§ 5.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

.1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Section 12.2 of AIA Document A232–2009, and to satisfy other requirements, if any, which extend beyond final payment;

.2 the Contractor has submitted a final accounting for the Cost of the Work, pursuant to Exhibit A, Determination of the Cost of the Work when payment is on the basis of the Cost of the Work, with or without a Guaranteed Maximum payment; and

.3 a final Certificate for Payment or Project Certificate for Payment has been issued by the Architect; such final payment shall be made by the Owner not more than 30 days after the issuance of the final Certificate for Payment or Project Certificate for Payment, or as follows:

ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 Initial Decision Maker

The Architect will serve as Initial Decision Maker pursuant to Section 15.2 of AIA Document A232–2009, unless the parties appoint below another individual, not a party to this Agreement, to serve as Initial Decision Maker.
(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)

§ 6.2 Binding Dispute Resolution

For any Claim subject to, but not resolved by, mediation pursuant to Section 15.3 of AIA Document A232–2009, the method of binding dispute resolution shall be as follows:
(Check the appropriate box. If the Owner and Contractor do not select a method of binding dispute resolution below, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.)

[ ] Arbitration pursuant to Section 15.4 of AIA Document A232–2009.

[ ] Litigation in a court of competent jurisdiction.

[ ] Other: *(Specify)*

ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 Where the Contract Sum is a Stipulated Sum

§ 7.1.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A232–2009.

§ 7.1.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A232–2009.

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§ 7.2 Where the Contract Sum is Based on the Cost of the Work with or without a Guaranteed Maximum Price
§ 7.2.1 Subject to the provisions of Section 7.2.2 below, the Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A232–2009.

§ 7.2.2 The Contract may be terminated by the Owner for cause as provided in Article 14 of AIA Document A232–2009; however, the Owner shall then only pay the Contractor an amount calculated as follows:

.1 Take the Cost of the Work incurred by the Contractor to the date of termination;

.2 Add the Contractor's Fee computed upon the Cost of the Work to the date of termination at the rate stated in Sections 4.3.2 or 4.4.2, as applicable, or, if the Contractor's Fee is stated as a fixed sum, an amount that bears the same ratio to that fixed-sum Fee as the Cost of the Work at the time of termination bears to a reasonable estimate of the probable Cost of the Work upon its completion; and

.3 Subtract the aggregate of previous payments made by the Owner.

§ 7.2.3 If the Owner terminates the Contract for cause when the Contract Sum is based on the Cost of the Work with a Guaranteed Maximum Price, and as provided in Article 14 of AIA Document A232–2009, the amount, if any, to be paid to the Contractor under Section 14.2.4 of AIA Document A232–2009 shall not cause the Guaranteed Maximum Price to be exceeded, nor shall it exceed the amount calculated in Section 7.2.2.

§ 7.2.4 The Owner shall also pay the Contractor fair compensation, either by purchase or rental at the election of the Owner, for any equipment owned by the Contractor that the Owner elects to retain and that is not otherwise included in the Cost of the Work under Section 7.2.1. To the extent that the Owner elects to take legal assignment of subcontracts and purchase orders (including rental agreements), the Contractor shall, as a condition of receiving the payments referred to in this Article 7, execute and deliver all such papers and take all such steps, including the legal assignment of such subcontracts and other contractual rights of the Contractor, as the Owner may require for the purpose of fully vesting in the Owner the rights and benefits of the Contractor under such subcontracts or purchase orders.

§ 7.2.5 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A232–2009; in such case, the Contract Sum and Contract Time shall be increased as provided in Section 14.3.2 of AIA Document A232–2009, except that the term 'profit' shall be understood to mean the Contractor's Fee as described in Sections 4.3.2 and 4.4.2 of this Agreement.

ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A232–2009 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.2 Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located. *(Insert rate of interest agreed upon, if any.)*

%

§ 8.3 The Owner's representative:
(Name, address and other information)

§ 8.4 The Contractor's representative:
(Name, address and other information)

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§ 8.5 Neither the Owner's nor the Contractor's representative shall be changed without ten days written notice to the other party.

§ 8.6 Other provisions:

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 The Contract Documents, except for Modifications issued after execution of this Agreement, are enumerated in the sections below.

§ 9.1.1 The Agreement is this executed AIA Document A132–2009, Standard Form of Agreement Between Owner and Contractor, Construction Manager as Adviser Edition.

§ 9.1.2 The General Conditions are, AIA Document A232–2009, General Conditions of the Contract for Construction, Construction Manager as Adviser Edition.

§ 9.1.3 The Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages

§ 9.1.4 The Specifications:
(Either list the Specifications here or refer to an exhibit attached to this Agreement.)

Section	Title	Date	Pages

§ 9.1.5 The Drawings:
(Either list the Drawings here or refer to an exhibit attached to this Agreement.)

Number	Title	Date

§ 9.1.6 The Addenda, if any:

Number	Date	Pages

Portions of Addenda relating to bidding requirements are not part of the Contract Documents unless the bidding requirements are also enumerated in this Article 9.

§ 9.1.7 Additional documents, if any, forming part of the Contract Documents are:

.1 AIA Document A132™–2009, Exhibit A, Determination of the Cost of the Work, if applicable.

.2 AIA Document E201™–2007, Digital Data Protocol Exhibit, if completed, or the following:

.3 AIA Document E202™–2008, Building Information Modeling Protocol Exhibit, if completed, or the following:

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.4 Other documents, if any, listed below:
(List here any additional documents which are intended to form part of the Contract Documents. AIA Document A232–2009 provides that bidding requirements such as advertisement or invitation to bid, Instructions to Bidders, sample forms and the Contractor's bid are not part of the Contract Documents unless enumerated in this Agreement. They should be listed here only if intended to be part of the Contract Documents.)

ARTICLE 10 INSURANCE AND BONDS

The Contractor shall purchase and maintain insurance and provide bonds as set forth in Article 11 of AIA Document A232–2009.

(State bonding requirements, if any, and limits of liability for insurance required in Article 11 of AIA Document A232–2009.)

Type of Insurance or Bond	Limit of Liability or Bond Amount ($0.00)

This Agreement is entered into as of the day and year first written above.

OWNER *(Signature)*	**CONTRACTOR** *(Signature)*
(Printed name and title)	*(Printed name and title)*

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PAGE 1

Town of Haddam
30 Field Park Drive
Haddam, CT 06438

...

Former Haddam Jailhouse Building
11 Jail Hill Road, Haddam, CT
Hazardous Materials Abatement

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_____

(Signed)

_____

(Title)

_____

(Dated)

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AIA® Document A232™ – 2009

General Conditions of the Contract for Construction, *Construction Manager as Adviser Edition*

for the following PROJECT:
(Name, and location or address)

Former Haddam Jailhouse Building
11 Jail Hill Road, Haddam, CT

THE CONSTRUCTION MANAGER:
(Name, legal status and address)

THE OWNER:
(Name, legal status and address)

Town of Haddam
30 Field Park Drive
Haddam, CT 06438

THE ARCHITECT:
(Name, legal status and address)

ADDITIONS AND DELETIONS:
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This document is intended to be used in conjunction with AIA Documents A132™–2009, Standard Form of Agreement Between Owner and Contractor, Construction Manager as Adviser Edition; B132™–2009, Standard Form of Agreement Between Owner and Architect, Construction Manager as Adviser Edition; and C132™–2009, Standard Form of Agreement Between Owner and Construction Manager as Adviser.

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ARTICLE 1 GENERAL PROVISIONS

§ 1.1 Basic Definitions

§ 1.1.1 The Contract Documents. The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement), and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of addenda relating to bidding requirements).

§ 1.1.2 The Contract. The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and the Construction Manager or the Construction Manager's consultants, (3) between the Owner and the Architect or the Architect's consultants, (4) between the Contractor and the Construction Manager or the Construction Manager's consultants, (5) between the Owner and a Subcontractor or Sub-subcontractor (6) between the Construction Manager and the Architect, or (7) between any persons or entities other than the Owner and Contractor. The Construction Manager and Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of their duties.

§ 1.1.3 The Work. The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

§ 1.1.4 The Project. The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by other Multiple Prime Contractors and by the Owner's own forces, including persons or entities under separate contracts not administered by the Construction Manager.

§ 1.1.5 The Drawings. The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules and diagrams.

§ 1.1.6 The Specifications. The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

§ 1.1.7 Instruments of Service. Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 Initial Decision Maker. The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2 and certify termination of the Agreement under Section 14.2.2.

§ 1.2 Correlation and Intent of the Contract Documents

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

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§ **1.2.2** Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ **1.2.3** Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.3 Capitalization

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 Interpretation

In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

§ 1.5 Ownership and Use of Drawings, Specifications and Other Instruments of Service

§ **1.5.1** The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and will retain all common law, statutory and other reserved rights, including copyrights. The Contractor, Subcontractors, sub-subcontractors, and material or equipment suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be construed as publication in derogation of the Architect, or Architect's consultants' reserved rights.

§ **1.5.2** The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers are authorized to use and reproduce the Instruments of Service provided to them solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers may not use the Instruments of Service on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect and the Architect's consultants.

§ 1.6 Transmission of Data in Digital Form

If the parties intend to transmit Instruments of Service or any other information or documentation in digital form, they shall endeavor to establish necessary protocols governing such transmissions, unless otherwise already provided in the Agreement or the Contract Documents.

ARTICLE 2 OWNER

§ 2.1 General

§ **2.1.1** The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Article 4, the Construction Manager and the Architect do not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

§ **2.1.2** The Owner shall furnish to the Contractor within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.

§ 2.2 Information and Services Required of the Owner

§ **2.2.1** Prior to commencement of the Work, the Contractor may request in writing that the Owner provide reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. Thereafter, the Contractor may only request such evidence if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) a change in the Work materially changes the Contract Sum; or (3) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due. The Owner shall furnish such evidence as a condition precedent to commencement or continuation of the Work or the

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portion of the Work affected by a material change. After the Owner furnishes the evidence, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.2 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities. Unless otherwise provided under the Contract Documents, the Owner, through the Construction Manager, shall secure and pay for the building permit.

§ 2.2.3 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.2.4 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.2.5 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

§ 2.2.6 The Owner shall endeavor to forward all communications to the Contractor through the Construction Manager and shall contemporaneously provide the same communications to the Architect about matters arising out of or relating to the Contract Documents.

§ 2.3 Owner's Right to Stop the Work

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

§ 2.4 Owner's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Construction Manager's and Architect's and their respective consultants' additional services made necessary by such default, neglect or failure. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect, after consultation with the Construction Manager. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

ARTICLE 3 CONTRACTOR

§ 3.1 General

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The plural term "Multiple Prime Contractors" refers to persons or entities who perform construction under contracts with the Owner that are administered by the Construction Manager. The term does not include the Owner's own forces, including persons or entities under separate contracts not administered by the Construction Manager.

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§ 3.1.3 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.4 The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Construction Manager or Architect in their administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.2 Review of Contract Documents and Field Conditions by Contractor

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed and correlated personal observations with requirements of the Contract Documents.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.2.3, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Construction Manager and Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information submitted to the Construction Manager in such form as the Construction Manager and Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Construction Manager and Architect any nonconformity discovered by or made known to the Contractor as a request for information submitted to Construction Manager in such form as the Construction Manager and Architect may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall make Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 3.3 Supervision and Construction Procedures

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instruction concerning these matters. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety thereof and, except as stated below, shall be fully and solely responsible for the jobsite safety of such means, methods, techniques, sequences or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely written notice to the Owner, the Construction Manager, and the Architect and shall not proceed with that portion of the Work without further written instructions from the Architect, through the Construction Manager. If the Contractor is then instructed to proceed with the required means, methods, techniques, sequences or procedures without acceptance of changes proposed by the Contractor, the Owner shall be solely responsible for any loss or damage arising solely from those Owner-required means, methods, techniques, sequences or procedures.

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§ **3.3.2** The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ **3.3.3** The Contractor shall be responsible for inspection of portions of the Project already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.4 Labor and Materials

§ **3.4.1** Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ **3.4.2** Except in the case of minor changes in the Work authorized by the Architect in accordance with Sections 3.12.8 or 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect, in consultation with the Construction Manager, and in accordance with a Change Order or Construction Change Directive.

§ **3.4.3** The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

§ 3.5 Warranty

The Contractor warrants to the Owner, Construction Manager, and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform with the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Construction Manager or Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.6 Taxes

The Contractor shall pay sales, consumer, use and similar taxes for the Work or portions thereof provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 3.7 Permits, Fees, Notices, and Compliance with Laws

§ **3.7.1** Unless otherwise provided in the Contract Documents, the Owner, through the Construction Manager, shall secure and pay for the building permit. The Contractor shall secure and pay for other permits, fees, licenses and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

§ **3.7.2** The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

§ **3.7.3** If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ **3.7.4 Concealed or Unknown Conditions.** If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner, Construction Manager, and the Architect before conditions are disturbed and in no event later than 21 days after first observance of the conditions. The Architect and Construction

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Manager will promptly investigate such conditions and, if the Architect, in consultation with the Construction Manager, determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend an equitable adjustment in the Contract Sum or Contract Time, or both. If the Architect, in consultation with the Construction Manager, determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner, Construction Manager, and Contractor in writing, stating the reasons. If the Owner or Contractor disputes the Architect's determination or recommendation, either party may proceed as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner, Construction Manager, and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.8 Allowances

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents:

- **.1** Allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- **.2** Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and
- **.3** Whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

§ 3.9 Superintendent

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner and Architect through the Construction Manager, the name and qualifications of a proposed superintendent. The Construction Manager may reply within 14 days to the Contractor in writing stating (1) whether the Owner, the Construction Manager, or the Architect has reasonable objection to the proposed superintendent or (2) that any of them require additional time to review. Failure of the Construction Manager to reply within the 14 day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner, Construction Manager or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ 3.10 Contractor's Construction Schedules

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall prepare and submit for the Owner's and Architect's information and the Construction Manager's approval a Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project schedule to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work.

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The Contractor shall cooperate with the Construction Manager in scheduling and performing the Contractor's Work to avoid conflict with, and as to cause no delay in, the work or activities of other Multiple Prime Contractors or the construction or operations of the Owner's own forces.

§ 3.10.2 The Contractor shall prepare a submittal schedule, promptly after being awarded the Contract and thereafter update it as necessary to maintain a current submittal schedule, and shall submit the schedule(s) for the Construction Manager's and Architect's approval. The Architect and Construction Manager's approval shall not unreasonably be delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Construction Manager and Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall participate with other Contractors, the Construction Manager and Owner in reviewing and coordinating all schedules for incorporation into the Project schedule that is prepared by the Construction Manager. The Contractor shall make revisions to the construction schedule and submittal schedule as deemed necessary by the Construction Manager to conform to the Project schedule.

§ 3.10.4 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner, Construction Manager and Architect and incorporated into the approved Project schedule.

§ 3.11 Documents and Samples at the Site

The Contractor shall maintain at the site for the Owner one copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and one copy of approved Shop Drawings, Product Data, Samples and similar required submittals. These documents shall be available to the Architect and delivered to the Construction Manager for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 Shop Drawings, Product Data and Samples

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents. Their purpose is to demonstrate the way by which the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect and Construction Manager is subject to the limitations of Sections 4.2.9 through 4.2.11. Informational submittals upon which the Construction Manager and Architect are not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Construction Manager or Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve and submit to the Construction Manager Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents in accordance with the Project submittal schedule approved by the Construction Manager and Architect, or in the absence of an approved Project submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of other Multiple Prime Contractors or the Owner's own forces. The Contractor shall cooperate with the Construction Manager in the coordination of the Contractor's Shop Drawings, Product Data, Samples and similar submittals with related documents submitted by other Multiple Prime Contractors.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents to the Owner, Construction Manager, and Architect, that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so and (3) checked

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and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been reviewed and approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Construction Manager and Architect in writing of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples or similar submittals by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples or similar submittals, to revisions other than those requested by the Construction Manager and Architect on previous submittals. In the absence of such written notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. The Contractor shall not be required to provide professional services in violation of applicable law. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall cause such services or certifications to be provided by a properly licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor all performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review, approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Contractor shall not be responsible for the adequacy of the performance and design criteria specified in the Contract Documents.

§ 3.13 Use of Site

§ 3.13.1 The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.13.2 The Contractor shall coordinate the Contractor's operations with, and secure the approval of, the Construction Manager before using any portion of the site.

§ 3.14 Cutting and Patching

§ 3.14.1 The Contractor shall be responsible for cutting, fitting or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting and patching shall be restored to the condition existing prior to the cutting, fitting and patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner's own forces or of other Multiple Prime Contractors by cutting, patching, or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter such construction by the Owner's own forces or by other Multiple Prime Contractors except with written consent of the Construction Manager,

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Owner and such other Multiple Prime Contractors; such consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold from the other Multiple Prime Contractors or the Owner the Contractor's consent to cutting or otherwise altering the Work.

§ 3.15 Cleaning Up

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract. At completion of the Work the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner, or Construction Manager with the Owner's approval, may do so and the Owner shall be entitled to reimbursement from the Contractor.

§ 3.16 Access to Work

The Contractor shall provide the Owner, Construction Manager and Architect access to the Work in preparation and progress wherever located.

§ 3.17 Royalties, Patents and Copyrights

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner, Construction Manager and Architect harmless from loss on account thereof, but shall not be responsible for such defense or loss when a particular design, process or product of a particular manufacturer or manufacturers is required by the Contract Documents or where the copyright violations are contained in Drawings, Specifications or other documents prepared by the Owner, Architect, or Construction Manager. However, if the Contractor has reason to believe that the required design, process or product is an infringement of a copyright or a patent, the Contractor shall be responsible for such loss unless such information is promptly furnished to the Architect through the Construction Manager.

§ 3.18 Indemnification

§ 3.18.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Construction Manager, Architect, Construction Manager's and Architect's consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself) but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

ARTICLE 4 ARCHITECT AND CONSTRUCTION MANAGER

§ 4.1 General

§ 4.1.1 The Owner shall retain an architect lawfully licensed to practice architecture or an entity lawfully practicing architecture in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 4.1.2 The Owner shall retain a construction manager lawfully licensed to practice construction management or an entity lawfully practicing construction management in the jurisdiction where the Project is located. That person or entity is identified as the Construction Manager in the Agreement and is referred to throughout the Contract Documents as if singular in number.

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§ 4.1.3 Duties, responsibilities and limitations of authority of the Construction Manager and Architect as set forth in the Contract Documents shall not be restricted, modified or extended without written consent of the Owner, Construction Manager, Architect and Contractor. Consent shall not be unreasonably withheld.

§ 4.1.4 If the employment of the Construction Manager or Architect is terminated, the Owner shall employ a successor construction manager or architect as to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Construction Manager or Architect, respectively.

§ 4.2 Administration of the Contract

§ 4.2.1 The Construction Manager and Architect will provide administration of the Contract as described in the Contract Documents and will be the Owner's representatives during construction until the date the Architect issues the final Certificate for Payment. The Construction Manager and Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and report to the Owner and Construction Manager (1) known deviations from the Contract Documents and from the most recent Project schedule prepared by the Construction Manager, and (2) defects and deficiencies observed in the Work.

§ 4.2.3 The Construction Manager shall provide a staffing plan to include one or more representatives who shall be in attendance at the Project site whenever the Work is being performed. The Construction Manager will determine in general if the Work observed is being performed in accordance with the Contract Documents, will keep the Owner reasonably informed of the progress of the Work, and will report to the Owner and Architect (1) known deviations from the Contract Documents and the most recent Project schedule, and (2) defects and deficiencies observed in the Work.

§ 4.2.4 The Construction Manager will schedule and coordinate the activities of the Contractor and other Multiple Prime Contractors in accordance with the latest approved Project schedule.

§ 4.2.5 The Construction Manager, except to the extent required by Section 4.2.4, and Architect will not have control over, or charge of, construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents, except as provided in Section 3.3.1, and neither will be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. Neither the Construction Manager nor the Architect will have control over or charge of or be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or of any other persons or entities performing portions of the Work.

§ 4.2.6 Communications Facilitating Contract Administration. Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner and Contractor shall endeavor to communicate with each other through the Construction Manager, and shall contemporaneously provide the same communications to the Architect about matters arising out of or relating to the Contract Documents. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with other Multiple Prime Contractors shall be through the Construction Manager and shall be contemporaneously provided to the Architect if those communications are about matters arising out of or related to the Contract Documents. Communications by and with the Owner's own forces shall be through the Owner.

§ 4.2.7 The Construction Manager and Architect will review and certify all Applications for Payment by the Contractor, in accordance with the provisions of Article 9.

§ 4.2.8 The Architect and Construction Manager have authority to reject Work that does not conform to the Contract Documents and will notify each other about the rejection. The Construction Manager shall determine in general

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whether the Work of the Contractor is being performed in accordance with the requirements of the Contract Documents and notify the Owner, Contractor and Architect of defects and deficiencies in the Work. Whenever the Construction Manager considers it necessary or advisable, the Construction Manager will have authority to require additional inspection or testing of the Work in accordance with Sections 13.5.2 and 13.5.3, upon written authorization of the Owner, whether or not such Work is fabricated, installed or completed. The foregoing authority of the Construction Manager will be subject to the provisions of Sections 4.2.18 through 4.2.20 inclusive, with respect to interpretations and decisions of the Architect. However, neither the Architect's nor the Construction Manager's authority to act under this Section 4.2.8 nor a decision made by either of them in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect or the Construction Manager to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons performing any of the Work.

§ 4.2.9 The Construction Manager will receive and promptly review for conformance with the submittal requirements of the Contract Documents, all submittals from the Contractor such as Shop Drawings, Product Data and Samples. Where there are Multiple Prime Contractors, the Construction Manager will also check and coordinate the information contained within each submittal received from Contractor and other Multiple Prime Contractors, and transmit to the Architect those recommended for approval. By submitting Shop Drawings, Product Data, Samples and similar submittals, the Construction Manager represents to the Owner and Architect that the Construction Manager has reviewed and recommended them for approval. The Construction Manager's actions will be taken in accordance with the Project submittal schedule approved by the Architect or, in the absence of an approved Project submittal schedule, with reasonable promptness while allowing sufficient time to permit adequate review by the Architect.

§ 4.2.10 The Architect will review and approve or take other appropriate action upon the Contractor's submittals such as Shop Drawings, Product Data and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Upon the Architect's completed review, the Architect shall transmit its submittal review to the Construction Manager.

§ 4.2.11 Review of the Contractor's submittals by the Construction Manager and Architect is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Construction Manager and Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5 and 3.12. The Construction Manager and Architect's review shall not constitute approval of safety precautions or, unless otherwise specifically stated by the Construction Manager and Architect, of any construction means, methods, techniques, sequences or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.12 The Construction Manager will prepare Change Orders and Construction Change Directives.

§ 4.2.13 The Construction Manager and the Architect will take appropriate action on Change Orders or Construction Change Directives in accordance with Article 7. and the Architect will have authority to order minor changes in the Work as provided in Section 7.4. The Architect, in consultation with the Construction Manager, will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.14 Utilizing the documents provided by the Contractor, the Construction Manager will maintain at the site for the Owner one copy of all Contract Documents, approved Shop Drawings, Product Data, Samples and similar required submittals, in good order and marked currently to record all changes and selections made during construction. These will be available to the Architect and the Contractor, and will be delivered to the Owner upon completion of the Project.

§ 4.2.15 The Construction Manager will assist the Architect in conducting inspections to determine the dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion in conjunction with the Architect pursuant to Section 9.8; and receive and forward to the Owner written warranties and related

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documents required by the Contract and assembled by the Contractor pursuant to Section 9.10. The Construction Manager will forward to the Architect a final Application and Certificate for Payment or final Project Application and Project Certificate for Payment upon the Contractor's compliance with the requirements of the Contract Documents.

§ 4.2.16 If the Owner and Architect agree, the Architect will provide one or more project representatives to assist in carrying out the Architect's responsibilities at the site. The duties, responsibilities and limitations of authority of such project representatives shall be as set forth in an exhibit to be incorporated in the Contract Documents.

§ 4.2.17 The Architect will interpret and decide matters concerning performance under, and requirements of the Contract Documents on written request of the Construction Manager, Owner or Contractor through the Construction Manager. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.18 Interpretations and decisions of the Architect will be consistent with the intent of and reasonably inferable from the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either and will not be liable for results of interpretations or decisions so rendered in good faith.

§ 4.2.19 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.20 The Construction Manager will receive and review requests for information from the Contractor, and forward each request for information to the Architect, with the Construction Manager's recommendation. The Architect will review and respond in writing to the Construction Manager to requests for information about the Contract Documents. The Construction Manager's recommendation and the Architect's response to each request will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 Definitions

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include other Multiple Prime Contractors or subcontractors of other Multiple Prime Contractors.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.2 Award of Subcontracts and Other Contracts for Portions of the Work

§ 5.2.1 Unless otherwise stated in the Contract Documents or the bidding requirements, the Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Construction Manager for review by the Owner, Construction Manager and Architect the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the Work. The Construction Manager may reply within 14 days to the Contractor in writing stating (1) whether the Owner, the Construction Manager or the Architect has reasonable objection to any such proposed person or entity or, (2) that the Construction Manager, Architect or Owner requires additional time for review. Failure of the Construction Manager, Owner, or Architect to reply within the 14-day period shall constitute notice of no reasonable objection.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner, Construction Manager or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner, Construction Manager or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner, Construction Manager or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change,

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and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person or entity previously selected if the Owner, Construction Manager or Architect makes reasonable objection to such substitution.

§ 5.3 Subcontractual Relations

By appropriate agreement, written where legally required for validity, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including responsibility for safety of the Subcontractor's Work, which the Contractor, by these Documents, assumes toward the Owner, Construction Manager and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner, Construction Manager and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.4 Contingent Assignment of Subcontracts

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

- **.1** assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor in writing; and
- **.2** assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon such assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor Contractor or other entity. If the Owner assigns the subcontract to a successor Contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor Contractor's obligations under the subcontract.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY OTHER CONTRACTORS

§ 6.1 Owner's Right to Perform Construction with Own Forces and to Award Other Contracts

§ 6.1.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, which include persons or entities under separate contracts not administered by the Construction Manager, and to award other contracts in connection with other portions of the Project or other construction or operations on the site under Conditions of the Contract identical or substantially similar to these including those portions related to insurance and waiver of subrogation. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such Claim as provided in Article 15.

§ 6.1.2 When the Owner performs construction or operations with the Owner's own forces including persons or entities under separate contracts not administered by the Construction Manager, the Owner shall provide for coordination of such forces with the Work of the Contractor, who shall cooperate with them.

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§ 6.1.3 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces, the Owner shall be deemed to be subject to the same obligations and to have the same rights that apply to the Contractor under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6, and Articles 10, 11 and 12.

§ 6.2 Mutual Responsibility

§ 6.2.1 The Contractor shall afford the Owner's own forces, Construction Manager and other Multiple Prime Contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner's own forces or other Multiple Prime Contractors, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Construction Manager and Architect apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor so to report shall constitute an acknowledgment that the Owner's own forces or other Multiple Prime Contractors' completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then reasonably discoverable.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs, including costs that are payable to a separate contractor or to other Multiple Prime Contractors because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of delays, improperly timed activities, damage to the Work or defective construction by the Owner's own forces or other Multiple Prime Contractors.

§ 6.2.4 The Contractor shall promptly remedy damage the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner, separate contractors, or other Multiple Prime Contractors as provided in Section 10.2.5.

§ 6.2.5 The Owner and other Multiple Prime Contractors shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 6.3 Owner's Right to Clean Up

If a dispute arises among the Contractor, other Multiple Prime Contractors and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Construction Manager, with notice to the Architect, will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 General

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Construction Manager, Architect and Contractor; a Construction Change Directive requires agreement by the Owner, Construction Manager and Architect and may or may not be agreed to by the Contractor; an order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents, and the Contractor shall proceed promptly, unless otherwise provided in the Change Order, Construction Change Directive or order for a minor change in the Work.

§ 7.2 Change Orders

A Change Order is a written instrument prepared by the Construction Manager and signed by the Owner, Construction Manager, Architect and Contractor, stating their agreement upon all of the following:

.1 The change in the Work;

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.2 The amount of the adjustment, if any, in the Contract Sum; and
.3 The extent of the adjustment, if any, in the Contract Time.

§ 7.3 Construction Change Directives

§ 7.3.1 A Construction Change Directive is a written order prepared by the Construction Manager and signed by the Owner, Construction Manager and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

.1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
.2 Unit prices stated in the Contract Documents or subsequently agreed upon;
.3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
.4 As provided in Section 7.3.7.

§ 7.3.4 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed in a proposed Change Order or Construction Change Directive so that application of such unit prices to quantities of Work proposed will cause substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 7.3.5 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Construction Manager and Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.6 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.7 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Construction Manager shall determine the method and the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Construction Manager may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.7 shall be limited to the following:

.1 Costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers compensation insurance;
.2 Costs of materials, supplies and equipment, including cost of transportation, whether incorporated or consumed;
.3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
.4 Costs of premiums for all bonds and insurance, permit fees, and sales, use or similar taxes related to the Work; and
.5 Additional costs of supervision and field office personnel directly attributable to the change.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Construction Manager and Architect. When

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both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Construction Manager and Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Construction Manager and Architect determine to be reasonably justified. The interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Construction Manager and Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Construction Manager shall prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 Minor Changes in the Work

The Architect has authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes will be effected by written order issued through the Construction Manager and shall be binding on the Owner and Contractor.

ARTICLE 8 TIME

§ 8.1 Definitions

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.2 Progress and Completion

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, prematurely commence operations on the site or elsewhere prior to the effective date of insurance required by Article 11 to be furnished by the Contractor and Owner. The date of commencement of the Work shall not be changed by the effective date of such insurance.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.3 Delays and Extensions of Time

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by an act or neglect of the Owner, Owner's own forces, Construction Manager, Architect, any of the other Multiple Prime Contractors or an employee of any of them, or by changes ordered in the Work, or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or other causes beyond the Contractor's control; or by delay authorized by the Owner pending mediation and arbitration, or by other causes that the Architect, based on the recommendation of the Construction Manager, determines may justify delay, then the Contract Time shall be extended by Change Order for such reasonable time as the Architect may determine.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

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ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 Contract Sum

The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.2 Schedule of Values

Where the Contract is based on a Stipulated Sum or Guaranteed Maximum Price, the Contractor shall submit to the Construction Manager, before the first Application for Payment, a schedule of values allocating the entire Contract Sum to the various portions of the Work and prepared in such form and supported by such data to substantiate its accuracy as the Construction Manager and Architect may require. This schedule, unless objected to by the Construction Manager or Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. In the event there is one Contractor, the Construction Manager shall forward to the Architect the Contractor's schedule of values. If there are Multiple Prime Contractors responsible for performing different portions of the Project, the Construction Manager shall forward the Multiple Prime Contractors' schedules of values only if requested by the Architect.

§ 9.3 Applications for Payment

§ 9.3.1 At least fifteen days before the date established for each progress payment, the Contractor shall submit to the Construction Manager an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. Such application shall be notarized, if required, and supported by such data substantiating the Contractor's right to payment as the Owner, Construction Manager or Architect may require, such as copies of requisitions from Subcontractors and material suppliers, and shall reflect retainage if provided for in the Contract Documents.

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Construction Manager and Architect, but not yet included in Change Orders.

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or material supplier unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage and transportation to the site for such materials and equipment stored off the site.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work.

§ 9.4 Certificates for Payment

§ 9.4.1 Where there is only one Contractor, the Construction Manager will, within seven days after the Construction Manager's receipt of the Contractor's Application for Payment, review the Application, certify the amount the Construction Manager determines is due the Contractor, and forward the Contractor's Application and Certificate for Payment to the Architect. Within seven days after the Architect receives the Contractor's Application for Payment from the Construction Manager, the Architect will either issue to the Owner a Certificate for Payment, with a copy to the Construction Manager, for such amount as the Architect determines is properly due, or notify the Construction Manager and Owner in writing of the Architect's reasons for withholding certification in whole or in part as provided

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in Section 9.5.1. The Construction Manager will promptly forward to the Contractor the Architect's notice of withholding certification.

§ 9.4.2 Where there are Multiple Prime Contractors performing portions of the Project, the Construction Manager will, within seven days after the Construction Manager receives the Multiple Prime Contractors' Applications for Payment: (1) review the Applications and certify the amount the Construction Manager determines is due each of the Multiple Prime Contractors; (2) prepare a Summary of Contractors' Applications for Payment by combining information from each Multiple Prime Contractors' application with information from similar applications for progress payments from other Multiple Prime Contractors; (3) prepare a Project Application and Certificate for Payment; (4) certify the amount the Construction Manager determines is due all Multiple Prime Contractors; and (5) forward the Summary of Contractors' Applications for Payment and Project Application and Certificate for Payment to the Architect.

§ 9.4.3 Within seven days after the Architect receives the Project Application and Project Certificate for Payment and the Summary of Contractors' Applications for Payment from the Construction Manager, the Architect will either issue to the Owner a Project Certificate for Payment, with a copy to the Construction Manager, for such amount as the Architect determines is properly due, or notify the Construction Manager and Owner in writing of the Architect's reasons for withholding certification in whole or in part as provided in Section 9.5.1. The Construction Manager will promptly forward the Architect's notice of withholding certification to the Contractors.

§ 9.4.4 The Construction Manager's certification of an Application for Payment or, in the case of Multiple Prime Contractors, a Project Application and Certificate for Payment shall be based upon the Construction Manager's evaluation of the Work and the information provided as part of the Application for Payment. The Construction Manager's certification will constitute a representation that, to the best of the Construction Manager's knowledge, information and belief, the Work has progressed to the point indicated and the quality of the Work is in accordance with the Contract Documents. The certification will also constitute a recommendation to the Architect and Owner that the Contractor be paid the amount certified.

§ 9.4.5 The Architect's issuance of a Certificate for Payment or in the case of Multiple Prime Contractors, Project Application and Certificate for Payment, shall be based upon the Architect's evaluation of the Work, the recommendation of the Construction Manager, and information provided as part of the Application for Payment or Project Application for Payment. The Architect's certification will constitute a representation that, to the best of the Architect's knowledge, information and belief, the Work has progressed to the point indicated, that the quality of the Work is in accordance with the Contract Documents, and that the Contractor is entitled to payment in the amount certified.

§ 9.4.6 The representations made pursuant to Sections 9.4.4 and 9.4.5 are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion and to specific qualifications expressed by the Construction Manager or Architect.

§ 9.4.7 The issuance of a separate Certificate for Payment or a Project Certificate for Payment will not be a representation that the Construction Manager or Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work, (2) reviewed the Contractor's construction means, methods, techniques, sequences or procedures, (3) reviewed copies of requisitions received from Subcontractors and material suppliers and other data requested by the Owner to substantiate the Contractor's right to payment or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 Decisions to Withhold Certification

§ 9.5.1 The Construction Manager or Architect may withhold a Certificate for Payment or Project Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Construction Manager's or Architect's opinion the representations to the Owner required by Section 9.4.4 and 9.4.5 cannot be made. If the Construction Manager or Architect is unable to certify payment in the amount of the Application, the Construction Manager will notify the Contractor and Owner as provided in Section 9.4.1 and 9.4.3. If the Contractor, Construction Manager and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment or a Project Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Construction Manager or Architect may also withhold a Certificate for Payment or, because of

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subsequently discovered evidence or subsequent observations, may nullify the whole or a part of a Certificate for Payment or Project Certificate for Payment previously issued, to such extent as may be necessary in the Construction Manager's or Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from the acts and omissions described in Section 3.3.2 because of

.1 defective Work not remedied;
.2 third party claims filed or reasonable evidence indicating probable filing of such claims unless security acceptable to the Owner is provided by the Contractor;
.3 failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment;
.4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
.5 damage to the Owner or a separate contractor;
.6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
.7 repeated failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When the above reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.3 If the Architect or Construction Manager withholds certification for payment under Section 9.5.1, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or material or equipment suppliers to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Construction Manager and both will reflect such payment on the next Certificate for Payment.

§ 9.6 Progress Payments

§ 9.6.1 After the Architect has issued a Certificate for Payment or Project Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Construction Manager and Architect.

§ 9.6.2 The Contractor shall pay each Subcontractor, no later than seven days after receipt of payment from the Owner the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 9.6.3 The Construction Manager will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Owner, Construction Manager and Architect on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and material and equipment suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors to ascertain whether they have been properly paid. Neither the Owner, Construction Manager nor Architect shall have an obligation to pay or to see to the payment of money to a Subcontractor except as may otherwise be required by law.

§ 9.6.5 Contractor payments to material and equipment suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors and suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, shall create any fiduciary

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liability or tort liability on the part of the Contractor for breach of trust or shall entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.7 Failure of Payment

If the Construction Manager and Architect do not issue a Certificate for Payment or a Project Certificate for Payment, through no fault of the Contractor, within fourteen days after the Construction Manager's receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents the amount certified by the Construction Manager and Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' written notice to the Owner, Construction Manager and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shut-down, delay and start-up, plus interest as provided for in the Contract Documents.

§ 9.8 Substantial Completion

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so the Owner can occupy or utilize the Work for its intended use.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall notify the Construction Manager, and the Contractor and Construction Manager shall jointly prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the list, the Architect, assisted by the Construction Manager, will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the list, which is not sufficiently complete in accordance with the requirements of the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect, assisted by the Construction Manager, to determine Substantial Completion.

§ 9.8.4 When the Architect, assisted by the Construction Manager, determines that the Work or designated portion thereof is substantially complete, the Construction Manager will prepare, and the Construction Manager and Architect shall execute a Certificate of Substantial Completion that shall establish the date of Substantial Completion, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in such Certificate. Upon such acceptance and consent of surety, if any, the Owner shall make payment of retainage applying to such Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§ 9.9 Partial Occupancy or Use

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer as required under Section 11.3.1.5 and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor and Construction Manager shall jointly prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall

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be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect after consultation with the Construction Manager.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Construction Manager, Contractor and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 Final Completion and Final Payment

§ 9.10.1 Upon completion of the Work, the Contractor shall forward to the Construction Manager a written notice that the Work is ready for final inspection and acceptance and shall also forward to the Construction Manager a final Contractor's Application for Payment. Upon receipt, the Construction Manager will evaluate the completion of Work of the Contractor and then forward the notice and Application, with the Construction Manager's recommendations, to the Architect who will promptly make such inspection. When the Architect, finds the Work acceptable under the Contract Documents and the Contract fully performed, the Construction Manager and Architect will promptly issue a final Certificate for Payment or Project Certificate for Payment stating that to the best of their knowledge, information and belief, and on the basis of their on-site visits and inspections, the Work has been completed in accordance with terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Construction Manager's and Architect's final Certificate for Payment or Project Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect through the Construction Manager (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner, (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment and (5), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Construction Manager and Architect so confirm, the Owner shall, upon application by the Contractor and certification by the Construction Manager and Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect through the Construction Manager prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

- **.1** liens, Claims, security interests or encumbrances arising out of the Contract and unsettled;
- **.2** failure of the Work to comply with the requirements of the Contract Documents; or
- **.3** terms of special warranties required by the Contract Documents.

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§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 Safety Precautions and Programs

The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Contract. The Contractor shall submit the Contractor's safety program to the Construction Manager for review and coordination with the safety programs of other Contractors.
The Construction Manager's responsibilities for review and coordination of safety programs shall not extend to direct control over or charge of the acts or omissions of the Contractors, Subcontractors, agents or employees of the Contractors or Subcontractors, or any other persons performing portions of the Work and not directly employed by the Construction Manager.

§ 10.2 Safety of Persons and Property

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to

- **.1** employees on the Work and other persons who may be affected thereby;
- **.2** the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor or the Contractor's Subcontractors or Sub-subcontractors;
- **.3** other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction; and
- **.4** construction or operations by the Owner or other Contractors.

§ 10.2.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss.

§ 10.2.3 The Contractor shall erect and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent sites and utilities.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2, 10.2.1.3 and 10.2.1.4 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2, 10.2.1.3 and 10.2.1.4, except damage or loss attributable to acts or omissions of the Owner, Construction Manager or Architect or anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner, Construction Manager and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 Injury or Damage to Person or Property

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, written notice of such injury or damage, whether or not insured,

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shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.3 Hazardous Materials

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to, asbestos or polychlorinated biphenyl (PCB),encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and report the condition to the Owner, Construction Manager and Architect in writing.

§ 10.3.2 Upon receipt of the Contractor's written notice, the Owner shall obtain the services of a licensed laboratory to verify a presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor, Construction Manager and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of such material or substance or who are to perform the task of removal or safe containment of such material or substance. The Contractor, the Construction Manager and the Architect will promptly reply to the Owner in writing stating whether or not any of them has reasonable objection to the persons or entities proposed by the Owner. If the Contractor, Construction Manager or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor, the Construction Manager and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resumed upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased in the amount of the Contractor's reasonable additional costs of shut-down, delay and start-up.

§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Construction Manager, Architect, their consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss or expense is not due to the fault or negligence of the party seeking indemnity.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall indemnify the Owner for the cost and expense the Owner incurs (1) for remediation of a material or substance the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall indemnify the Contractor for all cost and expense thereby incurred.

§ 10.4 Emergencies

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 Contractor's Liability Insurance

§ 11.1.1 The Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located such insurance as will protect the Contractor from claims set

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forth below which may arise out of or result from the Contractor's operations and completed operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

.1 Claims under workers' compensation, disability benefit and other similar employee benefit acts which are applicable to the Work to be performed;

.2 Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;

.3 Claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;

.4 Claims for damages insured by usual personal injury liability coverage;

.5 Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;

.6 Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle; and

.7 Claims for bodily injury or property damage arising out of completed operations; and

.8 Claims involving contractual liability insurance applicable to the Contractor's obligations under Section 3.18.

§ 11.1.2 The insurance required by Section 11.1.1 shall be written for not less than limits of liability specified in the Contract Documents or required by law, whichever coverage is greater. Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from the date of commencement of the Work until the date of final payment and termination of any coverage required to be maintained after final payment and, with respect to the Contractor's completed operations coverage, until the expiration of the period for correction of Work or for such other period for maintenance of completed operations coverage as specified in the Contract Documents.

§ 11.1.3 Certificates of insurance acceptable to the Owner shall be submitted to the Construction Manager for transmittal to the Owner with a copy to the Architect prior to commencement of the Work and thereafter upon renewal or replacement of each required policy of insurance. These certificates and the insurance policies required by this Section 11.1 shall contain a provision that coverages afforded under the policies will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment as required by Section 9.10.2 and thereafter upon renewal or replacement of such coverage until the expiration of the time required by Section 11.1.2. Information concerning reduction of coverage shall be furnished by the Contractor with reasonable promptness.

§ 11.1.4 The Contractor shall cause the commercial liability coverage required by the Contract Documents to include (1) the Construction Manager, the Construction Manager's consultants, the Owner, the Architect, and the Architect's consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations.

§ 11.2 Owner's Liability Insurance

The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance.

§ 11.3 Property Insurance

§ 11.3.1 Unless otherwise provided, the Owner shall purchase and maintain, in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, property insurance written on a builder's risk "all risk" or equivalent policy form in the amount of the initial Contract Sum, plus value of subsequent Contract modifications and cost of materials supplied or installed by others, comprising total value for the entire Project at the site on a replacement cost basis without optional deductibles. Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made as provided in Section 9.10 or until no person or entity other than the Owner has an insurable interest in the property required by this Section 11.3 to be covered, whichever is later. This insurance shall include interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the Project.

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§ **11.3.1.1** Property insurance shall be on an "all-risk" or equivalent policy form and shall include, without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, falsework, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for the Architect's, Contractor's, and Construction Manager's services and expenses required as a result of such insured loss.

§ **11.3.1.2** If the Owner does not intend to purchase such property insurance required by the Contract and with all of the coverages in the amount described above, the Owner shall so inform the Contractor in writing prior to commencement of the Work. The Contractor may then effect insurance that will protect the interests of the Contractor, Subcontractors and Sub-subcontractors in the Work, and by appropriate Change Order the cost thereof shall be charged to the Owner. If the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain insurance as described above, without so notifying the Contractor in writing, then the Owner shall bear all reasonable costs properly attributable thereto.

§ **11.3.1.3** If the property insurance requires deductibles, the Owner shall pay costs not covered because of such deductibles.

§ **11.3.1.4** This property insurance shall cover portions of the Work stored off the site, and also portions of the Work in transit.

§ **11.3.1.5** Partial occupancy or use in accordance with Section 9.9 shall not commence until the insurance company or companies providing property insurance have consented to such partial occupancy or use by endorsement or otherwise. The Owner and the Contractor shall take reasonable steps to obtain consent of the insurance company or companies and shall, without mutual written consent, take no action with respect to partial occupancy or use that would cause cancellation, lapse or reduction of insurance.

§ **11.3.2 Boiler and Machinery Insurance.** The Owner shall purchase and maintain boiler and machinery insurance required by the Contract Documents or by law, which shall specifically cover such insured objects during installation and until final acceptance by the Owner; this insurance shall include interests of the Owner, Construction Manager, Contractor, Subcontractors and Sub-subcontractors in the Work, and the Owner and Contractor shall be named insureds.

§ **11.3.3 Loss of Use Insurance.** The Owner, at the Owner's option, may purchase and maintain such insurance as will insure the Owner against loss of use of the Owner's property due to fire or other hazards, however caused. The Owner waives all rights of action against the Contractor for loss of use of the Owner's property, including consequential losses due to fire or other hazards however caused.

§ **11.3.4** If the Contractor requests in writing that insurance for risks other than those described herein or other special causes of loss be included in the property insurance policy, the Owner shall, if possible, include such insurance, and the cost thereof shall be charged to the Contractor by appropriate Change Order.

§ **11.3.5** If during the Project construction period the Owner insures properties, real or personal or both, adjoining or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, the Owner shall waive all rights in accordance with the terms of Section 11.3.7 for damages caused by fire or other causes of loss covered by this separate property insurance. All separate policies shall provide this waiver of subrogation by endorsement or otherwise.

§ **11.3.6** Before an exposure to loss may occur, the Owner shall file with the Contractor a copy of each policy that includes insurance coverages required by this Section 11.3. Each policy shall contain all generally applicable conditions, definitions, exclusions and endorsements related to this Project. Each policy shall contain a provision that the policy will not be canceled or allowed to expire, and that its limits will not be reduced, until at least 30 days' prior written notice has been given to the Contractor.

§ **11.3.7 Waivers of Subrogation.** The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents and employees each of the other, and (2) the Construction Manager,

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Architect, Architect's consultants, separate contractors described in Article 6, if any, and any of their subcontractors, sub-subcontractors, agents and employees, for damages caused by fire or other causes of loss to the extent covered by property insurance obtained pursuant to this Section 11.3 or other property insurance applicable to the Work, except such rights as the Owner and Contractor may have to the proceeds of such insurance held by the Owner as fiduciary. The Owner or Contractor, as appropriate, shall require of the Construction Manager, Construction Manager's consultants, Architect, Architect's consultants, Owner's separate contractors described in Article 6, if any, and the subcontractors, sub-subcontractors, agents and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

§ 11.3.8 A loss insured under the Owner's property insurance shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.3.10. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner.

§ 11.3.9 If required in writing by a party in interest, the Owner as fiduciary shall, upon occurrence of an insured loss, give bond for proper performance of the Owner's duties. The cost of required bonds shall be charged against proceeds received as fiduciary. The Owner shall deposit in a separate account proceeds so received, which the Owner shall distribute in accordance with such agreement as the parties in interest may reach, or as determined in accordance with the method of binding dispute resolution selected in the Agreement between the Owner and Contractor. If after such loss no other special agreement is made and unless the Owner terminates the Contract for convenience, replacement of damaged property shall be performed by the Contractor after notification of a Change in the Work in accordance with Article 7.

§ 11.3.10 The Owner as fiduciary shall have power to adjust and settle a loss with insurers unless one of the parties in interest shall object in writing within five days after occurrence of loss to the Owner's exercise of this power; if such objection is made, the dispute shall be resolved in the manner selected by the Owner and Contractor as the method of binding dispute resolution in the Agreement. If the Owner and Contractor have selected arbitration as the method of binding dispute resolution, the Owner as fiduciary shall make settlement with insurers or distribution of insurance proceeds in accordance with the direction of the arbitrators.

§ 11.4 Performance Bond and Payment Bond

§ 11.4.1 The Owner shall have the right to require the Contractor to furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder as stipulated in bidding requirements or specifically required in the Contract Documents on the date of execution of the Contract.

§ 11.4.2 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 Uncovering of Work

§ 12.1.1 If a portion of the Work is covered contrary to the Construction Manager's or Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by either, be uncovered for their observation and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered which the Construction Manager or Architect has not specifically requested to observe prior to its being covered, the Construction Manager or Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, costs of uncovering and replacement shall, by appropriate Change Order, be at the Owner's expense. If such Work is not in accordance with the Contract Documents, such costs and the cost of correction shall be at the Contractor's expense unless the condition was caused by the Owner or one of the other Contractors in which event the Owner shall be responsible for payment of such costs.

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§ 12.2 Correction of Work

§ 12.2.1 Before or After Substantial Completion

The Contractor shall promptly correct Work rejected by the Construction Manager or Architect or failing to conform to the requirements of the Contract Documents, whether discovered before or after Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Construction Manager's and Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

§ 12.2.2 After Substantial Completion

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof, or after the date for commencement of warranties established under Section 9.9.1, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.4.

§ 12.2.2.2 The one-year period shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction, whether completed or partially completed, of the Owner or separate contractors or other Multiple Prime Contractors caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.3 Acceptance of Nonconforming Work

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 Governing Law

The Contract shall be governed by the law of the place where the Project is located except that, if the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

§ 13.2 Successors and Assigns

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns and legal representatives to covenants, agreements and obligations contained in the Contract Documents. Except as provided in

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Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate such assignment.

§ 13.3 Written Notice

Written notice shall be deemed to have been duly served if delivered in person to the individual, to a member of the firm or entity or to an officer of the corporation for which it was intended; or if delivered at or sent by registered or certified mail or by courier service providing proof of delivery to, the last business address known to the party giving notice.

§ 13.4 Rights and Remedies

§ 13.4.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights and remedies otherwise imposed or available by law.

§ 13.4.2 No action or failure to act by the Owner, Construction Manager, Architect or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed in writing.

§ 13.5 Tests and Inspections

§ 13.5.1 Tests, inspections and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections and approvals. The Contractor shall give the Construction Manager and Architect timely notice of when and where tests and inspections are to be made so that the Construction Manager and Architect may be present for such procedures. The Owner shall bear costs of (1) tests, inspections or approvals that do not become requirements until after bids are received or negotiations concluded, and (2) tests, inspections or approvals where building codes or applicable laws or regulations prohibit the Owner from delegating their cost to the Contractor.

§ 13.5.2 If the Construction Manager, Architect, Owner or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection or approval not included under Section 13.5.1, the Construction Manager and Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection or approval by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Construction Manager and Architect of when and where tests and inspections are to be made so that the Construction Manager and Architect may be present for such procedures. Such costs except as provided in Section 13.5.3, shall be at the Owner's expense.

§ 13.5.3 If such procedures for testing, inspection or approval under Sections 13.5.1 and 13.5.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure including those of repeated procedures and compensation for the Construction Manager's and Architect's services and expenses shall be at the Contractor's expense.

§ 13.5.4 Required certificates of testing, inspection or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Construction Manager for transmittal to the Architect.

§ 13.5.5 If the Construction Manager or Architect is to observe tests, inspections or approvals required by the Contract Documents, the Construction Manager or Architect will do so promptly and, where practicable, at the normal place of testing.

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§ 13.5.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.6 Interest

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at such rate as the parties may agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

§ 13.7 Time Limits on Claims

The Owner and the Contractor shall commence all claims and causes of action, whether in contract, tort, breach of warranty or otherwise, against the other arising out of or related to the Contract in accordance with the requirements of the final dispute resolution method selected in the Agreement within the time period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and the Contractor waive all claims and causes of action not commenced in accordance with this Section 13.7.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 Termination by the Contractor

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, for any of the following reasons:

- **.1** Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- **.2** An act of government, such as a declaration of national emergency that requires all Work to be stopped;
- **.3** Because the Construction Manager has not certified or the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- **.4** The Owner has failed to furnish to the Contractor promptly, upon the Contractor's request, reasonable evidence as required by Section 2.2.1.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, repeated suspensions, delays or interruptions of the entire Work by the Owner as described in Section 14.3 constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' written notice to the Owner, Construction Manager and Architect, terminate the Contract and recover from the Owner payment for Work executed including reasonable overhead and profit, costs incurred by reason of such termination, and damages.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor or a Subcontractor or their agents or employees or any other persons performing portions of the Work under contract with the Contractor because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' written notice to the Owner, Construction Manager and Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

§ 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- **.1** repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- **.2** fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;
- **.3** repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- **.4** otherwise is guilty of substantial breach of a provision of the Contract Documents.

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§ 14.2.2 When any of the above reasons exist, the Owner, after consultation with the Construction Manager, and upon certification by the Initial Decision Maker that sufficient cause exists to justify such action, may without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

.1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;

.2 Accept assignment of subcontracts pursuant to Section 5.4; and

.3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Construction Manager's and Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall, upon application, be certified by the Initial Decision Maker after consultation with the Construction Manager, and this obligation for payment shall survive termination of the Contract.

§ 14.3 Suspension by the Owner for Convenience

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and the Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay or interruption as described in Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent:

.1 that performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible; or

.2 that an equitable adjustment is made or denied under another provision of this Contract.

§ 14.4 Termination by the Owner for Convenience

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of written notice from the Owner of such termination for the Owner's convenience, the Contractor shall

.1 cease operations as directed by the Owner in the notice;

.2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and

.3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination, along with reasonable overhead and profit on the Work not executed.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 Claims

§ 15.1.1 Definition. A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract The responsibility to substantiate Claims shall rest with the party making the Claim.

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§ 15.1.2 Notice of Claims. Claims by either the Owner or Contractor must be initiated by written notice to the other party and to the Initial Decision Maker with a copy sent to the Construction Manager and Architect, if the Construction Manager and or Architect is not serving as the Initial Decision Maker. Claims by either party must be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 15.1.3 Continuing Contract Performance. Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents. The Construction Manager will prepare Change Orders and the Architect will issue a Certificate for Payment or Project Certificate for Payment in accordance with the decisions of the Initial Decision Maker.

§ 15.1.4 Claims for Additional Cost. If the Contractor wishes to make a Claim for an increase in the Contract Sum, written notice as provided herein shall be given before proceeding to execute the Work. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.3.

§ 15.1.5 Claims for Additional Time

§ 15.1.5.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, written notice as provided herein shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay only one Claim is necessary.

§ 15.1.5.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated and had an adverse effect on the scheduled construction.

§ 15.1.6 Claims for Consequential Damages. The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

- **.1** damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- **.2** damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.6 shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 Initial Decision

§ 15.2.1 Claims, excluding those arising under Sections 10.3, 10.4, 11.3.9, and 11.3.10, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim arising prior to the date final payment is due, unless 30 days have passed after the Claim has been referred to the Initial Decision Maker with no decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision

Init.
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Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of such request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect and Construction Manager, if the Architect or Construction Manager is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may, within 30 days from the date of an initial decision, demand in writing that the other party file for mediation within 60 days of the initial decision. If such a demand is made and the party receiving the demand fails to file for mediation within the time required, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 15.3 Mediation

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.6 shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 15.3.3 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

§ 15.4 Arbitration

§ 15.4.1 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a

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notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

§ 15.4.2 The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

§ 15.4.3 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

§ 15.4.4 Consolidation or Joinder

§ 15.4.4.1 Either party, at its sole discretion, may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 15.4.4.2 Either party, at its sole discretion, may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as the Owner and Contractor under this Agreement.

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PAGE 1

Former Haddam Jailhouse Building
11 Jail Hill Road, Haddam, CT

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Town of Haddam
30 Field Park Drive
Haddam, CT 06438

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_____

(Signed)

_____

(Title)

_____

(Dated)

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TOWN OF HADDAM SUPPLEMENTARY CONDITIONS

1. "The Contractor and its subcontractors will comply with Section 49-41a of the *Connecticut General Statutes*. Within thirty (30) days after payment to the Contractor by the Town of Haddam, the Contractor shall pay any amounts due any subcontractor, whether for labor performed or materials furnished, when the labor or materials have been included in a requisition submitted by the Contractor and paid by the Town of Haddam. The Contractor shall include in each of its subcontracts a provision requiring each of its subcontractors to pay any amounts due any of its subcontractors, whether for labor performed or materials furnished, within thirty (30) days after such subcontractor receives a payment from the Contractor which encompassed labor or materials furnished by such subcontractor."

2. "Any non-resident Contractor shall obtain and provide the Town of Haddam a certificate from the Connecticut Commissioner of Revenue Services of compliance with *Connecticut General Statutes* Section 12-430(7) or the Town of Haddam will be required to deduct five percent (5%) of all amounts payable to such non-resident contractor and pay it over to the Commissioner of Revenue Services."

3. "The Contractor, for itself and all subcontractors, offers and agrees to assign the Town of Haddam, all right, title and interest to all causes of action it (they) may have under Section 4 of the *Clayton Act*, 15 U.S. Section 15 or under Chapter 624 of the *Connecticut General Statutes*, arising out of the purchase of services, property, or intangibles of any kind pursuant to a public purchase contract or subcontract. This assignment shall be made and become effective at the time the Town of Haddam awards or accepts such contract, without further acknowledgement by the parties."

4. "Termination by the Owner for Convenience" (Add this to 14.2.5 of A201)

   "Anything to the contrary notwithstanding, the Owner retains the right to terminate the Contract for its convenience upon written notice to the Contractor. In said event, Contractor's remedy for termination for convenience shall be limited to the following:

   a. Contractor shall be entitled to be paid pursuant to the prices set forth in the Contract for all work properly performed prior to termination;

   b. Partial payment shall be made for any lump sum items of work on the basis of the percentage complete of such items at the time of termination:

   c. The Contractor shall be reimbursed for reasonable close-out costs, including the mobilization, shipping, and restocking fees for material which can be returned, and engineering for work not performed;

   d. Contractor shall not be entitled to any compensation for loss of anticipated profits for unallocated overhead. Except as provided under Section 14.1.2, any determination by a court of competent jurisdiction that the termination of the Contractor or successor-in-interest pursuant to any provision of this contract is wrongful, such termination will be deemed converted to a termination for a convenience of the Owner and the Contractor's remedy shall be limited to those set forth in this Paragraph."

Delete 9.7 in its entirety and add

In lieu of allowing the contractor the right to stop work under Section 9.9 of A201, prefer a provision such as the following:

"If the Owner shall fail to pay the Contractor at the time the payment of any amount becomes due, the Contractor shall provide the Owner a written protest that if payment is not made within seven (7) days of the receipt of the protest letter, the Contractor shall be entitled to interest at the judgment rate for such amounts that may be determined in arbitration as having been wrongfully withheld. Written notice shall be deemed to have been duly served if sent by certified mail to:

Mr. Thomas Giddis
Town of Haddam
30 Field Park Drive
Haddam, CT 06438

Add Section 2.4.2 would add a line "Nothing herein shall relieve the Contractor from actual damages in the event that the lump sum remaining to be paid to the Contractor is inadequate to cover the costs to the owner."

Add this as Section 4.7.7.1

1.1.1.1.1.1 NO DAMAGE FOR DELAY CAUSE

Notwithstanding anything to the contrary in the Contract Documents, an extension in the Contract Time shall be the sole remedy of the Contractor for any (1) delay in the commencement, prosecution or completion of the work, (2) hindrance or obstruction in the performance of the work, (3) loss of productivity, or (4) other similar claims whether or not such delays are foreseeable, contemplated, or uncontemplated, unless a Delay is caused by acts of the Owner, constituting active interference with the Contractor's performance of the Work, and only to the extent such acts continue after the Contractor furnishes the Owner with written notice of such interference. If no event shall the Contractor be entitled to any compensation or recovery of any damage, in connection with any Delay, including without limitation, consequential damages, lost opportunity cost, impact damages or other similar remuneration. The Owner's exercise of any of its rights or remedies under the Contract Documents (including, without limitation, ordering changes in the work, or directing suspension, rescheduling or correction of the work), regardless of the extent or frequency of the Owner's exercise of such rights or remedies, shall not be construed as active interference with the Contractor's performance of the work.

If the Contractor submits a progress report indicating or otherwise expresses an intention to achieve, completion of the work prior to any completion date required by the Contract Documents or expiration of the Contract Time, no liability of the Owner to the Contractor for any failure of the Contractor to so complete the work shall be created or implied.

In addition to the foregoing and to all other express provisions in the Contract Documents, the following are areas of delay which could occur and are clearly contemplated by the parties:

(1) Delay caused by change orders;

(2) Delays caused by the bankruptcy or insolvency of one or more contractors or subcontractors;

(3) Delays caused by changes necessitated by changes in laws or regulations;

(4) Unavailability or shortage of building materials;

(5) Job site theft;

(6) Weather conditions;

(7) Failure of one or more contractors or subcontractors to perform;

(8) Vandalism or natural disaster requiring reconstruction.

Substitute for 4.9 in its entirety

1.1.1.1.1.2 MEDIATION AND ARBITRATION

Consistent with the spirit and cooperation with which the parties are entering into this Agreement, the parties establish the following procedure to encourage the resolution of any differences that may arise:

7.1 Mediation. All claims, disputes, or other matters in question between the parties to this Agreement arising out of or relating to this Agreement or breach thereof shall be submitted to non-binding mediation. On the written notice of either party to the other of the election to submit any dispute under this Agreement to mediation, each party shall designate its representative and shall meet at the Haddam Town Hall within ten (10) days after the service of notice. The parties themselves shall then attempt to resolve the dispute within ten (10) days of meeting.

Should the parties themselves be unable to agree on a resolution of this dispute, then the parties shall appoint a third party, who shall be a competent and impartial party and who shall be acceptable to each party, to mediate the dispute. Each party shall pay the fees and expenses of the party mediator and such costs shall be borne equally by both parties. Upon agreement of the parties, either party may waive the first step in the mediation process and appoint a mutually acceptable mediator.

Any third party mediator designated to serve in accordance with the provisions of the Agreement shall be disinterested and shall be qualified to evaluate the performance of both parties.

This process shall be considered as a condition precedent to moving to arbitration.

7.2 Arbitration. If mediation fails to resolve the claim dispute or other matter in questions, the issue or issues shall be subject to and decided by arbitration in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association currently in effect unless the parties mutually agree otherwise.

(a) Demand for arbitration shall be filed in writing with the other party to this Agreement and with the American Arbitration Association upon the unsuccessful conclusion of mediation. A demand for arbitration shall be made within a reasonable time after the unsuccessful mediation. In no event shall the demand for arbitration be made after the date when institution of legal or equitable proceedings based on such claim, dispute, or other matter in question would be barred by the applicable statute of limitations.

(b) In order to resolve all claims in one arbitration proceeding, arbitration arising out of or related to this agreement shall be consolidated wherever possible with arbitration proceedings involving common issues with other persons or entities having a contract to perform services or supply materials on the subject project, whose contract permits consolidation of arbitration.

(c) The award rendered by the arbitrator or arbitrators shall be final and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

7.3 Equitable Relief. Nothing herein shall prevent either party from obtaining a court order enforcing the mediation-arbitration process and such other temporary or equitable relief until such time that the dispute is settled or there is an arbitration award.

Add to 7.3.10 of A201

1.1.1.1.1.3 CHANGE ORDERS

"The amount allowed by the architect pursuant to the contract shall be the only amount allowed as compensation and/or as damages to the contractor because of a change order. Under no circumstances may the contractor make any additional claims for damage as a result of change orders. The contractor shall supply all information requested by the architect in order to promptly act upon any change order. The architect's determination in this regard shall be final and binding upon the contractor (and the Town)."

SUPPLEMENTARY GENERAL CONDITIONS

PART 1 - THE GENERAL CONDITIONS

The General Conditions of the Contract for Construction, AIA Document A201, Fourteenth Edition, 1987, herein referred to as the "General Conditions."

PART 2 - THE SUPPLEMENTARY CONDITIONS

The following supplements modify, change, delete from or add to the "General Conditions of the Contract for Construction." Where any Article of the General Conditions is modified or deleted by these Supplementary Conditions, the unaltered provisions of that Article, Paragraph, Subparagraph, or Clause shall remain in effect.

PART 3 - MODIFICATIONS TO THE GENERAL CONDITIONS

Article 1 - Contract Documents

1.1 Basic Definitions - Add the following:

1.1.8 When applied to materials and equipment the words "furnish", "install" and "provide" shall mean the following:

1.1.8.1 The word "provide" shall mean to furnish, pay for, deliver, install, adjust, clean and otherwise make materials and equipment fit and ready for their intended use, as specified in paragraph 4.4.1 of the General Conditions.

1.1.8.2 The word "furnish" shall mean to secure, pay for, deliver to the site, unload and uncrate materials and equipment.

1.1.8.3 The word "install" shall mean to place in position, incorporate in the work, adjust, clean and make fit and ready for use.

1.1.8.4 The phrase "furnish and install" shall be equivalent to the word "provide."

1.1.9 The phrase "match existing" shall mean the following:

1.1.9.1 Where Contract Documents call for match, match existing work exactly in quality and appearance.

1.1.9.2 When Contract Documents do not call for exact matching, match existing work as nearly as possible, using normally available materials and workmanship. If normally available materials and workmanship do not approximate existing work, notify Architect. If in the Architect's judgment it is impossible to approximate existing work with normally available materials and workmanship, the Architect may issue suitable Change Orders.

1.1.9.3 Existing structures and materials are indicated "existing." In general structures and materials which are not indicated existing are included in the Work.

1.2.3 In the event of conflicts or discrepancies among the Contract Documents, interpretations will be based on the following priorities.

1. The Agreement.
2. Addenda, with those of later date having precedence over those of earlier date.
3. The Supplementary Conditions.
4. The General Conditions of the Contract for Construction.
5. Drawings and Specifications.

In the case of an inconsistency between Drawings and Specifications or within either Document not clarified by addendum, the better quality or greater quantity of Work shall be provided in accordance with the Architect's interpretation.

Article 3 - Contractor

3.6.1 Delete and substitute the following:

3.6.1 This project is exempt from payment of State Sales and Use Taxes.

3.7 Permits, Fees, and Notices

Add the following:

3.7.1.1 The Contractor is responsible for securing and paying for permits and Certificates of Occupancy.

Article 7 - Changes in the Work

7.3 Construction Change Directions:

7.3.6 In the first sentence, delete the words "a reasonable allowance for overhead and profit" and substitute "an allowance for overhead and profit in accordance with the schedule set forth in Subparagraph 7.3.6.6 below."

Add the following Subparagraph:

7.3.6.6 The allowance for overhead and profit combined, including the total cost to the Owner, shall be based on the following:

a. For the Contractor, for Work performed by their own forces, overhead and profit combined on Change Orders shall be 15% of the cost.
b. For the Contractor for Work performed by his Subcontractor, 10% of the amount due the Subcontractor.
c. For each Subcontractor or Sub-subcontractor involved for any Work performed by that Contractor's forces, 15% of the cost.
d. For each Subcontractor for Work performed by his Sub-subcontractors, 10% of the amount due the Sub-subcontractor.
e. Cost to which overhead and profit is to be applied shall be determined in accordance with Subparagraph 7.3.6.
f. In order to facilitate checking on quotations for extras or credits, all proposals shall be accompanied by a complete itemization of costs including labor,

materials, and Subcontracts. Labor and materials shall be itemized in the manner prescribed above. Where major cost items are Subcontracts, they shall be itemized also.

