RI061373D

DRAFT
TARGETED BROWNFIELDS ASSESSMENT

BALTIC MILLS SITE
SPRAGUE, CONNECTICUT

NON-SUPERFUND
TARGETED BROWNFIELDS ASSESSMENTS

RESPONSE ACTION CONTRACT (RAC), REGION I

For
U.S. Environmental Protection Agency

By
Tetra Tech NUS, Inc.

EPA Contract No. 68-W6-0045
EPA Work Assignment No. 136-SIBZ-0100
TtNUS Project No. GN5266

August 2006

TETRA TECH NUS, INC.

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Arnold N. Ostrofsky
Project Manager

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Program Manager

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1.0 BACKGROUND

At the request of the U.S. Environmental Protection Agency (EPA), Region I, Tetra Tech NUS, Inc. (TtNUS) completed a Non-Superfund Targeted Brownfields Assessments (TBA) at the Baltic Mills Site (the Site) located at 29 Bushnell Hollow Road in the town of Sprague, Connecticut (Figure 1-1). This work is authorized under Work Assignment No. 136-SIBZ-0100, Contract No. 68-W6-0045. This Draft TBA Report presents a summary of the findings of the TBA field investigation, recommendations, and cost estimates for further action.

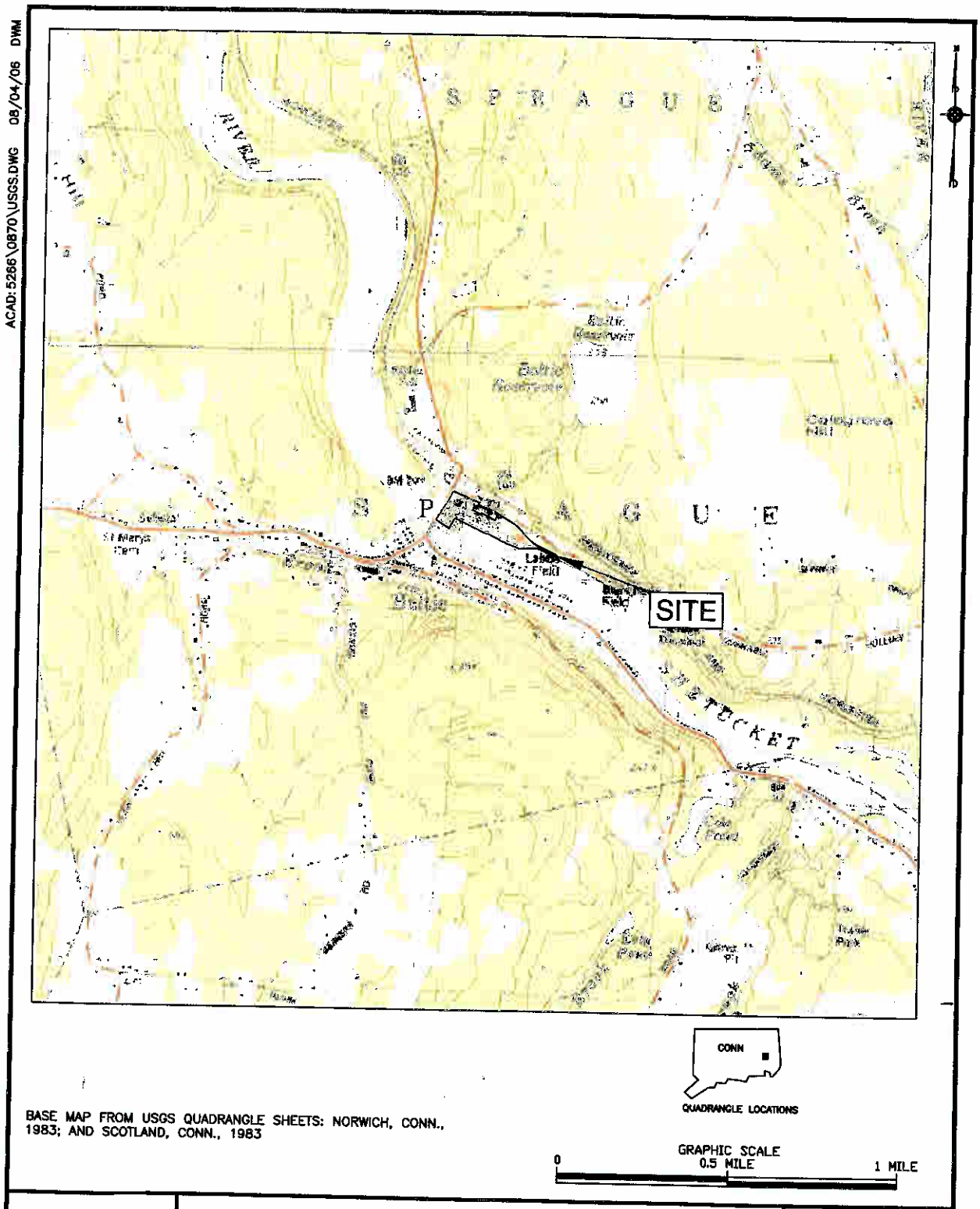
1.1 Report Objectives

The purpose of this TBA was to investigate the Site for the presence of oil and hazardous materials (OHM) in soils and groundwater. This Draft TBA report presents the results of the field investigation and provides recommendations and order-of-magnitude cost estimates for future actions to support the reuse of the Site for commercial development and open space.

1.2 Site Description

The Site is located at 29 Bushnell Hollow Road in the Town of Sprague, Connecticut at 41° 37' 04.8" north latitude and 72° 04' 55.6" west longitude (Figure 1-1). Alternate historic addresses include 2 Scotland Road, 27 Bushnell Hollow Road, and the intersection of Route 138 and Route 97. The parcel of land containing the Site is approximately 16.5 acres in size and is roughly rectangular in shape, with the long axis oriented from northwest to southeast. The Site is currently zoned for general industrial use (Town of Sprague Zone IG 80), and is the former location of a textile mill which was destroyed by fire on August 19, 1999.

The Site is bordered by Route 138 (Bushnell Hollow Road) to the north, Route 97 (Scotland Road) to the west, and the Shetucket River to the south and east (Figure 1-2). Surrounding properties include undeveloped residentially-zoned land to the east; commercial businesses (a construction company, a silk printing/embroidery company, and a former heating oil distribution business) and municipal facilities (Sprague Fire Department and Highway Department garage) to the north; single family residential housing and elderly housing to the west; and an industrial facility (Nutmeg Wire), the Shetucket River and the Village of Baltic (residential and commercial)


ACAD: 5266\0870\USGS.DWG 08/04/06 DWM
SPRAGUE
SITE
CONN
QUADRANGLE LOCATIONS
BASE MAP FROM USGS QUADRANGLE SHEETS: NORWICH, CONN., 1983; AND SCOTLAND, CONN., 1983
GRAPHIC SCALE
0
0.5 MILE
1 MILE
TETRA TECH NUS, INC.
SITE LOCUS
BALTIC MILLS SITE
SPRAGUE, CONNECTICUT
SCALE
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1-1

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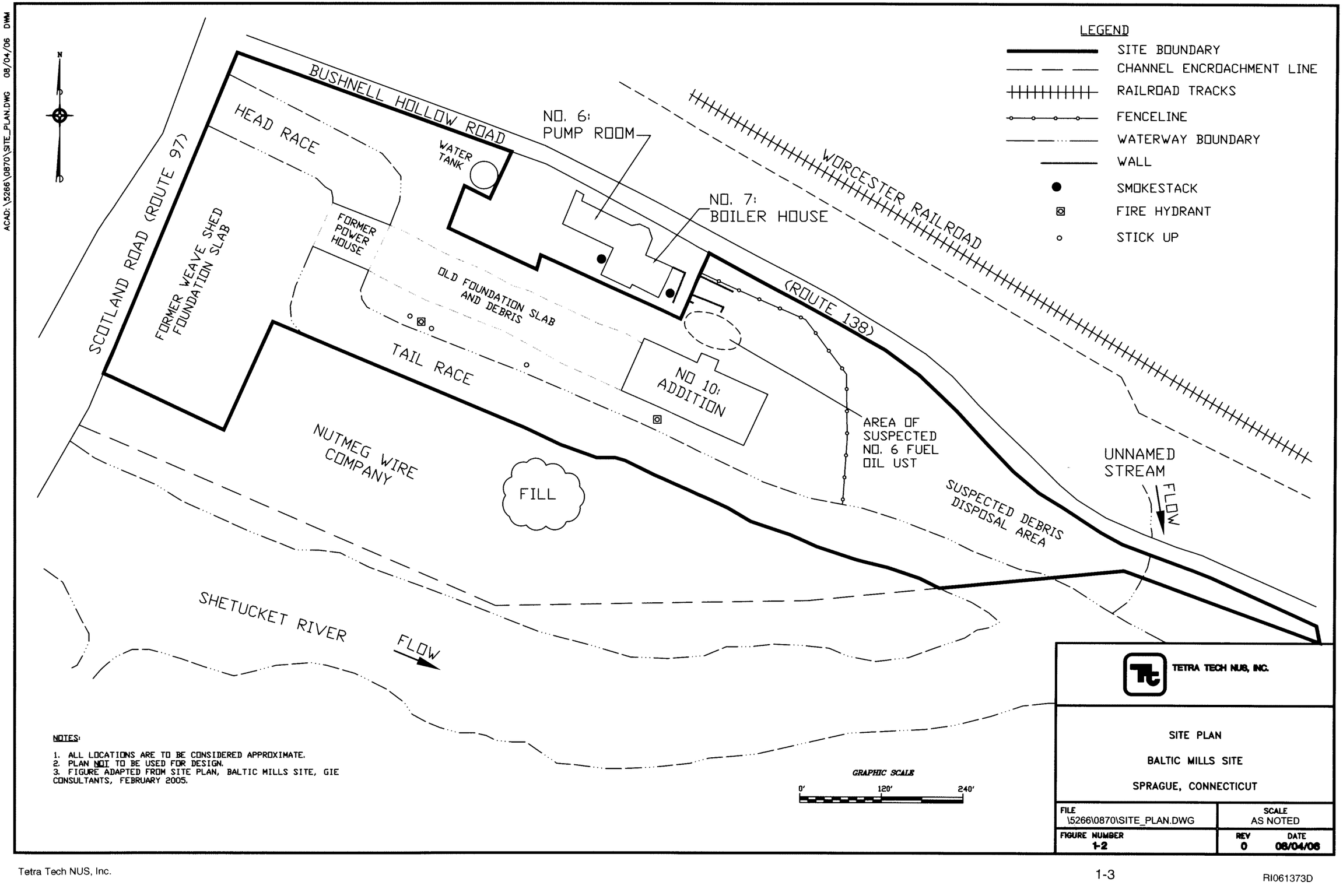

NOTES:

1. ALL LOCATIONS ARE TO BE CONSIDERED APPROXIMATE.
2. PLAN NOT TO BE USED FOR DESIGN.
3. FIGURE ADAPTED FROM SITE PLAN, BALTIC MILLS SITE, GIE CONSULTANTS, FEBRUARY 2005.

TETRA TECH NUS, INC.

SITE PLAN

BALTIC MILLS SITE

SPRAGUE, CONNECTICUT

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FIGURE NUMBER 1-2	REV 0 / DATE 08/04/06

to the south. The water quality of the Shetucket River is rated use class B by CTDEP (CTDEP, 1993).

Reconnaissance photographs taken by GEI Consultants (GEI) in January 2005 show only one structure (Building No. 10, also referred to as the Addition) present on the Site. Building No. 10 is a 3-story 21,000 square foot building. The former mill's boiler house and twin smoke stacks are on an adjacent parcel located to the north of the Site at 27 Bushnell Hollow Road (the 27 Bushnell Hollow Road property is not a subject of this investigation). Foundations of other former mill buildings occupy the western, northwestern, and central portions of the property. The ruins of the former power house/turbine building are present at the head of the tailrace. Piles of mixed stone rubble, brick, and concrete occupy the central portion of the Site. The concrete foundation slab of the former Weave Shed is located in the southwestern corner of the Site. A stone-lined tailrace canal runs through the Site from northwest to southeast.

Groundwater within the Site's property boundary is classified use class GB by CTDEP, however groundwater to the east and south of the site is rated GA (CTDEP, 1993). Public water supply and sewer service are available to the Site from the Sprague Water and Sewer Authority. The Baltic Reservoir, a public water supply, is located 0.5 miles to the north of, and upgradient from, the Site. A public water supply well is located approximately 1/8 mile southwest (cross-gradient) of the Site. Residential dwellings located to the east of the site are supplied by private water wells. These wells are located approximately 1/3 mile downgradient from the site on the opposite side of the Shetucket River.

There is a septic system on the site that formerly discharged to the tailrace canal via an outfall. No information was available regarding the location of this septic system.

1.3 Site Background

Site background information was summarized in the Phase I report prepared for the Town of Sprague by GEI (GEI, 2005). The Site has been used for industrial purposes since 1857, when Amanda and William Sprague constructed a water-powered cotton mill on the Site. Water from the Shetucket River was directed to the mill via a canal which ran through the northern portion of the property. This mill was partially destroyed by a flood in 1876, and was entirely destroyed by fire in 1877. Ponemah Mill, Inc. purchased the property in 1892, and constructed another

textile mill, including a new headrace and tail race, in 1893. The former water canal was filled in during construction. The Baltic Power Company purchased the property in 1894, and operated the textile mill from 1901 until 1967. The building that remains on the Site (Building No. 10) was constructed during the period from 1915 to 1916. Textile manufacturing operations ceased in 1967. Several small boat building operations and a retail hardware store (Baltic Hardware) occupied the mill buildings at the Site through the 1980s and 1990s until the time that it was destroyed by fire in August 1999. The 27 Bushnell Hollow portion of the mill property which contains the boiler house, pump room, and smoke stacks was sold to John McGuire and Linda Cipriani in 1986.

1.4 Previous Site Investigations

TtNUS reviewed a Phase I Environmental Site Assessment (ESA) of the property that was prepared by GEI in February 2005 (GEI, 2005), as well as the After Action Report prepared by EPA for the cleanup of the site after the August 1999 fire.

1.4.1 GEI Phase I Environmental Site Assessment

In 2005, GEI prepared a Phase I ESA report for the Town of Sprague to evaluate the environmental conditions pertaining to the presence of hazardous substances or petroleum products at the Site (GEI, 2005). This report conformed to American Society for Testing Materials (ASTM) requirements and contained a computer database search of federal and state agency environmental records, review of CTDEP records, interviews with knowledgeable persons, site reconnaissance visit, and an asbestos and lead paint inspection of Building No. 10.

1.4.1.1 Database Inquiries and Agency Records Reviews

GEI (2005) assessed the regulatory history of the Site and surrounding properties using a January 2005 Environmental Data Resources, Inc. (EDR) database search of records compiled by the State of Connecticut and EPA (EDR, 2005). GEI also reviewed CTDEP Bureau of Waste Management records, and records of the Town of Sprague Building Department and Health Department pertaining to the Site.

1.4.1.2 Database Search of Surrounding Properties

The search radius used in the EDR data base search conformed to ASTM requirements for a Phase I Environmental Site Assessment. State and federal records reviewed in the database search include existing and proposed National Priority List (NPL) sites, Comprehensive Environmental Response Compensation Liability Information System (CERCLIS) sites, CERCLIS No Further Action Planned (CERC-NFRAP) sites, Resource Conservation Recovery Act (RCRA) sites including; treatment storage and disposal (TSD) sites, Large Quantity (LQG) and Small Quantity (SQG) hazardous waste generators, Facility Index System/Facility Identification Initiative Program Summary Report (FINDS), State Hazardous Waste Sites (SHWS), landfills, PCB Activity Database System (PADS), Emergency Response Notification System (ERNS), Underground Storage Tanks (USTs), and Leaking Underground Storage Tanks (LUSTs).

Table 1-1 summarizes surrounding properties that the database identified as being a potential threat of environmental impairment to the Site. One property (shaded in grey) has had historical releases of oil and/or hazardous material that could potentially impact environmental conditions at the Site.

TABLE 1-1
SURROUNDING PROPERTIES DATABASE RESULTS
DRAFT TARGETED BROWNFIELDS ASSESSMENT
BALTIC MILLS SITE
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Site	Proximity to Site	Database Identification No.	Comments
Abele's	1/4 to 1/2 mile NNW	LUST (S105456483)	Possible threat of contamination given the location relative to the Site.
Sprague Salt Storage	1/8 to 1/4 NW	CT LWDS (N/A)	Not a likely thread of contamination since no reported releases.

Table based on information obtained from GEI Consultants, Inc., Phase I ESA (GEI, 2005)

1.4.1.3 Database Search of the Site

The Site is identified in the database search under the following agency records: CERCLIS, LUST, USTs, State Spills List, and CTDEP Leachate and Wastewater Discharge Sources. CTDEP Resource Conservation and Recovery Act (RCRA) records contained one reference to the Site.

1.4.1.4 CERCLIS

The Baltic Mills Site is listed in CERCLIS due to the Removal Assessment and Removal Action associated with EPA's cleanup activities after the August 1999 fire. EPA site activities included demolition of the main mill and Baltic hardware, segregating, stockpiling, and disposal of ACM, and decontamination and removal of a 550-gallon AST that contained petroleum liquids

The M.S. Chambers Site, located at 132 West Main Street, (approximately ¼ mile to the southwest of the Site) is also a CERCLIS site due to a former waste lagoon. This site is located downgradient from the Baltic Mills Site.

1.4.1.5 RCRA

CTDEP records contained a Generator Summary report for Starwing, Inc. located at 25 Bushnell Hollow Road. This is one of the small boat building companies that occupied the site prior to the 1999 fire. The report documents shipping of 420 gallons of waste acetone from the site for disposal on September 26, 1987.

1.4.1.6 LUST

The Site is listed as a LUST site due to the removal of two 50,000-gallon tanks storing No. 6 fuel oil. These tanks, and associated contaminated soil, were removed from the Site on January 11, 1989. The status is listed as "completed" although there is no record that confirmatory soil samples were collected and analyzed.

1.4.1.7 State Spills Records

Records of spills recorded at the Site by CTDEP include:

- December 1, 1975 – Bevis industries – Water in No. 6 fuel oil tank, tank dewatered and temporary tank installed;
- April 23, 1976 – Bevis industries – Floor drain discharge from boiler room;
- December 21, 1995 – Fire/Runoff/Oil;
- January 7, 1995 – Transformer oil 30 gallons – Non-PCB transformer found and removed;
- August 11, 1999 – Mill Fire – Fly ash/asbestos.

1.4.1.8 Connecticut Property Transfer Act Filings

The Site is considered an "Establishment" under the Connecticut Real Estate Transfer Act. A Form 1 filing (indicating that no release of hazardous waste occurred at the Site) was made on December 23, 1993 when Baltic Mills Development Corp. sold the property to Baltic Mills Viancy, Inc.

1.4.1.9 CTDEP Bureau of Waste Management

The GEI report summarized correspondence reviewed in CTDEP Bureau of Waste Management files. These files contained the following information:

- Correspondence between Eastern Connecticut Management, Inc. and CTDEP regarding the need to remove USTs and contaminated soil;
- Acknowledgement of completion of removal of 50,000-gallon No. 6 fuel oil USTs and associated contaminated soil in 1989;
- Removal and cleanup of a spill of PCB-contaminated oil and transformer from the "transformer site" to PCB concentrations of less than 1 part-per-billion; and
- Re-submission of a hazardous waste manifest for disposal of 395 gallon of flammable liquid from the Site by Baltic Mills Development, Inc.

1.4.1.10 Town of Sprague

Town records pertaining to environmental conditions at the Site were limited to a letter to Eastern Connecticut Management Company regarding the abandoned septic tank and outlet pipe discharging to the tailrace.

1.4.1.11 Recognized Environmental Conditions

The GEI Phase I ESA identified the following nine recognized environmental conditions at the Site (GEI, 2005):

- Two 50,000-gallon, concrete USTs used to store No. 6 fuel oil previously existed on the site adjacent to the east side of the boiler house that is now 27 Bushnell Hollow Road. The tanks were removed in 1989. CTDEP considered the results of soil analysis performed at the time of the AST removal to be suitable for site closure. The analytical results were not available in CTDEP records. Petroleum-contaminated soil may remain at the former UST locations.