Article 9 - Payments and Completion

9.3 Applications for Payment:

9.3.1 Add the following sentence to 9.3.1: "The form of Application for Payment shall be notarized, 1992 edition AIA Document G702, Application and Certification for Payment, supported by 1992 edition AIA Document G703, Continuation Sheet." Documents which violate the copyright laws are unacceptable.

9.6 Progress Payments:

Add the following:

9.6.1.1

a. Each application for payment shall be for one calendar month.
b. Provided an Application for Payment is received by the Architect not later than the fifth (5th) day of the month, the Owner shall make payment to the Contractor not later than the fifteenth (15th) day of the second following month. If an Application for Payment is received by the Architect after the application date fixed above, payment shall be made by the Owner not later than sixty (60) days after the Architect receives the Application for Payment.
c. Each Application for Payment shall be based upon the approved Schedule of Values submitted by the Contractor in accordance with the Contract Documents. The Schedule of Values shall allocate the entire Contract Sum among the various portions of the Work and be prepared in such form and supported by such data to substantiate its accuracy as the Architect may require. This Schedule, unless object to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.
d. Applications for Payment shall indicate the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.
e. Subject to the provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:
    1. Take the portion of the Contract Sum properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Work by the share of the total Contract sum allocated to that portion of the Work in the Schedule of Values, less retainage of five percent (5%). Pending final determination of cost to the Owner of changes in the Work, amounts not in dispute may be included as provided Subparagraph 7.3.7 of the General Conditions even though the Contract Sum has not yet been adjusted by Change Order;
    2. Add that portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction (or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing), less retainage of five percent (5%);

3. Subtract the aggregate of previous payments made by the Owner; and
4. Subtract amounts, if any, for which the Architect has withheld or nullified a Certificate of Payment as provided in Paragraph 9.5 of the General Conditions.

f. The Owner may consider reduction of retainage at substantial completion.

9.6.2 "Promptly" in the first line shall mean within thirty days.

9.10 Final Completion and Final Payment:

Article 11 - Insurance Bonds

11.1 Insurance Requirements:

Add 11.1.1.8 as follows:

General Insurance Requirements:
- Insurance companies must be rated A.M. Best A/VII or higher.
- Insurance companies must be licensed to do business in the State of Connecticut.
- All liability policies must be on an occurrence form.
- "The Town of Haddam" is on all liability policies.
- A 30 day notice of cancellation is required on all policies.

A. Contractor's Liability Insurance

1. Worker's Compensation statutory limits are required covering the benefits of the State of Connecticut and any other state if employees used on the project do not reside in Connecticut.
2. Employer's Liability:
   $100,000 each accident
   $500,000 disease, policy limit
   $100,000 disease, each employee
3. General Liability:
   $1,000,000 general aggregate
   $1,000,000 products/completed operations aggregate
   $1,000,000 personal & advertising injury
   $1,000,000 each occurrence
   $50,000 fire damage (any one fire)
   $5,000 medical expenses (anyone person)
   - Combined single limits (bodily injury/property damage).
   - Aggregates must apply per project.
   - ISO FORM GC 0001 11/88 or equivalent coverage required and should not exclude XCU or contractual liability. Any non-standard exclusions should be noted on the certificate of insurance.
4. Umbrella/Excess Liability:
   $1,000,000 per occurrence
   - excess insurance is acceptable must be as broad as the underlying
   - policies.
5. Automobile Liability:
   $1,000,000 combined single limit (bodily injury/property damage)
   - coverage must apply to owned, non-owned, and hired autos.

6. CONTRACTOR shall require CONTRACTOR'S insurance carrier to add OWNER and OWNER'S professional consultants and their agents as additional insureds under CONTRACTOR'S general liability insurance policy with respect to services performed by CONTRACTOR for OWNER. CONTRACTOR'S insurance carrier shall acknowledge that the protection so extended shall be primary protection for OWNER and OWNER'S professional consultants and their agents.
7. "The Contractor agrees to indemnify, defend and save harmless, the Town of Haddam, as well as its officers, agents, Architects, Engineers, Environmental consultants and employees from any and all claims and losses accruing or resulting from the claims and losses accruing or resulting to any person, firm or corporation who may be injured or damaged by the Contractor in the performance of this Contract."
   CONTRACTOR will require all SUBCONTRACTORS to conform with this provision before they start any work. CONTRACTOR shall insure this provision in conformity with the insurance provisions of this CONTRACT.
8. The Owner shall be listed on the certificate of insurance as additional insured.

Each Policy of Insurance shall include a waiver of subrogation in favor of the Town of Haddam and shall provide no less than thirty (30) days notice to the Town of Haddam in the event of a cancellation or change in conditions or amounts of coverage. The Commercial General Liability, Automobile, and Umbrella Liability shall name the Town of Haddam as an additional insured.

The above insurance requirements shall also apply to all Subcontractors and the Consultant shall not allow any Subcontractors to commence work until the Subcontractor's insurance has been so obtained and approved.

B. Property Insurance

1. The Town of Haddam will continue to insure the buildings under their present property policy. Additions and alterations will be considered part of the building once accepted by the Owner. The Contractor is responsible for insuring all materials and equipment prior to installation including while in storage, transit, or at the job site. An installation floater covering the material on an all-risk basis is required in an amount equal to the maximum amount of goods in storage, transit, or at the job site any one time. All deductibles are the responsibility of the Contractor.

11.1.4 Add the following clause:

11.13.1 The Contractor shall furnish three copies of the Certificate of Insurance herein required which shall specifically set forth evidence of all coverage required by this article. The form of Certificate shall be Accord. The Contractor shall furnish to the Owner copies of any endorsements that are subsequently issued amending coverage limits.

Add the following:

11.5 Additional Insurance Requirements:

11.5.1 If by the terms of this insurance any mandatory deductibles are required, in the event of a paid claim the Contractor shall be responsible for payment of such mandatory deductibles.

Add the following Articles and their subparagraphs:

Article 15 - Standard Forms

15.1 Forms to be Completed Prior to Start of Construction

15.1.1 The form of Contract is
AIA Document A301/CMa
Bid Bond
Dated 2/70 (must accompany Bid Form)

15.1.2 The form of Performance Bond and Labor and Material Payment Bond is:
AIA Document A312
Performance Bond and Labor and Material Payment Bond
Dated 6/94
(must be completed for contract signing)

15.1.3 The form of Certificate for Insurance is:
Standard Form by Accord
(must be completed for contract signing)

15.2 Forms to be Used during Construction

15.2.1 The form of Request for Payment is:
AIA Document G702 and G702A
Application and Certificate for Payment
with Continuing Sheets
Dated 1992

15.2.2 The form of Change Order is:
AIA Document G701
Change Order
Dated 1992

15.2.3 The form of Supplemental Instructions
AIA Document G710
Architects Supplemental Instructions
Dated 3/79

15.2.4 The form of Proposal Request is:
AIA Document G709
Proposal Request
Dated 4/70

15.3 Forms for Project Completion

15.3.1 Certificate of Substantial Completion
AIA Document G704

Dated 1992

15.3.2 Contractor's Affidavit of Payment of Debts and Claims
AIA Document G706
Dated 1994

15.3.3 Contractor's Affidavit of Release of Liens
AIA Document G706A
Date 1994

15.3.4 Consent of Surety for Final Payment
AIA Document G707
Dated 1994

15.3.5 Consent of Surety for Reduction in or Partial Release of Retainage
AIA Document G707A
Dated 1994

END OF SECTION

SECTION 01010 – GENERAL REQUIREMENTS

PART 1 – GENERAL

1.1 SECTION INCLUDES

A. Contractor use of site and premises.

B. Work Sequence.

C. Owner occupancy.

1.2 CONTRACTOR QUALIFICATIONS

A. All bidders shall submit a record of prior experience in asbestos and lead paint abatement project as well as experience in floor tile replacement projects, listing no less than three (3) completed jobs in the past year, with all projects of similar size and scope. The Contractor shall list the experience and training of the project foremen and all on-site personnel. The information that should be included is as follows:

1. Project Name and Address
2. Owner's Name and Address
3. Architect/Consultant
4. Contract Amount
5. Date of Completion
6. Extras and Changes

B. The Contractor selected <u>must</u> appear on the approved list of Asbestos Abatement Contractors on file at the State of Connecticut Department of Public Health.

C. Submit a written statement regarding whether the Contractor has ever been found out-of-compliance with federal or state asbestos and/or lead regulations pertaining to worker protection, removal, transport, or disposal.

D. Award of this Contract may not necessarily be based solely on the submitted lowest Base Bid amount. The Owner reserved the right to award the Bidder who best meets all contractor qualifications.

1.3 CONTRACTOR USE OF SITE AND PREMISES

A. Limit use of site and premises as follows:

1. Owner occupancy
2. Work by Owner
3. Use of site and premises by public

4. Work performed by other trades

B. Coordinate use of the premises under direction of the Owner.

C. Assume full responsibility for protection and safekeeping of products under this Contract.

D. Obtain and pay for use of additional storage or work areas needed for operations under this Contract.

1.4 WORK SEQUENCE

A. Perform Work in phases if applicable, to accommodate the Owner's occupancy requirements and remaining construction phases, coordinate abatement schedule and operations with the Owner, Consultant, and Architect.

B. The Owner will not occupy portions of the building for normal activities during the Work. The Contractor is responsible for creating a phasing plan to accommodate remaining renovations.

1.5 OWNER OCCUPANCY

A. The Owner will not occupy Senior Center portions of the building during the entire period of abatement. This building has Board of Education and one school classroom in the north end of the building.

B. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.

C. Schedule the Work to accommodate this requirement.

D. Maintain a means of egress.

E. Coordinate Work with the Town of Haddam, Sanitation Health Officer, Building Inspector, and Fire Marshal.

F. Maintain a permanent means of egress during construction. Provide and maintain a temporary means of egress as required by the Fire Marshal and Building Inspector.

1.6 CLOSEOUT AND PUNCH LIST

A. The Contractor shall carefully check his own work and that of any Subcontractor as the work is being performed. Unsatisfactory work shall be corrected immediately.

B. When the Contractor determines that he is substantially complete, that is, has less than one percent of his Contract remaining to be completed, he shall prepare for submission to the Consultant, a list of items to be completed or corrected. The failure to include any items on such list does not alter the responsibility of the Contractor to complete all work in accordance with the Contractor Documents.

C. Upon receipt of the Contractor's list of items to be completed or corrected, the Consultant will promptly make a thorough inspection and prepare a "punch list" setting forth in accurate detail any items on the Contractor's list and any additional items that are not acceptable.

D. When the "punch list" has been prepared, the Consultant will arrange a meeting with the Contractor to identify and answer questions on the work which must be completed before final acceptance.

E. The Contractor shall correct all "punch list" items or shall cause the correction of the "punch list" items within a time frame to be established when the "punch list" is made. The time frame for the completion of the "punch list" shall not exceed the completion date of the Contract. Should the "punch list" not be completed within the specified time frame, the Owner may invoke the rights given under the General Conditions.

F. The Consultant shall not be expected to inspect any area more than once for the preparation of the "punch list" items. If, during an inspection, the Consultant discovers fifteen (15) or more deficient conditions, then the area shall be declared Not Ready for Inspection.

G. All inspections and sampling required for asbestos abatement compliance will be performed by the Consultant.

1.7 CLEANING

A. Throughout the construction period, the Contractor shall maintain the building and site free of rubbish, debris, surplus materials, and other items not required for the Work. Remove such material from the site daily to prevent accumulations. Remove all construction debris from work areas, and remove all hazardous waste and asbestos waste as required by the most current federal, state, and local regulations and the requirements of the specifications.

1.8 ADDITIONAL GENERAL REQUIREMENTS

A. The Asbestos Abatement Contractor shall employ a competent Supervisor with at least three (3) years of experience on projects of similar scope and magnitude who shall be responsible for all work involving asbestos abatement as described in the specifications and defined in the applicable regulations, and have full time daily supervision of the same. The Supervisor shall be the competent person as defined by OSHA regulations.

B. The Contractor shall allow the work of this contract to be inspected if required by local, state, federal, and any other authorities having jurisdiction over such work. The Contractor shall immediately notify the Owner and Consultant and shall maintain written evidence of such inspection for review by the Owner and Consultant.

C. The Contractor shall incur the cost of all fines resulting from regulatory non-compliance as issued by federal, state, and local agencies. The Contractor shall incur the cost of all work requirements mandated by federal, state, and local agencies as a result of regulatory non-compliance or negligence.

D. The Contractor shall immediately notify the Owner and Consultant of the delivery of all permits, licenses, certificates of inspection, of approval or occupancy, etc., and any other such

instruments required under codes by authorities having jurisdiction, regardless of to whom issued, and shall cause them to be displayed to the Owner and Consultant for verification and recording.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

END OF SECTION

SECTION 01016 – SCHEDULING AND PHASING

PART 1 – GENERAL

1.1 GENERAL REQUIREMENTS

A. The work of this project shall begin immediately upon receipt of the notice to proceed from the Owner. A Pre-Construction Meeting shall be scheduled by the Consultant and attended by the Contractor and any Sub-Contractors. The assigned Supervisors must attend this meeting.

B. A working schedule shall be presented by the Contractor at the Pre-Construction Meeting. Variations, amendments, and corrections to the presented schedule will be discussed, and the Owner and Consultant will inform the Contractor of additions or changes in the scheduling requirements for the project.

C. As a result of the Pre-Construction Meeting, the Contractor shall submit a revised schedule no later than two days from the Pre-Construction Meeting. Upon approval from the Owner and Consultant, the Contractor will receive a notice to proceed with the work of the Contract.

D. Refer to all other applicable sections of the specification for coordination of trades.

E. The abatement and leveling contractor shall coordinate work with all other activities at this occupied site.

1.2 TIME FOR COMPLETION AND WORKING HOURS, AND LIQUIDATED DAMAGES

A. Upon award of contract from the Owner, the Contractor shall immediately order materials, supplies, and components for the work of this project.

B. The Contractor shall begin the work immediately upon receipt of the written notice to proceed from the Owner. The base bid Work shall occur during winter 2012.

C. As actual damages for any delays in completion are impossible to determine, the Contractor and his sureties shall be liable for and shall pay to the Owner $500 per day as fixed, liquidated damages for each calendar day of delay beyond the contract completion date until the work is substantially complete.

D. For purposes of liquidated damages, Substantial Completion means that the value of the work remaining to be performed is, in the estimate of the Consultant, less than one percent (<1%) of the original contract price. When the Contractor considers the work to be complete he shall request a final inspection, which shall be arranged by the Owner. The Consultant shall note any deficiencies in the work in a "punch list." If the itemized punch list amounts to more than one percent (>1%) of the original contract price, the work shall be considered not substantially complete. When the punch list items are complete, the Contractor shall request another inspection, which shall be arranged by the Owner.

E. If conditions arise that are beyond the control of the Contractor and force delays in the performance of the Work, the Owner, and Consultant shall immediately be notified. The Contractor shall state the reason for the delay and shall estimate the expected duration of the delay. Any application for an extension of the Contract completion date shall be made under proper change order procedures as defined in the Contract Documents. The acceptance of the cause for the day and change order is subject to the Owner's review and approval.

F. **Any extra hours or days per week worked by the Contractor or Subcontractors shall first be approved by the Owner and Consultant and shall be at no extra cost to the Owner unless otherwise agreed upon in writing.** Denial of extra hours or days per week by the Owner shall not be grounds for extra time allotted to the overall Contract time. The contractor must pay for all of the owners expenses should the contractor choose to work off hour shifts, overtime (in excess of eight hours/day), weekends and days beyond the scheduled end date unless another agreement has been reached in writing. These expenses include but are not limited to project monitoring services, air sampling costs, custodial services, etc.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

END OF SECTION

SECTION 01022 – UNIT PRICES

PART 1 – GENERAL

1.1 SUMMARY

A. A unit price is an amount proposed by Bidders and stated on the Bid Form as a price per unit of measurement for materials or services that will be added to or deducted from the Contract Sum by Change Order in the event the project Scope of Work is altered.

B. Unit prices include material, any direct or indirect expenses of the Contractor or Sub-Contractor, profit, insurance, bonding, and any applicable taxes. **The same unit price shall apply whether the work is added or deducted.**

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

A. The proposed Contract Price for the Base Bid and Alternates for each School are as follows:

Base Bid _____

_____ Dollars ($_____)

B. Unit Prices per the following schedule. Unit prices shall include labor, disposal, and all necessary fees.

Item No. 1 – CONTAINMENT(s) PREPARATION TO ENCLOSE ASBESTOS ABATEMENT AREA'S-

$ _____ per containment

Item No. 2 – FLOOR TILE (includes carpet over floor tile) REMOVAL AND DISPOSAL AS ACM

$ _____ per square foot.

Item No. 3 – DOOR CAULKING REMOVAL AND DISPOSAL AS ACM

$ _____ per linear foot.

Item No. 4 – WINDOW WITH PCB CAULKING/GLAZING COMPOUND REMOVAL AND DISPOSAL AS PCB

$ _____ per window.

Item No. 5 – BRICK REMOVAL AS PCB REMEDIATION WASTE REMOVAL AND DISPOSAL AS PCB-CONTAINING MATERIAL

$ _____ per square foot.

Item No. 6 – CONTAINMENT(S) PREPARATION TO ENCLOSE PCBs EXTERIOR/INTERIOR REMEDATION AREAS

$ _____ per containment

END OF SECTION

SECTION 01070 – CONTRACT CLOSEOUT

PART 1 – GENERAL

1.1 GENERAL PROVISIONS

A. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 FINAL CLEANING

A. Unless otherwise specified under Sections of the Specifications, the Contractor shall perform final cleaning operations as herein specified prior to final inspection.

B. Maintain the project site free from accumulations of waste, debris, and rubbish, caused by operations. At the completion of the work, remove waste materials, rubbish, tools, equipment, machinery, and surplus materials, and clean all sight-exposed surfaces; leave the project clean and ready for work of others under separate contract.

C. Cleaning shall include all surfaces, interior and exterior in which the Contractor has had access.

D. Use only those materials that will not create hazards to health or property.

1.3 ASBESTOS ABATEMENT CLOSEOUT DOCUMENTS

A. Submit to the Owner and Consultant, final completed copies of the waste shipment records, signed by all transporters and the designated disposal site owner/operator.

B. Submit to the Consultant copies of all Contractor's logs and all worker certifications.

C. Submit to the Consultant copies of all OSHA personal monitoring results.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

END OF SECTION

SECTION 02080 - ASBESTOS ABATEMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and General Provisions of Contract, including General Supplementary Conditions and Division 1 Specifications Sections, apply to this Section.

1.2 CONSULTANT

A. The Owner shall retain Fuss & O'Neill EnviroScience, LLC as a Consultant for the purposes of project management and monitoring during Asbestos Abatement and PCBs Remediation. The Consultant will represent the Owner in all phases of the abatement project at the discretion of the Owner. The Asbestos Abatement Contractor will regard the Consultant's direction as authoritative and binding as provided herein, in matters particularly but not limited to approval of work areas, review of monitoring results, completion of the various segments of work, final completion of the abatement, submission of data, and daily field punch list items. The Licensed Asbestos Project Designer for this project is Stephen Connelly (# 000039).

1.3 USE OF THE CONTRACT DOCUMENTS

A. It shall be incumbent upon the Contractor to visit the Site and determine what exists, its condition, and what will be required to accomplish the Work intended by the Contract Documents. No increase in the Contract Sum will be permitted as a result of the Contractor's failure to visit the site and understand the existing conditions.

B. All work shall comply with the Contract Documents and with applicable Codes, laws, regulations, and ordinances wherever applicable. The most stringent of all the foregoing shall govern.

C. It is not intended that the Specifications show every detail of the Work, but the Contractor shall be required to furnish within the Contract Sum all material and labor necessary for the completion of the Work in accordance with the intent of the Specifications.

D. In case of ambiguity among the Contract documents, the more stringent requirement as determined by the Consultant shall prevail.

E. The Work of this Contract includes making modifications as necessary, subject to approval by Owner in consultation with the Consultant, to correct any conflicts.

F. All items, not specifically mentioned in the Specifications but implied by trade practices to complete the work, shall be included.

1.4 EXAMINATION OF THE SITE

A. It is understood that the Contractor has examined the Site and made his own estimates of the facilities and difficulties attending the execution of the Work, and has based his price thereon.

B. Except for unforeseeable concealed conditions as determined by the Consultant, the Contractor shall make no claim for additional cost due to the existing conditions at the site.

1.5 CONTRACTOR QUALIFICATIONS

A. All bidders shall submit a record of prior experience in asbestos abatement projects, listing no less than three (3) completed jobs in the past year, with all projects of similar size and scope. The Contractor shall list the experience and training of the project foremen and all on-site personnel. The information that should be included is as follows:

1. Project Name and Address
2. Owner's Name and Address
3. Architect/Consultant
4. Contract Amount
5. Date of Completion
6. Extras and Changes

B. The Contractor selected must appear on the approved list of Asbestos Abatement contractors on file at the State of Connecticut Department of Public Health and hold a valid license for asbestos abatement within the State of Connecticut.

C. Submit a written statement regarding whether the Contractor has ever been found out-of-compliance with federal or state asbestos and/or lead regulations pertaining to worker protection, removal, transport, or disposal.

1.6 TESTING LABORATORY SERVICES

A. The Contractor shall submit to the Consultant the name, address, and qualifications of proposed laboratories intended to be utilized for sample analysis as required by this section.

1.7 ADDITIONAL GENERAL REQUIREMENTS

A. The Asbestos Abatement Contractor shall employ a competent Asbestos Abatement Supervisor with at least three (3) years of experience on projects of similar scope and magnitude who shall be responsible for all work involving asbestos abatement as described in the specifications and defined in applicable regulations, and have full time daily supervision of the same. The Supervisor shall be the competent person as defined by OSHA regulations.

B. The Contractor shall allow the work of this contract to be inspected if required by local, state, federal, and any other authorities having jurisdiction over such work. The Contractor shall immediately notify the Owner and Consultant and shall maintain written evidence of such inspection for review by the Owner and Consultant.

C. The Contractor shall incur the cost of all fines resulting from regulatory non-compliance as issued by federal, state, and local agencies. The Contractor shall incur the cost of all work requirements mandated by federal, state, and local agencies as a result of regulatory non-compliance or negligence.

D. The Contractor shall immediately notify the Owner and Consultant of the delivery of all permits, licenses, certificates of inspection, of approval, or occupancy, etc., and any other such instruments required under codes by authorities having jurisdiction, regardless of to who issued, and shall cause them to be displayed to the Owner and Consultant for verification and recording.

1.8 SCOPE OF WORK

A. Work outlined in this Section includes all work necessary for the removal and disposal of asbestos-containing materials (ACM) impacted during renovation/floor tile and associated mastic abatement activities associated with the former Haddam Jailhouse building. This work includes, but is not limited to, the removal and disposal of floor tiles, flooring mastic, cove base, and corresponding adhesives (non-asbestos), fire doors, mudded insulation on pipe fittings, textured ceiling paint, roof perimeter and penetration flashing, and light fixture paper.

1.9 PROJECT DESCRIPTION

A. The base bid includes the removal and disposal of all asbestos containing materials identified in the scope of work at the former historical jailhouse by workers meeting requirements of OSHA 1926.1101 for Class 2 work. The bid will include the cost for the removal and replacement of floor tile and associated mastic, cove base and adhesives (non-asbestos) where applicable, fire doors, mudded insulation on pipe fittings, textured ceiling paint, roof penetration flashing, and light fixture paper.

Additional materials as discovered outside of those listed will be covered by unit prices. The quantities are estimates only and should be verified by the Contractor. This bid includes the following asbestos containing materials to be removed and replaced:

BASE BID

LOCATION	MATERIAL	QUANTITY
2nd Floor – Near Fire Escape Door	Yellow 12”x12” Floor Tile	15 SF
3rd Floor Bathroom	Green 9”x9” Floor Tile	9 SF
Door Systems-original Jailhouse building	Door Caulk	4 Doors
Kitchen Storage	Brown 12”x12” Floor Tile	40 SF
Jailhouse Roof – off metal roof vents	Roof flashing off roof vents	16 LF

The contractor will be required to remove all layers of floor tile in this location. All layers of floor tile, leveling materials, mastic, etc. are included in the base work; no extra charge will be accepted. MSD sheets for chemicals to be used during the project must be submitted to the owner’s representative prior to site delivery. The contractor may user liquid mastic remover on the floor.

The contractor is responsible for cleaning of residual duct tape and spray glue marks after tear down of the containment is complete.

1.10 DEFINITIONS

A. The following definitions relative to asbestos abatement apply:

1. ABATEMENT - Procedures to control fiber release from asbestos-containing materials; includes removal, encapsulation, and enclosure.
2. AIR MONITORING - The process of measuring the fiber concentration of an area or of a person.
3. AMENDED WATER - Water to which a surfactant has been added.
4. ASBESTOS - The name given to a number of naturally occurring fibrous silicates. This includes the serpentine forms and the amphiboles and includes chrysotile, amosite, crocidolite, tremolite, anthophyllite, and actinolite, or any of these forms, which have been chemically altered.
5. ASBESTOS FELT - a product made by saturating felted asbestos with asphalt or other suitable bindery, such as a synthetic elastomer.
6. ASBESTOS FIBERS - Those particles with a length greater than five (5) microns and a length to diameter ratio of 3:1 or greater.
7. ASBESTOS WORK AREA - a regulated area as defined by OSHA 29 CFR 1926.1101 where asbestos abatement operations are performed which is isolated by physical barriers to prevent the spread of asbestos dust, fibers, or debris. The regulated area shall comply with requirements of regulated area for demarcation, access, respirators, prohibited activities, competent persons and exposure assessments and monitoring.
8. ASPHALT SHINGLES, COMPOSITION SHINGLES OR STRIP SLATES: (PITCHED ROOF SHINGLE) - a roofing material manufactured by saturating a dry felt with asphalt then coating the saturated felt with a harder asphalt mixed with a fine mineral, glass fiber, asbestos or organic stabilizer. All or part of the weather side may be covered with mineral granules, or with powdered talc or mica.
9. BASE FLASHING (ROOF) - the flashing provided by upturned edges of a water tight membrane on a roof; may contain metal and associated waterproofing material or combination of roofing felts and waterproofing at the joint between a roofing surface and a vertical surface such as a wall or parapet. Also base flashing may be present at perimeter of completely flat roof.
10. BUILT-UP ROOFING (COMPOSITION ROOFING, FELT AND GRAVEL ROOFING, GRAVEL ROOFING) - a continuous roof covering made up of laminations or plies of saturated or coated roofing felts, alternated with layers of asphalt or coal-tar pitch and surfaced with gravel, paint or finish coat.
11. CAULKING - resilient mastic compound often having a silicone bituminous or rubber base; used to seal cracks, fill joints, and prevent leakage. Typical applications: around windows, and doors. Caulking is at joints between two dissimilar materials (i.e. Masonry to wood, masonry to steel)
12. CLEAN ROOM - An uncontaminated area or room, which is a part of the worker decontamination enclosure with provisions for storage of workers' street clothes and protective equipment.
13. CLEARANCE SAMPLING - Final air sampling performed aggressively after the completion of the abatement project in a regulated area.

Air samples collected by the air sampling professional having a fiber concentration of less than 0.01 fibers/cc of air in each of five (5) samples collected inside the containment will denote acceptable clearance sampling by Phase Contrast Microscopy.

or

Five air samples collected inside the containment by the air sampling professional having an average asbestos concentration of less than 70 structures per square millimeter of air will denote acceptable clearance sampling for Transmission Electron Microscopy.

14. COMPETENT PERSON - As defined by 29 CFR 1926.1101, a representative of the Abatement Contractor who is capable of identifying existing asbestos hazards in the workplace and selecting the appropriate control strategy for asbestos exposure. Who has authority to take prompt corrective measures to eliminate such hazards during asbestos removal. Competent person shall be properly trained in accordance with EPA's Model Accreditation Plan.
15. CURTAINED DOORWAY - A device to allow ingress and egress from one area to another while permitting minimal air movement between the areas. Two curtained doorways spaced a minimum of six feet apart can form an airlock.
16. DAMP PROOFING - application of a water impervious material to surface such as wall to prevent penetration of moisture, typically at foundation or below grade surface.
17. DECONTAMINATION ENCLOSURE SYSTEM - A series of connected areas, with curtained doorways between any two adjacent areas, for the decontamination of workers and equipment. A decontamination enclosure system always contains at least one airlock and is adjacent and connected to the regulated area, where possible.
18. ENCAPSULANT - A liquid material which can be applied to asbestos-containing materials which controls the possible release of asbestos fibers from the materials either by creating a membrane over the surface (bridging encapsulant) or penetrating the material and binding its components together (penetrating encapsulant).
19. EQUIPMENT ROOM – Any contaminated area or a room that is part of the worker decontamination enclosure with provisions for storage of contaminated clothing and equipment.
20. FIXED OBJECT - Unit of equipment or furniture in the work areas that cannot be removed from the work area.
21. FRIABLE ASBESTOS MATERIALS - Any material that contains more than 1% asbestos by weight, that can be crumbled, pulverized or reduced to powder by hand pressure.
22. GLAZING COMPOUND - any compound used to hold window glass in place, also referred to as putty, or glazier's putty. Is not field applied, usually installed during manufacture of windows.
23. HEPA FILTER - High Efficiency Particulate Air (HEPA) filter in compliance with ANSI Z9.2-1979.
24. HEPA VACUUM EQUIPMENT - Vacuum equipment equipped with a HEPA filter system for filtering the effluent air from the unit.
25. MOVABLE OBJECT - Unit of equipment of furniture in the work area that can be removed from the work area.
26. NEGATIVE AIR PRESSURE EQUIPMENT - A portable local exhaust system equipped with HEPA filtration used to create negative pressure in a regulated area (negative with respect to adjacent unregulated areas) and capable of maintaining a constant, low velocity air flow into regulated areas from adjacent unregulated areas.
27. NESHAPS - National Emissions Standard for Hazardous Air Pollutants regulations enforced by the EPA.

28. PERMISSIBLE EXPOSURE LEVEL (PEL) - The maximum airborne concentration of asbestos fibers to which an employee is allowed to be exposed. The new level established by OSHA 29 CFR 1926.1101 is 0.1 fibers per cubic centimeter of air as an eight (8) hour time weighted average and 1.0 fibers /cc averaged over a sampling period of 30 minutes as an Excursion Limit. The Contractor is responsible for maintaining work areas in a manner that this standard is not exceeded.
29. PROJECT MONITOR - A professional capable of conducting air monitoring and analysis of schemes. This individual should be an industrial hygienist, an environmental scientist, or an engineer with experience in asbestos air monitoring and worker protection equipment and procedures. This individual should have demonstrated proficiency in conducting air sample collection in accordance with 29 CFR 1910.1001 and 29 CFR 1926.1101.
30. REGULATED AREA - An area established by the employer to demarcate where Class I, II, and III asbestos work is conducted and any adjoining area where debris and waste from such asbestos work accumulate, and a work area within which airborne concentrations of asbestos exceed or there is a reasonable possibility that they may exceed the PEL.
31. SHOWER ROOM - A room between the clean room and the equipment room in the work decontamination enclosure with hot and cold running water and suitably arranged for employee showering during decontamination. The shower room is located in an airlock between the contaminated area and the clean area.
32. WATERPROOFING - material, usually a membrane or applied compound (tar/mastic), used to make a surface impervious to water, includes concealed conditions (applications around doors, windows, and in wall cavities). Sometimes combined with felts.

1.11 SUBMITTALS

A. The Contractor shall submit the following prior to the pre-construction meeting:

1. Submit a schedule to the Owner and the Consultant which defines a timetable for executing and completing the project, including set-up, removal, cleanup, decontamination, and air clearance monitoring.
2. Submit the identity of the hauling contractor and location of the landfill to be used.
3. Submit a copy of a video tape (VHS format) showing the conditions of the building prior to the start of work. The contractor will be held responsible for all damage to the building and its contents not shown in the video tape.
4. Submit the plans and construction details for the construction of the decontamination enclosure systems and the isolation of the work areas as may be necessary for compliance with this specification and applicable regulations.
5. Submit the training, medical, and fit test records of each employee who may be on the project site.
6. Submit the qualifications of the air sampling professional that the asbestos abatement Contractor proposed to use for this project to perform employee exposure monitoring.
7. Submit detailed product information on all materials and equipment proposed for asbestos abatement work on this project.
8. Submit pertinent information regarding the qualifications of the Project Supervisor (competent person) for this project as well as a list of past projects completed. Effective June 4, 2000, no individual shall provide services as an asbestos abatement site

supervisor or as an asbestos abatement work without a certificate to do so issued by CTDPH.

B. The following shall be submitted to the Consultant during the work:

1. Results of personal air sampling
2. Training and medical records for new employees to start work (24 hours in advance)

C. The following shall be submitted to the Consultant at the completion of work:

1. Copies of all air sampling results
2. Contractor logs
3. Completed copies of Waste Shipment Records (WSR)

1.12 REGULATIONS AND STANDARDS

A. The Contractor shall be solely responsible for conducting this project and supervising all work in a manner that will be in conformance with all federal, state, and local regulations and guidelines pertaining to asbestos abatement. Specifically, the Contractor shall comply with the requirements of the following:

1. U.S. Environmental Protection Agency (USEPA) National Emissions Standards for Hazardous Air Pollutants (NESHAPS) Regulations (40 CFR 61, Subpart M);
2. U. S. Environmental Protection Agency (USEPA) Asbestos in Schools Regulations (40 CFR 763, Subpart E);
3. OSHA Asbestos Regulations (29 CFR 1910.1001 and 1926.1101);
4. Connecticut Department of Energy and Environmental Protection (DEEP) Regulations (Section 22a-209-8 (i) and Section 22a-220 of the Connecticut General Statutes);
5. Connecticut Department of Health Services (DOHS) Standards for Asbestos Abatement Sections 19a-332-1 to 19a-332.23;
6. Connecticut Basic Building Code (BOCA) (including Connecticut Supplements);
7. Life Safety Code (NFPA);
8. Local health and safety codes, ordinances, or regulations pertaining to asbestos remediation and all national codes and standards including ASTM, ANSI, and Underwriter's Laboratories.

1.13 EXEMPTIONS

A. Any deviations from these specifications require the written approval and authorization from the Owner and Consultant.

B. Any modifications from the standard work practices identified in the State of Connecticut Department of Public Health (CTDPH) Standards for Asbestos Abatement, Sections 19a-332a-1 to 19a-332a-16, Sections 20-440-1 to 20-440-9, Section 20-441 and Section 19a-332e-1 to 19a-332e-2, must be requested in writing, and approved in writing from the CTDPH.

1.14 FINAL AIR CLEARANCE

A. Following the completion of the encapsulation phase of the work, the Consultant shall collect final air clearance samples inside the work area per AHERA regulation 40 CFR Part 763, if necessary. The Owner of the facility shall be responsible for payment of the sampling and analysis of the initial final air clearance samples only. The Contractor shall be responsible for payment of all costs associated with the collection and analysis of additional final air clearance samples if the first set of samples fail to satisfy the clearance criteria.

1.15 NOTIFICATIONS, POSTINGS, SUBMITTALS, AND PERMITS

A. The Contractor shall make the following notifications, and provide the submittals to the following agencies prior to the commencement of removal work. This notification is required ten (10) calendar days prior to the start of the abatement project:

1. Connecticut Department of Public Health
   410 Capitol Avenue
   MS #51 AIR
   P.O. Box 340308
   Hartford, CT 06134

B. The minimum information included in the notification to these agencies includes:

1. Name and address of building Owner/Operator
2. Building location
3. Building size, age, and use
4. Amount of friable asbestos
5. Work schedule, including proposed start and completion date
6. Asbestos removal procedures to be used
7. Name and location of disposal site for generated asbestos waste, residue, and debris

1.16 WORK SITE SAFETY PLAN

A. The Contractor shall establish a set of emergency procedures and shall post them in a conspicuous place at the work site. The safety plan should include provisions for the following:

1. Evacuation of injured workers.
2. Emergency and fire exit routes from all work areas.
3. Emergency first aid treatment.
4. Local telephone numbers for emergency services including ambulance, fire, and police.
5. A method to notify occupants of the building in the event of a fire or other emergency requiring evacuation of the building.

B. The Contractor is responsible for training all workers in these procedures.

1.17 INDEPENDENT AIR SAMPLING AND ASBESTOS ABATEMENT MONITORING

A. This section describes independent air sampling work being performed on behalf of the Owner. This work is not in the Contract Sum. This section describes air monitoring carried out by the Owner's Consultant to verify that the building beyond the work area and the outside environment remains uncontaminated. (Personal air monitoring required by OSHA is work to be performed by the Contractor and is within the Contract Sum.)

B. The purpose of the Owner's Consultant's air monitoring is to detect faults in the work area isolation such as:

1. Contamination of the building outside of the work area by airborne asbestos fibers
2. Failure of filtration or rupture in the differential pressure system
3. Contamination of air outside the building envelope by airborne asbestos fibers.

Should any of the above occur the Contractor shall immediately cease asbestos abatement activities until the fault is corrected. Do not recommence work until authorized by the Owner's Consultant.

C. The Owner's Consultant will monitor airborne fiber counts in the Work Area. The purpose of this air monitoring will be to detect airborne asbestos concentrations, which may challenge the ability of the Work Area isolation procedures to protect the balance of the building or outside of the building from contamination by airborne fibers.

D. To determine if the elevated airborne fiber counts encountered during abatement operations have been reduced to an acceptable level, the Consultant will sample and analyze air in accordance with clearance air sampling requirements.

E. The Owner's Consultant will perform on-site monitoring throughout the course of the project, as follows:

1. All work procedures shall be continuously monitored by the Consultant to assure that areas outside the designated work locations in the buildings will not be contaminated.
2. Prior to work on any given day, the Contractor's designated "competent person" shall discuss the day's work schedule with the Consultant to evaluate job tasks with respect to safety procedures and requirements specified to prevent contamination of the building or the employees. This includes a visual survey of the work area and the decontamination of the building or the employees. This includes a visual survey of the work area and the decontamination enclosure systems.

1.18 CONTRACTOR'S AIR SAMPLING RESPONSIBILITY

A. The Contractor shall independently retain an air sampling professional to monitor airborne asbestos concentrations in the workers' breathing zone and to establish conditions and work procedures for maintaining compliance with OSHA Regulations 29 CFR 1910.1001 and 1926.1101.

B. The Contractor's air sampling professional shall document all air sampling results and provide a report to the Consultant within 48 hours after sample collection.

C. All air sampling shall be conducted in accordance with methods described in OSHA Standards 29 CFR 1910.1001 and 1926.1101.

1.19 PROPER WORKER PROTECTION

A. This section describes the equipment and procedures required for protecting workers against asbestos contamination and other workplace hazards except for respiratory protection.

B. All workers are to be accredited as Abatement Workers as required by the AHERA regulation 40 CFR 763 Appendix C to Subpart E, February 3, 1994.

C. The Contractor is required to be certified and accredited as required by the State of Connecticut Department of Health Services.

D. In accordance with 29 CFR 1926, all workers shall receive a training course covering the dangers inherent in handling asbestos, the dangers of breathing asbestos dust, proper work procedures, and proper worker protective measures. This course must include but is not limited to the following:

1. Methods of recognizing asbestos
2. Health effects associated with asbestos
3. Relationship between smoking and asbestos in producing lung cancer
4. Nature of operations that could result in exposure to asbestos
5. Importance of and instruction in the use of necessary protective controls, practices, and procedures to minimize exposure including:
   a. Engineering controls
   b. Work Practices
   c. Respirators
   d. Housekeeping procedures
   e. Hygiene facilities
   f. Protective clothing
   g. Decontamination procedures
   h. Emergency procedures
   i. Waste disposal procedures
6. Purpose, proper use, fitting, instructions, and limitations of respirators as required by 29 CFR 1910.134
7. Appropriate work practices for the work
8. Requirements of medical surveillance program
9. Review of 29 CFR 1926
10. Pressure Differential Systems
11. Work practices including hands on or on-job training
12. Personal Decontamination procedures
13. Air monitoring, personal and area

E. The Contractor shall provide medical examinations for all workers who may encounter an airborne fiber level of 0.1 f/cc or greater for an 8 hour Time Weighted Average. In the absence of specific airborne fiber data provide medical examinations for all workers who will enter the Work Area for any reason. Examination shall, at a minimum, meet OSHA

requirements as set forth in 29 CFR 1926 In addition, provide an evaluation of the individual's ability to work in environments capable of producing heat stress in the worker.

F. Submit the following to the Owner's Representative for review. The Contractor shall not start work until these submittals are returned with Owner's Representative's action stamp indicating that they are approved.

1. Submit copies of certificates from an EPA-approved AHERA Abatement Workers course for each worker as evidence that each asbestos Abatement Worker is accredited as required by the AHERA Regulation 40 CFR 763 Appendix C to Subpart E, February 3, 1994.
2. Submit evidence that the Contractor is certified to perform asbestos abatement work by the State of Connecticut Department of Health services.
3. Submit an original signed copy of the Certificate of Worker's Acknowledgment found at the end of this section, for each worker who is to be at the job site or enter the Work Area.
4. Submit documents verifying that each worker has had a medical examination within the last 12 months as part of compliance with OSHA medical surveillance requirements. Submit, at a minimum, for each worker the following:
   a. Name and Social Security Number
   b. Physicians Written Opinion from examining physician including at a minimum the following:
      1) Whether worker has any detected medical conditions that would place the worker at an increased risk of material health impairment from exposure to asbestos.
      2) Any recommended limitations on the worker or on the use of personal protective equipment such as respirators.
      3) Statement that the worker has been informed by the physician of the results of the medical examination and of any medical conditions that may result from asbestos exposure.
5. Copy of information that was provided to physician in compliance with 29 CFR 1926
6. Statement that worker is able to wear and use the type of respiratory protection proposed for the project, and is able to work safely in an environment capable of producing heat stress in the worker.
7. Effective June 4, 2000, submit copies of certificates for the site supervisor and the workers issued by CTDPH.

G. Submit certification, signed by an officer of the abatement-contracting firm and notarized, that exposure measurements, medical surveillance, and worker training records are being kept in conformance with 29 CFR 1926.

H. The Contractor shall maintain control of and be responsible for access to all work areas to ensure the following requirements:

1. Non-essential personnel are prohibited from entering the area.
2. All authorized personnel entering the work area shall read the "Worker Protection Procedures" which are posted at the entry points to the enclosure system, and shall be equipped with properly fitted respirators and protective clothing.
3. All personnel who are exiting from the decontamination enclosure system shall be properly decontaminated.

4. Asbestos waste that is taken out of the work area must be properly bagged and labeled in accordance with these specifications. The surface of the bags shall be decontaminated. Asbestos leaving the enclosure system must be immediately transported off site or immediately placed in locked, posted temporary storage on site, and removed within 24 hours of the project conclusion.
5. Any material, equipment, or supplies that are brought out of the decontamination enclosure system shall be cleaned and decontaminated by wet cleaning and/or HEPA vacuuming of all surfaces.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Deliver all materials in the original packages, containers, or bundles bearing the name of the manufacturer and the brand name and product technical description.

B. Damaged or deteriorating materials shall not be used and shall be removed from the premises. Material that becomes contaminated with asbestos shall be decontaminated or disposed of as asbestos waste.

C. Polyethylene sheet in a roll size to minimize the frequency of joints shall be delivered to the job site with factory label indicating 4 or 6 mil.

D. Polyethylene disposable bags shall be six (6) mil with pertinent pre-printed label. Tie wraps for bags shall be plastic, five (5) inches long (minimum), pointed and looped to secure filled plastic bags.

E. Tape or adhesive spray will be capable of sealing joints in adjacent polyethylene sheets and for attachment of polyethylene sheet to finished or unfinished surfaces of dissimilar materials and capable of adhering under both dry and wet conditions, including use of amended water.

F. Surfactant (wetting agent), shall consist of fifty (50) percent polyoxyethylene ether and fifty (50) percent polyoxyethylene ester, or equivalent, and shall be mixed with water to provide a concentration of one (1) ounce surfactant to five (5) gallons of water or as directed by manufacturer.

G. Removal encapsulant shall be non-flammable factory prepared penetrating chemical encapsulant found acceptable to Consultant. Usage shall be in accordance with manufacturer's printed technical data.

H. The Contractor shall have available spray equipment capable of mixing wetting agent with water and capable of generating sufficient pressure and volume and having sufficient hose length to reach all areas with asbestos.

I. Impermeable containers are to be used to received and retain any asbestos-containing or contaminated materials until disposal at an acceptable disposal site. The containers shall be labeled in accordance with OSHA Standard 29 CFR 1926.1101. Containers must be both air and watertight.

J. Labels and signs, as required by OSHA Standard 29 CFR 1926.1101, will be used.

K. Encapsulant shall be bridging or penetrating type which has been found acceptable to the Consultant. Usage shall be in accordance with manufacturer's printed technical data.

L. HEPA filtered local exhaust ventilation shall be utilized during the installation of enclosures and supports where asbestos-containing materials may be disturbed.

2.2 TOOLS AND EQUIPMENT

A. The Contractor shall provide all tools and equipment necessary for asbestos removal, encapsulation, and enclosure.

B. The Contractor's air monitoring professional shall have air-monitoring equipment of type and quantity to monitor operations and conduct personnel exposure surveillance per OSHA requirements.

C. The Contractor shall have available sufficient inventory or dated purchase orders for materials necessary for the job including protective clothing, respirators, filter cartridges, polyethylene sheeting of proper size and thickness, tape and air filters.

D. The Contractor shall provide (as needed) temporary electrical power panels, electrical power cables, and electrical power sources (such as generators). Any electrical connection work affecting the building electrical power system shall be performed by a State of Connecticut licensed electrician.

E. The Contractor shall have available shower stalls and plumbing to support same to include sufficient hose length and drain system or an acceptable alternate.

F. Exhaust air filtration system units shall contain HEPA filter(s) capable of sufficient air exhaust to create negative pressure of -0.02 inches of water within enclosure with respect to outside area. Equipment shall be checked for proper operation by smoke tubes or differential pressure gauge before the start of each shift and at least twice during the shift. Adequate exhaust air shall be provided for a minimum of four (4) air changes per hour within the enclosure. No air movement system or air filtering equipment shall discharge unfiltered air outside.

G. Vacuum units, of suitable size and capacities for the project, shall have HEPA filter(s) capable of trapping and retaining at least 99.97 percent of all monodispersed particles of 0.3 micrometers in diameter or larger.

H. The Contractor will have reserve units so that the station system will operate continuously.

PART 3 - EXECUTION

3.1 PRE-ABATEMENT MEETING

A. At least one week prior to the start of work a Pre-Construction Meeting will be scheduled and must be attended by the Contractor and any Subcontractors. The assigned Contractor Site Supervisor is also required to attend this meeting.

B. The contractor shall present a detailed project schedule and project submittals at the Pre-Construction Meeting. Variations, amendments, and corrections to the presented schedule will be discussed, and the Owner and Consultant will inform the Contractor of any scheduling adjustments for this project.

C. Following the Pre-Construction Meeting, the Contractor shall submit a revised schedule (if needed) no later than one week after the meeting.

3.2 WORK AREA PREPARATION

A. Where necessary, shut down electrical power, including receptacles and light fixtures. Under no circumstances during the decontamination procedures will lighting fixtures be permitted to be operating when the spraying of amended water may contact the fixture. Provide GFCI devices, temporary power, and temporary lighting installed in compliance with the applicable electrical codes. All installations are to be made by a State of Connecticut licensed electrician.

B. Shut down and/or isolate heating, cooling, and ventilation air systems or zones to prevent contamination and fiber dispersal to other areas of the structure. During the work, vents within the work area shall be "criticalled" with duct tape and polyethylene sheeting.

C. The Contractor shall be responsible for removing furniture from the work areas. The Contractor shall pre-clean moveable objects within the proposed work areas using HEPA vacuum equipment and/or wet cleaning methods as appropriate and remove such objects from work areas to a temporary location. For example cabinets to gain access to floor tile and associated mastic.

D. Seal off all openings, including, but not limited to, windows, corridors, doorways, skylights, ducts, grills, diffusers, and any other penetration of the work areas, with polyethylene sheeting a minimum of six (6) mils thick, sealed with duct tape. This includes doorways and corridors that will not be used for passage during work areas and occupied areas.

E. Pre-clean fixed objects within the work areas, using HEPA vacuum equipment and/or wet cleaning methods as appropriate, and enclose with a minimum six (6) mil plastic sheeting sealed with duct tape.

F. Clean the proposed work areas using HEPA vacuum equipment or wet cleaning methods as appropriate. Do not use methods that raise dust, such as dry sweeping or vacuuming with equipment not equipped with HEPA filters.

G. After HEPA vacuum cleaning, cover fixed walls with two layers of four-mil polyethylene sheeting to the floor level. Where fixed walls are not used, two layers of six-mil polyethylene

sheeting will be applied to a rigid framework of wood, metal, or PVC. Where floor tile/mastic is not being abated, cover the floor with two layers of six-mil polyethylene sheeting. All overlaps shall be sealed with tape or spray adhesive.

H. Maintain emergency and fire exits from the work areas, or establish alternate exits satisfactory to fire officials.

I. Clean and remove ceiling mounted objects, such as lights and other items not sealed off that interfere with asbestos abatement. Use hand-held amended water spraying or HEPA vacuuming equipment during fixture removal to reduce settled fiber dispersal.

J. Create pressure differential between work areas and uncontaminated areas by the use of acceptable negative air pressure equipment sufficient to provide four air changes per hour and at least 0.02 inches of on a water gauge.

3.3 DECONTAMINATION SYSTEM

A. The Contractor shall establish contiguous to the work area, a decontamination enclosure consisting of equipment room, shower room, and clean room in series. The only access between contaminated and uncontaminated areas shall be through this decontamination enclosure. If it is not feasible to set-up a contiguous decontamination unit, the Contractor shall establish a remote decontamination unit.

B. Access between rooms in the decontamination system shall be through double flap curtain openings. The clean room, shower and equipment room within the decontamination enclosure, shall be completely sealed ensuring that the sole source of airflow through this area originates from uncontaminated areas outside the work area.

C. The Contractor shall establish contiguous with the work area an equipment decontamination enclosure consisting of two (2) totally enclosed chambers divided by double flap curtained opening. This enclosure must be constructed so as to ensure no personnel enter or exit through this unit.

D. Occupied areas and/or building space not within the work areas shall be separated from asbestos abatement work areas by means of airtight barriers.

E. Construct the decontamination system with wood or metal framing, 3/8" sheathing and cover both sides with a double layer of six (6) mil polyethylene sheeting, spray glued or taped at the joints. Caulk joints watertight at floor, walls, and ceiling.

F. The Contractor and the Consultant shall visually inspect barrier several times daily to assure effective seal and the Contractor shall repair defects immediately.

3.4 ASBESTOS REMOVAL PROCEDURE - GENERAL

A. The Contractor shall have a designated “competent person” on the job at all times to ensure establishment of a proper enclosure system and proper work practices throughout project.

B. Abatement work will not commence until authorized by the Consultant.

C. Spray asbestos materials with amended water using airless spray equipment or apply approved removal wetting agent to reduce the release of fibers during removal operation. The Consultant shall pre-approve the use of amended water as the wetting agent.

D. In order to maintain indoor asbestos concentrations to the minimum, the wet asbestos must be removed in manageable sections. Material drop shall not exceed eight feet. For heights up to 15 feet, provide inclined chutes or scaffolding to intercept drop.

E. Remove asbestos containing materials as appropriate by standard methods. Fill disposal containers as removal proceeds; seal filled containers and clean containers before removal to equipment decontamination system. Wet clean each container thoroughly, double bag and apply caution label. Ensure that workers do not exit the work area thorough the equipment decontamination enclosure.

F. After completion of stripping work, all surfaces from which asbestos has been removed shall be wet brushed, using a nylon brush, wet wiped, and sponged or cleaned by an equivalent method to remove all visible material (wire brushes are not permitted). During this work, the surfaces being cleaned shall be kept wet.

G. Remove and containerize all visible accumulations of asbestos-containing and/or asbestos-contaminated debris. During cleanup, utilize brooms, rubber dustpan, and rubber squeegees to minimize damage to floor covering.

H. Sealed disposal containers, and all equipment used in the work area, shall be included in the cleanup and shall be removed from work areas via the equipment decontamination enclosure at an appropriate time in the cleaning sequence. All asbestos waste in 6-mil polyethylene disposal bags shall be double bagged in the equipment decontamination enclosure before removal from the site.

I. At any time during asbestos removal, should the Consultant suspect contamination of areas outside the work area(s), he shall cause all abatement work to stop until the Contractor takes steps to decontaminate these areas and eliminate the causes of such contamination. Unprotected individuals shall be prohibited from entering suspected contaminated areas until air sampling and visual inspections certify decontamination.

J. After completion of the initial final cleaning procedure including removal of the inner layers of polyethylene sheeting, but prior to encapsulation, a pre-sealant inspection shall be conducted by the Consultant. The pre-sealant inspection shall verify that ACM and residual dust has been removed from the work area.

3.5 ASBESTOS REMOVAL PROCEDURES - FLOOR TILE AND ASSOCIATED MASTIC

A. Prior to the removal of any floor tile and associated mastic, the Contractor shall ensure that work area preparation has been conducted in accordance with Section 3.1 and 3.2 of this Specification.

B. The Contractor shall remove binding strips, all vinyl wall base, or other restrictive molding from door ways, walls, etc. clean and dispose of as non-asbestos waste. Dispose of any materials that have floor mastic on them as asbestos-containing waste. Carpet and cabinet

kickplate removal is included in the scope of work. The contractor must set up containment prior to starting carpet removal unless the carpet can be removed without disturbing the floor tiles underneath.

C. The Contractor shall wet the floor with amended water or detergent solution, so that entire surface is wet. Do not allow to puddle or run off other areas. If a detergent is used, use in strict accordance with manufacturer's instructions. Allow time for humidity and water or removal encapsulant to loosen tiles prior to removal.

D. The Contractor shall keep floor continuously wet throughout removal operation.

E. Remove tiles using a manual or powered spade, or stripping machine. Continuously mist floor in area where machine is working with amended water, removal encapsulant, or detergent solution. Wet any debris generated as necessary to keep continuously wet. Keep floor where tile has been removed continuously wet until after completion of heavy adhesive residue removal.

F. Pick up whole tiles, stack, place in boxes or wrap in felt, and place in labeled disposal bags. At the Contractor's option, tiles may be placed directly into durable leak-tight containers.

G. Following removal of floor tiles, there will be a layer (or layers) of adhesive remaining on the floor. The adhesive may be removed using shot/bead blast machines and chemical stripping agents (only for edges). Minimize use of chemical stripping agent to remaining edging mastic only. The mastic edges must be removed before the shot blasting is performed.

H. The Contractor shall leave the substrate in such a state as to comply with all requirements and recommendations of the manufacturer of replacement flooring.

3.6 CONSULTANT'S RESPONSIBILITIES

A. Air sampling shall be conducted by the Consultant to ascertain the integrity of controls that protect the building from asbestos contamination. Independently, the Contractor shall monitor air quality within the work area to ascertain the protection of employees and to comply with OSHA regulations.

B. The Consultant's air sampling professional shall collect and analyze air samples during two time periods:

1. Abatement Period. If required, the Consultant's project monitor shall collect samples on a daily basis during the work period. A sufficient number of area samples shall be taken outside of the work area, at the exhaust of the negative pressure system, and outside of the building to judge the degree of cleanliness or contamination of the building during removal. Additional samples may be taken inside the work area and decontamination enclosure system, at the discretion of the project monitor.
2. Post-Abatement Period. If required, the Consultant's project monitor shall conduct air sampling following the final cleanup phase of the project, once the "no visible residue" criterion, as established by the project monitor, has been met. Five (5) samples shall be collected inside the work area utilizing aggressive methods to comply with the State of Connecticut Department of Public Health Standards for Asbestos Abatement, sections

19a-332a-12, and 19a-332a-13. Analysis of the samples to determine airborne concentrations of asbestos shall be conducted by Transmission Electron Microscopy (TEM) method with an average limit of 70.0 structures per square millimeter of filter surface or by Phase Contrast Microscopy (PCM) with a limit of 0.01 fibers per cubic centimeters of air in accordance with the above Connecticut regulation sections.

C. The Consultant's project monitor shall provide continual evaluation of the air quality of the building during removal, using his/her best professional judgments in respect to the State of Connecticut Department of Health Services guideline of 0.010 fibers/cc and the background air quality established during the pre-abatement period.

D. If the project monitor determines that the building air quality has become contaminated from the project, he/she shall immediately inform the Contractor to cease all removal operations and implement a work stoppage clean up procedure. The Contractor shall conduct a thorough cleanup of the areas of the building designated by the Consultant. No further removal work can take place until the project monitor has assessed that the building air has been decontaminated.

E. Pre-abatement and abatement air samples shall be collected as required to obtain a volume of 1,200 liters. Samples shall be analyzed by Phase Contrast Microscopy (PCM) methodology using the NIOSH 7400 protocol.

3.7 CONSULTANT'S INSPECTION RESPONSIBILITIES

A. Consultant shall conduct inspection throughout the progress of the abatement project. Inspections shall be conducted in order to document the progress of the abatement work as well as the procedures and practices employed by the abatement Contractor.

B. The Consultant shall perform the following inspections during the course of abatement activities:

1. Pre-commencement Inspection. Pre-commencement inspections shall be performed at the time requested by the abatement Contractor. The Consultant shall be informed 12 hours prior to the time the inspection is needed. If, during the course of the pre-commencement inspection, deficiencies are found, the Contractor shall perform the necessary adjustments in order to obtain compliance.
2. Work Area Inspections. Work area inspections shall be conducted on a daily basis at the discretion of the Consultant. During the course of the work inspections, the Consultant shall observe the Contractor's removal procedures, verify barrier integrity, monitor negative air filtration devices, assess project progress, and inform the abatement Contractor of specific remedial activities if deficiencies are noted.
3. Pre-sealant Inspection. The Consultant, upon the request of the abatement Contractor, shall conduct a pre-sealant inspection. The Consultant shall be informed 12 hours prior the time that the inspection is needed. The pre-sealant inspection shall be conducted after completion of the initial cleaning procedures, but prior to encapsulation. The pre-sealant inspection shall verify that all ACM and residual debris have been removed from the work area. If, during the course of the pre-sealant inspection, the Consultant identifies residual dust or debris, the Contractor shall comply with the request of the Consultant in order to render the area "dust free."

4. Final Visual Inspection. The Consultant, upon request of the abatement Contractor, shall conduct a final visual inspection. Following the removal of the inner layer of polyethylene sheeting and prior to final air clearance, the Consultant shall conduct a final visual inspection inside the work area. If residual dust or debris is identified during the course of the final inspection, the Contractor shall comply with the request of the Consultant in order to render the area "dust free."

3.8 CLEARANCE AIR TESTING

A. After the visual inspection is completed and all surfaces in the abatement area have dried, final air clearance sampling shall be performed by the Consultant. Aggressive air monitoring will be used. Selection of location and of samples shall be the responsibility of the Consultant. Air monitoring volumes shall be sufficient to provide a detection limit of 0.010 f/cm3 using NIOSH-approved method for PCM analysis. For air clearance by Transmission Electron Microscopy, air-monitoring volumes shall be sufficient to provide a detection limit of 0.005 f/cm^3 using the AHERA Level II Yamate Method.

B. Areas, which do not comply, with the Standard for Cleaning for Initial Clearance shall continue to be cleaned by and at the Contractor's expense until the specified Standard of Cleaning is achieved as evidenced by results of air testing as previously specified.

3.9 DISPOSAL OF ASBESTOS

A. All disposal of asbestos-containing and/or asbestos contaminated material must be in compliance with requirements of and authorized by the office of Solid Waste Management, Department of Energy and Environmental Protection (DEEP), State of Connecticut.

B. Disposal approvals shall be obtained before commencing asbestos removal.

C. A copy of approved disposal authorization shall be provided to the Owner and Consultant and any required federal, state, or local agencies.

D. Copies of all Waste Shipment Records will be retained by the Consultant as part of the project file. The landfill operator on receipt will sign the receipts, and the quantity of asbestos debris leaving the job site and arriving at the landfill acknowledged.

E. All asbestos debris shall be transported in covered, sealed vans, boxes, or dumpsters, which are physically isolated from the driver by an airtight barrier. All vehicles must be properly licensed to meet DOT requirements.

F. Any vehicles used to store or transport ACM will either be removed from the property at night, or securely locked and posted to prevent disturbance.

G. Any incident and/or accident that may result in spilling or exposure of asbestos waste outside the containment, on and off the school property and all related issues are the sole responsibility of the abatement contractor.

END OF SECTION 02080

CERTIFICATE OF WORKER'S ACKNOWLEDGMENT

PROJECT NAME _____ DATE _____
PROJECT ADDRESS _____
CONTRACTOR'S NAME _____

WORKING WITH ASBESTOS CAN BE DANGEROUS. INHALING ASBESTOS FIBERS HAS BEEN LINKED WITH VARIOUS TYPES OF CANCER. IF YOU SMOKE AND INHALE ASBESTOS FIBERS THE CHANCE THAT YOU WILL DEVELOP LUNG CANCER IS GREATER THAN THAT OF THE NON-SMOKING PUBLIC. Your employer's contract with the Owner for the above project requires that: You be supplied with the proper respirator and be trained in its use. You be trained in safe work practices and in the use of the equipment found on the job. You receive a medical examination. These things are to have been done at no cost to you.

RESPIRATORY PROTECTION: You must have been trained in the proper use of respirators, and informed of the type respirator to be used on the above referenced project. You must be given a copy of the written respiratory protection manual issued by your employer. You must be equipped at no cost with the respirator to be used on the above project.

TRAINING COURSE: You must have been trained in the dangers inherent in handling asbestos and breathing asbestos dust and in proper work procedures and personal and area protective measures. The topics covered in the course must have included the following:

- Physical characteristics of asbestos
- Health hazards associated with asbestos
- Respiratory protection
- Use of protective equipment
- Pressure Differential Systems
- Work practices including hands on or on-job training
- Personal decontamination procedures
- Air monitoring, personal and area

MEDICAL EXAMINATION: You must have had a medical examination within the past 12 months at no cost to you. This examination must have included: health history, pulmonary function tests and may have included an evaluation of a chest x-ray.

By signing this document you are acknowledging only that the Owner of the building you are about to work in has advised you of your rights to training and protection relative to your employer, the Contractor.

Signature _____
Social Security No. _____
Printed Name _____ Witness _____

SECTION 02085 – HANDLING OF PCBs/DEHP AND MERCURY

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. General Provisions of Contract, including Supplementary Conditions and other Division 1 Sections, apply to this Section.

B. Refer to other Sections of these Specifications to determine the type and extent of work therein affecting the work of this Section, whether or not such work is specifically mentioned herein.

1.2 SUMMARY OF WORK

A. Fluorescent Light Ballasts: Work of this Section includes, but is not necessarily limited to, all which is necessary for complete removal and disposal of all polychlorinated biphenyls (PCB) and Non-PCB diethylhexl phthalate (DEHP) containing ballasts that exist in the Auditorium abatement work area of Windsor High School. Ballasts that are to be removed shall be recycled/disposed of as PCB waste, or as DEHP waste if they have "No PCB" labels. The following table summarizes the locations of work and estimated material quantity:

TABLE 1

LOCATION	ESTIMATED QUANTITY
Throughout the jailhouse	30
TOTAL:	**30**

B. Mercury-Containing Lamps: Work of this Section includes, but is not necessarily limited to, all which is necessary for complete removal and disposal of fluorescent lamps and metal halide lamps as mercury-containing. Lamps that are to be removed shall be recycled/disposed of as universal waste. The following table summarizes the locations of work and estimated material quantity:

TABLE 2

LOCATION	ESTIMATED QUANTITY
Throughout the jailhouse	78
TOTAL:	**78**

1.3 REGULATIONS AND STANDARDS

A. The following regulations and standards of federal and state agencies apply to the disposal of PCB/DEHP-contaminated materials and are made part of this Specification by reference.

1. Toxic Substance Control Act (TSCA) (40 CFR Part 761)
2. Comprehensive Environmental Response, Compensation, and Liability Act (Superfund Law)
3. Connecticut General Hazardous Statute 22A454, 456

B. Under TSCA, items that contain more than 500 parts per million (ppm) of PCBs are classified as PCB material, items that contain between 50 ppm and 500 ppm of PCB area classified as PCB-contaminated, and items that contain less than 50 ppm of PCBs are classified as non-PCB items.

C. Under the "Superfund" laws, PCBs are specifically listed as a hazardous substance. The "release" of more than one pound of PCBs into the environment triggers a "Superfund" notification and cleanup requirement.

D. Since twenty-five ballasts collectively contain approximately one pound of PCBs, the disposal of twenty-five or more PCB-containing ballast in a landfill would trigger a "Superfund" action.

E. The State of Connecticut General Hazardous Waste Statute 22A 454, 456 requires that PCB ballast must be incinerated or sent to a chemical waste landfill. The statute defines PCB waste, including PCB ballast, as Connecticut Regulated Wastes.

F. Other Regulations: The other relevant regulations affecting disposal of PCBs include the following.

1. Department of Transportation (DOT) regulations - DOT regulation HM-181 regulates transportation of hazardous materials, including PCBs.
2. Occupational Safety and Health Administration (OSHA) - OSHA regulates workers' safety and exposure to a variety of chemicals including PCBs.
3. Resource Conservation and Recovery Act (RCRA) - RCRA regulates wastes, which fail Toxic Characteristic Leachate Procedure (TCLP) and which contain more than 50 ppm of PCBs.

1.4 SUBMITTALS

A. The Contractor shall submit to the Consultant the following submittals prior to start of work:

1. Proposed transporter for PCB and non-PCB wastes generated as part of the project, including licenses as required.
2. Proposed disposal/recycling facility proposed for PCB and non-PCB waste generated as part of the project.
3. Proposed transporter for mercury containing universal wastes generated as part of the project, including licenses as required.
4. Proposed disposal/recycling facility proposed for mercury containing waste generated as part of the project.

PART 2 - PRODUCTS

2.1 MATERIALS AND EQUIPMENT

A. Deliver all materials in the original packages, containers, or bundles bearing the name of the manufacturer and the brand name and product technical description.

PART 3 – EXECUTION

3.1 BALLAST REMOVAL AND PACKAGING

A. The Contractor shall remove all ballasts from light fixtures with care.

B. The Contractor shall pack all ballasts in appropriately sized containers or drums with care, so as not to cause ballasts to leak as a direct result of removal and packing.

C. The Contractor shall segregate all leaking ballasts from non-leaking ballasts, separately package leaking ballasts in plastic bags and individually drum.

D. The Contractor shall label all drums properly. The Contractor shall supply labels. Labels shall contain the following information:

1. Contents of drum
2. DOT description
3. Name, address, and telephone number of the Owner (i.e., the Generator)
4. Emergency telephone numbers
5. Date on which drum was filled with ballasts
6. Class 9 label

E. The Contractor shall ensure that no other material or waste is contained in the drums except the ballasts from fluorescent light fixtures.

F. The Contractor shall not load drum with more than 750 pounds of gross weight.

G. The Contractor shall not use any absorbent material to pack ballasts in drums.

H. The Contractor shall not use any plastic liners in drums.

I. Each drum shall be sealed and stored in a secure area to minimize inadvertent damage or vandalism.

J. The ballasts will be removed by personnel wearing chemically resistant gloves, eye protection, and proper respiratory protection.

3.2 DISPOSAL OF BALLASTS

A. At the completion of the removal phase of the project, a transporter licensed to haul either PCB or non-PCB waste shall be contracted for disposal of the waste generated by the project work. Chain of custody records shall be maintained which include the date of pickup, number of drums, name of the transporter, and destination of waste for disposal. The Contractor shall be responsible for all disposal costs associated with the waste generated during this project.