- Piles of building rubble and debris which remain on the Site. Some lead-based paint coated solid waste (metal, brick, wood) and asbestos could be mixed in with this debris. GEI recommended that this issue be discussed with the CTDEP and Connecticut Department of Health (CTDOH) to determine if this debris must be disposed of as asbestos containing material (ACM) (GEI, 2005);

- Significant fires that occurred on the Site property in 1877 and 1999 resulted in deposition of partially burned wood and other material that may have contributed to polycyclic aromatic hydrocarbon (PAH) contamination to the Site's soil;

- Coal ash is reported to have been disposed of in the area between the northern side of the tailrace and the former main mill building (Building No. 1). Coal ash is considered a solid waste;

- A former coal gas manufacturing and storage facility operated next to the Site in the northeastern corner of the current Nutmeg Wire property. This facility, which is not part

of the site being investigated under this TBA, produced coal gas for lighting of the mill and perhaps the village of Baltic. This facility produced coal tar, indicating that residual PAH contamination could exist in this area, which is located off the Site. The gas facility is hydraulically isolated from the Site by the tail race canal;

- A former septic system located on the site received sanitary waste and industrial effluent from the mill facility. The system reportedly discharged to the tailrace canal. There is no information on the chemical characterization of these discharges, which could have impacted the area at and downstream of the discharge point. No information was available regarding the specific location of the septic system;

- Several former loading docks were present on the Site that could have been the subject of chemical spills during loading or unloading operation. Residual contamination could exist in the loading dock areas;

- Connecticut Real Estate Transfer Act. The site is considered an "establishment" per Section 22a-134 of the Connecticut General Statutes due to the past quantity of hazardous waste generation. Future "transfers" of property may be subject to the Transfer Act (Section 22a-134). An exemption to the Transfer Act may exist for transfers to a municipality or urban rehabilitation agency. Legal counsel should be consulted regarding the applicability of the "Transfer Act".

Window glazing and roof material collected from the Site was determined to be ACM. Lead-based paint was detected on all painted surfaces screened with an XRF. Waste generated during building demolition or renovation will require handling and disposal in accordance with CTDEP, CTDOH, and federal Occupational Safety and Health Administration (OSHA) requirements.

1.4.2 EPA Removal Program after Action Report for the Baltic Mill Site, Baltic, New London County, Connecticut September 29, 2000 through May 29, 2001.

The EPA After Action Report (Weston, 2001) summarizes the actions taken and resources committed during the cleanup of the Site that was performed by EPA after the August 1999 fire. The scope of work included demolition of the mill buildings and removal of debris, drums, and

other containers from Baltic Hardware which were partially destroyed by the fire. Mobilization began on December 11, 2000. Demolition of the mill buildings, and removal of asbestos, and loading out of ACM and debris was completed on April 27, 2001. Two 55-gallon drums of mixed petroleum waste were transported from Baltic Hardware on May 7, 2001. The removal action was completed on May 29, 2001. The estimated cost for the removal action was $1,834, 400 (Weston, 2001).

1.5 Areas of Known or Suspected Contamination

Areas of known or suspected contamination investigated by TtNUS as part of this TBA included:

- Former 50,000-gallon UST area located east of the boiler house;
- Solid waste disposal area located in the eastern portion of the Site;
- Suspected coal ash disposal area located between the north wall of the tailrace and the former location of the mill buildings;
- Former Weave Shed area located adjacent to Scotland Road;
- Investigation of the debris piles for the presence of asbestos; and
- Asbestos and lead-based paint inspection of Building No. 10.

1.6 Overview of TBA Activities

The purpose of the TBA is to determine the nature and extent of OHM at the Site. This Draft TBA report presents the results of the field investigation performed by TtNUS in March 2006 and provides recommendations and order-of-magnitude cost estimates for future site re-use.

2.0 FIELD INVESTIGATIONS

This section provides a summary of the field investigations performed by TtNUS as part of this TBA. Field investigations were performed during the period from March 13 to 14 and March 23 to March 24, 2006. The purpose of the March 2006 field investigations was to determine the presence of OHM in soils and groundwater at the Site. The field investigation was performed in accordance with the EPA-approved Revision 1.0, Sampling and Analysis Plan (SAP) for the Site, dated February 2006.

2.1 Asbestos, Lead-Based Paint, and Contaminated Building Materials Survey

TtNUS contracted EnviroScience Consultants, Inc., (EnviroScience) an asbestos and lead-based paint consulting firm certified in the State of Connecticut, to survey all safely accessible areas of mill buildings (safely accessible areas included areas that were not confined spaces, did not require wearing fall protection equipment, and which were not structurally deficient), for the presence and quantity of ACM, lead-based paint coated building materials, contaminated building materials, and hazardous materials-containing electrical equipment and lighting fixtures.

2.1.1 Asbestos Inspection

During the asbestos inspection, suspect asbestos containing materials were separated into the three categories defined by EPA guidance documents and Asbestos Hazardous Emergency Response Act (AHERA) regulation 40 CFR Part 763.85. The AHERA regulation serves as the industry standards for conducting asbestos inspections, sampling protocols and analysis of asbestos bulk samples. These categories include thermal system insulation (TSI), surfacing ACM, and miscellaneous ACM. TSI includes all materials used to prevent heat loss, heat gain, or water condensation on mechanical systems. Examples of TSI include but are not limited to pipe insulation, boiler insulation, duct insulation, and mudded insulation on pipe fittings. Surfacing ACM includes all ACM that is sprayed, toweled, 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 sheet flooring, vinyl asbestos flooring, ceiling tiles, and roofing materials.

The above-referenced AHERA regulation specifies asbestos sampling methods and details the collection of a minimum of samples for each of the three material categories. Suspect materials were first visually identified and separated into groups of homogenous building materials. Each homogenous set of building materials suspected of containing asbestos was sampled. Sampling involved collecting a cross section of the materials to the base substrate. The subcontractor collected samples of suspected ACM for analysis by Polarized Light Microscopy (PLM) with point counting (as necessary for confirmation of asbestos content).

2.1.2 Lead-Based Paint Screening

Representative interior and exterior painted surfaces were screened for the presence of lead-based paint using an X-Ray Fluorescence (XRF) Analyzer to identify building components that may impact demolition work or material salvage efforts at the site. The Department of Labor's OSHA regulations (29 CFR 1926.62), require action if lead in any amount is disturbed during demolition and construction activities.

2.1.3 TCLP Sampling for Lead Waste

On March 13, 2006, EnviroScience collected representative samples of building components from the Site for toxicity characteristic leaching procedure (TCLP) analysis of lead. Individual samples of collected components were combined in the approximate volume ratio as they occurred on-site. The combined sample was submitted for laboratory analysis.

2.1.4 PCB-Containing Fluorescent Ballasts and Mercury-Containing Lamps

On March 13, 2006, EnviroScience performed a visual inspection of representative fluorescent light fixtures to identify possible PCB-containing ballasts and performed an inventory of mercury lamps, thermostats, and mercury switches. 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.

2.2 Soil Sampling Hollow-Stem Auger (HSA)

During the March 2006 field investigation, TtNUS advanced six soil borings (SB1 through SB6) using HSA drilling methods to approximately 16 to 24 feet below ground surface (bgs). Five soil borings (SB1 through SB5) were completed as 2-inch interior diameter (I.D.) monitoring wells (MW1 through MW5, respectively). Well screen placement relative to the water table varied throughout the Site due to differing depths at which refusal was encountered during drilling. Several attempts were made to install a monitoring well at boring location SB6. However this location was abandoned after refusal was repeatedly encountered prior to reaching the water table. Borings at this location were backfilled using native soil.

2.2.1 Subsurface Soil Sampling

During the March 2006 investigation soil samples were collected from six soil borings (SB1 through SB6) at continuous 2-foot depth intervals from the ground surface to the groundwater table (encountered at approximately 14 to 16 feet bgs) or to refusal, whichever was encountered first, using a 2-foot long 2.0-inch I.D. split-barrel sampler. Two-foot intervals were sampled below the water table for soil classification purposes only. Immediately upon collection, each soil sample was field-screened for organic vapors using the Massachusetts Department of Environmental Protection (MADEP) Jar Headspace Technique (MADEP Policy WSC-97).

Physical characteristics of all soil samples were described using the Universal Soil Classification System (USCS) and recorded on Boring Log sheets together with jar headspace readings. Boring Logs are contained in Appendix A.

Two soil samples each from soil borings SB1 through SB6, were submitted for laboratory analysis. The soil samples were selected for laboratory analysis based on jar headspace readings or, in the absence of positive headspace readings, visual/olfactory evidence of contamination. If no visual/olfactory evidence of contamination was noted, the sample intersecting the groundwater table was selected for laboratory analysis.

The selected soil samples were submitted to the laboratory for the following analyses:

- Volatile organic compounds (VOCs),

- Extractable total petroleum hydrocarbons (ETPH),
- Semi-volatile organic compounds (SVOCs),
- Pesticides/polychlorinated biphenyls (PCBs),
- Total metals,
- Synthetic precipitation leaching procedure (SPLP) metals and PCBs
- Total cyanide, and
- pH

A total of thirteen soil samples were analyzed for these constituents (including one field duplicate). Chain-of-Custody Forms are contained in Appendix B.

2.2.2 Monitoring Well Construction and Development

As part of the March 2006 field investigation, soil borings SB1 through SB5 were completed as monitoring wells MW1 through MW5, respectively. Monitoring wells were constructed of 2-inch I.D. Schedule 40 polyvinyl chloride (PVC) pipe. Well screens were 10-feet in length, with a slot size of 0.010-inch. All well screens were fitted with a PVC end plug. Initial determination of the depth to groundwater was made by visual observation of soil moisture content in the split-spoon samples recovered from the soil borings.

A sand filter pack was placed in each borehole to a depth of approximately 2 feet above the top of the well screen. A 2-foot thick bentonite seal was placed above the filter pack. Clean sand was used to backfill the borehole around the riser pipe. MW1 was completed as a flush-mount well with an 8-inch diameter road box and 1-foot diameter concrete surface seal. MW2 through MW5 were completed as above-ground wells with approximately 3-foot tall steel protective casings surrounded by 1-foot diameter concrete surface seals. Well risers were fitted with lockable expandable well caps. Details pertaining to well construction for each monitoring well are documented on the monitoring well construction log sheets contained in Appendix A.

After installation, each well was developed by pumping until visually clear per the SAP. Well development data sheets are contained in Appendix A.

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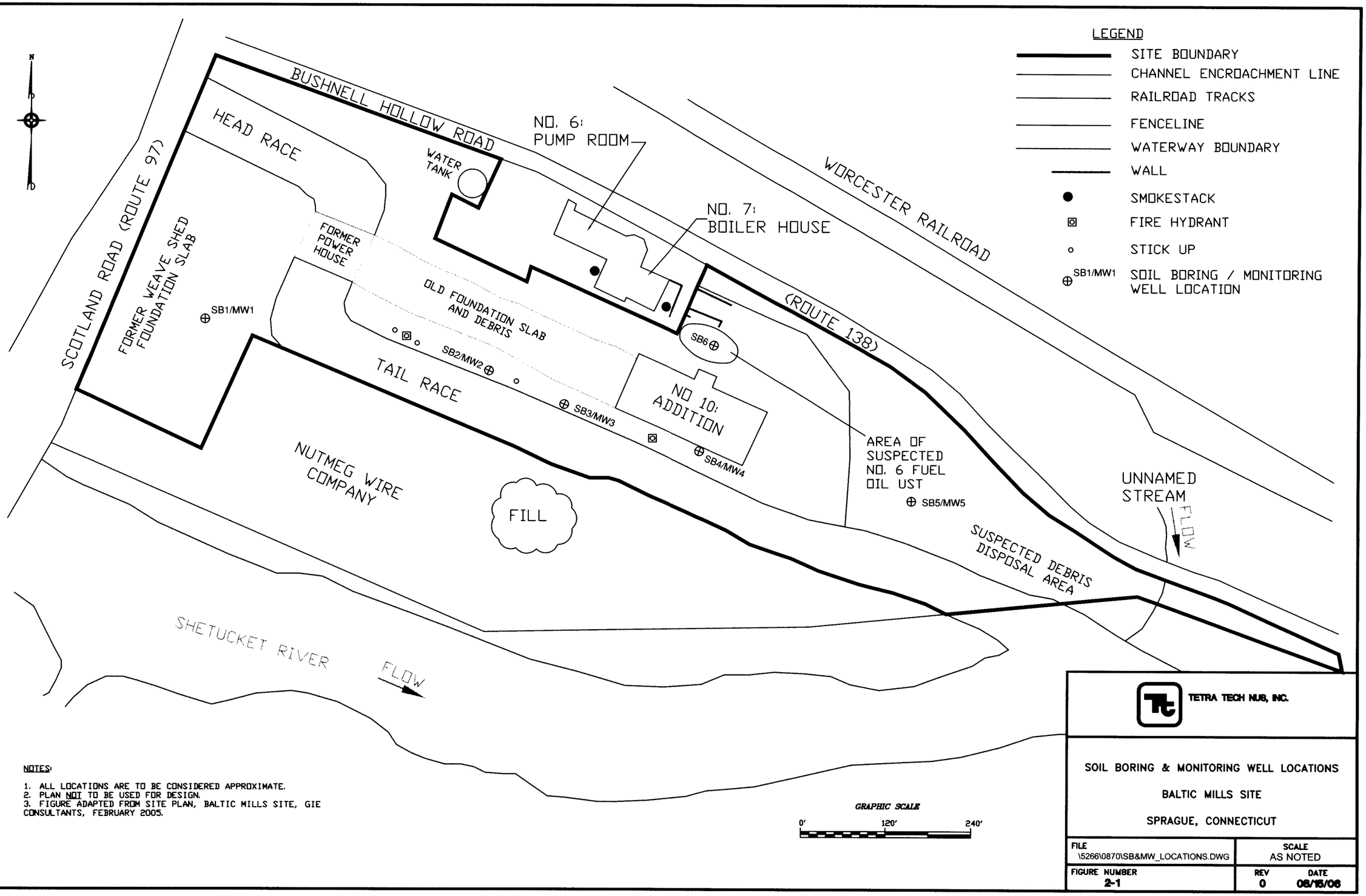


NOTES:

1. ALL LOCATIONS ARE TO BE CONSIDERED APPROXIMATE.
2. PLAN NOT TO BE USED FOR DESIGN.
3. FIGURE ADAPTED FROM SITE PLAN, BALTIC MILLS SITE, GIE CONSULTANTS, FEBRUARY 2005.

TETRA TECH NUS, INC.

SOIL BORING & MONITORING WELL LOCATIONS

BALTIC MILLS SITE

SPRAGUE, CONNECTICUT

FILE	SCALE
\5266\0870\SB&MW_LOCATIONS.DWG	AS NOTED
FIGURE NUMBER 2-1	REV 0 / DATE 08/15/06

2.3 Measurement of Surface and Groundwater Elevations

Depth to groundwater was measured at each monitoring well during the March 2006 field investigation. Groundwater measurements were made prior to beginning groundwater sample collection. Groundwater elevations were calculated using an assumed elevation benchmark of 100 feet.

2.4 Collection of Groundwater Samples

During the March 2006 field investigation, groundwater samples were collected from each of the five newly installed monitoring wells in accordance with the procedure outlined in EPA's Low Stress ("low flow") Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells (EPA SOP No. GW 001).

The well purge water was containerized in a 55-gallon drum and staged on the Site pending waste characterization analysis. Groundwater samples were picked up at the site by a laboratory representative for transportation to the lab for analysis of VOCs, SVOCs, metals, cyanide, pesticides/PCBs, and ETPH. Low Flow Groundwater Sample Log Sheets are contained in Appendix A. Chain of Custody Forms are contained in Appendix B.

2.5 Survey of Site Features

Horizontal locations of soil borings and monitoring wells were determined using Global Positioning System (GPS) survey equipment during the March 2006 field investigation. Relative elevations of monitoring wells were determined to the nearest 0.01-foot by traditional survey techniques using an arbitrary on-site elevation benchmark of 100 feet.

3.0 APPLICABLE REGULATORY STANDARDS

The CTDEP has developed risk-based numerical criteria for the remediation of polluted soil and groundwater. These criteria were promulgated in the CTDEP Remediation Standard Regulations (RSRs) (CTDEP, January 1996) and in the most recent revision of the Comprehensive List of Approved Additional Polluting Substances Criteria and Alternate Criteria list of Additional Polluting Substances (CTDEP, October 24, 2005). These criteria are numerical threshold concentrations for selected environmental contaminants (termed "polluting substances") below which soil and groundwater are considered sufficiently remediated to be protective of human health and the environment.

3.1 RSR Soil Criteria

Criteria for soils are segregated into two major categories. Direct Exposure Criteria (DEC) were developed for direct exposure to soils and have been subdivided into criteria specific for residential and industrial/commercial (I/C) site activities and uses (RDEC and I/CDEC, respectively). Pollutant Mobility Criteria (PMC) were developed to protect groundwater from substances leaching from contaminated soil and have been subdivided into criteria for GAA/GA and GB groundwater areas (GA/GAA PMC and GB PMC, respectively).

The DECs apply to accessible soil when the contaminant is a substance other than PCB. The RSRs consider inaccessible soil to be at a depth of more than 4 feet bgs if unpaved, or more than 2 feet bgs if paved with 3 or more inches of bituminous concrete or concrete. Environmentally isolated soil is that soil located beneath an existing building or other permanent structure. If soil is inaccessible or environmentally isolated due to being beneath pavement or a structure, then an Environmental Land Use Restriction (ELUR) is required to maintain the pavement, building, other structure or any conditions that maintains the soil's inaccessibility or environmental isolation.

3.2 RSR Groundwater Criteria

Criteria for groundwater are segregated into three major categories. Groundwater Protection Criteria (GPC) have been developed for GAA, and GA groundwater. Surface Water Protection Criteria (SWPC) have been developed for discharges of contaminated groundwater plumes into

surface water bodies (including rivers, lakes, ponds, streams, intermittent streams, and wetlands). Volatilization Criteria (VC) have been developed for migration of VOC vapors from contaminated groundwater into overlying buildings. The VC has been subdivided into criteria specific to residential (RVC) and industrial/commercial (I/CVC) site activities. Sites that are remediated to meet the I/CVC criteria require an ELUR that restricts the property to commercial or industrial uses.

3.3 Regulatory Criteria Applicable to the Site

The former use of the site, and its zoning designation is for industrial/ commercial use and the I/C DEC and VC soil and groundwater criteria would normally apply to soil and groundwater contamination. However, the intended future use of the Site may include open space/ recreational use. Therefore, the purpose of this BTSA investigation is to determine if the R-DEC meet the accessible soils (0-to 4-feet bgs in unpaved areas) due to the potential for children to visit the Site. Since groundwater in the vicinity of the Site has been rated use class GB, the GA/GAA PMC are not applicable to soils. Groundwater criteria applicable to the Site include the SWPC and the RVC. Positive detections for OHM in groundwater were also compared to the GA/GAA GPC.

Alternate criteria for soil DEC and PMC and groundwater VC can be developed subject to CTDEP approval. Exemptions from VC may be obtained for parcels where no building is constructed or if CTDEP-approved indoor air monitoring program and volatile substance control measures have been implemented at a building on the parcel.

Exemption from groundwater protection criteria may be approved by CTDEP if it is technically impractical to remediate polluting substances to background or if compliance with the applicable criteria is technically impracticable as determined using the *Guidance for Evaluating the Technical Impracticality of Groundwater Restoration* USEPA Directive No. 9234.2-25 issued September 1993 (USEPA, September 1993). The presence of dense non-aqueous phase liquids (DNAPL) at a site can often render groundwater restoration technically impracticable.

4.0 FIELD INVESTIGATION RESULTS

This section presents the results of the field investigations described in Section 2.0, and provides a comparison of soil and groundwater sample laboratory analytical results to the site-applicable regulatory standards discussed in Section 3.0.

4.1 Analytical Data Validation and Verification Methods

A modified Tier II validation was performed on laboratory analytical data for soil and groundwater samples. Data validation procedures included checking chain-of-custody records for accuracy and completeness of sampling, shipping, analysis, and reporting. The results of the data validation indicated that all analytical results met validation criteria and are useable for the purposes of this TBA. The Chain-of-Custody Forms and analytical data summaries are contained in Appendix B.

4.2 Site Geology and Hydrogeology

This section discusses information on Site geology and hydrogeology that was obtained during the TBA investigation.

4.2.1 Site Geology

This section discusses site geological conditions determined from review of published information and field observations.

4.2.1.1 Bedrock Geology

According to the 1961 *USGS Map of the Bedrock Geology of the Norwich Quadrangle, Connecticut*, the underlying bedrock unit at the Site is the Putnam Gneiss (USGS, 1961). The Putnam Gneiss is described as medium-grained quartz-calcic olgioclase-biotite-muscovite schist (GEI, 2005). No subsurface investigations at the Site have been conducted, so more details on the subsurface geology is not available.

4.2.1.2 Surficial Geology

According to the 1962 *USGS Map of the Surficial Geology of the Norwich Quadrangle, Connecticut*, the surficial geology of the site consists of alluvium and stratified glacial drift (USGS, 1962). Alluvium is described as gravel, sand and silt along streams. Stratified drift is boulders, gravel sand and silt (GEI, 2005). The existing surficial material at the Site has been extensively modified by fill operations that were conducted during the history of the Site.

4.2.1.3 Field Observations

Inspection of soil samples collected from the Site during the TBA investigation indicated that majority of the subsurface soil was a brown fine to medium-grained sand with trace to some silt and grey clay. Rock and brick fragments were noted in the soil sample collected at SB2 from 2 to 4-feet bgs, as well as purple coarse-grained sand particles from 16 to 18-feet bgs. Coal fragments were noted in soil boring SB3 from 0 to 2-feet bgs, and brick fragments were noted from 6 to 8-feet bgs. Purple coarse-grained sand particles were noted in soil boring SB4 from 16 to 18-feet bgs. Soil boring logs are contained in Appendix A. Soil boring locations are depicted on Figure 2-1.

Jar headspace field-screening using a photoionization detector (PID) indicated low concentrations of organic vapors (0.5 to 35.5 parts per million volume [ppmv]) in the soil samples collected from borings SB1, SB5, and SB6. Jar headspace field-screening of soil samples collected from borings SB2 and SB3 detected low to moderate concentrations (1.7 to 128 ppmv) of organic vapors, whereas low to high concentrations (0 to >3000 ppmv) were detected in samples collected from boring SB4. Headspace screening results of soil samples are listed on the boring logs in Appendix A, and are summarized in Table 4-1.

4.2.2 Site Hydrogeology

Groundwater flow is assumed to follow topography in a southerly direction towards the Shetucket River (GEI, 2005). The groundwater flow however, can be influenced by local infrastructure development including paved areas, subsurface drainage and sanitary sewers, the placement of fill, and the existence of utility trenches.

TABLE 4-1
SUMMARY OF ORGANIC VAPORS DETECTED BY JAR HEADSPACE SCREENING
DRAFT TARGETED BROWNFIELDS ASSESSMENT
BALTIC MILLS SITE
SPRAGUE, CONNECTICUT

Organic Vapor Concentration (ppmv)						
Depth (bgs)	**Boring SB01**	**Boring SB02**	**Boring SB03**	**Boring SB04**	**Boring SB05**	**Boring SB06**
0-2	0	1.7	70.1	0	0	6.5
2-4	0	0.6	91.1	0	0	0.2
4-6	0	117	54.9	NR	0	0
6-8	0	115	53.6	0	0	0.2
8-10	0	110	NR	0	0	0
10-12	0	NR	47.9	0	0	0
12-14	0	84.2	36.9	0	0	0
14-16	0	121	66.8	85.3	0	35.5
16-18	0	98.2	81.7	78.3	0	EOB
18-20	NA	128	87.6	>999	0	
20-22	0	52.9	82.4	>3000	0.5	
22-24	EOB	84.2	57.7	>2400	0	
24-26		EOB	EOB	EOB	EOB	

Notes:

bgs – below ground surface
ppmv – parts per million by volume
NA – Not Applicable (soil saturated)
NR - No Recovery
NC - Not Collected (due to weather conditions, equipment malfunction, etc.)
EOB - End of Boring

Depths to groundwater measured in the five on-site monitoring wells (MW01 through MW05) on April 12, 2006 ranged from 16.72 feet bgs at MW01 to 25.71 feet bgs at MW05. Corresponding elevations of groundwater measured from an arbitrary datum of 100 feet ranged from 81.07 feet at MW03 to 83.28 feet at MW01 (SEE Figure 4-1). Table 4-2 contains a summary of the measured groundwater depths and their associated elevations. Based on limited onsite groundwater elevations, the general direction of groundwater flow was determined to be to the south, toward the Shetucket River.

4.3 Soil Sample Analytical Results

Soil samples collected from borings SB1 through SB6 were analyzed for VOCs, SVOCs, pesticides, PCBs, total metals, total cyanide, SPLP-metals, SPLP-PCBs, and pH. In addition, each soil sample was analyzed for ETPH via the TPH or ETPH analysis method. Analytical results reported the presence of VOCs, SVOCs, polycyclic aromatic hydrocarbons (PAH) compounds, pesticides, ETPH, phthalate compounds, total metals, and SPLP leachable metals. A summary of soil analytical results is presented in Table 4-3. OHM compounds detected in soil samples at concentrations exceeding applicable regulatory criteria are summarized in Sections 4.3.1, 4.3.2, and 4.3.3. Soil boring locations are depicted on Figure 2-1.

4.3.1 OHM Compounds Exceeding CTDEP Residential Direct Exposure Criteria

This section summarizes OHM compounds at concentrations exceeding CTDEP RDEC. These compounds include PAHs, ETPH, arsenic, and lead. See Table 4-3.

4.3.1.1 Semivolatile Organic Compounds

- Benzo(a)anthracene, in the soil samples collected from boring SB3 at the 2-to 4-foot bgs depth interval and boring SB6 at the 0-to 2-foot bgs depth interval exceeded the 1000 µg/Kg CTDEP-RDEC criterion.

- Benzo(a)pyrene, in the soil samples collected from boring SB3 at the 2-to 4-foot bgs depth interval and boring SB6 at the 0-to 2-foot and 14-to 16-foot bgs depth intervals exceeded the 1000 µg/Kg CTDEP-RDEC criterion.

TABLE 4-2
GROUNDWATER ELEVATION SUMMARY
DRAFT TARGETED BROWNFIELDS ASSESSMENT
BALTIC MILLS SITE
SPRAGUE, CONNECTICUT

Well ID	Depth to Groundwater (feet bgs)	Elevation of PVC Casing (feet)	Elevation of Water Table (feet)	Total Depth of Monitoring Well (feet)	Screened Interval of Monitoring Well (feet)
MW1	16.72	100.00	83.28	22.0	12-22
MW2	19.95	101.04	81.09	24.0	14-24
MW3	18.67	99.74	81.07	24.0	14-24
MW4	18.70	99.78	81.08	24.0	14-24
MW5	25.71	107.20	81.49	25.5	15.5-25.5

Notes:

1. Groundwater elevations measured from top of PVC casing
2. Elevations referenced to an arbitrary on-site benchmark

TABLE 4-3
SOIL ANALYTICAL DATA
DRAFT TARGETED BROWNFIELDS ASSESSMENT
BALTIC MILLS SITE
SPRAGUE, CONNECTICUT

Sample Number					BM-SO-SB01-0002	BM-SO-SB01-1416	BM-SO-SB2-0002	BM-SO-SB3-0204	BM-SO-SB3-0608	BM-SO-SB2-1416	BM-SO-SB4-0002	BM-SO-SB4-1214	BM-SO-SB05-0002	BM-SO-SB05-2022	BM-SO-SB06-0002	BM-SO-DUP01-03142006	BM-SO-SB06-1416
Sample Location					SB1	SB1	SB2	SB3	SB3	SB3	SB4	SB4	SB5	SB5	SB6	SB6	SB6
Date Sampled					3/13/2006	3/13/2006	3/23/2006	3/24/2006	3/24/2006	3/24/2006	3/24/2006	3/24/2006	3/13/2006	3/13/2006	3/14/2006	3/14/2006	3/14/2006
Interval					0.0-2.0	14.0-16.0	0.0-2.0	2.0-4.0	6.0-8.0	14.0-16.0	0.0-2.0	12.0-14.0	0.0-2.0	20.0-22.0	0.0-2.0	0.0-2.0	14.0-16.0
QC Identifier	I/C DEC	R-DEC	GA PMC	GB PMC	None	None	None	None	None	None	None	None	None	None	Field Dup. BM-SO-SB06-0002	Field Dup. BM-SO-SB06-0002	None
Volatile Organic Analysis (UG/KG)																	
Benzene	200000	21000	20	200	9 U	8 U	5 U	5 U	7 U	6 U	6 U	6 U	9 U	7 U	8 U	7 U	2 J
Carbon Disulfide	1000000	500000	NC	140000	9 U	8 U	5 U	5 U	7 U	6 U	6 U	6 U	9 U	7 U	8 U	7 U	3 J
Chlorobenzene	1000000	500000	2000	20000	9 U	8 U	5 U	5 U	7 U	6 U	6 UJ	6 U	9 U	7 U	8 U	7 U	3 J
Cyclohexane	1000000	NC	NC	400	9 U	8 U	5 U	5 U	7 U	6 U	6 U	6 U	9 U	7 U	8 U	7 U	84
Isopropylbenzene	1000000	500000	600	132000	9 U	8 U	5 U	5 U	7 U	6 U	6 U	6 U	9 U	7 U	8 U	7 U	27
Methylcyclohexane	NC	NC	NC	NC	9 U	8 U	5 U	5 U	7 U	6 U	6 U	6 U	9 U	7 U	8 U	7 U	510 *
Semivolatile Organic Analysis (UG/KG)																	
1,1'-Biphenyl	NC	NC	NC	NC	340 U	400 U	360 U	110 J	360 U	360 U	360 U	350 U	370 U	420 U	360 U	370 U	3800 U
2-Methylnaphthalene	2500000	474000	NC	9800	340 U	400 U	360 U	330 J	50 J	360 U	360 U	350 U	370 U	420 U	360 U	62 J	3800 U
4-Methylphenol	2500000	340000	NC	7000	340 U	400 U	360 U	74 J	360 U	360 U	360 U	350 U	370 U	420 U	360 U	370 U	3800 U
Acenaphthene	2500000	1000000	NC	84000	340 U	400 U	360 U	400	40 J	360 U	360 U	350 U	370 U	420 U	39 J	280 J	3800 U
Acenaphthylene	2500000	1000000	8400	84000	340 U	400 U	360 U	1000	85 J	360 U	360 U	350 U	370 U	420 U	120 J	100 J	3800 U
Acetophenone	NC	NC	NC	NC	340 U	400 U	360 U	47 J	360 U	360 U	360 U	350 U	370 U	420 U	360 U	370 U	3800 U
Anthracene	2500000	1000000	40000	400000	340 U	400 U	360 U	12000 *	400	360 U	73 J	350 U	370 U	420 U	210 J	630 J	3800 U
Benzo(a)anthracene	7800	**1000**	*1000*	1000	340 U	400 U	95 J	***16000*** *	900	360 U	170 J	350 U	52 J	420 U	**1000** J	***2100*** J	490 J
Benzo(a)pyrene	1000	**1000**	*1000*	1000	340 U	400 U	85 J	***10000*** *	670	360 U	150 J	350 U	50 J	420 U	***1100*** J	***1700***	***1100*** J
Benzo(b)fluoranthene	7800	**1000**	*1000*	1000	340 U	400 U	140 J	***14000*** *J	800	360 U	210 J	350 U	58 J	420 U	***1500*** J	***2200***	450 J
Benzo(g,h,i)perylene	2500000	1000000	NC	42000	340 U	400 U	48 J	2400 *	180 J	360 U	66 J	350 U	370 U	420 U	730 J	1100	630 J
Benzo(k)fluoranthene	78000	8400	*1000*	1000	340 U	400 U	53 J	*6400* *	460	360 U	77 J	350 U	370 U	420 U	420 J	820 J	3800 U
bis(2-Ethylhexyl)phthalate	410000	44000	*1000*	11000	340 U	400 U	120 J	*1000* J	71 J	37 J	57 J	350 UJ	450 U	420 U	360 U	370 U	3800 UJ
Carbazole	290000	31000	*1000*	1000	340 U	400 U	360 U	*3400* *	130 J	360 U	360 U	350 U	370 U	420 U	150 J	360 J	3800 U
Chrysene	780000	84000	*1000*	1000	340 U	400 U	140 J	*14000* *	900	360 U	200 J	350 U	57 J	420 U	1100 J	2000 J	1200 J
Dibenzo(a,h)anthracene	780	**840**	*1000*	1000	340 U	400 U	360 U	***1700*** J	79 J	360 U	360 U	350 U	370 U	420 U	210 J	360 J	3800 U
Dibenzofuran	2500000	270000	NC	5600	340 U	400 U	360 U	2200	110 J	360 U	360 U	350 U	370 U	420 U	360 U	130 J	3800 U
Di-n-Butylphthalate	2500000	1000000	14000	140000	340 U	400 U	360 U	360 U	360 U	360 U	360 U	350 U	370 U	420 U	360 U	120 J	3800 U
Fluoranthene	2500000	1000000	*5600*	56000	340 U	400 U	220 J	*38000* *	1800	360 U	360 J	350 U	63 J	420 U	2000	2600 *	600 J
Fluorene	2500000	1000000	5600	56000	340 U	400 U	360 U	1900	120 J	360 U	360 U	350 U	370 U	420 U	360 U	200 J	3800 U
Indeno(1,2,3-cd)pyrene	7800	**840**	*1000*	1000	340 U	400 U	51 J	***3000*** *	200 J	360 U	73 J	350 U	370 U	420 U	640 J	***900***	3800 U
Naphthalene	2500000	1000000	5600	56000	340 U	400 U	360 U	240 J	51 J	360 U	360 U	350 U	370 U	420 U	360 U	150 J	3800 U
Phenanthrene	2500000	1000000	*4000*	40000	340 U	400 U	150 J	*44000* *	1500	360 U	260 J	350 U	41 J	420 U	710 J	2700 *J	710 J
Phenol	2500000	1000000	80000	800000	340 U	400 U	360 U	56 J	360 U	360 U	360 U	350 U	370 U	420 U	360 U	370 U	3800 U
Pyrene	2500000	1000000	*4000*	40000	340 U	400 U	190 J	*28000* *	1500	360 U	330 J	350 U	73 J	420 U	2700	3600 *J	1800 J
Pesticide/PCB Analysis (UG/KG)																	
4,4'-DDD	24000	2600	NC	29	3.4 U	4.0 U	3.7 U	7.0 J	3.6 U	3.6 U	3.6 U	3.5 U	3.7 U	4.1 U	3.7 U	3.7 U	3.8 U
4,4'-DDE	17000	1800	NC	21	3.4 U	4.0 U	55 UJ	48 UJ	4.0 J	3.6 U	13 UJ	3.5 U	32 UJ	4.1 U	3.7 U	3.7 U	3.8 U
alpha-Chlordane	2200	490	NC	66	1.7 U	2.1 U	2.3 UJ	1.9 U	1.9 U	1.9 U	1.9 U	1.8 U	38 *J	6.0 J	1.9 U	1.9 U	1.9 U
Endrin	610000	20000	NC	NC	3.4 U	4.0 U	3.7 U	3.6 U	3.6 U	3.6 U	3.6 U	3.3 J	3.7 U	4.1 U	3.7 U	3.7 U	3.8 U
Endrin Aldehyde	610000	20000	NC	NC	3.4 U	4.0 U	3.7 U	5.2 J	3.6 U	3.6 U	3.6 U	3.5 U	4.1	3.6 J	3.7 U	3.7 U	3.8 U
Endrin Ketone	610000	20000	NC	NC	3.4 U	4.0 U	3.7 U	90 UJ	10 UJ	3.6 U	1.9 J	3.5 U	7.6 UJ	9.2 UJ	3.7 U	3.7 U	3.8 U
gamma-Chlordane	2200	490	NC	66	1.7 U	2.1 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.8 U	30 J	4.1 J	1.9 U	1.9 U	1.9 U
Heptachlor Epoxide	630	67	NC	20	1.7 U	2.1 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.8 U	2.4	2.1 U	1.9 U	1.9 U	1.9 U
Methoxychlor	10000000	340000	NC	8000	17 U	21 U	19 U	97 J	19 U	19 U	19 U	18 U	19 U	21 U	19 U	19 U	19 U

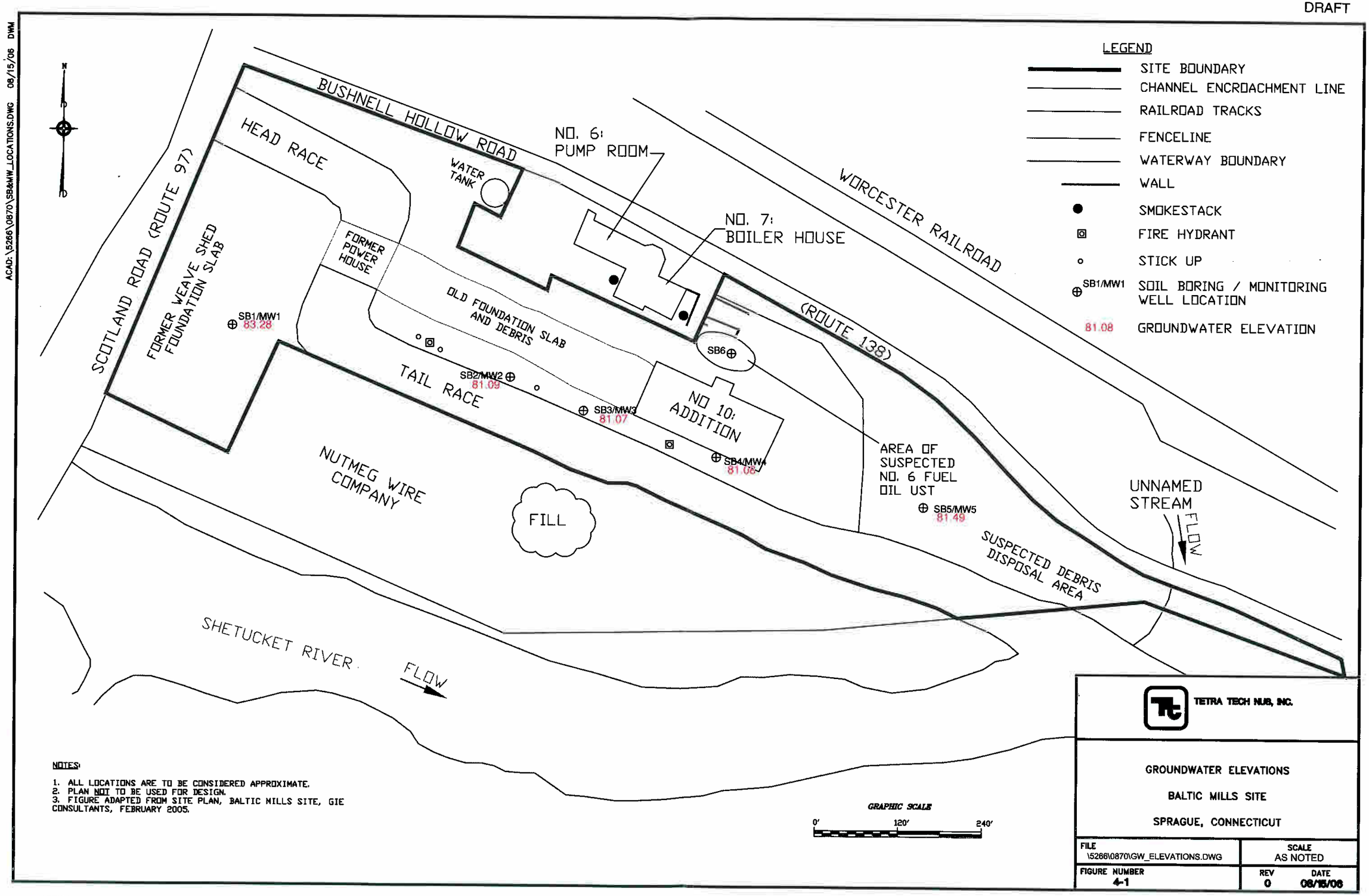
U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate; * - From dilution; R - Rejected; NA - Not Analyzed.