B. The Contractor shall provide a Certificate of Recycling and Disposal (CRD) pursuant to 40 CFR Part 761 Subpart K.

C. The Contractor shall provide waste shipment records and disposal manifests for all PCB and non-PCB wastes generated and disposed from the project site. The Owner shall be provided sufficient time to identify agent for signatures on waste documentation. Contractor shall provide waste manifest to generation and destination state as required and provide Owner (Generator copy to agent signing manifests).

3.3 COLLECTION AND CONTAINMENT MERCURY LAMPS AND EQUIPMENT

A. All fluorescent lamps to be removed are to be considered mercury-containing. Lamps are to be handled by personnel wearing gloves and eye protection for protection against glass breakage, and proper respiratory protection. Lamps are to be stored unbroken in DOT approved containers that protect the lamps against breakage.

3.4 STORAGE AND DISPOSAL/RECYCLING OF MERCURY LAMPS AND EQUIPMENT

A. Each container shall be sealed and stored in a secure area to minimize inadvertent damage or vandalism. Each lamp or a container or package in which such lamps are contained must be labeled or marked clearly with one of the following phrases: “Universal Waste -- Lamp(s),” or “Waste Lamp(s),” or “Used Lamp(s)".

B. At the completion of the mercury removal phase of the project, a transporter licensed to haul mercury-containing waste shall be contracted for disposal/recycling of the mercury waste. Chain of custody records shall be maintained which include the date of pick-up, number of containers, name of Mercury transporter, and destination of Mercury waste disposal. The Contractor shall be responsible for all disposal/recycling costs associated with the Mercury waste generated during this project.

C. The Owner shall be provided a minimum of 72 hours notice of requirement for signature to identify agent for signatures on waste documentation. Contractor shall provide waste manifest to generation and destination state as required and provide Owner (Generator copy to agent signing manifests).

END OF SECTION 02085

SECTION 02086 – PCB REMEDIATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 specification sections, apply to this section.

B. Reference is made to the Limited Performance Based Disposal Plan for PCB containing Materials Removal as prepared by Fuss & O'Neill EnviroScience, LLC dated December 20, 2011

C. Related Specification sections include asbestos abatement section 02080.

1.2 GENERAL REQUIREMENTS

A. The Remediation Contractor shall furnish all labor, materials, facilities, equipment, installation services, employee training, notifications, permits, licenses, certifications, agreements, and incidentals necessary to perform the specified work. Work shall be performed in accordance with the contract documents, the latest regulations from the Occupational Safety and Health Administration (OSHA), the United States Environmental Protection Agency (USEPA), and all other applicable federal, state, and local agencies. Whenever the requirements of the above references conflict or overlap, the more stringent provision shall apply.

B. All project personnel engaged in the work covered under this section shall be trained in accordance with OSHA Regulations 29 CFR 1910.1000 and 29 CFR 1910.1200. It should also be noted that work associated with PCB removal shall also involve exposure to asbestos during demolition and removal activities specified herein and Remediation Contractor shall perform required exposure assessment for asbestos in accordance with 29 CFR 1926.1101 for asbestos.

C. The Remediation Contractor shall provide a Project Health and Safety Officer having a minimum of eight (8) hours of supervisor training in hazardous waste site operations in accordance with the requirements of 29 CFR 1910. The supervisor must be on site at all times during abatement work.

D. This section specifies the procedures for removal of existing materials containing polychlorinated biphenyls (PCB), equal to or greater than (>)50 parts per million (ppm), in the form of window system caulking and glazing compounds, door system caulking and disposal of removed materials as PCB Bulk Product Waste. Also includes the removal of Bulk PCB Remediation Waste including adjacent brick and steel lintels and subsequent cleaning of all adjacent surfaces upon completion of work.

E. Disturbance or removal of polychlorinated biphenyls (PCB) containing materials may cause a health hazard to workers and building occupants. The Remediation Contractor shall disclose to all of his workers, supervisory personnel, subcontractors, and consultants who will be at job site of the seriousness of the hazard and of proper work procedures which must be followed.

F. Where in the performance of the work, workers, supervisory personnel, subcontractors, or consultants may encounter, disturb or otherwise function in the immediate vicinity of polychlorinated biphenyls (PCB) containing materials, appropriate, continuous measures as necessary to protect all workers from the hazard of exposure shall be taken. Such measures shall include the procedures and methods described herein, regulations of the U.S. Occupational Safety & Health Administration (OSHA), U.S. Environmental Protection Agency (USEPA), and local requirements as applicable.

G. The results of the testing for PCB containing paint are identified in the Performance Based Site Clean-up and Disposal Plan for PCB Caulking Removal.

H. Project Scope Locations and Work Statement: The project site is the located at the former Haddam Jailhouse Building in Haddam, CT. The proposed removal and disposal activities to be performed by Remediation Contractor shall include the following:

1. Site preparation and controls to facilitate remediation of PCBs.
2. Health and Safety in accordance with Occupation Safety and Health Administration (OSHA) requirements.
3. Removal and off-site disposal of PCB materials containing PCB ≥50 or <50 ppm at the Brick building of the Former Jail-House property as PCB Bulk Product Waste or PCB Remediation Waste from all locations identified. All waste removed including metal framed windows, steel lintels and door systems with glazing compounds and caulking compound shall be disposed of PCB waste >50 ppm at a TSCA approved facility.
4. Removal of two courses of brick around the whole perimeter of all windows including one course of brick below the window sills. All windows shall be wrapped up in two layers of (6) Mil polyurethane, and disposed of PCB Bulk materials >50 PPM.
5. The total waste stream shall be tested for disposal to ensure waste does not leach more than 10 μg/L based on Toxicity Characteristic Leachate Procedure (TCLP) testing.
6. PCB Remediation Waste shall include removal of adjacent brick masonry for disposal at concentrations identified which are >50 ppm and shall be also disposed of at a TSCA approved facility.
7. Recordkeeping and distribution as required in accordance with 40 CFR part 761.125 (c) (5).

1.3 REFERENCES

A. 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. Where a conflict or overlap among regulations and/or these specifications exist, the most stringent requirements shall apply.

1. American National Standards Institute (ANSI)
   a. ANSI.Z89.1 Personnel Protective Equipment - Protective Headwear for Industrial Worker's Requirements (Latest Revision)
   b. ANSI.Z87
2. Code of Federal Regulations (CFR)
   a. 29 CFR Subpart D- Walking, Working Surfaces
   b. 29 CFR 1910.120 - Hazardous Waste Operations and Emergency Response (HAZWOPER).

c. 29 CFR 1910.134 - Respiratory Protection Standard
d. 29 CFR 191 0.146 - Permit-Required Confined Spaces
e. 29 CFR 1910.1000 – Air Contaminants (Table Z-1)
f. 29 CFR 1910.1200 - Hazard Communication
g. 29 CFR 1926.20 - General Health and Safety Provisions
h. 29 CFR 1926.57 - Ventilation
i. 29 CFR 1926.59 - Hazard Communication Program
j. 29 CFR 1926.62 - Lead Exposure in Construction
k. 29 CFR 1926.95 - Criteria for Personal Protective Equipment
l. 29 CFR 1926, Subpart H -Materials Handling, Storage, Use and Disposal
m. 29 CFR 1926, Subpart L - Scaffolding
n. 29 CFR 1926, Subpart M -Fall Protection
o. 29 CFR 1926, Subpart X - Ladders
p. 29 CFR 1926, Subpart Z - Toxic and Hazardous Substances
q. 40 CFR 50.6 - National Primary and Secondary Ambient Air Quality Standards for Particulate Matter
r. 40 CFR 260 - Hazardous Waste Management System: General
s. 40 CFR 261 - Identification and Listing of Hazardous Waste
t. 40 CFR 262 - Standards Applicable to Generators of Hazardous Waste
u. 40 CFR 263 - Standards Applicable to Transporters of Hazardous Waste
v. 40 CFR 264 - Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
w. 40 CFR 265 - Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
x. 40 CFR 268 - Land Disposal Restrictions
y. 40 CFR 700 - Toxic Substances Control Act (TSCA)
z. 40 CFR 761- PCBs Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions
aa. 49 CFR 105 - Hazardous Materials Program Definitions and General Procedures
bb. 49 CFR 171 - General Information, Regulations and Definitions
cc. 49 CFR 172 - Hazardous Material Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements
dd. 49 CFR 173 - Shippers-General Requirements for Shipments and Packaging
ee. 49 CFR 177 - Carriage by Public Highway
ff. 49 CFR 176 - Specifications for Packaging

3. National Institute for Occupational Safety and Health (NIOSH)
   a. Publication Number 87-106 Respiratory Decision Logic
   b. NIOSH /OSHA Booklet 3142 Lead in Construction
   c. Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities (NIOSH Publication 85-115)
4. U.S. Environmental Protection Agency (USEPA), Toxic Substances Control Act (TSCA)
   a. Polychlorinated Biphenyl (PCB) Site Revitalization Guidance Under the Toxic Substances Control Act
   b. 40 CFR Part 761.50 - Applicability (b) (1-8)
   c. 40 CFR Part 761.61 - PCB Remediation Waste
   d. 40 CFR Part 761.62 - PCB Bulk Product Waste
   e. 40 CFR Part 761.79 - Decontamination
5. Center for Disease Control (CDC): Air Pollution and Respiratory Health.

1.4 DEFINITIONS

A. The following definitions as used within this technical specification as well as references to specific sections of the Code of Federal Regulation section 40 CRF Part 761 are provided. Definitions are extracted in part from 40 CFR Part 761.3, for full definitions refer to the specified section of regulations.

1. Bulk PCB Remediation Waste means waste containing PCBs as a result of a spill, release, or other unauthorized disposal, at the following concentrations: Materials disposed of prior to April 18, 1978, that are currently at concentrations ≥50 ppm PCBs, regardless of the concentration of the original spill; materials which are currently at any volume or concentration where the original source was ≥500 ppm PCBs beginning on April 18, 1978, or ≥50 ppm PCBs beginning on July 2, 1979; and materials which are currently at any concentration if the PCBs are spilled or released from a source not authorized for use under this part. PCB remediation waste means soil, rags, and other debris generated as a result of any PCB spill cleanup, as further defined in 40 CFR §761.3.
2. CERCLA means the Comprehensive Environmental Response, Compensation, and Liability Act (42 U.S.C. 9601-9657).
3. Chemical waste landfill means a landfill at which protection against risk of injury to health or the environment from migration of PCBs to land, water, or the atmosphere is provided from PCBs and PCB Items deposited therein by locating, engineering, and operating the landfill as specified in §761.75.
4. Cleanup Site means the areal extent of contamination and all suitable areas in very close proximity to the contamination necessary for implementation of a cleanup of PCB remediation waste, regardless of whether the site was intended for management of waste.
5. Containment means the enclosure within the building which establishes a contaminated area and surrounds the location where PCB and/or other toxic or hazardous substance removal is taking place and establishes a Control Work Area.
6. Designated Facility means the off-site disposer or commercial storer of PCB waste designated on the manifest as the facility that will receive a manifested shipment of PCB waste.
7. Disposal means intentionally or accidentally to discard, throw away, or otherwise complete or terminate the useful life of PCBs and PCB Items. Disposal includes spills, leaks, and other uncontrolled discharges of PCBs as well as actions related to containing, transporting, destroying, degrading, decontaminating, or confining PCBs and PCB Items.
8. DOT means the United States Department of Transportation.
9. EPA identification number means the 12-digit number assigned to a facility by EPA upon notification of PCB waste activity under §761.205.
10. Excluded PCB products means PCB materials which appear at concentrations less than 50 ppm as defined in 40 CFR §761.3.
11. Fixed Object: means mechanical equipment, electrical equipment, fire detection systems, alarms, and all other fixed equipment, fixtures or other items which cannot be removed from the work area.
12. Generator of PCB waste means any person whose act or process produces PCBs that are regulated for disposal under subpart D of 40 CFR Part 761, or whose act first causes PCBs or PCB Items to become subject to the disposal requirements of subpart D, or who has physical control over the PCBs when a decision is made that the use of the PCBs has been terminated and therefore is subject to the disposal requirements of subpart D. Unless another provision of 40 CFR Part 761 specifically requires a site-

specific meaning, "generator of PCB waste" includes all of the sites of PCB waste generation owned or operated by the person who generates PCB waste.

13. HEPA: High Efficiency Particulate Air filtration efficiency of 99.97 percent down to 0.3 microns. Filtration provided on specialized vacuums and air filtration devices to trap particles.
14. High occupancy area means any area where PCB remediation waste has been disposed of on-site and where occupancy for any individual not wearing dermal and respiratory protection for a calendar year is: 840 hours or more (an average of 16.8 hours or more per week) for non-porous surfaces and 335 hours or more (an average of 6.7 hours or more per week) for bulk PCB remediation waste. Examples could include a residence, school, day care center, sleeping quarters, a single or multiple occupancy 40 hours per week work station, a school class room, a cafeteria in an industrial facility, a control room, and a work station at an assembly line.
15. Incinerator means an engineered device using controlled flame combustion to thermally degrade PCBs and PCB Items. Examples of devices used for incineration include rotary kilns, liquid injection incinerators, cement kilns, and high temperature boilers.
16. Laboratory means a facility that analyzes samples for PCBs and is unaffiliated with any entity whose activities involve PCBs.
17. Liquid PCBs means a homogenous flowable material containing PCBs and no more than 0.5 percent by weight non-dissolved material.
18. Low occupancy area means any area where PCB remediation waste has been disposed of on-site and where occupancy for any individual not wearing dermal and respiratory protection for a calendar year is: less than 840 hours (an average of 16.8 hours per week) for non-porous surfaces and less than 335 hours (an average of 6.7 hours per week) for bulk PCB remediation waste. Examples could include an electrical substation or a location in an industrial facility where a worker spends small amounts of time per week (such as an unoccupied area outside a building, an electrical equipment vault, or in the non-office space in a warehouse where occupancy is transitory).
19. Manifest means the shipping document EPA form 8700–22 and any continuation sheet attached to EPA form 8700–22, originated and signed by the generator of PCB waste in accordance with the instructions included with the form and subpart K.
20. Mark means the descriptive name, instructions, cautions, or other information applied to PCBs and PCB Items, or other objects subject to the regulations.
21. Marked means the marking of PCB Items and PCB storage areas and transport vehicles by means of applying a legible mark by painting, fixation of an adhesive label, or by any other method that meets the requirements of the regulations.
22. Municipal solid wastes means garbage, refuse, sludges, wastes, and other discarded materials resulting from residential and non-industrial operations and activities, such as household activities, office functions, and commercial housekeeping wastes.
23. Non-liquid PCBs means materials containing PCBs that by visual inspection do not flow at room temperature (25°C or 77°F) or from which no liquid passes when a 100 g or 100 ml representative sample is placed in a mesh number 60 ±5 percent paint filter and allowed to drain at room temperature for 5 minutes.
24. Non-porous surface means a smooth, unpainted solid surface that limits penetration of liquid containing PCBs beyond the immediate surface. Examples are: smooth un-corroded metal; natural gas pipe with a thin porous coating originally applied to inhibit corrosion; smooth glass; smooth glazed ceramics; impermeable polished building stone such as marble or granite; and high density plastics, such as polycarbonates and melamines, which do not absorb organic solvents.
25. On site means within the boundaries of a contiguous property unit.

26. PCB and PCBs means any chemical substance that is limited to the biphenyl molecule that has been chlorinated to varying degrees or any combination of substances which contains such substance. Refer to §761.1(b) for applicable concentrations of PCBs. PCB and PCBs as contained in PCB items are defined in §761.3. PCB Article means any manufactured article, other than a PCB Container, that contains PCBs and whose surface(s) has been in direct contact with PCBs. "PCB Article" includes capacitors, transformers, electric motors, pumps, pipes and any other manufactured item (1) which is formed to a specific shape or design during manufacture, (2) which has end use function(s) dependent in whole or in part upon its shape or design during end use, and (3) which has either no change of chemical composition during its end use or only those changes of composition which have no commercial purpose separate from that of the PCB Article.
27. PCB Article Container means any package, can, bottle, bag, barrel, drum, tank, or other device used to contain PCB Articles or PCB Equipment, and whose surface(s) has not been in direct contact with PCBs.
28. PCB Bulk Product Waste means waste derived from manufactured products containing PCBs in a non-liquid state, at any concentration where the concentration at the time of designation for disposal is ≥50 ppm PCBs. PCB bulk product waste does not include PCBs or PCB Items regulated for disposal under §761.60(a) through (c), §761.61, §761.63, or §761.64. PCB bulk product waste is further defined in 40 CFR §761.3.
29. PCB Capacitor means any capacitor that contains ≥500 ppm PCB. Concentration assumptions applicable to capacitors appear under §761.2.
30. PCB Container means any package, can, bottle, bag, barrel, drum, tank, or other device that contains PCBs or PCB Articles and whose surface(s) has been in direct contact with PCBs.
31. PCB-Contaminated means a non-liquid material containing PCBs at concentrations ≥50 ppm but < 500 ppm; a liquid material containing PCBs at concentrations ≥50 ppm but < 500 ppm or where insufficient liquid material is available for analysis, a non-porous surface having a surface concentration >10 μg/100 cm2 but < 100 μg/100 cm2, measured by a standard wipe test as defined in §761.123.
32. PCB Equipment means any manufactured item, other than a PCB Container or a PCB Article Container, which contains a PCB Article or other PCB Equipment, and includes microwave ovens, electronic equipment, and fluorescent light ballasts and fixtures.
33. PCB Item means any PCB Article, PCB Article Container, PCB Container, PCB Equipment, or anything that deliberately or unintentionally contains or has as a part of it any PCB or PCBs.
34. PCB waste(s) means those PCBs and PCB Items that are subject to the disposal requirements of subpart D in 40 CFR Part 761.
35. Porous surface means any surface that allows PCBs to penetrate or pass into itself including, but not limited to, paint or coating on metal; corroded metal; fibrous glass or glass wool; unglazed ceramics; ceramics with a porous glaze; porous building stone such as sandstone, travertine, limestone, or coral rock; low-density plastics such as Styrofoam and low-density polyethylene; coated (varnished or painted) or uncoated wood; concrete or cement; plaster; plasterboard; wallboard; rubber; fiberboard; chipboard; asphalt; or tar paper. For purposes of cleaning and disposing of PCB remediation waste, porous surfaces have different requirements than non-porous surfaces.
36. RCRA means the Resource Conservation and Recovery Act (40 U.S.C. 6901 et seq.).
37. Standard wipe sample means a sample collected for chemical extraction and analysis using the standard wipe test as defined in §761.123. Except as designated elsewhere in part 761, the minimum surface area to be sampled shall be 100 cm^2.

38. Storage for disposal means temporary storage of PCBs that have been designated for disposal.
39. SW–846 means the document having the title "SW-846, Test Methods for Evaluating Solid Waste,"
40. Totally enclosed manner means any manner that will ensure no exposure of human beings or the environment to any concentration of PCBs.
41. Transfer facility means any transportation-related facility including loading docks, parking areas, and other similar areas where shipments of PCB waste are held during the normal course of transportation. Transport vehicles are not transfer facilities under this definition, unless they are used for the storage of PCB waste, rather than for actual transport activities. Storage areas for PCB waste at transfer facilities are subject to the storage facility standards of §761.65, but such storage areas are exempt from the approval requirements of §761.65(d) and the recordkeeping requirements of §761.180, unless the same PCB waste is stored there for a period of more than 10 consecutive days between destinations.
42. Transporter of PCB waste means, for the purposes of subpart K of 40 CFR Part 761, any person engaged in the transportation of regulated PCB waste by air, rail, highway, or water for purposes other than consolidation by a generator.
43. Transport vehicle means a motor vehicle or rail car used for the transportation of cargo by any mode. Each cargo-carrying body (e.g., trailer, railroad freight car) is a separate transport vehicle.
44. TSCA means the Toxic Substances Control Act (15 U.S.C. 2601 et seq.).

1.5 SUBMITTALS

A. The following documents shall be submitted immediately upon project award to the Owner prior to commencement of PCB Removal work:

1. Site Specific Health and Safety Plan (HASP): The Remediation Contractor shall prepare a site specific HASP plan for protection of workers and control of the work site in accordance with OSHA regulatory requirements. The HASP shall govern all work conducted at the site during the abatement of PCB Paint and related debris; waste handling, sampling, waste management; and waste transportation. At a minimum, the HASP shall address the requirements set forth in 29 CFR 1910.120, as further outlined below:
   a. Health and Safety Organization
   b. Site Description and Hazard Assessment
   c. Training
   d. Medical Surveillance
   e. Work Areas
   f. Personal Protective Equipment
   g. Personal Hygiene and Decontamination
   h. Standard Operating Procedures and Engineering Controls
   i. Emergency Equipment and First Aid Provisions
   j. Equipment Decontamination
   k. Air Monitoring
   l. Telephone List
   m. Emergency Response and Evacuation Procedures and Routes
   n. Site Control

o. Permit-Required Confined Space Procedures
p. Spill prevention and Containment Plan
q. Heat and Cold Stress
r. Record Keeping
s. Community Protection Plan

2. Training Documentation: Documentation of OSHA 40-Hour HAZWOPER Training for all employees and subcontractors to be used for the abatement work, and 8-Hour HAZWOPER Supervisor Training for the designated on-site Health and Safety Officer for the abatement work.
3. PCB and or other Toxic or Hazardous Substances Disposal Plan: A written plan that details the Remediation Contractor's plan for transportation and disposal of PCB-containing or other Toxic or Hazardous Substance wastes generated during the project. The Disposal Plan shall identify:
   a. Waste packaging, labeling, placarding and manifesting procedures.
   b. The name, address, and 24-hour contact number for the proposed treatment or disposal facility or facilities to which waste generated during the project will be transported.
   c. The name, address, contact person(s) and state-specific permit numbers for proposed waste transporters, and EPA identification number for firms that will transport waste.
   d. The license plate numbers of vehicles to be used in transporting of the waste from the site to the disposal facility.
   e. The route(s) by which the waste will be transported to the designated disposal facility, and states or territories through which the waste will pass.
4. Material Safely Data Sheets: Material Safety Data Sheets (OSHA Form 174 or equivalent) and manufacturer's information shall be provided for all chemicals and materials to be used during the project including but not limited to specialty cleaners and chemical stripping products.

B. The following documents shall be submitted to the Owner within fifteen (15) work days following removal of waste from the site:

1 Waste Profile Sheets
2. Pre-Disposal Analysis Test Results (If required by disposal facility)
3. Manifests signed by the disposal facility
4. Tipping Receipts provided by the disposal facility
5. Certification of Final Treatment/Disposal signed by the responsible disposal facility official.

C. PCB Work Closeout Submittals:

1. Disposal Site Receipts: Copy of waste shipment record and disposal site receipt showing the PCB-containing or other Toxic or Hazardous Substances materials have been properly disposed.

D. Product Data: Catalog sheets, specifications, and application instructions for any removal products, if used.

1.6 POSTING AND RECORD MAINTENANCE REQUIREMENTS

A. The following items shall be conspicuously displayed proximate but outside of abatement work areas.

1. Exit Routes -Emergency exit procedures and routes
2. Emergency Phone Numbers - A list indicating the telephone numbers and locations of the local hospital(s); the local emergency squad; the local fire department; the local police department; the Poison Control Center; Chemical Emergency Advise (CHEMTREC); the local Department of Health's local office; the Remediation Contractor (on-site and after hours numbers); and the environmental consultant (on-site and after hours numbers).
3. Warning Signs - Warning signs shall be in English and the language of any workers on site who do not speak English, and be of sufficient size to be clearly legible and display the following or similar language in accordance with 29 CFR 1910.1200:

WARNING
HAZARDOUS WASTE WORK AREA
PCBs-POISON
NO SMOKING, EATING OR DRINKING
AUTHORIZED PERSONNEL ONLY
PROTECTIVE CLOTHING IS REQUIRED IN THIS AREA

In addition, all entrances to work areas shall be posted with a PCB M_L marker.

B. The Remediation Contractor shall maintain the following items on-site and available for review by all employees and authorized visitors:

1. Remediation Contractor's Project Specific Health and Safety Plan
2. Certificates of Training for all employees and the project Supervisor
3. Codes, Standards and Publications
4. Material Safety Data Sheets (MSDS) for all chemicals used during the project.
5. Copies of the Remediation Contractor's written hazard communication, respiratory protection, and confined space entry programs.

C. Fees, Permits and Licenses. The Remediation Contractor shall pay all licensing fees, royalties, and other costs necessary for the use of any copyrighted or patented product, design, invention, or processing in the performance of the work specified in this Section.

1. The Remediation Contractor shall be solely responsible for costs, damages, or losses resulting from any infringement of these patent rights or copyrights. The Remediation Contractor shall hold the Owner and the Owner's Authorized Representative harmless from any costs, damages, and losses resulting from any infringement of these patent rights or copyrights.

2.
2. The Remediation Contractor shall be responsible for securing all necessary permits for work under this Section, including hauling, removal, and disposal, fire, and materials usage, or any other permits required to perform the specified work.

1.7 QUALITY ASSURANCE

A. The Remediation Contractor shall provide and assure that the quality of work practices and procedures to be utilized are consistent with the above listed agencies and regulations. Remediation Contractor shall utilize the latest edition, including all addenda, revisions, and supplements for all regulatory agencies codes, etc.

B. Worker's Qualifications: The persons performing PCB Caulking abatement and their supervisors shall be personally experienced in PCB abatement work and shall have been regularly employed by a company performing PCB abatement for a minimum of 3 years.

C. Pre-Work Conference: Before the Work of this Section is scheduled to commence, a conference will be held by the Owner at the Site for the purpose of reviewing the Contract Documents, discussing requirements for the Work, and reviewing the Work procedures.

1. The conference shall be attended by the Remediation Contractor, and the Owner's Authorized Representative employed by the Owner.

1.8 MINIMUM REQUIREMENTS FOR WORKER HEALTH AND SAFETY

A. The Remediation Contractor is responsible and liable for the health and safety of all onsite personnel and the offsite community affected by the project. All onsite workers or other persons entering the abatement work areas, decontamination areas or waste handling and staging areas shall be knowledgeable of and comply with the requirements of the site specific Health and Safety Plan at all times. The Remediation Contractor's HASP shall comply with all applicable federal, state, and local regulations protecting human health and the environment from the hazards posed by the work to be performed under this project.

B. Consistent disregard for the provisions of the HASP shall be deemed as sufficient cause for immediate stoppage of work and termination of the Contract or any Sub Contracts without compromise or prejudice to the rights of the Owner or the Owner's Authorized Representative.

C. Any discrepancies between the Remediation Contractor's HASP and these specifications or federal and state regulations shall be resolved in favor of the more stringent requirements that provide the highest degree of protection to the project personnel and the surrounding community and environment

D. In addition to exposure concerns relating to the presence of PCBs, other health and safety considerations will apply to the work. The Remediation Contractor shall be responsible for recognizing such hazards and shall be responsible for the health and safety of Remediation Contractor employees at all times. It is the Remediation Contractor's responsibility to comply with all applicable health and safety regulations.

E. The HASP shall be reviewed by all persons prior to entry into the abatement, decontamination, or waste staging areas, whether a representative of the Remediation Contractor, owner, architect/engineer, environmental consultant, subcontractor(s), waste transporter or federal, state or local regulatory agency. Such review shall be acknowledged and documented by the Remediation Contractor's Health and Safety Officer by obtaining the name, signature, and affiliation of all persons reviewing the HASP.

F. The HASP shall be maintained so as to be readily accessible and reviewable by all site personnel throughout the duration of the abatement project and until all waste materials are removed from the site and disposed of at the appropriate disposal facility.

G. The Remediation Contractor's on-site Health and Safety Officer shall be responsible for ensuring that project personnel and site visitors are informed of and comply with the provisions of the HASP at all times during the project.

1.9 WORK AREAS AND ZONES

A. The Remediation Contractor shall lay-out and clearly identify work areas in the field. Access by equipment, site personnel, and the public to the work areas shall be limited as follows:

1. Abatement Zone: The Abatement Zone(s) shall consist of all interior or exterior areas where removal of PCBs and other Toxic or Hazardous Substances and waste handling and staging activities are on-going and the immediately surrounding locale or other areas where contamination could occur. Each Abatement Zone for purposes of removal of PCB materials or other Toxic or Hazardous Substances for disposal shall be performed within a containment (refer to section 3.1) to isolate work areas from non-work areas. The containment shall be visibly delineated with appropriate warning signs at all approaches to Abatement (including a PCB M_L marker), and be restricted from access by all persons except those directly necessary for the completion of the respective abatement tasks. The Abatement Zones shall be relocated and delineated as necessary as work progresses from one portion of the project site to another, to limit access to each abatement area and to minimize risk of exposure to site workers and the general public. Access shall be controlled at the periphery of the Abatement Zones to regulate the flow of personnel and equipment into and out of each zone and to help verify that proper procedures for entering and exiting are followed. All persons within the Abatement Zones shall wear the appropriate level of protection established in the HASP.
2. Decontamination Zone: The Decontamination Zone is the transition zone between the abatement area and the clean support zone of the project site, and is intended to reduce the potential for contaminants from being dispersed from the Abatement Zone to clean areas of the site. The Decontamination Zone shall consist of a buffer area surrounding each Abatement Zone through which the transfer of equipment, materials, personnel, and containerized waste products will occur and in which decontamination of equipment, personnel, and clothing will occur. The Decontamination Zones shall be constructed as a three chamber decontamination unit for workers and a two chamber equipment room for waste load out as detailed in Section 3.2. All emergency response and first aid equipment shall be readily maintained in these Zones. All protective equipment and clothing shall be removed or decontaminated in the Decontamination Zone prior to exiting to the Support Zone.
3. Support Zone: The Support Zone will consist of the area outside the Decontamination Zones and the remainder of the project site. Administrative and other support functions and any activities that by nature need not be conducted in the Abatement or Decontamination Zone related to the project shall occur in the Support Zone, Access to the Abatement and Decontamination Zones shall be controlled by the Health and Safety Officer and limited to those persons necessary to complete the abatement work and which have reviewed and signed the HASP.

1.10 PERSONNEL PROTECTIVE EQUIPMENT

A. The Remediation Contractor shall be responsible to determine and provide the appropriate level of personal protective equipment in accordance with applicable regulations and standards necessary to protect the Remediation Contractor's employees from all hazards present.

B. The Remediation Contractor shall provide all employees with the appropriate safety equipment and protective clothing to ensure an appropriate level of protection for each task, taking into consideration the chemical, physical, ergonomic and biological hazards posed by the site and work activities.

C. The Remediation Contractor shall establish in the HASP criteria for the selection and use of personal protective equipment (PPE).

D. The PPE to be utilized for the project shall be selected based upon the potential hazards associated with the project site and the work to be performed. Appropriate protective clothing shall be worn at all times within the Abatement Zone.

E. The Remediation Contractor shall provide the appropriate level of respiratory protection to all field personnel engaged in activities where respiratory hazards exist or there is a potential for such hazard to exit.

F. The Remediation Contractor shall provide, as necessary, protective coveralls, disposable gloves and other protective clothing for all personnel that will be actively involved in abatement activities or waste handling activities or otherwise present in the Abatement Zones. Coveralls shall be of Tyvek or equivalent material. Should the potential for exposure to liquids exist, splash resistant disposable suits shall be provided and utilized.

G. Protective coveralls, and other protective clothing shall be donned and removed within the Decontamination Zone and shall be disposed of at the end of each day. Ripped coveralls shall be immediately replaced after appropriate decontamination has been completed to the satisfaction of the Health and Safety Officer. Protective clothing shall not be worn outside of the Decontamination Zone.

H. Hard Hats, protective eyewear, rubber boots, and or other non-skid footwear shall be provided by the Remediation Contractor as required for workers and authorized visitors.

I. All contaminated protective clothing, respirator cartridges and disposable protective items shall be placed into proper containers to be provided by the Remediation Contractor for transport and proper disposal n accordance with 40 CFR 262.

1.11 EMERGENCY EQUIPMENT AND FIRST AID REQUIREMENTS

A. The Remediation Contractor shall provide and maintain at the site, at a minimum, the following Emergency and First Aid Equipment:

1. Fire Extinguishers: A minimum one (1) fire extinguisher shall be supplied and maintained at the site by the Remediation Contractor throughout the duration of the project. Each extinguisher shall be a minimum of a 20 pound Class ABC dry fire extinguisher with Underwriters Laboratory approval per 29 CFR 1910.157.

2. First Aid Kit: A minimum 01 one (1) first aid kit meeting the requirements of 29 CFR 1910,151 shall be supplied and maintained at the site by the Remediation Contractor throughout the duration of the project.
3. Communications: Telephone communications (either cellular or land line) shall be provided by the Remediation Contractor for use by site personnel at all times during the project.

B. The Health and Safely Officer shall be notified immediately in the event of personal injury, potential exposure to contaminants, or other emergency. The Health and Safety Officer shall then immediately notify the Owner's Authorized Representative.

1.12 STANDARD SAFETY AND HEALTH PROCEDURES AND ENGINEERING CONTROLS

A. The following provisions shall be employed to promote overall safety, personnel hygiene and personnel decontamination:

1. Each Remediation Contractor or Subcontractor shall ensure that all safety equipment and protective clothing to be utilized by its personnel is maintained in a clean and readily accessible manner at the site.
2. All prescription eyeglasses in use on this project shall be safety glasses conforming to ANSI Standard Z87.1. No contact lenses shall be allowed on the site.
3. Prior to exiting the delineated Decontamination Zone(s), all personnel shall remove protective clothing, and place disposable items in appropriate disposal containers to be dedicated to that purpose. Following removal of PPE, personnel shall thoroughly wash and rinse their face, hands, arms and other exposed areas with soap and tap water wash and subsequent tap water rinse. A fresh supply of tap water shall be provided at the site on each work day by the Remediation Contractor for this purpose.
4. All PPE used on site shall be decontaminated or disposed of at the end of each work day. Discarded PPE shall be placed in sealed DOT approved 55-gallon barrels for off-site disposal.
5. Respirators, if necessary due to an upgrade to Level C PPE, shall be dedicated to each employee, and not interchanged between workers without cleaning and sanitizing.
6. Eating, drinking, chewing gum or tobacco, smoking, and any other practice that increases the likelihood of hand to mouth contact shall be prohibited within the delineated abatement and decontamination work zones. Prior to performing these activities, each employee shall thoroughly cleanse their face, hands, arms and other exposed areas.
7. All personnel shall thoroughly cleanse their face hands, arms and other exposed areas prior to using toilet facilities.
8. No alcohol, tobacco, illicit drugs, or firearms will be allowed on the site at any time.
9. Contact with potentially contaminated surfaces should be avoided, if possible. Field personnel should minimize walking through standing water/puddles, mud or other wet or discolored surfaces; kneeling on ground; and placing equipment, materials or food on ground or other potentially contaminated surface.
10. The use of the "Buddy System shall be employed at all times while conducting work at the site. Each employee shall frequently monitor other workers for signs of heat stress or chemical exposure or fatigue: periodically examine others PPE for signs of wear or damage; routinely communicate with others; and notify the Health and Safety Officer in the case of an emergency.

B. Worker's must wear protective suits, protective gloves, eye protection and a minimum of half-face respirator with HEPA filter cartridge for all projects. Respiratory protection shall be in accordance with OSHA regulation 1910.134 and ANSI Z88.2.

C. Workers must be trained as per OSHA and USEPA requirements, have medical clearance and must have recently received pulmonary function test (PFT) and respirator fit tested by a trained professional.

1. A personal air sampling program shall be in place as required by OSHA.
2. The use of respirators must also follow a complete respiratory protection program as specified by OSHA.

PART 2 - PRODUCTS

2.1 ABATEMENT PRODUCTS

A. All materials shall be delivered in the original packages, containers, or bundles bearing the name of the manufacturer and the brand name.

B. Disposal Drums: Metal or fiberboard with locking ring tops, with warning labels as required by OSHA, and/or EPA.

C. Respirators:

1. Type: Approved by the Mine Safety and Health Administration (MSHA), Department of Labor, or the National Institute for Occupational Safety and Health (NIOSH), Department of Health and Human Services.

D. Vacuum Cleaners:

1. Type: Vacuums equipped with HEPA filters.

E. Polyethylene Sheeting:

1. Type: Minimum 6 mil., opaque, fire retardant polyethylene sheets.
2. Floor Protective Layer: Minimum 10 mil., reinforced polyethylene sheets.

F. Cleaning Products: Remediation Contractor shall at their discretion utilize specialty cleaning products such as Capsur, TechXtract or other cleaners for use in decontaminating porous and non-porous surfaces to remain. All such products shall be utilized in accordance with manufacturer's specifications as intended. Remediation Contractor shall ensure appropriate use and disposal associated with use in accordance with the MSDS sheets for each product utilized. It shall be incumbent upon the Remediation Contractor to determine the need for use of specialty products to meet required cleaning verification levels established herein and in accordance with the Work Plan.

2.2 GENERAL EQUIPMENT

A. A sufficient supply of disposable mops, rags, and sponges for work area cleaning and decontamination shall be available.

B. A sufficient supply of scaffolding, ladders, lifts, and hand tools (e.g., scrapers, wire cutters, brushes, utility knives, wire saws, etc.) shall be provided as needed.

2.3 PERSONNEL PROTECTION

A. Safety equipment (e.g., hard hats meeting the requirements of ANSI Standard Z89.1-1981, eye protection meeting the requirements of ANSI Standard Z87.1-1979, safety shoes meeting the requirements of ANSI Standard Z41.1-1967, disposable PVC gloves or other work gloves), shall be provided to all workers and authorized visitors.

B. Non-skid footwear shall be provided to all abatement workers. Disposable clothing shall be adequately sealed to the footwear to prevent body contamination.

PART 3 - EXECUTION

3.1 WORK AREA PROTECTION – ABATEMENT ZONE

A. Protection of Existing Construction: Perform PCB Bulk Product Waste and Bulk PCB Remediation Waste removal work without damage or contamination of adjacent areas, soil, and existing construction.

B. Prior to commencement of PCB abatement activities at each work area, a containment system shall be constructed by the Remediation Contractor to capture and contain all materials removed during the abatement. Containment procedures referenced for the abatement zone must be utilized for both PCB Bulk Product Waste removal as well as Bulk PCB Remediation Waste Removal. Exception is work involving the removal of PCB contaminated asphalt for disposal as Bulk PCB Remediation Waste.

C. The project site shall be enclosed by a construction chain link fence. During all remediation activities, Remediation Contractor shall maintain control of all entrances and exits to the project site to ensure only authorized personnel enter the work areas and are afforded proper personal protective equipment and as required respiratory protection. All approaches to work areas shall be demarcated with appropriately worded warning signs.

D. Work zones shall be established in accordance with this section to include abatement zone, decontamination zone and support zone.

E. Ground protection to prevent debris from escaping the abatement zone and to protect areas outside of abatement zone from PCB contamination shall be utilized. Protection shall include the use of water impervious membrane covering which shall be secured to the ground surface. Edges shall be raised to prevent water run-off used for dust/water control during selective demolition of window system. The membrane shall be covered with a single layer of 6-mil polyethylene sheeting securely fastened to foundation.

1. One layer of polyethylene sheeting having a minimum thickness of 6-mils shall be installed on the exterior side of the structure beneath and extending a minimum of ten (10) feet beyond each window and door in each direction. The polyethylene sheeting shall be securely fastened to the outside face of the structure using duct tape or other suitable material.

F. Isolation barriers shall be installed on interior side of windows and door to isolate these systems to the building exterior where work shall be performed. Protection shall include two layers of 6-mil polyethylene sheeting securely affixed to the inside finish surfaces of walls to isolate windows and door to the building exterior.

1. Two (2) layers of 6-mil polyethylene sheeting shall be securely affixed to ceiling and floor inside of each window and door system with duct tape or other means to isolate the window systems to the building exterior.

G. Isolation barriers shall be installed on exterior side of windows and door to contain these systems where work shall be performed to minimize dispersal of dust and debris. Protection shall include two layers of 6-mil polyethylene sheeting securely affixed to the exterior side finish surfaces of building and constructed in a manner using framework to to contain window and door systems. To minimize dust and debris Remediation Contractor shall utilize negative pressure containment with use of negative air filtration units with HEPA filtration.

H. All other openings to the building interior such as unit ventilation, ducts, and grilles shall be securely sealed with a single layer of 6-mil polyethylene sheeting from the building exterior.

I. Ground protection and isolation barriers shall remain in place throughout work to collect dust and debris resulting from PCB Bulk Product Waste removal and PCB Remediation Waste removal. All debris generated during operations including but not limited to visible caulking, dust and debris shall be HEPA vacuumed continuously throughout the work shift and at the end of a work shift to avoid accumulation. Any tears or rips that occur in protections shall be repaired or removed and replaced with new protections.

J. Warning Signage: Post warning signs in accordance with 29 CFR 1910.1200 at all approaches to the work area. Signs shall be conspicuously posted to permit a person to read signs and take precautionary measures to avoid exposure to PCBs or other Toxic or Hazardous Substances. These signs should include the PCB M_L markers at each entrance to the work area.

K. Waste Containers for PCB Bulk Product Waste: Appropriate PCB waste containers shall be placed adjacent to abatement zones. Containers shall be lined covered and secured. The PCB waste containers shall be properly marked as described in 40 CFR part 761.45. Marking shall include a PCB M_L marker.

3.2 DECONTAMINATION ZONE

A. The Remediation Contractor shall establish contiguous to the work area, a decontamination enclosure consisting of equipment room, shower room, and clean room in series. The only access between contaminated and uncontaminated areas shall be through this decontamination enclosure. The Remediation Contractor shall ensure that employees enter and exit the Abatement Zone through the decontamination area.

B. Access between rooms in the decontamination system shall be through double flap curtain opening airlocks.

C. Construct the decontamination systems with wood or metal framing, 3/8" sheathing and cover both sides with a double layer of six (6) mil polyethylene sheeting, spray glued or taped at the joints. Caulk joints watertight at floor, walls, and ceiling.

D. The Remediation Contractor shall visually inspect barrier several times daily to assure effective seal and the Remediation Contractor shall repair defects immediately.

E. Equipment room. The equipment room shall be supplied with impermeable, labeled bags and containers for the containment and disposal of contaminated protective equipment.

F. Shower area. Shower facilities shall be provided which comply with 29 CFR 1910.141(d)(3). The showers shall be adjacent both to the equipment room and the clean room.

G. Clean change room. The clean room shall be equipped with a locker or appropriate storage container for each worker's use. Following showering, each worker must then change into street clothing in clean change areas.

H. Decontamination area entry procedures. The Remediation Contractor shall ensure that all workers follow proper decontamination procedures for entry into a Regulated Work area including but not limited to the following:

1. Enter the decontamination area through the clean room;
2. Remove and deposit street clothing within a locker provided for their use;
3. Put on protective clothing and respiratory protection before leaving the clean room.
4. Before entering the Abatement Zone, the Remediation Contractor shall ensure that workers pass through the equipment room.

I. Decontamination area exit procedures. The Remediation Contractor shall ensure that all workers follow proper decontamination procedures for exit from a Regulated Work area including but not limited to the following:

1. Before leaving the regulated area, workers shall remove all gross contamination and debris from their protective clothing.
2. Workers shall remove their protective clothing in the equipment room and deposit the clothing in labeled impermeable bags or containers.
3. Workers shall not remove their respirators in the equipment room.
4. Workers shall shower prior to entering the clean room.
5. After showering, workers shall enter the clean room before changing into street clothes.

J. Equipment Room for Waste Removal: The Remediation Contractor shall establish a two chamber equipment room or area that is adjacent to the Abatement Zone for the decontamination of waste containers and equipment as noted above.

1. The area must be of sufficient size as to accommodate cleaning of equipment and removing waste without spreading contamination beyond the area (as determined by visible accumulations).

2. All equipment and surfaces of containers filled with PCB waste must be cleaned prior to removing them from the equipment room or area.

3.3 PCB BULK PRODUCT AND PCB REMEDIATION WASTE MATERIALS

A. PCB Bulk Product Waste Materials including PCB caulking and glazing compound and associated Bulk PCB Remediation Waste associated with metal window systems and door system to be removed intact shall be handled and removed from specified locations for proper disposal.

B. Materials shall be removed in a manner which does not breakdown the materials into fine dust or powder to the extent feasible. Equipment and tools to be utilized shall include hand tools to remove materials from adjacent substrates. Mechanical removal equipment shall as appropriate be fitted with dust collection systems.

C. Any dry or brittle caulking materials or other PCB Bulk Product waste shall be removed with additional engineering controls such as use of a HEPA vacuum to remove accumulated dust or debris during removal.

D. Sequence of removal shall follow the following general requirements:

1. All PCB containing materials shall be removed prior to demolition from all of the ten (10) window(s) and one (1) door system components on the brick portion of the building. PCB Bulk product Waste includes caulking compounds between the brick and the windows and door systems. Entire window and door systems will be removed for disposal. All waste shall be disposed of as TSCA regulated PCB Bulk Product Waste > 50 ppm.
2. Adjacent brick masonry surfaces contain PCB >50 ppm and shall be removed as PCB Remediation Waste for disposal as TSCA regulated waste PCB >50 ppm. This will be done by removing (2) two courses of brick from the whole perimeter of the windows to include the window sill, and one course of brick below the brick sill, and door.
3. Work includes removal of ten (10) ten window(s), and one (1) door that shall be removed for disposal as PCB Bulk Product Waste and PCB Remediation Waste as the entire window, and door assembly including PCB glazing compound(s) will be disposed.
4. Window lintels will be disposed of as PCB Remediation Waste for disposal as TSCA regulated waste PCB >50 ppm.
5. Remove three square feet of the asphalt below the door when it has been removed as as PCB Remediation Waste for disposal as TSCA regulated waste PCB >50 ppm.
6. The materials will be properly containerized for disposal as PCB Bulk Product Waste and PCB Remediation Waste. All materials shall be disposed as PCB Waste >50 ppm at a TSCA waste facility for PCB waste.

E. Post removal verification sampling shall be conducted by Owner's Representative, in all areas of brick removal areas to demonstrate that the cleanup goals have been met.

F. Waste shall be immediately containerized in temporary 6-mil polyethylene disposal bags for disposal. These containers shall be sealed in abatement zone when full during collection and then placed in disposal containers/storage trailers. The containers shall not be emptied into other containers to avoid dispersal of dust or fugitive emissions.

G. The use of minimal quantities of water to moisten the generated dust prior to collection shall be utilized. Under no circumstances shall the PCB waste show evidence of free liquid water, pooling, or ponding within the waste stream. Any liquid used to wet the dust and debris to control fugitive emissions shall be properly containerized and decontaminated in accordance with 40 CFR Part §761.79 (b)(1) or disposed of in accordance with40 CFR Part §761.60 (a).

H. PCB Bulk Product Waste shall be stored for disposal in accordance with 40 CFR Part §761.40 and §761.65 and marked in accordance with 40 CFR Part §761.40 and §761.45.

I. All waste containers shall be appropriately labeled in accordance with 40 CFR Part §761.40 and §761.45. Labeling shall include the PCB M_L marker.

3.4 BULK PCB REMEDIATION WASTE ASPHALT

A. All asphalt designated for removal shall be excavated and transported off-site for disposal as Bulk PCB Remediation Waste.

B. Asphalt removal shall be competed in accordance with 40 CFR Part §761.61 (a). Asphalt materials shall be completely removed from designated location in its entirety for proper disposal.

C. Post removal verification sampling shall be conducted by Owner's Representative, in all asphalt removal areas to demonstrate that the cleanup goals have been met.

D. Asphalt present beneath door systems has been assumed to contain PCB concentrations ranging from greater than 1 ppm to less than 50 ppm. Asphalt shall be removed from designated areas only for proper disposal as waste containing PCBs <50 ppm.

E. During excavation work, use of wetting to control dust and visible emissions shall be required. Remediation contractor shall ensure that upon completion of asphalt excavation adjacent masonry surfaces are cleaned of visible dust.

F. All PCB Remediation Waste shall be stored for disposal in accordance with 40 CFR Part §761.65.

G. All waste containers shall be appropriately labeled in accordance with 40 CFR Part §761.40 and §761.45. Marking shall include the PCB M_L marker.

H. All equipment used during excavation shall be decontaminated as specified in section 3.6.

3.5 CLEANING AND DECONTAMINATION

A. The Remediation Contractor shall be responsible for complete cleaning and decontamination of the Abatement Zone upon completion of work. The Abatement Zone will be required to meet proposed Verification Sampling limits established in Work Plan.

B. The Remediation Contractor shall utilize HEPA vacuum and wet cleaning products to remove all visible dust and debris from all surfaces within the work area. If specialty products are utilized the Remediation Contractor shall utilize in accordance with manufacturer's specifications including any additional safety and disposal requirements for such use.

C. Cleaning of containment barriers shall be performed prior to removal leaving critical barriers at openings, decontamination units and negative air filtration devices in place until results of post verification sampling indicate acceptable limits. Cleaning shall be performed from ceiling to floors.

D. Any liquid used to wet the dust and debris to control fugitive emissions shall be collected and decontaminated in accordance with 40 CFR Part §761.79 (b)(1) or disposed of in accordance with §761.60 (a).

E. All rags and other cleaning materials used to clean shall also be properly disposed as PCB Remediation Waste. All PCB Remediation Waste shall be stored for disposal in accordance with 40 CFR Part §761.61(a)(5)(v)(A). All waste containers shall be appropriately marked in accordance with 40 CFR Part §761.40 and §761.45.

F. Equipment to be utilized in connection with the removal of PCB Bulk Product Waste, Bulk PCB Remediation waste and PCB Contaminated soil including waste collection or that will or may come in direct contact with the site contaminants shall be decontaminated prior to leaving the site to prevent migration of the contaminated residues from the project site. Decontamination shall be in accordance with 40 CFR Part §761.79 and Sub-part S procedures.

G. All non-disposable equipment and tools employed in the course of the project will be decontaminated at the conclusion of each work day through the following sequence:

1. Initial tap water rinse, to remove gross soil
2. Tap water and hexane or equivalent wash
3. Tap water rinse
4. Second tap water and hexane or equivalent wash
5. Second tap water rinse

H. The wash water and decontamination liquids shall be captured and containerized in DOT approved 55-gallon barrels for off-site disposal.

3.6 CERTIFICATION OF ABATEMENT AND SAMPLING-POST VERFICATION SAMPLING

A. The Owner shall retain an industrial hygiene firm, Fuss & O'Neill EnviroScience, LLC (as Owner Representative) to perform periodic inspections and sampling during the work. Site visits shall be scheduled based on the progress of the work and at critical time periods.

B. The Owner's Representative shall perform post removal and decontamination visual clearance inspection, bulk and/or sampling as necessary to determine complete removal of PCBs. Refer to the Post verification protocol for determination of clearance levels.

C. Once verification sampling has documented the Abatement Zone meets required criteria established in the Work Plan, the Remediation Contractor shall be permitted to remove decontamination unit and critical barriers. These areas shall be subjected to a visual inspection to ensure no visible dust is present.

D. The Owner's Representative shall collect forty-two (42) verification chip samples and duplicates. Three (3) chip samples of brick shall be collected for every location a window and

door is being removed. Samples shall include 25% of the total in duplicate samples. The laboratory shall be Con-Test Analytical Laboratory of East Longmeadow, MA. Con-test is an accredited laboratory for PCB analysis. The analysis method shall include extraction using EPA Method 3540C (Soxhlet Extraction) and analysis for PCBs using EPA Method 8082.

3.7 MARKING OF WASTE CONTAINERS

A. All waste containers must be marked with the name of the waste contained; the date in which the first material was placed in the vessel; and the last date at which addition of waste occurred. All waste containers must be marked with a PCB ML marker.

B. All waste containers containing PCB Bulk Product Waste, Bulk PCB Remediation Waste and PCB contaminated debris, containment system components, used personnel protective equipment, personal and equipment wash water and decontamination fluids, or other wastes generated during the abatement work shall be labeled as follows:

DOT Class 9 UN3432 (solid)
Or UN2315 (liquid) PCB Waste
RQ
Waste for Disposal
Federal law prohibits improper disposal.
If found, contact the nearest police or public safety authority or
the U.S. Environmental Protection Agency.

a. Generator's Information: _____
b. Manifest Tracking No.: _____
c. Accumulation Start Date: _____
d. EPA ID No.: _____
e. EPA Waste No.: _____
f. Total Weight: _____
g. Container No.: _____

HANDLE WITH CARE!

In addition, these containers must be marked with a PCB M_L marker.

C. Such marking must be durable, in English and printed on or affixed to the surface of the package or on a label, tag or sign; displayed on a background of sharply contrasting color; un-obscured by labels or attachments and located away from any other marking (such as advertising) that could substantially reduce its effectiveness.

3.8 ON-SITE WASTE MANAGEMENT AND DISPOSAL OF SOLID HAZARDOUS WASTES

A. All solid waste material, containment system components, used personnel protective equipment, and other solid wastes generated during the work, shall be placed directly in appropriate waste receptacles immediately upon removal from its in-situ position. Suitable waste receptacles may consist of roll-off containers or DOT-approved 55-gallon barrels.

B. The Remediation Contractor shall be responsible for all packaging, labeling, transport, disposal, and record-keeping associated with PCB or PCB contaminated waste in accordance with all federal, state, and local regulations.

C. The Remediation Contractor shall ensure that the person transporting the waste holds a valid permit issued in accordance with appropriate federal, state, and local regulations.

D. The Remediation Contractor shall provide to the transporter at the time of transfer appropriate shipping records or uniform waste manifests as required by the federal, state, and local regulations with a copy to the Owner and Owner's Authorized Representative.

E. Remediation Contractor shall maintain proper follow up procedures to assure that waste materials have been received by the designated waste site in a timely manner and in accordance with all federal, state, and local regulations.

F. The Remediation Contractor shall assure that disposal of polychlorinated biphenyls (PCB) containing waste material is at a facility approved to accept such waste and shall provide a tracking/manifest form signed by the landfill's authorized representative.

G. If roll-off containers are to be utilized for containerization of the abatement wastes the following shall apply:

1. All roll-off containers or other similar vessels utilized shall be watertight and lined with 6-mil polyethylene sheeting or equivalent impermeable lining, and equipped with a secured and impermeable cover.
2. The impermeable cover shall remain securely in place at all times when material is not being actively placed in the vessels. The Remediation Contractor shall be responsible for ensuring that the cover remains securely intact until the container is removed from the site.

H. If 55-Gallon barrels are to be utilized for waste containerization, the barrels shall consists of suitable DOT-approved 55-gallon barrels that are watertight and free of corrosion, perforations, punctures, or other damage. All barrels shall be securely covered and sealed at the conclusion of each work day.

I. The waste containers shall remain staged at the site with a secure impermeable cover in place until the materials are transported from the site to be delivered to the designated disposal facility.

J. A waste roll-off and barrel staging area shall be designated prior to initiation of the abatement work, and approved by the Owner's Authorized Representative. If this area is located outside of the building, the area (or areas) shall be surrounded by a chain-link fence with a minimum height of six feet. The fence shall be labeled with a PCB ML marker.

K. Properly containerized waste must be transported by a licensed hauler and shipped as PCB Bulk Product Waste and Bulk PCB Remediation Waste for disposal at a permitted hazardous waste landfill which is an EPA, TSCA approved facility for PCB waste >50 ppm. Provide required copies of the uniform waste manifests for hazardous wastes to the Owner, waste generation State and waste destination State as required.

L. Materials containing <50 ppm will be transported to a non-hazardous solid waste disposal facility, an EPA approved PCB incineration facility. Waste manifests must show chain of custody. Provide required copies of the waste shipment records for wastes to the Owner as required.

M. Any PCB Liquid Water Waste shall be properly containerized and decontaminated in accordance with 40 CFR Part §761.79 (b)(1) or disposed of in accordance with 40 CFR Part §761.60 (a).

N. Any chemicals, solvents or other products used during decontamination shall be properly containerized as PCB Liquid Waste. Waste must be properly decontaminated or disposed in accordance with 40 CFR Part §761.60 (a) or 40 CFR Part §761.79 (g). PCB Liquid Waste shall be transported by a licensed hauler and shipped for treatment or disposal. Provide required copies of the uniform waste manifests for hazardous wastes to the Owner, waste generation State and waste destination State as required.

O. All contaminated waste shall be carefully loaded on trucks or other appropriate vehicles for transport. Before and during transport, care shall be exercised to insure that no unauthorized persons have access to the material.

P. Transporters of the waste are prohibited from "back hauling" any freight after the disposition of the Owner's waste stream until decontamination of the vehicle and/or trailer is assured.

END OF SECTION 02086

SECTION 02090 – LEAD PAINT AWARENESS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. General Provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY OF WORK

A. Work of this Section includes requirements for worker protection and waste disposal related to the demolition work involving components and surfaces containing lead dust at the historical former Jailhouse Building at Route 154 Jail Hill Road, Haddam, CT.

B. The building surfaces throughout the building have varying levels of lead within the settled dust. The procedures referenced herein shall be utilized during required demolition work specified elsewhere in the Engineer's Specification that might impact lead.

C. The removal, painting, or other renovations of the building surfaces may result in dust and debris exposing workers to levels of lead above the OSHA Action Level. Worker protection, training, and engineering controls referenced herein shall be strictly adhered to, until completion of exposure assessment with results indicating exposures below the "Action Level". **This section does not involve lead abatement, but identifies worker protection requirements for trades involved in the demolition and disposal procedures if lead is involved in the waste stream.**

1.3 DEFINITIONS

The following definitions relative to lead paint as used in this Section are offered:

1. ACTION LEVEL (AL): The allowable employee exposure, without regard to use of respiratory protection, to an airborne concentration of lead over an eight (8) hour time weighted average (TWA), as defined by OSHA. The current action level is thirty micrograms per cubic meter of air (30 $\mu g/m^3$).
2. AREA MONITORING: The sampling of lead concentrations, which is representative of the airborne lead concentrations that may reach the breathing zone of personnel potentially exposed to lead.
3. BIOLOGICAL MONITORING: The analysis of a person's blood and/or urine, to determine the level of lead concentration in the body.
4. CHANGE ROOM: An area provided with separate facilities for clean protective work clothing and equipment and for street clothes, which prevents cross-contamination.
5. COMPETENT PERSON: A person employed by the Contractor who is capable of identifying existing and predictable lead hazards in the surroundings or working conditions, and who has authorization to take prompt corrective measures to eliminate them as defined by OSHA.

6. EXPOSURE ASSESSMENT: An assessment conducted by an employer to determine if any employee may be exposed to lead at or above the action level.
7. "HIGH EFFICIENCY PARTICULATE AIR" (HEPA): A type of filtering system capable of filtering out particles of 0.3 microns diameter from a body of air at 99.97% efficiency or greater.
8. LEAD: Refers to metallic lead, inorganic lead compounds and organic lead soaps. Excluded from this definition are other organic lead compounds.
9. LEAD WORK AREA: An area enclosed in a manner to prevent the spread of lead dust, paint chips, or debris resulting from lead-containing paint disturbance.
10. LEAD PAINT: Refers to paints, glazes and other surface coverings containing a toxic level of lead.
11. PERMISSIBLE EXPOSURE LIMIT (PEL): The maximum allowable limit of exposure to an airborne concentration of lead over an eight (8) hour time weighted average (TWA), as defined by OSHA. The current PEL is fifty micrograms per cubic meter of air (50 $\mu g/m^3$). Extended workdays lower the PEL by the formula: PEL equals 400 divided by the number of hours of work.
12. PERSONAL MONITORING: Sampling of lead concentrations within the breathing zone of an employee to determine the 8-hour time weighted average concentration in accordance with 29 CFR 1926.62 and 29 CFR 1910.1025. Samples shall be representative of the employee's work tasks. Breathing zone shall be considered an area within a sphere with a radius of 18 inches and centered at the nose or mouth of an employee.
13. RESOURCE CONSERVATION RECOVERY ACT (RCRA): RCRA establishes regulatory levels of hazardous chemicals. There are eight (8) heavy metals of concern for disposal: arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver. Six (6) of the metals are typically found in paints, excluding selenium and silver.
14. TOXIC LEVEL OF LEAD: A level of lead, when present in dried paint or plaster, contains more than 0.50% lead by dry weight as measured by atomic absorption spectrophotometry (AAS) or 1.0 mg/cm^2 as measured by on-site testing utilizing an x-ray fluorescence analyzer. (Term is specific to State of CT regulations and HUD guidelines only)
15. TOXICITY CHARACTERISTIC LEACHATE PROCEDURE (TCLP): The U.S. Environmental Protection Agency (USEPA) required sample preparation and analysis for determining the hazard characteristics of a waste material.

1.4 REGULATIONS AND STANDARDS

A. The following regulations, standards, and ordinances of federal, state, and local agencies are applicable and made a part of this specification by reference:

1. American National Standards Institute (ANSI)
   ANSI 288.2 - 1980 Respiratory Protection
2. Code of Federal Regulation (CFR)
   a. 29 CFR 1910.134 - Respiratory Protection
   b. 29 CFR 1910.1025 - Lead
   c. 29 CFR 1926.62 - Lead in Construction Interim Final Rule
   d. 29 CFR 1910.1200 - Hazard Communication
   e. 29 CFR 1926.59 - Hazard Communication in Construction
   f. 29 CFR 1926.55 - Gases, Vapors, Fumes, Dusts, and Mists

g. 29 CFR 1926.57 - Ventilation
h. 40 CFR 260 - Hazardous Waste Management Systems: General
i. 40 CFR 261 - Identification and Listing of Hazardous Waste
j. 40 CFR 262 - Generators of Hazardous Waste
k. 40 CFR 263 - Transporters of Hazardous Waste
l. 40 CFR 264 - Owner and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
m. 40 CFR 265 - Interim Statutes for Owner and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
n. 40 CFR 268 - Lead Disposal Restrictions
o. 40 CFR 172 - Hazardous Materials Tables and Communication Regulations
p. 40 CFR 178 - Shipping Container Specifications
q. 40 CFR 270 and 124 - Hazardous Waste Permits

3. Underwriters Laboratories, Inc. (UL)
UL586 - 1990 High Efficiency Particulate Air Filter Units

1.5 QUALITY ASSURANCE

A. Hazard Communication Program

B. The Contractor shall establish and implement a Hazard Communication Program as required by 29 CFR 1926.59.

C. Compliance Plan (Site Specific)
The contractor shall establish a written compliance plan, which is specific to the project site, to include the following:

1. A description of work activity involving lead including equipment used, material included, controls in place, crew size, employee job responsibilities, operating procedures, and maintenance practices.
2. Methods of engineering controls to be used to control lead exposure.
3. The proposed technology the Contractor will implement in meeting the PEL.
4. Air monitoring data documenting the source of lead emissions.
5. A detailed schedule for implementing the program, including documentation of appropriate supply of equipment, etc.
6. Proposed work practice which establishes proper protective work clothing, housekeeping methods, hygiene facilities, and practices.
7. Worker rotation schedule, if proposed, to reduce TWA.
8. A description of methods for informing workers of potential lead exposure.

D. Hazardous Waste Management
The Contractor shall establish a Hazardous Waste Management Plan, which shall comply with applicable regulations and address the following:

1. Identification of hazardous wastes
2. Estimated quantity of waste to be disposed of
3. Names and qualifications of each sub-contractor that will be transporting, storing, treating, and disposing of wastes

4. Disposal facility location and 24 hour point of contact
5. Establish EPA state hazardous waste and identification numbers if applicable
6. Names and qualifications (experience and training) of personnel who will be working on-site with hazardous wastes
7. List of waste handling equipment to be used in performing the work to include cleaning, volume reduction, if applicable, and transport equipment
8. Qualifications of laboratory to be utilized for TCLP sampling and analysis
9. Spill prevention, containment, and cleanup contingency measures
10. Work plan and schedule for waste containment, removal, treatment, and disposal

E. Medical Examinations

1. Before exposure to lead contaminated dust, provide workers with a comprehensive medical examination as required by 29 CFR 1910.1025 and 29 CFR 1926.62.
2. The examination shall not be required if adequate records show that employees have been examined as required by 29 CFR 1926.62 within the last year.
3. Medical examination shall include, at a minimum, approval to wear respiratory protection and biological monitoring.

F. Training

G. The Contractor shall ensure that workers are trained to perform lead paint disturbing activities and disposal operations prior to the start of work in accordance with 29 CFR 1926.62.

H. Respiratory Protection Program

1. The Contractor shall furnish each employee required to wear a negative pressure respirator with a respirator fit test at the time of initial fitting and at least once every six (6) months thereafter as required by 29 CFR 1926.62.
2. The Contractor shall establish a Respiratory Protection Program in accordance with ANSI Z88.2, 29 CFR 1910.134, and 29 CFR 1926.62.

1.6 SUBMITTALS

A. The Contractor shall submit to the Owner the following submittals prior to start of work:

1. Copies of medical records for each employee to be used on the project, including results of biological monitoring and a notarized statement by the examining physician that such an examination took place.
2. Copies of workers' training certificates.
3. Submit record of successful respirator fit testing performed by a qualified individual within the previous six (6) months, for each employee to be used on this project with the employee's name and social security number with each record.
4. The name and address of Contractor's blood lead testing lab, OSHA-CDC listing, and Certification in the State of Connecticut.
5. The name and address of Contractor's personal air monitoring and waste disposal lead testing laboratory/ies.
6. Name, address, and ID number of the hazardous waste hauler, waste transfer route, and proposed disposal site.

B. The Contractor shall submit to the Owner the following submittals during the job:

1. Results from personal air samples.
2. Medicals, certificates, and fit test 24 hours in advance of any new employee starting on the project.

C. The Contractor shall submit to the Owner the following submittals upon completion of the work:

1. Copies of manifests and receipts acknowledging disposal of all hazardous waste material from the project showing delivery date, quantity, and appropriate signature of landfill's authorized representative.

1.7 PERSONAL PROTECTION

A. Exposure Assessment

1. The Contractor shall determine if any worker will be exposed to lead at or above the action level.
2. The exposure assessment shall identify the level of exposure a worker would be subjected to without respiratory protection.
3. The exposure assessment shall be achieved by obtaining personal monitoring samples representative of a full shift at least (8-hour TWA).
4. During the period of the exposure assessment, the Contractor shall institute the following procedures for protection of workers.
   a. Protective clothing shall be utilized
   b. Respiratory protection
   c. Change areas shall be provided
   d. Hand washing facilities and shower
   e. Biological monitoring
   f. Training of workers

B. Respiratory Protection

1. The Contractor shall furnish appropriate respirators approved by NIOSH/MSHA for use in atmospheres containing lead dust.
2. Respirators shall comply with the requirements of 29 CFR 1926.62.
3. Workers shall be instructed in all aspects of respiratory protection.
4. The Contractor shall have an adequate supply of HEPA filter elements and spare parts on site for all types of respirators in use.
5. The following minimum respirator protection for use during paint removal or demolition of components and surfaces with lead paint shall be the 1/2 mask air purifying respirator with high efficiency filters for exposures (not in excess of 500 up/m^3 or 10 x PEL).

C. Protective Clothing

1. Personal protective clothing shall be provided for all workers, supervisors, and authorized visitors entering the work area.

2. Each worker shall be provided with a minimum of two (2) complete disposable coverall suits.
3. Removal workers shall not be limited to two (2) suits, and the Contractor shall supply additional suits as necessary.
4. Under no circumstances shall anyone entering the abatement area be allowed to re-use a contaminated disposable suit.
5. Disposable suits, such as TYVEK suits, and other personal protective equipment (PPE) shall be donned prior to entering the lead control area. A change room shall be provided for workers to put on suits and other personal protective equipment with separate areas to store their street clothes.
6. Eye protection for personnel engaged in lead operations shall be furnished when the use of a full-face respirator is not required.
7. Goggles with side shields shall be worn when working with power tools or a material that may splash or fragment, or if protective eye wear is specified on the Material Safety Data Sheet (MSDS) for a particular product to be used on the project.

1.8 PERSONAL MONITORING

A. General. The Contractor is required to perform the personal air sampling activities during lead paint disturbing work. The results of such sampling shall be posted, provided to individual workers, and submitted to the Owner as described herein.

B. Sampling. Samples shall be taken for the duration of the work shift or for eight hours, whichever is less. Personal samples need not be taken every day after the first day if working conditions remain unchanged, but must be taken every time there is a change in removal operations, either in terms of the location or the type of work. Sampling will be used to determine eight-hour Time-weighted averages (TWA). The Contractor is responsible for personal sampling as outlined in OSHA Standard 29 CFR 1926.62 and 29 CFR 1910.1025.

C. Sampling Results. Air sampling results shall be reported to individual workers in written form no more than forty-eight (48) hours after the completion of a sampling cycle. The reporting document shall list each sample's result, sampling time and date, personnel monitored and their social security numbers, flow rate, sample duration, sample yield, cassette size, and analysts' name and company, and shall include an interpretation of the results. Air sample analysis results will be reported in micrograms/cubic meter ($\mu g/m^3$).

D. Testing Laboratory. The Contractor's testing lab shall be participating in AIHA's Environmental Lead Laboratory Accreditation Program (ELLAP). The Contractor shall submit to the Consultant for review and acceptance, the name and address of the laboratory, certification(s) of AIHA participation, a listing of relevant experience in air lead analysis, and presentation of a documented Quality Assurance and Quality Control Program.

PART 2 - PRODUCTS

2.1 GENERAL

A. Any substitution in materials, equipment, or methods to those specified shall be approved by the Owner prior to use. Any requests for substitution shall be provided in writing to the Owner. The request shall clearly state the rationale for the substitution.

B. Submit to the Owner product data of all materials and equipment and samples of all materials to be considered as an alternate.

C. Product data shall consist of manufacturer; catalog sheets, brochures, diagrams, schedules, performance charts, illustrations, material safety data sheets (MSDS), and other standard descriptive data. Submittal data shall be clearly marked to identify pertinent materials, products or equipment and show performance characteristics and capacities.

D. Samples shall be of sufficient size and quantity to clearly illustrate the functional characteristics of the product or material with integrally related parts and attachment devices.

2.2 MATERIALS AND PRODUCTS

A. Deliver all materials in the original packages, containers, or bundles bearing the name of the manufacturer and the brand name and product technical description.

B. Damaged or deteriorating materials shall not be used and shall be removed from the premises.

C. The Contractor shall have available sufficient inventory or dated purchase orders for materials necessary for the job including protective clothing, respirators, filter cartridges, polyethylene sheeting of proper size and thickness, tape, and air filters.

D. Materials

1. Polyethylene sheet in a roll size to minimize the frequency of joints shall be delivered to job site with factory label indicating 6 mil.
2. Polyethylene disposable bags shall be six (6) mil. Tie wraps for bags shall be plastic, five (5) inches long (minimum), pointed and looped to secure filled plastic bags.
3. Tape or adhesive spray will be capable of sealing joints in adjacent polyethylene sheets and for attachment of polyethylene sheet to finished or unfinished surfaces of dissimilar materials and capable of adhering under both dry and wet conditions, including use of amended water.
4. Impermeable containers are to be used to receive and retain any lead containing or contaminated materials until disposal at an acceptable disposal site. (The containers shall be labeled in accordance with EPA and DOT standards.)
5. HEPA filtered exhaust systems shall be used during powered dust generating abatement operations. The use of powered equipment without HEPA exhausts is prohibited.

2.3 TOOLS AND EQUIPMENT

A. Provide suitable tools for all lead disturbing operations.

B. The Contractor shall have available power cables or sources such as generators (where required).

C. Vacuum units, of suitable size and capacities for the project, shall have HEPA filter(s) capable of trapping and retaining 99.97% of all mono-dispersed particles of 0.3 micrometers in diameter.

PART 3 - EXECUTION

3.1 WORKER PROTECTION/TRAINING

A. The Contractor shall provide appropriate training, respiratory and other personal protection, and biological monitoring for each worker and ensure proper usage during potential lead exposure and the initial exposure assessment.

3.2 CONTRACTOR'S RESPONSIBILITIES

A. The Contractor is responsible for establishing and maintaining controls referenced herein to prevent dispersal of lead contamination from the lead work area.

B. The Contractor is also responsible for conducting work with applicable federal, state, and local regulations as referenced herein.

3.3 WORKER HYGIENE PRACTICES (*Required during initial exposure assessment and if results of air sampling are above OSHA Action Level*)

A. Work Area Entry. Workers shall don personal protective equipment prior to entering work area, including respiratory protection, disposable coveralls, gloves, headgear, and footwear.

B. Work Area Departure. While leaving respirators on, workers shall remove all gross contamination, debris, and dust from disposable coveralls and proceed to change room and remove coveralls and footwear and place in hazardous waste disposal container.

C. Hand washing Facilities. All workers must wash their hands and faces upon leaving the work area.

D. Equipment. All equipment used by workers inside the work area shall be wet wiped or bagged for later decontamination before removal from the work area.

E. Prohibited Activities. Under no circumstances shall workers eat, drink, smoke, chew gum, or tobacco, or remove their respirators in the work area.

F. Shock Hazards. The Contractor is responsible for using safe procedures to avoid electrical hazards. All temporary electrical wiring will be protected by ground fault circuit interrupters (GFI).

3.4 LEAD WORK AREA (*Required during initial exposure assessment and if results of air sampling are above OSHA Action Level*)

A. The Contractor shall place warning signs at all entrances and exits from the work area. Signage shall be a minimum of 20" x 14" and shall state the following:

WARNING
LEAD WORK AREA
POISON
NO SMOKING OR EATING OR DRINKING
UNAUTHORIZED ENTRY PROHIBITED

B. The Contractor shall designate a change room as specified in this Section. The change room shall consist of two (2) layers of sheeting on the floor surface adjacent to the lead work area. The change room shall have separate storage facilities for street clothes to avoid cross contamination.

C. The Contractor shall provide potable water for hand and face washing and provide a portable shower unit.

D. The Contractor shall place six-mil polyethylene drop clothes on floor/ ground surfaces prior to beginning removal work to facilitate clean-up.

3.5 WORK AREA CLEAN UP

A. The Contractor shall remove all loose chips and debris from floor surfaces and place in hazardous waste disposal bags.

B. The Contractor shall HEPA vacuum adjacent surfaces to remove dust and debris.

C. Polyethylene drop cloths shall be properly disposed of.

3.6 WASTE DISPOSAL

A. The Contractor's contractual liability shall be the proper disposal of all non-hazardous and hazardous wastes generated at the site in accordance with all applicable federal, state, and local regulations as referenced herein. Metal components with lead paint can be recycled

END OF SECTION 02090

ATTACHMENT A

LIMITED HAZARDOUS MATERIALS SURVEY REPORT DATED DECEMBER 16, 2011

Asbestos & Lead Based Paint Inspection Report

Former Jailhouse
Haddam, Connecticut

Town of Haddam

Haddam, CT

(Original Report September 7, 2005)
Revised December 28, 2010
Revised December 29, 2010
Revised January 4, 2011
Revised December 16, 2011

FUSS & O'NEILL
Disciplines to Deliver

Fuss & O'Neill EnviroScience, LLC
146 Hartford Road
Manchester, CT 06040

Project No. 20101276.A1E

FUSS & O'NEILL
EnviroScience, LLC

Disciplines to Deliver

December 28, 2010
Revised December 16, 2011

Mr. Paul J. DeStefano, First Selectman
Town of Haddam
30 Field Park Drive
Haddam, CT 06438

RE: Asbestos and Lead-Based Paint Inspection
Former Haddam Jailhouse Project
Fuss & O'Neill EnviroScience Project No. 20101276.A1E

Dear Mr. DeStefano:

Enclosed is the revised and updated report for the asbestos and lead-based paint inspection and PCB testing performed at the former Haddam Jail House in Haddam, Connecticut.

The initial survey was performed on September 7, 2005 by EnviroScience Consultants, Inc. and was conducted as a feasibility study for Mr. George Fellner of Fellner Architects. Additional asbestos bulk sampling was performed by Fuss & O'Neill EnviroScience LLC on December 13, 2010 and recently for PCB testing to complete the survey characterization as provided for in out proposal to the Town of Haddam.

The information summarized in this document is for the above-mentioned materials only. It does not include information on other hazardous materials that may exist in the property (such as underground storage tanks).

If you have any questions regarding the contents of this report, please do not hesitate to contact me at (860) 646-2469, extension 5565. Thank you for this opportunity to have served your environmental needs.

Sincerely,

Stephen W. Connelly
Senior Vice President

SWC/kr

Enclosure

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FUSS & O'NEILL
EnviroScience, LLC

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Town of Haddam

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1 Introduction

On December 13, 2010, Fuss & O'Neill EnviroScience, LLC (EnviroScience) Environmental Technicians Willie L. Thompson, III, and Andrew Jackson, both State of Connecticut Licensed Asbestos Inspectors, performed an asbestos inspection of the former Jailhouse. The inspection included sampling suspect materials from the Main Building (Cell Block Wing and Administration Wings) and the brick building. The brick building is slated for demolition while the main building is scheduled to be renovated.

This inspection was performed in response to the planned demolition and renovation of the selected areas of the former Jailhouse and consisted of a survey for asbestos containing materials (ACM). The inspectors also noted any fluorescent light fixtures for PCB ballasts and light tubes for mercury.

The interior and exterior of the target areas for the Jailhouse building structure were inspected in accordance with EnviroScience's written proposal dated November 18, 2010. The Former Jailhouse was earlier inspected for asbestos by Mike Stewart in September 2005 as part of a feasibility study evaluating the Jailhouse. During the survey in which Mr. Stewart collected samples, only one sample of certain material was collected. The current inspection involved additional sampling of those select materials plus any suspect material observed by the inspectors which weren't sampled previously.

2 Asbestos Inspection

During this inspection, suspect ACM were separated into three USEPA categories. These categories are: thermal system insulation (TSI), surfacing ACM, and miscellaneous ACM. TSI includes all materials used to prevent heat loss or gain or water condensation on mechanical systems. Examples of TSI are pipe insulation, boiler insulation, duct insulation, and mudded insulation on pipe fittings. Surfacing ACM includes all ACM that is sprayed, troweled, or otherwise applied to an existing surface. Surfacing ACM is commonly used for fireproofing, decorative, and acoustical applications. Miscellaneous materials include all ACM not listed in thermal or surfacing, such as linoleum, vinyl asbestos flooring, and ceiling tiles.

All suspect ACM were sampled. Materials that were sampled were analyzed by Polarized Light Microscopy (PLM). If suspect ACM was not sampled, it was assumed to contain asbestos.

Finally, all ACM were quantified in linear and square footage, depending on the nature of the material. The asbestos content, quantities, and locations of ACM identified by bulk sample analysis are listed in *Table 1* of the Results section.

2.1 Results

Utilizing the USEPA protocol and criteria, the following materials were determined to be **ACM**:

TABLE 1A

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
INTERIOR				
2nd floor rear room	12"x12" Tan floor tile	1.25% chrysotile	15 SF	1213WT23
1st floor kitchen storage	12"x12" brown floor tile	5% chrysotile	40 SF	1213WT25A
3rd floor bathroom	9"x9" floor tile	8% chrysotile	9 SF	1213WT32A

LF = Linear Feet, SF = Square Feet

Utilizing the USEPA protocol and criteria, the following materials were determined to be **ACM. These materials were sampled during the initial feasibility study on September 7, 2005**

TABLE 1B

LOCATION	MATERIAL TYPE	% ASBESTOS	QUANTITY	SAMPLE ID
JAIL HOUSE				
INTERIOR				
2nd Floor – Near Fire Escape Door	Yellow 12"x12" Floor Tile	5% Chrysotile	15 SF	09-07-MS-11A
3rd Floor Bathroom	Green 9"x9" Floor Tile	8% Chrysotile	9 SF	09-07-MS-19
EXTERIOR				
Roof	Base Flashing	8% Chrysotile	100 LF	09-07-MS-23A
Door Systems	Door Caulk	5% Chrysotile	4 Doors	09-07-MS-32A
TRAINING BUILDING				
INTERIOR				
Throughout Building	Off White 12"x12" Floor Tile	5% Chrysotile	5,180 SF	09-07-MS-33A
Kitchen/ A/V Room	Sink Undercoat	5% Chrysotile	1 Sink	09-07-MS-41

LF = Linear feet; SF = Square feet

Utilizing the USEPA protocol and criteria, the following materials were determined to be **non-ACM:**

TABLE 2A

LOCATION	MATERIAL TYPE	SAMPLE ID
Cell Block Wing-New Roof -Bottom Layer	Tar Paper	1213WT01A-B
Cell Block Wing-New Roof-Top Layer	Black Shingles	1213WT02A-B
Administration Wing roof-bottom layer	Tar Paper	1213WT03A-B
Administration Wing roof-top layer	Green Shingles	1213WT04A-B
Exterior Brick Building	Window Glazing on metal windows	1213WT05A-C
Exterior Main Building	Window Glazing on wood windows	1213WT06A-B
Kitchen, bathroom in brick building	Ceramic tile mastic	1213WT07A-C
1st floor, 2nd floor	Cove base mastic	1213WT08A-B
3rd floor bathroom	Black Mastic	1213WT09A-B
Dumpster	Gray Shingle*	1213WT10A-B
Cell Block Wing- Old roof top layer	Green Shingle	1213WT11A-B
Basement	Water tank insulation	1213WT13A-B

LOCATION	MATERIAL TYPE	SAMPLE ID
1st floor kitchen storage	12"x12" floor tile	1213WT14A-B
1st floor kitchen storage	Yellow mastic	1213WT15A-B
1st Floor throughout main building, cell block area	Glue Daubs	1213WT16A-B
1st floor kitchen	Red Linoleum Flooring	1213WT17A-B
Throughout the building	Sheet rock/Joint compound	1213WT18A-B
Exterior Brick Building	Window Caulk on metal windows (top layer)	1213WT19A-C
Exterior Main Building	Window Caulk on wood windows	1213WT20A-B
Exterior Main building	Window Caulk on metal windows (bottom layer)	1213WT21A-C
Brick building-behind sheet rock wall	Vapor Barrier*	1213WT22A*C
Throughout the building	Joint Compound	1213WT24A-B
1st floor kitchen storage	Mastic*	1213WT26A-C
Furnace-water cut off interface	Gasket*	1213WT27A-B
Hallway near kitchen-on counter top	Linoleum*	1213WT28A-C
Hallway near kitchen-on counter top	Brown Mastic	1213WT29A-C
1st and 2nd floor	Brown Cove base	1213WT30A-B
2nd floor rooms-on wood fiber flooring	Vapor barrier*	1213WT31A-C

*Materials not sampled during the September 2005 inspection
** No sample #12

Utilizing the USEPA protocol and criteria, the following materials were determined to be non-ACM. **These materials were sampled during the initial feasibility Study on September 7, 2005**

TABLE 2B

MATERIAL TYPE	LOCATION	SAMPLE ID
	JAIL HOUSE	
Water Tank Insulation*	Basement	09-07-MS-01A
Flue Cement	Basement	09-07-MS-02
Cement on Boiler	Basement	09-07-MS-03
12"x12" Floor Tiles*	1st Floor Kitchen Storage, 2nd & 3rd Floor Bathrooms	09-07-MS-04A
Yellow Mastic*	1st Floor Kitchen Storage, 2nd & 3rd Floor Bathrooms	09-07-MS-05A
Glue Daubs*	1st Floor	09-07-MS-06A
Flexible Duct Connector	1st Floor Kitchen	09-07-MS-07
Rough Coat Plaster	Throughout Building	09-07-MS-08A-G
Skim Coat Plaster	Throughout Building	09-07-MS-09A-G
Red Linoleum*	1st Floor Kitchen	09-07-MS-10A
Sheetrock & Joint Compound*	Throughout Building	09-07-MS-12A
Joint Compound	Throughout Building	09-07-MS-14
Ceramic Tile Mastic*	1st Floor Kitchen	09-07-MS-15A
Cove Base Mastic*	2nd Floor	09-07-MS-16A
Brown Cove Base*	2nd Floor	09-07-MS-17A

MATERIAL TYPE	LOCATION	SAMPLE ID
Black Mastic*	3rd Floor Bathroom	09-07-MS-18A
Tan Shingle*	Cell Block Wing – Old Roof – Bottom Layer	09-07-MS-20A
Green Shingle*	Cell Block Wing – Old Roof – Middle Layer	09-07-MS-21A
Black Shingle*	Cell Block Wing – Old Roof – Top Layer	09-07-MS-22A
Tar Paper*	Cell Block Wing – New Roof – Bottom Layer	09-07-MS-24A
Black Shingle*	Cell Block Wing – New Roof – Top Layer	09-07-MS-25A
Tar Paper*	Administration Wing Roof – Bottom Layer	09-07-MS-26A
Green Shingle*	Administration Wing Roof – Top Layer	09-07-MS-27A
Window Glazing Compound*	Exterior – Metal Windows	09-07-MS-28A
Window Caulk*	Exterior – Metal Windows	09-07-MS-29A
Window Glazing Compound*	Exterior – Wood Windows	09-07-MS-30A
Window Caulk*	Exterior – Wood Windows	09-07-MS-31A
TRAINING BUILDING		
Yellow Mastic *	Throughout Building	09-07-MS-34A
Brown Cove Base *	Throughout Building	09-07-MS-35A
Cove Base Mastic *	Throughout Building	09-07-MS-36A
2'x4' Ceiling Tiles *	Throughout Building	09-07-MS-37A
Sheetrock & Joint Compound *	Throughout Building	09-07-MS-38A
Joint Compound	Throughout Building	09-07-MS-40
Red Shingles *	Roof	09-07-MS-41A
CORNHOUSE & PIGGERY		
Green Shingle *	Roof – Bottom Layer	09-09-MS-43A
Black Shingle *	Roof – Top Layer	09-09-MS-44A
Window Glazing Compound *	Exterior – Windows	09-09-MS-45A
SHED		
Red Shingle *	Roof – Top Layer	09-09-MS-46A
Black Shingle *	Roof – Middle Layer	09-09-MS-47A
Tar Paper *	Roof – Bottom Layer	09-09-MS-48A
PUMPHOUSE		
Window Glazing Compound *	Exterior – Windows	09-09-MS-49A
Black Rolled Shingle *	Roof	09-09-MS-50A

Observations and Comments

Tar Paper

The tar paper from the cell block wing and the administration wing was found to be non-ACM.

Black Shingles

The black shingles from the cell block wing and the administration wing was found to be non-ACM.

Green Shingles

The green shingles from the cell block wing (1213WT11A-B) and the administration wing (1213WT04A-B) was found to be non-ACM.

Window glazing on metal windows
The window glazing was observed on the exterior metal windows of the brick building attached to the main building. The material was analyzed and found to be non-ACM.

Window glazing on wood windows
The window glazing was observed on the exterior wood windows of the main building. The material was analyzed and found to be non-ACM.

Ceramic tile mastic
The ceramic tile was found in the brick building bathroom, the main building kitchen area and main building bathrooms. The material was analyzed and found to be non-ACM.

Brown Cove base/mastic
The cove base and mastic was found in the main building. The material is non-ACM.

Black Mastic
The mastic was observed under the 12"x12" floor tile in the 3rd floor bathroom and is non-ACM.

Gray Shingle
The gray shingle was observed inside a dumpster behind the main building along with other roofing material. The gray shingle was not previously sampled. The material was found to be non-ACM during laboratory analysis.

Water Tank Insulation
The tanks insulation was found in the basement and determined to be non-ACM.

12"x12" Floor Tile/Yellow Mastic
The mastic was found in the kitchen storage room while the floor tile was found in the kitchen storage room and the bathrooms on the 2nd and 3rd floor. Both materials are non-ACM.

Glue Daubs
The glue daubs were found on 1st Floor throughout main building and cell block area. The material is non-ACM.

Sheet Rock/Joint Compound
Found throughout the main building and brick building. The materials are non-ACM.

Window Caulk on metal windows
There are two types of window caulk; the first type (1213WT19A-C) is rubbery while the second type (1213WT21A-C) is flaky. Each type was found to be non-ACM during laboratory analysis.

Window Caulk on wood windows
The material is found on the main building and is non-ACM.

Vapor Barrier
This material was found behind the sheet rock walls of the brick building. The material is non-ACM.

Gasket
This material was found in the furnace on the water cut off interface. The material is non-ACM.

Linoleum Countertop and associated mastic
The linoleum and mastic were observed in the small hallway between the kitchen and front rooms of the main building. The materials are nom-ACM.

Vapor Barrier
This material was found on the second floor on top of a wood fiber-like flooring which itself sat on top of wood floors. The material is non-ACM.

12" x 12" Brown Floor Tile/Mastic
This floor tile and mastic was observed underneath the 12"x12' floor tile/mastic in the kitchen storage. The floor tile is ACM while the mastic is non-ACM.

Door Caulk
The door caulking was sampled previously in the September 2005 feasibility study. This material was analyzed and found to be ACM.

Sink Undercoat (Training Building)
The sink undercoat was sampled previously in the September 2005 feasibility study. This material was analyzed and found to be ACM.

Off White 12" x 12" Floor tile (Training Building)
The floor tile was sampled previously in the September 2005 feasibility study. This material was analyzed and found to be ACM.

Base Flashing
The base flashing was sample previously in the September 2005 feasibility study. This material was analyzed and found to be ACM.

Green 9" x 9" Floor tile and mastic
The floor tile was sampled previously in the September 2005 feasibility study. This material was analyzed and found to be ACM.

Yellow 12" x 12" Floor tile
The floor tile was sampled previously in the September 2005 feasibility study. This material was analyzed and found to be ACM.

2.2 Discussion

The USEPA defines any material that contains greater than one percent (>1%) asbestos, utilizing PLM, as being an ACM. Materials that are identified as "none detected" are specified

as not containing asbestos. At EnviroScience, materials that are identified as containing less than four percent (<4%) asbestos are analyzed further utilizing the "point-counting" technique to verify asbestos content. This policy is supported by USEPA requirements for "point-counting" confirmation of low level PLM results. The following samples were analyzed by point-counting based on initial PLM results of <4% asbestos.

TABLE 3A

SAMPLE ID	LOCATION	MATERIAL	% ASBESTOS	VERIFIED ACM?
1213WT05A-C	Exterior Brick Building	Window Glazing on metal windows	<0.25% Chrysotile	No
1213WT18A-B	Throughout the building	Sheet rock/Joint compound	<0.25% Chrysotile	No
1213WT20A-B	Exterior Main Building	Window Caulk on wood windows	<0.25% Chrysotile 0.75% Chrysotile	No
1213WT21A-C	Exterior main building	Window Caulk on metal windows (bottom layer)	<0.25% Anthophyllite	No
1213WT23	2nd floor rear room	12"x12" Tan floor tile	1.25% Chrysotile	Yes
1213WT24A-B	Throughout the building	Joint Compound	0.25% Chrysotile 0.50% Chrysotile	No
1213WT28A-C	Hallway near kitchen-on counter top	Linoleum*	<0.25% Chrysotile	No
1213WT29A-C	Hallway near kitchen-on counter top	Brown Mastic	<0.25% Anthophyllite	No
1213WT33A-C	3rd floor bathroom	Black Mastic	<0.25% Chrysotile	No

The following samples were analyzed by point-counting based on initial PLM results of <4% asbestos. **These materials were sampled during the initial feasibility Study dated September 7, 2005.**

TABLE 3B

MATERIAL	% ASBESTOS	SAMPLE ID	CONFIRMED ACM
Tar Paper	<0.25% Chrysotile	09-07-MS-24A	No
Exterior – Metal Windows	0.75% Chrysotile	09-07-MS-28A	No

2.3 Conclusion

All ACM is identified in Section 2.1 (*Tables 1-1B*) must be removed by a State of Connecticut Licensed Asbestos Abatement Contractor prior to building demolition. This is a requirement of the State of Connecticut Department of Public Health (CT DPH) Standards for Asbestos Abatement.

Any suspect material encountered during renovation/demolition that is not identified in this report as being non-ACM, should be assumed to be ACM unless sample results prove otherwise.

Please see *Appendix A* for the chain-of-custody and sample results.

2.4 Cost of Abatement

The estimated cost of abating the ACM listed in Section 2.1, *Tables 1-1B* was determined using unit prices currently associated with industry standards. Costs were then adjusted using job cost multipliers to account for specific job conditions. This is an estimate only and is solely intended to assist the client for budgetary purpose. Actual cost will vary inversely with the size of the project and will depend on market condition. The estimated removal costs are as follows:

TABLE 4
JAILHOUSE BUILDING

LOCATION	MATERIAL	QUANTITY
2nd Floor – Near Fire Escape Door	Yellow 12"x12" Floor Tile	15 SF
3rd Floor Bathroom	Green 9"x9" Floor Tile	9 SF
Roof	Base Flashing on vents	16 LF
Door Systems	Door Caulk	4 Doors
Kitchen Storage	Brown 12"x12" Floor Tile	40 SF
Jailhouse	Lead Paint (in) Insulation	-----
Jailhouse	PCBs	1 Door
Jailhouse	Mercury Lamp	-----

3 Lead-Based Paint Screening

A lead paint screen was performed at the former Jailhouse Facility in Haddam, CT by EnviroScience's Environmental Consultant Michael Stewart on September 7, 2005. A direct reading X-ray fluorescence (XRF) analyzer was used to perform the screening. The screen was conducted in accordance with the protocol outlined in the attached document: Testing Procedures and Equipment (*Appendix B*).

For the purpose of this screen, various interior and exterior components representing the initial painting history of the building and any building-wide repainting of these building components were tested. The purpose of this screen was to identify trends in the painting history of the building in order to determine if Toxicity Characteristic Leachate Procedure analysis was required.

The Jailhouse is a 3-story structure with a basement, it is divided into two wings: Administrative and Cellblock. The administrative wing has mostly plaster walls and ceilings with some sheetrock walls. The windows are a mix off wood and metal window systems. The door systems are wood. The floors are wood with tile, linoleum, or carpet in most areas. The cellblock wing is primarily metal construction with concrete floors. The exterior is stone construction.

The Training Building is an old barn that was renovated in the early 1970s. The walls are sheetrock. The window systems are new vinyl windows. The door systems are wood. The exterior has vinyl siding.

The Corn house/Piggery is entirely wood construction with no interior painted surfaces.

The Shed is entirely wood construction with the front entirely open. There are no interior painted components.

The Pump House is a concrete building with wood window and door systems. There are no painted interior components other than the window and door systems.

3.1 Results

The screen indicated consistent painting trends throughout the buildings. Lead was found on plaster walls and ceilings, wood window and door systems and ceilings, and on the metal in the cellblock wing in the Jailhouse Building. Lead was found on the exterior components of the . Cornhouse/Piggery, Shed, and Pumphouse.

ITEM	LOCATION	READING (MG/CM^2)
Wood Ceiling	Jailhouse – 1st Floor – Kitchen	>9.9
Door Jamb	Jailhouse – 1st Floor – Kitchen	8.6
Door	Throughout Jailhouse	4.5 – 8.9
Door Casing	Throughout Jailhouse	2.4 - >9.9
Door Jamb	Throughout Jailhouse	3.2 - >9.9
Window Trim	Throughout Jailhouse	9.0 - >9.9
Window Sill	Jailhouse – 1st Floor – Front Right Room	5.9
Window Sash	Throughout Jailhouse	1.6 – 9.3
Window Well	Jailhouse – 1st Floor – Front Right Room	>9.9
Plaster Walls	Throughout Jailhouse	1.3 – >9.9
Plaster Ceiling	Throughout Jailhouse	2.3
Metal Walls	Jailhouse – Cellblock	7.9
Metal Ceiling	Jailhouse – Cellblock	>9.9
Cell Bars	Jailhouse – Cellblock	6.2
Cell Walls	Jailhouse – Cellblock	4.3
Brick Wall	Jailhouse – Cellblock	1.2
Baseboard	Jailhouse – 3rd Floor – Back Left Room	8.7
Exterior Siding	Corn house/Piggery	>9.9
Exterior Siding	Shed	>9.9
Exterior Siding	Pump house	2.4
Window Trim	Pump house	8.8
Window Sash	Pump house	2.2
Door 2	Pump house	1.7
Door 2 Casing	Pump house	2.1

3.2 TCLP Analysis

If components of building that is slated for demolition have toxic levels of lead-based paint, a TCLP analysis needs to be conducted to determine whether the debris generated from demolition needs to be disposed of as lead waste. EPA has determined that if the result of the analysis is more than 5.0 mg/L (milligram per liter); the waste needs to be disposed of as lead-

contaminated waste. **At this time the future use of the five buildings is not known so an accurate TCLP could not be conducted.**

3.3 Conclusion

In the Jailhouse Building toxic levels of lead were found on plaster walls and ceilings, wood window and door systems and ceilings, and on the metal in the cellblock wing.

There were no toxic levels of lead found in the training building.

The Corn house/Piggery, Shed, and Pump House all had exterior components with toxic levels of lead on them.

TCLP analysis should be conducted on the buildings prior to renovation or demolition once the future use of the buildings is determined.

Disclaimer: The information contained in this report concerning the presence or absence of lead paint does not constitute a comprehensive lead inspection under Connecticut regulations Section 19a-111-1 to 11. The surfaces tested represent only a portion of those surfaces that would be tested to determine whether the premises are in compliance with Connecticut regulations.

The Contractor shall be aware that OSHA has not established a level of lead in a material below which 29 CFR 1926.62 does not apply. The Contractor shall comply with exposure assessment criteria, interim worker protection, and other requirements of the regulation as necessary to protect workers and building occupants.

The field testing sheets are provided as *Appendix C* in this report.

For purposes of complying with the U.S. Environmental Protection Agency's Renovation, Repair and Painting Rule (RRP) (40 CFR 745.80 through 92) a Comprehensive Lead Inspection of the entire structure or targeted areas scheduled for renovation is necessary to determine if the RRP rule is applicable. A Comprehensive Lead Inspection includes testing representative coated surfaces of each building component in each room or room equivalent for lead-based paint content. Other types of lead surveys, such as lead paint screening and risk assessments, do not include testing all coated surfaces for lead-based paint and typically do not satisfy the lead-based paint testing requirements of the RRP rule. Since the testing performed was not a comprehensive inspection, the testing will not satisfy applicability requirements of the RRP for untested surfaces. Only data for those specific surfaces and locations tested within this limited screening can be utilized to determine applicability requirements for RRP. **Reliance on this report for determining RRP applicability is not authorized by Fuss & O'Neill EnviroScience, LLC.**

Those surfaces which contain lead paint are subject to RRP work practice and training requirements if more than de-minimus amounts are disturbed in renovation or for projects involving window replacement. Those surfaces which do not contain lead paint are not subject to the RRP requirements. If a specific component or surface is not identified as having been tested it should be presumed to contain lead paint unless tested. Contractor's should be aware

that the threshold limit of 1.0 mg/cm^2 for purposes of RRP requirements is not recognized by the Occupational Safety and Health Administration (OSHA) and workers exposure's are still subject to lead in construction regulation 29 CFR 1926.62 regardless of paint testing results.

4 PCB-Containing Fluorescent Ballasts and Mercury-Containing Lamps

4.1 PCB-Containing Fluorescent Ballasts

On December 13, 2010, EnviroScience's representative Willie L. Thompson III performed an inspection of representative fluorescent light fixtures to identify possible PCB-containing ballasts.

Typical ballasts were examined in-place on their fixtures for evidence of "No PCB" labels or for manufacturer's information that could be used to determine the PCB content. If neither of the above methods could be used to determine the existence of PCBs, the ballasts were assumed to contain PCBs.

4.1.1 Results

The following ballasts had "No-PCB" labels:

LOCATION	QUANTITY
Throughout the Jail House	30
TOTAL:	**30**

The ballasts in the following areas were inaccessible and therefore, should be assumed to contain PCB unless further inspection rules out the existence of PCBs.

LOCATION	QUANTITY
Pump House	Unknown
Corn house & Piggery	Unknown
Training Building	Unknown
TOTAL:	Unknown

4.1.2 Recommendation

Nearly all fluorescent light ballasts manufactured prior to 1979 contain capacitors that contain PCBs. Ballasts installed as late as 1985 may contain PCB capacitors. Fluorescent light ballasts that are not labeled as "No-PCBs" must be assumed to contain PCBs unless proven otherwise by quantitative analytical testing.

Capacitors in fluorescent light ballasts labeled as non-PCB containing may contain diethylhexl phthalate (DEHP). DEHP was the primary substitute to replace PCBs for small capacitors in fluorescent lighting ballasts. DEHP is a toxic substance, a suspected carcinogen and is listed

under RCRA and the Superfund law as a hazardous waste. Therefore, Superfund liability exists for land filling DEHP ballasts.

4.2 Mercury-Containing Lamps

On December 13, 2010 EnviroScience's representative Willie L. Thompson III performed an inventory of mercury lamps, thermometers, and mercury switches. These fixtures were inventoried in-place.

4.2.1 Results

No mercury thermometers, switches, or gauges were identified. The following areas have fluorescent lamps:

LOCATION	QUANTITY
Throughout Main Building/Jailhouse	78
TOTAL:	**78**

5 PCB-Containing Source Material

On December 13, 2010, EnviroScience representative Andrew Jackson, collected samples of door and window caulking and glazing to be analyzed for PCB content at the Haddam Jailhouse in Haddam, CT. Concentrations above 50 mg/Kg of PCBs in caulk are determined to be PCB contaminated. The following eight (8) samples were collected and analyzed by Phoenix Environmental Laboratories of Manchester, Connecticut.

Sample #	Material	Location	Analysis Method - Parameter	Results Concentrations (mg/Kg)
121310-AJDC01	Exterior door caulk	C side door of brick building	3541/8082 – Aroclor-1016	None detected
			3541/8082– Aroclor-1221	None detected
			3541/8082– Aroclor-1232	None detected
			3541/8082– Aroclor-1242	None detected
			3541/8082– Aroclor-1248	*
			3541/8082– Aroclor-1254	None detected
			3541/8082– Aroclor-1260	None detected
			3541/8082– Aroclor-1262	None detected
			3541/8082– Aroclor-1268	None detected
			Total PCBs	**1,500**

Sample #	Material	Location	Analysis Method - Parameter	Results Concentrations (mg/Kg)
121310-AJWG02	Exterior window glazing	D side window Brick building at bottom of fire escape	3541/8082 – Aroclor-1016	None detected
			3541/8082– Aroclor-1221	None detected
			3541/8082– Aroclor-1232	None detected
			3541/8082– Aroclor-1242	None detected
			3541/8082– Aroclor-1248	*
			3541/8082– Aroclor-1254	None detected
			3541/8082– Aroclor-1260	None detected
			3541/8082– Aroclor-1262	None detected
			3541/8082– Aroclor-1268	None detected
			Total PCBs	**1.5**
121310-AJWC03	Exterior window caulking	C side window Brick Building	3541/8082 – Aroclor-1016	None detected
			3541/8082– Aroclor-1221	None detected
			3541/8082– Aroclor-1232	None detected
			3541/8082– Aroclor-1242	None detected
			3541/8082– Aroclor-1248	*
			3541/8082– Aroclor-1254	None detected
			3541/8082– Aroclor-1260	None detected
			3541/8082– Aroclor-1262	None detected
			3541/8082– Aroclor-1268	None detected
			Total PCBs	**500**
121310-AJDC04	Exterior door caulk	B side door	3541/8082 – Aroclor-1016	None detected
			3541/8082– Aroclor-1221	None detected
			3541/8082– Aroclor-1232	None detected
			3541/8082– Aroclor-1242	None detected
			3541/8082– Aroclor-1248	None detected
			3541/8082– Aroclor-1254	None detected
			3541/8082– Aroclor-1260	None detected
			3541/8082– Aroclor-1262	None detected
			3541/8082– Aroclor-1268	None detected
			Total PCBs	0.81
121310-AJWG05	Exterior window glazing	D side second floor window by the fire escape	3541/8082 – Aroclor-1016	None detected
			3541/8082– Aroclor-1221	None detected
			3541/8082– Aroclor-1232	None detected
			3541/8082– Aroclor-1242	None detected
			3541/8082– Aroclor-1248	None detected
			3541/8082– Aroclor-1254	None detected
			3541/8082– Aroclor-1260	None detected
			3541/8082– Aroclor-1262	None detected
			3541/8082– Aroclor-1268	None detected
			Total PCBs	0.81

Sample #	Material	Location	Analysis Method - Parameter	Results Concentrations (mg/Kg)
121310-AJWC06	Exterior window caulking	D side window First floor jailhouse	3541/8082 – Aroclor-1016	None detected
			3541/8082– Aroclor-1221	None detected
			3541/8082– Aroclor-1232	None detected
			3541/8082– Aroclor-1242	None detected
			3541/8082– Aroclor-1248	None detected
			3541/8082– Aroclor-1254	None detected
			3541/8082– Aroclor-1260	None detected
			3541/8082– Aroclor-1262	None detected
			3541/8082– Aroclor-1268	None detected
			Total PCBs	0.81
121310-AJIWC07	Interior window caulking	D side interior window frame	3541/8082 – Aroclor-1016	None detected
			3541/8082– Aroclor-1221	None detected
			3541/8082– Aroclor-1232	None detected
			3541/8082– Aroclor-1242	None detected
			3541/8082– Aroclor-1248	None detected
			3541/8082– Aroclor-1254	None detected
			3541/8082– Aroclor-1260	None detected
			3541/8082– Aroclor-1262	None detected
			3541/8082– Aroclor-1268	None detected
			Total PCBs	0.81
121310-AJIWG08	Interior window glazing	D side window pane in Brick Building	3541/8082 – Aroclor-1016	None detected
			3541/8082– Aroclor-1221	None detected
			3541/8082– Aroclor-1232	None detected
			3541/8082– Aroclor-1242	None detected
			3541/8082– Aroclor-1248	None detected
			3541/8082– Aroclor-1254	None detected
			3541/8082– Aroclor-1260	None detected
			3541/8082– Aroclor-1262	None detected
			3541/8082– Aroclor-1268	None detected
			Total PCBs	**4.2**

5.1 Results

Samples 121310AJDC01 (Exterior door caulk, B side door) and 121310AJWC03 (window caulking, C side brick building) were the only samples that were over the threshold of 50 mg/KG. The B side door caulking must be disposed of as PCB contaminated waste. The window caulking of the windows on the brick building must be assumed to be PCB contaminated unless testing of the particular window indicates otherwise. The Results can be found in *Appendix D* of this report.

5.2 Conclusion

Remediation and proper disposal of PCB containing caulk is necessary pending renovation/demolition activities. In addition, portions of the adjoining substrate (brick) may have to be removed and disposed of as PCB contaminated waste.

- **PHASE 2 – ADJACENT SURFACE SAMPLING**

Sampling of adjacent porous surfaces to determine extent of PCB contamination: The analytical method for analysis includes extraction method 3540C and analysis method SW846 8082.

Bulk Sampling – Porous Surfaces

Sampling of wood and concrete slab in accordance with EPA "Draft Standard Operating Procedures for Sampling Concrete in Field" (dated December 30, 1997). This sampling involves complete removal of bulk product materials (source materials) at sampling locations using hand tools. Intent is to ensure complete removal of source material prior to sampling adjacent surfaces. Once removal of all visible source material is performed, the porous surfaces will be cleaned with distilled water. Porous surfaces will be sampled using a mechanical hammer drill to obtain samples at depths of 0 to 0.5 inch depth and 0.5 to 1 inch depths where possible based on material matrix. The bulk materials will be analyzed for PCB content from each cross section. Tools utilized to collect samples will be cleaned using hexane wash series including soapy water, distilled clean water, and hexane between sampling.

6 Site Characterization – Adjacent Surface Supplemental Testing

On November 22, 2011, Fuss & O'Neill EnviroScience representative Andrew Jackson performed supplemental testing of adjacent surfaces (wood frame, concrete slab) at the former Haddam Jailhouse in Haddam, Connecticut. Initial testing results of the source materials (exterior and interior window and door caulking compounds and window glazing compound) were determined to contain PCBs at concentrations greater than 50 PPM , which are federally regulated waste under the Toxic Substance Control Act (TSCA) (40 CFR 760)

This section provides a summary of the sampling performed to delineate the nature and extent of PCBs as required in accordance with 40 CFR Part 761.61 (a)(3) (A-C). The section includes the nature of the contamination including kinds of materials; a summary of the procedures used to sample contaminated and adjacent surfaces; and the location and extent of the identified contaminated areas.

6.1 Sample Collection and Analysis

6.1.1 Adjacent Surface (wood, concrete) Sampling

Adjacent surface sampling was performed on November 22, 2011 by Fuss & O'Neill EnviroScience representative Andrew Jackson. All samples collected were transmitted to Con-Test Analytical, Inc of East Longmeadow, Massachusetts. The analytical method for analysis included extraction method 3540C and analysis method SW846 8082.

Adjacent surface samples (wood, and concrete slab) were collected at depths of 0.0 to 0.5 inch and 0.5 to 1 inch into the substrate at the two vertical window joints adjacent to the wood

frame. In addition surface samples were collected at depths of 0.0 to 0.5 to 1 inch into the concrete substrate adjacent to the wood window apron.

6.1.2 Bulk Sampling – Porous Surfaces

EnviroScience conducted sampling of masonry in accordance with EPA "Draft Standard Operating Procedures for Sampling Concrete in Field" (dated December 30, 1997). Sampling involved first complete removal of bulk product material (source material) at the sampling location (senior center window system) using hand tools. Intent was to ensure complete removal of source material prior to sampling adjacent surfaces. Once removal of all visible source material was performed the porous surface was cleaned and rinsed with distilled water. The adjacent porous surface included was a concrete sill. The porous surface was sampled using a mechanical hammer drill to obtain samples at depths of 0 to 0.5 inch depth and 0.5 to 1 inch depths. The bulk material was analyzed for PCB content from each cross section. Tools utilized to collect samples were cleaned using hexane wash series including soapy water, distilled clean water, and hexane between sampling. Each sample was placed in 4 ounce glass jars, labeled and delivered to laboratory using proper chain of custody.

6.2 Sample Analysis Results

6.2.1 Adjacent Porous Materials Sample - Analysis Results

Table 6

Sample Number	Sampled Location	Material Description	Result (mg/kg)
112211AJ01	Side C Adjacent to window	Core sample of Brick to depth of ½ inch	**44 (Aroclor-1242)** **43 (Aroclor-1248)**
112211AJ02	Side D Adjacent to window	Core sample of Brick to depth of ½ inch	**15 (Aroclor-1242)** **5.6 (Aroclor-1248)**
112211AJ03	Side C Adjacent to window	Core sample of Brick to depth of ½ inch	0.38 (Aroclor-1248)
112211AJ04	Side B Adjacent to window	Core sample of Brick to depth of ½ inch	0.24 (Aroclor-1248)
112211AJ05	0-4 inches Side D	Core sample of Brick to depth of ½ inch	ND
112211AJ06	0-4 inches Side D	Core sample of Brick to depth of ½ inch	ND
112211AJ07	0-4 inches Side C	Core sample of Brick to depth of ½ inch	ND
112211AJ08	0-4 inches Side C	Core sample of Brick to depth of ½ inch	ND

PCBs <50 PPM were detected in the adjacent porous brick associated with the exterior and interior window, and door caulking compound/window glazing compound at Former Jail-House in Haddam, Connecticut.

Report prepared by Environmental Technician Willie L. Thompson III.

Reviewed by:

Stephen W. Connelly
Senior Vice President

FUSS & O'NEILL
EnviroScience, LLC

Appendix A

Asbestos Sample Results and Chain of Custody (Original & Additional Survey)

EMSL Analytical, Inc.

Attn: **SWC**
EnviroScience Consultants, Inc.
795 North Mountain Road
Newington, CT 06111

Fax: (413) 647-0018 Phone: (860) 953-2700

Project: **05-647.10/FELLNER ARCHITECTS-OLD JAILHOUSE FEASIBILITY - TRAINING BLDG.**

Customer ID: ENVI54
Customer PO:
Received: 09/09/05 10:16 AM
EMSL Order: 040517368

EMSL Proj:
Analysis Date: 9/9/2005
Report Date: 9/9/2005

Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Location	Appearance	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
09-07-MS-33A 040517368-0001	THROUGHOUT BLDG.	Tan Fibrous Homogeneous	<1% Cellulose	95% Non-fibrous (other)	5% Chrysotile
09-07-MS-34A 040517368-0002	THROUGHOUT BLDG.	Tan Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
09-07-MS-35A 040517368-0003	THROUGHOUT BLDG.	Brown Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
09-07-MS-36A 040517368-0004	THROUGHOUT BLDG.	Brown/White Fibrous Heterogeneous	10% Cellulose	90% Non-fibrous (other)	None Detected
09-07-MS-37A 040517368-0005	THROUGHOUT BLDG.	Tan/White Fibrous Heterogeneous	40% Cellulose 40% Min. Wool	20% Non-fibrous (other)	None Detected
09-07-MS-38A 040517368-0006	THROUGHOUT BLDG.	Various Fibrous Heterogeneous	30% Cellulose	70% Non-fibrous (other)	None Detected
09-07-MS-40 040517368-0007	THROUGHOUT BLDG.	White/Blue Fibrous Heterogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
09-07-MS-41 040517368-0008	KITCHEN	Purple Fibrous Homogeneous	<1% Cellulose	95% Non-fibrous (other)	5% Chrysotile

Analyst(s)

Ribbal Amro (9)

Stephen Siegel, CIH
or other approved signatory

Due to magnification limitations inherent in PLM, asbestos fibers in dimensions below the resolution capability of PLM may not be detected. Samples reported as <1% or none detected may require additional testing by TEM to confirm asbestos quantities. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL Analytical, Inc. EMSL's liability is limited to the cost of analysis. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. The test results contained within this report meet the requirements of NELAC unless otherwise noted.
Analysis performed by EMSL Westmont (NVLAP #101048-0), NY ELAP 10872

EMSL Analytical, Inc.

Attn: **SWC**
EnviroScience Consultants, Inc.
795 North Mountain Road
Newington, CT 06111

Fax: (413) 647-0018 Phone: (860) 953-2700

Project: 05-647.10/FELLNER ARCHITECTS-OLD JAILHOUSE FEASIBILITY - TRAINING BLDG.

Customer ID: ENVI54
Customer PO:
Received: 09/09/05 10:16 AM
EMSL Order: 040517368

EMSL Proj:
Analysis Date: 9/9/2005
Report Date: 9/9/2005

Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Location	Appearance	Non-Asbestos %	Fibrous	% Non-Fibrous	Asbestos % Type
09-07-MS-42A 040517368-0009	Roof	Brown/Tan/Black Fibrous Heterogeneous	10%	Glass	90% Non-fibrous (other)	None Detected

Analyst(s)

Ribbal Amro (9)

Stephen Siegel, CIH
or other approved signatory

Due to magnification limitations inherent in PLM, asbestos fibers in dimensions below the resolution capability of PLM may not be detected. Samples reported as <1% or none detected may require additional testing by TEM to confirm asbestos quantities. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL Analytical, Inc. EMSL's liability is limited to the cost of analysis. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. The test results contained within this report meet the requirements of NELAC unless otherwise noted.
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Office Locations:
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Boston, MA

SAMPLE LOG FOR ASBESTOS BULKS

Sheet 1 of 2

Project Name: Fallon Architects-Old Jailhouse Feasibility Project No. CS-542.10

Building: Training Building Project Manager: SWC

Sample ID	Sample Location	Material	Result (%)
[redacted]	Throughout Building	Off White 12x12 Floor Tile	
01-02-MS-33B			
01-02-MS-33C			
[redacted]		Yellow Mastic	
01-02-MS-34B			
01-02-MS-34C			
[redacted]		Brown Cove Base	
01-02-MS-35B			
01-02-MS-35C			
[redacted]		Cove Base Mastic	
01-02-MS-36B			
01-02-MS-36C			

Analysis: [redacted] Turnaround Time: 24 Hour

Based on the turnaround time indicated above, analyses are due to EnviroScience on or before this date: 9/6/05
Please call the EnviroScience Laboratory if analyses will be late at (860) 953-2700.

Fax Results to the EnviroScience Laboratory at: 413-547-0818.

Special Instructions: Stop analysis on first positive sample in each homogeneous set of samples unless otherwise noted. Do not level samples unless indicated. EPA 400 point count all samples of asbestos content <4%, positive stop on all point counts.

Samples collected by: Mike Stewart Date: 9/6/05 Time: AM PM

Samples [Rec'd][Sent by] L. MS R. MS Date: 9/6/05 9/6/05 Time: PM

Samples Received by: Date: Time:

Shipped To: ☑ EMSL Stafford ☐ Other

Method of Shipment: ☑ Fed Ex ☐ UPS Overnight ☐ UPS Ground ☐ Other

795 North Mountain Road, Newington, CT 06111
Phone: (860) 953-2700 Fax (860) 953-3203

0405173 96

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Fairfield, CT
Boston, MA

SAMPLE LOG FOR ASBESTOS BULKS

Sheet 2 of 2

Project Name: Fellows Architects - Old Jail Inc. Feasibility Project No. 05-69210

Building: Training Building Project Manager: SWC

Sample ID	Sample Location	Material	Result (%)
09-09-MS-37A	Throughout Building	2x4 Ceiling Tiles	
09-09-MS-37B			
09-09-MS-37C			
09-09-MS-38A		Sheetrock Joint Compound	
09-09-MS-38B			
09-09-MS-38C			
09-09-MS-39		Joint Compound	
09-09-MS-41	Kitchen	Scale Undercoat	
09-09-MS-48A	Roof	Red Shingle	
09-09-MS-48B			
09-09-MS-48C			
09-09-MS-			

Analysis Method: ☑ PLM ☐ Other Turnaround Time: 24 Hour

Based on the turnaround time indicated above, analyses are due to EnviroScience on or before this date: 9/16/05
Please call the EnviroScience Laboratory if analyses will be late at (860) 353-2703.

Fax Results to the EnviroScience Laboratory at: 413-647-9018.

Special Instruction: Stop analysis on first positive sample in each homogeneous set of samples unless otherwise noted. Do not layer samples unless indicated. EPA 400 point count all samples of asbestos content <4%, positive stop on all point counts.

Samples collected by: Mike Stewart Date: 9/9/05 Time: AM/PM

Samples [Rec'd][Sent by] MS / MS Date: 9/9/05 / 9/9/05 Time: PM

Samples Received by: Date:

Shipped To: ☑ EMSL State: NJ ☐ Other

Method of Shipment: ☑ Fed Ex ☐ UPS Overnight ☐ UPS Ground ☐ Other

795 North Mountain Road, Newington, CT 06111
Phone: (860) 293-2700 Fax: (860) 353-3203

EMSL Analytical, Inc.
107 Haddon Ave., Westmont, NJ 08108
Phone: (856) 858-4800 Fax: (856) 858-4968 Email: sslegel@EMSL.com

Attn: **SWC**
EnviroScience Consultants, Inc.
795 North Mountain Road
Newington, CT 06111

Fax: (413) 647-0018 Phone: (860) 953-2700
Project: 05-642.10/FIELLNER ARCHITECTS-OLD JAILHOUSE FEASIBILITY - SHED

Customer ID: ENVI54
Customer PO:
Received: 09/09/05 10:17 AM
EMSL Order: 040517373
EMSL Proj:
Analysis Date: 9/9/2005
Report Date: 9/10/2005

Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Location	Appearance	Non-Asbestos %	Fibrous	Non-Asbestos %	Non-Fibrous	Asbestos % Type
09-07-MS-46A 040517373-0001	ROOF TOP LAYER	Various Non-Fibrous Heterogeneous	5%	Glass	95%	Non-fibrous (other)	None Detected
09-07-MS-47A 040517373-0002	MIDDLE LAYER	Black Non-Fibrous Heterogeneous	5%	Glass	95%	Non-fibrous (other)	None Detected
09-07-MS-48A 040517373-0003	BOTTOM LAYER	Black Non-Fibrous Heterogeneous	40%	Cellulose	60%	Non-fibrous (other)	None Detected

Analyst(s)
Caidong Shi (3)

Stephen Siegel, CIH
or other approved signatory

Due to magnification limitations inherent in PLM, asbestos fibers in dimensions below the resolution capability of PLM may not be detected. Samples reported as <1% or none detected may require additional testing by TEM to confirm asbestos quantities. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL Analytical, Inc. EMSL's liability is limited to the cost of analysis. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. The test results contained within this report meet the requirements of NELAC unless otherwise noted.
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PLM-1

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SAMPLE LOG FOR ASBESTOS BULKS

Sheet 1 of 1

Project Name: Eggner Architects-Old Jailhouse Feasibility Project No. 05-6421.10

Building: Shed Project Manager: SWC

Sample ID	Sample Location	Material	Result (%)
09-02-MS-46A	Roof - Top Layer	Red Shingle	
~~09-02-MS-46B~~			
~~09-02-MS-46C~~			
09-02-MS-47A	- Middle Layer	Black Shingle	
~~09-02-MS-47B~~			
~~09-02-MS-47C~~			
09-02-MS-48A	- Bottom Layer	Tar Paper	
~~09-02-MS-48B~~			
~~09-02-MS-48C~~			

SAMPLES ACCEPTED FOR ANALYSIS BY EMSL ANALYTICAL INC

Analysis Method: ☑ PLM ☐ Other

Turnaround Time 24 Hour

Based on the turnaround time indicated above, analyses are due to EnviroScience on or before this date: 9/16/05.
Please call the EnviroScience Laboratory if analyses will be late at (860) 953-2700.

Fax Results to the EnviroScience Laboratory at: 413-647-0018.

3

Special Instruction: Stop analysis on first positive sample in each homogeneous set of samples unless otherwise noted. Do not layer samples unless indicated. EPA 400 point count all samples of asbestos content <1%, positive stop on all point counts.

RECEIVED SEP 10 2005 EMSL ANALYTICAL

Samples collected by: Mike Stewart Date: 9/7/05 Time: AM/PM

Samples [Rec'd][Sent by] MS MS Date: 9/8/05 9/8/05 Time: PM

Samples Received by: Date: Time:

Shipped To: ☑ EMSL - State NJ ☐ Other

Method of Shipment: ☑ Fed Ex ☐ UPS Overnight ☐ UPS Ground ☐ Other

795 North Mountain Road, Newington, CT 06111
Phone: (860) 953-2700 Fax (860) 953-3203

EMSL Analytical, Inc.
107 Hadeon Ave., Westmont, NJ 08108
Phone: (856) 858-4500 Fax: (856) 858-4960 Email: sslegel@EMSL.com

Attn: **SWC**
EnviroScience Consultants, Inc.
795 North Mountain Road
Newington, CT 06111

Fax: (413) 647-0018 Phone: (860) 953-2700
Project: 05-447.10/FELLNER ARCHITECTS - OLD JAILHOUSE FEASIBILITY - PUMP HOUSE

Customer ID: ENVI54
Customer PO:
Received: 09/09/05 10:17 AM
EMSL Order: 040517382
EMSL Proj:
Analysis Date: 9/9/2005
Report Date: 9/10/2005

Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Location	Appearance	Non-Asbestos %	Fibrous	Non-Asbestos %	Non-Fibrous	Asbestos %	Type
09-07-MS-49A 040517383-0001	EXTERIOR	Various Non-Fibrous Heterogeneous			100%	Non-fibrous (other)	None Detected	
09-07-MS-50A 040517383-0002	Roof	Black Non-Fibrous Heterogeneous	15%	Cellulose	85%	Non-fibrous (other)	None Detected	

Analyst(s)
Caidong Shi (2)

Stephen Siegel, CIH
or other approved signatory

Due to magnification limitations inherent in PLM, asbestos fibers in dimensions below the resolution capability of PLM may not be detected. Samples reported as <1% or none detected may require additional testing by TEM to confirm asbestos quantities. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL Analytical, Inc. EMSL's liability is limited to the cost of analysis. EMSL bears no responsibility for sample collection activities or analytical method limitations, interpretation and use of test results are the responsibility of the client. The test results contained within this report meet the requirements of NELAC unless otherwise noted.
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Fairfield, CT
Boston, MA

SAMPLE LOG FOR ASBESTOS BULKS

Sheet 1 of 1

Project Name: Fellner Architects-Old Jailhouse Feasibility Project No. 05-6421a

Building: Pump House Project Manager: SWC

Sample ID	Sample Location	Material	Result (%)
09-07-MS-49A	Exterior	Window Glazing Compound	
~~09-07-MS-49B~~			
~~09-07-MS-49C~~			
09-07-MS-50A	Roof	Black Rolled Shingle	
~~09-07-MS-50B~~			
~~09-07-MS-50C~~			

SAMPLES ACCEPTED FOR ANALYSIS BY EMSL ANALYTICAL INC.

Analysis Method: ☑ PLM ☐ Other Turnaround Time 24 Hour

Based on the turnaround time indicated above, analyses are due to EnviroScience on or before this date: 9/16/05.
Please call the EnviroScience Laboratory if analyses will be late at (860) 953-2700.

Fax Results to the EnviroScience Laboratory at: 413-647-0018.

Special Instruction: Stop analysis on first positive sample in each homogeneous set of samples unless otherwise noted. Do not layer samples unless indicated. EPA 400 point count all samples of asbestos content <4%, positive stop on all point counts.

Samples collected by: Mike Stewart Date: 9/7/05 Time: AM/PM

Samples [Rec'd][Sent by] I MS II MS Date: 9/8/05 9/8/05 Time: PM

Samples Received by: Date: Time:

Shipped To: ☑ EMSL State NJ ☐ Other

Method of Shipment: ☑ Fed Ex ☐ UPS Overnight ☐ UPS Ground ☐ Other

RECEIVED WESTERN CONSULTANTS SEP 11 2005

795 North Mountain Road, Newington, CT 06111
Phone: (860) 953-2700 Fax (860) 953-3203

EMSL Analytical, Inc.
107 Haddon Ave., Westmont, NJ 08108
Phone: (856) 858-4900 Fax: (856) 858-4909 Email: [illegible]@EMSL.com

Attn: **SWC**
EnviroScience Consultants, Inc.
795 North Mountain Road
Newington, CT 06111

Fax: (413) 647-0018 Phone: (860) 953-2700
Project: 05-643.10/FELLNER ARCHITECTS - OLD JAILHOUSE FEASIBILITY - CORNHOUSE PIGERY

Customer ID: ENVI54
Customer PO:
Received: 09/09/05 10:16 AM
EMSL Order: 040517381
EMSL Proj:
Analysis Date: 9/10/2005
Report Date: 9/10/2005

Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Location	Appearance	Non-Asbestos %	Fibrous	Non-Asbestos %	Non-Fibrous	Asbestos % Type
09-07-MS-43A 040517381-0001	ROOF BOTTOM LAYER	Gray/Black Fibrous Heterogeneous	10%	Cellulose	90%	Non-fibrous (other)	None Detected
09-07-MS-44A 040517381-0002	TOP LAYER	Gray/Black Fibrous Heterogeneous	8%	Cellulose	92%	Non-fibrous (other)	None Detected
09-07-MS-45A 040517381-0003	EXTERIOR	White Non-Fibrous Heterogeneous			100%	Non-fibrous (other)	None Detected

Analyst(s)
Kristy Reeves (3)

Stephen Siegel, CIH
or other approved signatory

Due to magnification limitations inherent in PLM, asbestos fibers in dimensions below the resolution capability of PLM may not be detected. Samples reported as <1% or none detected may require additional testing by TEM to confirm asbestos quantities. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL Analytical, Inc. EMSL's liability is limited to the cost of analysis. EMSL bears no responsibility for sample collection methods or analytical method limitations. Interpretation and use of test results are the responsibility of the client. The test results contained within this report meet the requirements of NELAC unless otherwise noted.
Analysis performed by EMSL Westmont (NVLAP #101048-0, NY ELAP 10872

PLM-1

THIS IS THE LAST PAGE OF THE REPORT.

040517381

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Office Locations:
Newington, CT
Fairfield, CT
Boston, MA

SAMPLE LOG FOR ASBESTOS BULKS

Sheet 1 of 1

Project Name: Fellner Architects – Old Jailhouse Feasibility Project No. 05-6421.0

Building: Cocoahouse + Pigery Project Manager: SWC

Sample ID	Sample Location	Material	Result (%)
09-07-MS-43A	Roof-Bottom Layer	Green Shingle	
~~09-07-MS-43B~~			
~~09-07-MS-43C~~			
09-07-MS-44A	-Top Layer	Black Shingle	
~~09-07-MS-44B~~			
~~09-07-MS-44C~~			
09-07-MS-45A	Exterior	Window Glazing Compound	
~~09-07-MS-45B~~			
~~09-07-MS-45C~~			

SAMPLES ACCEPTED FOR ANALYSIS BY EMSL ANALYTICAL INC.

Analysis Method: ☑ PLM ☐ Other

3

Turnaround Time 24 Hour

Based on the turnaround time indicated above, analyses are due to EnviroScience on or before this date: 9/6/05.
Please call the EnviroScience Laboratory if analyses will be late at (860) 953-2700.

Fax Results to the EnviroScience Laboratory at: 413-647-0018.

Special Instruction: Stop analysis on first positive sample in each homogeneous set of samples unless otherwise noted. Do not layer samples unless indicated. EPA 400 point count all samples of asbestos content <4%, positive stop on all point counts.

RECEIVED EMSL ANALYTICAL INC. 9/6/05 11:45 AM

Samples collected by: Mike Stewart Date: 9/7/05 Time: 5:00 PM

Samples [Rec'd][Sent by] [MS] [MS] Date: 9/8/05 [9/8/05] Time: [3 PM]

Samples Received by: Date: Time:

Shipped To: ☑ EMSL State NJ ☐ Other

Method of Shipment: ☑ Fed Ex ☐ UPS Overnight ☐ UPS Ground ☐ Other

795 North Mountain Road, Newington, CT 06111
Phone: (860) 953-2700 Fax (860) 953-3203

EMSL Analytical, Inc.

Attn: **Mike Stewart**
EnviroScience Consultants, Inc.
795 North Mountain Road
Newington, CT 06111

Fax: (413) 647-0018 Phone: (302) 8 -

Project: **FELLNER ARCHITECTS-OLD JAILBASE FEASIBILITY 05-642.10**

Customer ID: ENVI54
Customer PO:
Received: 09/09/05 10:14 AM
EMSL Order: 040517359

EMSL Proj:
Analysis Date: 9/10/2005
Report Date: 9/12/2005

Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Location	Appearance	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
09-07-MS-01A 040517359 0001	BASEMENT	Gray Fibrous Heterogeneous	25% Cellulose 20% Glass 30% Min. Wool	25% Non-fibrous (other)	None Detected
09-07-MS-02 040517359-0002	BASEMENT	Gray Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
09-07-MS-03 040517359-0003	BASEMENT	Gray Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
09-07-MS-04A 040517359-0004	1ST FLOOR-KITCHEN STORAGE	White Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
09-07-MS-05A 040517359-0005	1ST FLOOR-KITCHEN STORAGE	Yellow Non-Fibrous Homogeneous	8% Cellulose	92% Non-fibrous (other)	None Detected
09-07-MS-06A 040517359-0006	1ST FLOOR	Brown/Yellow Fibrous Heterogeneous	8% Cellulose	92% Non-fibrous (other)	None Detected
09-07-MS-07 040517359-0007	KITCHEN	Brown Fibrous Heterogeneous	65% Cellulose	35% Non-fibrous (other)	None Detected
09-07-MS-08A 040517359-0008	1ST FLOOR-WALL	Gray/White Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected

Analyst(s)

Kristy Reeves (41)

Stephen Siegel, CIH
or other approved signatory

Due to magnification limitations inherent in PLM, asbestos fibers in dimensions below the resolution capability of PLM may not be detected. Samples reported as <1% or none detected may require additional testing by TEM to confirm asbestos quantities. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL Analytical, Inc. EMSL's liability is limited to the cost of analysis. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. The test results contained within this report meet the requirements of NELAC unless otherwise noted.

Analysis performed by EMSL Westmont (NVLAP #101048-0), NY ELAP 10872

EMSL Analytical, Inc.

Attn: **Mike Stewart**
EnviroScience Consultants, Inc.
795 North Mountain Road
Newington, CT 06111

Fax: (413) 647-0018 Phone: (302) 8 -

Project: **FELLNER ARCHITECTS-OLD JAILBASE FEASIBILITY 05-642.10**

Customer ID: ENVI54
Customer PO:
Received: 09/09/05 10:14 AM
EMSL Order: 040517359

EMSL Proj:
Analysis Date: 9/10/2005
Report Date: 9/12/2005

Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Location	Appearance	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
09-07-MS-08B 040517359-0008	1ST FLOOR-WALL	Gray/White Fibrous Heterogeneous	5% Cellulose	95% Non-fibrous (other)	None Detected
09-07-MS-08C 040517359-0010	2ND FLOOR-WALL	Gray Non-Fibrous Heterogeneous	2% Cellulose	98% Non-fibrous (other)	None Detected
09-07-MS-08D 040517359-0011	2ND FLOOR-WALL	Gray Fibrous Heterogeneous	5% Cellulose	95% Non-fibrous (other)	None Detected
09-07-MS-08E 040517359-0012	2ND FLOOR-CEILING	Gray Non-Fibrous Heterogeneous	2% Cellulose	98% Non-fibrous (other)	None Detected
09-07-MS-08F 040517359-0013	3RD FLOOR WALL	Gray Non-Fibrous Heterogeneous	2% Cellulose	98% Non-fibrous (other)	None Detected
09-07-MS-08G 040517359-0014	3RD FLOOR WALL	Gray Non-Fibrous Heterogeneous	2% Cellulose	98% Non-fibrous (other)	None Detected
09-07-MS-09A 040517359-0015	1ST FLOOR WALL	Gray/White Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
09-07-MS-09B 040517359-0016	1ST FLOOR WALL	Gray/White Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected

Analyst(s)

Kristy Reeves (41)

Stephen Siegel, CIH
or other approved signatory

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Analysis performed by EMSL Westmont (NVLAP #101048-0), NY ELAP 10872

PLM-1

EMSL Analytical, Inc.