TABLE 4-3 (cont.)
SOIL ANALYTICAL DATA
DRAFT TARGETED BROWNFIELDS ASSESSMENT
BALTIC MILLS SITE
SPRAGUE, CONNECTICUT
PAGE 2 OF 2

Sample Number					BM-SO-SB01-0002	BM-SO-SB01-1416	BM-SO-SB2-0002	BM-SO-SB3-0204	BM-SO-SB3-0608	BM-SO-SB2-1416	BM-SO-SB4-0002	BM-SO-SB4-1214	BM-SO-SB05-0002	BM-SO-SB05-2022	BM-SO-SB06-0002	BM-SO-DUP01-03142006	BM-SO-SB06-1416
Sample Location					SB1	SB1	SB2	SB3	SB3	SB3	SB4	SB4	SB5	SB5	SB6	SB6	SB6
Date Sampled					3/13/2006	3/13/2006	3/23/2006	3/24/2006	3/24/2006	3/24/2006	3/24/2006	3/24/2006	3/13/2006	3/13/2006	3/14/2006	3/14/2006	3/14/2006
Interval					0.0-2.0	14.0-16.0	0.0-2.0	2.0-4.0	6.0-8.0	14.0-16.0	0.0-2.0	12.0-14.0	0.0-2.0	20.0-22.0	0.0-2.0	0.0-2.0	14.0-16.0
QC Identifier	I/C DEC	R-DEC	GA PMC	GB PMC	None	None	None	None	None	None	None	None	None	None	Field Dup. BM-SO-SB06-0002	Field Dup. BM-SO-SB06-0002	None
Extractable Total Petroleum Hydrocarbon Analysis (mg/Kg)																	
Extractable TPH	2500	**500**	*500*	*2500*	NA	NA	51	**1400**	78	16	33	14	20	15 U	93	57	*2800* NA
TAL Metal Analysis (mg/Kg)																	
Aluminum					6000	16100	10800	6440	6990	5030	5390	3610	6760	10000	6920	6960	6990
Arsenic	10	**10**	NA	NA	3.8	4.5	5.5 J	7.5 J	7.9 J	3.7 J	4.5 J	1.2 J	5.9	2.6	**10.1**	8.5	8.2
Barium	140000	4700	NA	NA	64.2	81.0	77.1	87.8	92.3	22.5 J	47.4	16.5	65.2	40.0 J	66.1	60.0	50.1
Beryllium	2	2	NA	NA	0.36 J	1.1 J	0.71 J	0.45 J	0.48 J	0.30 J	0.38 J	0.28 J	0.44 J	0.67 J	0.46 J	0.46 J	0.45 J
Calcium	NC	NC	NA	NA	19100	1980	3510	11500	2810	1670	1110	441	1530	951	1100	1080	1330
Chromium	100	100	NA	NA	12.7 J	28.7 J	21.6 J	13.2 J	19.7 J	10.0 J	12.1	8.0	16.5 J	26.9 J	18.5 J	19.1 J	19.1 J
Cobalt	2500	70	NA	NA	2.3 J	4.6 J	5.1 J	3.2 J	5.5 J	2.1 J	3.2 J	2.2 J	3.7 J	4.0 J	5.3 J	4.2 J	4.5 J
Copper	76000	2500	NA	NA	7.9 J	12.8 J	35.3 J	52.0 J	49.9 J	5.7 J	14.5 J	5.3 J	13.6 J	8.1 J	15.6 J	18.4 J	16.9 J
Cyanide	NC	NC	NA	NA	2.2 UJ	2.6 UJ	2.7 U	0.84 J	2.7 U	2.7 U	2.6 U	2.5 U	2.5 UJ	2.8 UJ	2.4 UJ	2.4 UJ	2.5 UJ
Iron	NC	NC	NA	NA	7270 J	14500 J	12100 J	8470 J	13800 J	7120 J	6620 J	5260 J	7810 J	11800 J	9340 J	9120 J	8050 J
Lead	1000	**400**	NA	NA	26.0 J	5.4 J	209	158	**996**	5.4 J	43.2	1.6	14.8 J	4.5 J	29.1 J	62.3 J	15.9 J
Magnesium	NC	NC	NA	NA	9310 J	3680 J	3300 J	2630 J	3630 J	1830 J	2030 J	1250 J	2900 J	3360 J	3170 J	2970 J	2760 J
Manganese	47000	1600	NA	NA	443 J	213 J	251 J	130 J	200 J	85.2 J	131 J	116 J	135 J	130 J	140 J	136 J	117 J
Mercury	610	20	NA	NA	0.012 J	0.028 J	0.041 J	0.16	0.017 J	0.088 U	0.092 U	0.089 U	0.012 J	0.0098 J	0.013 J	0.016 J	0.014 J
Nickel	7500	1400	NA	NA	8.1 J	15.6 J	14.9	9.8	17.3	7.0	10.2	6.1	14.3 J	12.1 J	14.3 J	13.7 J	14.6 J
Potassium	NC	NC	NA	NA	1640	613	1650	1560	3020	705	719	408	1630	655	2560	1770	1750
Selenium	10000	340	NA	NA	1.3 J	1.7 UJ	0.83 UJ	0.055 UJ	0.45 UJ	0.44 UJ	0.38 UJ	0.37 UJ	2.6 UJ	0.87 UJ	0.89 UJ	0.84 UJ	0.38 UJ
Sodium	NC	NC	NA	NA	231 UJ	63.0 UJ	87.8 J	166 J	162 J	64.1 J	87.1 J	46.9 J	101 UJ	129 UJ	91.0 UJ	78.2 UJ	124 UJ
Thallium	160	5.4	NA	NA	1.2 UJ	0.47 UJ	0.87 J	0.28 J	0.17 J	0.14 J	0.25 J	0.15 J	1.9 U	2.3 U	0.51 UJ	0.29 UJ	0.43 UJ
Vanadium	14000	470	NA	NA	11.4 J	25.9 J	22.7 J	13.6 J	18.6 J	11.7 J	11.3 J	7.9 J	15.9 J	24.7 J	19.7 J	22.8 J	24.6 J
Zinc	610000	20000	NA	NA	23.8 J	33.6 J	68.8 J	78.7 J	655	15.1 J	30.4	13.9	24.5 J	30.7 J	36.4 J	32.8 J	26.1 J
SPLP Metal Analysis (ug/L)																	
Aluminum	NA	NA	NC	NC	26000	41900	723	590	728	559	786	14.0 U	23100	43800	20500	19000	42900
Arsenic	NA	NA	*50*	500	*51.9*	8.8 U	1.8 UJ	3.2 U	5.8 U	1.6 U	1.6 U	1.8 UJ	27.7	5.9 U	38.3	31.7	27.9
Barium	NA	NA	1000	10000	211 J	150 J	31.8	12.6 U	14.7 U	6.7 U	11.3 U	5.3 U	180 J	172 J	179 J	141 J	323 J
Beryllium	NA	NA	4	40	1.1 U	2.0 U	0.16 J	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.98 U	2.0 U	0.78 U	0.76 U	1.7 U
Calcium	NA	NA	NC	NC	24000	6010	24000	9040	6340	7740	2260	1340 U	3960	3700	3300	2480	16800
Chromium	NA	NA	*50*	500	34.2	*54.5*	2.3 U	1.1 U	1.3 U	0.55 UJ	1.2 U	0.59 UJ	24.8	*81.0*	30.9	26.4	*58.4*
Cobalt	NA	NA	NC	100	17.5 U	8.8 U	2.2 U	1.1 U	1.2 U	0.86 U	1.0 U	1.3 U	12.8 U	13.6 U	16.8 U	11.4 U	29.1
Copper	NA	NA	1300	13000	51.9	25.3 U	13.3	9.0 J	10.1 J	6.3 U	6.3 U	6.7 J	41.4	25.4 U	55.4	50.0	143
Iron	NA	NA	NC	NC	22500 J	26100 J	1470	517	824	26.3 UJ	781	20.6 UJ	16900 J	40300 J	18300 J	16500 J	25700 J
Lead	NA	NA	*15*	150	*124*	*20.2*	8.0	*40.7*	*135*	0.46 U	12.1	0.46 U	*79.1*	*27.1*	*153*	*206*	*31.2*
Magnesium	NA	NA	NC	NC	25200	4070	1670	616 U	1190	1950	420 U	131 U	4420	6850	4250	3030	7620
Manganese	NA	NA	NC	NC	1330	535	23.1	10.5	16.4	1.8 U	31.5	4.1	502	346	509	457	383
Mercury	NA	NA	2	20	0.35	0.075 J	0.067 U	0.07 U	0.071 U	0.066 U	0.069 U	0.07 U	0.13	0.089 J	0.10	0.11	0.069 U
Nickel	NA	NA	100	1000	32.4	25.0	3.1 U	1.6 U	2.1 U	0.86 UJ	1.2 U	1.1 UJ	29.4	38.8	43.2	27.3	87.8
Potassium	NA	NA	NC	NC	4430	1780	414	173 J	552	985	160 U	160 U	4380	1900	4970	3130	10300
Sodium	NA	NA	NC	NC	2300 U	808 U	10200	11000	10300	2330 U	7690 U	2380 U	2960 U	2920 U	1480 U	1630 U	4490 U
Vanadium	NA	NA	*50*	500	44.7	*55.1*	2.8 U	3.0 U	2.0 U	1.6 U	2.0 U	0.54 UJ	32.3	*95.9*	45.0	*59.4*	*70.8*
Miscellaneous Analysis (pH Un)																	
pH					8.5 J	7.9 J	7.1 J	8.2 J	8.1 J	8.1 J	6.2 J	8.0 J	6.5 J	5.7 J	6.4 J	5.9 J	5.6 J

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate; * - From dilution; R - Rejected; NA - Not Analyzed.

ACAD: \5266\0870\SB&MW_LOCATIONS.DWG 08/15/06 DWM



NOTES:

1. ALL LOCATIONS ARE TO BE CONSIDERED APPROXIMATE.
2. PLAN NOT TO BE USED FOR DESIGN.
3. FIGURE ADAPTED FROM SITE PLAN, BALTIC MILLS SITE, GIE CONSULTANTS, FEBRUARY 2005.

TETRA TECH NUS, INC.

GROUNDWATER ELEVATIONS

BALTIC MILLS SITE

SPRAGUE, CONNECTICUT

FILE	SCALE
\5266\0870\GW_ELEVATIONS.DWG	AS NOTED
FIGURE NUMBER 4-1	REV 0 / DATE 08/15/06

- Benzo(b)fluoranthene, in the soil samples collected from borings SB3 at the 2-to 4-foot bgs depth interval and boring SB6 at the 0-to 2-foot bgs depth interval exceeded the 1000 µg/Kg CTDEP-RDEC criterion.

- Dibenzo(a,h)anthracene and indeno(1,2,3-cd)pyrene, in soil boring SB3 at the 2-to 4-foot bgs depth interval and boring SB6 at the 0 to 2 foot bgs depth interval exceeds the 840 µg/Kg CTDEP-RDCE criteria for both compounds.

4.3.1.2 Extractable Petroleum Hydrocarbons

- ETPH detected in soil samples collected from borings SB3 at the 2-to 4-foot bgs depth interval and boring SB6 at the 14-to 16-foot bgs depth interval exceeded the 500 mg/Kg CTDEP-RDCE criterion.

4.3.1.3 Total Metals

- Arsenic in the soil sample collected from boring SB6 at the 0- to 2-foot bgs depth interval exceeded the 10 mg/Kg CTDEP-RDCE criterion.

- Lead in the soil sample collected from boring SB3 at the 6-to 8-foot bgs depth interval exceeded the 400 mg/Kg CTDEP-RDCE criterion.

4.3.2 OHM Compounds Exceeding CTDEP Industrial/Commercial Direct Exposure Criteria

This section summarizes OHM compounds that were detected in one or more soil samples at concentrations exceeding the CTDEP I/C DEC. These contaminants include PAHs, ETPH, and arsenic. See Table 4-3.

4.3.2.1 Semivolatile Organic Compounds

- Benzo(a)anthracene, in the soil sample collected from boring SB3 at the 2-to 4-foot bgs depth interval exceeded the 7800 µg/Kg CTDEP I/DEC criterion.

- Benzo(a)pyrene, in the soil samples collected from boring SB3 at the 2-to 4-foot bgs depth interval and boring SB6 at the 0-to 2- and 14-to 16-foot bgs depth intervals exceeded the I/C DEC criterion of 1000 µg/Kg.

- Benzo(b)fluoranthene, in the soil sample collected from boring SB3 at the 2-to 4-foot bgs depth interval exceeded the 7800 µg/Kg I/C DEC criterion.

- Dibenzo(a,h)anthracene, in the soil sample collected from boring SB3 at the 2-to 4-foot bgs depth interval exceeded the 7800 µg/Kg criterion.

4.3.2.2 Extractable Petroleum Hydrocarbons

- ETPH detected in soil samples collected from boring SB6 at the 14-to 16-foot bgs depth interval exceeded the 2500 mg/Kg CTDEP I/C DEC criterion.

4.3.2.3 Total Metals

- Arsenic in the soil sample collected from boring SB6 at the 0- to 2-foot bgs depth interval exceeded the 10 mg/Kg I/C DEC criterion.

4.3.3 OHM Compounds Exceeding CTDEP GA Pollutant Mobility Criteria

This section summarizes OHM compounds that were detected in one or more samples at concentrations equal to or exceeding GA PMC. These contaminants included PAHs, bis(2-ethylhexyl)phthalate), arsenic, chromium, lead, and vanadium.

4.3.3.1 Semivolatile Organic Compounds

- Benzo(a)anthracene, in the soil samples collected from borings SB3 and SB6 at the 2-to 4-foot and 0-to 2-foot bgs depth intervals, respectively exceeded the 1000 µg/Kg criterion.

- Benzo(a)pyrene, in the soil samples collected from borings SB3 at the 2-to 4-foot depth interval and SB6 at the 0-to -2 and 14-to 16-foot bgs depth intervals exceeded the 1000 µg/Kg CTDEP GA PMC criterion.

- Benzo(b)fluoranthene, in the soil samples collected from borings SB3 and SB6 at the 2-to 4-foot bgs depth interval and the 0-to 2-foot bgs depth interval, respectively exceeded the 1000 µg/Kg CTDEP GA PMC criterion.

- Benzo(k)fluoranthene, bis(2-ethylhexyl)phthalate), carbazole, dibenzo(a,h)anthracene, fluoranthene, phenanthrene, and pyrene in soil samples collected from boring SB3 at the 2-to 4-foot bgs depth interval exceeded the criteria.

- Chrysene and indeno(1,2,3-cd)pyrene detected in soil boring SB3 at the 2-to 4-foot depth interval and at boring SB6 at the 0-to -2 foot bgs and 14-to 16-foot bgs depth intervals exceeded the criteria.

4.3.3.2 Pesticides and PCBs

None of the detected pesticide concentrations exceeded the CTDEP criteria for GA PMC. PCBs were not detected in soil samples collected from the Site so SPLP analyses were not performed of those compounds. Since total PCBs were not detected in soil, TtNUS assumes that concentrations of leachable PCBs are below the GA PMC.

4.3.3.3 SPLP Metals

- Arsenic in the soil sample collected from boring SB1 at the 0-to 2-foot bgs interval exceeded the CTDEP GA PMC criterion of 50 µg/L.

- Chromium in the soil samples collected from boring SB1 at the 14-to 16-foot bgs depth interval, boring SB5 at the 20-to 22-foot bgs depth interval, and boring SB6 at the 14-to-16-foot depth interval exceeded the 50 µg/L criterion.

- Lead in the soil samples collected from boring SB1 at the 0-to 2- and 14-to 16-foot bgs depth intervals; from boring SB3 at the 2-to 4-foot bgs and 6-to 8-foot bgs depth

intervals; from boring SB5, at the 0-to 2- and 20-to 22-foot bgs depth intervals; and from boring SB6 at the 0-to 2- and 14-to 16-foot depth intervals exceeded the 15 µg/L criterion for GA PMC.

- Vanadium in soil samples collected from the boring SB1 at the 14-to 16-foot bgs depth interval; from boring SB5 at the 20-to 22-foot bgs depth interval, and from boring SB6 at the 0-to 2-foot bgs and 14-to 16-foot bgs depth intervals exceeded the CTDEP GA PMC criterion of 50 µg/L for this metal.

4.3.4 OHM Compounds Exceeding CTDEP GB Pollutant Mobility Criteria

This section summarizes OHM compounds that were detected in one or more samples at concentrations exceeding GB PMC. These contaminants included PAHs and lead.

4.3.4.1 Semivolatile Organic Compounds

- Benzo(a)anthracene, in the soil samples collected from boring SB3 at the 2-to 4-foot bgs depth interval and boring SB6 at the 0-to 2-foot bgs depth interval exceeded the 1000 µg/Kg CTDEP GB PMC criterion.

- Benzo(a)pyrene, in the soil samples collected from boring SB3 at the 2-to 4-foot bgs depth interval, and boring SB6 at the 0-to 2 foot bgs and 14-to-16 foot bgs depth intervals exceeded the 1000 µg/Kg CTDEP GB PMC criterion.

- Benzo(b)fluoranthene, in the soil samples collected from borings SB3 and SB6 at the 2-to 4- and 0- to 2-foot bgs depth intervals, respectively exceeded the 1000 µg/Kg CTDEP GB PMC criterion.

- Benzo(k)fluoranthene, dibenzo(a,h)anthracene, carbazole, indeno(12,2-cd)pyrene, fluoranthene, and phenanthrene, in soil samples collected from soil boring SB3 at the 2-to 4-foot bgs depth interval exceeded the criteria.

- Chrysene, in the soil samples collected from boring SB3 at the 2-to 4-foot bgs depth interval and boring SB6 at the 0-to 2-foot bgs and 14-to 16-foot bgs depth intervals exceeded the 1000 µg/Kg criterion.

4.3.4.2 SPLP Metals

- Lead in the soil samples collected from boring SB6 at the 0-to 2-foot bgs depth interval exceeded the criterion of 150 µg/L.

4.4 Groundwater Analytical Results

Groundwater samples collected from monitoring wells MW1 through MW5 were analyzed for VOCs, SVOCs, pesticides, PCBs, total cyanide, ETPH, and total metals. Analytical results detected the presence of VOCs, SVOCs, and metals in groundwater. A summary of groundwater analytical results is presented in Table 4-4.

Benzene was detected at a concentration (4.4 µg/L) above the GA and GAA Groundwater Protection Criteria (GPC) in samples collected from monitoring well MW5. The detected concentrations are well below the residential VC of 215 µg/L and the SWPC of 710 µg/L.

One SVOC, phenanthrene, was detected at concentrations exceeding the SWPC in samples collected from monitoring well MW03.

The metal cobalt was detected at a concentration above the GA and GAA GPC in samples collected from monitoring wells MW1 and MW5. SWPC have not been adopted for this metal.

No other contaminants detected in groundwater samples exceeded the GA and GAA GPC, Residential VC, or SWPC.

TABLE 4-4
GROUNDWATER ANALYTICAL DATA
DRAFT TARGETED BROWNFIELDS ASSESSMENT
BALTIC MILLS SITE
SPRAGUE, CONNECTICUT

Sample Number				BM-GW-MW01-01	BM-GW-MW2-01	BM-GW-MW3-01	BM-GW-DUP01	BM-GW-MW4-01	BM-GW-MW5-01
Sample Location				MW1	MW2	MW3	MW3	MW4	MW5
Date Sampled				3/14/2006	3/24/2006	3/24/2006	3/24/2006	3/24/2006	3/23/2006
Interval				0.0-0.0	0.0-0.0	0.0-0.0	0.0-0.0	0.0-0.0	0.0-0.0
QC Identifier	CT GA GPC	ResVC	SWP	None	None	BM-GW-MW3-01	BM-GW-MW3-01	None	None
Low Concentration Volatile Organic Analysis (ug/L)									
Benzene	1	215	710	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	4.4
Chloroform	6	287	14100	0.5 U	0.41 J	0.53	0.5 U	0.5 U	0.5 U
Semivolatile Organic Analysis (UG/L)									
2-Methylnaphthalene	NC	NC	NC	0.05 U	0.05 U	0.1	0.1	0.05 U	0.05 U
4-Methylphenol	NC	NC	NC	10 U	10 U	10 U	10 U	10 U	2 J
Acenaphthene	NC	NC	NC	0.05 U	0.05 U	0.05	0.053	0.05 U	0.05 U
Di-n-Butylphthalate	700	NC	120000	10 U	10 U	2 J	2 J	10 U	10 U
Fluorene	280	NC	140000	10 U	0.05 U	0.086	0.086	0.05 U	0.05 U
Naphthalene	280	NC	NC	0.05 U	0.05 U	0.099	0.1	0.05 U	0.088
Phenanthrene	200	NC	0.077	0.05 U	0.05 U	0.29	0.26	0.05 U	0.05 U
Phenol	4000	NC	92000000	10 U	10 U	10 U	10 U	10 U	3 J
Pesticide/PCB Analysis (UG/L)									
	ALL RESULTS NON-DETECTED								
Extractable Total Petroleum Hydrocarbon Analysis (mg/L)									
	ALL RESULTS NON-DETECTED								
TAL Metal Analysis (ug/L)									
Aluminum	NC	NA	NC	77.1 UJ	170 J	181 J	192 J	279	4570
Barium	1000	NA	NC	94.6 J	66.8 J	50.5 J	50.5 J	26.9 J	78.6 J
Calcium	NC	NA	NC	25200	21700	22700	23000	24700	21700
Chromium	50	NA	1200	10.0 U	0.68 J	0.43 UJ	0.48 UJ	0.87 J	24.8
Cobalt	10	NA	NC	20.3	1.1 UJ	2.1 UJ	2.0 UJ	1.6 UJ	12.4
Iron	NC	NA	NC	99.9 UJ	641	167 U	193 U	380	7450
Magnesium	NC	NA	NC	8970	12700	7250	7370	3820 J	5870
Manganese	NC	NA	NC	821	123	206	206	181	4860
Nickel	100	NA	880	4.0 UJ	1.6 UJ	2.3 UJ	2.0 UJ	1.9 UJ	36.8 J
Potassium	NC	NA	NC	6950	7390	6650	6740	5000	14300
Selenium	50	NA	50	3.1 UJ	35.0 UJ	35.0 UJ	1.6 J	35.0 UJ	35.0 UJ
Sodium	NC	NA	NC	47800	26800	21100	21600	19300	107000
Thallium	5	NA	63	4.7 U	2.0 U	2.0 U	2.0 U	2.0 U	4.5
Vanadium	50	NA	NC	4.0 U	0.58 UJ	0.74 UJ	0.76 UJ	1.5 UJ	10.2
Zinc	5000	NA	123	12.0 UJ	53.5 UJ	60.1 UJ	56.3 UJ	70.8 UJ	91.5 J
Total Petroleum Hydrocarbon Analysis (mg/L)									
Extractable TPH	**ALL RESULTS NON-DETECTED**								

U - Not detected; UJ - Detection limit approximate; J - Quantitation approximate;
* - From dilution; R - Rejected; NA - Not Analyzed

4.5 Asbestos, Lead-based Paint, Radioactive Materials, and Contaminated Electrical Equipment Survey

The following section summarizes the findings of the asbestos containing material (ACM), lead-based paint coated building materials, contaminated building materials, and hazardous materials-containing electrical equipment and lighting fixtures survey conducted as part of this BTSA.

4.5.1 Asbestos Inspection

The USEPA defines any material that contains greater than 1 percent asbestos, as determined by visual PLM microscopy, as ACM. Materials that are identified as "none detected" are specified as not containing asbestos. If all collected samples of a homogenous material are analyzed and determined not to contain asbestos, the material is considered non-asbestos containing. If any of the collected samples are determined to contain asbestos at concentrations above 1 percent, all of the collected homogenous material is considered asbestos containing.

All materials determined to contain asbestos were quantified by linear foot or square foot depending on the nature of the material. The asbestos content, quantities, and locations of ACM identified by bulk sample analysis are listed in Table 2 of Appendix C. Sample results indicating material containing more than 1 percent asbestos are shown in bold on this table.

4.5.2 Lead-based Paint Testing

Painted surfaces are classified as containing lead-based paint if the results of an XRF screening indicate that lead is present above the 1.0 milligram per square centimeter (mg/cm^2) standard established by the Department of Housing and Urban Development (HUD) and the State of Connecticut lead paint regulations. These regulations were developed to evaluate exposure to lead in residential housing and do not specifically apply to the Site unless the existing building were to be converted to residential use. However this standard is also used as a standard to determine if demolition or renovation activities at a site require compliance with OSHA lead-worker regulations.

Accessible painted surfaces on the interior and exterior of the building were screened using an XRF. Levels of lead exceeding the 1 mg/cm^2 HUD standard were detected on building components within the interior and exterior of the building. The lead field testing data are listed in Table 4 of Appendix C. Building components which contained levels of lead equal or greater than 1.0 mg/cm^2 are shown in bold.

On the exterior of the mill building, the lead-based paint screening revealed that the external window frames and external door frames contained levels of lead exceeding the HUD standard Also, in the interior of the building on the basement level, doors, walls, columns, and window systems, contain toxic levels of lead. The walls, door and window components in the rear stairwell also contain lead-based paint. The paint is defective and peeling due to heat-damaged substrates and moisture in the building. OSH lead worker regulations would apply during demolition or renovation these building components.

4.5.3 TCLP Sampling for Lead Waste

On March 13, 2006, EnviroScience collected representative samples of building components at the Site. The results of the sample analysis indicate that waste that would be generated by demolition or renovation of lead-paint coated materials would be non-hazardous for lead under RCRA regulations and may be disposed of as construction debris.

4.5.4 PCB-Containing Fluorescent Ballasts and Mercury-Containing Lamps

A total of 190 fluorescent lamp fixtures were identified in Building No. 10. Typical ballasts were examined in place on the 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. A total of 95 ballasts were identified in the mill building which did not have labels indicating "No PCB". No mercury-containing thermometers, switches, or gauges were identified.

5.0 SUMMARY AND CONCLUSIONS

This section summarizes the findings of the TBA investigation, and presents conclusions regarding the nature and extent of soil, sediment, and groundwater contamination at the Site.

5.1 Site Background Summary

The parcel of land containing the Site is approximately 16.5 acres in size and is roughly rectangular in shape, with the long axis oriented from northwest to southeast. The Site is currently zoned for general industrial use (Town of Sprague Zone IG 80), and is the location of a former textile mill which was partially destroyed by fire on August 19, 1999. The proposed re-use of the Site is commercial development and open space.

The former use of the site, and its zoning designation is for industrial/ commercial use. Therefore, the I/C DEC and VC soil and groundwater criteria would normally apply to soil and groundwater contamination. However, since one of the intended future uses of the Site may include open space/ recreational use RDEC criteria would apply for exposure to contaminated soil. Therefore, the purpose of this BTSA investigation is to determine if accessible soils (0- to 4-feet bgs in unpaved areas) comply with the RDEC due to the potential for children to visit the Site. Since groundwater in the vicinity of the Site has been rated use class GB, the GB PMC are applicable to soils. Groundwater criteria applicable to the Site include the SWPC and the RVC.

Alternate criteria for soil DEC and PMC and groundwater VC can be developed subject to CTDEP approval. Exemptions from VC may be obtained for parcels where no building is constructed or if CTDEP-approved indoor air monitoring program and volatile substance control measures have been implemented at a building on the parcel and an Environmental land use restriction is placed on the property to ensure that the appropriate land use is maintained and that any control measures remain operational.

5.2 Summary of TBA Investigation Results

This section summarizes the findings of the TtNUS TBA investigation, including OHM detected in sampled media, and RSR criteria that were exceeded in those media. Soil boring and monitoring well locations sampled during this investigation are depicted on Figure 2-1.

5.2.1 Soils

Inspection of soil samples collected from the Site during the TBA investigation indicates that majority of the subsurface soil is a brown fine to medium sand with trace to some silt and grey clay. Rock and brick fragments were noted in the soil sample collected at SB2 from 2 to 4-feet bgs, as well as purple coarse sand particles from 16 to 18-feet bgs. Coal fragments were noted in soil boring SB3 from 0 to 2-feet bgs, as well as brick fragments from 6 to 8-feet bgs. Purple coarse sand particles were noted in soil boring SB4 from 16 to 18-feet bgs. Soil boring logs are contained in Appendix A.

Jar headspace field-screening of soil samples collected from the Site indicated the following organic vapor concentrations:

- Low concentrations (0.2 to 35.5 ppmv) in the soil samples collected from borings SB1, SB5, and SB6;
- Low to moderate concentrations (0.6 to 128 ppmv) in soil samples collected from borings SB2 and SB3
- Low to high concentrations (0 to >3000 ppmv) in soil samples collected from boring SB4.

Headspace screening results are summarized in Table 4-1 and are listed on the boring logs in Appendix A.

5.2.1.1 OHM Detected in "Accessible" Soils at Concentrations Exceeding RSR Criteria

The following compounds were detected in "accessible" soils (0- to 4-foot bgs depth interval) collected from the Site at concentrations that exceeded RDEC:

ACAD: \5266\0870\EXCEEDANCES.DWG 08/15/06 DWM

BUSHNELL HOLLOW ROAD
HEAD RACE
WATER TANK
NO. 6: PUMP ROOM
NO. 7: BOILER HOUSE
WORCESTER RAILROAD
SCOTLAND ROAD (ROUTE 97)
FORMER WEAVE SHED FOUNDATION SLAB
FORMER POWER HOUSE
SB1/MW1
OLD FOUNDATION SLAB AND DEBRIS
SB2/MW2
SB3/MW3
SB4/MW4
SB6
ETPH (14-16)
PAH (0-2,14-16)
ARSENIC (0-2)
LEAD (0-2)
(ROUTE 138)
TAIL RACE
NO 10: ADDITION
PAH (2-4)
NUTMEG WIRE COMPANY
FILL
PAH (0-3)
LEAD (6-8)
PAH
AREA OF SUSPECTED NO. 6 FUEL OIL UST
SB5/MW5
UNNAMED STREAM
FLOW
SUSPECTED DEBRIS DISPOSAL AREA
SHETUCKET RIVER
FLOW

LEGEND

- SITE BOUNDARY
- CHANNEL ENCROACHMENT LINE
- RAILROAD TRACKS
- FENCELINE
- WATERWAY BOUNDARY
- WALL
- SMOKESTACK
- FIRE HYDRANT
- STICK UP
- SB1/MW1 — SOIL BORING / MONITORING WELL LOCATION
- PAH (0-3) — SOIL CONTAMINATION WITH SAMPLE DEPTH
- **PAH** — GROUNDWATER CONTAMINANT

NOTES:

1. ALL LOCATIONS ARE TO BE CONSIDERED APPROXIMATE.
2. PLAN NOT TO BE USED FOR DESIGN.
3. FIGURE ADAPTED FROM SITE PLAN, BALTIC MILLS SITE, GIE CONSULTANTS, FEBRUARY 2005.
4. SEE TABLE 4-3 FOR SOIL CONTAMINANT CONCENTRATIONS AND RSR CRITERIA EXCEEDED.
5. SEE TABLE 4-4 FOR GROUNDWATER CONTAMINANT CONCENTRATIONS AND RSR CRITERIA EXCEEDED.

GRAPHIC SCALE

0' 120' 240'

TETRA TECH NUS, INC.

SOIL AND GROUNDWATER CONTAMINATION EXCEEDING APPLICABLE RSR CRITERIA

BALTIC MILLS SITE

SPRAGUE, CONNECTICUT

FILE	SCALE
\5266\0870\EXCEEDANCES.DWG	AS NOTED
FIGURE NUMBER 5-1	REV 0 / DATE 08/15/06

PAH Compounds:

- Benzo(a)anthracene in borings SB3 and SB6.
- Benzo(a)pyrene in borings SB3 and SB6.
- Benzo(b)fluoranthene in borings SB3 and SB6.
- Dibenzo(a,h)anthracene in borings SB3 and SB6.
- Indeno(1,2,3-cd)pyrene in borings SB3 and SB6.

Extractable Total Petroleum Hydrocarbons.

- Extractable total petroleum hydrocarbons in boring SB3.

Metals:

- Arsenic in boring SB6.

The following compounds were detected in "accessible" soils (0- to 4-foot bgs depth interval) at concentrations that exceeded I/C DEC:

PAH Compounds:

- Benzo(a)anthracene in boring SB3.
- Benzo(a)pyrene in borings SB3 and SB6.
- Benzo(b)fluoranthene in boring SB3.
- Dibenzo(a,h)anthracene boring SB3.

Metals:

- Arsenic in boring SB6

The following compounds were detected in "accessible" soils at concentrations that exceeded GA PMC:

PAH Compounds and Phalates:

- Benzo(a)anthracene in borings SB3 and SB6.
- Benzo(a)pyrene in borings SB3 and SB6.
- Benzo(b)fluoranthene in borings SB3 and SB6.
- Benzo(k)fluoranthene in boring SB3
- bis(2-ethylhexyl)phthalate) in boring SB3
- dibenzo(a,h)anthracene in boring SB3
- fluoranthene in boring SB3
- phenanthrene in boring SB3.
- Carbazole in boring SB3.
- Chrysene in borings SB3 and SB6
- indeno(1,2,3-cd)pyrene in borings SB3 and SB6

SPLP Extractable Metals:

- Arsenic in boring SB1.
- Lead in borings SB1, SB3, SB5, and SB6.
- Vanadium in boring SB6.

The following compounds were detected in "accessible" soils at concentrations that exceeded GB PMC:

PAH Compounds:

- Benzo(a)anthracene in borings SB3 and SB6.
- Benzo(a)pyrene in borings SB3 and SB6.
- Benzo(b)fluoranthene in borings SB3 and SB6.
- Benzo(k)fluoranthene in boring SB3
- dibenzo(a,h)anthracene in boring SB3
- indeno(1,2,3-cd)pyrene in boring SB3
- fluoranthene in boring SB3
- phenanthrene in boring SB3

- Carbazole in boring SB3.
- Chrysene in borings SB3 and SB6.

SPLP Extractable Metals:

- Lead in boring SB6.

5.2.1.2 OHM Detected in "Inaccessible" Soils at Concentrations Exceeding RSR Criteria

The following compounds were detected in "inaccessible" soils (greater than 4 feet bgs depth interval) at concentrations that exceeded RDEC:

PAH Compounds:

- Benzo(a)pyrene in boring SB6.

Extractable Petroleum Hydrocarbons

- Extractable petroleum hydrocarbons in boring SB6.

Metals:

- Lead in boring SB3.

The following compounds were detected in "inaccessible" soils at concentrations that exceeded I/C DEC:

PAH Compounds:

- Benzo(a)pyrene in boring SB6.

Extractable Total Petroleum Hydrocarbons

- Extractable petroleum hydrocarbons in boring SB6.

The following were detected in "inaccessible" soils at concentrations that exceeded GA PMC:

PAH Compounds:

- Benzo(a)pyrene in boring SB6.

SPLP Metals:

- Chromium in borings SB1, SB5, and SB6.
- Lead in borings SB1, SB3, SB5, and SB6.
- Vanadium in borings SB1, SB5, and SB6

The following were detected in "inaccessible" soils at concentrations that exceeded GB PMC:

PAH Compounds:

- Benzo(a)pyrene in boring SB6.
- Chrysene in boring SB6.

5.2.2 Groundwater

Depths to groundwater measured in the five on-site monitoring wells (MW1 through MW5) on April 12, 2006 ranged from 16.72 feet bgs at MW1 to 25.71 feet bgs at MW5. Corresponding elevations of groundwater measured from an arbitrary datum of 100 feet ranged from 81.07 feet at MW3 to 83.28 feet at MW1. Table 4-2 contains a summary of the measured groundwater depths and their associated elevations. The general direction of groundwater flow is south, toward the adjacent Shetucket River based on limited onsite groundwater elevations. GB groundwater standards are applicable to the Site.

- Benzene was detected at a concentration above the CT GA and GAA groundwater protection criteria (GPC) in samples collected from monitoring well MW5.

- One PAH, phenanthrene, was detected at concentrations exceeding the CT SWPC in samples collected from monitoring well MW3.

- The metal cobalt was detected at a concentration above the CT GA and GAA groundwater protection criteria in samples collected from monitoring wells MW1 and MW5.

No other compounds detected in groundwater samples exceeded the CT GA and GAA GPC, Residential VC or SWPC.

5.3 Asbestos, Lead-Based Paint, Radioactive Materials, and Contaminated Electrical Equipment Survey

This section presents the conclusion of the EnviroScience inspection of the mill buildings for ACM, lead-based paint coated building materials, contaminated building materials, and hazardous materials-containing electrical equipment and lighting fixtures.

5.3.1 Asbestos Containing Materials

EnviroScience identified non-friable ACM on the exterior and in debris fields surrounding the building. Roofing and window glazing have been identified as ACM on the exterior of the structure.

All materials determined to contain asbestos were quantified in linear feet or square feet, depending on the nature of the material. The asbestos content, quantities, and locations of ACM identified by bulk sample analysis are listed in Table 2 of Appendix C. Sample results indicating material containing more than 1 percent asbestos are shown in bold.

Estimated costs for ACM abatement are presented in Section 7.0.

5.3.2 Lead-Based Paint

Painted surfaces in Building No. 10 were in deteriorated condition due either to heat from the fire or to moisture. Lead-based paint is present in the following area of Building No. 10:

- External door and window frames;
- Interior doors, walls, columns, and window systems in the building's basement;
- Walls, door, and window components in the south stairwell.

Painted surfaces are also present on the upper three floors of the building and the north stairwell. Although the deteriorated condition of the building precluded access to these areas, it can be reasonably assumed that these painted surfaces are also coated with lead based paint. Estimated costs for lead paint abatement are discussed in Section 7.

5.3.3 TCLP Sampling for Lead Waste

On March 13, 2006, EnviroScience collected representative samples of building components at the Site for analysis of TCLP leachable lead. Analysis results indicate that lead-contaminated waste that would be generated during building demolition or renovation would be non-hazardous under RCRA regulations.

5.3.4 PCB-Containing Fluorescent Ballasts and Mercury-Containing Lamps

A total of 190 fluorescent lighting fixtures were identified in Building No. 10. A total of 95 ballasts were identified in the building which did not have labels indicating "No PCB". No mercury thermostats, switches, or gauges were identified in the building.

5.4 Conceptual Site Model

The Baltic Mill Site is an approximately 16.5 acre inactive industrial property. The site contains the remains of a former textile mill complex which was partially destroyed by fire on August 19, 1999. The proposed re-use of the Site is for commercial development and/or open space. Soils at the Site consist of brown fine to medium sand with trace to some silt and grey clay with brick fragments noted in places. Based on limited onsite groundwater elevation data and site

topography, the inferred groundwater flow direction is to the south, toward the adjacent Shetucket River. Elevations of groundwater measured from an arbitrary datum of 100 feet ranged from 81.07 feet at MW3 to 83.28 feet at MW01.

Several mill complexes have existed on the site, which have been destroyed or damaged by flooding and fire. The Site had been extensively re-worked during construction, demolition, and re-construction of historic mill complexes, culminating with the near complete destruction by fire of the most recent mill complex and implementation of a removal action to remediate asbestos and lead-containing fire debris. Historic disposal activities and contaminant releases that may have occurred on the site include disposal of debris and coal ash in the area located to the south of Building No. 10, and disposal of coal ash in the area located between Building No. 10 and the adjacent building slab and the tailrace canal. It is likely that on-site disposal of debris from the fire that occurred at the Site in 1877 has also occurred. Releases of No. 6 fuel oil appear to have occurred in the vicinity of the former No. 6 fuel oil ASTs located south of Building No. 7 (boiler room), and may have also occurred in the vicinity of soil boring SB3. PAHs, lead, and asbestos are likely to have been deposited on the Site's surficial soils as fallout from the August 1999 fire. PAHs and lead may have been deposited in deeper soils as a result of fallout or debris disposal from the 1877 fire. Disposal of solid waste and debris may have occurred south of Building No. 10 in the vicinity of soil boring SB5.

Substances of Concern (SOCs) detected in the Site's soil and groundwater in the vicinity of soil borings SB1, SB3, SB5 and SB6 at concentrations exceeding RSR criteria include ETPH, SVOCs, arsenic, chromium, cobalt, lead, and vanadium. Soil SOCs detected at soil SB1 were the metals chromium, lead and vanadium, whereas groundwater SOCs at this location were limited to cobalt. Soil SOCs detected in the vicinity of soil boring SB3 included PAHs, EPTH, and lead, whereas groundwater SOCs at this location were limited to PAHs. Soil SOCs detected in the vicinity of soil boring SB5 included lead, vanadium, and chromium whereas groundwater SOCs at this location were limited to benzene and cobalt. Soil SOCs detected at boring SB6 included PAHs, ETPH, arsenic and lead.

SOCs detected in the vicinity of boring SB6 are consistent with a release of petroleum and/or deposition of coal ash, which is consistent with the historic Site activities at this location. SOCs detected in the vicinity of boring SB5 are consistent with contamination that may be released from disposal of solid waste or debris. SOCs detected in the vicinity of boring SB3 are

consistent with the disposal of coal ash and petroleum, although the source of the PAHs total and SPLP-leachable lead may be due to disposal of lead-contaminated soil or debris. The source of PAHs in groundwater at this location may be contaminant migration from the petroleum release in the vicinity of boring SB6. The source of the metals detected in soil and groundwater in the vicinity of boring SB1 is unclear.

Potential mechanisms of contaminant migration at the Site include migration of contamination from soil to groundwater via dissolution by infiltrating precipitation and transport to the Shetucket River via groundwater discharge. Contamination may also enter the River by erosion of contaminated surficial soil. Likely receptors are persons contacting accessible soil, and the surface water and aquatic life in the Shetucket River.

The presence of PAH, ETPH, and arsenic contamination found at "inaccessible" samples exceeding the RDEC indicates that a risk of exposure to human receptors is possible by contact with surficial soils, particularly in the vicinity of soil boring SB3 and SB6.

Groundwater at the Site is rated use class GB by CTDEP, and residences and businesses in the vicinity of the Site are serviced by public water supply, therefore impacts to human receptors from exposure to contaminated groundwater is not likely to occur. Residential dwellings located to the east of the site are supplied by private water wells. These wells are located approximately 1/3 mile downgradient from the site on the opposite side of the Shetucket River, and should be hydrologically isolated from the Site by the River. Detection of phenanthrene in the groundwater sample collected from monitoring well MW3 at a concentration exceeding the SWPC indicates that groundwater discharging from the Site to the tailrace canal may impact aquatic life. Chromium concentrations in the SPLP extract of samples collected from SB1 and SB5, lead concentrations in the SPLP extract from SB1, SB3, SB5, and SB6, and vanadium concentrations in the SPLP extract from SB1, SB5, and SB6 exceeded the GA GPC. These metals were not detected in groundwater at concentrations exceeding any of the RSRs, indicating that the metals detected in soil may not be adversely impacting groundwater at this time.

6.0 RECOMMENDATIONS

This section presents recommendations for further actions that should be taken at the Site to facilitate its beneficial reuse. These recommendations include removal of lead-based and ACM from Building No. 10 and roofing material observed in the rubble pile and in the area the immediately surrounding Building No. 10. These recommendations assume that Building No. 10 will be demolished. Collection of additional soil and groundwater samples from the Site is recommended to help determine the horizontal and vertical extent of contamination.