Attn: **Mike Stewart**
EnviroScience Consultants, Inc.
795 North Mountain Road
Newington, CT 06111

Fax: (413) 647-0018 Phone: (302) 8 -

Project: **FELLNER ARCHITECTS-OLD JAILBASE FEASIBILITY 05-642.10**

Customer ID: ENVI54
Customer PO:
Received: 09/09/05 10:14 AM
EMSL Order: 040517359

EMSL Proj:
Analysis Date: 9/10/2005
Report Date: 9/12/2005

Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Location	Appearance	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
09-07-MS-09C 040517359-0017	2ND FLOOR-WALL	Gray/White Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
09-07-MS-09D 040517359-0018	2ND FLOOR-WALL	White Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
09-07-MS-09E 040517359-0019	2ND FLOOR-CEILING	Gray/White Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
09-07-MS-09F 040517359-0020	3RD FLOOR-WALL	Gray/White Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
09-07-MS-09G 040517359-0021	3RD FLOOR-WALL	Gray/White Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
09-07-MS-10A 040517359-0022	KITCHEN	Tan/Red Fibrous Heterogeneous	20% Cellulose	80% Non-fibrous (other)	None Detected
09-07-MS-11A 040517359-0023	2ND FLOOR	Tan Non-Fibrous Heterogeneous		95% Non-fibrous (other)	5% Chrysotile
09-07-MS-12A 040517359-0024	1ST FLOOR	Tan/White Fibrous Heterogeneous	20% Cellulose 3% Glass	77% Non-fibrous (other)	None Detected

Analyst(s)

Kristy Reeves (41)

Stephen Siegel, CIH
or other approved signatory

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Analysis performed by EMSL Westmont (NVLAP #101048-0), NY ELAP 10872

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EMSL Analytical, Inc.
[illegible]
[illegible]

Attn: **Mike Stewart**
EnviroScience Consultants, Inc.
795 North Mountain Road
Newington, CT 06111

Fax: (413) 647-0018 Phone: (302) 8 -

Project: **FELLNER ARCHITECTS-OLD JAILBASE FEASIBILITY 05-642.10**

Customer ID: ENVI54
Customer PO:
Received: 09/09/05 10:14 AM
EMSL Order: 040517359

EMSL Proj:
Analysis Date: 9/10/2005
Report Date: 9/12/2005

Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Location	Appearance	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
09-07-MS-14 040517359-0025	1ST FLOOR	White Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
09-07-MS-15A 040517359-0026	KITCHEN	Yellow Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (other)	None Detected
09-07-MS-16A 040517359-0027	2ND FLOOR	Brown Non-Fibrous Homogeneous	2% Cellulose	98% Non-fibrous (other)	None Detected
09-07-MS-17A 040517359-0028	2ND FLOOR	Brown Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
09-07-MS-18 040517359-0029	3RD FLOOR BATHROOM	Black Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
09-07-MS-19 040517359-0030	3RD FLOOR BATHROOM	Green Fibrous Heterogeneous		92% Non-fibrous (other)	8% Chrysotile
09-07-MS-20A 040517359-0031	CELL BLOCK WING-ROOF-BOTTOM LAYER	Black Fibrous Heterogeneous	15% Cellulose	85% Non-fibrous (other)	None Detected
09-07-MS-21A 040517359-0032	CELL BLOCK WING-ROOF-MIDDLE LAYER	Black Fibrous Heterogeneous	15% Cellulose	85% Non-fibrous (other)	None Detected

Analyst(s)

Kristy Reeves (41)

Stephen Siegel, CIH
or other approved signatory

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Analysis performed by EMSL Westmont (NVLAP #101048-0), NY ELAP 10872

PLM-1

EMSL Analytical, Inc.
107 Hadden Ave., Westmont, NJ 08108
Phone: (856) 858-4800 Fax: (856) 858-4580 Email: csiegel@EMSL.com

Attn: **Mike Stewart**
EnviroScience Consultants, Inc.
795 North Mountain Road
Newington, CT 06111

Fax: (413) 647-0018 Phone: (302) 8 -
Project: FELLNER ARCHITECTS-OLD JAILBASE FEASIBILITY 08-642.10

Customer ID: ENV154
Customer PO:
Received: 09/08/05 10:14 AM
EMSL Order: 040517359
EMSL Proj:
Analysis Date: 9/10/2005
Report Date: 9/10/2005

Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Location	Appearance	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
09-07-MS-22A 040517359-0033	CELL BLOCK WING-ROOF-TOP LAYER	Black Fibrous Heterogeneous	20% Cellulose	80% Non-fibrous (other)	None Detected
09-07-MS-23A 040517359-0034	Roof	Gray/Black Fibrous Heterogeneous	10% Cellulose	82% Non-fibrous (other)	8% Chrysotile
09-07-MS-24A 040517359-0035	CELL BLOCK WING-NEW ROOF-BOTTOM LAYER	Black Fibrous Heterogeneous	5% Cellulose	95% Non-fibrous (other)	Trace Chrysotile
09-07-MS-25A 040517359-0036	CELL BLOCK WING-NEW ROOF-TOP LAYER	Gray/Black Fibrous Heterogeneous	15% Cellulose	85% Non-fibrous (other)	None Detected
09-07-MS-26A 040517359-0037	ADMINISTRATION WING ROOF-BOTTOM LAYER	Black Fibrous Heterogeneous	20% Cellulose	80% Non-fibrous (other)	None Detected
09-07-MS-27A 040517359-0038	ADMINISTRATION WING ROOF-TOP LAYER	Gray/Black Fibrous Heterogeneous	25% Cellulose	75% Non-fibrous (other)	None Detected
09-07-MS-28A 040517359-0039	EXTERIOR-METAL WINDOWS	Gray Non-Fibrous Heterogeneous		99% Non-fibrous (other)	1% Chrysotile

Analyst(s)

Kristy Reeves (43)

Stephen Siegel, CIH
or other approved signatory

Due to magnification limitations inherent in PLM, asbestos fibers in dimensions below the resolution capability of PLM may not be detected. Samples reported as <1% or none detected may require additional testing by TEM to confirm asbestos quantities. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL Analytical, Inc. EMSL's liability is limited to the cost of analysis. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. The test results contained within this report meet the requirements of NELAC unless otherwise noted.
Analysis performed by EMSL Westmont (NVLAP #101048-0), NY ELAP 10872

EMSL Analytical, Inc.
107 Haddon Ave., Westmont, NJ 08108
Phone: (856) 858-4800 Fax: (856) 858-4809 Email: sslegel@EMSL.com

Attn: **Mike Stewart**
EnviroScience Consultants, Inc.
798 North Mountain Road
Newington, CT 06111

Fax: (413) 647-0018 Phone: (302) 8 -
Project: FIELLNER ARCHITECTS-OLD JAILBASE FEASIBILITY 08-642.10

Customer ID: ENVI54
Customer PO:
Received: 09/09/06 10:14 AM
EMSL Order: 040617369
EMSL Proj:
Analysis Date: 9/10/2006
Report Date: 9/10/2006

Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Location	Appearance	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
09-07-MS-29A 040617369-0040	EXTERIOR-METAL WINDOWS	Gray Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
09-07-MS-30A 040617369-0041	EXTERIOR-WOOD WINDOWS	Tan/White Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
09-07-MS-31A 040617369-0042	EXTERIOR-WOOD WINDOWS	Gray/White Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
09-07-MS-32A 040617369-0043	EXTERIOR-DOOR SYSTEMS	Gray Fibrous Heterogeneous		95% Non-fibrous (other)	5% Chrysotile

Analyst(s)

Kristy Reeves (43)

Stephen Siegel, CIH
or other approved signatory

Due to magnification limitations inherent in PLM, asbestos fibers in dimensions beyond the resolution capability of PLM may not be detected. Samples reported as <1% or none detected may require additional testing by TEM to confirm asbestos quantities. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL Analytical, Inc. EMSL's liability is limited to the cost of analysis. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. The test results contained within this report meet the requirements of NELAC unless otherwise noted.
Analysis performed by EMSL Westmont (NVLAP 101048-0), NY ELAP 10872

PLM-1

THIS IS THE LAST PAGE OF THE REPORT.

EMSL Analytical, Inc.

Attn: **Mike Stewart**
EnviroScience Consultants, Inc.
795 North Mountain Road
Newington, CT 06111

Fax: (413) 647-0018 Phone: (302) 8 -

Project: **FELLNER ARCHITECTS-OLD JAILBASE FEASIBILITY 05-642.10**

Customer ID: ENVI54
Customer PO:
Received: 09/09/05 10:14 AM
EMSL Order: 040517359

EMSL Proj:
Analysis Date: 9/10/2005
Report Date: 9/12/2005

Asbestos Analysis of Bulk Material via EPA 600/R-93/116. Quantitation using 400 Point Count Procedure.

Sample	Location	Appearance	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
09-07-MS-24A *040517359-0045*	CELL BLOCK WING-NEW ROOF-BOTTOM LAYER	Black Fibrous Heterogeneous	5.00% Cellulose	95.00% Non-fibrous (other)	<0.25% Chrysotile
			MAY BE CROSS CONTAMINATED. ONLY ONE FIBER ON OUTSIDE OF SAMPLE.		
09-07-MS-28A *040517359-0046*	EXTERIOR-METAL WINDOWS	Gray Non-Fibrous Heterogeneous		99.25% Non-fibrous (other)	0.75% Chrysotile

Analyst(s)
Kristy Reeves (2)

Stephen Siegel, CIH
or other approved signatory

Disclaimer: Some samples may contain asbestos fibers present in dimensions below PLM resolution limits. EMSL Analytical Inc suggests that samples reported as <0.25% or none detected undergo additional analysis via TEM. The above test report relates only to the items tested. This report may not be reproduced, except in full, without written approval of EMSL Analytical Inc. This test report must not be used by the client to claim product endorsement by NVLAP or any agency of the United States Government. EMSL Analytical Inc., bears no responsibility for sample collection activities, analytical method limitations, or the accuracy of results when requested to separate layered samples. EMSL Analytical Inc., liability is limited to the cost of sample analysis. The test results contained within this report meet the requirements of NELAC unless otherwise noted.
Analysis performed by EMSL Test Lab (NVLAP #101048-0), NY ELAP 10872

PLMPointCount-1

THIS IS THE LAST PAGE OF THE REPORT.

040517359

EnviroScience Consultants inc.

Environmental Engineering • Industrial Hygiene • Laboratory Services

Office Locations:
Newington, CT
Fairfield, CT
Boston, MA

ENVI 50

SAMPLE LOG FOR ASBESTOS BULKS

Sheet 1 of 8

Project Name: Fellner Architects-Old Jailhouse Feasibility Project No. 05-64210

Building: Jailhouse Project Manager: SWC

Sample ID	Sample Location	Material	Result (%)
09-07-MS-01A	Basement	Water Tank Insulation	
~~09-07-MS-01B~~			
~~09-07-MS-01C~~			
09-07-MS-02		Flue Cement	
09-07-MS-03		Cement on Boiler	
09-07-MS-04A	1st Floor-Kitchen Storage	12"x12" Floor Tile	
~~09-07-MS-04B~~	2nd Floor-Bathroom		
~~09-07-MS-04C~~	3rd Floor-Bathroom		
09-07-MS-05A	1st Floor-Kitchen Storage	Yellow Mastic	
~~09-07-MS-05B~~	2nd Floor-Bathroom		
~~09-07-MS-05C~~	3rd Floor-Bathroom		
09-07-MS-06A	1st Floor	Glue Dabs	

SAMPLES ACCEPTED FOR ANALYSIS BY EMSL ANALYTICAL INC

Analysis Method: ☑ PLM ☐ Other Turnaround Time 24 Hour

Based on the turnaround time indicated above, analyses are due to EnviroScience on or before this date: 9/16/05.
Please call the EnviroScience Laboratory if analyses will be late at (860) 953-2700.

43

Fax Results to the EnviroScience Laboratory at: 413-647-0018.

Special Instruction: Stop analysis on first positive sample in each homogeneous set of samples unless otherwise noted. Do not layer samples unless indicated. EPA 400 point count all samples of asbestos content 3% positive stop on all point counts.

RECEIVED SEP 12 2005 EMSL ANALYTICAL INC. WEST SPRINGFIELD, MA

Samples collected by: Mike Stewart Date: 9/7/05 Time: 8:00 AM

Samples [Rec'd][Sent by] [MS] [MS] Date: 9/8/05 9/8/05 Time: 5 PM

Samples Received by: Date: Time:

Shipped To: ☑ EMSL State NJ ☐ Other

Method of Shipment: ☑ Fed Ex ☐ UPS Overnight ☐ UPS Ground ☐ Other

795 North Mountain Road, Newington, CT 06111
Phone: (860) 953-2700 Fax (860) 953-3203

0405173 59

EnviroScience Consultants inc.
Environmental Engineering • Industrial Hygiene • Laboratory Services

Office Locations:
Newington, CT
Fairfield, CT
Boston, MA

SAMPLE LOG FOR ASBESTOS BULKS

Sheet 2 of 8

Project Name: Fellner Architects - Old Jailhouse Feasibility Project No. 05-64210

Building: Jailhouse Project Manager: SWC

Sample ID	Sample Location	Material	Result (%)
~~09-07-MS-06B~~	~~1st Floor~~	~~Glue Dabs~~	
~~09-07-MS-06C~~	~~⊥~~	~~⊥~~	
09-07-MS-07	Kitchen	Flex Connector	
09-07-MS-08A	1st Floor - Wall	Rough Coat Plaster	
09-07-MS-08B	⊥		
09-07-MS-08C	2nd Floor		
09-07-MS-08D	⊥		
09-07-MS-08E	⊥ - Ceiling		
09-07-MS-08F	3rd Floor Wall		
09-07-MS-08G	⊥	⊥	
09-07-MS-09A	1st Floor	Skim Coat Plaster	
09-07-MS-09B	⊥	⊥	

SAMPLES ACCEPTED FOR ANALYSIS BY EMSL ANALYTICAL INC.

Analysis Method: ☑ PLM ☐ Other Turnaround Time 24 Hour

Based on the turnaround time indicated above, analyses are due to EnviroScience on or before this date: 9/16/05.
Please call the EnviroScience Laboratory if analyses will be late at (860) 953-2700.

Fax Results to the EnviroScience Laboratory at: 413-647-0018.

Special Instruction: Stop analysis on first positive sample in each homogeneous set of samples unless otherwise noted. Do not layer samples unless indicated. EPA 400 point count all samples of asbestos content <4%, positive stop on all point counts.

Samples collected by: Mike Stewart **Date:** 9/7/05 **Time:** AM/PM

Samples [Rec'd][Sent by] I MS II MS **Date:** I 9/8/05 II 9/8/05 **Time:** I PM II PM

Samples Received by: _____ **Date:** _____ **Time:** _____

Shipped To: ☑ EMSL State NJ ☐ Other _____

Method of Shipment: ☑ Fed Ex ☐ UPS Overnight ☐ UPS Ground ☐ Other

RECEIVED WESTBOROUGH, MA 01581 SEP 9 AM 11:15

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Environmental Engineering • Industrial Hygiene • Laboratory Services

Office Locations:
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Fairfield, CT
Boston, MA

SAMPLE LOG FOR ASBESTOS BULKS

Sheet 3 of 8

ject Name: Fellner Architects-Old Jailhouse Feasibility Project No. 05-6421.0

ilding: Jailhouse Project Manager: SWC

Sample ID	Sample Location	Material	Result (%)
07-MS-09C	2nd Floor - Wall	Skim Coat Plaster	
07-MS-09D	↓ ↓	↓	
07-MS-09E	↓ - Ceiling		
07-MS-09F	3rd Floor - Wall		
07-MS-09G	↓ ↓	↓	
07-MS-10A	Kitchen	Linoleum (red)	
~~07-MS-10B~~	↓	↓	
~~07-MS-10C~~	↓	↓	
07-MS-11A	2nd Floor	Yellow 12x12" Self adhesive Floor tile	
~~07-MS-11B~~	↓	↓	
~~07-MS-11C~~	↓	↓	
07-MS-12A	1st Floor	Sheetrock + Joint Compound	

lysis Method: ☑ PLM ☐ Other Turnaround Time 24 Hour

ed on the turnaround time indicated above, analyses are due to EnviroScience on or before this date: 9/16/05.
ise call the EnviroScience Laboratory if analyses will be late at (860) 953-2700.

Results to the EnviroScience Laboratory at: 413-647-0018.

cial Instruction: Stop analysis on first positive sample in each homogeneous set of samples unless otherwise d. Do not layer samples unless indicated. EPA 400 point count all samples of asbestos content <4%, positive on all point counts.

ples collected by: Mike Stewart **Date:** 9/7/05 **Time:** AM/PM

ples [Rec'd][Sent by] [MS ‖ MS] **Date:** [9/8/05 ‖ 9/8/05] **Time:** PM

les Received by: _____ **Date:** _____ **Time:** _____

ped To: ☑ EMSL State NJ ☐ Other _____

iod of Shipment: ☑ Fed Ex ☐ UPS Overnight ☐ UPS Ground ☐ Other

040517359

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SAMPLE LOG FOR ASBESTOS BULKS

Sheet 4 of 8

Project Name: Fellner Architects-Old Jailhouse Feasibility Project No. 05-642.10

Building: Jailhouse Project Manager: SWC

Sample ID	Sample Location	Material	Result (%)
~~09-07-MS-12B~~	~~2nd Floor~~	~~Sheetrock + Joint Compound~~	
~~09-07-MS-12C~~	~~3rd Floor~~	~~"~~	
09-02-MS-14	1st Floor	Joint Compound	
09-02-MS-15A	Kitchen	Ceramic Tile Mastic	
~~09-02-MS-15B~~	"	"	
~~09-02-MS-15C~~	"	"	
09-02-MS-16A	2nd Floor	Cove Base Mastic	
~~09-02-MS-16B~~	"	"	
~~09-02-MS-16C~~	"	"	
09-02-MS-17A	"	Brown Cove Base	
~~09-02-MS-17B~~	"	"	
~~09-02-MS-17C~~	"	"	

SAMPLES ACCEPTED FOR ANALYSIS BY EMSL ANALYTICAL INC.

Analysis Method: ☑ PLM ☐ Other Turnaround Time 24 Hour

Based on the turnaround time indicated above, analyses are due to EnviroScience on or before this date: 9/16/05.
Please call the EnviroScience Laboratory if analyses will be late at (860) 953-2700.

Fax Results to the EnviroScience Laboratory at: 413-647-0018.

Special Instruction: Stop analysis on first positive sample in each homogeneous set of samples unless otherwise noted. Do not layer samples unless indicated. EPA 400 point count all samples of asbestos content <4%, positive stop on all point counts.

Samples collected by: Mike Stewart Date: 9/7/05 Time: AM/PM

Samples [Rec'd][Sent by] [MS][MS] Date: 9/8/05][9/8/05] Time: 10:00

Samples Received by: Date: Time:

Shipped To: ☑ EMSL State NJ ☐ Other

Method of Shipment: ☑ Fed Ex ☐ UPS Overnight ☐ UPS Ground ☐ Other

RECEIVED WEST MILFORD 05 SEP -9 AM 10:14

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Boston, MA

SAMPLE LOG FOR ASBESTOS BULKS

Sheet 5 of 8

Project Name: Fellner Architects-Old Jailhouse Feasibility Project No. 05-6421.0

Building: Jailhouse Project Manager: SWC

Sample ID	Sample Location	Material	Result (%)
09-07-MS-18	3rd Floor Bathroom	Black Mastic	
09-07-MS-19		Green 9x9 Floor Tile	
09-07-MS-20A	Cellblock Wing-Roof-Bottom Layer	Tan Shingle	
~~09-07-MS-20B~~			
~~09-07-MS-20C~~			
09-07-MS-21A	-Middle Layer	Green Shingle	
~~09-07-MS-21B~~			
~~09-07-MS-21C~~			
09-07-MS-22A	-Top Layer	Black Shingle	
~~09-07-MS-22B~~			
~~09-07-MS-22C~~			
09-07-MS-23A	Roof	Base Flashing	

SAMPLES ACCEPTED FOR ANALYSIS BY EMSL ANALYTICAL INC

Analysis Method: ☑ PLM ☐ Other Turnaround Time 24 Hour

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Please call the EnviroScience Laboratory if analyses will be late at (860) 953-2700.

Fax Results to the EnviroScience Laboratory at: 413-647-0018.

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RECEIVED SEP 15 2005 7:00 AM

Samples collected by: Mike Stewart Date: 9/7/05 Time: ~~AM~~/PM

Samples [Rec'd][Sent by] MS MS Date: 9/8/05 9/8/05 Time: ~~AM~~/PM

Samples Received by: Date: Time: ~~AM~~/PM

Shipped To: ☑ EMSL State NJ ☐ Other

Method of Shipment: ☑ Fed Ex ☐ UPS Overnight ☐ UPS Ground ☐ Other

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SAMPLE LOG FOR ASBESTOS BULKS

Sheet 6 of 8

Project Name: Fellner Architects-Old Jailhouse Feasibility Project No. 05-6421.10

Building: Jailhouse Project Manager: SWC

Sample ID	Sample Location	Material	Result (%)
~~09-07-MS-23B~~	Roof	Base Flashing	
~~09-07-MS-23C~~	↓	↓	
09-07-MS-24A	Cell Block Wing-New Roof-Bottom Layer	Tar Paper	
~~09-07-MS-24B~~	↓	↓	
~~09-07-MS-24C~~	↓	↓	
09-07-MS-25A	Top layer	Black Shingle	
~~09-07-MS-25B~~	↓	↓	
~~09-07-MS-25C~~	↓	↓	
09-07-MS-26A	Administration Wing Roof-Bottom Layer	Tar Paper	
~~09-07-MS-26B~~	↓	↓	
~~09-07-MS-26C~~	↓	↓	
09-07-MS-27A	Top Layer	Green Shingle	

Analysis Method: ☑ PLM ☐ Other Turnaround Time 24 Hour

Based on the turnaround time indicated above, analyses are due to EnviroScience on or before this date: 9/6/05.
Please call the EnviroScience Laboratory if analyses will be late at (860) 953-2700.

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Special Instruction: Stop analysis on first positive sample in each homogeneous set of samples unless otherwise noted. Do not layer samples unless indicated. EPA 400 point count all samples of asbestos content <4%, positive stop on all point counts.

Samples collected by: Mike Stewart Date: 9/7/05 Time: 4:30 PM

Samples [Rec'd][Sent by] [MS][MS] Date: 9/8/05 [9/8/05] Time: [illegible]

Samples Received by: Date: Time:

Shipped To: ☑ EMSL State NJ ☐ Other

Method of Shipment: ☑ Fed Ex ☐ UPS Overnight ☐ UPS Ground ☐ Other

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SAMPLE LOG FOR ASBESTOS BULKS

Sheet 7 of 8

Project Name: Fellner Architects - Old Jailhouse Feasibility Project No. 05-642.10

Building: Jailhouse Project Manager: SWC

Sample ID	Sample Location	Material	Result (%)
~~09-02-MS-27B~~	Administration Wing Roof - Tar	Green Shingle	
~~09-02-MS-27C~~	↓	↓	
09-02-MS-28A	Exterior - Metal Windows	Window Glazing Compound	
~~09-02-MS-28B~~			
~~09-02-MS-28C~~			
09-02-MS-29A		Window Caulk	
~~09-02-MS-29B~~			
~~09-02-MS-29C~~			
09-02-MS-30A	Wood Windows	Window Glazing Compound	
~~09-02-MS-30B~~			
~~09-02-MS-30C~~			
09-02-MS-31A		Window Caulk	

SAMPLES ACCEPTED FOR ANALYSIS BY EMSL ANALYTICAL INC.

Analysis Method: ☑ PLM ☐ Other Turnaround Time 24 Hour

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RECEIVED SEP 9 - 6 PM 05

Samples collected by: Mike Stewart Date: 9/7/05 Time: 9AM/PM

Samples [Rec'd][Sent by] [MS][MS] Date: 9/8/05][9/8/05] Time: PM

Samples Received by: Date: Time:

Shipped To: ☑ EMSL State NJ ☐ Other

Method of Shipment: ☑ Fed Ex ☐ UPS Overnight ☐ UPS Ground ☐ Other

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SAMPLE LOG FOR ASBESTOS BULKS

Sheet 8 of 8

Project Name: Fellner Architects-Old Jailhouse Feasibility Project No. 05-6421.0

Building: Jailhouse Project Manager: SWC

Sample ID	Sample Location	Material	Result (%)
~~09-07-MS-31B~~	~~Exterior-Wood Windows~~	~~Window Caulk~~	
~~09-07-MS-31C~~	↓	↓	
09-07-MS-32A	Door Systems	Door Caulk	
~~09-07-MS-32B~~	↓	↓	
~~09-07-MS-32C~~	↓	↓	
09-07-MS-			
09-07-MS-			
09-07-MS-			
09-07-MS-			
09-07-MS-			
09-07-MS-			
09-07-MS-			

SAMPLES ACCEPTED FOR ANALYSIS BY EMSL ANALYTICAL INC.

Analysis Method: ☑ PLM ☐ Other Turnaround Time 24 Hour

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RECEIVED SEP 9 11 3:24 PM

Samples collected by: Mike Stewart Date: 9/7/05 Time: 3:24 PM

Samples [Rec'd][Sent by] [MS][MS] Date: 9/8/05 9/8/05 Times: 8AM 11 AM

Samples Received by: Date: Time:

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Method of Shipment: ☑ Fed Ex ☐ UPS Overnight ☐ UPS Ground ☐ Other

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EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077
Phone: (800) 220-3675 Fax: (856) 786-5974 Email: westmontashlab@EMSL.com

Attn: **Steve Connelly**
Fuss & O' Neill EnviroScience, LLC
146 Hartford Road
Manchester, CT 06040

Fax: (413) 647-0018 Phone: (860) 646-2469
Project: **20101276.AIE TOWN OF HADDAM**

Customer ID: ENVI54
Customer PO:
Received: 12/15/10 10:20 AM
EMSL Order: 041028844

EMSL Proj:
Analysis Date: 12/15/2010

Test Report: Asbestos Analysis of Bulk Material via EPA 600/R-93/116. Quantitation using 400 Point Count Procedure.

Sample	Description	Appearance	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
1213WT05A 041028844-0009	EXTERIOR BRICK BLDG - METAL WINDOW GLAZING	Gray Non-Fibrous Heterogeneous		100.00% Non-fibrous (other)	**<0.25% Chrysotile**
1213WT05B 041028844-0010	EXTERIOR BRICK BLDG - METAL WINDOW GLAZING	Gray Non-Fibrous Heterogeneous		100.00% Non-fibrous (other)	**<0.25% Chrysotile**
1213WT05C 041028844-0011	EXTERIOR BRICK BLDG - METAL WINDOW GLAZING	Gray Non-Fibrous Heterogeneous		100.00% Non-fibrous (other)	**<0.25% Chrysotile**
1213WT18A 041028844-0034	THROUGHOUT - SHEETROCK/JOINT COMPOUND	Brown/White Fibrous Heterogeneous	40.00% Cellulose	60.00% Non-fibrous (other)	**<0.25% Chrysotile**
1213WT18B 041028844-0035	THROUGHOUT - SHEETROCK/JOINT COMPOUND	Brown/White Fibrous Heterogeneous	50.00% Cellulose	50.00% Non-fibrous (other)	**<0.25% Chrysotile**
1213WT20A 041028844-0039	EXTERIOR MAIN BLDG - WOOD WINDOW CAULK	Gray/White Non-Fibrous Heterogeneous		100.00% Non-fibrous (other)	**<0.25% Chrysotile**
1213WT20B 041028844-0040	EXTERIOR MAIN BLDG - WOOD WINDOW CAULK	Various Non-Fibrous Heterogeneous		99.25% Non-fibrous (other)	**0.75% Chrysotile**
1213WT21A 041028844-0041	EXTERIOR BRICK BLDG - BOTTOM LAYER - METAL	Gray Non-Fibrous Heterogeneous		100.00% Non-fibrous (other)	**<0.25% Anthophyllite**
1213WT21B 041028844-0042	EXTERIOR BRICK BLDG - BOTTOM LAYER - METAL	Gray Non-Fibrous Heterogeneous		100.00% Non-fibrous (other)	**<0.25% Anthophyllite**

Initial report from 12/16/2010 07:09:47

Analyst(s)
Jerry Cherian (22)

Stephen Siegel
Stephen Siegel, CIH, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. 200 Route 130 North, Cinnaminson NJ NVLAP Lab Code 101048-0, AIHA-LAP, LLC:IHLAP Lab 100194, NYS ELAP 10872, NJ DEP 03038

EMSL Analytical, Inc.
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Phone: (800) 220-3675 Fax: (856) 786-5974 Email: westmontasblab@EMSL.com

Attn: **Steve Connelly**
Fuss & O' Neill EnviroScience, LLC
146 Hartford Road
Manchester, CT 06040

Fax: (413) 647-0018 Phone: (860) 646-2469
Project: **20101276.AIE TOWN OF HADDAM**

Customer ID: ENVI54
Customer PO:
Received: 12/15/10 10:20 AM
EMSL Order: 041028844
EMSL Proj:
Analysis Date: 12/15/2010

Test Report: Asbestos Analysis of Bulk Material via EPA 600/R-93/116. Quantitation using 400 Point Count Procedure.

Sample	Description	Appearance	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
1213WT21C 041028844-0043	EXTERIOR BRICK BLDG - BOTTOM LAYER - METAL	Gray Non-Fibrous Heterogeneous		100.00% Non-fibrous (other)	**<0.25% Anthophyllite**
1213WT23 041028844-0047	2ND FLOOR REAR ROOM - MAIN BLDG - 12X12 TAN	Tan Non-Fibrous Heterogeneous		98.75% Non-fibrous (other)	**1.25% Chrysotile**
1213WT24A 041028844-0048	1ST FLOOR KITCHEN - JOINT COMPOUND	Tan Non-Fibrous Heterogeneous		99.75% Non-fibrous (other)	**0.25% Chrysotile**
1213WT24B 041028844-0049	1ST FLOOR KITCHEN - JOINT COMPOUND	Tan Non-Fibrous Heterogeneous		99.50% Non-fibrous (other)	**0.50% Chrysotile**
1213WT28A 041028844-0058	HALLWAY NEAR KITCHEN - LINOLEUM	Green Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**<0.25% Chrysotile**
1213WT28B 041028844-0059	HALLWAY NEAR KITCHEN - LINOLEUM	Green Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**<0.25% Chrysotile**
1213WT28C 041028844-0060	HALLWAY NEAR KITCHEN - LINOLEUM	Green Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**<0.25% Chrysotile**
1213WT29A 041028844-0061	HALLWAY NEAR KITCHEN - BROWN MASTIC	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**<0.25% Anthophyllite**
1213WT29B 041028844-0062	HALLWAY NEAR KITCHEN - BROWN MASTIC	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**<0.25% Anthophyllite**

Initial report from 12/16/2010 07:09:47

Analyst(s)
Jerry Cherian (22)

Stephen Siegel, CIH, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. 200 Route 130 North, Cinnaminson NJ NVLAP Lab Code 101048-0, AIHA-LAP, LLC IHLAP Lab 100194, NYS ELAP 10872, NJ DEP 03036

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Attn: **Steve Connelly**
Fuss & O' Neill EnviroScience, LLC
146 Hartford Road
Manchester, CT 06040

Fax: (413) 647-0018 Phone: (860) 646-2469
Project: **20101276.AIE TOWN OF HADDAM**

Customer ID: ENVI54
Customer PO:
Received: 12/15/10 10:20 AM
EMSL Order: 041028844

EMSL Proj:
Analysis Date: 12/15/2010

Test Report: Asbestos Analysis of Bulk Material via EPA 600/R-93/116. Quantitation using 400 Point Count Procedure.

Sample	Description	Appearance	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
1213WT29C *041028844-0063*	HALLWAY NEAR KITCHEN - BROWN MASTIC	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**<0.25% Anthophyllite**
1213WT33A *041028844-0072*	3RD FLOOR BATHROOM - BLACK MASTIC	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**<0.25% Chrysotile**
1213WT33B *041028844-0073*	3RD FLOOR BATHROOM - BLACK MASTIC	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**<0.25% Chrysotile**
1213WT33C *041028844-0074*	3RD FLOOR BATHROOM - BLACK MASTIC	Black Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**<0.25% Chrysotile**

Initial report from 12/16/2010 07:09:47

Analyst(s)
Jerry Chenan (22)

Stephen Siegel, CIH, Laboratory Manager
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Samples analyzed by EMSL Analytical, Inc. 200 Route 130 North, Cinnaminson NJ NVLAP Lab Code 101048-0, AIHA-LAP, LLC-IHLAP Lab 100194, NYS ELAP 10872, NJ DEP 03038

THIS IS THE LAST PAGE OF THE REPORT.

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Attn: **Steve Connelly**
Fuss & O' Neill EnviroScience, LLC
146 Hartford Road
Manchester, CT 06040

Fax: (413) 847-0018 Phone: (860) 646-2469
Project: **20101276.AIE TOWN OF HADDAM**

Customer ID: ENVI54
Customer PO:
Received: 12/15/10 10:20 AM
EMSL Order: 041028844

EMSL Proj:
Analysis Date: 12/15/2010

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
1213 WT01A *041028844-0001*	CELL BLOCK WING -NEW ROOF BOTTOM LAYER - TAR PAPER	Black Fibrous Heterogeneous	10% Cellulose	90% Non-fibrous (other)	**None Detected**
1213 WT01B *041028844-0002*	CELL BLOCK WING -NEW ROOF BOTTOM LAYER - TAR PAPER	Black Fibrous Heterogeneous	10% Cellulose	90% Non-fibrous (other)	**None Detected**
1213 WT02A *041028844-0003*	CELL BLOCK WING - NEW ROOF TOP LAYER - BLACK SHINGLE	Black Fibrous Heterogeneous	20% Cellulose suggest term	80% Non-fibrous (other)	**None Detected**
1213 WT02B *041028844-0004*	CELL BLOCK WING - NEW ROOF TOP LAYER - BLACK SHINGLE	Black Fibrous Heterogeneous	20% Cellulose suggest term	80% Non-fibrous (other)	**None Detected**
1213 WT03A *041028844-0005*	ADMINISTRATIVE WING ROOF - BOTTOM LAYER - TAR PAPER	Black Fibrous Heterogeneous	60% Cellulose	40% Non-fibrous (other)	**None Detected**

Initial report from 12/16/2010 07:09:47

Analyst(s)

Jerry Cherian (48)

Stephen Siegel

Stephen Siegel, CIH, Laboratory Manager
or other approved signatory

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Attn: **Steve Connelly**
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146 Hartford Road
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Fax: (413) 647-0018 Phone: (860) 646-2469
Project: **20101276.AIE TOWN OF HADDAM**

Customer ID: ENVI54
Customer PO:
Received: 12/15/10 10:20 AM
EMSL Order: 041028844

EMSL Proj:
Analysis Date: 12/15/2010

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
1213 WT03B *041028844-0006*	ADMINISTRATIVE WING ROOF - BOTTOM LAYER - TAR PAPER	Black Fibrous Heterogeneous	60% Cellulose	40% Non-fibrous (other)	**None Detected**
1213WT04A *041028844-0007*	ADMINISTRATIVE WING ROOF- TOP LAYER - GREEN SHINGLE	Black Fibrous Heterogeneous	20% Cellulose	80% Non-fibrous (other)	**None Detected**
			suggest tem		
1213WT04B *041028844-0008*	ADMINISTRATIVE WING ROOF- TOP LAYER - GREEN SHINGLE	Black Fibrous Heterogeneous	20% Cellulose	80% Non-fibrous (other)	**None Detected**
			suggest tem		
1213WT06A *041028844-0012*	EXTERIOR MAIN BLDG - WOOD WINDOW GLAZING	Gray/White Non-Fibrous Heterogeneous		100% Non-fibrous (other)	**None Detected**
			suggest tem		
1213WT06B *041028844-0013*	EXTERIOR MAIN BLDG - WOOD WINDOW GLAZING	White Non-Fibrous Heterogeneous		100% Non-fibrous (other)	**None Detected**

Sample number on bag was labelled 6C, therefore analyst relabeled sample bag to 6B.

Initial report from 12/16/2010 07:09:47

Analyst(s)

Jerry Cherian (48)

Stephen Siegel, CIH, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. 200 Route 130 North, Cinnaminson NJ NVLAP Lab Code 101048-0, AIHA-LAP, LLC-IHLAP Lab 100194, NYS ELAP 10872, NJ DEP 03036

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Fax: (413) 647-0018 Phone: (860) 646-2469
Project: **20101276.AIE TOWN OF HADDAM**

Customer ID: ENVI54
Customer PO:
Received: 12/15/10 10:20 AM
EMSL Order: 041028844
EMSL Proj:
Analysis Date: 12/15/2010

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
1213WT07A *041028844-0014*	1ST FLOOR KITCHEN - CERAMIC TILE	Tan Non-Fibrous Heterogeneous		100% Non-fibrous (other)	**None Detected**
1213WT07B *041028844-0015*	1ST FLOOR KITCHEN - CERAMIC TILE	Tan Non-Fibrous Heterogeneous		100% Non-fibrous (other)	**None Detected**
1213WT08A *041028844-0016*	1ST FLOOR FRONT LEFT RM - COVEBASE MASTIC	Brown Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
1213WT08B *041028844-0017*	1ST FLOOR FRONT LEFT RM - COVEBASE MASTIC	Brown Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
1213WT09A *041028844-0018*	3RD FLOOR BATHROOM - BLACK MASTIC	Black Non-Fibrous Heterogeneous		100% Non-fibrous (other)	**None Detected**
1213WT09B *041028844-0019*	3RD FLOOR BATHROOM - BLACK MASTIC	Black Non-Fibrous Heterogeneous		100% Non-fibrous (other)	**None Detected**
1213WT10A *041028844-0020*	DUMPSTER - GRAY SHINGLE	Black Fibrous Heterogeneous	20% Cellulose	80% Non-fibrous (other)	**None Detected**

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Analysis Date: 12/15/2010

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
1213WT10B *041028844-0021*	DUMPSTER - GRAY SHINGLE	Black Fibrous Heterogeneous	20% Cellulose	80% Non-fibrous (other)	**None Detected**
1213WT11A *041028844-0022*	CELL BLOCK WING - OLD ROOF TOP LAYER - GREEN SHINGLE	Black/Green Fibrous Heterogeneous	20% Cellulose	80% Non-fibrous (other)	**None Detected**
1213WT11B *041028844-0023*	CELL BLOCK WING - OLD ROOF TOP LAYER - GREEN SHINGLE	Black/Green Fibrous Heterogeneous	20% Cellulose	80% Non-fibrous (other)	**None Detected**
1213WT13A *041028844-0024*	BASEMENT - WATER TANK INSULATION	Gray Fibrous Heterogeneous	40% Min. Wool suggest tem	60% Non-fibrous (other)	**None Detected**
1213WT13B *041028844-0025*	BASEMENT - WATER TANK INSULATION	Gray Fibrous Heterogeneous	40% Min. Wool suggest tem	60% Non-fibrous (other)	**None Detected**
1213WT14A *041028844-0026*	1ST FLOOR KITCHEN STORAGE - 12X12 FLOOR TILE	Beige Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**

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EMSL Order: 041028844

EMSL Proj:
Analysis Date: 12/15/2010

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
1213WT14B *041028844-0027*	1ST FLOOR KITCHEN STORAGE - 12X12 FLOOR TILE	Beige Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
1213WT15A *041028844-0028*	1ST FLOOR KITCHEN STORAGE - YELLOW MASTIC	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
1213WT15B *041028844-0029*	1ST FLOOR KITCHEN STORAGE - YELLOW MASTIC	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
1213WT16A *041028844-0030*	1ST FLOOR - GLUE DAUBS	Brown Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
1213WT16B *041028844-0031*	1ST FLOOR - GLUE DAUBS	Brown Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
1213WT17A *041028844-0032*	1ST FLOOR KITCHEN - RED LINOLEUM FLOORING	Red Non-Fibrous Heterogeneous		100% Non-fibrous (other)	**None Detected**

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EMSL Proj:
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Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
1213WT17B *041028844-0033*	1ST FLOOR KITCHEN - RED LINOLEUM FLOORING	Red Non-Fibrous Heterogeneous		100% Non-fibrous (other)	**None Detected**
1213WT19A *041028844-0036*	EXTERIOR BRICK BLDG - TOP LAYER - METAL WINDOW CAULK	Non-Fibrous Heterogeneous		100% Non-fibrous (other)	**None Detected**
			suggest tem This sample appeared to be different from the other two samples in this group.		
1213WT19B *041028844-0037*	EXTERIOR BRICK BLDG - TOP LAYER - METAL WINDOW CAULK	Gray/White Non-Fibrous Heterogeneous		100% Non-fibrous (other)	**None Detected**
1213WT19C *041028844-0038*	EXTERIOR BRICK BLDG - TOP LAYER - METAL WINDOW CAULK	Gray/White Non-Fibrous Heterogeneous		100% Non-fibrous (other)	**None Detected**
1213WT22A *041028844-0044*	BRICK BUILDING - BEHIND SHEETROCK - VAPOR BARRIER	Black Fibrous Heterogeneous	60% Cellulose	40% Non-fibrous (other)	**None Detected**

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Received: 12/15/10 10:20 AM
EMSL Order: 041028844
EMSL Proj:
Analysis Date: 12/15/2010

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
1213WT22B *041028844-0045*	BRICK BUILDING - BEHIND SHEETROCK - VAPOR BARRIER	Black Fibrous Heterogeneous	60% Cellulose	40% Non-fibrous (other)	**None Detected**
1213WT22C *041028844-0046*	BRICK BUILDING - BEHIND SHEETROCK - VAPOR BARRIER	Black Fibrous Heterogeneous	60% Cellulose	40% Non-fibrous (other)	**None Detected**
1213WT25A *041028844-0050*	1ST FLOOR KITCHEN STORAGE - 12X12 BROWN FLOOR TILE	Brown Non-Fibrous Homogeneous	point count	95% Non-fibrous (other)	**5% Chrysotile**
1213WT25B *041028844-0051*	1ST FLOOR KITCHEN STORAGE - 12X12 BROWN FLOOR TILE				**Stop Positive (Not Analyzed)**
1213WT25C *041028844-0052*	1ST FLOOR KITCHEN STORAGE - 12X12 BROWN FLOOR TILE				**Stop Positive (Not Analyzed)**

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Customer ID: ENVI54
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Received: 12/15/10 10:20 AM
EMSL Order: 041028844

EMSL Proj:
Analysis Date: 12/15/2010

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
1213WT26A 041028844-0053	1ST FLOOR KITCHEN STORAGE - BLACK MASTIC	Black Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
1213WT26B 041028844-0054	1ST FLOOR KITCHEN STORAGE - BLACK MASTIC	Black Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
1213WT26C 041028844-0055	1ST FLOOR KITCHEN STORAGE - BLACK MASTIC	Black Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
1213WT27A 041028844-0056	BASEMENT BOILER - WATER CUTOFF INTERFACE - GASKET	Red Non-Fibrous Heterogeneous	suggest term	100% Non-fibrous (other)	None Detected
1213WT27B 041028844-0057	BASEMENT BOILER - WATER CUTOFF INTERFACE - GASKET	Red Non-Fibrous Heterogeneous	suggest term	100% Non-fibrous (other)	None Detected

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Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
1213WT30A *041028844-0064*	1ST FLOOR - BROWN COVEBASE	Brown Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
1213WT30B *041028844-0065*	1ST FLOOR - BROWN COVEBASE	Brown Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
1213WT31A *041028844-0066*	2ND FLOOR REAR ROOM - VAPOR BARRIER ON WOOD FIBER FLOORING	Brown Non-Fibrous Heterogeneous suggest tem		100% Non-fibrous (other)	**None Detected**
1213WT31B *041028844-0067*	2ND FLOOR REAR ROOM - VAPOR BARRIER ON WOOD FIBER FLOORING	Brown Non-Fibrous Heterogeneous suggest tem		100% Non-fibrous (other)	**None Detected**
1213WT31C *041028844-0068*	2ND FLOOR REAR ROOM - VAPOR BARRIER ON WOOD FIBER FLOORING	Brown Non-Fibrous Heterogeneous suggest tem		100% Non-fibrous (other)	**None Detected**

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Sample	Description	Appearance	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
1213WT32A *041028844-0069*	3RD FLOOR BATHROOM - 9X9 GREEN FLOOR TILE	Green Non-Fibrous Homogeneous		92% Non-fibrous (other)	8% Chrysotile
1213WT32B *041028844-0070*	3RD FLOOR BATHROOM - 9X9 GREEN FLOOR TILE				Stop Positive (Not Analyzed)
1213WT32C *041028844-0071*	3RD FLOOR BATHROOM - 9X9 GREEN FLOOR TILE				Stop Positive (Not Analyzed)

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THIS IS THE LAST PAGE OF THE REPORT.

041028844

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SAMPLE LOG FOR ASBESTOS BULKS

Sheet 1 of 7

Project Name: Town of Haddam

Project No. 20101276.ALE

Building: Former Jail House

Project Manager: Stephen Connelly

Sample ID	Sample Location	Material	Result (%)
1213WT01A	Cell Block wing - New Roof Bottom layer	Tar Paper	
01B	↓	↓	
1213WT02A	Cell Block wing - New Roof Top layer	Black Shingle	
02B	↓	↓	
1213WT03A	Administration Wing Roof - Bottom layer	Tar Paper	
03B	↓	↓	
1213WT04A	Administration Wing Roof - Top layer	Green Shingle	
04B	↓	↓	
1213WT05A	Exterior Brick Building	(Metal) window Glazing	
05B	↓	↓	
05C	↓	↓	

Analysis Method: ☒ PLM ☐ Other

Turnaround Time 24hr

Based on the turnaround time indicated above, analyses are due to EnviroScience on or before this date: _____. Please call the EnviroScience Laboratory if analyses will be late at (860) 646-2469.

Fax Results to the EnviroScience Laboratory at: 413-647-0018.

Special Instructions: Stop analysis on first positive sample in each homogeneous set of samples unless otherwise noted. Do not layer samples unless indicated. EPA 400 point count all samples of asbestos content <4% positive stop on all point counts.

Samples collected by: Willie Thompson **Date:** 12/13/10 **Time:** _____

Samples [Rec'd][Sent by] [ ] [ ] **Date:** [ ] [ ] **Time:** _____

Samples Received by: DMB-#1020A **Date:** 12-15-10 **Time:** _____

Shipped To: ☑ EMSL **State** NJ ☐ Other _____

Method of Shipment: ☑ Fed Ex ☐ UPS Overnight ☐ UPS Ground ☐ Other

10 DEC 15 AM 11:29

SAMPLES ACCEPTED FOR ANALYSIS BY EMSL ANALYTICAL INC

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041028844

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SAMPLE LOG FOR ASBESTOS BULKS

Sheet 2 of 7

Project Name: Town of Haddam

Project No. 20100276.A1G

Building: Former Jail House

Project Manager: Stephen Connally

Sample ID	Sample Location	Material	Result (%)
1213WT06A	Exterior Main Building	(Wood) Window Glazing	
06B	↓	↓	
1213WT07A	1st Floor Kitchen	Ceramic Tile Mastic	
07B	↓	↓	
1213WT08A	1st Floor Front left Room	Coveback mastic	
08B	↓	↓	
1213WT09A	3rd Floor Bathroom	Black Mastic	
09B	↓	↓	
1213WT10A	Dumpster	Gray Shingle	
10B	↓	↓	
1213WT11A	Cell Block way - Old floor top layer	Green Shingle	
11B	↓	↓	

Analysis Method: ☒ PLM ☐ Other

Turnaround Time 24hr

Based on the turnaround time indicated above, analyses are due to EnviroScience on or before this date _____. Please call the EnviroScience Laboratory if analyses will be late at (860) 646-2469.

Fax Results to the EnviroScience Laboratory at: 413-647-0818.

Special Instructions: Stop analysis on first positive sample in each homogeneous set of samples unless otherwise noted. Do not layer samples unless indicated. EPA 400 point count all samples of asbestos content <4%, positive stop on all point counts.

Samples collected by: Willie Thompson Date: 12/13/10 Time: _____

Samples [Rec'd] [Sent by] [ ] Date: [ ] Time: _____

Samples Received by: _____ Date: _____ Time: _____

Shipped To: ☒ EMSL State NJ ☐ Other _____

Method of Shipment: ☒ Fed Ex ☐ UPS Overnight ☐ UPS Ground ☐ Other

10 DEC 15 AM 11:29

SAMPLES ACCEPTED FOR ANALYSIS BY EMSL ANALYTICAL INC.

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FUSS & O'NEILL
EnviroScience, LLC

146 Hartford Road, Manchester, CT 06040

www.fando.com

(860) 646-2469 Fax (860) 649-6883

SAMPLE LOG FOR ASBESTOS BULKS

Sheet 3 of 7

Project Name: Town of Haddam

Project No. 20101276.A1E

Building: Former Jail House

Project Manager: Stephen Connelly

Sample ID	Sample Location	Material	Result (%)
1213WT13A	Basement	Water Tank Insulation	
13B	↓	↓	
1213WT14A	1st Floor Kitchen Storage	12"x12" Floor tile	
14B	↓	↓	
1213 WT15A	1st Floor Kitchen Storage	Yellow Mastic	
15B	↓	↓	
1213WT16A	1st Floor	Glue Daubs	
16B	↓	↓	
1213WT17A	1st Flor Kitchen	Red linoleum Flooring	
17B	↓	↓	
1213WT18A	Throughout	Sheetrock/Joint Compound	
18B	↓	↓	

Analysis Method: ☒ PLM ☐ Other

Turnaround Time 24hr

Based on the turnaround time indicated above, analyses are due to EnviroScience on or before this date _____. Please call the EnviroScience Laboratory if analyses will be late at (860) 646-2469.

Fax Results to the EnviroScience Laboratory at: 413-647-0018.

Special Instructions: Stop analysis on first positive sample in each homogeneous set of samples unless otherwise noted. Do not layer samples unless indicated. EPA 400 point count all samples of asbestos content <4%, positive stop on all point counts.

Samples collected by: Willie Thompson **Date:** 12/13/10 **Time:** _____

Samples [Rec'd][Sent by] [ ] **Date:** [ ] **Time:** _____

Samples Received by: _____ **Date:** _____ **Time:** _____

Shipped To: ☒ EMSL **State** NJ ☐ Other _____

Method of Shipment: ☒ Fed Ex ☐ UPS Overnight ☐ UPS Ground ☐ Other

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SAMPLE LOG FOR ASBESTOS BULKS

Sheet 4 of 7

Project Name: Town of Hebron

Project No. 20100276.A1E

Building: Former Jail House

Project Manager: Stephen Connelly

Sample ID	Sample Location	Material	Result (%)
1213WT19A	Exterior Brick Building - Top layer	(Metal) Window Caulk	
19B	↓	↓	
19C	↓	↓	
1213WT20A	Exterior Main Building	(Wood) Window Caulk	
20B	↓	↓	
1213WT21A	Exterior Brick Building - Bottom layer	(Metal) Window Caulk	
21B	↓	↓	
21C	↓	↓	
1213WT 22A	Brick Building - Behind Sheetrock	Vapor Barrier	
22B	↓	↓	
22C	↓	↓	
1213WT23	2nd Floor Rear Room - Main Building	12"X12" Tan Floor tile	

Analysis Method: ☒ PLM ☐ Other

Turnaround Time 24hr

Based on the turnaround time indicated above, analyses are due to EnviroScience on or before this date: _____. Please call the EnviroScience Laboratory if analyses will be late at (860) 646-2469.

Fax Results to the EnviroScience Laboratory at: 413-647-0018.

Special Instructions: Stop analysis on first positive sample in each homogeneous set of samples unless otherwise noted. Do not layer samples unless indicated. EPA 400 point count all samples of asbestos content <4%, positive stop on all point counts.

Samples collected by: Willie Thompson **Date:** 12/13/10 **Time:** _____

Samples [Rec'd][Sent by] [ ] **Date:** [ ] **Time:** _____

Samples Received by: _____ **Date:** _____ **Time:** _____

Shipped To: ☒ EMSL **State** NJ ☐ Other _____

Method of Shipment: ☒ Fed Ex ☐ UPS Overnight ☐ UPS Ground ☐ Other

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SAMPLE LOG FOR ASBESTOS BULKS

Sheet 5 of 7

Project Name: Town of Hadlam

Project No. 20101276.A1E

Building: Former Jail House

Project Manager: Stephen Connelly

Sample ID	Sample Location	Material	Result (%)
1213WT24A	1st Floor Kitchen	Joint Compound	
24B	↓	↓	
1213WT25A	1st Floor Kitchen Storage	12"x12" Brown Floor tile	
25B	↓	↓	
1213WT25C	↓	↓	
1213WT26A	1st Floor Kitchen Storage	Black Mastic	
26B	↓	↓	
26C	↓	↓	
1213WT27A	Basement Boiler Water Cutoff Interface	Gasket	
1213WT27B	↓	↓	

Analysis Method: ☐ PLM ☐ Other

Turnaround Time 24hr

Based on the turnaround time indicated above, analyses are due to EnviroScience on or before this date _____. Please call the EnviroScience Laboratory if analyses will be late at (860) 646-2469.

Fax Results to the EnviroScience Laboratory at: 413-647-0018.

Special Instructions: Stop analysis on first positive sample in each homogeneous set of samples unless otherwise noted. Do not layer samples unless indicated. EPA 400 point count all samples of asbestos content <4%, positive stop on all point counts.

Samples collected by: Willie Thompson Date: 12/13/10 Time: _____

Samples [Rec'd][Sent by] [ ][ ] Date: [ ][ ] Time: _____

Samples Received by: _____ Date: _____ Time: _____

Shipped To: ☑ EMSL State NJ ☐ Other _____

Method of Shipment: ☑ Fed Ex ☐ UPS Overnight ☐ UPS Ground ☐ Other

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SAMPLE LOG FOR ASBESTOS BULKS

Sheet 6 of 7

Project Name: Town of Haddam

Project No. 20101276.A1C

Building: Former Jail House

Project Manager: Stephen Connolly

Sample ID	Sample Location	Material	Result (%)
1213WT28A	Hallway Near Kitchen	Linoleum Countertop	
28B	↓	↓	
28C	↓	↓	
1213WT29A	Hallway Near Kitchen	Brown Mastic	
29B	↓	↓	
29C	↓	↓	
1213WT30A	1st Floor	Brown Cove base	
30B	↓	↓	
1213WT31A	2nd Floor Rear Room	Vapor Barrier on wood tongue & groove flooring	
31B	↓	↓	
31C	↓	↓	

Analysis Method: ☒ PLM ☐ Other

Turnaround Time 24hr

Based on the turnaround time indicated above, analyses are due to EnviroScience on or before this date: _____. Please call the EnviroScience Laboratory if analyses will be late at (860) 646-2469.

Fax Results to the EnviroScience Laboratory at: 413-647-0018.

Special Instructions Stop analysis on first positive sample in each homogeneous set of samples unless otherwise noted. Do not layer samples unless indicated. EPA 400 point count all samples of asbestos content <4%, positive stop on all point counts.

Samples collected by: Willie Thompson **Date:** 12/13/10 **Time:** _____

Samples [Rec'd][Sent by] [_____] **Date:** [_____] **Time:** _____

Samples Received by: _____ **Date:** _____ **Time:** _____

Shipped To: ☒ EMSL **State** NJ ☐ Other _____

Method of Shipment: ☒ Fed Ex ☐ UPS Overnight ☐ UPS Ground ☐ Other

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SAMPLE LOG FOR ASBESTOS BULKS

Sheet 7 of 7

Project Name: Town of Haddam

Project No. 20101276.A1E

Building: Former Jail House

Project Manager: Stephen Connelly

Sample ID	Sample Location	Material	Result (%)
1213WT32A	3rd Floor Bathroom	9"x9" Green Floor tile	
32B	↓	↓	
32C			
1213WT33A	3rd Floor Bathroom	Black Mastic	
33B			
33C			

Analysis Method: ☒ PLM ☐ Other

Turnaround Time 24hr

Based on the turnaround time indicated above, analyses are due to EnviroScience on or before this date: _____. Please call the EnviroScience Laboratory if analyses will be late at (860) 646-2469.

Fax Results to the EnviroScience Laboratory at: 413-647-0018.

Special Instructions: Stop analysis on first positive sample in each homogeneous set of samples unless otherwise noted. Do not layer samples unless indicated. EPA 400 point count all samples of asbestos content <4%, positive stop on all point counts.

Samples collected by: Willie Thompson Date: 12/13/10 Time: _____

Samples [Rec'd][Sent by] [ ] Date [ ] Time: _____

Samples Received by: _____ Date: _____ Time: _____

Shipped To: ☑ EMSL State NJ ☐ Other _____

Method of Shipment: ☑ Fed Ex ☐ UPS Overnight ☐ UPS Ground ☐ Other

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Appendix B

Lead Paint Testing Procedures and Equipment

STANDARD OPERATING PROCEDURES
LEAD-BASED PAINT LIMITED SCREENINGS

TESTING PROCEDURES AND EQUIPMENT

The U. S. Department of Housing and Urban Development (HUD) "Guidelines for the Evaluation and Control of Lead Hazards in Housing, September 1997," were consulted for this lead paint screening. HUD has been the agency at the federal level with responsibility for the establishment of national lead-based paint standards for testing and abatement. The HUD document will be referenced as the Guidelines in this document. The HUD Guidelines are specific to child occupied dwelling units or target housing and are not wholly applicable to limited screenings. Additionally, most New England States have regulations and standards with regard to lead paint testing and abatement in child occupied facilities. EnviroScience shall consult these regulations and standards prior to beginning testing. Some states have reporting requirements if certain threshold values for lead paint are found and certain conditions exist. EnviroScience reports any specific testing results required by State laws as licensed inspectors and consultants in these circumstances.

This lead evaluation was a Lead Based Paint Limited Screening. Both the proposed scope of work and the final report will note this type of evaluation was done. A Lead Paint Limited Screening is performed in order to determine through representative testing the lead paint history of a property. However, conclusions about untested areas cannot be reliably determined based on the limited testing that was done. Comprehensive inspections involve testing of representative components in each and every room of a building. A Lead Based Paint Limited Screening is conducted in representative locations and not necessarily every room. The intent is to collect a sufficient number of readings using field instrumentation to characterize a given component or surface. Representative components are classified as testing combinations. The age and use of the functional space, component type, and substrate type are used to characterize a testing combination for purposes of a Lead Based Paint Limited Screening. Considering age of the structure inspectors determine original dates of construction and any major renovations to the original building. Interior spaces where major renovation has occurred are also treated as separate spaces. A functional space is a room or group of rooms used for similar purposes where painting is presumed to be uniform.

Inspectors perform Lead Based Paint Limited Screening on representative components ensuring randomization in the selection of components. EnviroScience utilizes a protocol of a minimum of three (3) rooms with similar building components and surfaces are comprehensively tested similar to inspections for HUD compliance or state regulated inspections. (For example, living room, kitchen, and a bedroom may be comprehensively tested in a 6-room apartment). In this protocol specific unique components are tested in any other locations in the dwelling. Inspectors shall record readings utilizing portable field instrumentation.

Conclusions in a Lead Based Paint Limited Screening are made based on consistent findings in the limited number of readings collected for a given testing combination. Inspectors conduct more readings if trends or similar findings are not found during such a limited screening process. In reporting findings and use in cost estimating, EnviroScience shall use limited screening information to extrapolate (or presume) that the untested areas have similar paint history as to those areas where limited screenings were conducted. (For example if in the three locations tested, all window sashes contained threshold values of lead paint above HUD or other State regulatory levels, then EnviroScience would detail in the report that all such components in the dwelling should be presumed to contain lead paint or recommend them to be tested further).

Lead-based paint surfaces and components were identified by utilizing on-site x-ray fluorescence (XRF) instruments. Fuss & O'Neill EnviroScience, LLC owns and maintains two different types of XRFs for testing for lead-based paint. These instruments are four (4) Radiation Monitoring Device LPA-1s (RMD) and a Scitec MAP 4 analyzer. Each of these instruments is operated in accordance with state and federal and manufacturer standards on the use of the instruments. State and federal protocols provide, with the exception of wall surfaces, one reading with the instrument on a representative component in each room, i.e., baseboard, chair rail, etc., as sufficient to establish the lead paint classification of all the representatives of that component type in a room. In the case of walls, because of the large spacial areas involved and the variability in lead content in paint over such large areas, the federal and state governments want a reading on each wall surface in a room. Therefore, representative testing is not permitted for walls.

The federal government has developed Performance Characteristic Sheets (PCS) for each of the types of instruments cited above. Each instrument must be calibrated in accordance with these PCSs on a 1.0-milligram lead standard. Each of EnviroScience's instruments has one of these standards assigned to it. Some of the standards were purchased directly from the government and the others from the manufacturers of the instruments.

For the Scitec MAP 4 instrument, on one or more substrates, substrate interference can affect the validity of the result. For this instrument, if the reading is below 4.0 mg/cm^2, a Substrate Equivalent Lead (SEL) was determined on certain substrates in the Screen and Test Modes of the instrument. For the RMD in the standard reading mode on metal, an SEL also has to be determined. To determine the SEL, the paint is removed from the surface of the component to obtain a bare substrate reading. After removing the paint, the surface is wiped with a 5% trisodium phosphate solution (a heavy duty cleaner). All paint residue is collected and properly disposed of. Once the paint and surrounding area are cleaned, the XRF is utilized to determine the SEL for each surface. The SEL values are subtracted from the XRF values to determine the Corrected Lead Concentration (CLC). The CLC is the lead content of the paint on the component tested.

Each of the types of instruments has federal government-determined positive and negative ranges for the definition of lead-based paint. In addition, the Scitec MAP 4 also has inconclusive ranges in many of its reading modes. XRF results are classified using either the threshold or the inconclusive range. For the threshold, results are classified as positive if they are greater than or equal to the threshold and negative if they are less than the threshold. There is no inconclusive classification when using the threshold. For the inconclusive range, results are classified as positive if they are greater than the upper limit of the inconclusive range and negative if they are less than the lower limit of the inconclusive range. The ranges for each of the types of instruments and their various operating modes are as follows:

Radiation Monitoring Device LPA Analyzer 1

30-Second Standard Mode Reading Description	Substrate	Threshold (mg/cm^2)
Results corrected for substrate bias on metal substrate only.	Brick	1.0
	Concrete	1.0
	Drywall	1.0
	Metal	0.9
	Plaster	1.0
	Wood	1.0

Quick Mode Reading Description	Substrate	Threshold (mg/cm^2)	Inconclusive Range (mg/cm^2)
Readings not corrected for substrate bias on any substrate.	Brick	1.0	None
	Concrete	1.0	None
	Drywall	1.0	None
	Metal	1.0	None
	Plaster	1.0	None
	Wood	1.0	None

Scitec MAP 4 Spectrum Analyzer

Unlimited Mode Reading Description	Substrate	Inconclusive Range (mg/cm^2)
Results not corrected for substrate bias for unlimited mode readings.	Brick	0.91 to 1.19
	Concrete	0.91 to 1.19
	Drywall	0.91 to 1.19
	Metal	0.91 to 1.19
	Plaster	0.91 to 1.19
	Wood	0.91 to 1.19

Screen Mode Reading Description	Substrate	Inconclusive Range (mg/cm^2)
Results corrected for substrate bias on drywall, metal, and wood substrates.	Brick	0.91 to 1.09
	Concrete	0.91 to 1.09
	Drywall	0.91 to 1.39
	Metal	0.91 to 1.19
	Plaster	0.91 to 1.09
	Wood	0.91 to 1.29

Test Mode Reading Description	Substrate	Threshold (mg/cm^2)	Inconclusive Range (mg/cm^2)
Readings corrected for substrate bias for test mode readings on drywall, metal, and wood substrates only.	Brick	0.9	None
	Concrete	0.9	None
	Drywall	None	0.91 to 1.39
	Metal	None	0.91 to 1.09
	Plaster	0.9	None
	Wood	None	0.91 to 1.29

If a reading falls in the inconclusive range, either the lead inspector should be authorized by the client to take a paint chip sample to determine whether the final result is either positive or negative after laboratory analysis, or the result can be categorized as suspect positive and treated accordingly. If it is not confirmed with laboratory analysis, it cannot be assumed to be negative for toxic levels of lead. If it is assumed to be positive, it can either be abated as a positive if the condition of the surface and/or location of the component require this treatment under Connecticut and/or HUD regulations, or it can be managed in place as a positive component in accordance with the requirements of Connecticut and HUD regulations.

Prior to the start of any testing, a sketch of the building is drawn, and side designations are given to help identify exactly where readings were taken. Drawings depicting the room-numbering scheme are located on the cover page(s) for the building(s) inspected. Each side of the building was labeled

A, B, C, or D. The wall "A" side of the unit is generally the side of primary entrance into a dwelling, and this room is always Room 1. Areas in the units include rooms, hallways, and closets. Areas are numbered in a clockwise fashion as building construction allows. This allows the inspector to indicate which substrate surface was tested. The condition of the surface is described by a check mark in the appropriate column, under the heading "condition of surface" on the testing form.

When more than one surface type was present on a side, the component tested was indicated with a number. If two windows were present on a building side, they were numbered left to right. Closet shelves and shelf supports were numbered top to bottom.

It is understood that the room layouts presented in the report are in conformance with the conditions that exist at the time the testing is performed. EnviroScience avoids labeling a room solely by its current functional use (i.e., living room, bedroom, etc.) since this use can change over time. Similarly, room layouts can change dramatically as dwellings are renovated and additions are built, incorporating existing rooms, or existing interior walls are moved or eliminated altogether.

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EnviroScience, LLC

Appendix C

Lead Testing Field Data Sheets
(Original Survey)

EnviroScience Consultants inc.

LEAD INSPECTION COVER SHEET

Inspector's Information

Inspector's Name: Mike Stewart
License Number: 002115
XRF Model: RMD LPA-1
Serial Number: 135
Date of Inspection: 9/7/05
Project Number: 05-64210

Property Information

Building Address: Route 154 and Jail Hill Rd, Haddam
Age of Property:
Describe Structure: multiple buildings

Are there lead hazards present? ☑ Yes ☐ No
Were lead dust wipes taken? ☐ Yes ☑ No
Were soil samples collected? ☐ Yes ☑ No

Single Family Dwelling ☐

Is there an EBL child present? ☐ Yes ☐ No
Is there a child under six years of age in the dwelling? ☐ Yes ☐ No

Multiple Family Building ☐

Number of units in building:
Number of units tested:
Is there an EBL child present in building? ☐ Yes ☐ No
If EBL child, which unit(s)?
Is there a child under six years of age in the building? ☐ Yes ☐ No
If child under six, which unit(s)?

XRF Calibration Check

Calibration Paint Film Used: ☐ NIST 1.02 mg/cm^2 ☑ Manufacturer's Standard 1.0 mg/cm^2

Calibration Check Limits Used:
☑ RMD (0.7 to 1.3 mg/cm^2 inclusive)
☐ PGT (0.5 to 2.3 mg/cm^2 inclusive)
☐ Scitec MAP4 (0.6 to 1.2 mg/cm^2 inclusive)

	Hour	First Reading	Second Reading	Third Reading	Average
First Check	2:05	0.9	1.0	0.9	0.9
Second Check	3:50	0.9	0.9	1.0	0.9
Third Check					
Fourth Check					

795 North Mountain Road, Newington, Connecticut 06111
E-Mail: enviro.science@enviroscl.com

Address: Main Building Apt.:

Floor: 1 Room: Kitchen Page 1 of 13

Side	Surface	X.R.F. Readings	Defective	Substrate Type	Substrate SEL	CLC	Result POS	Result NEG	Paint Chip Sample #	Paint Chip Result
	Floor									
	Baseboards									
A	Wall	0.0		P						
B	Wall	0.0		P						
C	Wall	0.1		P						
D	Wall	0.0		P						
	Chairrail									
C	Ceiling	>9.9	Yes	W						
	Crown Molding									
A	Door	0.2		M						
	Casing			M						
	Jamb	8.6	Yes	W						
	Door									
	Casing									
	Jamb									
	Window Trim									
	Sill									
	Sash									
	Well									
	Cabinet Base									
	Door Exterior									
	Door Interior									
	Walls									
	Shelves									
	Shelf Supports									
	Closet Shelf									
	Shelf Supports									
	Radiator									
	Wall Molding									

Substrate Type: Metal = M Wood = W Plaster = P Sheetrock = S Concrete = C Brick = B

Notes:

EnviroScience Consultants Inc

Address: Main Building Apt.:

Floor: 1 Room: Front Right Page 2 of 13

Side	Surface	X.R.F. Readings	Defective	Substrate Type	Substrate SEL	CLC	Result POS	Result NEG	Paint Chip Sample #	Paint Chip Result
	Floor									
	Baseboards									
A	Wall	4.5	Yes	P						
B	Wall	0.0		P						
C	Wall	0.7		P						
D	Wall	1.3	Yes	P						
	Chairrail									
	Ceiling									
	Crown Molding									
A	Door	0.0		W						
	Casing	2.4	No	W						
	Jamb	3.3	Yes	W						
	Door									
	Casing									
	Jamb									
D	Window Trim	9.0	Yes	W						
	Sill	5.9	Yes	W						
	Sash	4.6	No	W						
	Well	29.9	Yes	W						
	Cabinet Base									
	Door Exterior									
	Door Interior									
	Walls									
	Shelves									
	Shelf Supports									
	Closet Shelf									
	Shelf Supports									
	Radiator									
	Wall Molding									
B	Shelves	0.0		W						

Substrate Type: Metal = M Wood = W Plaster = P Sheetrock = S Concrete = C Brick = B

Notes:

EnviroScience Consultants Inc.