6.1 Abatement of ACM and Lead-Based Paint

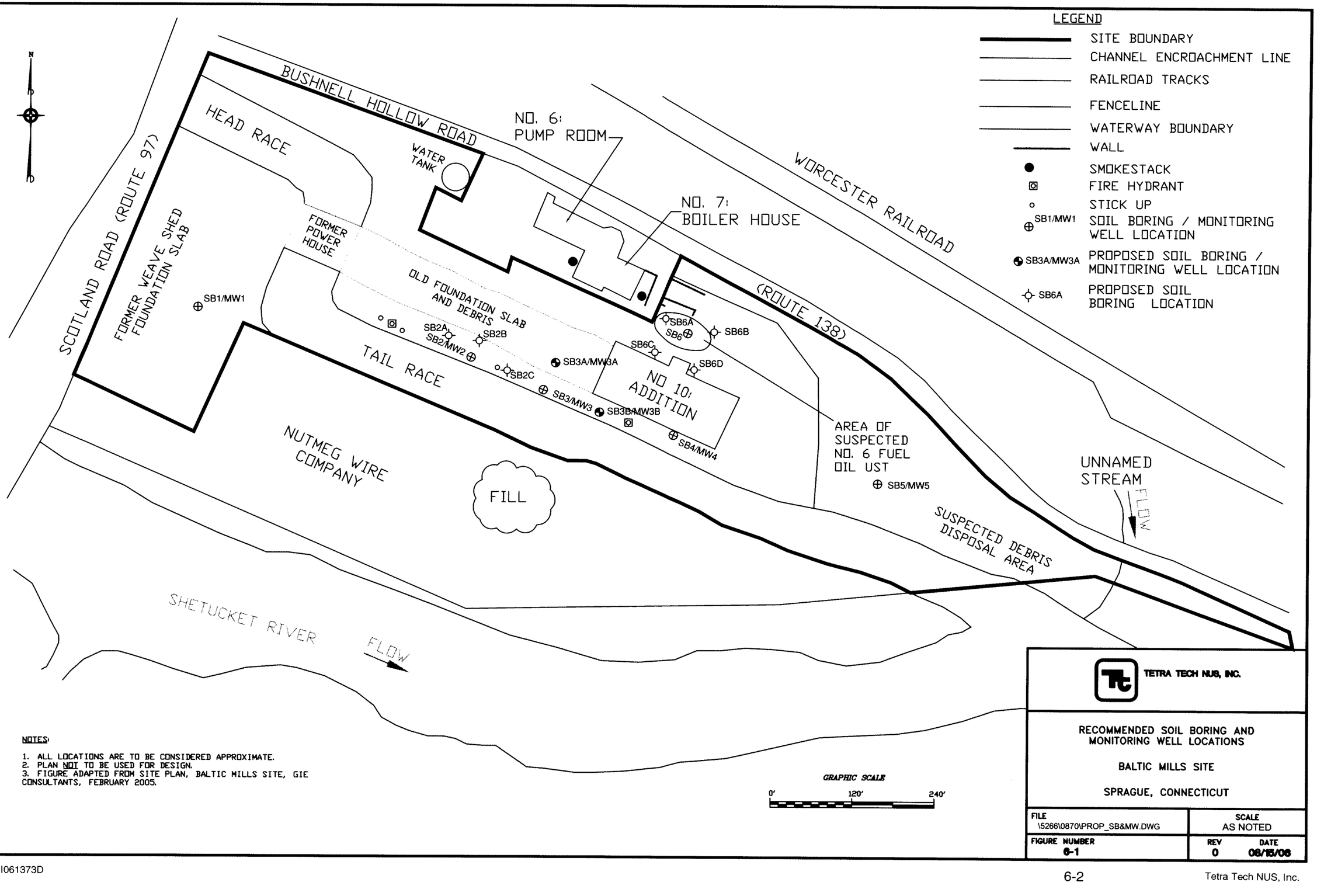
Assuming that Building No. 10 will require demolition prior to site redevelopment, segregation of non-friable ACM is recommended prior to building demolition, as it will reduce disposal costs of the building material and increase the volume of salvageable material. Lead-based paint containing material can be disposed of as non-hazardous building debris. Detailed recommendations pertaining to the removal and disposal of ACM and lead-based paint are contained in the EnviroScience Consultants report (Appendix C). Cost for segregation of ACM are addressed in Section 7.0.

6.2 Additional Soil and Groundwater Sample Collection and Analysis

The sampling and analysis of soil and groundwater performed at the site by TtNUS should be considered an initial investigation that is equivalent to a Phase II investigation under the CTDEP Draft Site Characterization Guidance Document (Guidance Document, CTDEP, 2000), since the level of effort required to completely evaluate the vertical and horizontal extent of soil and groundwater, which is required by the Guidance Document to demonstrate that a Site has been remediated according to the RSRs, is beyond the scope of this TBA investigation.

TtNUS detected soil contamination exceeding applicable RSR criteria in samples of accessible and inaccessible soil collected from soil borings SB3 and SB6. In addition, SPLP metals exceeded criteria both in accessible and inaccessible soil samples collected from SB1 and SB5. The locations of these borings and monitoring wells are depicted on Figure 6-1. Recommended soil boring and soil sample collection and analysis are as follows:

ACAD: \5266\0870\PROP_SB&MW.DWG 08/15/06 DWM



NOTES:

1. ALL LOCATIONS ARE TO BE CONSIDERED APPROXIMATE.
2. PLAN NOT TO BE USED FOR DESIGN.
3. FIGURE ADAPTED FROM SITE PLAN, BALTIC MILLS SITE, GIE CONSULTANTS, FEBRUARY 2005.

TETRA TECH NUS, INC.

RECOMMENDED SOIL BORING AND MONITORING WELL LOCATIONS

BALTIC MILLS SITE

SPRAGUE, CONNECTICUT

FILE	SCALE
\5266\0870\PROP_SB&MW.DWG	AS NOTED
FIGURE NUMBER 6-1	REV 0 / DATE 08/15/06

- Three shallow (0 to 4 feet bgs) soil borings and collection of samples of accessible soils in the vicinity of soil boring SB2. These samples should be analyzed for PAHs;

- Two deep (0 to 30 feet bgs) soil borings in the vicinity of soil boring SB3. Three soil samples from above the water table should be analyzed for PAHs. Groundwater monitoring wells should be installed in these borings and groundwater samples collected for metals, PAH and ETPH analysis;

- Four deep soil borings (0 to 20 feet bgs, or to refusal) and collection of one sample of accessible soil and one sample of inaccessible soil for analysis of PAHs, ETPH and total and SPLP metals; and

- Measurement of hydraulic conductivity and groundwater depth in all on-site monitoring wells.

Costs for drilling, monitoring well installation, labor and analysis associated with these recommendations are presented in Section 7.0. If this investigation does not completely delineate the extent of soil and groundwater contamination, addictions investigation may be required to close data gaps.

6.3 Phase III Report

The CTDEP guidance document requires that a Phase III report achieve the following objectives:

- A description of each release areas
- Result in an understanding of Site environmental conditions that control migrations of substances from the release environmental receptors
- Describe the extent of soil and groundwater contamination in three dimensions
- Describe how the distribution of contamination may change with time
- Describe the effect the distribution of contamination may have on human health and the environment;
- Describe how environmental conditions associated with each release related to RSTR criteria

- Develop and understanding of the affected environmental system sufficiently to develop remedial options;
- Provide the data and rational necessary to support conclusions.

The Phase III report should also further expand on the Conceptual Site Model developed in Phases I and II. The following elements should be incorporated into the CSM:

- Soil characterization data, including the location and nature of artificial fills and delineation of soil horizons that may affect pollution migration;
- Groundwater hydrostratigraphy and hydrogeology including delineation of vertical flow and flow along preferential pathways;
- The surface character of the site as it may affect recharge or potential migration of volatile gasses;
- The groundwater regional setting and potential influenced of flow direction
- Other environmental media that may be affected by the release;
- The nature of the pollutants identified at the Site including the solubility, volatility, degradability, breakdown products, and transport mechanisms;
- Potential migration pathways cross medial transfer and preferential pathways migration
- Potential receptors including humans, biota, surface water, water supply wells and basements of buildings.

The Guidance Document requires that the Phase III report present the environmental data as a whole. The presentation should address how the data validates the hypothesis of the CSM regarding the environmental fate of the released pollutants. Typical elements of a Phase III report are as follows:

- The Environmental setting and identified releases discussed in the context of the CSM;
- A brief summary of investigation objectives activities and protocols;
- Presentation of data and identification of the extent of pollution for each release and each environmental medium including maps, cross sections and summary tables;
- Data evaluation and discussion of the consistency of data in terms of the CSDM, with identification of assumptions and rational for conclusions;

- Conclusions regarding site environmental conditions, with delineation of pollution exceeding applicable criteria and recommendations for remedial action as appropriate;
- Appendices with supporting data and field notes.

7.0 PRELIMINARY COST ESTIMATES

To assist in selecting the recommended remedial action alternative, TtNUS developed the following preliminary "order-of-magnitude" cost estimates for implementing the recommendations presented in Section 6.0. The proposed and/or recommended abatement actions, investigations and associated and cost estimates may change if additional information on the nature and extent of contamination at the Site becomes available. It is noted that these estimates should not be interpreted as precise costs for procuring consulting or remedial services. "Order-of-magnitude" estimates costs for implementing each of the considered remedial action alternatives are as follows:

Estimated Cost for Remedial Action for Abatement of Asbestos-containing and Hazardous Materials: $205,300

Estimated Cost for Phase III Investigation and Report: $75,800

Tables 7-1 and 7-2 provide a more detailed summary of estimated costs for implementing the recommended asbestos and lead paring abatement activities and additional investigation activities, respectively. Additional details to support the "order-of-magnitude" cost estimates for each remedial action alternative are presented in Appendix E.

TABLE 7-1
ORDER-OF-MAGNITUDE COST ESTIMATE
ABATEMENT OF ASBESTOS-CONTAINING AND HAZARDOUS MATERIAL
DRAFT TARGETED BROWNFIELDS ASSESSMENT
BALTIC MILLS SITE
SPRAGUE, CONNECTICUT

COST SUMMARY TABLE - ABATEMENT OF ASBESTOS-CONTAINING AND HAZARDOUS MATRIALS (costs rounded to nearest $100)		
DIRECT COSTS	**ACTIVITY**	**COST**
	Project Planning	$9,000
	Asbestos and Hazardous Materials Abatement	$193,700
	Labor Equipment and Travel	$2,600
	Total Direct Cost for Alternative 1	$202,700
Total Cost for Alternative 1		**$205,300**

TABLE 7-2
ORDER-OF-MAGNITUDE COST ESTIMATE
PHASE III INVESTIGATION
DRAFT TARGETED BROWNFIELDS ASSESSMENT
BALTIC MILLS SITE
SPRAGUE, CONNECTICUT

COST SUMMARY TABLE - PHASE III INVESTIGATION (costs rounded to nearest $100)		
DIRECT COSTS	ACTIVITY	COST
	Project Planning	$9,000
	Equipment Rental	$2,100
	Drilling and monitoring Well Installation	$6,600
	Soil and Gorundwater Sample Collection and Analysis and Data Validation	$38,800
	Phase III Report	$19,300
Total Cost for Phase III Investigation		**$75,800**

REFERENCES

REFERENCES

CTDEP, February 1993. Water Quality Classification Map of the Thames River, Pawcatuck River, and Southeast Coastal Basins. Connecticut Department of Environmental Protection Bureau of Water Management, Planning and Standards Division.

CTDEP, January 1996. Remediation Standard Regulations. Section 22a-133k-l of the Regulations of Connecticut State Agencies.

CTDEP, 2000. Draft Site Characterization Guidance Document.

CTDEP, October 24, 2005. Comprehensive List of Approved Additional Polluting Substances Criteria and Alternate Criteria list of Additional Polluting Substances.

Environmental Data Resources, January 2005. First Search Database Report of the Baltic Mills Site, Sprague, Connecticut performed for GEI Consultants, Inc., January 2005.

GEI Consultants, Inc. February 2005. Phase I Environmental Site Assessment, Baltic Mills Site, 29 Bushnell Hollow Road, Sprague, Connecticut. Prepared for the Town of Sprague, Connecticut.

United States Geological Survey, 1961. Map of the Bedrock Geology of the Norwich Quadrangle. United States Geological Survey, Washington, D.C.

United States Geological Survey, 1962. Map of the Surficial Geology of the Norwich Quadrangle. United States Geological Survey, Washington, D.C.

Weston, 2001. Removal Program After Action Report for the Baltic Mills Site, Baltic, New London County, Connecticut. September 29 2000 through 29 May 2001. Roy F. Weston, Inc. Wilmington, Massachusetts.

USEPA, September 1993. *Guidance for Evaluating the Technical Impracticality of Groundwater Restoration* USEPA Directive No. 9234.2-25 issued September 1993.

APPENDIX A

BORING LOGS

BORING LOG FOR: BALTIC MILL
PROJECT NO.: SHEETROCK
LOGGED BY: J DRISCOLL
DRILLED BY (Company/Driller): GRABOARD / JEFF
GRD. SURFACE ELEVATION:

TRANSCRIBED BY:
ELEVATION FROM:

BORING NO.: SB-1
START DATE: 3/13/2006
COMPLETION: DATE: 3/13/2006
MON. WELL NO.: MW-01
CHECKED BY:

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = (FID, (PPM))
0	6 8	0.5 / 2.0	1015 BM-SO-SB01-0002		soft	brn	f-m sand w/ pebbles and some fines (silt).	SW	sl. moist.	0.0
2	5 7									
4	9 16 27 25	0.2 / 2.0			soft	brn	SAA	SW	sl. moist	0.0
6	9 12 24 25	0.9 / 1.0			soft	brn	SAA	SW	sl. moist.	0.0
8	23 26 16	0.9 / 2.0			soft	grey brn	f-m sand w/ some silt. w/ few rock frags - Hetrolithic xbe.	SW	sl. moist	0.0
10	14 6 8 6	1.2 / 2.0			soft	dk brn	m-f sand + silt		sl moist	0.0
					med firm	dk brn	clay + silt			
12	3 4 6 8	0.6 / 2.0			sl. firm	gry brn	fine sand - silt		sl. moist	0.0
						orang brn	fine sand - silt.			
14	4 5 10	1.5 / 2.0			sl. firm	brn dk brn	f sand + some m Sand with silt + little clay		moist.	0.0
16	11 3 2 3	/	1100 BM-SO-SB01-1416		sl. firm	brn/ dk brn	f sand w/ m sand and silt.		moist.	0.0

TYPE OF DRILLING RIG:
METHOD OF ADVANCING BORING: HSA
METHOD OF SOIL SAMPLING: split spoon
METHOD OF ROCK CORING: NA
GROUNDWATER LEVELS: 16 bgs
OTHER OBSERVATIONS:

Tetra Tech NUS, Inc.

BORING NO.: SB-1

TtNUS Form 0018

BORING LOG FOR: _____
PROJECT NO.: _____
LOGGED BY: _____
DRILLED BY (Company/Driller): _____
GRD. SURFACE ELEVATION: _____

TRANSCRIBED BY: _____

ELEVATION FROM: _____

BORING NO.: SB-1
START DATE: _____
COMPLETION: DATE: _____
MON. WELL NO.: _____
CHECKED BY: _____

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
16	4									
	3									
18	4	/	NO SAMPLE						saturated!	0.0
	9									
20		/	NO SAMPLE							
	14	1.0			loose	grey	fine sand + silt.		saturated	0.0
	15	/								
22	100/1"	0.1	@1130							
		/	—	E.O.B.			—			
		/								
		/								
		/								
		/								

TYPE OF DRILLING RIG:
METHOD OF ADVANCING BORING: HSA
METHOD OF SOIL SAMPLING: SPLIT SPOON
METHOD OF ROCK CORING: N/A
GROUNDWATER LEVELS: 12' BGS
OTHER OBSERVATIONS:

Tetra Tech NUS, Inc.

BORING NO.: SB-1

TtNUS Form 0018

BORING LOG FOR: BALTIC MILL
PROJECT NO.: 2266/0840
LOGGED BY: J DRISCOLL
DRILLED BY (Company/Driller): SEABOARD/JEFF
GRD. SURFACE ELEVATION:

TRANSCRIBED BY:
ELEVATION FROM:

BORING NO.: SB2
START DATE: 3/23/06
COMPLETION: DATE: 3/24/06
MON. WELL NO.: MW2
CHECKED BY:

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
0										
	5 6 7 7	0.4 / 2.0	BM-20-SB2-0002 @ 3/23/06		Soft	brn	silt with some f sand + organics (roots) for top 0.3'. Bottom 0.5 m-f sand w/ few silt.		Sl. moist.	1.7
2										
	13 9 13 15	0.8 / 2.0	no sample collected		Soft	grey	m-f sand w/ silt and few rock/brick fragments		Sl. moist	0.6
4										
	3 6 3 5	0.9 / 2.0	no sample collected		soft	brn/ orange brn	f sand w/ some m-sand and silt w/ few pebbles		moist	11.7
6	6									
	7 11 9 13	0.9 / 2.0	no sample collected		soft	brn	top 0.5 m-f sand. bottom 0.4 f-c sand w/ rock frags		moist	11.5
8										
	7 11 9 13	1.0 / 2.0	no sample collected		Soft	brn orange brn	top 0.4 f-c sand w/ rock frags bottom 0.6 f-m sand		moist	1.1.0
10										
	8 6 5 5	0.9 / 2.0	no recovery		—		no recovery		—	—
12										
	6 5 9 17	0.4 / 2.0			Soft	brn	m-f sand w/ little silt and few pebbles		moist	84.2
14										
	7 12 WH 10	0.8 / 2.0			Soft	lt brn	m-f sand w/ little pebbles and few silt.		moist to SATURATED	12.1
16										

TYPE OF DRILLING RIG: BOMB / TRUCK
METHOD OF ADVANCING BORING: HSA
METHOD OF SOIL SAMPLING: SPLIT SPOON
METHOD OF ROCK CORING: NA
GROUNDWATER LEVELS:
OTHER OBSERVATIONS: BOMB RIG SHUT DOWN AT 10', TRY W/ TRUCK TOMORROW BORING NO.: SB2
TRUCK AUGERS TO 10' bgs, FIRST SAMPLE 6-12'

Tetra Tech NUS, Inc.

PAGE: 1 OF 2

TtNUS Form 0018

BORING LOG FOR: BALTIC MILL
PROJECT NO.: 52166/0840
LOGGED BY: J. DRISCOLL
DRILLED BY (Company/Driller):
GRD. SURFACE ELEVATION:

TRANSCRIBED BY:
ELEVATION FROM:

BORING NO.: SB2
START DATE: 3/23/06
COMPLETION: DATE: 3/24/06
MON. WELL NO.: MW2
CHECKED BY:

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
16	27 24	1.1 / 2.0			Soft	brown	C Sand (purple grains) w/		SATURATED	98.2
18	28 30				H.brn		some pebbles and silt.			
	18	0.6 / 1.0			Soft	H	C-sand w/ some pebbles		SATURATED	128
20	26 26					brn	and silt			
	3	0.6 / 2.0			Soft	H brn	↓ some silt + pebbles		SATURATED	57.9
22	20 22						~~C~~-sand w/ purple grains			
	6 17	1.5 / 2.0			Soft	H brn	~~Same~~ ↓		SATURATED	84.2
24	18 10						Sand			
Bottom										

TYPE OF DRILLING RIG:
METHOD OF ADVANCING BORING:
METHOD OF SOIL SAMPLING:
METHOD OF ROCK CORING:
GROUNDWATER LEVELS:
OTHER OBSERVATIONS:

Tetra Tech NUS, Inc.

BORING NO.: SB-2

Tnus Form 0018

BORING LOG FOR: BALTIC MILL
PROJECT NO.: 5266/0840
LOGGED BY: JDRISCOLL
DRILLED BY (Company/Driller): SEABOARD/JEFF
GRD. SURFACE ELEVATION:

TRANSCRIBED BY:
ELEVATION FROM:

BORING NO.: SB 3
START DATE: 3/24/06
COMPLETION: DATE: 3/24/06
MON. WELL NO.: MW-3
CHECKED BY:

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
0	5									
	11	0.9/2.0			Soft	brn	f-m sand w/ some silt			70.1
2	16						and some pebbles w/ little coal		sl. moist	
	19									
	17									
	4	0.4/2.0			s-ft	brn/	f ↓			91.1
4	10					black	w/ some coal		sl. moist	
	9									
	5									
	10	0.8/2.0			s-ft	o/br	f sand w/ some m sand		sl. moist	54.9
6	14					brn	with silt and few pebbles			
	5									
	7									
	3	0.5/2.0			s-ft	brn	f sand w/ some silt		sl. moist	53.6
8	21						and brick & few pebbles			
	29									
	50/4"	0/2.0	no Recovery		—		no recovery		—	47.9
10										
	7									
	9	0.8/2.0	insufficient Recovery		M. dense compact	brn	f sand w/ silt		sl. moist	47.9
12	8									
	11									
	3									
	4	1.2/2.0				brn	silty sand trace clay		moist	360.9
14	5									
	6									
	27									
	47	0.5/2.0			s/ft/ rock hard	ltbn/ hdpn	c sand w/ silt and gravel pieces sandstone rock fragments.		moist/ STRATED	66.8
16	33									
	33									

TYPE OF DRILLING RIG: TRUCK
METHOD OF ADVANCING BORING: HSA
METHOD OF SOIL SAMPLING: SPLIT SPOON
METHOD OF ROCK CORING: NA
GROUNDWATER LEVELS: NS1
OTHER OBSERVATIONS:

BORING NO.:

Tetra Tech NUS, Inc.

PAGE: 1 OF 2

Ttnus Form 0018

BORING LOG FOR: BALTIC MILL
PROJECT NO.: 52661084O
LOGGED BY: SDERSCOLL
DRILLED BY (Company/Driller):
GRD. SURFACE ELEVATION:

TRANSCRIBED BY:
ELEVATION FROM:

BORING NO.: SB3
START DATE:
COMPLETION: DATE:
MON. WELL NO.:
CHECKED BY:

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
16	36									
	41	09/2.0			soft	brwn	m-C sand w/ pepe grains			81.7
18	15									
	20						w/ rock fragments			
	21				soft	gray brn	f-m sand w/ some c sand			87.6
	24	17/2.0								
20	21						and silt			
	10									
	9				soft	gray brn	↓			87.4
	4	10/2.0								
22	6									
	7									
	15				silt	gray brn	m-f sand w/ some silt			57.7
	19									
24	30									
EOB	50									

TYPE OF DRILLING RIG:
METHOD OF ADVANCING BORING:
METHOD OF SOIL SAMPLING:
METHOD OF ROCK CORING:
GROUNDWATER LEVELS:
OTHER OBSERVATIONS: well set at 24' screen to 14' sand to 12' bentonite to 0' cement to grade.

Tetra Tech NUS, Inc.

BORING NO.: SB3

PAGE: 2 OF 2

Tinus Form 0018

BORING LOG FOR: BALTIC MILL
PROJECT NO.: 5266/0840
LOGGED BY: J DRISCOLL
DRILLED BY (Company/Driller): SEABOARD/JEFF
GRD. SURFACE ELEVATION:

TRANSCRIBED BY:
ELEVATION FROM:

BORING NO.: SB 4
START DATE: 3/24/2006
COMPLETION: DATE: 3/24/2006
MON. WELL NO.: MW 4
CHECKED BY:

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
0										
	4 4 4	1.0/2.0			Soft	brn	f-m sand w/ silt few	SW	SL. moist collected 3x vol.	0.0
2	4						rounded pebbles w/ roots.			
	4 7 8	1.0/2.0			Soft	brn	f-m sand w/ silt and	SW	SL. moist collected 3x vol	0.0
4	8 6						few rounded pebbles			
	5 3	0.0/2.0	no recovery				no recovery		—	—
6	3 2							SAA		
	4 5	1.2/2.0			Soft	orge brn	m sand w/ little f sand	SW	SL. moist	0.0
8	4 3						and few silt	C		
	2 3	0.0/2.0	insufficient Volume		soft	orge brn	↓	SW	moist	0.0
10	4 5						SAA			
	5 6	0.7/2.0				Horge brn	f-m sand w/ pebbles	SW	moist	0.0
12	8 10						and few silt.			
	5 6	1.3/2.0					f sand w/ m sand		moist	0.0
14	8						[illegible] pebbles + silt			
	30 31	0.4/2.0	insufficient volume				[illegible] w/ purple grains		SATURATED.	83.2
16	50						and some rock frags			

TYPE OF DRILLING RIG: TRUCK RIG
METHOD OF ADVANCING BORING: HSA
METHOD OF SOIL SAMPLING: Split Spoon
METHOD OF ROCK CORING: NA
GROUNDWATER LEVELS: 15-16'
OTHER OBSERVATIONS:

Tetra Tech NUS, Inc.

BORING NO.: SB 4 PAGE: 1 OF 2

Ttnus Form 0018

BORING LOG FOR: BALTIC MILL
PROJECT NO.: 52660/0846
LOGGED BY: J DRISCOLL
DRILLED BY (Company/Driller): SEA BOARD/SUB-T
GPD. SURFACE ELEVATION:

TRANSCRIBED BY:
ELEVATION FROM:

BORING NO.: SB4
START DATE: 3/24/06
COMPLETION: DATE: 3/24/06
MON. WELL NO.: MW4
CHECKED BY:

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
16	28	0.6/2.0			soft	BRN	c sand (w/ purple grains)		SATURATED	45.3
	39				hard		and some silt with rock frg.			
18	35									
	25									
	8	0.5/			soft					
	21						↓			
20	20	2.0					SAA		SATURATED	1999
	22									
	10	0.5'			soft		↓			
22	16	2.0					SAA		SATURATED	>3000
	22									
	15									
	25	0.5/			soft		c-sand w/ purple grains			
	40						and some silt		SATURATED	2400
24	28	2.0								
EOB										

TYPE OF DRILLING RIG:
METHOD OF ADVANCING BORING:
METHOD OF SOIL SAMPLING:
METHOD OF ROCK CORING:
GROUNDWATER LEVELS:
OTHER OBSERVATIONS: WATER AT 18', SAND TO 24', BENTONITE TO 8'

BORING NO.: SB4

Tetra Tech NUS, Inc.

PAGE: 2 OF 2

Tnus Form 0018

BORING LOG FOR: BALTIC MILL
PROJECT NO.: 2266-0840
LOGGED BY: J DRISCOLL
DRILLED BY (Company/Driller): SEABOARD / JEFF
GRD. SURFACE ELEVATION: NA
TRANSCRIBED BY:
ELEVATION FROM:
BORING NO.: SB-5
START DATE: 03/13/06
COMPLETION. DATE: 03/13/06
MON. WELL NO.: MW-5
CHECKED BY:

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
0	1									
	5	10/2	1330		soft	lt brn	m sand w/ trace clay		sl. moist	0.0
2	6		BM-SO-SB5-0002			dk brn	+organics.			
	5		1335		soft	lt brn	f-c sand little silt		sl. moist	0.0
4	7	10/2	BM-SO-SB5-0004							
	5		1345		soft	brn	f-m sand w/ some silt		sl. moist	0.0
6	13	0.2/2	BM-SO-SB5-0006							
	4		1350		soft	brn	f-m sand w/ few silt		sl. moist	0.0
8	12	0.4/2	BM-SO-SB5-0008							
	12		1355		soft	dk brown	m-f sand w/ few silt		sl. moist	0.0
10	100/2"	2.4/0.6	BM-SO-SB5-0010				+little clay w/ pebbles			
	9		1400		soft		m sand w/ cobbles		sl. moist	0.0
12	11	0.5/2	BM-SO-SB5-1012							
	11		1410		soft		f-m sand w/ few		sl. moist	0.0
14	8	1.3/2	BM-SO-SB5-1014				pebbles.			
	17		1415		soft/ rock hard		SAA, rock in tip of s/s		sl. moist	0.0
14	12	0.1/2	BM-SO-SB5-1416							

TYPE OF DRILLING RIG:
METHOD OF ADVANCING BORING: HSA
METHOD OF SOIL SAMPLING: SPLIT SPOON
METHOD OF ROCK CORING: N/A
GROUNDWATER LEVELS: 22' bgs
OTHER OBSERVATIONS:

Tetra Tech NUS, Inc.

BORING NO.: SB-5

TtNUS Form 0018

BORING LOG FOR: BALTIC MILL
PROJECT NO.: 5766-0840
LOGGED BY: J DRISCOLL
DRILLED BY (Company/Driller): SEABOARD
GRD. SURFACE ELEVATION:

TRANSCRIBED BY:
ELEVATION FROM:

BORING NO.: SB-5
START DATE: 3/13/06
COMPLETION: DATE: 3/13/06
MON. WELL NO.: MW-5
CHECKED BY:

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = (FID, (PPM))
16	10									
	6	1.1	1418		soft /	brn	m- sand w/ silt w/		sl. moist.	0.0
18	4	/	BM-SO-SB5-1618				some clay.			
	4	2								
	7		1420		soft	dk brn	f sand w/ silt + little clay		moist	0.0
	3	1.1								
20	3	/	BM-SO-SB5-1820							
	8	2								
	16		1425		soft /	brn	f. sand w/ silt + little clay		moist	0.0
	3	1.2								
22	4	/	BM-SO-SB5-2022		Stiff	dk brn				
	5	2								
	16		1430 ✗		soft	brn/	f sand- w/ silt		SATURATED	0.5
	14	1.0				orange				
24	100/5"	/	BM-SO-SB5-2224		Sl. firm	brn/	f-m			
25	100/5"	1.1				orange				
		0.4	1435		Sl. firm	dk brn	f-m sand w/ silt.		SATURATED	0.0
27		/	BM-SO-SB5-2527							
		/	E.O.B.							
		/								
		/								

TYPE OF DRILLING RIG:
METHOD OF ADVANCING BORING: HSA
METHOD OF SOIL SAMPLING: Split Spoon
METHOD OF ROCK CORING: NA
GROUNDWATER LEVELS: 22' bgs
OTHER OBSERVATIONS: Auger refusal at 25.5' bgs

Tetra Tech NUS, Inc.

BORING NO.: SB-5

TtNUS Form 0018

BORING LOG FOR: BALTIC MILL
PROJECT NO.: 52666084.0
LOGGED BY: J. DRISCOLL
DRILLED BY (Company/Driller): STRATAPROBE / JEFF NITCH
GRD. SURFACE ELEVATION:

TRANSCRIBED BY:
ELEVATION FROM:

BORING NO.: SB-6
START DATE: 3/19/06
COMPLETION: DATE: 3/19/06
MON. WELL NO.: MW-6
CHECKED BY:

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA *METHOD* = [FID, (PPM)]
0	1 1 2	1.0 / 2.0	BM-SB-SB06-0002 0915 1000	@ GRADE	soft	brn/blk	dk brown organic-rich for 0.2',		sl. moist.	0.0
							brown mf sand w/ little silt + fine gravel			
2	2 3 4									
	11 17 5 5	1.1 / 2.0			soft	brn	f sand w/ some m. sand		sl. moist.	0.0
4							few rock frags + pebbles.			
	3 5 6 8 11	0.4 / 2.0			soft	brn/gry	f-m sand w/ pebbles		sl. moist.	0.0
6							and few rock frags.			
	2 3 4 4 5	0.7 / 2.0			soft	brn	SAA		sl. moist	0.0
8										
	2 2 3 5 5	0.7 / 2.0			soft	brn	SAA		sl. moist	0.0
10										
	3 3 4 4 5	0.1 / 2.0			soft	brn	SAA		sl. moist	0.0
12										
	4 3 3 4	0.5 / 2.0			soft	brn/gry	SAA for top 0.2,		sl. moist.	0.0
14							m-C sand w/ pebbles.			
	4 11 100/0"	0.4 / 1.0	BM-SB-SB06-1416 1000		soft	brn	m-C sand w/ pebbles.		Sheen on water	25.6
16				E.O.B						

TYPE OF DRILLING RIG:
METHOD OF ADVANCING BORING: ~~HSA~~ AUGER
METHOD OF SOIL SAMPLING: SPLIT SPOON
METHOD OF ROCK CORING: N/A
GROUNDWATER LEVELS: [redacted] @ 14' bgs
OTHER OBSERVATIONS: Auger Refusal @ 15', pull up ~ 16' → Auger Refusal @ 11' pull across road → Refusal. No well set - not enough water.

Tetra Tech NUS, Inc

BORING NO.: SB-6

PAGE: 1 OF 1

TtNUS Form 0018

SAA: Same As Above

APPENDIX B

CHAIN OF CUSTODY FORMS

USEPA Contract Laboratory Program
Generic Chain of Custody

Reference Case: 0457H **R**

Client No: S05-RAC1-314 Mod 2.0

Region:	1
Project Code:	
Account Code:	5266-0840
CERCLIS ID:	
Spill ID:	01ZZ
Site Name/State:	Baltic Mill Site_MITKEM_0457H_031406/CT
Project Leader:	John Meyer
Action:	Brownfields Site
Sampling Co:	Tetra Tech NUS

Date Shipped:	3/14/2006
Carrier Name:	Lab Courier
Airbill:	
Shipped to:	Mitkem Corporation 175 Metro Center Blvd. Warwick RI 02886 (401) 732-3400

Chain of Custody Record

Sampler Signature: Shanna Saint

Relinquished By (Date / Time)	Received By (Date / Time)
1 Shanna Saint 3-14-06/1600	
2	
3	
4	

SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		QC Type
D14064	Field QC	M/G	VOC (21)	(Frozen), (Methanol) (3)	BM-SO-TB01-03132006	S: 3/13/2006	9:00	Trip Blank
D14065	Soil	M/G	Metals+Cy (21), SVOC+PESTP (21), TCLP M +PC (21), VOC (21)	(Frozen), (Ice Only), (Methanol) (6)	BM-SO-SB01-0002	S: 3/13/2006	10:15	--
D14066	Soil	M/G	Metals+Cy (21), SVOC+PESTP (21), TCLP M +PC (21), VOC (21)	(Frozen), (Ice Only), (Methanol) (6)	BM-SO-SB01-1416	S: 3/13/2006	11:00	--
D14067	Soil	M/G	Metals+Cy (21), SVOC+PESTP (21), TCLP M +PC (21), VOC (21)	(Frozen), (Ice Only), (Methanol) (6)	BM-SO-SB05-0002	S: 3/13/2006	13:30	--
D14068	Soil	M/G	Metals+Cy (21), SVOC+PESTP (21), TCLP M +PC (21), VOC (21)	(Frozen), (Ice Only), (Methanol) (6)	BM-SO-SB05-2022	S: 3/13/2006	14:25	--
D14069	Field QC	M/G	Cyanide (21), EPTH (21), Metals (21), Pest/PCB (21), SVOC (21), VOC (21)	(HCL), (HNO3), (Ice Only), (NaOH) (9)	BM-SO-RB01-03142006	S: 3/14/2006	9:00	Rinsate
D14070	Soil	M/G	Metals+Cy (21), SVOC+PESTP (21), TCLP M +PC (21), VOC (21)	(Frozen), (Ice Only), (Methanol) (6)	BM-SO-SB06-0002	S: 3/14/2006	9:15	D1

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
	D14074		
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

Cyanide = Cyanide, EPTH = EPTH by CTDEP, Metals = Metals, Metals+Cy = Metals + Cyanide by ILM05.3, Pest/PCB = Pesticides/PCBs by OLM04.3, SVOC = SVOCs by OLM04.3/SIM, SVOC+PESTP = SVOCs by OLM04.3SIM+Pest/PCBs by OLM04, TCLP M +PC = TCLP metals + TCLP PCBs, VOC = VOCs by 5035/OLM04.3VM, VOC = VOCs by OLCO3.2

TR Number: 1-502862452-031406-0005

TR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Heather Bauer, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4200; Fax 703/818-4602

USEPA Contract Laboratory Program
Generic Chain of Custody

Reference Case: 0457H **R**
Client No: S05-RAC1-314 Mod 2.0

Region:	1
Project Code:	
Account Code:	5266-0840
CERCLIS ID:	
Spill ID:	01ZZ
Site Name/State:	Baldo Mill Site_MITKEM_0457H_031406/CT
Project Leader:	John Meyer
Action:	Brownfields Site
Sampling Co:	Tetra Tech NUS

Date Shipped:	3/14/2006
Carrier Name:	Lab Courier
Airbill:	
Shipped to:	Mitkem Corporation 175 Metro Center Blvd. Warwick RI 02886 (401) 732-3400

Chain of Custody Record

Relinquished By	(Date / Time)	Received By	(Date / Time)
1 Shanna Lamb	3-14-06/1600		
2			
3			
4			

Sampler Signature: Shanna Lamb

SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		QC Type
D14971	Soil	M/G	Metals+Cy (21), SVOC+PESTP (21), TCLP M +PC (21), VOC (21)	(Frozen), (Ice Only), (Methanol) (6)	BM-SO-DUP01-03142006	S: 3/14/2006	9:20	D1
D14972	Soil	M/G	Metals+Cy (21), SVOC+PESTP (21), TCLP M +PC (21), VOC (21)	(Frozen), (Ice Only), (Methanol) (6)	BM-SO-SB06-1416	S: 3/14/2006	10:00	--
D14973	Field QC	M/G	Cyanide (21), EPTH (21), Metals (21), Pest/PCB (21), SVOC (21), VOC (21)	(HCL), (HNO3), (Ice Only), (NaOH) (10)	BM-GW-RB01-03142006	S: 3/14/2006	13:00	Rinsate
D14974	Ground Water	M/G	Cyanide (21), EPTH (21), Metals (21), Pest/PCB (21), SVOC (21), VOC (21)	(HCL), (HNO3), (Ice Only), (NaOH) (25)	BM-GW-MW01-01	S: 3/14/2006	14:35	Lab QC
D14975	Field QC	M/G	VOC (21)	(HCL) (2)	BM-GW-TB01-03142006	S: 3/14/2006	12:00	Trip Blank

Shipment for Case Complete? Y:	Sample(s) to be used for laboratory QC: D14974	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

Cyanide = Cyanide, EPTH = EPTH by CTDEP, Metals = Metals, Metals+Cy = Metals + Cyanide by ILM05.3, Pest/PCB = Pesticides/PCBs by OLM04.3, SVOC = SVOCs by OLM04.3/SIM, SVOC+PESTP = SVOCs by OLM04.3SIM+Pest/PCBs by OLM04, TCLP M +PC = TCLP metals + TCLP PCBs, VOC = VOCs by 5035/OLM04.3VM, VOC = VOCs by OLCO3.2

TR Number: 1-502862452-031406-0005

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Heather Bauer, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4200; Fax 703/818-4602

USEPA Contract Laboratory Program
Generic Chain of Custody

Reference Case: 0457H R
Client No: S03-RAC1-261

Region:	1
Project Code:	
Account Code:	5266-0840
CERCLIS ID:	
Spill ID:	01ZZ
Site Name/State:	Baltic Mill Site_SCILAB_0457H_031406/CT
Project Leader:	John Meyer
Action:	Brownfields Site
Sampling Co:	Tetra Tech NUS

Date Shipped:	3/14/2006
Carrier Name:	FedEx
Airbill:	845559984721
Shipped to:	Ameri-Sci 8 School Street Weymouth MA 02189 (781) 337-9334

Chain of Custody Record

Sampler Signature: Shanna Lane

Relinquished By (Date / Time)	Received By (Date / Time)
1 Shanna Lane 3-14-06/1400	to Fed Ex
2	
3	
4	

SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		QC Type
D14966	Soil	M/G	ASBESTOS (21)	(Not preserved) (1)	BM-SO-SB01-0002	S: 3/13/2006	10:15	--
D14967	Soil	M/G	ASBESTOS (21)	(Not preserved) (1)	BM-SO-SB05-0002	S: 3/13/2006	13:30	--
D14970	Soil	M/G	ASBESTOS (21)	(Not preserved) (1)	BM-SO-SB06-0002	S: 3/14/2006	9:15	D1
D14971	Soil	M/G	ASBESTOS (21)	(Not preserved) (1)	BM-SO-DUP01-03142006	S: 3/14/2006	9:20	D1

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key: ASBESTOS = Asbestos	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

TR Number: 1-502862452-031406-0003

Please provide preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Heather Bauer, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4200; Fax 703/818-4602

USEPA Contract Laboratory Program
Generic Chain of Custody

Reference Case: 0457H R
Client No: S05-RAC1-314 Mod 2.0

Region:	1
Project Code:	
Account Code:	5266-0940
CERCLIS ID:	
Spill ID:	01ZZ
Site Name/State:	Baltic Mill Site_MITKEM_0457H_032306/MA
Project Leader:	John Meyer
Action:	Brownfields Site
Sampling Co:	Tetra Tech NUS

Date Shipped:	3/23/2006
Carrier Name:	Lab Courier
Airbill:	
Shipped to:	Mitkem Corporation 175 Metro Center Blvd. Warwick RI 02886 (401) 732-3400

Chain of Custody Record

Relinquished By	(Date / Time)	Received By	(Date / Time)
1 Joanna Grant	3-23-06/1600		
2			
3			
4			