Address: Main Building Apt.:

Floor: 1 Room: Cellblock Page 3 of 13

Side	Surface	X.R.F. Readings	Defective	Substrate Type	Substrate SEL	CLC	Result POS	Result NEG	Paint Chip Sample #	Paint Chip Result
	Floor									
	Baseboards									
A	Wall	1.2	Yes	M						
B	Wall									
C	Wall									
D	Wall	7.9	Yes	M						
	Chairrail									
D	Ceiling	>9.9	Yes	M						
	Crown Molding									
	Door									
	Casing									
	Jamb									
	Door									
	Casing									
	Jamb									
	Window Trim									
	Sill									
	Sash									
	Well									
	Cabinet Base									
	Door Exterior									
	Door Interior									
	Walls									
	Shelves									
	Shelf Supports									
	Closet Shelf									
	Shelf Supports									
	Radiator									
	Wall Molding									
A	Cell Bars	6.2	Yes	M						
	Cell Wall	4.3	Yes	M						

Substrate Type: Metal = M Wood = W Plaster = P Sheetrock = S Concrete = C Brick = B

Notes:

EnviroScience Consultants Inc

Address: Main Building Apt.:

Floor: 2 Room: Middle Page 4 of 13

Side	Surface	X.R.F. Readings	Defective	Substrate Type	Substrate SEL	CLC	Result POS	Result NEG	Paint Chip Sample #	Paint Chip Result
	Floor									
	Baseboards									
A	Wall									
B	Wall	29.9	Yes	P						
C	Wall	29.9	Yes	P						
D	Wall									
	Chairrail									
B	Ceiling	2.3	Yes	P						
	Crown Molding									
	Door									
B	Casing	29.9	Yes	W						
	Jamb	29.9	Yes	W						
	Door	4.5		W						
A	Casing	29.9		W						
	Jamb	29.9		W						
	Window Trim									
	Sill									
	Sash									
	Well									
	Cabinet Base									
	Door Exterior									
	Door Interior									
	Walls									
	Shelves									
	Shelf Supports									
	Closet Shelf									
	Shelf Supports									
	Radiator									
	Wall Molding									

Substrate Type: Metal = M Wood = W Plaster = P Sheetrock = S Concrete = C Brick = B

Notes:

EnviroScience Consultants inc

Address: Main Building Apt.:

Floor: 2 Room: Back Page 5 of 13

Side	Surface	X.R.F. Readings	Defective	Substrate Type	Substrate SEL	CLC	Result PCS	Result NEG	Paint Chip Sample #	Paint Chip Result
	Floor									
	Baseboards									
A	Wall	0.1		S						
B	Wall	0.1		S						
C	Wall	0.4		S						
D	Wall	0.3		S						
	Chairrail									
D	Ceiling	0.1								
	Crown Molding									
A	Door	8.9	Yes	W						
	Casing	0.1		W						
	Jamb	79.9		W						
C	Door	0.0	N	W						
	Casing	0.1		W						
	Jamb	0.3		W						
	Window Trim									
	Sill									
	Sash									
	Well									
	Cabinet Base									
	Door Exterior									
	Door Interior									
	Walls									
	Shelves									
	Shelf Supports									
	Closet Shelf									
	Shelf Supports									
	Radiator									
	Wall Molding									

Substrate Type: Metal = M Wood = W Plaster = P Sheetrock = S Concrete = C Brick = B

Notes:

Address: Main Building

Apt.:

Floor: 3 Room: Middle Right

Side	Surface	X.R.F. Readings	Defective	Substrate Type	Substrate SEL	CLC	Result POS	Result NEG	Paint Chip Sample #	Paint Chip Result
	Floor									
	Baseboards									
AD	Wall	0.0		S						
B	Wall	5.1		P						
C	Wall	0.0		PS						
D	Wall	6.1		P						
	Chairrail									
	Ceiling									
	Crown Molding									
	Door									
B	Casing	>9.9	No	W						
	Jamb	>9.9		W						
	Door									
	Casing									
	Jamb									
	Window Trim	>9.9		W						
D	Sill	0.5		W						
	Sash	5.3		W						
	Well									
	Cabinet Base									
	Door Exterior									
	Door Interior									
	Walls									
	Shelves									
	Shelf Supports									
	Closet Shelf									
	Shelf Supports									
	Radiator									
	Wall Molding									

Substrate Type: Metal = M Wood = W Plaster = P Sheetrock = S Concrete = C Brick = B

Notes:

EnviroScience Consultants Inc

Address: Main Building Apt.:

Floor: 3 Room: Back Left Page 7 of 13

Side	Surface	X.R.F. Readings	Defective	Substrate Type	Substrate SEL	CLC	Result POS	Result NEG	Paint Chip Sample #	Paint Chip Result
	Floor									
P	Baseboards	8.2		W						
A	Wall	8.0		S						
B	Wall	0.9		S						
C	Wall	0.6		S						
D	Wall	0.2		S						
	Chairrail									
	Ceiling									
	Crown Molding									
	Door									
D	Casing	0.1		W						
	Jamb	0.1		W						
	Door									
	Casing									
	Jamb									
	Window Trim	29.7	Yes	W						
	Sill	0.1		W						
B	Sash	9.3	Yes	W						
	Well									
	Cabinet Base									
	Door Exterior									
	Door Interior									
	Walls									
	Shelves									
	Shelf Supports									
	Closet Shelf									
	Shelf Supports									
	Radiator									
	Wall Molding									

Substrate Type: Metal = M Wood = W Plaster = P Sheetrock = S Concrete = C Brick = B

Notes:

EnviroScience Consultants Inc

Address: Training Apt.:

Floor: 1 Room: Lobby Page 8 of 13

Side	Surface	X.R.F. Readings	Defective	Substrate Type	Substrate SEL	CLC	Result POS	Result NEG	Paint Chip Sample #	Paint Chip Result
	Floor									
	Baseboards									
A	Wall	0.0		S						
B	Wall	0.0		S						
C	Wall	0.0		S						
D	Wall	0.2		S						
	Chairrail									
	Ceiling									
	Crown Molding									
D	Door	0.1		W						
	Casing	0.1		W						
	Jamb	0.3		W						
	Door									
	Casing									
	Jamb									
A	Window Trim	0.0		W						
	Sill	0.4		W						
	Sash			W						
	Well									
	Cabinet Base									
	Door Exterior									
	Door Interior									
	Walls									
	Shelves									
	Shelf Supports									
	Closet Shelf									
	Shelf Supports									
	Radiator									
	Wall Molding									

Substrate Type: Metal = M Wood = W Plaster = P Sheetrock = S Concrete = C Brick = B

Notes:

EnviroScience Consultants Inc

Address: Training Apt.:

Floor: 1 Room: Mens Bathroom Page 9 of 13

Side	Surface	X.R.F. Readings	Defective	Substrate Type	Substrate SEL	CLC	Result POS	Result NEG	Paint Chip Sample #	Paint Chip Result
	Floor									
	Baseboards									
A	Wall	0.1		S						
B	Wall	0.2		S						
C	Wall	0.3		S						
D	Wall	0.0		S						
	Chairrail									
	Ceiling									
	Crown Molding									
C	Door	0.0		W						
	Casing	0.2		W						
	Jamb	0.1		W						
	Door									
	Casing									
	Jamb									
	Window Trim									
	Sill									
	Sash									
	Well									
	Cabinet Base									
	Door Exterior									
	Door Interior									
	Walls									
	Shelves									
	Shelf Supports									
	Closet Shelf									
	Shelf Supports									
	Radiator									
	Wall Molding									

Substrate Type: Metal = M Wood = W Plaster = P Sheetrock = S Concrete = C Brick = B

Notes:

EnviroScience Consultants Inc.

Address: Training

Apt.:

Floor: 2 Room: Training Area

Side	Surface	X.R.F. Readings	Defective	Substrate Type	Substrate SEL	CLC	Result POS	Result NEG	Paint Chip Sample #	Paint Chip Result
	Floor									
	Baseboards									
A	Wall	0.0	S	S						
B	Wall	0.1	S	S						
C	Wall	0.1	S	S						
D	Wall	0.0		S						
	Chairrail									
	Ceiling									
	Crown Molding									
	Door									
	Casing									
	Jamb									
	Door									
	Casing									
	Jamb									
	Window Trim	0.0		W						
A	Sill	0.0		W						
	Sash									
	Well									
	Cabinet Base									
	Door Exterior									
	Door Interior									
	Walls									
	Shelves									
	Shelf Supports									
	Closet Shelf									
	Shelf Supports									
	Radiator									
	Wall Molding									

Substrate Type: Metal = M Wood = W Plaster = P Sheetrock = S Concrete = C Brick = B

Notes:

Address: Cornbower + Berry Apt.:

Floor: Room: Page 11 of 13

EXTERIOR OF SIDE A

Side	Surface	X.R.F. Readings	Defective	Substrate Type	Substrate SEL	CLC	Result POS	Result NEG	Paint Chip Sample #	Paint Chip Result
	Foundation									
	Skirt Board									
	Corner Boards									
	Siding	29.9	Yes	W						
	Upper Trim									
	Door	0.0		W						
	Casing	0.1		W						
	Jamb									
	Threshold									
	Kick Board									
	Storm Door									
	Window Sill									
	Trim	0.3		W						
	Sash	0.0		W						
	Blind Stops									
	Storm Window									
	Basement Sash									
	Frame									
	Bulkhead									
	Downspouts									
	Vent									
	Pipe									
	Porch Floor									
	Ceiling Joist									
	Lower Trim									
	Lower Railing									
	Balusters									
	Railing Cap									
	Upper Trim									
	Ceiling									
	Lattice									
	Lattice Frame									
	Support Columns									
	Column Bases									
	Brackets									
	Hand Rails									
	Treads									
	Risers									
	Stringers									

Substrate Type: Metal = M Wood = W Plaster = P Sheetrock = S Concrete = C Brick = B

Notes:

EnviroScience Consultants inc

Address: Shed Apt.:

Floor: Room: Page 12 of 13

Side	Surface	X.R.F. Readings	Defective	Substrate		CLC	Result		Paint Chip	
				Type	SEL		POS	NEG	Sample #	Result
D	Siding	2.9	Yes	W						

Substrate Type: Metal = M Wood = W Plaster = P Sheetrock = S Concrete = C Brick = B

Notes:

EnviroScience Consultants inc

Address: Pump House Apt.:

Floor: Room: Page 13 of 13

EXTERIOR OF SIDE

Side	Surface	X.R.F. Readings	Defective	Substrate Type	Substrate SEL	CLC	Result POS	Result NEG	Paint Chip Sample #	Paint Chip Result
	Foundation									
	Skirt Board									
	Corner Boards									
D	Siding	2.4		C						
	Upper Trim									
D	Door 1	0.6		W						
	Casing 1	0.1								
	Jamb									
	Threshold									
	Kick Board									
	Storm Door									
C	Window Sill	0.5		W						
	Trim	3.8	Yes	W						
	Sash	2.2	Yes	W						
	Blind Stops									
	Storm Window									
	Basement Sash									
	Frame									
	Bulkhead									
	Downspouts									
	Vent									
	Pipe									
	Porch Floor									
	Ceiling Joist									
	Lower Trim									
	Lower Railing									
	Balusters									
	Railing Cap									
	Upper Trim									
	Ceiling									
	Lattice									
	Lattice Frame									
	Support Columns									
	Column Bases									
	Brackets									
	Hand Rails									
	Treads									
	Risers									
	Stringers									
D	Door 2	1.7	Yes	W						
D	Casing 2	2.1	Yes	W						

Substrate Type: Metal = M Wood = W Plaster = P Sheetrock = S Concrete = C Brick = B

Notes: No paint readings on sills

EnviroSciencz Consultants inc

FUSS & O'NEILL
EnviroScience, LLC

Appendix D

Initial PCB Sampling Results

Tuesday, December 28, 2010

Attn: Mr. Stephen Connelly
Fuss & O'Neill, Inc.
146 Hartford Road
Manchester, CT 06040

Project ID: TOWN OF HADDAM-JAILHOUSE
Sample ID#s: AZ86980 - AZ86987

This laboratory is in compliance with the QA/QC procedures outlined in EPA 600/4-79-019, Handbook for Analytical Quality in Water and Waste Water, March 1979, SW846 QA/QC and NELAC requirements of procedures used.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

Enclosed are revised Analysis Report pages. Please replace and discard the original pages. If you have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext. 200.

Sincerely yours,

Phyllis Shiller
Laboratory Director

NELAC - #NY11301
CT Lab Registration #PH-0618
MA Lab Registration #MA-CT-007
ME Lab Registration #CT-007
NH Lab Registration #213693-A,B
NJ Lab Registration #CT-003
NY Lab Registration #11301
PA Lab Registration #68-03530
RI Lab Registration #63
VT Lab Registration #VT11301

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
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PHOENIX
Environmental Laboratories, Inc.
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Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Analysis Report

December 28, 2010

FOR: Attn: Mr. Stephen Connelly
Fuss & O'Neill, Inc.
146 Hartford Road
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:	AJ	12/13/10	17:00
Location Code:	F&O-PCB	Received by:	LDF	12/14/10	13:05
Rush Request:		Analyzed by:	see "By" below		
P.O.#:	20101276.A1E				

Laboratory Data

SDG ID: GAZ86980
Phoenix ID: AZ86980

Project ID: TOWN OF HADDAM-JAILHOUSE
Client ID: 121310AJDC01

Parameter	Result	RL	Units	Date	Time	By	Reference
Percent Solid	100	1	%	12/14/10			E160.3
Caulk Extraction for PCB	Completed			12/14/10		QQ/K	SW3540C
PCB (Soxhlet)							
PCB-1016	ND	160	mg/kg	12/17/10		MH	3540C/8082
PCB-1221	ND	160	mg/kg	12/17/10		MH	3540C/8082
PCB-1232	ND	160	mg/kg	12/17/10		MH	3540C/8082
PCB-1242	ND	160	mg/kg	12/17/10		MH	3540C/8082
PCB-1248	*	160	mg/kg	12/17/10		MH	3540C/8082
PCB-1254	ND	160	mg/kg	12/17/10		MH	3540C/8082
PCB-1260	ND	160	mg/kg	12/17/10		MH	3540C/8082
PCB-1262	ND	160	mg/kg	12/17/10		MH	3540C/8082
PCB-1268	ND	160	mg/kg	12/17/10		MH	3540C/8082
Total PCBs	1500	160	mg/kg	12/17/10		MH	3540C/8082
QA/QC Surrogates							
% DCBP	Diluted Out		%	12/17/10		MH	3540C/8082
% TCMX	Diluted Out		%	12/17/10		MH	3540C/8082

Project ID: TOWN OF HADDAM-JAILHOUSE

Client ID: 121310AJDC01

Phoenix I.D.: AZ86980

Parameter	Result	RL	Units	Date	Time	By	Reference

Comments:

* For PCBs, as per section 11.9.3, when weathering of PCBs is present and the aroclor is no longer recognizable, quantitation may be performed by using the total area of the PCB pattern to that of the aroclor it mostly resembles. The PCB pattern did not resemble any of the standards, but most closely resembles aroclor 1248.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

ND=Not detected BDL=Below Detection Level RL=Reporting Level

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Phyllis Shiller, Laboratory Director

December 28, 2010

PHOENIX
Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Analysis Report

December 28, 2010

FOR: Attn: Mr. Stephen Connelly
Fuss & O'Neill, Inc.
146 Hartford Road
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:	AJ	12/13/10	16:30
Location Code:	F&O-PCB	Received by:	LDF	12/14/10	13:05
Rush Request:		Analyzed by:	see "By" below		
P.O.#:	20101276.A1E				

Laboratory Data

SDG ID: GAZ86980
Phoenix ID: AZ86981

Project ID: TOWN OF HADDAM-JAILHOUSE
Client ID: 121310AJWG02

Parameter	Result	RL	Units	Date	Time	By	Reference
Percent Solid	100	1	%	12/14/10			E160.3
Caulk Extraction for PCB	Completed			12/14/10		QQ/K	SW3540C
PCB (Soxhlet)							
PCB-1016	ND	0.83	mg/kg	12/16/10		MH	3540C/8082
PCB-1221	ND	0.83	mg/kg	12/16/10		MH	3540C/8082
PCB-1232	ND	0.83	mg/kg	12/16/10		MH	3540C/8082
PCB-1242	ND	0.83	mg/kg	12/16/10		MH	3540C/8082
PCB-1248	*	0.83	mg/kg	12/16/10		MH	3540C/8082
PCB-1254	ND	0.83	mg/kg	12/16/10		MH	3540C/8082
PCB-1260	ND	0.83	mg/kg	12/16/10		MH	3540C/8082
PCB-1262	ND	0.83	mg/kg	12/16/10		MH	3540C/8082
PCB-1268	ND	0.83	mg/kg	12/16/10		MH	3540C/8082
Total PCBs	1.5	0.83	mg/kg	12/16/10		MH	3540C/8082
QA/QC Surrogates							
% DCBP	131		%	12/16/10		MH	3540C/8082
% TCMX	99		%	12/16/10		MH	3540C/8082

Project ID: TOWN OF HADDAM-JAILHOUSE

Client ID: 121310AJWG02

Phoenix I.D.: AZ86981

Parameter	Result	RL	Units	Date	Time	By	Reference

Comments:

* For PCBs, as per section 11.9.3, when weathering of PCBs is present and the aroclor is no longer recognizable, quantitation may be performed by using the total area of the PCB pattern to that of the aroclor it mostly resembles. The PCB pattern did not resemble any of the standards, but most closely resembles aroclor 1248.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

ND=Not detected BDL=Below Detection Level RL=Reporting Level

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Phyllis Shiller, Laboratory Director

December 28, 2010

PHOENIX
Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Analysis Report

December 28, 2010

FOR: Attn: Mr. Stephen Connelly
Fuss & O'Neill, Inc.
146 Hartford Road
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:	AJ	12/13/10	16:00
Location Code:	F&O-PCB	Received by:	LDF	12/14/10	13:05
Rush Request:		Analyzed by:	see "By" below		
P.O.#:	20101276.A1E				

Laboratory Data

SDG ID: GAZ86980
Phoenix ID: AZ86982

Project ID: TOWN OF HADDAM-JAILHOUSE

Client ID: 121310AJWC03

Parameter	Result	RL	Units	Date	Time	By	Reference
Percent Solid	100	1	%	12/14/10			E160.3
Caulk Extraction for PCB	Completed			12/14/10		QQ/K	SW3540C
PCB (Soxhlet)							
PCB-1016	ND	83	mg/kg	12/17/10		MH	3540C/8082
PCB-1221	ND	83	mg/kg	12/17/10		MH	3540C/8082
PCB-1232	ND	83	mg/kg	12/17/10		MH	3540C/8082
PCB-1242	ND	83	mg/kg	12/17/10		MH	3540C/8082
PCB-1248	*	83	mg/kg	12/17/10		MH	3540C/8082
PCB-1254	ND	83	mg/kg	12/17/10		MH	3540C/8082
PCB-1260	ND	83	mg/kg	12/17/10		MH	3540C/8082
PCB-1262	ND	83	mg/kg	12/17/10		MH	3540C/8082
PCB-1268	ND	83	mg/kg	12/17/10		MH	3540C/8082
Total PCBs	500	83	mg/kg	12/17/10		MH	3540C/8082
QA/QC Surrogates							
% DCBP	Diluted Out		%	12/17/10		MH	3540C/8082
% TCMX	Diluted Out		%	12/17/10		MH	3540C/8082

Project ID: TOWN OF HADDAM-JAILHOUSE

Client ID: 121310AJWC03

Phoenix I.D.: AZ86982

Parameter	Result	RL	Units	Date	Time	By	Reference

Comments:

* For PCBs, as per section 11.9.3, when weathering of PCBs is present and the aroclor is no longer recognizable, quantitation may be performed by using the total area of the PCB pattern to that of the aroclor it mostly resembles. The PCB pattern did not resemble any of the standards, but most closely resembles aroclor 1248.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

ND=Not detected BDL=Below Detection Level RL=Reporting Level

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Phyllis Shiller, Laboratory Director

December 28, 2010

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Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Analysis Report

December 28, 2010

FOR: Attn: Mr. Stephen Connelly
Fuss & O'Neill, Inc.
146 Hartford Road
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:	AJ	12/13/10	15:30
Location Code:	F&O-PCB	Received by:	LDF	12/14/10	13:05
Rush Request:		Analyzed by:	see "By" below		
P.O.#:	20101276.A1E				

Laboratory Data

SDG ID: GAZ86980
Phoenix ID: AZ86983

Project ID: TOWN OF HADDAM-JAILHOUSE
Client ID: 121310AJDC04

Parameter	Result	RL	Units	Date	Time	By	Reference
Percent Solid	100	1	%	12/14/10			E160.3
Caulk Extraction for PCB	Completed			12/14/10		QQ/K	SW3540C
PCB (Soxhlet)							
PCB-1016	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1221	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1232	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1242	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1248	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1254	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1260	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1262	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1268	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
QA/QC Surrogates							
% DCBP	135		%	12/15/10		MH	3540C/8082
% TCMX	109		%	12/15/10		MH	3540C/8082

Comments:

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

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Phyllis Shiller, Laboratory Director
December 28, 2010

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Analysis Report

December 28, 2010

FOR: Attn: Mr. Stephen Connelly
Fuss & O'Neill, Inc.
146 Hartford Road
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:	AJ	12/13/10	15:00
Location Code:	F&O-PCB	Received by:	LDF	12/14/10	13:05
Rush Request:		Analyzed by:	see "By" below		
P.O.#:	20101276.A1E				

Laboratory Data

SDG ID: GAZ86980
Phoenix ID: AZ86984

Project ID: TOWN OF HADDAM-JAILHOUSE

Client ID: 121310AJWG05

Parameter	Result	RL	Units	Date	Time	By	Reference
Percent Solid	100	1	%	12/14/10			E160.3
Caulk Extraction for PCB	Completed			12/14/10		QQ/K	SW3540C
PCB (Soxhlet)							
PCB-1016	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1221	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1232	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1242	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1248	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1254	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1260	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1262	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1268	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
QA/QC Surrogates							
% DCBP	133		%	12/15/10		MH	3540C/8082
% TCMX	112		%	12/15/10		MH	3540C/8082

Comments:

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

ND=Not detected BDL=Below Detection Level RL=Reporting Level

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Phyllis Shiller

Phyllis Shiller, Laboratory Director
December 28, 2010

Ver 2

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Environmental Laboratories, Inc.
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Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Analysis Report

December 28, 2010

FOR: Attn: Mr. Stephen Connelly
Fuss & O'Neill, Inc.
146 Hartford Road
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:	AJ	12/13/10	14:30
Location Code:	F&O-PCB	Received by:	LDF	12/14/10	13:05
Rush Request:		Analyzed by:	see "By" below		
P.O.#:	20101276.A1E				

Laboratory Data

SDG ID: GAZ86980
Phoenix ID: AZ86985

Project ID: TOWN OF HADDAM-JAILHOUSE
Client ID: 121310AJWC06

Parameter	Result	RL	Units	Date	Time	By	Reference
Percent Solid	100	1	%	12/14/10			E160.3
Caulk Extraction for PCB	Completed			12/14/10		QQ/K	SW3540C
PCB (Soxhlet)							
PCB-1016	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1221	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1232	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1242	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1248	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1254	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1260	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1262	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1268	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
QA/QC Surrogates							
% DCBP	137		%	12/15/10		MH	3540C/8082
% TCMX	101		%	12/15/10		MH	3540C/8082

Comments:

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

ND=Not detected BDL=Below Detection Level RL=Reporting Level

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Phyllis Shiller, Laboratory Director
December 28, 2010

PHOENIX
Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Analysis Report

December 28, 2010

FOR: Attn: Mr. Stephen Connelly
Fuss & O'Neill, Inc.
146 Hartford Road
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:	AJ	12/13/10	14:00
Location Code:	F&O-PCB	Received by:	LDF	12/14/10	13:05
Rush Request:		Analyzed by:	see "By" below		
P.O.#:	20101276.A1E				

Laboratory Data

SDG ID: GAZ86980
Phoenix ID: AZ86986

Project ID: TOWN OF HADDAM-JAILHOUSE
Client ID: 121310AJIWC07

Parameter	Result	RL	Units	Date	Time	By	Reference
Percent Solid	100	1	%	12/14/10			E160.3
Caulk Extraction for PCB	Completed			12/14/10		QQ/K	SW3540C
PCB (Soxhlet)							
PCB-1016	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1221	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1232	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1242	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1248	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1254	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1260	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1262	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1268	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
QA/QC Surrogates							
% DCBP	133		%	12/15/10		MH	3540C/8082
% TCMX	111		%	12/15/10		MH	3540C/8082

Comments:

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
ND=Not detected BDL=Below Detection Level RL=Reporting Level
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Phyllis Shiller, Laboratory Director
December 28, 2010

Ver 2

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Tel. (860) 645-1102 Fax (860) 645-0823

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Analysis Report

December 28, 2010

FOR: Attn: Mr. Stephen Connelly
Fuss & O'Neill, Inc.
146 Hartford Road
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:	AJ	12/13/10	14:30
Location Code:	F&O-PCB	Received by:	LDF	12/14/10	13:05
Rush Request:		Analyzed by:	see "By" below		
P.O.#:	20101276.A1E				

Laboratory Data

SDG ID: GAZ86980
Phoenix ID: AZ86987

Project ID: TOWN OF HADDAM-JAILHOUSE
Client ID: 121310AJIWC08

Parameter	Result	RL	Units	Date	Time	By	Reference
Percent Solid	100	1	%	12/14/10			E160.3
Caulk Extraction for PCB	Completed			12/14/10		QQ/K	SW3540C
PCB (Soxhlet)							
PCB-1016	ND	0.81	mg/kg	12/17/10		MH	3540C/8082
PCB-1221	ND	0.81	mg/kg	12/17/10		MH	3540C/8082
PCB-1232	ND	0.81	mg/kg	12/17/10		MH	3540C/8082
PCB-1242	ND	0.81	mg/kg	12/17/10		MH	3540C/8082
PCB-1248	*	0.81	mg/kg	12/17/10		MH	3540C/8082
PCB-1254	ND	0.81	mg/kg	12/17/10		MH	3540C/8082
PCB-1260	ND	0.81	mg/kg	12/17/10		MH	3540C/8082
PCB-1262	ND	0.81	mg/kg	12/17/10		MH	3540C/8082
PCB-1268	ND	0.81	mg/kg	12/17/10		MH	3540C/8082
Total PCBs	4.2	0.81	mg/kg	12/17/10		MH	3540C/8082
QA/QC Surrogates							
% DCBP	115		%	12/17/10		MH	3540C/8082
% TCMX	51		%	12/17/10		MH	3540C/8082

Project ID: TOWN OF HADDAM-JAILHOUSE

Client ID: 121310AJIWC08

Phoenix I.D.: AZ86987

Parameter	Result	RL	Units	Date	Time	By	Reference

Comments:

* For PCBs, as per section 11.9.3, when weathering of PCBs is present and the aroclor is no longer recognizable, quantitation may be performed by using the total area of the PCB pattern to that of the aroclor it mostly resembles. The PCB pattern did not resemble any of the standards, but most closely resembles aroclor 1248.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

ND=Not detected BDL=Below Detection Level RL=Reporting Level

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Phyllis Shiller, Laboratory Director

December 28, 2010

Ver 2

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Tel. (860) 645-1102 Fax (860) 645-0823

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QA/QC Report

December 28, 2010

QA/QC Data

SDG I.D.: GAZ86980

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS Rec %	MS Dup Rec %	RPD
QA/QC Batch 167453, QC Sample No: AZ87046 (AZ86980, AZ86981, AZ86982, AZ86983, AZ86984, AZ86985, AZ86986, AZ86987)							
Polychlorinated Biphenyls							
PCB-1016	ND	108	109	0.9			
PCB-1221	ND						
PCB-1232	ND						
PCB-1242	ND						
PCB-1248	ND						
PCB-1254	ND						
PCB-1260	ND	94	100	6.2			
PCB-1262	ND						
PCB-1268	ND						
% DCBP (Surrogate Rec)	107	98	101	3.0			
% TCMX (Surrogate Rec)	92	84	86	2.4			

Comment:
A LCS and LCS Duplicate were performed instead of a matrix spike and matrix spike duplicate.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference
LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample Duplicate
MS - Matrix Spike
MS Dup - Matrix Spike Duplicate
NC - No Criteria

Phyllis Shiller, Laboratory Director
December 28, 2010

Reasonable Confidence Protocol
Laboratory Analysis QA/QC Certification Form

Laboratory Name: Phoenix Environmental Labs, Inc. **Client:** F&O

Project Location: TOWN OF HADDAM-JAILHOUS **Project Number:**

Laboratory Sample ID(s): AZ86980, AZ86981, AZ86982, AZ86983, AZ86984, AZ86985, AZ86986, AZ86987

Sampling Date(s): 12/13/2010

RCP Methods Used:

☐ 1311/1312 ☐ 6010 ☐ 7000 ☐ 7196 ☐ 7470/7471 ☐ 8081 ☐ EPH ☐ TO15

☑ 8082 ☐ 8151 ☐ 8260 ☐ 8270 ☐ ETPH ☐ 9010/9012 ☐ VPH

1.	For each analytical method referenced in this laboratory report package, were all specified QA/QC performance criteria followed (including the requirement to explain any criteria falling outside of acceptable guidelines, as specified in the CT DEP method-specific Reasonable Confidence	☑ Yes ☐ No
1a.	Were the method specified preservation and holding time requirements met?	☑ Yes ☐ No
1b.	EPH and VPH methods only: Was the VPH or EPH method conducted without significant modifications (see section 11.3 of respective RCP methods)	☐ Yes ☐ No ☑ NA
2.	Were all samples received by the laboratory in a condition consistent with that described on the associated Chain-of-Custody document(s)?	☑ Yes ☐ No
3.	Were samples received at an appropriate temperature (< 6 Degrees C)?	☑ Yes ☐ No ☐ NA
4.	Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents acheived?	☑ Yes ☐ No
5a.	Were reporting limits specified or referenced on the chain-of-custody?	☐ Yes ☑ No
5b.	Were these reporting limits met?	☐ Yes ☐ No ☑ NA
6.	For each analytical method referenced in this laboratory report package, were results reported for all constituents identified in the method-specific analyte lists presented in the Reasonable Confidence Protocol documents?	☑ Yes ☐ No ☐ NA
7.	Are project-specific QC samples included in the data set?	☐ Yes ☑ No ☐ NA

Note: For all questions to which the response was "No" (with the exception of question #5a, #7), additional information must be provided in an attached narrative. If the answer to question #1, #1A or 1B is "No", the data package does not meet the requirements for "Reasonable Confidence"

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowlegde and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete.

Authorized Signature: Phyllis Shiller

Date: Tuesday, December 28, 2010

Printed Name: Phyllis Shiller

Position: Laboratory Directory

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

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RCP Certification Report

December 28, 2010

SDG I.D.: GAZ86980

PCB Narration

Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents achieved? Yes.

Instrument: Au-ecd6 12/16/10-1 (AZ86981)

8082 Narration:

The initial calibration RSD for the compound list was less than 15% except for the following compounds: none

The continuing calibration standards were within acceptance criteria except for the following compounds: none

Printed Name Michael Hahn
Position: Chemist
Date: 12/16/2010

Instrument: Au-ecd8 12/15/10-1 (AZ86983, AZ86984, AZ86985, AZ86986)

8082 Narration:

The initial calibration RSD for the compound list was less than 15% except for the following compounds: none

The continuing calibration standards were within acceptance criteria except for the following compounds: none

Printed Name Michael Hahn
Position: Chemist
Date: 12/15/2010

QC Comments: QC Batch 67453 12/14/10 (AZ86980, AZ86981, AZ86982, AZ86983, AZ86984, AZ86985, AZ86986, AZ86987)

A LCS and LCS Duplicate were performed instead of a matrix spike and matrix spike duplicate.

QC (Batch Specific)

All LCS recoveries were within 30 - 130 with the following exceptions: None.

All LCSD recoveries were within 30 - 130 with the following exceptions: None.

All LCS/LCSD RPDs were less than 30% with the following exceptions: None.

5 OWK

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- [ ] 78 Interstate Drive, West Springfield, MA 01089
- [ ] 50 Redfield Street, Suite 100, Boston, MA 02122
- [ ] 275 Promenade Street, Suite 350, Providence, RI 02908
- [ ] 80 Washington Street, Suite 301, Poughkeepsie, NY 12601

CHAIN-OF-CUSTODY RECORD 22613

Turnaround
- [ ] 1 Day*
- [ ] 2 Days*
- [ ] 3 Days*
- [x] Standard (5 days)
- [ ] Other _____ (days)

*Surcharge Applies

PROJECT NAME: Town of Hadden - Jailhouse
PROJECT LOCATION: Hadden, CT
PROJECT NUMBER: 20101276, A/E
LABORATORY: Phoenix

REPORT TO: Stephen Connelly
INVOICE TO: Stephen Connelly
P.O. No.:

Sampler's Signature: Andrew Jackson Date: 12-13-10

Source Codes:
MW=Monitoring Well, PW=Potable Water, S=Soil, W=Waste, SW=Surface Water, T=Treatment Facility, B=Sediment, A=Air
X=Other PCBs

Analysis Request / Containers

Item No.	Transfer Check 1	2	3	4	Sample Number	Source Code	Date Sampled	Time Sampled	PCBs - Soxhlet Extraction 8082	Other: 8 oz Jar w/ 1/3 Jar Glass	Comments
1	✓				121310AJDC01	X	12-13-10	17:00	X	1	86980
2	✓				121310AJWG02	X		16:30	X	1	86981
3	✓				121310AJWC03	X		16:00	X	1	86982
4	✓				121310AJDC04	X		15:30	X	1	86983
5	✓				121310AJWG05	X		15:00	X	1	86984
6	✓				121310AJWC06	X		14:30	X	1	86985
7	✓				121310AJIWC07	X		14:00	X	1	86986
8	✓				121310AJIWC08	X		14:30	X	1	86987

Transfer Number	Relinquished By	Accepted By	Date	Time
1	Andrew Jackson	F+O Fridge	12-13	1800
2	F+O Fridge	Andrew Jackson	12-14	12:00
3	Andrew Jackson	[illegible]	12-14	13:05
4				

Reporting and Detection Limit Requirements:

Additional Comments:

FUSS & O'NEILL
EnviroScience, LLC

Appendix E

Supplemental PCB Sample Results

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ANALYTICAL LABORATORY

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

December 2, 2011

Stephen Connelly
Fuss & O'Neill EnviroScience, LLC - CT
146 Hartford Road
Manchester, CT 06040

Project Location: Haddam, CT
Client Job Number:
Project Number: 20101276.A2E
Laboratory Work Order Number: 11K0854

Enclosed are results of analyses for samples received by the laboratory on November 23, 2011. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Holly L. Folsom
Project Manager

con-test®
ANALYTICAL LABORATORY

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Fuss & O'Neill EnviroScience, LLC - CT
146 Hartford Road
Manchester, CT 06040
ATTN: Stephen Connelly

REPORT DATE: 12/2/2011

PURCHASE ORDER NUMBER: 20101276.A2E

PROJECT NUMBER: 20101276.A2E

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 11K0854

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: Haddam, CT

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
112211AJ 01	11K0854-01	Brick	0-0.5 in Window	SW-846 8082A	
112211AJ 02	11K0854-02	Brick	0.5-1in Window	SW-846 8082A	
112211AJ 03	11K0854-03	Brick	0-0.5in Door	SW-846 8082A	
112211AJ 04	11K0854-04	Brick	0.5-1in Door	SW-846 8082A	
112211AJ 04	11K0854-05	Soil	0-4in Soil D Side	SM 2540G	
				SW-846 8082A	
112211AJ 06	11K0854-06	Soil	0-4in Soil D Side	SM 2540G	
				SW-846 8082A	
112211AJ 07	11K0854-07	Soil	0-4in Soil C Side	SM 2540G	
				SW-846 8082A	
112211AJ 08	11K0854-08	Soil	0-4in Soil C Side	SM 2540G	
				SW-846 8082A	

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CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

SW-846 8082A

Qualifications:

Matrix spike and/or spike duplicate recovery bias high due to contribution of other Aroclors present in the source sample.

Analyte & Samples(s) Qualified:

Aroclor-1016, Aroclor-1016 [2C], Aroclor-1260, Aroclor-1260 [2C]
B041577-MS1, B041577-MSD1

The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.

Analyte & Samples(s) Qualified:

Decachlorobiphenyl, Decachlorobiphenyl [2C], Tetrachloro-m-xylene, Tetrachloro-m-xylene [2C]
11K0854-01[112211AJ 01]

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Daren J. Damboragian
Laboratory Manager

con-test® ANALYTICAL LABORATORY

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Haddam, CT | Sample Description: 0-0.5 in Window | Work Order: 11K0854

Date Received: 11/23/2011

Field Sample #: 112211AJ 01 | Sampled: 11/22/2011 12:00

Sample ID: 11K0854-01

Sample Matrix: Brick

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	9.5	mg/Kg	100		SW-846 8082A	11/26/11	11/29/11 10:00	JMB
Aroclor-1221 [1]	ND	9.5	mg/Kg	100		SW-846 8082A	11/26/11	11/29/11 10:00	JMB
Aroclor-1232 [1]	ND	9.5	mg/Kg	100		SW-846 8082A	11/26/11	11/29/11 10:00	JMB
Aroclor-1242 [1]	44	9.5	mg/Kg	100		SW-846 8082A	11/26/11	11/29/11 10:00	JMB
Aroclor-1248 [1]	43	9.5	mg/Kg	100		SW-846 8082A	11/26/11	11/29/11 10:00	JMB
Aroclor-1254 [1]	ND	9.5	mg/Kg	100		SW-846 8082A	11/26/11	11/29/11 10:00	JMB
Aroclor-1260 [1]	ND	9.5	mg/Kg	100		SW-846 8082A	11/26/11	11/29/11 10:00	JMB
Aroclor-1262 [1]	ND	9.5	mg/Kg	100		SW-846 8082A	11/26/11	11/29/11 10:00	JMB
Aroclor-1268 [1]	ND	9.5	mg/Kg	100		SW-846 8082A	11/26/11	11/29/11 10:00	JMB

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	*	30-150	S-01	11/29/11 10:00
Decachlorobiphenyl [2]	*	30-150	S-01	11/29/11 10:00
Tetrachloro-m-xylene [1]	*	30-150	S-01	11/29/11 10:00
Tetrachloro-m-xylene [2]	*	30-150	S-01	11/29/11 10:00

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Haddam, CT
Sample Description: 0.5-1in Window
Work Order: 11K0854
Date Received: 11/23/2011
Field Sample #: 112211AJ 02
Sampled: 11/22/2011 12:00
Sample ID: 11K0854-02
Sample Matrix: Brick

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	1.8	mg/Kg	20		SW-846 8082A	11/26/11	11/29/11 10:13	JMB
Aroclor-1221 [1]	ND	1.8	mg/Kg	20		SW-846 8082A	11/26/11	11/29/11 10:13	JMB
Aroclor-1232 [1]	ND	1.8	mg/Kg	20		SW-846 8082A	11/26/11	11/29/11 10:13	JMB
Aroclor-1242 [1]	15	1.8	mg/Kg	20		SW-846 8082A	11/26/11	11/29/11 10:13	JMB
Aroclor-1248 [1]	5.6	1.8	mg/Kg	20		SW-846 8082A	11/26/11	11/29/11 10:13	JMB
Aroclor-1254 [1]	ND	1.8	mg/Kg	20		SW-846 8082A	11/26/11	11/29/11 10:13	JMB
Aroclor-1260 [1]	ND	1.8	mg/Kg	20		SW-846 8082A	11/26/11	11/29/11 10:13	JMB
Aroclor-1262 [1]	ND	1.8	mg/Kg	20		SW-846 8082A	11/26/11	11/29/11 10:13	JMB
Aroclor-1268 [1]	ND	1.8	mg/Kg	20		SW-846 8082A	11/26/11	11/29/11 10:13	JMB

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	88.6	30-150		11/29/11 10:13
Decachlorobiphenyl [2]	89.1	30-150		11/29/11 10:13
Tetrachloro-m-xylene [1]	83.2	30-150		11/29/11 10:13
Tetrachloro-m-xylene [2]	90.8	30-150		11/29/11 10:13

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Haddam, CT
Sample Description: 0-0.5in Door
Work Order: 11K0854

Date Received: 11/23/2011

Field Sample #: 112211AJ 03
Sampled: 11/22/2011 12:00

Sample ID: 11K0854-03

Sample Matrix: Brick

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	11/26/11	11/29/11 9:34	JMB
Aroclor-1221 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	11/26/11	11/29/11 9:34	JMB
Aroclor-1232 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	11/26/11	11/29/11 9:34	JMB
Aroclor-1242 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	11/26/11	11/29/11 9:34	JMB
Aroclor-1248 [2]	0.38	0.10	mg/Kg	1		SW-846 8082A	11/26/11	11/29/11 9:34	JMB
Aroclor-1254 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	11/26/11	11/29/11 9:34	JMB
Aroclor-1260 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	11/26/11	11/29/11 9:34	JMB
Aroclor-1262 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	11/26/11	11/29/11 9:34	JMB
Aroclor-1268 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	11/26/11	11/29/11 9:34	JMB

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	90.5	30-150		11/29/11 9:34
Decachlorobiphenyl [2]	83.9	30-150		11/29/11 9:34
Tetrachloro-m-xylene [1]	80.9	30-150		11/29/11 9:34
Tetrachloro-m-xylene [2]	81.0	30-150		11/29/11 9:34

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ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Haddam, CT
Sample Description: 0.5-1in Door
Work Order: 11K0854
Date Received: 11/23/2011
Field Sample #: 112211AJ 04
Sampled: 11/22/2011 12:00
Sample ID: 11K0854-04
Sample Matrix: Brick

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	11/26/11	11/29/11 9:47	JMB
Aroclor-1221 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	11/26/11	11/29/11 9:47	JMB
Aroclor-1232 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	11/26/11	11/29/11 9:47	JMB
Aroclor-1242 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	11/26/11	11/29/11 9:47	JMB
Aroclor-1248 [1]	0.24	0.10	mg/Kg	1		SW-846 8082A	11/26/11	11/29/11 9:47	JMB
Aroclor-1254 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	11/26/11	11/29/11 9:47	JMB
Aroclor-1260 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	11/26/11	11/29/11 9:47	JMB
Aroclor-1262 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	11/26/11	11/29/11 9:47	JMB
Aroclor-1268 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	11/26/11	11/29/11 9:47	JMB

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	100	30-150		11/29/11 9:47
Decachlorobiphenyl [2]	92.3	30-150		11/29/11 9:47
Tetrachloro-m-xylene [1]	89.7	30-150		11/29/11 9:47
Tetrachloro-m-xylene [2]	89.1	30-150		11/29/11 9:47

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Haddam, CT
Sample Description: 0-4in Soil D Side
Work Order: 11K0854
Date Received: 11/23/2011
Field Sample #: 112211AJ 04
Sampled: 11/22/2011 17:00
Sample ID: 11K0854-05
Sample Matrix: Soil

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.15	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 15:45	MJC
Aroclor-1221 [1]	ND	0.15	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 15:45	MJC
Aroclor-1232 [1]	ND	0.15	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 15:45	MJC
Aroclor-1242 [1]	ND	0.15	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 15:45	MJC
Aroclor-1248 [1]	ND	0.15	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 15:45	MJC
Aroclor-1254 [1]	ND	0.15	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 15:45	MJC
Aroclor-1260 [1]	ND	0.15	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 15:45	MJC
Aroclor-1262 [1]	ND	0.15	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 15:45	MJC
Aroclor-1268 [1]	ND	0.15	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 15:45	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	65.6	30-150		11/28/11 15:45
Decachlorobiphenyl [2]	73.8	30-150		11/28/11 15:45
Tetrachloro-m-xylene [1]	85.9	30-150		11/28/11 15:45
Tetrachloro-m-xylene [2]	88.4	30-150		11/28/11 15:45

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Project Location: Haddam, CT
Sample Description: 0-4in Soil D Side
Work Order: 11K0854

Date Received: 11/23/2011

Field Sample #: 112211AJ 04
Sampled: 11/22/2011 17:00

Sample ID: 11K0854-05

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	65.9		% Wt	1		SM 2540G	11/30/11	12/1/11 16:05	RJS

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Project Location: Haddam, CT
Sample Description: 0-4in Soil D Side
Work Order: 11K0854

Date Received: 11/23/2011

Field Sample #: 112211AJ 06
Sampled: 11/22/2011 17:00

Sample ID: 11K0854-06

Sample Matrix: Soil

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.11	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 15:59	MJC
Aroclor-1221 [1]	ND	0.11	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 15:59	MJC
Aroclor-1232 [1]	ND	0.11	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 15:59	MJC
Aroclor-1242 [1]	ND	0.11	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 15:59	MJC
Aroclor-1248 [1]	ND	0.11	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 15:59	MJC
Aroclor-1254 [1]	ND	0.11	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 15:59	MJC
Aroclor-1260 [1]	ND	0.11	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 15:59	MJC
Aroclor-1262 [1]	ND	0.11	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 15:59	MJC
Aroclor-1268 [1]	ND	0.11	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 15:59	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	76.3	30-150		11/28/11 15:59
Decachlorobiphenyl [2]	82.9	30-150		11/28/11 15:59
Tetrachloro-m-xylene [1]	92.3	30-150		11/28/11 15:59
Tetrachloro-m-xylene [2]	94.0	30-150		11/28/11 15:59

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Project Location: Haddam, CT
Sample Description: 0-4in Soil D Side
Work Order: 11K0854

Date Received: 11/23/2011

Field Sample #: 112211AJ 06
Sampled: 11/22/2011 17:00

Sample ID: 11K0854-06

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	89.4		% Wt	1		SM 2540G	11/30/11	12/1/11 16:05	RJS

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Project Location: Haddam, CT
Sample Description: 0-4in Soil C Side
Work Order: 11K0854

Date Received: 11/23/2011

Field Sample #: 112211AJ 07
Sampled: 11/22/2011 17:00

Sample ID: 11K0854-07

Sample Matrix: Soil

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.12	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 16:13	MJC
Aroclor-1221 [1]	ND	0.12	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 16:13	MJC
Aroclor-1232 [1]	ND	0.12	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 16:13	MJC
Aroclor-1242 [1]	ND	0.12	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 16:13	MJC
Aroclor-1248 [1]	ND	0.12	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 16:13	MJC
Aroclor-1254 [1]	ND	0.12	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 16:13	MJC
Aroclor-1260 [1]	ND	0.12	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 16:13	MJC
Aroclor-1262 [1]	ND	0.12	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 16:13	MJC
Aroclor-1268 [1]	ND	0.12	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 16:13	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	74.0	30-150		11/28/11 16:13
Decachlorobiphenyl [2]	81.9	30-150		11/28/11 16:13
Tetrachloro-m-xylene [1]	93.5	30-150		11/28/11 16:13
Tetrachloro-m-xylene [2]	95.9	30-150		11/28/11 16:13

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Project Location: Haddam, CT
Sample Description: 0-4in Soil C Side
Work Order: 11K0854

Date Received: 11/23/2011

Field Sample #: 112211AJ 07
Sampled: 11/22/2011 17:00

Sample ID: 11K0854-07

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	86.8		% Wt	1		SM 2540G	11/30/11	12/1/11 16:05	RJS

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Project Location: Haddam, CT
Sample Description: 0-4in Soil C Side
Work Order: 11K0854
Date Received: 11/23/2011
Field Sample #: 112211AJ 08
Sampled: 11/22/2011 17:00
Sample ID: 11K0854-08
Sample Matrix: Soil

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.11	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 16:27	MJC
Aroclor-1221 [1]	ND	0.11	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 16:27	MJC
Aroclor-1232 [1]	ND	0.11	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 16:27	MJC
Aroclor-1242 [1]	ND	0.11	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 16:27	MJC
Aroclor-1248 [1]	ND	0.11	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 16:27	MJC
Aroclor-1254 [1]	ND	0.11	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 16:27	MJC
Aroclor-1260 [1]	ND	0.11	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 16:27	MJC
Aroclor-1262 [1]	ND	0.11	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 16:27	MJC
Aroclor-1268 [1]	ND	0.11	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 16:27	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	74.8	30-150		11/28/11 16:27
Decachlorobiphenyl [2]	82.1	30-150		11/28/11 16:27
Tetrachloro-m-xylene [1]	96.2	30-150		11/28/11 16:27
Tetrachloro-m-xylene [2]	98.0	30-150		11/28/11 16:27

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Project Location: Haddam, CT
Sample Description: 0-4in Soil C Side
Work Order: 11K0854

Date Received: 11/23/2011

Field Sample #: 112211AJ 08
Sampled: 11/22/2011 17:00

Sample ID: 11K0854-08

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	91.8		% Wt	1		SM 2540G	11/30/11	12/1/11 16:05	RJS

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Sample Extraction Data

Prep Method: % Solids-SM 2540G

Lab Number [Field ID]	Batch	Date
11K0854-05 [112211AJ 04]	B041860	11/30/11
11K0854-06 [112211AJ 06]	B041860	11/30/11
11K0854-07 [112211AJ 07]	B041860	11/30/11
11K0854-08 [112211AJ 08]	B041860	11/30/11

Prep Method: SW-846 3540C-SW-846 8082A

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
11K0854-01 [112211AJ 01]	B041577	2.10	10.0	11/26/11
11K0854-02 [112211AJ 02]	B041577	2.20	10.0	11/26/11
11K0854-03 [112211AJ 03]	B041577	2.00	10.0	11/26/11
11K0854-04 [112211AJ 04]	B041577	2.00	10.0	11/26/11

Prep Method: SW-846 3540C-SW-846 8082A

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
11K0854-05 [112211AJ 04]	B041578	10.1	50.0	11/26/11
11K0854-06 [112211AJ 06]	B041578	10.2	50.0	11/26/11
11K0854-07 [112211AJ 07]	B041578	10.0	50.0	11/26/11
11K0854-08 [112211AJ 08]	B041578	10.0	50.0	11/26/11

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QUALITY CONTROL

Polychlorinated Biphenyls with 3540 Soxhlet Extraction - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B041577 - SW-846 3540C										
Blank (B041577-BLK1)				Prepared: 11/26/11 Analyzed: 11/28/11						
Aroclor-1016	ND	0.10	mg/Kg							
Aroclor-1016 [2C]	ND	0.10	mg/Kg							
Aroclor-1221	ND	0.10	mg/Kg							
Aroclor-1221 [2C]	ND	0.10	mg/Kg							
Aroclor-1232	ND	0.10	mg/Kg							
Aroclor-1232 [2C]	ND	0.10	mg/Kg							
Aroclor-1242	ND	0.10	mg/Kg							
Aroclor-1242 [2C]	ND	0.10	mg/Kg							
Aroclor-1248	ND	0.10	mg/Kg							
Aroclor-1248 [2C]	ND	0.10	mg/Kg							
Aroclor-1254	ND	0.10	mg/Kg							
Aroclor-1254 [2C]	ND	0.10	mg/Kg							
Aroclor-1260	ND	0.10	mg/Kg							
Aroclor-1260 [2C]	ND	0.10	mg/Kg							
Aroclor-1262	ND	0.10	mg/Kg							
Aroclor-1262 [2C]	ND	0.10	mg/Kg							
Aroclor-1268	ND	0.10	mg/Kg							
Aroclor-1268 [2C]	ND	0.10	mg/Kg							
Surrogate: Decachlorobiphenyl	*0.738*		mg/Kg	1.00		73.8	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.805*		mg/Kg	1.00		80.5	30-150			
Surrogate: Tetrachloro-m-xylene	*0.896*		mg/Kg	1.00		89.6	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.879*		mg/Kg	1.00		87.9	30-150			
LCS (B041577-BS1)				Prepared: 11/26/11 Analyzed: 11/28/11						
Aroclor-1016	0.21	0.10	mg/Kg	0.250		83.0	40-140			
Aroclor-1016 [2C]	0.24	0.10	mg/Kg	0.250		97.2	40-140			
Aroclor-1260	0.23	0.10	mg/Kg	0.250		92.2	40-140			
Aroclor-1260 [2C]	0.24	0.10	mg/Kg	0.250		96.2	40-140			
Surrogate: Decachlorobiphenyl	*0.817*		mg/Kg	1.00		81.7	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.890*		mg/Kg	1.00		89.0	30-150			
Surrogate: Tetrachloro-m-xylene	*0.915*		mg/Kg	1.00		91.5	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.891*		mg/Kg	1.00		89.1	30-150			
LCS Dup (B041577-BSD1)				Prepared: 11/26/11 Analyzed: 11/28/11						
Aroclor-1016	0.23	0.10	mg/Kg	0.250		90.3	40-140	8.38	30	
Aroclor-1016 [2C]	0.27	0.10	mg/Kg	0.250		106	40-140	8.92	30	
Aroclor-1260	0.25	0.10	mg/Kg	0.250		99.5	40-140	7.62	30	
Aroclor-1260 [2C]	0.26	0.10	mg/Kg	0.250		103	40-140	6.68	30	
Surrogate: Decachlorobiphenyl	*0.849*		mg/Kg	1.00		84.9	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.920*		mg/Kg	1.00		92.0	30-150			
Surrogate: Tetrachloro-m-xylene	*0.898*		mg/Kg	1.00		89.8	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.872*		mg/Kg	1.00		87.2	30-150			

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QUALITY CONTROL

Polychlorinated Biphenyls with 3540 Soxhlet Extraction - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD		RPD Limit	Notes
Batch B041577 - SW-846 3540C												
Matrix Spike (B041577-MS1)		**Source: 11K0854-01**		Prepared: 11/26/11 Analyzed: 11/28/11								
Aroclor-1016	43	0.10	mg/Kg	0.250	0.0	**17400**	*	40-140				MS-21
Aroclor-1016 [2C]	39	0.10	mg/Kg	0.250	0.0	**15600**	*	40-140				MS-21
Aroclor-1260	0.65	0.10	mg/Kg	0.250	0.0	**260**	*	40-140				MS-21
Aroclor-1260 [2C]	3.6	0.10	mg/Kg	0.250	0.0	**1440**	*	40-140				MS-21
Surrogate: Decachlorobiphenyl	*0.824*		mg/Kg	1.00		82.4		30-150				
Surrogate: Decachlorobiphenyl [2C]	*0.888*		mg/Kg	1.00		88.8		30-150				
Surrogate: Tetrachloro-m-xylene	*0.909*		mg/Kg	1.00		90.9		30-150				
Surrogate: Tetrachloro-m-xylene [2C]	*0.856*		mg/Kg	1.00		85.6		30-150				
Matrix Spike Dup (B041577-MSD1)		**Source: 11K0854-01**		Prepared: 11/26/11 Analyzed: 11/28/11								
Aroclor-1016	25	0.10	mg/Kg	0.250	0.0	**10200**	*	40-140	**52.5**	*	50	MS-21
Aroclor-1016 [2C]	23	0.10	mg/Kg	0.250	0.0	**9360**	*	40-140	49.9		50	MS-21
Aroclor-1260	0.54	0.10	mg/Kg	0.250	0.0	**214**	*	40-140	19.4		50	MS-21
Aroclor-1260 [2C]	2.4	0.10	mg/Kg	0.250	0.0	**949**	*	40-140	41.4		50	MS-21
Surrogate: Decachlorobiphenyl	*0.741*		mg/Kg	1.00		74.1		30-150				
Surrogate: Decachlorobiphenyl [2C]	*0.807*		mg/Kg	1.00		80.7		30-150				
Surrogate: Tetrachloro-m-xylene	*0.907*		mg/Kg	1.00		90.7		30-150				
Surrogate: Tetrachloro-m-xylene [2C]	*0.855*		mg/Kg	1.00		85.5		30-150				
Batch B041578 - SW-846 3540C												
Blank (B041578-BLK1)				Prepared: 11/26/11 Analyzed: 11/28/11								
Aroclor-1016	ND	0.10	mg/Kg wet									
Aroclor-1016 [2C]	ND	0.10	mg/Kg wet									
Aroclor-1221	ND	0.10	mg/Kg wet									
Aroclor-1221 [2C]	ND	0.10	mg/Kg wet									
Aroclor-1232	ND	0.10	mg/Kg wet									
Aroclor-1232 [2C]	ND	0.10	mg/Kg wet									
Aroclor-1242	ND	0.10	mg/Kg wet									
Aroclor-1242 [2C]	ND	0.10	mg/Kg wet									
Aroclor-1248	ND	0.10	mg/Kg wet									
Aroclor-1248 [2C]	ND	0.10	mg/Kg wet									
Aroclor-1254	ND	0.10	mg/Kg wet									
Aroclor-1254 [2C]	ND	0.10	mg/Kg wet									
Aroclor-1260	ND	0.10	mg/Kg wet									
Aroclor-1260 [2C]	ND	0.10	mg/Kg wet									
Aroclor-1262	ND	0.10	mg/Kg wet									
Aroclor-1262 [2C]	ND	0.10	mg/Kg wet									
Aroclor-1268	ND	0.10	mg/Kg wet									
Aroclor-1268 [2C]	ND	0.10	mg/Kg wet									
Surrogate: Decachlorobiphenyl	*0.165*		mg/Kg wet	0.200		82.4		30-150				
Surrogate: Decachlorobiphenyl [2C]	*0.177*		mg/Kg wet	0.200		88.3		30-150				
Surrogate: Tetrachloro-m-xylene	*0.195*		mg/Kg wet	0.200		97.5		30-150				
Surrogate: Tetrachloro-m-xylene [2C]	*0.203*		mg/Kg wet	0.200		102		30-150				

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QUALITY CONTROL

Polychlorinated Biphenyls with 3540 Soxhlet Extraction - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B041578 - SW-846 3540C										
LCS (B041578-BS1)				Prepared: 11/26/11 Analyzed: 11/28/11						
Aroclor-1016	0.19	0.10	mg/Kg wet	0.200		96.4	40-140			
Aroclor-1016 [2C]	0.21	0.10	mg/Kg wet	0.200		104	40-140			
Aroclor-1260	0.19	0.10	mg/Kg wet	0.200		94.2	40-140			
Aroclor-1260 [2C]	0.21	0.10	mg/Kg wet	0.200		103	40-140			
Surrogate: Decachlorobiphenyl	*0.176*		mg/Kg wet	0.200		88.2	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.188*		mg/Kg wet	0.200		94.2	30-150			
Surrogate: Tetrachloro-m-xylene	*0.190*		mg/Kg wet	0.200		95.1	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.194*		mg/Kg wet	0.200		97.1	30-150			
LCS Dup (B041578-BSD1)				Prepared: 11/26/11 Analyzed: 11/28/11						
Aroclor-1016	0.20	0.10	mg/Kg wet	0.200		100	40-140	3.78	30	
Aroclor-1016 [2C]	0.21	0.10	mg/Kg wet	0.200		107	40-140	3.26	30	
Aroclor-1260	0.20	0.10	mg/Kg wet	0.200		100	40-140	6.33	30	
Aroclor-1260 [2C]	0.22	0.10	mg/Kg wet	0.200		109	40-140	5.70	30	
Surrogate: Decachlorobiphenyl	*0.188*		mg/Kg wet	0.200		94.1	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.199*		mg/Kg wet	0.200		99.6	30-150			
Surrogate: Tetrachloro-m-xylene	*0.188*		mg/Kg wet	0.200		94.2	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.192*		mg/Kg wet	0.200		95.9	30-150			

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
MS-21	Matrix spike and/or spike duplicate recovery bias high due to contribution of other Aroclors present in the source sample.
S-01	The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8082A in Product/Solid	
Aroclor-1016	CT,NH,NY,ME,NC
Aroclor-1016 [2C]	CT,NH,NY,ME,NC
Aroclor-1221	CT,NH,NY,ME,NC
Aroclor-1221 [2C]	CT,NH,NY,ME,NC
Aroclor-1232	CT,NH,NY,ME,NC
Aroclor-1232 [2C]	CT,NH,NY,ME,NC
Aroclor-1242	CT,NH,NY,ME,NC
Aroclor-1242 [2C]	CT,NH,NY,ME,NC
Aroclor-1248	CT,NH,NY,ME,NC
Aroclor-1248 [2C]	CT,NH,NY,ME,NC
Aroclor-1254	CT,NH,NY,ME,NC
Aroclor-1254 [2C]	CT,NH,NY,ME,NC
Aroclor-1260	CT,NH,NY,ME,NC
Aroclor-1260 [2C]	CT,NH,NY,ME,NC
SW-846 8082A in Soil	
Aroclor-1016	CT,NH,NY,ME,NC
Aroclor-1016 [2C]	CT,NH,NY,ME,NC
Aroclor-1221	CT,NH,NY,ME,NC
Aroclor-1221 [2C]	CT,NH,NY,ME,NC
Aroclor-1232	CT,NH,NY,ME,NC
Aroclor-1232 [2C]	CT,NH,NY,ME,NC
Aroclor-1242	CT,NH,NY,ME,NC
Aroclor-1242 [2C]	CT,NH,NY,ME,NC
Aroclor-1248	CT,NH,NY,ME,NC
Aroclor-1248 [2C]	CT,NH,NY,ME,NC
Aroclor-1254	CT,NH,NY,ME,NC
Aroclor-1254 [2C]	CT,NH,NY,ME,NC
Aroclor-1260	CT,NH,NY,ME,NC
Aroclor-1260 [2C]	CT,NH,NY,ME,NC

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC	100033	01/1/2012
MA	Massachusetts DEP	M-MA100	06/30/2012
CT	Connecticut Department of Publlic Health	PH-0567	09/30/2013
NY	New York State Department of Health	10899 NELAP	04/1/2012
NH	New Hampshire Environmental Lab	2516 NELAP	02/5/2012
RI	Rhode Island Department of Health	LAO00112	12/30/2011
NC	North Carolina Div. of Water Quality	652	12/31/2011
NJ	New Jersey DEP	MA007 NELAP	06/30/2012
FL	Florida Department of Health	E871027 NELAP	06/30/2012
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2012
WA	State of Washington Department of Ecology	C2065	02/23/2012
ME	State of Maine	2011028	06/9/2013

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☐ 1419 Richland Street, Columbia, SC 29201
☐ 78 Interstate Drive, West Springfield, MA 01089
☐ 50 Redfield Street, Suite 100, Boston, MA 02122
☐ 275 Promenade Street, Suite 350, Providence, RI 02908
☐ 80 Washington Street, Suite 301, Poughkeepsie, NY 12601

11K0854

CHAIN-OF-CUSTODY RECORD

0013

Turnaround
☐ 1 Day* ☐ 3 Days* ☐ Other _____ (days)
☐ 2 Days* ☒ Standard (5 days) *Surcharge Applies

Project Name	Project Location	Project Number	Laboratory
Former Jailhouse	Haddam, CT	20101276.A2E	Con Test

Report To: Stephen W. Connelly
Invoice To: Fuss & O'Neill EnviroScience, LLC
P.O. No.:
Sampler's Signature: Andrew Jackson Date: 11-22-11

Source Codes:
MW=Monitoring Well PW=Potable Water S=Soil W=Waste
SW=Surface Water T=Treatment Facility B=Sediment A=Air
X=Other Brick

Analysis Request: PCB Soxhlet / 8082

Containers: Soil VOA Vial, [ ] methanol; Soil VOA Vial, [ ] water; Glass Soil Container (4) oz; Glass Soil Container ( ) oz; Other; Water VOA Vial, [ ] As is [ ] HCl; Glass Amber ( ) ml, [ ] As is; Plastic - As is, [ ] 250 ml; Plastic - H_2SO_4 [ ] 250 ml; Plastic - HNO_3 250 ml; Plastic - NaOH, 250 ml; [ ] Filtered [ ] Unfiltered; Comments

Item No.	Transfer Check 1	2	3	4	Sample Number	Source Code	Date Sampled	Time Sampled	PCB Soxhlet / 8082	Glass Soil Container (4) oz	Comments
01	✓				112211AJ01	X	11-22-11	12:00	✓	✓	
02	✓				112211AJ02	X			✓	✓	
03	✓				112211AJ03	X			✓	✓	
04	✓				112211AJ04	X			✓	✓	
05	✓				112211AJ05	S		17:00	✓	✓	
06	✓				112211AJ06	S			✓	✓	
07	✓				112211AJ07	S			✓	✓	
08	✓				112211AJ08	S			✓	✓	

Transfer Number	Relinquished By	Accepted By	Date	Time
1	Andrew Jackson	F&O Fridge	11-22-11	09:00 AM
2	Allison Padfield	[illegible]	11/23/11	12:30
3	[illegible]	C. Chrysler Segall	11/23/11	1:40
4				

Reporting and Detection Limit Requirements:

Additional Comments: 01) 0-½" window; 02) ½"-1" window; 03) 0-½" Door; 04) ½"-1" Door; 05) 0-4" Soil Dside; 06) 0-4" Soil Dside; 07) 0-4" Cside; 08) 0-4" Cside Door

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Sample Receipt Checklist

CLIENT NAME: Fuss + O'Neill RECEIVED BY: C.C-S DATE: 11/23/11

1) Was the chain(s) of custody relinquished and signed? Yes No No CoC Included

2) Does the chain agree with the samples? Yes No

If not, explain:

3) Are all the samples in good condition? Yes No

If not, explain:

4) How were the samples received:

On Ice ☑ Direct from Sampling ☐ Ambient ☐ In Cooler(s) ☑

Were the samples received in Temperature Compliance of (2-6°C)? Yes No N/A

Temperature °C by Temp blank _____ Temperature °C by Temp gun 4.7°C

5) Are there Dissolved samples for the lab to filter? Yes No

Who was notified _____ Date _____ Time _____

6) Are there any RUSH or SHORT HOLDING TIME samples? Yes No

Who was notified _____ Date _____ Time _____

7) Location where samples are stored: 14

Permission to subcontract samples? Yes No
(Walk-in clients only) if not already approved
Client Signature:

Containers received at Con-Test

	# of containers		# of containers
1 Liter Amber		8 oz amber/clear jar	
500 mL Amber		4 oz amber/clear jar	8
250 mL Amber (8oz amber)		2 oz amber/clear jar	
1 Liter Plastic		Air Cassette	
500 mL Plastic		Hg/Hopcalite Tube	
250 mL plastic		Plastic Bag / Ziploc	
40 mL Vial - type listed below		PM 2.5 / PM 10	
Colisure / bacteria bottle		PUF Cartridge	
Dissolved Oxygen bottle		SOC Kit	
Encore		TO-17 Tubes	
Flashpoint bottle		Non-ConTest Container	
Perchlorate Kit		Other glass jar	
Other		Other	

Laboratory Comments:

40 mL vials: # HCl _____ # Methanol _____

Bisulfate _____ # DI Water _____

Thiosulfate _____ Unpreserved _____

Time and Date Frozen:

Do all samples have the proper Acid pH: Yes No N/A _____

Do all samples have the proper Base pH: Yes No N/A _____

Doc# 277

Rev. 1 May

ATTACHMENT B

LIMITED PERFORMANCE BASED DISPOSAL PLAN DATED DECEMBER 20, 2011

Limited Performance-Based Disposal Plan for PCB Window & Door Glazing/Caulking Removal

11 Jail Hill Road, Haddam, CT

Town of Haddam

Haddam, CT

December 20, 2011

FUSS & O'NEILL

Disciplines to Deliver

Fuss & O'Neill EnviroScience, LLC
146 Hartford Road
Manchester, CT 06040

Project No. 20101276.A2E

FUSS & O'NEILL
EnviroScience, LLC

December 20, 2011

Mr. Thomas Giddis
Town of Haddam
30 Field Park Drive
Haddam, CT 06438

RE: Limited Performance-Based Disposal Plan
11 Jail Hill Road, Haddam, CT
Fuss & O'Neill EnviroScience Project No. 20101276.A2E

Dear Mr. Giddis:

We have prepared this work plan in accordance with the requirements for a Performance-Based Disposal for PCB window glazing at the above-referenced site. The plan is consistent with requirement of 40 CFR Part 761.61(b).

Thank you for your attention to this matter and if you have any questions with regard to the plan please contact the undersigned at (860) 646-2469, ext. 5565.

Sincerely,

Stephen W. Connelly
Senior Vice President

SWC/kr

146 Hartford Road
Manchester, CT
06040
t 860.646.2469
f 860.533.5143

www.fando.com

Connecticut
Massachusetts
Rhode Island
South Carolina

FUSS & O'NEILL
EnviroScience, LLC

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Town of Haddam

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Appendix B Laboratory Analysis and Chain of Custody - Adjacent Porous Surfaces - Bulk
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1 Introduction

This plan has been prepared by Fuss & O'Neill EnviroScience, LLC (EnviroScience) on behalf of the Town of Haddam in preparation for the demolition of the back portion (brick structure) of the Jailhouse located at 11 Jail Hill Road, Haddam, Connecticut. The plan has been prepared to comply with the U.S. Environmental Protection Agency (EPA) requirements for a Performance-Based Disposal Plan in accordance with 40 CFR Part 761.61(b). Exterior and interior window and door glazing compound(s) have been determined to contain polychlorinated biphenyls (PCBs) at regulated concentrations at 11 Jail Hill Road in Haddam Connecticut.

1.1 Background

The Former Jailhouse is located at 11 Jail Hill Road, Haddam, Connecticut and the back portion is scheduled for demolition in 2011-2012.

Former Jailhouse at11 Jail Hill Road, Haddam, Connecticut

1.2 Project Objectives

This Plan is for the removal of polychlorinated biphenyl (PCB)-containing materials with equal to or greater than (≥50 parts per million (ppm) PCBs as Bulk Product Waste including exterior window and door caulking, and the removal of adjacent surface materials as PCB Remediation Waste including PCB contaminated brick materials at the former Jailhouse. Exterior and interior window glazing compound also contain PCB <50 ppm and windows will be removed for disposal as PCB waste >50 ppm. Adjacent brick surfaces also contain PCB >50 ppm at the former Jailhouse building which must be removed as PCB Remediation Waste to meet a clean-up standard of PCB content <1 ppm..

Adjacent brick surfaces also contain PCBs ≥ 50 ppm at the former Jailhouse building which must be removed as PCB Remediation Waste to meet a clean-up standard of PCB content ≤ 1 ppm.

The objective of the project is to remove all PCB-containing and contaminated materials prior to the demolition of the back portion (brick structure) of the Former Jailhouse as PCB Bulk Product Waste and PCB Remediation waste.

In accordance with State of Connecticut statutes, caulking compounds, glazing compounds, or other building materials containing PCBs <50 ppm but equal to or greater than 1 ppm PCBs are regulated and require remediation. We have included a scope of work to include removal of all window system components (metal frame) containing PCBs < 50 ppm. Refer to Remediation plan and performance specification to be implemented by selected abatement contractor.

1.3 Plan Organization

This Plan has been organized into the following sections:

Section 2: Site Characterization

The site characterization section provides a summary of the sampling performed to delineate the nature and extent of PCB as required in accordance with 40 CFR Part 761.61. The section includes the nature of the contamination including kinds of materials; a summary of the procedures used to sample contaminated and adjacent surfaces; and the location and extent of the identified contaminated areas.

Section 3: Remediation Plan

The remediation plan includes a discussion of how the remedial objectives identified in Section 1.2 shall be met and the remediation approach, cleanup levels to be met and the verification sampling approach to be utilized. This section includes a discussion of the areas of proposed remediation work and location for post-remediation verification sampling.

2 Site Characterization

This section provides a summary of the sampling performed to delineate the nature and extent of PCB as required in accordance with 40 CFR Part 761.61. The section includes the nature of the contamination including kinds of materials; a summary of the procedures used to sample contaminated and adjacent surfaces; and the location and extent of the identified contaminated areas.

The following sections describe the selection of sample locations, sample collection methods, and the results of the characterization data. Figures depicting the locations of all samples collected by Fuss & O'Neill EnviroScience, LLC (EnviroScience) are included in Table 2.1

2.1 Sample Collection and Analysis

Sampling for PCBs was conducted by EnviroScience in November and December 2011. Samples were collected by EnviroScience representatives Andrew Jackson, directed by Project Manager Stephen W. Connelly. All samples collected were transmitted to Contest Analytical Laboratory, Inc. of Longmeadow, MA.

Bulk Sampling

Sampling involved removal of bulk product materials (source materials) such as caulking, and window glazing compound using hand tools to submit in bulk form to determine PCB content. Adjacent porous surfaces such as brick were sampled using a mechanical hammer drill to obtain samples at depths of 0 - 0.5 inches. The bulk materials were analyzed for PCB content from each cross section. Tools utilized to collect samples were cleaned using hexane between sampling. Each sample was placed in 4 oz glass jar, labeled, stored in a cooler, and delivered to laboratory using proper chain of custody.

Materials sampled and methods are identified in the following Table 2.1

Table 2.1
Materials Sampled and Methods

Material Description	Location	Material Type	Number of Samples	Sampling Method
Exterior Door Caulking Compound	Side C door of Brick building	Bulk source material	1 Sample	Bulk
Exterior Window Glazing Compound	Side D window Brick Building at Bottom of Fire Escape	Bulk source material	1 Sample	Bulk
Exterior Window Caulking Compound	Side C Window Brick building	Bulk source material	1 sample	Bulk
Exterior Door Caulking Compound	Side B Door	Bulk source materials	1 sample	Bulk
Exterior Window Glazing Compound	Side D Second Floor Window by the Fire Escape	Bulk source materials	1 sample	Bulk
Exterior Window Caulking Compound	Side D Window First Floor Jail-House	Bulk source materials	1 sample	Bulk
Interior Window Caulking Compound	Side D Interior Window Frame	Bulk source materials	1 sample	Bulk
Interior Window Glazing Compound	Side D Window Pane Brick Building	Bulk source materials	1 sample	Bulk
Red Brick	Side C adjacent to window	Adjacent source materials	1 sample	Bulk
Red Brick	Side D adjacent to window	Adjacent source materials	1 sample	Bulk
Red Brick	Side C adjacent to window	Adjacent source materials	1 sample	Bulk
Red Brick	Side B adjacent to window	Adjacent source materials	1 sample	Bulk
Soil	0-4 inches depth Side C, D	Soil	4 sample(s)	Bulk

2.2 Sample Analysis Results

The following tables summarize the specific sampling locations of collected samples and results of PCB analysis. The analysis method included extraction using EPA Method 3540C (Soxhlet Extraction) and analysis for PCBs using EPA Method 8082. The laboratory results and chain of custody are included in *Appendix A* and *Appendix B*.

2.2.1 Caulking and Window Glazing Compound Sample Analysis Results

The analysis results of caulking and window glazing materials are summarized in Table 2.2. Note results in bold contain PCBs at 1 ppm or greater.

Table 2.2
Source Materials Analysis Results Summary

Date Collected	Sample No.	Building	Side	Location	Material Description	Results (PPM)
12-13-2010	121310AJDC01	Former Jailhouse	C	Brick Section	Exterior Gray Door Caulking	**1,500 Aroclor-1248**
12-13-2010	121310AJDC02	Former Jailhouse	D	Brick Section	Exterior Gray Window glazing compound	**1.5 Aroclor-1248**
12-13-2010	121310AJDC03	Former Jailhouse	C	Brick Section	Exterior Window Gray- glazing compound	**500 Aroclor-1248**
12-13-2010	121310AJDC04	Former Jailhouse	B	Stone Section	Gray Exterior door caulking compound	0.81
12-13-2010	121310AJDC05	Former Jailhouse	D	Stone Section (second floor window by fire escape)	Gray Exterior Window glazing compound	0.81
12-13-2010	121310AJDC06	Former Jailhouse	D	Stone Section (first floor jailhouse)	Exterior Window Glazing compound	0.81
12-13-2010	121310AJDC07	Former Jailhouse	D	Stone Section	Interior Window glazing compound (window frame)	0.81
12-13-2010	121310AJDC08	Former Jailhouse	D	Brick Section	Interior Window Glazing Compound (window pane)	**4.2**

Note: **Bold** text identifies material containing > 1 ppm PCBs.

Laboratory analysis results and chain of custody are included in *Appendix A* for caulking, and glazing compound materials.

2.2.2 Adjacent Porous Materials Sample Analysis Results

The analysis results of adjacent porous materials are summarized in Table 2.3. Note results in bold contain PCBs at 1 ppm or greater.

Due to the intent to remove the window systems to ten (10) of the windows, and one (1) of the doors, levels of PCB ≥50 ppm have been identified in the window glazing compound and door caulking compound(s) and will be removed prior to demolition of brick section of the building. Two courses of brick and the window sill below the window adjacent to the windows and door will be removed entirely. The steel lintels will be removed and disposed of as PCB containing materials. Three square feet of asphalt will also be removed and disposed of as PCB-containing waste from underneath the door that will be removed.

Table 2.3
Adjacent Porous Materials Sample and Soil Sample Analysis Results Summary

Date Collected	Sample No.	Building	Side	Location	Material Description	Results (PPM)
11-22-2011	112211AJ01	Former Jailhouse	C	Side C adjacent to window	Core sample of Brick to a depth of ½ inch	**44 Aroclor-1242 43 Aroclor-1248 TOTAL PCBs 87 PPM**
11-22-2011	112211AJ02	Former Jailhouse	D	Side D adjacent to window	Core sample of Brick to a depth of ½ inch	**15 Aroclor-1242 5.6 Aroclor-1248 TOTAL PCBs 20.6 PPM**
11-22-2011	112211AJ03	Former Jailhouse	C	Side C adjacent to window	Core sample of Brick to a depth of ½ inch	0.38
11-22-2011	112211AJ04	Former Jailhouse	B	Side B adjacent to window	Core sample of Brick to a depth of ½ inch	0.24
11-22-2011	112211AJ05	Former Jailhouse	D	0-4 inches depth Side D	Soil Sample of soil below windows and door	ND
11-22-2011	112211AJ06	Former Jailhouse	D	0-4 inches depth Side D	Soil Sample of soil below windows and door	ND

Date Collected	Sample No.	Building	Side	Location	Material Description	Results (PPM)
11-22-2011	112211AJ07	Former Jailhouse	C	0-4 inches depth Side C	Soil Sample of soil below windows and door	ND
11-22-2011	112211AJ08	Former Jailhouse	C	0-4 inches depth Side C	Soil Sample of soil below windows and door	ND

3 Performance-Based Remediation Plan

The work described in this Performance-Based Disposal Plan shall meet the objectives identified in section 1.2 Project Objectives in accordance with 40 CFR Part 761. The remediation work shall be performed to ensure compliance with EPA Toxic Substance Control Act (TSCA) requirements and protect both public health and the environmental. Materials classified as PCB Bulk Product Waste and PCB Remediation Waste shall be properly disposed in compliance with federal and state regulatory requirements.

The proposed remediation activities to be performed by remediation contractor shall include the following:

1. Site preparation and controls to facilitate remediation of PCBs.
2. Health and Safety in accordance with Occupation Safety and Health Administration (OSHA) requirements.
3. Removal and off-site disposal of PCB materials containing PCB $\geq$50 or <50 ppm at the Brick building of the Former Jail-House property as PCB Bulk Product Waste or PCB Remediation Waste from all locations identified. All waste removed including metal framed windows, steel lintels and door systems with glazing compounds and caulking compound shall be disposed of PCB waste >50 ppm at a TSCA approved facility.
4. Removal of two courses of brick around the whole perimeter of all windows including one course of brick below the window sills. All windows shall be wrapped up in two layers of (6) Mil polyurethane, and disposed of PCB Bulk materials >50 PPM.
5. The total waste stream shall be tested for disposal to ensure waste does not leach more than 10 μg/L based on Toxicity Characteristic Leachate Procedure (TCLP) testing.
6. PCB Remediation Waste shall include removal of adjacent brick masonry for disposal at concentrations identified which are >50 ppm and shall be also disposed of at a TSCA approved facility.
7. Recordkeeping and distribution as required in accordance with 40 CFR part 761.125 (c) (5).

Remediation activities to be performed by others shall include the following:

1. Monitoring remediation activities as Owner's representative shall be performed by Fuss & O'Neill EnviroScience, LLC.

2. Collection of verification samples for PCB analysis shall be performed by Fuss & O'Neill EnviroScience, LLC.

Prior to remediation activities, site preparation and controls shall be established. PCB Bulk Product Waste and PCB Remediation Waste will be removed and transported off-site for disposal at a permitted hazardous waste landfill which is an EPA, TSCA approved facility for PCB waste ≥50 ppm PCB Bulk Product Waste shall be removed and properly disposed in accordance with 40 CFR Part 761.61(b) and 62.

3.1 Site Preparation and Controls

The work shall be performed in accordance with the attached performance based technical specification section included in *Appendix C*. Existing condition drawings are included for reference in *Figure 2-1*. Prior to initiating PCB removal the following site controls will be implemented.

- Contractor shall prepare a site specific work plan as detailed in specification section attached.

- Contractor shall prepare a Health & Safety Plan (HASP) developed specific to the site and work activities to be performed. All workers shall follow applicable federal and state regulation with regard to work activities, including but not limited to OSHA regulation including personal protection and respiratory protection requirements.

- The project site shall be demarcated with caution tape and appropriately worded warning signs. During all remediation activities, the Remediation Contractor shall maintain control of all entrances and exits to the project site to ensure only authorized personnel enter the work areas and are afforded proper personal protective equipment and, as required, respiratory protection.

- Work zones shall be established in accordance with technical specification to include abatement zone, decontamination zone and support zone.

- Ground protection to prevent debris from escaping the abatement zone and to protect areas outside of abatement zone from PCB contamination shall be utilized. Protection shall include the use of water impervious membrane covering which shall be secured to the ground surface. Edges shall be raised to prevent water run-off used for dust control. The membrane shall be covered with a single layer of 6-mil polyethylene sheeting securely fastened to foundation. Refer to technical specification section for requirements.

- Isolation barriers shall be installed on interior side of window and door to isolate these systems to the building exterior where work shall be performed. Protection shall include two layers of 6-mil polyethylene sheeting securely affixed to the interior surfaces of walls and window openings, and. isolate window systems to the building exterior. Refer to technical specification section for requirements.

- All other openings to the building interior within 10 feet of the abatement zone such as unit ventilation, ducts, and grilles shall be securely sealed as appropriate with a single layer of 6-mil polyethylene sheeting from the building exterior. Refer to technical specification section for requirements.

- Ground protection and isolation barriers shall remain in place throughout work to collect dust and debris resulting from PCB Bulk Waste removal and PCB Remediation Waste removal. All debris generated during operations including but not limited to visible caulking, dust and debris shall be HEPA vacuumed continuously throughout the work shift and at the end of a work shift to avoid accumulation. Any tears or rips that occur in protections shall be repaired or removed and replaced with new protections.

- Wind screens consisting of 6-mil polyethylene sheeting shall be applied to staging or lift or around removal areas to prevent dispersal of dust and debris beyond the abatement zone. Platforms shall also be protected as appropriate to facilitate cleaning of dust and debris but not introduce trip or slip hazards.

- All equipment utilized to perform removal of source material or demolition of adjacent materials shall be equipped with appropriate dust collection systems.

- Warning Signage: Post warning signs in accordance with 29 CFR 1910.1200 at all approaches to the work area. Signs shall be conspicuously posted to permit a person to read signs and take precautionary measures to avoid exposure to PCBs or other Toxic or Hazardous Substances. These signs should include the PCB M_L markers at each entrance to the work area.

- Waste Containers for PCB Bulk Product Waste: Appropriate PCB waste containers shall be placed adjacent to abatement zones. Containers shall be lined, covered, and secured. The PCB waste containers shall be properly marked as described in 40 CFR part 761.45. Marking shall include a PCB M_L marker.

3.2 Removal Procedures

The following removal procedures shall be utilized to conduct PCB Bulk Product Waste and PCB Remediation Waste removal.

3.2.1 PCB Bulk Product and PCB Remediation Waste Materials

All PCB Bulk Product Waste Materials and PCB Remediation Waste including PCB caulking compound, window glazing compound, window systems, door system, steel lintels, and brick shall be handled and removed from specified locations for proper disposal. Materials shall be removed in a manner which does not breakdown the materials into fine dust or powder to the extent feasible. Equipment and tools to be utilized shall include hand tools and mechanical equipment such as demolition hammers to remove materials from adjacent substrates. Mechanical removal equipment shall as appropriate be fitted with dust collection systems. Any

dry or brittle caulking materials or other PCB Bulk Product waste shall be removed with additional engineering controls such as use of a HEPA vacuum to remove accumulated dust or debris during removal. Once removed materials shall be placed in lined containers or into appropriate temporary containers such as 6-mil polyethylene disposal bags for controlled transport to PCB waste containers at the end of each work shift.

1. All PCB containing materials shall be removed prior to demolition from all of the ten (10) window(s) and one (1) door system components on the brick portion of the building. PCB Bulk product Waste includes caulking compounds between the brick and the windows and door systems. Entire window and door systems will be removed for disposal. All waste shall be disposed of as TSCA regulated PCB Bulk Product Waste > 50 ppm.

2. Adjacent brick masonry surfaces contain PCB >50 ppm and shall be removed as PCB Remediation Waste for disposal as TSCA regulated waste PCB >50 ppm. This will be done by removing (2) two courses of brick from the whole perimeter of the windows to include the window sill, and one course of brick below the brick sill, and door.

3. Work includes removal of ten (10) ten windows, and one (1) door that shall be removed for disposal as PCB Bulk Product Waste and PCB Remediation Waste as the entire window, and door assembly including PCB glazing compound(s) will be disposed.

4. Window lintels will be disposed of as PCB Remediation Waste for disposal as TSCA regulated waste PCB >50 ppm.

5. Remove three square feet of the asphalt below the door when it has been removed as PCB Remediation Waste for disposal as TSCA regulated waste PCB >50 ppm.

6. The materials will be properly containerized for disposal as PCB Bulk Product Waste and PCB Remediation Waste. All materials shall be disposed as PCB Waste >50 ppm at a TSCA waste facility for PCB waste.

3.3 Verification Sampling Plan

Following the completion of the PCB Remediation Waste removal, Fuss & O'Neill EnviroScience, LLC shall implement the following verification sampling plan in accordance with 40 CFR Part 761.61(a) (6) and to the extent applicable Sub-part O.

Upon completion of work in each area, a visual inspection of all remediated surfaces for visible evidence of dust and debris shall be performed. Surfaces shall also be inspected for visible PCB source materials that may not have been removed. The visual inspection shall provide in a preliminary way, verification that remediation work has been completed in accordance with this Performance Based Disposal Plan (PBDP). Visual inspection shall ensure no visible dust or debris is present on adjacent surfaces where caulking and window glazing compounds and brick materials were removed and adjacent surface cutting or scarification is completed. In addition to the remediation surfaces the surfaces of protective coverings and isolation barriers shall be inspected to ensure they are cleaned of dust and debris. No sampling shall be performed until

the visual inspection is complete and the clearance criteria satisfied. Sampling shall also not occur until all designated work to remove PCBs is completed from the building.

We will take forty-two (42) verification chip samples and duplicates. Three (3) chip samples shall be collected for every location a window and door is being removed we shall include 25% of the total in duplicate samples. The laboratory shall be Con-Test Analytical Laboratory of East Longmeadow, MA. Con-test is an accredited laboratory for PCB analysis. The analysis method shall include extraction using EPA Method 3540C (Soxhlet Extraction) and analysis for PCBs using EPA Method 8082.

Plan Prepared and Reviewed by:

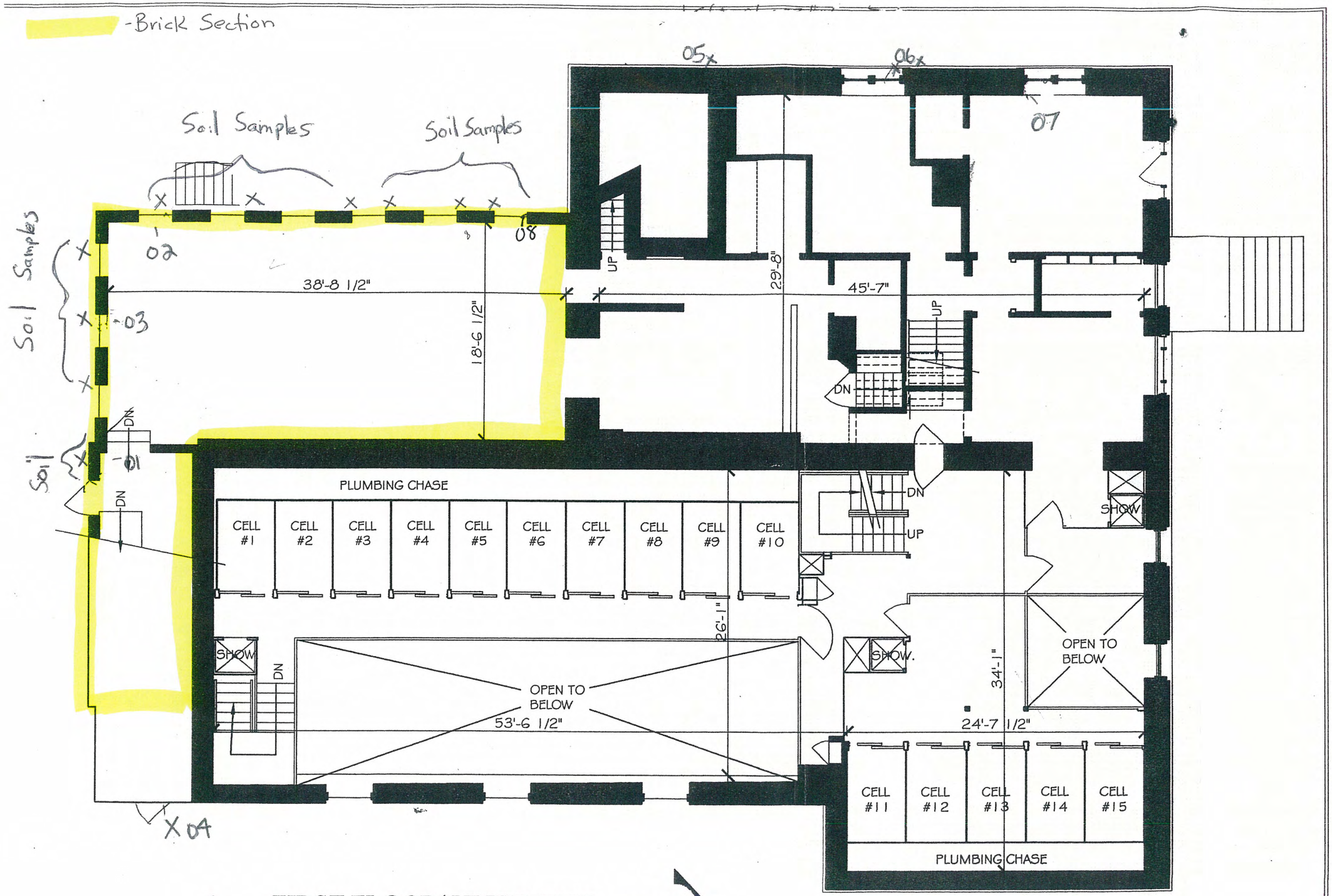
Stephen W. Connelly
Senior Vice President

Robert L. May, Jr.
Vice President

FUSS & O'NEILL
EnviroScience, LLC

Figure 2-1

Sample Locations-Site Plan



1 FIRST FLOOR/ UPPER TIER

SCALE = 1/8" = 1'-0"

NORTH

ARCHITECTURAL WORKSHOP

WILLIAM G. COWAN ARCHITECT
POST OFFICE BOX 664
CHESTER, CT. 06412
860|575|5968

RENOVATION OF
MIDDLESEX COUNTY GAOL
CORNER OF SAYBROOK AND JAIL HILL ROAD
HADDAM, CT.

JOB NO. 08-003

DATE 28 OCT 08

DRAWN BY WGC

EC.2

FUSS & O'NEILL
EnviroScience, LLC

Appendix A

Laboratory Analysis and Chain of Custody
Caulking Materials - Bulk

Tuesday, December 28, 2010

Attn: Mr. Stephen Connelly
Fuss & O'Neill, Inc.
146 Hartford Road
Manchester, CT 06040

Project ID: TOWN OF HADDAM-JAILHOUSE
Sample ID#s: AZ86980 - AZ86987

This laboratory is in compliance with the QA/QC procedures outlined in EPA 600/4-79-019, Handbook for Analytical Quality In Water and Waste Water, March 1979, SW846 QA/QC and NELAC requirements of procedures used.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

Enclosed are revised Analysis Report pages. Please replace and discard the original pages. If you have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext. 200.

Sincerely yours,

Phyllis Shiller
Laboratory Director

NELAC - #NY11301
CT Lab Registration #PH-0618
MA Lab Registration #MA-CT-007
ME Lab Registration #CT-007
NH Lab Registration #213693-A,B
NJ Lab Registration #CT-003
NY Lab Registration #11301
PA Lab Registration #68-03530
RI Lab Registration #63
VT Lab Registration #VT11301

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Telephone (860) 645-1102 Fax (860) 645-0823

PHOENIX
Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Analysis Report

December 28, 2010

FOR: Attn: Mr. Stephen Connelly
Fuss & O'Neill, Inc.
146 Hartford Road
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:	AJ	12/13/10	17:00
Location Code:	F&O-PCB	Received by:	LDF	12/14/10	13:05
Rush Request:		Analyzed by:	see "By" below		
P.O.#:	20101276.A1E				

Laboratory Data

SDG ID: GAZ86980
Phoenix ID: AZ86980

Project ID: TOWN OF HADDAM-JAILHOUSE
Client ID: 121310AJDC01

Parameter	Result	RL	Units	Date	Time	By	Reference
Percent Solid	100	1	%	12/14/10			E160.3
Caulk Extraction for PCB	Completed			12/14/10		QQ/K	SW3540C
PCB (Soxhlet)							
PCB-1016	ND	160	mg/kg	12/17/10		MH	3540C/8082
PCB-1221	ND	160	mg/kg	12/17/10		MH	3540C/8082
PCB-1232	ND	160	mg/kg	12/17/10		MH	3540C/8082
PCB-1242	ND	160	mg/kg	12/17/10		MH	3540C/8082
PCB-1248	*	160	mg/kg	12/17/10		MH	3540C/8082
PCB-1254	ND	160	mg/kg	12/17/10		MH	3540C/8082
PCB-1260	ND	160	mg/kg	12/17/10		MH	3540C/8082
PCB-1262	ND	160	mg/kg	12/17/10		MH	3540C/8082
PCB-1268	ND	160	mg/kg	12/17/10		MH	3540C/8082
Total PCBs	1500	160	mg/kg	12/17/10		MH	3540C/8082
QA/QC Surrogates							
% DCBP	Diluted Out		%	12/17/10		MH	3540C/8082
% TCMX	Diluted Out		%	12/17/10		MH	3540C/8082

Project ID: TOWN OF HADDAM-JAILHOUSE

Phoenix I.D.: AZ86980

Client ID: 121310AJDC01

Parameter	Result	RL	Units	Date	Time	By	Reference

Comments:

* For PCBs, as per section 11.9.3, when weathering of PCBs is present and the aroclor is no longer recognizable, quantitation may be performed by using the total area of the PCB pattern to that of the aroclor it mostly resembles. The PCB pattern did not resemble any of the standards, but most closely resembles aroclor 1248.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

ND=Not detected BDL=Below Detection Level RL=Reporting Level

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Phyllis Shiller, Laboratory Director
December 28, 2010

PHOENIX
Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Analysis Report

December 28, 2010

FOR: Attn: Mr. Stephen Connelly
Fuss & O'Neill, Inc.
146 Hartford Road
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:	AJ	12/13/10	16:30
Location Code:	F&O-PCB	Received by:	LDF	12/14/10	13:05
Rush Request:		Analyzed by:	see "By" below		
P.O.#:	20101276.A1E				

Laboratory Data

SDG ID: GAZ86980
Phoenix ID: AZ86981

Project ID: TOWN OF HADDAM-JAILHOUSE

Client ID: 121310AJWG02

Parameter	Result	RL	Units	Date	Time	By	Reference
Percent Solid	100	1	%	12/14/10			E160.3
Caulk Extraction for PCB	Completed			12/14/10		QQ/K	SW3540C
PCB (Soxhlet)							
PCB-1016	ND	0.83	mg/kg	12/16/10		MH	3540C/8082
PCB-1221	ND	0.83	mg/kg	12/16/10		MH	3540C/8082
PCB-1232	ND	0.83	mg/kg	12/16/10		MH	3540C/8082
PCB-1242	ND	0.83	mg/kg	12/16/10		MH	3540C/8082
PCB-1248	*	0.83	mg/kg	12/16/10		MH	3540C/8082
PCB-1254	ND	0.83	mg/kg	12/16/10		MH	3540C/8082
PCB-1260	ND	0.83	mg/kg	12/16/10		MH	3540C/8082
PCB-1262	ND	0.83	mg/kg	12/16/10		MH	3540C/8082
PCB-1268	ND	0.83	mg/kg	12/16/10		MH	3540C/8082
Total PCBs	1.5	0.83	mg/kg	12/16/10		MH	3540C/8082
QA/QC Surrogates							
% DCBP	131		%	12/16/10		MH	3540C/8082
% TCMX	99		%	12/16/10		MH	3540C/8082

Project ID: TOWN OF HADDAM-JAILHOUSE

Phoenix I.D.: AZ86981

Client ID: 121310AJWG02

Parameter	Result	RL	Units	Date	Time	By	Reference

Comments:

* For PCBs, as per section 11.9.3, when weathering of PCBs is present and the aroclor is no longer recognizable, quantitation may be performed by using the total area of the PCB pattern to that of the aroclor it mostly resembles. The PCB pattern did not resemble any of the standards, but most closely resembles aroclor 1248.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

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Phyllis Shiller

Phyllis Shiller, Laboratory Director

December 28, 2010

PHOENIX
Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac
NY # 11301

Analysis Report

December 28, 2010

FOR: Attn: Mr. Stephen Connelly
Fuss & O'Neill, Inc.
146 Hartford Road
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:	AJ	12/13/10	16:00
Location Code:	F&O-PCB	Received by:	LDF	12/14/10	13:05
Rush Request:		Analyzed by:	see "By" below		
P.O.#:	20101276.A1E				

Laboratory Data

SDG ID: GAZ86980
Phoenix ID: AZ86982

Project ID: TOWN OF HADDAM-JAILHOUSE
Client ID: 121310AJWC03

Parameter	Result	RL	Units	Date	Time	By	Reference
Percent Solid	100	1	%	12/14/10			E160.3
Caulk Extraction for PCB	Completed			12/14/10		QQ/K	SW3540C
PCB (Soxhlet)							
PCB-1016	ND	83	mg/kg	12/17/10		MH	3540C/8082
PCB-1221	ND	83	mg/kg	12/17/10		MH	3540C/8082
PCB-1232	ND	83	mg/kg	12/17/10		MH	3540C/8082
PCB-1242	ND	83	mg/kg	12/17/10		MH	3540C/8082
PCB-1248	*	83	mg/kg	12/17/10		MH	3540C/8082
PCB-1254	ND	83	mg/kg	12/17/10		MH	3540C/8082
PCB-1260	ND	83	mg/kg	12/17/10		MH	3540C/8082
PCB-1262	ND	83	mg/kg	12/17/10		MH	3540C/8082
PCB-1268	ND	83	mg/kg	12/17/10		MH	3540C/8082
Total PCBs	500	83	mg/kg	12/17/10		MH	3540C/8082
QA/QC Surrogates							
% DCBP	Diluted Out		%	12/17/10		MH	3540C/8082
% TCMX	Diluted Out		%	12/17/10		MH	3540C/8082

Project ID: TOWN OF HADDAM-JAILHOUSE

Phoenix I.D.: AZ86982

Client ID: 121310AJWC03

Parameter	Result	RL	Units	Date	Time	By	Reference

Comments:

* For PCBs, as per section 11.9.3, when weathering of PCBs is present and the aroclor is no longer recognizable, quantitation may be performed by using the total area of the PCB pattern to that of the aroclor it mostly resembles. The PCB pattern did not resemble any of the standards, but most closely resembles aroclor 1248.

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Phyllis Shiller, Laboratory Director
December 28, 2010

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587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Analysis Report

December 28, 2010

FOR: Attn: Mr. Stephen Connelly
Fuss & O'Neill, Inc.
146 Hartford Road
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:	AJ	12/13/10	15:30
Location Code:	F&O-PCB	Received by:	LDF	12/14/10	13:05
Rush Request:		Analyzed by:	see "By" below		
P.O.#:	20101276.A1E				

Laboratory Data

SDG ID: GAZ86980
Phoenix ID: AZ86983

Project ID: TOWN OF HADDAM-JAILHOUSE
Client ID: 121310AJDC04

Parameter	Result	RL	Units	Date	Time	By	Reference
Percent Solid	100	1	%	12/14/10			E160.3
Caulk Extraction for PCB	Completed			12/14/10		QQ/K	SW3540C
PCB (Soxhlet)							
PCB-1016	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1221	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1232	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1242	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1248	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1254	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1260	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1262	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1268	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
QA/QC Surrogates							
% DCBP	135		%	12/15/10		MH	3540C/8082
% TCMX	109		%	12/15/10		MH	3540C/8082

Comments:

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Phyllis Shiller, Laboratory Director
December 28, 2010

Ver 2

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Tel. (860) 645-1102 Fax (860) 645-0823

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Analysis Report

December 28, 2010

FOR: Attn: Mr. Stephen Connelly
Fuss & O'Neill, Inc.
146 Hartford Road
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:	AJ	12/13/10	15:00
Location Code:	F&O-PCB	Received by:	LDF	12/14/10	13:05
Rush Request:		Analyzed by:	see "By" below		
P.O.#:	20101276.A1E				

Laboratory Data

SDG ID: GAZ86980
Phoenix ID: AZ86984

Project ID: TOWN OF HADDAM-JAILHOUSE
Client ID: 121310AJWG05

Parameter	Result	RL	Units	Date	Time	By	Reference
Percent Solid	100	1	%	12/14/10			E160.3
Caulk Extraction for PCB	Completed			12/14/10		QQ/K	SW3540C
PCB (Soxhlet)							
PCB-1016	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1221	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1232	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1242	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1248	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1254	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1260	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1262	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1268	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
QA/QC Surrogates							
% DCBP	133		%	12/15/10		MH	3540C/8082
% TCMX	112		%	12/15/10		MH	3540C/8082

Comments:

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
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Phyllis Shiller, Laboratory Director
December 28, 2010

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Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Analysis Report

December 28, 2010

FOR: Attn: Mr. Stephen Connelly
Fuss & O'Neill, Inc.
146 Hartford Road
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:	AJ	12/13/10	14:30
Location Code:	F&O-PCB	Received by:	LDF	12/14/10	13:05
Rush Request:		Analyzed by:	see "By" below		
P.O.#:	20101276.A1E				

Laboratory Data

SDG ID: GAZ86980
Phoenix ID: AZ86985

Project ID: TOWN OF HADDAM-JAILHOUSE
Client ID: 121310AJWC06

Parameter	Result	RL	Units	Date	Time	By	Reference
Percent Solid	100	1	%	12/14/10			E160.3
Caulk Extraction for PCB	Completed			12/14/10		QQ/K	SW3540C
PCB (Soxhlet)							
PCB-1016	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1221	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1232	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1242	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1248	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1254	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1260	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1262	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1268	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
QA/QC Surrogates							
% DCBP	137		%	12/15/10		MH	3540C/8082
% TCMX	101		%	12/15/10		MH	3540C/8082

Comments:

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

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NY # 11301

Analysis Report

December 28, 2010

FOR: Attn: Mr. Stephen Connelly
Fuss & O'Neill, Inc.
146 Hartford Road
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:	AJ	12/13/10	14:00
Location Code:	F&O-PCB	Received by:	LDF	12/14/10	13:05
Rush Request:		Analyzed by:	see "By" below		
P.O.#:	20101276.A1E				

Laboratory Data

SDG ID: GAZ86980
Phoenix ID: AZ86986

Project ID: TOWN OF HADDAM-JAILHOUSE
Client ID: 121310AJIWC07

Parameter	Result	RL	Units	Date	Time	By	Reference
Percent Solid	100	1	%	12/14/10			E160.3
Caulk Extraction for PCB	Completed			12/14/10		QQ/K	SW3540C
PCB (Soxhlet)							
PCB-1016	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1221	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1232	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1242	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1248	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1254	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1260	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1262	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
PCB-1268	ND	0.81	mg/kg	12/15/10		MH	3540C/8082
QA/QC Surrogates							
% DCBP	133		%	12/15/10		MH	3540C/8082
% TCMX	111		%	12/15/10		MH	3540C/8082

Comments:

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
ND=Not detected BDL=Below Detection Level RL=Reporting Level
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Phyllis Shiller, Laboratory Director
December 28, 2010

Ver 2

PHOENIX
Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Analysis Report

December 28, 2010

FOR: Attn: Mr. Stephen Connelly
Fuss & O'Neill, Inc.
146 Hartford Road
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:	AJ	12/13/10	14:30
Location Code:	F&O-PCB	Received by:	LDF	12/14/10	13:05
Rush Request:		Analyzed by:	see "By" below		
P.O.#:	20101276.A1E				

Laboratory Data

SDG ID: GAZ86980
Phoenix ID: AZ86987

Project ID: TOWN OF HADDAM-JAILHOUSE
Client ID: 121310AJIWC08

Parameter	Result	RL	Units	Date	Time	By	Reference
Percent Solid	100	1	%	12/14/10			E160.3
Caulk Extraction for PCB	Completed			12/14/10		QQ/K	SW3540C
PCB (Soxhlet)							
PCB-1016	ND	0.81	mg/kg	12/17/10		MH	3540C/8082
PCB-1221	ND	0.81	mg/kg	12/17/10		MH	3540C/8082
PCB-1232	ND	0.81	mg/kg	12/17/10		MH	3540C/8082
PCB-1242	ND	0.81	mg/kg	12/17/10		MH	3540C/8082
PCB-1248	*	0.81	mg/kg	12/17/10		MH	3540C/8082
PCB-1254	ND	0.81	mg/kg	12/17/10		MH	3540C/8082
PCB-1260	ND	0.81	mg/kg	12/17/10		MH	3540C/8082
PCB-1262	ND	0.81	mg/kg	12/17/10		MH	3540C/8082
PCB-1268	ND	0.81	mg/kg	12/17/10		MH	3540C/8082
Total PCBs	4.2	0.81	mg/kg	12/17/10		MH	3540C/8082
QA/QC Surrogates							
% DCBP	115		%	12/17/10		MH	3540C/8082
% TCMX	51		%	12/17/10		MH	3540C/8082

Project ID: TOWN OF HADDAM-JAILHOUSE

Client ID: 121310AJIWC08

Phoenix I.D.: AZ86987

Parameter	Result	RL	Units	Date	Time	By	Reference

Comments:

* For PCBs, as per section 11.9.3, when weathering of PCBs is present and the aroclor is no longer recognizable, quantitation may be performed by using the total area of the PCB pattern to that of the aroclor it mostly resembles. The PCB pattern did not resemble any of the standards, but most closely resembles aroclor 1248.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

ND=Not detected BDL=Below Detection Level RL=Reporting Level

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Phyllis Shiller, Laboratory Director

December 28, 2010

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Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac
NY # 11301

QA/QC Report

December 28, 2010

QA/QC Data

SDG I.D.: GAZ86980

Parameter	Blank	LCS %	LCSD %	LCS RPD	MS Rec %	MS Dup Rec %	RPD
QA/QC Batch 167453, QC Sample No: AZ87046 (AZ86980, AZ86981, AZ86982, AZ86983, AZ86984, AZ86985, AZ86986, AZ86987)							
Polychlorinated Biphenyls							
PCB-1016	ND	108	109	0.9			
PCB-1221	ND						
PCB-1232	ND						
PCB-1242	ND						
PCB-1248	ND						
PCB-1254	ND						
PCB-1260	ND	94	100	6.2			
PCB-1262	ND						
PCB-1268	ND						
% DCBP (Surrogate Rec)	107	98	101	3.0			
% TCMX (Surrogate Rec)	92	84	86	2.4			

Comment:
A LCS and LCS Duplicate were performed instead of a matrix spike and matrix spike duplicate.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference
LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample Duplicate
MS - Matrix Spike
MS Dup - Matrix Spike Duplicate
NC - No Criteria

Phyllis Shiller, Laboratory Director
December 28, 2010

Reasonable Confidence Protocol
Laboratory Analysis QA/QC Certification Form

Laboratory Name: Phoenix Environmental Labs, Inc. **Client:** F&O

Project Location: TOWN OF HADDAM-JAILHOUS **Project Number:**

Laboratory Sample ID(s): AZ86980, AZ86981, AZ86982, AZ86983, AZ86984, AZ86985, AZ86986, AZ86987

Sampling Date(s): 12/13/2010

RCP Methods Used:

☐ 1311/1312 ☐ 6010 ☐ 7000 ☐ 7196 ☐ 7470/7471 ☐ 8081 ☐ EPH ☐ TO15

☑ 8082 ☐ 8151 ☐ 8260 ☐ 8270 ☐ ETPH ☐ 9010/9012 ☐ VPH

1.	For each analytical method referenced in this laboratory report package, were all specified QA/QC performance criteria followed (including the requirement to explain any criteria falling outside of acceptable guidelines, as specified in the CT DEP method-specific Reasonable Confidence	☑ Yes ☐ No
1a.	Were the method specified preservation and holding time requirements met?	☑ Yes ☐ No
1b.	EPH and VPH methods only: Was the VPH or EPH method conducted without significant modifications (see section 11.3 of respective RCP methods)	☐ Yes ☐ No ☑ NA
2.	Were all samples received by the laboratory in a condition consistent with that described on the associated Chain-of-Custody document(s)?	☑ Yes ☐ No
3.	Were samples received at an appropriate temperature (< 6 Degrees C)?	☑ Yes ☐ No ☐ NA
4.	Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents acheived?	☑ Yes ☐ No
5a.	Were reporting limits specified or referenced on the chain-of-custody?	☐ Yes ☑ No
5b.	Were these reporting limits met?	☐ Yes ☐ No ☑ NA
6.	For each analytical method referenced in this laboratory report package, were results reported for all constituents identified in the method-specific analyte lists presented in the Reasonable Confidence Protocol documents?	☑ Yes ☐ No ☐ NA
7.	Are project-specific QC samples included in the data set?	☐ Yes ☑ No ☐ NA

Note: For all questions to which the response was "No" (with the exception of question #5a, #7), additional information must be provided in an attached narrative. If the answer to question #1, #1A or 1B is "No", the data package does not meet the requirements for "Reasonable Confidence"

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowlegde and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete.

Authorized Signature: Phyllis Shiller

Date: Tuesday, December 28, 2010

Printed Name: Phyllis Shiller

Position: Laboratory Directory

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

RCP Certification Report

December 28, 2010

SDG I.D.: GAZ86980

PCB Narration

Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents achieved? Yes.

Instrument: Au-ecd6 12/16/10-1 (AZ86981)

8082 Narration:

The initial calibration RSD for the compound list was less than 15% except for the following compounds: none

The continuing calibration standards were within acceptance criteria except for the following compounds: none

Printed Name Michael Hahn
Position: Chemist
Date: 12/16/2010

Instrument: Au-ecd8 12/15/10-1 (AZ86983, AZ86984, AZ86985, AZ86986)

8082 Narration:

The initial calibration RSD for the compound list was less than 15% except for the following compounds: none

The continuing calibration standards were within acceptance criteria except for the following compounds: none

Printed Name Michael Hahn
Position: Chemist
Date: 12/15/2010

QC Comments: QC Batch 67453 12/14/10 (AZ86980, AZ86981, AZ86982, AZ86983, AZ86984, AZ86985, AZ86986, AZ86987)

A LCS and LCS Duplicate were performed instead of a matrix spike and matrix spike duplicate.

QC (Batch Specific)

All LCS recoveries were within 30 - 130 with the following exceptions: None.

All LCSD recoveries were within 30 - 130 with the following exceptions: None.

All LCS/LCSD RPDs were less than 30% with the following exceptions: None.

5 work

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- [ ] 50 Redfield Street, Suite 100, Boston, MA 02122
- [ ] 275 Promenade Street, Suite 350, Providence, RI 02908
- [ ] 80 Washington Street, Suite 301, Poughkeepsie, NY 12601

CHAIN-OF-CUSTODY RECORD 22613

Turnaround
- [ ] 1 Day*
- [ ] 2 Days*
- [ ] 3 Days*
- [x] Standard (5 days)
- [ ] Other _____ (days)

*Surcharge Applies

PROJECT NAME: Town of Haddam - Jailhouse
PROJECT LOCATION: Haddam, CT
PROJECT NUMBER: 20101276.A1E
LABORATORY: Phoenix

REPORT TO: Stephen Connelly
INVOICE TO: Stephen Connelly
P.O. NO.:

Sampler's Signature: Andrew Jackson Date: 12-13-10

Source Codes:
MW=Monitoring Well, SW=Surface Water, PW=Potable Water, T=Treatment Facility, S=Soil, B=Sediment, W=Waste, A=Air, X=Other PCB's

Analysis Request: PCB's - Soxhlet Extraction 8082

Containers: Soil VOA Vial, [ ] methanol; Soil VOA Vial, [ ] water; Glass Soil Container ( ) oz; Glass Soil Container ( ) oz; Other 8 oz Jar; Water VOA Vial, [ ] As is [ ] HCl; Glass Amber ( ) ml, [ ] As is [ ] HCl; Plastic - As is, [ ] 250 ml [ ] 500 [ ] 1000 ml; Plastic - H_2SO_4, [ ] 250 ml [ ] 500 [ ] 1500 ml; Plastic - HNO_3, 250 ml [ ] Filtered [ ] Unfiltered; Plastic - NaOH, 250 ml; 8 oz Jar Glass

Item No.	Transfer Check 1	2	3	4	Sample Number	Source Code	Date Sampled	Time Sampled	PCB's - Soxhlet Extraction 8082	Containers	Comments
1	✓				121310AJDC01	X	12-13-10	17:00	X	1	86980
2	✓				121310AJWG02	X		16:30	X	1	86981
3	✓				121310AJWC03	X		16:00	X	1	86982
4	✓				121310AJDC04	X		15:30	X	1	86983
5	✓				121310AJWG05	X		15:00	X	1	86984
6	✓				121310AJWC06	X		14:30	X	1	86985
7	✓				121310AJIWC07	X		14:00	X	1	86986
8	✓				121310AJIWC08	X		14:30	X	1	86987

Transfer Number	Relinquished By	Accepted By	Date	Time
1	Andrew Jackson	F+O Fridge	12-13	18:00
2	F+O Fridge	Andrew Jackson	12-14	12:00
3	Andrew Jackson	[illegible]	12-14	13:05
4				

Reporting and Detection Limit Requirements:

Additional Comments:

FUSS & O'NEILL
EnviroScience, LLC

Appendix B

Laboratory Analysis and Chain of Custody
Adjacent Porous Surfaces - Bulk

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ANALYTICAL LABORATORY

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

December 2, 2011

Stephen Connelly
Fuss & O'Neill EnviroScience, LLC - CT
146 Hartford Road
Manchester, CT 06040

Project Location: Haddam, CT
Client Job Number:
Project Number: 20101276.A2E
Laboratory Work Order Number: 11K0854

Enclosed are results of analyses for samples received by the laboratory on November 23, 2011. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Holly L. Folsom
Project Manager

con-test®
ANALYTICAL LABORATORY

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Fuss & O'Neill EnviroScience, LLC - CT
146 Hartford Road
Manchester, CT 06040
ATTN: Stephen Connelly

REPORT DATE: 12/2/2011

PURCHASE ORDER NUMBER: 20101276.A2E

PROJECT NUMBER: 20101276.A2E

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 11K0854

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: Haddam, CT

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
112211AJ 01	11K0854-01	Brick	0-0.5 in Window	SW-846 8082A	
112211AJ 02	11K0854-02	Brick	0.5-1in Window	SW-846 8082A	
112211AJ 03	11K0854-03	Brick	0-0.5in Door	SW-846 8082A	
112211AJ 04	11K0854-04	Brick	0.5-1in Door	SW-846 8082A	
112211AJ 04	11K0854-05	Soil	0-4in Soil D Side	SM 2540G	
				SW-846 8082A	
112211AJ 06	11K0854-06	Soil	0-4in Soil D Side	SM 2540G	
				SW-846 8082A	
112211AJ 07	11K0854-07	Soil	0-4in Soil C Side	SM 2540G	
				SW-846 8082A	
112211AJ 08	11K0854-08	Soil	0-4in Soil C Side	SM 2540G	
				SW-846 8082A	

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

SW-846 8082A

Qualifications:

Matrix spike and/or spike duplicate recovery bias high due to contribution of other Aroclors present in the source sample.

Analyte & Samples(s) Qualified:

Aroclor-1016, Aroclor-1016 [2C], Aroclor-1260, Aroclor-1260 [2C]
B041577-MS1, B041577-MSD1

The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.

Analyte & Samples(s) Qualified:

Decachlorobiphenyl, Decachlorobiphenyl [2C], Tetrachloro-m-xylene, Tetrachloro-m-xylene [2C]
11K0854-01[112211AJ01]

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Daren J. Damboragian
Laboratory Manager

con-test® ANALYTICAL LABORATORY

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Haddam, CT
Sample Description: 0-0.5 in Window
Work Order: 11K0854

Date Received: 11/23/2011

Field Sample #: 112211AJ 01
Sampled: 11/22/2011 12:00

Sample ID: 11K0854-01

Sample Matrix: Brick

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	9.5	mg/Kg	100		SW-846 8082A	11/26/11	11/29/11 10:00	JMB
Aroclor-1221 [1]	ND	9.5	mg/Kg	100		SW-846 8082A	11/26/11	11/29/11 10:00	JMB
Aroclor-1232 [1]	ND	9.5	mg/Kg	100		SW-846 8082A	11/26/11	11/29/11 10:00	JMB
Aroclor-1242 [1]	44	9.5	mg/Kg	100		SW-846 8082A	11/26/11	11/29/11 10:00	JMB
Aroclor-1248 [1]	43	9.5	mg/Kg	100		SW-846 8082A	11/26/11	11/29/11 10:00	JMB
Aroclor-1254 [1]	ND	9.5	mg/Kg	100		SW-846 8082A	11/26/11	11/29/11 10:00	JMB
Aroclor-1260 [1]	ND	9.5	mg/Kg	100		SW-846 8082A	11/26/11	11/29/11 10:00	JMB
Aroclor-1262 [1]	ND	9.5	mg/Kg	100		SW-846 8082A	11/26/11	11/29/11 10:00	JMB
Aroclor-1268 [1]	ND	9.5	mg/Kg	100		SW-846 8082A	11/26/11	11/29/11 10:00	JMB

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	*	30-150	S-01	11/29/11 10:00
Decachlorobiphenyl [2]	*	30-150	S-01	11/29/11 10:00
Tetrachloro-m-xylene [1]	*	30-150	S-01	11/29/11 10:00
Tetrachloro-m-xylene [2]	*	30-150	S-01	11/29/11 10:00

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Haddam, CT | Sample Description: 0.5-1in Window | Work Order: 11K0854

Date Received: 11/23/2011

Field Sample #: 112211AJ 02 | Sampled: 11/22/2011 12:00

Sample ID: 11K0854-02

Sample Matrix: Brick

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	1.8	mg/Kg	20		SW-846 8082A	11/26/11	11/29/11 10:13	JMB
Aroclor-1221 [1]	ND	1.8	mg/Kg	20		SW-846 8082A	11/26/11	11/29/11 10:13	JMB
Aroclor-1232 [1]	ND	1.8	mg/Kg	20		SW-846 8082A	11/26/11	11/29/11 10:13	JMB
Aroclor-1242 [1]	15	1.8	mg/Kg	20		SW-846 8082A	11/26/11	11/29/11 10:13	JMB
Aroclor-1248 [1]	5.6	1.8	mg/Kg	20		SW-846 8082A	11/26/11	11/29/11 10:13	JMB
Aroclor-1254 [1]	ND	1.8	mg/Kg	20		SW-846 8082A	11/26/11	11/29/11 10:13	JMB
Aroclor-1260 [1]	ND	1.8	mg/Kg	20		SW-846 8082A	11/26/11	11/29/11 10:13	JMB
Aroclor-1262 [1]	ND	1.8	mg/Kg	20		SW-846 8082A	11/26/11	11/29/11 10:13	JMB
Aroclor-1268 [1]	ND	1.8	mg/Kg	20		SW-846 8082A	11/26/11	11/29/11 10:13	JMB

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	88.6	30-150		11/29/11 10:13
Decachlorobiphenyl [2]	89.1	30-150		11/29/11 10:13
Tetrachloro-m-xylene [1]	83.2	30-150		11/29/11 10:13
Tetrachloro-m-xylene [2]	90.8	30-150		11/29/11 10:13

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Haddam, CT
Sample Description: 0-0.5in Door
Work Order: 11K0854

Date Received: 11/23/2011

Field Sample #: 112211AJ 03
Sampled: 11/22/2011 12:00

Sample ID: 11K0854-03

Sample Matrix: Brick

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	11/26/11	11/29/11 9:34	JMB
Aroclor-1221 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	11/26/11	11/29/11 9:34	JMB
Aroclor-1232 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	11/26/11	11/29/11 9:34	JMB
Aroclor-1242 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	11/26/11	11/29/11 9:34	JMB
Aroclor-1248 [2]	0.38	0.10	mg/Kg	1		SW-846 8082A	11/26/11	11/29/11 9:34	JMB
Aroclor-1254 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	11/26/11	11/29/11 9:34	JMB
Aroclor-1260 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	11/26/11	11/29/11 9:34	JMB
Aroclor-1262 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	11/26/11	11/29/11 9:34	JMB
Aroclor-1268 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	11/26/11	11/29/11 9:34	JMB

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	90.5	30-150		11/29/11 9:34
Decachlorobiphenyl [2]	83.9	30-150		11/29/11 9:34
Tetrachloro-m-xylene [1]	80.9	30-150		11/29/11 9:34
Tetrachloro-m-xylene [2]	81.0	30-150		11/29/11 9:34

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Haddam, CT
Sample Description: 0.5-1in Door
Work Order: 11K0854

Date Received: 11/23/2011

Field Sample #: 112211AJ 04 - Brick
Sampled: 11/22/2011 12:00

Sample ID: 11K0854-04

Sample Matrix: Brick

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	11/26/11	11/29/11 9:47	JMB
Aroclor-1221 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	11/26/11	11/29/11 9:47	JMB
Aroclor-1232 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	11/26/11	11/29/11 9:47	JMB
Aroclor-1242 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	11/26/11	11/29/11 9:47	JMB
Aroclor-1248 [1]	0.24	0.10	mg/Kg	1		SW-846 8082A	11/26/11	11/29/11 9:47	JMB
Aroclor-1254 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	11/26/11	11/29/11 9:47	JMB
Aroclor-1260 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	11/26/11	11/29/11 9:47	JMB
Aroclor-1262 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	11/26/11	11/29/11 9:47	JMB
Aroclor-1268 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	11/26/11	11/29/11 9:47	JMB

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	100	30-150		11/29/11 9:47
Decachlorobiphenyl [2]	92.3	30-150		11/29/11 9:47
Tetrachloro-m-xylene [1]	89.7	30-150		11/29/11 9:47
Tetrachloro-m-xylene [2]	89.1	30-150		11/29/11 9:47

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Haddam, CT
Sample Description: 0-4in Soil D Side
Work Order: 11K0854

Date Received: 11/23/2011

Field Sample #: 112211AJ 04
Sampled: 11/22/2011 17:00

Sample ID: 11K0854-05

Sample Matrix: Soil

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.15	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 15:45	MJC
Aroclor-1221 [1]	ND	0.15	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 15:45	MJC
Aroclor-1232 [1]	ND	0.15	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 15:45	MJC
Aroclor-1242 [1]	ND	0.15	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 15:45	MJC
Aroclor-1248 [1]	ND	0.15	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 15:45	MJC
Aroclor-1254 [1]	ND	0.15	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 15:45	MJC
Aroclor-1260 [1]	ND	0.15	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 15:45	MJC
Aroclor-1262 [1]	ND	0.15	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 15:45	MJC
Aroclor-1268 [1]	ND	0.15	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 15:45	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	65.6	30-150		11/28/11 15:45
Decachlorobiphenyl [2]	73.8	30-150		11/28/11 15:45
Tetrachloro-m-xylene [1]	85.9	30-150		11/28/11 15:45
Tetrachloro-m-xylene [2]	88.4	30-150		11/28/11 15:45

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Project Location: Haddam, CT
Sample Description: 0-4in Soil D Side
Work Order: 11K0854

Date Received: 11/23/2011

Field Sample #: 112211AJ 04
Sampled: 11/22/2011 17:00

Sample ID: 11K0854-05

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	65.9		% Wt	1		SM 2540G	11/30/11	12/1/11 16:05	RJS

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Project Location: Haddam, CT | Sample Description: 0-4in Soil D Side | Work Order: 11K0854

Date Received: 11/23/2011

Field Sample #: 112211AJ 06 | Sampled: 11/22/2011 17:00

Sample ID: 11K0854-06

Sample Matrix: Soil

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.11	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 15:59	MJC
Aroclor-1221 [1]	ND	0.11	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 15:59	MJC
Aroclor-1232 [1]	ND	0.11	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 15:59	MJC
Aroclor-1242 [1]	ND	0.11	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 15:59	MJC
Aroclor-1248 [1]	ND	0.11	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 15:59	MJC
Aroclor-1254 [1]	ND	0.11	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 15:59	MJC
Aroclor-1260 [1]	ND	0.11	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 15:59	MJC
Aroclor-1262 [1]	ND	0.11	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 15:59	MJC
Aroclor-1268 [1]	ND	0.11	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 15:59	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	76.3	30-150		11/28/11 15:59
Decachlorobiphenyl [2]	82.9	30-150		11/28/11 15:59
Tetrachloro-m-xylene [1]	92.3	30-150		11/28/11 15:59
Tetrachloro-m-xylene [2]	94.0	30-150		11/28/11 15:59

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Project Location: Haddam, CT
Sample Description: 0-4in Soil D Side
Work Order: 11K0854

Date Received: 11/23/2011

Field Sample #: 112211AJ 06
Sampled: 11/22/2011 17:00

Sample ID: 11K0854-06

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	89.4		% Wt	1		SM 2540G	11/30/11	12/1/11 16:05	RJS

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Project Location: Haddam, CT | Sample Description: 0-4in Soil C Side | Work Order: 11K0854

Date Received: 11/23/2011

Field Sample #: 112211AJ 07 | Sampled: 11/22/2011 17:00

Sample ID: 11K0854-07

Sample Matrix: Soil

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.12	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 16:13	MJC
Aroclor-1221 [1]	ND	0.12	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 16:13	MJC
Aroclor-1232 [1]	ND	0.12	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 16:13	MJC
Aroclor-1242 [1]	ND	0.12	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 16:13	MJC
Aroclor-1248 [1]	ND	0.12	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 16:13	MJC
Aroclor-1254 [1]	ND	0.12	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 16:13	MJC
Aroclor-1260 [1]	ND	0.12	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 16:13	MJC
Aroclor-1262 [1]	ND	0.12	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 16:13	MJC
Aroclor-1268 [1]	ND	0.12	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 16:13	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	74.0	30-150		11/28/11 16:13
Decachlorobiphenyl [2]	81.9	30-150		11/28/11 16:13
Tetrachloro-m-xylene [1]	93.5	30-150		11/28/11 16:13
Tetrachloro-m-xylene [2]	95.9	30-150		11/28/11 16:13

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Project Location: Haddam, CT
Sample Description: 0-4in Soil C Side
Work Order: 11K0854

Date Received: 11/23/2011

Field Sample #: 112211AJ 07
Sampled: 11/22/2011 17:00

Sample ID: 11K0854-07

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	86.8		% Wt	1		SM 2540G	11/30/11	12/1/11 16:05	RJS

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Project Location: Haddam, CT | Sample Description: 0-4in Soil C Side | Work Order: 11K0854

Date Received: 11/23/2011

Field Sample #: 112211AJ 08 | Sampled: 11/22/2011 17:00

Sample ID: 11K0854-08

Sample Matrix: Soil

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.11	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 16:27	MJC
Aroclor-1221 [1]	ND	0.11	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 16:27	MJC
Aroclor-1232 [1]	ND	0.11	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 16:27	MJC
Aroclor-1242 [1]	ND	0.11	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 16:27	MJC
Aroclor-1248 [1]	ND	0.11	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 16:27	MJC
Aroclor-1254 [1]	ND	0.11	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 16:27	MJC
Aroclor-1260 [1]	ND	0.11	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 16:27	MJC
Aroclor-1262 [1]	ND	0.11	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 16:27	MJC
Aroclor-1268 [1]	ND	0.11	mg/Kg dry	1		SW-846 8082A	11/26/11	11/28/11 16:27	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	74.8	30-150		11/28/11 16:27
Decachlorobiphenyl [2]	82.1	30-150		11/28/11 16:27
Tetrachloro-m-xylene [1]	96.2	30-150		11/28/11 16:27
Tetrachloro-m-xylene [2]	98.0	30-150		11/28/11 16:27

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Project Location: Haddam, CT | Sample Description: 0-4in Soil C Side | Work Order: 11K0854

Date Received: 11/23/2011

Field Sample #: 112211AJ 08 | Sampled: 11/22/2011 17:00

Sample ID: 11K0854-08

Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	91.8		% Wt	1		SM 2540G	11/30/11	12/1/11 16:05	RJS

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Sample Extraction Data

Prep Method: % Solids-SM 2540G

Lab Number [Field ID]	Batch	Date
11K0854-05 [112211AJ 04]	B041860	11/30/11
11K0854-06 [112211AJ 06]	B041860	11/30/11
11K0854-07 [112211AJ 07]	B041860	11/30/11
11K0854-08 [112211AJ 08]	B041860	11/30/11

Prep Method: SW-846 3540C-SW-846 8082A

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
11K0854-01 [112211AJ 01]	B041577	2.10	10.0	11/26/11
11K0854-02 [112211AJ 02]	B041577	2.20	10.0	11/26/11
11K0854-03 [112211AJ 03]	B041577	2.00	10.0	11/26/11
11K0854-04 [112211AJ 04]	B041577	2.00	10.0	11/26/11

Prep Method: SW-846 3540C-SW-846 8082A

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
11K0854-05 [112211AJ 04]	B041578	10.1	50.0	11/26/11
11K0854-06 [112211AJ 06]	B041578	10.2	50.0	11/26/11
11K0854-07 [112211AJ 07]	B041578	10.0	50.0	11/26/11
11K0854-08 [112211AJ 08]	B041578	10.0	50.0	11/26/11

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QUALITY CONTROL

Polychlorinated Biphenyls with 3540 Soxhlet Extraction - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B041577 - SW-846 3540C										
Blank (B041577-BLK1)				Prepared: 11/26/11 Analyzed: 11/28/11						
Aroclor-1016	ND	0.10	mg/Kg							
Aroclor-1016 [2C]	ND	0.10	mg/Kg							
Aroclor-1221	ND	0.10	mg/Kg							
Aroclor-1221 [2C]	ND	0.10	mg/Kg							
Aroclor-1232	ND	0.10	mg/Kg							
Aroclor-1232 [2C]	ND	0.10	mg/Kg							
Aroclor-1242	ND	0.10	mg/Kg							
Aroclor-1242 [2C]	ND	0.10	mg/Kg							
Aroclor-1248	ND	0.10	mg/Kg							
Aroclor-1248 [2C]	ND	0.10	mg/Kg							
Aroclor-1254	ND	0.10	mg/Kg							
Aroclor-1254 [2C]	ND	0.10	mg/Kg							
Aroclor-1260	ND	0.10	mg/Kg							
Aroclor-1260 [2C]	ND	0.10	mg/Kg							
Aroclor-1262	ND	0.10	mg/Kg							
Aroclor-1262 [2C]	ND	0.10	mg/Kg							
Aroclor-1268	ND	0.10	mg/Kg							
Aroclor-1268 [2C]	ND	0.10	mg/Kg							
Surrogate: Decachlorobiphenyl	*0.738*		mg/Kg	1.00		73.8	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.805*		mg/Kg	1.00		80.5	30-150			
Surrogate: Tetrachloro-m-xylene	*0.896*		mg/Kg	1.00		89.6	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.879*		mg/Kg	1.00		87.9	30-150			
LCS (B041577-BS1)				Prepared: 11/26/11 Analyzed: 11/28/11						
Aroclor-1016	0.21	0.10	mg/Kg	0.250		83.0	40-140			
Aroclor-1016 [2C]	0.24	0.10	mg/Kg	0.250		97.2	40-140			
Aroclor-1260	0.23	0.10	mg/Kg	0.250		92.2	40-140			
Aroclor-1260 [2C]	0.24	0.10	mg/Kg	0.250		96.2	40-140			
Surrogate: Decachlorobiphenyl	*0.817*		mg/Kg	1.00		81.7	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.890*		mg/Kg	1.00		89.0	30-150			
Surrogate: Tetrachloro-m-xylene	*0.915*		mg/Kg	1.00		91.5	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.891*		mg/Kg	1.00		89.1	30-150			
LCS Dup (B041577-BSD1)				Prepared: 11/26/11 Analyzed: 11/28/11						
Aroclor-1016	0.23	0.10	mg/Kg	0.250		90.3	40-140	8.38	30	
Aroclor-1016 [2C]	0.27	0.10	mg/Kg	0.250		106	40-140	8.92	30	
Aroclor-1260	0.25	0.10	mg/Kg	0.250		99.5	40-140	7.62	30	
Aroclor-1260 [2C]	0.26	0.10	mg/Kg	0.250		103	40-140	6.68	30	
Surrogate: Decachlorobiphenyl	*0.849*		mg/Kg	1.00		84.9	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.920*		mg/Kg	1.00		92.0	30-150			
Surrogate: Tetrachloro-m-xylene	*0.898*		mg/Kg	1.00		89.8	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.872*		mg/Kg	1.00		87.2	30-150			

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QUALITY CONTROL

Polychlorinated Biphenyls with 3540 Soxhlet Extraction - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD		RPD Limit	Notes
Batch B041577 - SW-846 3540C												
Matrix Spike (B041577-MS1)		**Source: 11K0854-01**		Prepared: 11/26/11 Analyzed: 11/28/11								
Aroclor-1016	43	0.10	mg/Kg	0.250	0.0	**17400**	*	40-140				MS-21
Aroclor-1016 [2C]	39	0.10	mg/Kg	0.250	0.0	**15600**	*	40-140				MS-21
Aroclor-1260	0.65	0.10	mg/Kg	0.250	0.0	**260**	*	40-140				MS-21
Aroclor-1260 [2C]	3.6	0.10	mg/Kg	0.250	0.0	**1440**	*	40-140				MS-21
Surrogate: Decachlorobiphenyl	*0.824*		mg/Kg	1.00		82.4		30-150				
Surrogate: Decachlorobiphenyl [2C]	*0.888*		mg/Kg	1.00		88.8		30-150				
Surrogate: Tetrachloro-m-xylene	*0.909*		mg/Kg	1.00		90.9		30-150				
Surrogate: Tetrachloro-m-xylene [2C]	*0.856*		mg/Kg	1.00		85.6		30-150				
Matrix Spike Dup (B041577-MSD1)		**Source: 11K0854-01**		Prepared: 11/26/11 Analyzed: 11/28/11								
Aroclor-1016	25	0.10	mg/Kg	0.250	0.0	**10200**	*	40-140	**52.5**	*	50	MS-21
Aroclor-1016 [2C]	23	0.10	mg/Kg	0.250	0.0	**9360**	*	40-140	49.9		50	MS-21
Aroclor-1260	0.54	0.10	mg/Kg	0.250	0.0	**214**	*	40-140	19.4		50	MS-21
Aroclor-1260 [2C]	2.4	0.10	mg/Kg	0.250	0.0	**949**	*	40-140	41.4		50	MS-21
Surrogate: Decachlorobiphenyl	*0.741*		mg/Kg	1.00		74.1		30-150				
Surrogate: Decachlorobiphenyl [2C]	*0.807*		mg/Kg	1.00		80.7		30-150				
Surrogate: Tetrachloro-m-xylene	*0.907*		mg/Kg	1.00		90.7		30-150				
Surrogate: Tetrachloro-m-xylene [2C]	*0.855*		mg/Kg	1.00		85.5		30-150				
Batch B041578 - SW-846 3540C												
Blank (B041578-BLK1)				Prepared: 11/26/11 Analyzed: 11/28/11								
Aroclor-1016	ND	0.10	mg/Kg wet									
Aroclor-1016 [2C]	ND	0.10	mg/Kg wet									
Aroclor-1221	ND	0.10	mg/Kg wet									
Aroclor-1221 [2C]	ND	0.10	mg/Kg wet									
Aroclor-1232	ND	0.10	mg/Kg wet									
Aroclor-1232 [2C]	ND	0.10	mg/Kg wet									
Aroclor-1242	ND	0.10	mg/Kg wet									
Aroclor-1242 [2C]	ND	0.10	mg/Kg wet									
Aroclor-1248	ND	0.10	mg/Kg wet									
Aroclor-1248 [2C]	ND	0.10	mg/Kg wet									
Aroclor-1254	ND	0.10	mg/Kg wet									
Aroclor-1254 [2C]	ND	0.10	mg/Kg wet									
Aroclor-1260	ND	0.10	mg/Kg wet									
Aroclor-1260 [2C]	ND	0.10	mg/Kg wet									
Aroclor-1262	ND	0.10	mg/Kg wet									
Aroclor-1262 [2C]	ND	0.10	mg/Kg wet									
Aroclor-1268	ND	0.10	mg/Kg wet									
Aroclor-1268 [2C]	ND	0.10	mg/Kg wet									
Surrogate: Decachlorobiphenyl	*0.165*		mg/Kg wet	0.200		82.4		30-150				
Surrogate: Decachlorobiphenyl [2C]	*0.177*		mg/Kg wet	0.200		88.3		30-150				
Surrogate: Tetrachloro-m-xylene	*0.195*		mg/Kg wet	0.200		97.5		30-150				
Surrogate: Tetrachloro-m-xylene [2C]	*0.203*		mg/Kg wet	0.200		102		30-150				

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QUALITY CONTROL

Polychlorinated Biphenyls with 3540 Soxhlet Extraction - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B041578 - SW-846 3540C										
LCS (B041578-BS1)				Prepared: 11/26/11 Analyzed: 11/28/11						
Aroclor-1016	0.19	0.10	mg/Kg wet	0.200		96.4	40-140			
Aroclor-1016 [2C]	0.21	0.10	mg/Kg wet	0.200		104	40-140			
Aroclor-1260	0.19	0.10	mg/Kg wet	0.200		94.2	40-140			
Aroclor-1260 [2C]	0.21	0.10	mg/Kg wet	0.200		103	40-140			
Surrogate: Decachlorobiphenyl	*0.176*		mg/Kg wet	0.200		88.2	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.188*		mg/Kg wet	0.200		94.2	30-150			
Surrogate: Tetrachloro-m-xylene	*0.190*		mg/Kg wet	0.200		95.1	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.194*		mg/Kg wet	0.200		97.1	30-150			
LCS Dup (B041578-BSD1)				Prepared: 11/26/11 Analyzed: 11/28/11						
Aroclor-1016	0.20	0.10	mg/Kg wet	0.200		100	40-140	3.78	30	
Aroclor-1016 [2C]	0.21	0.10	mg/Kg wet	0.200		107	40-140	3.26	30	
Aroclor-1260	0.20	0.10	mg/Kg wet	0.200		100	40-140	6.33	30	
Aroclor-1260 [2C]	0.22	0.10	mg/Kg wet	0.200		109	40-140	5.70	30	
Surrogate: Decachlorobiphenyl	*0.188*		mg/Kg wet	0.200		94.1	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.199*		mg/Kg wet	0.200		99.6	30-150			
Surrogate: Tetrachloro-m-xylene	*0.188*		mg/Kg wet	0.200		94.2	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.192*		mg/Kg wet	0.200		95.9	30-150			

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
MS-21	Matrix spike and/or spike duplicate recovery bias high due to contribution of other Aroclors present in the source sample.
S-01	The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8082A in Product/Solid	
Aroclor-1016	CT,NH,NY,ME,NC
Aroclor-1016 [2C]	CT,NH,NY,ME,NC
Aroclor-1221	CT,NH,NY,ME,NC
Aroclor-1221 [2C]	CT,NH,NY,ME,NC
Aroclor-1232	CT,NH,NY,ME,NC
Aroclor-1232 [2C]	CT,NH,NY,ME,NC
Aroclor-1242	CT,NH,NY,ME,NC
Aroclor-1242 [2C]	CT,NH,NY,ME,NC
Aroclor-1248	CT,NH,NY,ME,NC
Aroclor-1248 [2C]	CT,NH,NY,ME,NC
Aroclor-1254	CT,NH,NY,ME,NC
Aroclor-1254 [2C]	CT,NH,NY,ME,NC
Aroclor-1260	CT,NH,NY,ME,NC
Aroclor-1260 [2C]	CT,NH,NY,ME,NC
SW-846 8082A in Soil	
Aroclor-1016	CT,NH,NY,ME,NC
Aroclor-1016 [2C]	CT,NH,NY,ME,NC
Aroclor-1221	CT,NH,NY,ME,NC
Aroclor-1221 [2C]	CT,NH,NY,ME,NC
Aroclor-1232	CT,NH,NY,ME,NC
Aroclor-1232 [2C]	CT,NH,NY,ME,NC
Aroclor-1242	CT,NH,NY,ME,NC
Aroclor-1242 [2C]	CT,NH,NY,ME,NC
Aroclor-1248	CT,NH,NY,ME,NC
Aroclor-1248 [2C]	CT,NH,NY,ME,NC
Aroclor-1254	CT,NH,NY,ME,NC
Aroclor-1254 [2C]	CT,NH,NY,ME,NC
Aroclor-1260	CT,NH,NY,ME,NC
Aroclor-1260 [2C]	CT,NH,NY,ME,NC

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC	100033	01/1/2012
MA	Massachusetts DEP	M-MA100	06/30/2012
CT	Connecticut Department of Publilc Health	PH-0567	09/30/2013
NY	New York State Department of Health	10899 NELAP	04/1/2012
NH	New Hampshire Environmental Lab	2516 NELAP	02/5/2012
RI	Rhode Island Department of Health	LAO00112	12/30/2011
NC	North Carolina Div. of Water Quality	652	12/31/2011
NJ	New Jersey DEP	MA007 NELAP	06/30/2012
FL	Florida Department of Health	E871027 NELAP	06/30/2012
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2012
WA	State of Washington Department of Ecology	C2065	02/23/2012
ME	State of Maine	2011028	06/9/2013

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☐ 50 Redfield Street, Suite 100, Boston, MA 02122
☐ 275 Promenade Street, Suite 350, Providence, RI 02908
☐ 80 Washington Street, Suite 301, Poughkeepsie, NY 12601

11K0854

CHAIN-OF-CUSTODY RECORD 0013

Turnaround
☐ 1 Day* ☐ 3 Days* ☐ Other _____ (days)
☐ 2 Days* ☒ Standard (5 days) *Surcharge Applies

PROJECT NAME: Former Jailhouse
PROJECT LOCATION: Haddam, CT
PROJECT NUMBER: 20101276.A2E
LABORATORY: Con Test

REPORT TO: Stephen W. Connelly
INVOICE TO: Fuss & O'Neill EnviroScience, LLC
P.O. NO.:
Sampler's Signature: Andrew Jackson Date: 11-22-11

Source Codes:
MW=Monitoring Well PW=Potable Water S=Soil W=Waste
SW=Surface Water T=Treatment Facility B=Sediment A=Air
X=Other Brick

Analysis Request: PCB Soxhlet / 8082

Containers: Soil VOA Vial, [ ] methanol; Soil VOA Vial, [ ] water [ ] $Na(SO_4)_2$; Glass Soil Container (4) oz; Glass Soil Container ( ) oz; Other; Water VOA Vial, [ ] As is [ ] HCl; Glass Amber ( ) ml, [ ] As is [ ] H_2SO_4; Plastic - As is, [ ] 250 ml [ ] 500 [ ] 1000 ml; Plastic - H_2SO_4, [ ] 250 ml [ ] 500 ml; Plastic - HNO_3, 250 ml [ ] Filtered [ ] Unfiltered; Plastic - NaOH, 250 ml

Item No.	Transfer Check 1	2	3	4	Sample Number	Source Code	Date Sampled	Time Sampled	PCB Soxhlet / 8082	Glass Soil Container (4) oz	Comments
01	✓				112211AJ01	X	11-22-11	12:00	✓	✓	
02	✓				112211AJ02	X			✓	✓	
03	✓				112211AJ03	X			✓	✓	
04	✓				112211AJ04	X			✓	✓	
05	✓				112211AJ05	S		17:00	✓	✓	
06	✓				112211AJ06	S			✓	✓	
07	✓				112211AJ07	S			✓	✓	
08	✓				112211AJ08	S			✓	✓	

Transfer Number	Relinquished By	Accepted By	Date	Time
1	Andrew Jackson	F&O Fridge	11-22-11	09:00AM
2	Aaron Radwicki	[illegible]	11/23/11	12:30
3	[illegible]	[illegible]	11/23/11	1:45
4				

Reporting and Detection Limit Requirements:

Additional Comments: 01) 0-½" window; 02) ½"-1" window; 03) 0-½" Door; 04) ½"-1" Door; 05) 0-4" Soil Dside; 06) 0-4" Soil Dside; 07) 0-4" C side; 08) 0-4" C side Door

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Sample Receipt Checklist

CLIENT NAME: Fuss + O'Neill RECEIVED BY: C.C-S DATE: 11/23/11

1) Was the chain(s) of custody relinquished and signed? Yes No No CoC Included

2) Does the chain agree with the samples? Yes No

If not, explain:

3) Are all the samples in good condition? Yes No

If not, explain:

4) How were the samples received:

On Ice ☑ Direct from Sampling ☐ Ambient ☐ In Cooler(s) ☑

Were the samples received in Temperature Compliance of (2-6°C)? Yes No N/A

Temperature °C by Temp blank _____ Temperature °C by Temp gun 4.7°C

5) Are there Dissolved samples for the lab to filter? Yes No

Who was notified _____ Date _____ Time _____

6) Are there any RUSH or SHORT HOLDING TIME samples? Yes No

Who was notified _____ Date _____ Time _____

7) Location where samples are stored: 19

Permission to subcontract samples? Yes No
(Walk-in clients only) if not already approved
Client Signature:

Containers received at Con-Test

	# of containers		# of containers
1 Liter Amber		8 oz amber/clear jar	
500 mL Amber		4 oz amber/clear jar	8
250 mL Amber (8oz amber)		2 oz amber/clear jar	
1 Liter Plastic		Air Cassette	
500 mL Plastic		Hg/Hopcalite Tube	
250 mL plastic		Plastic Bag / Ziploc	
40 mL Vial - type listed below		PM 2.5 / PM 10	
Colisure / bacteria bottle		PUF Cartridge	
Dissolved Oxygen bottle		SOC Kit	
Encore		TO-17 Tubes	
Flashpoint bottle		Non-ConTest Container	
Perchlorate Kit		Other glass jar	
Other		Other	

Laboratory Comments:

40 mL vials: # HCl _____ # Methanol _____

Bisulfate _____ # DI Water _____

Thiosulfate _____ Unpreserved _____

Time and Date Frozen:

Do all samples have the proper Acid pH: Yes No N/A _____

Do all samples have the proper Base pH: Yes No N/A _____

FUSS & O'NEILL
EnviroScience, LLC

Appendix C

Technical Specification Section

SECTION 02086 – PCB REMEDIATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 specification sections, apply to this section.

B. Reference is made to the Limited Performance Based Disposal Plan for PCB containing Materials Removal as prepared by Fuss & O'Neill EnviroScience, LLC dated December 20, 2011

C. Related Specification sections include asbestos abatement section 02080.

1.2 GENERAL REQUIREMENTS

A. The Remediation Contractor shall furnish all labor, materials, facilities, equipment, installation services, employee training, notifications, permits, licenses, certifications, agreements, and incidentals necessary to perform the specified work. Work shall be performed in accordance with the contract documents, the latest regulations from the Occupational Safety and Health Administration (OSHA), the United States Environmental Protection Agency (USEPA), and all other applicable federal, state, and local agencies. Whenever the requirements of the above references conflict or overlap, the more stringent provision shall apply.

B. All project personnel engaged in the work covered under this section shall be trained in accordance with OSHA Regulations 29 CFR 1910.1000 and 29 CFR 1910.1200. It should also be noted that work associated with PCB removal shall also involve exposure to asbestos during demolition and removal activities specified herein and Remediation Contractor shall perform required exposure assessment for asbestos in accordance with 29 CFR 1926.1101 for asbestos.

C. The Remediation Contractor shall provide a Project Health and Safety Officer having a minimum of eight (8) hours of supervisor training in hazardous waste site operations in accordance with the requirements of 29 CFR 1910. The supervisor must be on site at all times during abatement work.

D. This section specifies the procedures for removal of existing materials containing polychlorinated biphenyls (PCB), equal to or greater than (>)50 parts per million (ppm), in the form of window system caulking and glazing compounds, door system caulking and disposal of removed materials as PCB Bulk Product Waste. Also includes the removal of Bulk PCB Remediation Waste including adjacent brick and steel lintels and subsequent cleaning of all adjacent surfaces upon completion of work.

E. Disturbance or removal of polychlorinated biphenyls (PCB) containing materials may cause a health hazard to workers and building occupants. The Remediation Contractor shall disclose to all of his workers, supervisory personnel, subcontractors, and consultants who will be at job site of the seriousness of the hazard and of proper work procedures which must be followed.

F. Where in the performance of the work, workers, supervisory personnel, subcontractors, or consultants may encounter, disturb or otherwise function in the immediate vicinity of polychlorinated biphenyls (PCB) containing materials, appropriate, continuous measures as necessary to protect all workers from the hazard of exposure shall be taken. Such measures shall include the procedures and methods described herein, regulations of the U.S. Occupational Safety & Health Administration (OSHA), U.S. Environmental Protection Agency (USEPA), and local requirements as applicable.

G. The results of the testing for PCB containing paint are identified in the Performance Based Site Clean-up and Disposal Plan for PCB Caulking Removal.

H. Project Scope Locations and Work Statement: The project site is the located at the former Haddam Jailhouse Building in Haddam, CT. The proposed removal and disposal activities to be performed by Remediation Contractor shall include the following:

1. Site preparation and controls to facilitate remediation of PCBs.
2. Health and Safety in accordance with Occupation Safety and Health Administration (OSHA) requirements.
3. Removal and off-site disposal of PCB materials containing PCB ≥50 or <50 ppm at the Brick building of the Former Jail-House property as PCB Bulk Product Waste or PCB Remediation Waste from all locations identified. All waste removed including metal framed windows, steel lintels and door systems with glazing compounds and caulking compound shall be disposed of PCB waste >50 ppm at a TSCA approved facility.
4. Removal of two courses of brick around the whole perimeter of all windows including one course of brick below the window sills. All windows shall be wrapped up in two layers of (6) Mil polyurethane, and disposed of PCB Bulk materials >50 PPM.
5. The total waste stream shall be tested for disposal to ensure waste does not leach more than 10 μg/L based on Toxicity Characteristic Leachate Procedure (TCLP) testing.
6. PCB Remediation Waste shall include removal of adjacent brick masonry for disposal at concentrations identified which are >50 ppm and shall be also disposed of at a TSCA approved facility.
7. Recordkeeping and distribution as required in accordance with 40 CFR part 761.125 (c) (5).

1.3 REFERENCES

A. 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. Where a conflict or overlap among regulations and/or these specifications exist, the most stringent requirements shall apply.

1. American National Standards Institute (ANSI)
   a. ANSI.Z89.1 Personnel Protective Equipment - Protective Headwear for Industrial Worker's Requirements (Latest Revision)
   b. ANSI.Z87
2. Code of Federal Regulations (CFR)
   a. 29 CFR Subpart D- Walking, Working Surfaces
   b. 29 CFR 1910.120 - Hazardous Waste Operations and Emergency Response (HAZWOPER).

c. 29 CFR 1910.134 - Respiratory Protection Standard
d. 29 CFR 191 0.146 - Permit-Required Confined Spaces
e. 29 CFR 1910.1000 – Air Contaminants (Table Z-1)
f. 29 CFR 1910.1200 - Hazard Communication
g. 29 CFR 1926.20 - General Health and Safety Provisions
h. 29 CFR 1926.57 - Ventilation
i. 29 CFR 1926.59 - Hazard Communication Program
j. 29 CFR 1926.62 - Lead Exposure in Construction
k. 29 CFR 1926.95 - Criteria for Personal Protective Equipment
l. 29 CFR 1926, Subpart H -Materials Handling, Storage, Use and Disposal
m. 29 CFR 1926, Subpart L - Scaffolding
n. 29 CFR 1926, Subpart M -Fall Protection
o. 29 CFR 1926, Subpart X - Ladders
p. 29 CFR 1926, Subpart Z - Toxic and Hazardous Substances
q. 40 CFR 50.6 - National Primary and Secondary Ambient Air Quality Standards for Particulate Matter
r. 40 CFR 260 - Hazardous Waste Management System: General
s. 40 CFR 261 - Identification and Listing of Hazardous Waste
t. 40 CFR 262 - Standards Applicable to Generators of Hazardous Waste
u. 40 CFR 263 - Standards Applicable to Transporters of Hazardous Waste
v. 40 CFR 264 - Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
w. 40 CFR 265 - Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
x. 40 CFR 268 - Land Disposal Restrictions
y. 40 CFR 700 - Toxic Substances Control Act (TSCA)
z. 40 CFR 761- PCBs Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions
aa. 49 CFR 105 - Hazardous Materials Program Definitions and General Procedures
bb. 49 CFR 171 - General Information, Regulations and Definitions
cc. 49 CFR 172 - Hazardous Material Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements
dd. 49 CFR 173 - Shippers-General Requirements for Shipments and Packaging
ee. 49 CFR 177 - Carriage by Public Highway
ff. 49 CFR 176 - Specifications for Packaging

3. National Institute for Occupational Safety and Health (NIOSH)
   a. Publication Number 87-106 Respiratory Decision Logic
   b. NIOSH /OSHA Booklet 3142 Lead in Construction
   c. Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities (NIOSH Publication 85-115)
4. U.S. Environmental Protection Agency (USEPA), Toxic Substances Control Act (TSCA)
   a. Polychlorinated Biphenyl (PCB) Site Revitalization Guidance Under the Toxic Substances Control Act
   b. 40 CFR Part 761.50 - Applicability (b) (1-8)
   c. 40 CFR Part 761.61 - PCB Remediation Waste
   d. 40 CFR Part 761.62 - PCB Bulk Product Waste
   e. 40 CFR Part 761.79 - Decontamination
5. Center for Disease Control (CDC): Air Pollution and Respiratory Health.

1.4 DEFINITIONS

A. The following definitions as used within this technical specification as well as references to specific sections of the Code of Federal Regulation section 40 CRF Part 761 are provided. Definitions are extracted in part from 40 CFR Part 761.3, for full definitions refer to the specified section of regulations.

1. Bulk PCB Remediation Waste means waste containing PCBs as a result of a spill, release, or other unauthorized disposal, at the following concentrations: Materials disposed of prior to April 18, 1978, that are currently at concentrations ≥50 ppm PCBs, regardless of the concentration of the original spill; materials which are currently at any volume or concentration where the original source was ≥500 ppm PCBs beginning on April 18, 1978, or ≥50 ppm PCBs beginning on July 2, 1979; and materials which are currently at any concentration if the PCBs are spilled or released from a source not authorized for use under this part. PCB remediation waste means soil, rags, and other debris generated as a result of any PCB spill cleanup, as further defined in 40 CFR §761.3.
2. CERCLA means the Comprehensive Environmental Response, Compensation, and Liability Act (42 U.S.C. 9601-9657).
3. Chemical waste landfill means a landfill at which protection against risk of injury to health or the environment from migration of PCBs to land, water, or the atmosphere is provided from PCBs and PCB Items deposited therein by locating, engineering, and operating the landfill as specified in §761.75.
4. Cleanup Site means the areal extent of contamination and all suitable areas in very close proximity to the contamination necessary for implementation of a cleanup of PCB remediation waste, regardless of whether the site was intended for management of waste.
5. Containment means the enclosure within the building which establishes a contaminated area and surrounds the location where PCB and/or other toxic or hazardous substance removal is taking place and establishes a Control Work Area.
6. Designated Facility means the off-site disposer or commercial storer of PCB waste designated on the manifest as the facility that will receive a manifested shipment of PCB waste.
7. Disposal means intentionally or accidentally to discard, throw away, or otherwise complete or terminate the useful life of PCBs and PCB Items. Disposal includes spills, leaks, and other uncontrolled discharges of PCBs as well as actions related to containing, transporting, destroying, degrading, decontaminating, or confining PCBs and PCB Items.
8. DOT means the United States Department of Transportation.
9. EPA identification number means the 12-digit number assigned to a facility by EPA upon notification of PCB waste activity under §761.205.
10. Excluded PCB products means PCB materials which appear at concentrations less than 50 ppm as defined in 40 CFR §761.3.
11. Fixed Object: means mechanical equipment, electrical equipment, fire detection systems, alarms, and all other fixed equipment, fixtures or other items which cannot be removed from the work area.
12. Generator of PCB waste means any person whose act or process produces PCBs that are regulated for disposal under subpart D of 40 CFR Part 761, or whose act first causes PCBs or PCB Items to become subject to the disposal requirements of subpart D, or who has physical control over the PCBs when a decision is made that the use of the PCBs has been terminated and therefore is subject to the disposal requirements of subpart D. Unless another provision of 40 CFR Part 761 specifically requires a site-

specific meaning, "generator of PCB waste" includes all of the sites of PCB waste generation owned or operated by the person who generates PCB waste.

13. HEPA: High Efficiency Particulate Air filtration efficiency of 99.97 percent down to 0.3 microns. Filtration provided on specialized vacuums and air filtration devices to trap particles.
14. High occupancy area means any area where PCB remediation waste has been disposed of on-site and where occupancy for any individual not wearing dermal and respiratory protection for a calendar year is: 840 hours or more (an average of 16.8 hours or more per week) for non-porous surfaces and 335 hours or more (an average of 6.7 hours or more per week) for bulk PCB remediation waste. Examples could include a residence, school, day care center, sleeping quarters, a single or multiple occupancy 40 hours per week work station, a school class room, a cafeteria in an industrial facility, a control room, and a work station at an assembly line.
15. Incinerator means an engineered device using controlled flame combustion to thermally degrade PCBs and PCB Items. Examples of devices used for incineration include rotary kilns, liquid injection incinerators, cement kilns, and high temperature boilers.
16. Laboratory means a facility that analyzes samples for PCBs and is unaffiliated with any entity whose activities involve PCBs.
17. Liquid PCBs means a homogenous flowable material containing PCBs and no more than 0.5 percent by weight non-dissolved material.
18. Low occupancy area means any area where PCB remediation waste has been disposed of on-site and where occupancy for any individual not wearing dermal and respiratory protection for a calendar year is: less than 840 hours (an average of 16.8 hours per week) for non-porous surfaces and less than 335 hours (an average of 6.7 hours per week) for bulk PCB remediation waste. Examples could include an electrical substation or a location in an industrial facility where a worker spends small amounts of time per week (such as an unoccupied area outside a building, an electrical equipment vault, or in the non-office space in a warehouse where occupancy is transitory).
19. Manifest means the shipping document EPA form 8700–22 and any continuation sheet attached to EPA form 8700–22, originated and signed by the generator of PCB waste in accordance with the instructions included with the form and subpart K.
20. Mark means the descriptive name, instructions, cautions, or other information applied to PCBs and PCB Items, or other objects subject to the regulations.
21. Marked means the marking of PCB Items and PCB storage areas and transport vehicles by means of applying a legible mark by painting, fixation of an adhesive label, or by any other method that meets the requirements of the regulations.
22. Municipal solid wastes means garbage, refuse, sludges, wastes, and other discarded materials resulting from residential and non-industrial operations and activities, such as household activities, office functions, and commercial housekeeping wastes.
23. Non-liquid PCBs means materials containing PCBs that by visual inspection do not flow at room temperature (25°C or 77°F) or from which no liquid passes when a 100 g or 100 ml representative sample is placed in a mesh number 60 ±5 percent paint filter and allowed to drain at room temperature for 5 minutes.
24. Non-porous surface means a smooth, unpainted solid surface that limits penetration of liquid containing PCBs beyond the immediate surface. Examples are: smooth un-corroded metal; natural gas pipe with a thin porous coating originally applied to inhibit corrosion; smooth glass; smooth glazed ceramics; impermeable polished building stone such as marble or granite; and high density plastics, such as polycarbonates and melamines, which do not absorb organic solvents.
25. On site means within the boundaries of a contiguous property unit.

26. PCB and PCBs means any chemical substance that is limited to the biphenyl molecule that has been chlorinated to varying degrees or any combination of substances which contains such substance. Refer to §761.1(b) for applicable concentrations of PCBs. PCB and PCBs as contained in PCB items are defined in §761.3. PCB Article means any manufactured article, other than a PCB Container, that contains PCBs and whose surface(s) has been in direct contact with PCBs. "PCB Article" includes capacitors, transformers, electric motors, pumps, pipes and any other manufactured item (1) which is formed to a specific shape or design during manufacture, (2) which has end use function(s) dependent in whole or in part upon its shape or design during end use, and (3) which has either no change of chemical composition during its end use or only those changes of composition which have no commercial purpose separate from that of the PCB Article.
27. PCB Article Container means any package, can, bottle, bag, barrel, drum, tank, or other device used to contain PCB Articles or PCB Equipment, and whose surface(s) has not been in direct contact with PCBs.
28. PCB Bulk Product Waste means waste derived from manufactured products containing PCBs in a non-liquid state, at any concentration where the concentration at the time of designation for disposal is ≥50 ppm PCBs. PCB bulk product waste does not include PCBs or PCB Items regulated for disposal under §761.60(a) through (c), §761.61, §761.63, or §761.64. PCB bulk product waste is further defined in 40 CFR §761.3.
29. PCB Capacitor means any capacitor that contains ≥500 ppm PCB. Concentration assumptions applicable to capacitors appear under §761.2.
30. PCB Container means any package, can, bottle, bag, barrel, drum, tank, or other device that contains PCBs or PCB Articles and whose surface(s) has been in direct contact with PCBs.
31. PCB-Contaminated means a non-liquid material containing PCBs at concentrations ≥50 ppm but < 500 ppm; a liquid material containing PCBs at concentrations ≥50 ppm but < 500 ppm or where insufficient liquid material is available for analysis, a non-porous surface having a surface concentration >10 μg/100 cm2 but < 100 μg/100 cm2, measured by a standard wipe test as defined in §761.123.
32. PCB Equipment means any manufactured item, other than a PCB Container or a PCB Article Container, which contains a PCB Article or other PCB Equipment, and includes microwave ovens, electronic equipment, and fluorescent light ballasts and fixtures.
33. PCB Item means any PCB Article, PCB Article Container, PCB Container, PCB Equipment, or anything that deliberately or unintentionally contains or has as a part of it any PCB or PCBs.
34. PCB waste(s) means those PCBs and PCB Items that are subject to the disposal requirements of subpart D in 40 CFR Part 761.
35. Porous surface means any surface that allows PCBs to penetrate or pass into itself including, but not limited to, paint or coating on metal; corroded metal; fibrous glass or glass wool; unglazed ceramics; ceramics with a porous glaze; porous building stone such as sandstone, travertine, limestone, or coral rock; low-density plastics such as Styrofoam and low-density polyethylene; coated (varnished or painted) or uncoated wood; concrete or cement; plaster; plasterboard; wallboard; rubber; fiberboard; chipboard; asphalt; or tar paper. For purposes of cleaning and disposing of PCB remediation waste, porous surfaces have different requirements than non-porous surfaces.
36. RCRA means the Resource Conservation and Recovery Act (40 U.S.C. 6901 et seq.).
37. Standard wipe sample means a sample collected for chemical extraction and analysis using the standard wipe test as defined in §761.123. Except as designated elsewhere in part 761, the minimum surface area to be sampled shall be 100 cm^2.

38. Storage for disposal means temporary storage of PCBs that have been designated for disposal.
39. SW-846 means the document having the title "SW-846, Test Methods for Evaluating Solid Waste,"
40. Totally enclosed manner means any manner that will ensure no exposure of human beings or the environment to any concentration of PCBs.
41. Transfer facility means any transportation-related facility including loading docks, parking areas, and other similar areas where shipments of PCB waste are held during the normal course of transportation. Transport vehicles are not transfer facilities under this definition, unless they are used for the storage of PCB waste, rather than for actual transport activities. Storage areas for PCB waste at transfer facilities are subject to the storage facility standards of §761.65, but such storage areas are exempt from the approval requirements of §761.65(d) and the recordkeeping requirements of §761.180, unless the same PCB waste is stored there for a period of more than 10 consecutive days between destinations.
42. Transporter of PCB waste means, for the purposes of subpart K of 40 CFR Part 761, any person engaged in the transportation of regulated PCB waste by air, rail, highway, or water for purposes other than consolidation by a generator.
43. Transport vehicle means a motor vehicle or rail car used for the transportation of cargo by any mode. Each cargo-carrying body (e.g., trailer, railroad freight car) is a separate transport vehicle.
44. TSCA means the Toxic Substances Control Act (15 U.S.C. 2601 et seq.).

1.5 SUBMITTALS

A. The following documents shall be submitted immediately upon project award to the Owner prior to commencement of PCB Removal work:

1. Site Specific Health and Safety Plan (HASP): The Remediation Contractor shall prepare a site specific HASP plan for protection of workers and control of the work site in accordance with OSHA regulatory requirements. The HASP shall govern all work conducted at the site during the abatement of PCB Paint and related debris; waste handling, sampling, waste management; and waste transportation. At a minimum, the HASP shall address the requirements set forth in 29 CFR 1910.120, as further outlined below:
   a. Health and Safety Organization
   b. Site Description and Hazard Assessment
   c. Training
   d. Medical Surveillance
   e. Work Areas
   f. Personal Protective Equipment
   g. Personal Hygiene and Decontamination
   h. Standard Operating Procedures and Engineering Controls
   i. Emergency Equipment and First Aid Provisions
   j. Equipment Decontamination
   k. Air Monitoring
   l. Telephone List
   m. Emergency Response and Evacuation Procedures and Routes
   n. Site Control

o. Permit-Required Confined Space Procedures
p. Spill prevention and Containment Plan
q. Heat and Cold Stress
r. Record Keeping
s. Community Protection Plan

2. Training Documentation: Documentation of OSHA 40-Hour HAZWOPER Training for all employees and subcontractors to be used for the abatement work, and 8-Hour HAZWOPER Supervisor Training for the designated on-site Health and Safety Officer for the abatement work.
3. PCB and or other Toxic or Hazardous Substances Disposal Plan: A written plan that details the Remediation Contractor's plan for transportation and disposal of PCB-containing or other Toxic or Hazardous Substance wastes generated during the project. The Disposal Plan shall identify:
   a. Waste packaging, labeling, placarding and manifesting procedures.
   b. The name, address, and 24-hour contact number for the proposed treatment or disposal facility or facilities to which waste generated during the project will be transported.
   c. The name, address, contact person(s) and state-specific permit numbers for proposed waste transporters, and EPA identification number for firms that will transport waste.
   d. The license plate numbers of vehicles to be used in transporting of the waste from the site to the disposal facility.
   e. The route(s) by which the waste will be transported to the designated disposal facility, and states or territories through which the waste will pass.
4. Material Safely Data Sheets: Material Safety Data Sheets (OSHA Form 174 or equivalent) and manufacturer's information shall be provided for all chemicals and materials to be used during the project including but not limited to specialty cleaners and chemical stripping products.

B. The following documents shall be submitted to the Owner within fifteen (15) work days following removal of waste from the site:

1 Waste Profile Sheets
2. Pre-Disposal Analysis Test Results (If required by disposal facility)
3. Manifests signed by the disposal facility
4. Tipping Receipts provided by the disposal facility
5. Certification of Final Treatment/Disposal signed by the responsible disposal facility official.

C. PCB Work Closeout Submittals:

1. Disposal Site Receipts: Copy of waste shipment record and disposal site receipt showing the PCB-containing or other Toxic or Hazardous Substances materials have been properly disposed.

D. Product Data: Catalog sheets, specifications, and application instructions for any removal products, if used.

1.6 POSTING AND RECORD MAINTENANCE REQUIREMENTS

A. The following items shall be conspicuously displayed proximate but outside of abatement work areas.

1. Exit Routes -Emergency exit procedures and routes
2. Emergency Phone Numbers - A list indicating the telephone numbers and locations of the local hospital(s); the local emergency squad; the local fire department; the local police department; the Poison Control Center; Chemical Emergency Advise (CHEMTREC); the local Department of Health's local office; the Remediation Contractor (on-site and after hours numbers); and the environmental consultant (on-site and after hours numbers).
3. Warning Signs - Warning signs shall be in English and the language of any workers on site who do not speak English, and be of sufficient size to be clearly legible and display the following or similar language in accordance with 29 CFR 1910.1200:

WARNING
HAZARDOUS WASTE WORK AREA
PCBs-POISON
NO SMOKING, EATING OR DRINKING
AUTHORIZED PERSONNEL ONLY
PROTECTIVE CLOTHING IS REQUIRED IN THIS AREA

In addition, all entrances to work areas shall be posted with a PCB M_L marker.

B. The Remediation Contractor shall maintain the following items on-site and available for review by all employees and authorized visitors:

1. Remediation Contractor's Project Specific Health and Safety Plan
2. Certificates of Training for all employees and the project Supervisor
3. Codes, Standards and Publications
4. Material Safety Data Sheets (MSDS) for all chemicals used during the project.
5. Copies of the Remediation Contractor's written hazard communication, respiratory protection, and confined space entry programs.

C. Fees, Permits and Licenses. The Remediation Contractor shall pay all licensing fees, royalties, and other costs necessary for the use of any copyrighted or patented product, design, invention, or processing in the performance of the work specified in this Section.

1. The Remediation Contractor shall be solely responsible for costs, damages, or losses resulting from any infringement of these patent rights or copyrights. The Remediation Contractor shall hold the Owner and the Owner's Authorized Representative harmless from any costs, damages, and losses resulting from any infringement of these patent rights or copyrights.

2.

2. The Remediation Contractor shall be responsible for securing all necessary permits for work under this Section, including hauling, removal, and disposal, fire, and materials usage, or any other permits required to perform the specified work.

1.7 QUALITY ASSURANCE

A. The Remediation Contractor shall provide and assure that the quality of work practices and procedures to be utilized are consistent with the above listed agencies and regulations. Remediation Contractor shall utilize the latest edition, including all addenda, revisions, and supplements for all regulatory agencies codes, etc.

B. Worker's Qualifications: The persons performing PCB Caulking abatement and their supervisors shall be personally experienced in PCB abatement work and shall have been regularly employed by a company performing PCB abatement for a minimum of 3 years.

C. Pre-Work Conference: Before the Work of this Section is scheduled to commence, a conference will be held by the Owner at the Site for the purpose of reviewing the Contract Documents, discussing requirements for the Work, and reviewing the Work procedures.

1. The conference shall be attended by the Remediation Contractor, and the Owner's Authorized Representative employed by the Owner.

1.8 MINIMUM REQUIREMENTS FOR WORKER HEALTH AND SAFETY

A. The Remediation Contractor is responsible and liable for the health and safety of all onsite personnel and the offsite community affected by the project. All onsite workers or other persons entering the abatement work areas, decontamination areas or waste handling and staging areas shall be knowledgeable of and comply with the requirements of the site specific Health and Safety Plan at all times. The Remediation Contractor's HASP shall comply with all applicable federal, state, and local regulations protecting human health and the environment from the hazards posed by the work to be performed under this project.

B. Consistent disregard for the provisions of the HASP shall be deemed as sufficient cause for immediate stoppage of work and termination of the Contract or any Sub Contracts without compromise or prejudice to the rights of the Owner or the Owner's Authorized Representative.

C. Any discrepancies between the Remediation Contractor's HASP and these specifications or federal and state regulations shall be resolved in favor of the more stringent requirements that provide the highest degree of protection to the project personnel and the surrounding community and environment

D. In addition to exposure concerns relating to the presence of PCBs, other health and safety considerations will apply to the work. The Remediation Contractor shall be responsible for recognizing such hazards and shall be responsible for the health and safety of Remediation Contractor employees at all times. It is the Remediation Contractor's responsibility to comply with all applicable health and safety regulations.

E. The HASP shall be reviewed by all persons prior to entry into the abatement, decontamination, or waste staging areas, whether a representative of the Remediation Contractor, owner, architect/engineer, environmental consultant, subcontractor(s), waste transporter or federal, state or local regulatory agency. Such review shall be acknowledged and documented by the Remediation Contractor's Health and Safety Officer by obtaining the name, signature, and affiliation of all persons reviewing the HASP.

F. The HASP shall be maintained so as to be readily accessible and reviewable by all site personnel throughout the duration of the abatement project and until all waste materials are removed from the site and disposed of at the appropriate disposal facility.

G. The Remediation Contractor's on-site Health and Safety Officer shall be responsible for ensuring that project personnel and site visitors are informed of and comply with the provisions of the HASP at all times during the project.

1.9 WORK AREAS AND ZONES

A. The Remediation Contractor shall lay-out and clearly identify work areas in the field. Access by equipment, site personnel, and the public to the work areas shall be limited as follows:

1. Abatement Zone: The Abatement Zone(s) shall consist of all interior or exterior areas where removal of PCBs and other Toxic or Hazardous Substances and waste handling and staging activities are on-going and the immediately surrounding locale or other areas where contamination could occur. Each Abatement Zone for purposes of removal of PCB materials or other Toxic or Hazardous Substances for disposal shall be performed within a containment (refer to section 3.1) to isolate work areas from non-work areas. The containment shall be visibly delineated with appropriate warning signs at all approaches to Abatement (including a PCB M_L marker), and be restricted from access by all persons except those directly necessary for the completion of the respective abatement tasks. The Abatement Zones shall be relocated and delineated as necessary as work progresses from one portion of the project site to another, to limit access to each abatement area and to minimize risk of exposure to site workers and the general public. Access shall be controlled at the periphery of the Abatement Zones to regulate the flow of personnel and equipment into and out of each zone and to help verify that proper procedures for entering and exiting are followed. All persons within the Abatement Zones shall wear the appropriate level of protection established in the HASP.
2. Decontamination Zone: The Decontamination Zone is the transition zone between the abatement area and the clean support zone of the project site, and is intended to reduce the potential for contaminants from being dispersed from the Abatement Zone to clean areas of the site. The Decontamination Zone shall consist of a buffer area surrounding each Abatement Zone through which the transfer of equipment, materials, personnel, and containerized waste products will occur and in which decontamination of equipment, personnel, and clothing will occur. The Decontamination Zones shall be constructed as a three chamber decontamination unit for workers and a two chamber equipment room for waste load out as detailed in Section 3.2. All emergency response and first aid equipment shall be readily maintained in these Zones. All protective equipment and clothing shall be removed or decontaminated in the Decontamination Zone prior to exiting to the Support Zone.
3. Support Zone: The Support Zone will consist of the area outside the Decontamination Zones and the remainder of the project site. Administrative and other support functions and any activities that by nature need not be conducted in the Abatement or Decontamination Zone related to the project shall occur in the Support Zone, Access to the Abatement and Decontamination Zones shall be controlled by the Health and Safety Officer and limited to those persons necessary to complete the abatement work and which have reviewed and signed the HASP.

1.10 PERSONNEL PROTECTIVE EQUIPMENT

A. The Remediation Contractor shall be responsible to determine and provide the appropriate level of personal protective equipment in accordance with applicable regulations and standards necessary to protect the Remediation Contractor's employees from all hazards present.

B. The Remediation Contractor shall provide all employees with the appropriate safety equipment and protective clothing to ensure an appropriate level of protection for each task, taking into consideration the chemical, physical, ergonomic and biological hazards posed by the site and work activities.

C. The Remediation Contractor shall establish in the HASP criteria for the selection and use of personal protective equipment (PPE).

D. The PPE to be utilized for the project shall be selected based upon the potential hazards associated with the project site and the work to be performed. Appropriate protective clothing shall be worn at all times within the Abatement Zone.

E. The Remediation Contractor shall provide the appropriate level of respiratory protection to all field personnel engaged in activities where respiratory hazards exist or there is a potential for such hazard to exit.

F. The Remediation Contractor shall provide, as necessary, protective coveralls, disposable gloves and other protective clothing for all personnel that will be actively involved in abatement activities or waste handling activities or otherwise present in the Abatement Zones. Coveralls shall be of Tyvek or equivalent material. Should the potential for exposure to liquids exist, splash resistant disposable suits shall be provided and utilized.

G. Protective coveralls, and other protective clothing shall be donned and removed within the Decontamination Zone and shall be disposed of at the end of each day. Ripped coveralls shall be immediately replaced after appropriate decontamination has been completed to the satisfaction of the Health and Safety Officer. Protective clothing shall not be worn outside of the Decontamination Zone.

H. Hard Hats, protective eyewear, rubber boots, and or other non-skid footwear shall be provided by the Remediation Contractor as required for workers and authorized visitors.

I. All contaminated protective clothing, respirator cartridges and disposable protective items shall be placed into proper containers to be provided by the Remediation Contractor for transport and proper disposal n accordance with 40 CFR 262.

1.11 EMERGENCY EQUIPMENT AND FIRST AID REQUIREMENTS

A. The Remediation Contractor shall provide and maintain at the site, at a minimum, the following Emergency and First Aid Equipment:

1. Fire Extinguishers: A minimum one (1) fire extinguisher shall be supplied and maintained at the site by the Remediation Contractor throughout the duration of the project. Each extinguisher shall be a minimum of a 20 pound Class ABC dry fire extinguisher with Underwriters Laboratory approval per 29 CFR 1910.157.

2. First Aid Kit: A minimum 01 one (1) first aid kit meeting the requirements of 29 CFR 1910,151 shall be supplied and maintained at the site by the Remediation Contractor throughout the duration of the project.
3. Communications: Telephone communications (either cellular or land line) shall be provided by the Remediation Contractor for use by site personnel at all times during the project.

B. The Health and Safely Officer shall be notified immediately in the event of personal injury, potential exposure to contaminants, or other emergency. The Health and Safety Officer shall then immediately notify the Owner's Authorized Representative.

1.12 STANDARD SAFETY AND HEALTH PROCEDURES AND ENGINEERING CONTROLS

A. The following provisions shall be employed to promote overall safety, personnel hygiene and personnel decontamination:

1. Each Remediation Contractor or Subcontractor shall ensure that all safety equipment and protective clothing to be utilized by its personnel is maintained in a clean and readily accessible manner at the site.
2. All prescription eyeglasses in use on this project shall be safety glasses conforming to ANSI Standard Z87.1. No contact lenses shall be allowed on the site.
3. Prior to exiting the delineated Decontamination Zone(s), all personnel shall remove protective clothing, and place disposable items in appropriate disposal containers to be dedicated to that purpose. Following removal of PPE, personnel shall thoroughly wash and rinse their face, hands, arms and other exposed areas with soap and tap water wash and subsequent tap water rinse. A fresh supply of tap water shall be provided at the site on each work day by the Remediation Contractor for this purpose.
4. All PPE used on site shall be decontaminated or disposed of at the end of each work day. Discarded PPE shall be placed in sealed DOT approved 55-gallon barrels for off-site disposal.
5. Respirators, if necessary due to an upgrade to Level C PPE, shall be dedicated to each employee, and not interchanged between workers without cleaning and sanitizing.
6. Eating, drinking, chewing gum or tobacco, smoking, and any other practice that increases the likelihood of hand to mouth contact shall be prohibited within the delineated abatement and decontamination work zones. Prior to performing these activities, each employee shall thoroughly cleanse their face, hands, arms and other exposed areas.
7. All personnel shall thoroughly cleanse their face hands, arms and other exposed areas prior to using toilet facilities.
8. No alcohol, tobacco, illicit drugs, or firearms will be allowed on the site at any time.
9. Contact with potentially contaminated surfaces should be avoided, if possible. Field personnel should minimize walking through standing water/puddles, mud or other wet or discolored surfaces; kneeling on ground; and placing equipment, materials or food on ground or other potentially contaminated surface.
10. The use of the "Buddy System shall be employed at all times while conducting work at the site. Each employee shall frequently monitor other workers for signs of heat stress or chemical exposure or fatigue: periodically examine others PPE for signs of wear or damage; routinely communicate with others; and notify the Health and Safety Officer in the case of an emergency.

B. Worker's must wear protective suits, protective gloves, eye protection and a minimum of half-face respirator with HEPA filter cartridge for all projects. Respiratory protection shall be in accordance with OSHA regulation 1910.134 and ANSI Z88.2.

C. Workers must be trained as per OSHA and USEPA requirements, have medical clearance and must have recently received pulmonary function test (PFT) and respirator fit tested by a trained professional.

1. A personal air sampling program shall be in place as required by OSHA.
2. The use of respirators must also follow a complete respiratory protection program as specified by OSHA.

PART 2 - PRODUCTS

2.1 ABATEMENT PRODUCTS

A. All materials shall be delivered in the original packages, containers, or bundles bearing the name of the manufacturer and the brand name.

B. Disposal Drums: Metal or fiberboard with locking ring tops, with warning labels as required by OSHA, and/or EPA.

C. Respirators:

1. Type: Approved by the Mine Safety and Health Administration (MSHA), Department of Labor, or the National Institute for Occupational Safety and Health (NIOSH), Department of Health and Human Services.

D. Vacuum Cleaners:

1. Type: Vacuums equipped with HEPA filters.

E. Polyethylene Sheeting:

1. Type: Minimum 6 mil., opaque, fire retardant polyethylene sheets.
2. Floor Protective Layer: Minimum 10 mil., reinforced polyethylene sheets.

F. Cleaning Products: Remediation Contractor shall at their discretion utilize specialty cleaning products such as Capsur, TechXtract or other cleaners for use in decontaminating porous and non-porous surfaces to remain. All such products shall be utilized in accordance with manufacturer's specifications as intended. Remediation Contractor shall ensure appropriate use and disposal associated with use in accordance with the MSDS sheets for each product utilized. It shall be incumbent upon the Remediation Contractor to determine the need for use of specialty products to meet required cleaning verification levels established herein and in accordance with the Work Plan.

2.2 GENERAL EQUIPMENT

A. A sufficient supply of disposable mops, rags, and sponges for work area cleaning and decontamination shall be available.

B. A sufficient supply of scaffolding, ladders, lifts, and hand tools (e.g., scrapers, wire cutters, brushes, utility knives, wire saws, etc.) shall be provided as needed.

2.3 PERSONNEL PROTECTION

A. Safety equipment (e.g., hard hats meeting the requirements of ANSI Standard Z89.1-1981, eye protection meeting the requirements of ANSI Standard Z87.1-1979, safety shoes meeting the requirements of ANSI Standard Z41.1-1967, disposable PVC gloves or other work gloves), shall be provided to all workers and authorized visitors.

B. Non-skid footwear shall be provided to all abatement workers. Disposable clothing shall be adequately sealed to the footwear to prevent body contamination.

PART 3 - EXECUTION

3.1 WORK AREA PROTECTION – ABATEMENT ZONE

A. Protection of Existing Construction: Perform PCB Bulk Product Waste and Bulk PCB Remediation Waste removal work without damage or contamination of adjacent areas, soil, and existing construction.

B. Prior to commencement of PCB abatement activities at each work area, a containment system shall be constructed by the Remediation Contractor to capture and contain all materials removed during the abatement. Containment procedures referenced for the abatement zone must be utilized for both PCB Bulk Product Waste removal as well as Bulk PCB Remediation Waste Removal. Exception is work involving the removal of PCB contaminated asphalt for disposal as Bulk PCB Remediation Waste.

C. The project site shall be enclosed by a construction chain link fence. During all remediation activities, Remediation Contractor shall maintain control of all entrances and exits to the project site to ensure only authorized personnel enter the work areas and are afforded proper personal protective equipment and as required respiratory protection. All approaches to work areas shall be demarcated with appropriately worded warning signs.

D. Work zones shall be established in accordance with this section to include abatement zone, decontamination zone and support zone.

E. Ground protection to prevent debris from escaping the abatement zone and to protect areas outside of abatement zone from PCB contamination shall be utilized. Protection shall include the use of water impervious membrane covering which shall be secured to the ground surface. Edges shall be raised to prevent water run-off used for dust/water control during selective demolition of window system. The membrane shall be covered with a single layer of 6-mil polyethylene sheeting securely fastened to foundation.

1. One layer of polyethylene sheeting having a minimum thickness of 6-mils shall be installed on the exterior side of the structure beneath and extending a minimum of ten (10) feet beyond each window and door in each direction. The polyethylene sheeting shall be securely fastened to the outside face of the structure using duct tape or other suitable material.

F. Isolation barriers shall be installed on interior side of windows and door to isolate these systems to the building exterior where work shall be performed. Protection shall include two layers of 6-mil polyethylene sheeting securely affixed to the inside finish surfaces of walls to isolate windows and door to the building exterior.

1. Two (2) layers of 6-mil polyethylene sheeting shall be securely affixed to ceiling and floor inside of each window and door system with duct tape or other means to isolate the window systems to the building exterior.

G. Isolation barriers shall be installed on exterior side of windows and door to contain these systems where work shall be performed to minimize dispersal of dust and debris. Protection shall include two layers of 6-mil polyethylene sheeting securely affixed to the exterior side finish surfaces of building and constructed in a manner using framework to to contain window and door systems. To minimize dust and debris Remediation Contractor shall utilize negative pressure containment with use of negative air filtration units with HEPA filtration.

H. All other openings to the building interior such as unit ventilation, ducts, and grilles shall be securely sealed with a single layer of 6-mil polyethylene sheeting from the building exterior.

I. Ground protection and isolation barriers shall remain in place throughout work to collect dust and debris resulting from PCB Bulk Product Waste removal and PCB Remediation Waste removal. All debris generated during operations including but not limited to visible caulking, dust and debris shall be HEPA vacuumed continuously throughout the work shift and at the end of a work shift to avoid accumulation. Any tears or rips that occur in protections shall be repaired or removed and replaced with new protections.

J. Warning Signage: Post warning signs in accordance with 29 CFR 1910.1200 at all approaches to the work area. Signs shall be conspicuously posted to permit a person to read signs and take precautionary measures to avoid exposure to PCBs or other Toxic or Hazardous Substances. These signs should include the PCB M_L markers at each entrance to the work area.

K. Waste Containers for PCB Bulk Product Waste: Appropriate PCB waste containers shall be placed adjacent to abatement zones. Containers shall be lined covered and secured. The PCB waste containers shall be properly marked as described in 40 CFR part 761.45. Marking shall include a PCB M_L marker.

3.2 DECONTAMINATION ZONE

A. The Remediation Contractor shall establish contiguous to the work area, a decontamination enclosure consisting of equipment room, shower room, and clean room in series. The only access between contaminated and uncontaminated areas shall be through this decontamination enclosure. The Remediation Contractor shall ensure that employees enter and exit the Abatement Zone through the decontamination area.

B. Access between rooms in the decontamination system shall be through double flap curtain opening airlocks.

C. Construct the decontamination systems with wood or metal framing, 3/8" sheathing and cover both sides with a double layer of six (6) mil polyethylene sheeting, spray glued or taped at the joints. Caulk joints watertight at floor, walls, and ceiling.

D. The Remediation Contractor shall visually inspect barrier several times daily to assure effective seal and the Remediation Contractor shall repair defects immediately.

E. Equipment room. The equipment room shall be supplied with impermeable, labeled bags and containers for the containment and disposal of contaminated protective equipment.

F. Shower area. Shower facilities shall be provided which comply with 29 CFR 1910.141(d)(3). The showers shall be adjacent both to the equipment room and the clean room.

G. Clean change room. The clean room shall be equipped with a locker or appropriate storage container for each worker's use. Following showering, each worker must then change into street clothing in clean change areas.

H. Decontamination area entry procedures. The Remediation Contractor shall ensure that all workers follow proper decontamination procedures for entry into a Regulated Work area including but not limited to the following:

1. Enter the decontamination area through the clean room;
2. Remove and deposit street clothing within a locker provided for their use;
3. Put on protective clothing and respiratory protection before leaving the clean room.
4. Before entering the Abatement Zone, the Remediation Contractor shall ensure that workers pass through the equipment room.

I. Decontamination area exit procedures. The Remediation Contractor shall ensure that all workers follow proper decontamination procedures for exit from a Regulated Work area including but not limited to the following:

1. Before leaving the regulated area, workers shall remove all gross contamination and debris from their protective clothing.
2. Workers shall remove their protective clothing in the equipment room and deposit the clothing in labeled impermeable bags or containers.
3. Workers shall not remove their respirators in the equipment room.
4. Workers shall shower prior to entering the clean room.
5. After showering, workers shall enter the clean room before changing into street clothes.

J. Equipment Room for Waste Removal: The Remediation Contractor shall establish a two chamber equipment room or area that is adjacent to the Abatement Zone for the decontamination of waste containers and equipment as noted above.

1. The area must be of sufficient size as to accommodate cleaning of equipment and removing waste without spreading contamination beyond the area (as determined by visible accumulations).

2. All equipment and surfaces of containers filled with PCB waste must be cleaned prior to removing them from the equipment room or area.

3.3 PCB BULK PRODUCT AND PCB REMEDIATION WASTE MATERIALS

A. PCB Bulk Product Waste Materials including PCB caulking and glazing compound and associated Bulk PCB Remediation Waste associated with metal window systems and door system to be removed intact shall be handled and removed from specified locations for proper disposal.

B. Materials shall be removed in a manner which does not breakdown the materials into fine dust or powder to the extent feasible. Equipment and tools to be utilized shall include hand tools to remove materials from adjacent substrates. Mechanical removal equipment shall as appropriate be fitted with dust collection systems.

C. Any dry or brittle caulking materials or other PCB Bulk Product waste shall be removed with additional engineering controls such as use of a HEPA vacuum to remove accumulated dust or debris during removal.

D. Sequence of removal shall follow the following general requirements:

1. All PCB containing materials shall be removed prior to demolition from all of the ten (10) window(s) and one (1) door system components on the brick portion of the building. PCB Bulk product Waste includes caulking compounds between the brick and the windows and door systems. Entire window and door systems will be removed for disposal. All waste shall be disposed of as TSCA regulated PCB Bulk Product Waste > 50 ppm.
2. Adjacent brick masonry surfaces contain PCB >50 ppm and shall be removed as PCB Remediation Waste for disposal as TSCA regulated waste PCB >50 ppm. This will be done by removing (2) two courses of brick from the whole perimeter of the windows to include the window sill, and one course of brick below the brick sill, and door.
3. Work includes removal of ten (10) ten window(s), and one (1) door that shall be removed for disposal as PCB Bulk Product Waste and PCB Remediation Waste as the entire window, and door assembly including PCB glazing compound(s) will be disposed.
4. Window lintels will be disposed of as PCB Remediation Waste for disposal as TSCA regulated waste PCB >50 ppm.
5. Remove three square feet of the asphalt below the door when it has been removed as as PCB Remediation Waste for disposal as TSCA regulated waste PCB >50 ppm.
6. The materials will be properly containerized for disposal as PCB Bulk Product Waste and PCB Remediation Waste. All materials shall be disposed as PCB Waste >50 ppm at a TSCA waste facility for PCB waste.

E. Post removal verification sampling shall be conducted by Owner's Representative, in all areas of brick removal areas to demonstrate that the cleanup goals have been met.

F. Waste shall be immediately containerized in temporary 6-mil polyethylene disposal bags for disposal. These containers shall be sealed in abatement zone when full during collection and then placed in disposal containers/storage trailers. The containers shall not be emptied into other containers to avoid dispersal of dust or fugitive emissions.

G. The use of minimal quantities of water to moisten the generated dust prior to collection shall be utilized. Under no circumstances shall the PCB waste show evidence of free liquid water, pooling, or ponding within the waste stream. Any liquid used to wet the dust and debris to control fugitive emissions shall be properly containerized and decontaminated in accordance with 40 CFR Part §761.79 (b)(1) or disposed of in accordance with40 CFR Part §761.60 (a).

H. PCB Bulk Product Waste shall be stored for disposal in accordance with 40 CFR Part §761.40 and §761.65 and marked in accordance with 40 CFR Part §761.40 and §761.45.

I. All waste containers shall be appropriately labeled in accordance with 40 CFR Part §761.40 and §761.45. Labeling shall include the PCB M_L marker.

3.4 BULK PCB REMEDIATION WASTE ASPHALT

A. All asphalt designated for removal shall be excavated and transported off-site for disposal as Bulk PCB Remediation Waste.

B. Asphalt removal shall be competed in accordance with 40 CFR Part §761.61 (a). Asphalt materials shall be completely removed from designated location in its entirety for proper disposal.

C. Post removal verification sampling shall be conducted by Owner's Representative, in all asphalt removal areas to demonstrate that the cleanup goals have been met.

D. Asphalt present beneath door systems has been assumed to contain PCB concentrations ranging from greater than 1 ppm to less than 50 ppm. Asphalt shall be removed from designated areas only for proper disposal as waste containing PCBs <50 ppm.

E. During excavation work, use of wetting to control dust and visible emissions shall be required. Remediation contractor shall ensure that upon completion of asphalt excavation adjacent masonry surfaces are cleaned of visible dust.

F. All PCB Remediation Waste shall be stored for disposal in accordance with 40 CFR Part §761.65.

G. All waste containers shall be appropriately labeled in accordance with 40 CFR Part §761.40 and §761.45. Marking shall include the PCB M_L marker.

H. All equipment used during excavation shall be decontaminated as specified in section 3.6.

3.5 CLEANING AND DECONTAMINATION

A. The Remediation Contractor shall be responsible for complete cleaning and decontamination of the Abatement Zone upon completion of work. The Abatement Zone will be required to meet proposed Verification Sampling limits established in Work Plan.

B. The Remediation Contractor shall utilize HEPA vacuum and wet cleaning products to remove all visible dust and debris from all surfaces within the work area. If specialty products are utilized the Remediation Contractor shall utilize in accordance with manufacturer's specifications including any additional safety and disposal requirements for such use.

C. Cleaning of containment barriers shall be performed prior to removal leaving critical barriers at openings, decontamination units and negative air filtration devices in place until results of post verification sampling indicate acceptable limits. Cleaning shall be performed from ceiling to floors.

D. Any liquid used to wet the dust and debris to control fugitive emissions shall be collected and decontaminated in accordance with 40 CFR Part §761.79 (b)(1) or disposed of in accordance with §761.60 (a).

E. All rags and other cleaning materials used to clean shall also be properly disposed as PCB Remediation Waste. All PCB Remediation Waste shall be stored for disposal in accordance with 40 CFR Part §761.61(a)(5)(v)(A). All waste containers shall be appropriately marked in accordance with 40 CFR Part §761.40 and §761.45.

F. Equipment to be utilized in connection with the removal of PCB Bulk Product Waste, Bulk PCB Remediation waste and PCB Contaminated soil including waste collection or that will or may come in direct contact with the site contaminants shall be decontaminated prior to leaving the site to prevent migration of the contaminated residues from the project site. Decontamination shall be in accordance with 40 CFR Part §761.79 and Sub-part S procedures.

G. All non-disposable equipment and tools employed in the course of the project will be decontaminated at the conclusion of each work day through the following sequence:

1. Initial tap water rinse, to remove gross soil
2. Tap water and hexane or equivalent wash
3. Tap water rinse
4. Second tap water and hexane or equivalent wash
5. Second tap water rinse

H. The wash water and decontamination liquids shall be captured and containerized in DOT approved 55-gallon barrels for off-site disposal.

3.6 CERTIFICATION OF ABATEMENT AND SAMPLING-POST VERFICATION SAMPLING

A. The Owner shall retain an industrial hygiene firm, Fuss & O'Neill EnviroScience, LLC (as Owner Representative) to perform periodic inspections and sampling during the work. Site visits shall be scheduled based on the progress of the work and at critical time periods.

B. The Owner's Representative shall perform post removal and decontamination visual clearance inspection, bulk and/or sampling as necessary to determine complete removal of PCBs. Refer to the Post verification protocol for determination of clearance levels.

C. Once verification sampling has documented the Abatement Zone meets required criteria established in the Work Plan, the Remediation Contractor shall be permitted to remove decontamination unit and critical barriers. These areas shall be subjected to a visual inspection to ensure no visible dust is present.

D. The Owner's Representative shall collect forty-two (42) verification chip samples and duplicates. Three (3) chip samples of brick shall be collected for every location a window and

door is being removed. Samples shall include 25% of the total in duplicate samples. The laboratory shall be Con-Test Analytical Laboratory of East Longmeadow, MA. Con-test is an accredited laboratory for PCB analysis. The analysis method shall include extraction using EPA Method 3540C (Soxhlet Extraction) and analysis for PCBs using EPA Method 8082.

3.7 MARKING OF WASTE CONTAINERS

A. All waste containers must be marked with the name of the waste contained; the date in which the first material was placed in the vessel; and the last date at which addition of waste occurred. All waste containers must be marked with a PCB ML marker.

B. All waste containers containing PCB Bulk Product Waste, Bulk PCB Remediation Waste and PCB contaminated debris, containment system components, used personnel protective equipment, personal and equipment wash water and decontamination fluids, or other wastes generated during the abatement work shall be labeled as follows:

DOT Class 9 UN3432 (solid)
Or UN2315 (liquid) PCB Waste
RQ
Waste for Disposal
Federal law prohibits improper disposal.
If found, contact the nearest police or public safety authority or
the U.S. Environmental Protection Agency.

a. Generator's Information: _____
b. Manifest Tracking No.: _____
c. Accumulation Start Date: _____
d. EPA ID No.: _____
e. EPA Waste No.: _____
f. Total Weight: _____
g. Container No.: _____

HANDLE WITH CARE!

In addition, these containers must be marked with a PCB M_L marker.

C. Such marking must be durable, in English and printed on or affixed to the surface of the package or on a label, tag or sign; displayed on a background of sharply contrasting color; un-obscured by labels or attachments and located away from any other marking (such as advertising) that could substantially reduce its effectiveness.

3.8 ON-SITE WASTE MANAGEMENT AND DISPOSAL OF SOLID HAZARDOUS WASTES

A. All solid waste material, containment system components, used personnel protective equipment, and other solid wastes generated during the work, shall be placed directly in appropriate waste receptacles immediately upon removal from its in-situ position. Suitable waste receptacles may consist of roll-off containers or DOT-approved 55-gallon barrels.

B. The Remediation Contractor shall be responsible for all packaging, labeling, transport, disposal, and record-keeping associated with PCB or PCB contaminated waste in accordance with all federal, state, and local regulations.

C. The Remediation Contractor shall ensure that the person transporting the waste holds a valid permit issued in accordance with appropriate federal, state, and local regulations.

D. The Remediation Contractor shall provide to the transporter at the time of transfer appropriate shipping records or uniform waste manifests as required by the federal, state, and local regulations with a copy to the Owner and Owner's Authorized Representative.

E. Remediation Contractor shall maintain proper follow up procedures to assure that waste materials have been received by the designated waste site in a timely manner and in accordance with all federal, state, and local regulations.

F. The Remediation Contractor shall assure that disposal of polychlorinated biphenyls (PCB) containing waste material is at a facility approved to accept such waste and shall provide a tracking/manifest form signed by the landfill's authorized representative.

G. If roll-off containers are to be utilized for containerization of the abatement wastes the following shall apply:

1. All roll-off containers or other similar vessels utilized shall be watertight and lined with 6-mil polyethylene sheeting or equivalent impermeable lining, and equipped with a secured and impermeable cover.
2. The impermeable cover shall remain securely in place at all times when material is not being actively placed in the vessels. The Remediation Contractor shall be responsible for ensuring that the cover remains securely intact until the container is removed from the site.

H. If 55-Gallon barrels are to be utilized for waste containerization, the barrels shall consists of suitable DOT-approved 55-gallon barrels that are watertight and free of corrosion, perforations, punctures, or other damage. All barrels shall be securely covered and sealed at the conclusion of each work day.

I. The waste containers shall remain staged at the site with a secure impermeable cover in place until the materials are transported from the site to be delivered to the designated disposal facility.

J. A waste roll-off and barrel staging area shall be designated prior to initiation of the abatement work, and approved by the Owner's Authorized Representative. If this area is located outside of the building, the area (or areas) shall be surrounded by a chain-link fence with a minimum height of six feet. The fence shall be labeled with a PCB ML marker.

K. Properly containerized waste must be transported by a licensed hauler and shipped as PCB Bulk Product Waste and Bulk PCB Remediation Waste for disposal at a permitted hazardous waste landfill which is an EPA, TSCA approved facility for PCB waste >50 ppm. Provide required copies of the uniform waste manifests for hazardous wastes to the Owner, waste generation State and waste destination State as required.

L. Materials containing <50 ppm will be transported to a non-hazardous solid waste disposal facility, an EPA approved PCB incineration facility. Waste manifests must show chain of custody. Provide required copies of the waste shipment records for wastes to the Owner as required.

M. Any PCB Liquid Water Waste shall be properly containerized and decontaminated in accordance with 40 CFR Part §761.79 (b)(1) or disposed of in accordance with 40 CFR Part §761.60 (a).

N. Any chemicals, solvents or other products used during decontamination shall be properly containerized as PCB Liquid Waste. Waste must be properly decontaminated or disposed in accordance with 40 CFR Part §761.60 (a) or 40 CFR Part §761.79 (g). PCB Liquid Waste shall be transported by a licensed hauler and shipped for treatment or disposal. Provide required copies of the uniform waste manifests for hazardous wastes to the Owner, waste generation State and waste destination State as required.

O. All contaminated waste shall be carefully loaded on trucks or other appropriate vehicles for transport. Before and during transport, care shall be exercised to insure that no unauthorized persons have access to the material.

P. Transporters of the waste are prohibited from "back hauling" any freight after the disposition of the Owner's waste stream until decontamination of the vehicle and/or trailer is assured.

END OF SECTION 02086