Sampler Signature: Joanna Grant

SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		QC Type
D15025	Field QC	M/G	VOC (21)	(Frozen), (Methanol) (3)	BM-SO-TB02	S: 3/23/2006	9:00	Trip Blank
D15026	Soil	M/G	Inorg. (21), Org. (21), SPLP (21), VOC (21)	(Frozen), (Ice Only), (Methanol) (6)	BM-SO-SB2-0002	S: 3/23/2006	11:00	--
D15027	Ground Water	M/G	Cyanide (21), Metals (21), Org. (21), VOC (21)	(HCL), (HNO3), (Ice Only), (NaOH) (8)	BM-GW-MW5-01	S: 3/23/2006	14:00	--
D15028	Field QC	M/G	VOC (21)	(HCL) (2)	BM-GW-TB02	S: 3/23/2006	9:00	Trip Blank

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

Cyanide = Cyanide, Inorg. = Metals+Cyanide, Metals = Metals, Org. = SVOC, Pest/PCBs, ETPH, SPLP = SPLP PCBs+SPLP Metals, VOC = VOC

TR Number: T-502862452-032306-0001

Please provide preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Heather Bauer, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4200; Fax 703/818-4602

USEPA Contract Laboratory Program
Generic Chain of Custody

Reference Case: 0457H **R**
Client No: S05-RAC1-314 Mod 2.0

Region: 1
Project Code:
Account Code: 5266-0940
CERCLIS ID:
Spill ID: 01ZZ
Site Name/State: Baltic Mill Site_MITKEM_0457H_032406/MA
Project Leader: John Meyer
Action: Brownfields Site
Sampling Co: Tetra Tech NUS

Date Shipped: 3/24/2006
Carrier Name: Lab Courier
Airbill:
Shipped to: Mitkem Corporation
175 Metro Center Blvd.
Warwick RI 02886
(401) 732-3400

Chain of Custody Record

Sampler Signature: Shanna Stanley

Relinquished By	(Date / Time)	Received By	(Date / Time)
1 Shanna Stanley	3-24-06/1600		3-24-06 1600
2			
3			
4			

SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		QC Type
D15029	Field QC	M/G	VOC (21)	(Frozen), (Methanol) (3)	BM-SO-TB03	S: 3/24/2006	7:00	Trip Blank
D15030	Soil	M/G	Inorg. (21), Org. (21), SPLP (21), VOC (21)	(Frozen), (Ice Only), (Methanol) (6)	BM-SO-SB3-0204	S: 3/24/2006	8:00	--
D15031	Soil	M/G	Inorg. (21), Org. (21), SPLP (21), VOC (21)	(Frozen), (Ice Only), (Methanol) (6)	BM-SO-SB3-0608	S: 3/24/2006	8:30	--
D15032	Soil	M/G	Inorg. (21), Org. (21), SPLP (21), VOC (21)	(Frozen), (Ice Only), (Methanol) (15)	BM-SO-SB4-0002	S: 3/24/2006	10:15	Lab QC
D15033	Soil	M/G	Inorg. (21), Org. (21), SPLP (21), VOC (21)	(Frozen), (Ice Only), (Methanol) (6)	BM-SO-SB4-1214	S: 3/24/2006	11:00	--
D15034	Field QC	M/G	VOC (21)	(HCL) (2)	BM-GW-TB03	S: 3/24/2006	7:00	Trip Blank
D15035	Ground Water	M/G	Cyanide (21), Metals (21), Org. (21), VOC (21)	(HCL), (HNO3), (Ice Only), (NaOH) (10)	BM-GW-MW3-01	S: 3/24/2006	9:00	GW D1
D15036	Ground Water	M/G	Cyanide (21), Metals (21), Org. (21), VOC (21)	(HCL), (HNO3), (Ice Only), (NaOH) (10)	BM-GW-DUP01	S: 3/24/2006	9:05	GW D1
D15037	Soil	M/G	Inorg. (21), Org. (21), SPLP (21), VOC (21)	(Frozen), (Ice Only), (Methanol) (6)	BM-SO-SB2-1416	S: 3/24/2006	12:30	--
D15038	Ground Water	M/G	Inorg. (21), Org. (21), SPLP (21), VOC (21)	(HCL), (Ice Only) (5)	BM-GW-MW4-01	S: 3/24/2006	13:50	--

Shipment for Case Complete? Y / N
Sample(s) to be used for laboratory QC: D15032
Additional Sampler Signature(s):
Chain of Custody Seal Number:

Analysis Key: Concentration: L = Low, M = Low/Medium, H = High Type/Designate: Composite = C, Grab = G
Cyanide = Cyanide, Inorg. = Metals+Cyanide, Metals = Metals, Org. = SVOC, Pest/PCBs, ETPH, SPLP = SPLP PCBs+SPLP Metals, VOC = VOC

Shipment Iced? _____

TR Number: 1-502862452-032406-0001

Provide preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Heather Bauer, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4200; Fax 703/818-4600

USEPA Contract Laboratory Program
Generic Chain of Custody

Reference Case: 0457H **R**
Client No: S05-RAC1-314 Mod 2.0

Region:	1
Project Code:	
Account Code:	5266-0540
CERCLIS ID:	
Split ID:	01ZZ
Site Name/State:	Baltic Mill Site_MITKEM_0457H_032406/MA
Project Leader:	John Meyer
Action:	Brownfields Site
Sampling Co:	Tetra Tech NUS

Date Shipped:	3/24/2006
Carrier Name:	Lab Courier
Airbill:	
Shipped to:	Mitkem Corporation 175 Metro Center Blvd. Warwick RI 02886 (401) 732-3400

Chain of Custody Record

Sampler Signature: Johanna Isaac

Relinquished By	(Date / Time)	Received By	(Date /-Time)
1 Johanna Isaac	3-24-06/1600		5-24-06
2			
3			
4			

SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	QC Type
D15039	Ground Water	M/G	Inorg. (21), Org. (21), SPLP (21), VOC (21)	(HCL), (Ice Only) (5)	BM-GW-MW2-01	S: 3/24/2006 15:15	--

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC: D15032	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced?

Cyanide = Cyanide, Inorg. = Metals+Cyanide, Metals = Metals, Org. = SVOC, Pest/PCBs, ETPH, SPLP = SPLP PCBs+SPLP Metals, VOC = VOC

TR Number: 1-502862452-032406-0001

TR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Heather Bauer, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4200; Fax 703/818-4600

USEPA Contract Laboratory Program
Generic Chain of Custody

Reference Case: 0457H R
Client No: S03-RAC1-261 Mod 1.0

Region:	1
Project Code:	
Account Code:	5266-0840
CERCLIS ID:	
Split ID:	01ZZ
Site Name/State:	Baltic Mill Site_SCILAB_0457H_032406/MA
Project Leader:	John Meyer
Action:	Brownfields Site
Sampling Co:	Tetra Tech NUS

Date Shipped:	3/24/2006
Carrier Name:	FedEx
Airbill:	845559984607
Shipped to:	Ameri-Sci 8 School Street Weymouth MA 02189 (781) 337-9334

Chain of Custody Record

Relinquished By	(Date / Time)	Received By	(Date / Time)
1			
2			
3			
4			

Sampler Signature:

SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		QC Type
D15026	Soil	M/G	ASBESTOS (21)	(Not preserved) (1)	BM-SO-SB2-0002	S: 3/23/2006	11:00	--
D15052	Soil	M/G	ASBESTOS (21)	(Not preserved) (1)	BM-SO-SB4-0002	S: 3/24/2006	10:15	--
D15053	Soil	M/G	ASBESTOS (21)	(Not preserved) (1)	BM-SO-SB3-0002	S: 3/24/2006	16:00	--

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key: ASBESTOS = Asbestos	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

TR Number: 1-502862452-032406-0003

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Heather Bauer, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4200; Fax 703/818-4602

APPENDIX C

ASBESTOS, LEAD-BASED PAINT, PCBS AND CONTAMINATED BUILDING MATERIALS

April 14, 2006

Ms. Mary Fiori
Tetra Tech NUS, Inc.
20251 Century Boulevard, Suite 200
Germantown, Maryland 20874

RE: **Survey and Consultation Services**
Asbestos, Lead-Based Paint, PCB's and Contaminated Building Materials
Baltic Mill, Sprague, CT
EnviroScience Project No. 06-136.10

Dear Ms. Fiori:

Enclosed is the Final report for the hazardous materials survey performed at the Baltic Mill, Plainfield, Connecticut.

The initial survey was performed on March 13, 2006 by EnviroScience Consultants, Inc.'s (EnviroScience's) licensed inspectors and included an asbestos inspection, screening for lead-based paint, and assessment of PCB-containing ballasts and possible mercury hazards.

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) 953-2700, extension 3047. Thank you for this opportunity to have served your environmental needs.

Sincerely,

Robert L. May, Jr.
Manager, Hazardous Materials

RLM:kr

Enclosure

Y:\WORD\Projects\06\06-136.10c.doc

HAZARDOUS MATERIALS SURVEY REPORT

BALTIC MILL
SPRAGUE, CONNECTICUT

Prepared for:

Tetra Tech NUS, Inc.
20251 Century Boulevard, Suite 200
Germantown, Maryland 20874

Prepared by:

EnviroScience Consultants, Inc.
795 North Mountain Road
Newington, Connecticut 06111

EnviroScience Project No. 06-136.10

April 14, 2006

TABLE OF CONTENTS

APPENDICES

1.0 INTRODUCTION

The site is located at 29 Bushnell Hollow Road in Sprague, Connecticut. The site is bordered by Route 138 (Bushnell Hollow Road) to the north, Route 97 (Scotland Road) to the west, and the Shetucket River to the south and east. Surrounding properties include undeveloped residentially zoned land to the east; commercial businesses and municipal facilities (Sprague Fire Department and highway department garage) to the north; single family residences and elderly housing to the west; and an industrial facility (Nutmeg Wire), the Shetucket River and the Village of Baltic (residential and commercial property) to the south.

There is one structure, known as Building 10, present on the site. This is a 3-story 21,000 square foot building. The site also includes foundations of former mill buildings located throughout the western, northwestern and central portions of the property. A former power house building is also present in the form of ruins. Mixed stone, rubble, brick, and concrete occupy the central portion of the site. A concrete foundation slab of a former Weave Shed is located in the southwestern corner of the site. A stone lined tailrace canal runs through the site from northwest to southeast. A septic system that formerly discharged to the tailrace canal via an outfall also existed in years past.

The Mill Building has been essentially gutted. Interior finishes consist mostly of wood timber framing members, wood floor decking, and sheetrock wall finishes. The window systems are composed of wood. Door systems are comprised of wood and metal. The first, second, third floor and roof areas of the building were not structurally sound and could not be accessed.

On March 13, 2006, EnviroScience Consultants, Inc.'s (EnviroScience) Senior Environmental Consultants, Paul Bateman and Pat Sharkany, both State of Connecticut Licensed Asbestos and Lead Inspectors, performed an inspection for hazardous materials at the Baltic Mill which is slated for demolition. Both individuals have also received OSHA 40-hour training. The Boiler house and Power house located on site were not part of the inspection. Debris and soil mixed with debris samples were also collected west of the mill building and sent for asbestos analysis. The survey was conducted in compliance with the requirements of the U.S. Environmental Protection Agency (USEPA) National Emission Standards for Hazardous Air Pollutants (NESHAP) regulation and the State of Connecticut regulations 19a-332a.

This inspection was performed in response to the planned demolition of the Baltic Mill, and consisted of a survey for asbestos containing materials (ACM), a screening of painted surfaces for lead, and an evaluation of fluorescent light fixtures for PCB ballasts and light tubes for mercury. Samples were also collected for analysis by the Toxicity Characteristic Leachate Procedure (TCLP). Samples for TCLP analysis were collected from representative waste materials expected to be generated by the demolition of the structures.

The interior and exterior of the building was inspected in accordance with EnviroScience's written proposal numbered 06-136.00 dated January 15, 2006.

EnviroScience took digital photographs of the building. The digital photographs are included as Appendix IX.

2.0 ASBESTOS INSPECTION

During the inspection, suspect ACM were separated into the three categories defined by USEPA guidance documents and AHERA regulation 40 CFR Part 763.85. The AHERA regulation serves as the industry standards for conducting asbestos inspections, sampling protocols and analysis of asbestos bulk samples. These categories include thermal system insulation (TSI), surfacing ACM, and miscellaneous ACM. TSI includes all materials used to prevent heat loss, heat gain, or water condensation on mechanical systems. Examples of TSI include but are not limited to 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 sheet flooring, vinyl asbestos flooring, ceiling tiles and roofing materials.

Suspect materials were first visually identified and separated into groups of homogeneous building materials. Each homogeneous set of building materials suspected of containing asbestos were sampled. Sampling involved collecting a cross section of the materials to the base substrate. Materials that were sampled were analyzed by PLM (Refer to Appendix IV for analytical method). A minimum of three (3) samples were collected of each set of homogeneous building materials. The above referenced AHERA regulation specifies asbestos sampling methods and details the collection of a minimum number of samples for each of the three material categories. As an industry standard at least three samples are typically collected for analysis of each homogeneous material. Each sample is systematically analyzed for the presence of asbestos.

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. If all collected samples of a homogeneous material are analyzed and determined not to contain asbestos the material is considered non-asbestos containing. If any of the collected samples are determined to contain asbestos in amounts greater than 1% asbestos the material is considered asbestos containing.

Samples of suspect asbestos containing materials were sent for analysis to EMSL Analytical of Westmont, New Jersey (EMSL). Refer to Table 1 for samples collected.

Finally, all materials determined to contain asbestos were quantified in linear and square footage (LF or SF), depending on the nature of the material. The asbestos content, quantities, and locations of ACM identified by bulk sample analysis are listed in Table 2 of the Results section. Materials determined not to contain asbestos are included in Table 3.

2.1 Results

The following table (Table 1) summarizes the results of analysis for all bulk samples collected at the site. The table includes sample identification number, material type, location, and analysis

result. Sample results indicating material contains more than 1% asbestos either by PLM are shown in bold text.

TABLE 1
Bulk Sample Summary
Suspect Asbestos Containing Materials Sample Analysis

Sample Number	Suspect Material Description	Sample Location	Asbestos Content (%)	Analyzed by/Method
3-13-PB-01A	Roofing-Type I-black roofing	Exterior - on ground	20% Chrysotile	EMSL[1]
3-13-PB-02C	Roofing type II- roofing with tar	Exterior - on ground	10% Chrysotile	EMSL[1]
3-13-PB-03A	Roofing-Type III-gray paper roofing	Exterior - on ground	30% Chrysotile	EMSL[1]
3-13-PB-04A	Window glazing	Exterior	5% Chrysotile	EMSL[1]
3-13-PB-05A-C	Paper under wood flooring	1st, 2nd and 3rd floors	None found	EMSL[1]
3-13-PB-06A-C	Basement	Basement –scattered on ceiling and floors	None found	EMSL[1]
3-13-PB-07A-C	Sheetrock	Basement-northeast corner	None found	EMSL[1]
3-13-PB-08A-C	Paneling glue	Basement-northeast corner	None found	EMSL[1]
3-13-PB-09A-C	Carpet glue	Basement-northeast corner	None found	EMSL[1]
3-13-PB-10A-C	Brown flooring	Basement-southwest corner	None found	EMSL[1]
3-13-PB-11A-C	Debris mixed with soil	Exterior debris field-closest to existing building	None found	EMSL[1]
3-13-PB-12A	Exterior-debris field – away from existing building	West end of debris field-gray paper roofing (similar to sample 3A)	15% Chrysotile	EMSL[1]

Notes:
[1]Analyses performed by EMSL using PLM with Dispersion Staining (EPA 600/R-93/116). Refer to Appendix IV.

Utilizing the USEPA protocol and criteria, the following materials included in Table 2 were determined to be ACM:

TABLE 2
Asbestos Containing Materials and Estimated Quantities

Location	Material Type	Asbestos Content	Estimated Quantity
EXTERIOR			
Exterior-on ground	Roofing-Type I-black roofing	20% Chrysotile	15,000 SF
Exterior-on ground	Roofing type II- roofing with tar	10% Chrysotile	15,000 SF
Exterior-on ground	Roofing-Type III-gray paper roofing	30% Chrysotile	15,000 SF

Location	Material Type	Asbestos Content	Estimated Quantity
Exterior	Window glazing	5% Chrysotile	165 Each
Exterior west end of debris field	West end of debris field-gray paper roofing(similar to sample 3A)	15% Chrysotile	10,000 SF*

LF = Linear Feet, SF = Square Feet
*Quantities are estimates only.

Utilizing the USEPA protocol and criteria, the following materials included in Table 3 were determined to be non-ACM:

TABLE 3
Non Asbestos Containing Materials

Location	Material Type	Sample No.
1st, 2nd and 3rd floors	Paper under wood flooring	3-13-PB-5A-C
Basement-scattered on floors and ceiling	Basement	3-13-PB-6A-C
Basement-northeast corner	Sheetrock	3-13-PB-7A-C
Basement-northeast corner	Paneling glue	3-13-PB-8A-C
Basement-northeast corner	Carpet glue	3-13-PB-9A-C
Basement-southwest corner	Brown flooring	3-13-PB-10A-C
Exterior debris field-closest to existing building	Debris	3-13-PB-11A-C

2.2 Conclusion

All ACM identified in Section 2.1 (Table 2) 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. Materials that cannot be removed prior to building demolition due to unsafe building conditions must be segregated and disposed of as asbestos waste upon building demolition.

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 analysis results prove otherwise.

Please see Appendix I for the chain-of-custody and sample results.

3.0 LEAD-BASED PAINT TESTING

3.1 Introduction

A lead-containing paint screen was conducted to identify building components that may have paints with detectable levels of lead that will be impacted by proposed demolition work or salvaging efforts at the site (Refer to Appendix V for lead paint testing procedures and equipment). The Department of Labors Occupational Safety and Health Administration (OSHA) has regulations in place regarding exposure to lead dust or fume. The regulations, 29 CFR 1926.62 require action if lead in any amount is disturbed during demolition and construction activities.

The inspection was conducted by Paul Bateman and Pat Sharkany on March 13, 2006, utilizing a Radiation Monitoring Device (RMD) LPA-1) X-Ray Fluorescence (XRF) Analyzer, serial number 1138. The XRF instrument was checked for proper calibration prior to each use utilizing a manufacturer's block with a known lead standard. The instruments were operated in accordance with the EPA Performance Characteristic Sheet (PCS) for an RMD. Representative painted components or structures throughout the building were tested.

X-ray fluorescence (XRF) results are classified as containing lead paint if the results are at or above the 1.0 milligrams per centimeter squared (mg/cm^2) standard established by the Department of Housing and Urban Development (HUD) and the State of Connecticut regulations. Refer to Table 5 for XRF testing results. The above mentioned regulations are specific to residential target housing and do not apply to this property, however the standard is established as an industry standard. Accessible painted surfaces on the interior and exterior of the building were tested using XRF. Toxic levels of lead were detected on components within the interior and exterior of the building. The lead field testing data is included in Appendix VI.

3.2 Results

The results of testing using XRF are summarized in Table 5. All results are included in the table. Testing on representative components with levels of lead equal or greater than 1.0 mg/cm^2 are shown in bold text.

TABLE 4
XRF Testing Results

Location	Surface	Side	Substrate	XRF Reading
	R & D Building			
Exterior	Door	A	Wood	0.0
Exterior	Door	B	Wood	0.4
Exterior	Door casing	B	Plaster	0.1
Exterior	Door jamb	B	Plaster	0.4
Exterior	**Door casing**	**C**	**Wood**	**1.6**
Exterior	**Window sill**	**C**	**Wood**	**1.6**
Exterior	**Window trim**	**C**	**Wood**	**2.5**
Exterior	Door	D	Wood	0.6
Exterior	Door casing	D	Wood	0.5
Basement-room-1 entry room	Wall	D	Brick	0.0
Basement-room-1 entry room	**Door**	**D**	**Metal**	**4.2**
Basement-room-1 entry room	**Column**	**C**	**Wood**	**6.0**
Basement-room - stairwell	**Door**	**D**	**Wood**	**4.5**
Basement-main storage area	Wall	A	Brick	0.4
Basement-main storage area	**Wall**	**B**	**Brick**	**1.9**
Basement-main storage area	**Wall**	**D**	**Brick**	**3.5**
Basement-main storage area	**Door**	**B**	**Wood**	**5.6**
Basement-main storage area	**Door**	**A**	**Wood**	**2.3**
Basement-main storage area	**Window trim**	**D**	**Wood**	**2.6**
Basement-main storage area	**Window sill**	**D**	**Wood**	**3.6**

Location	Surface	Side	Substrate	XRF Reading
Basement-main storage area	**Window sash**	**D**	**Wood**	**2.5**
Basement-main storage area	**Window well**	**D**	**Wood**	**5.0**
Basement-main storage area	**Column**	**C**	**Wood**	**8.0**
Basement-main storage area	Wainscoting	A	Wood	0.0
Rear stairwell	**Wall**	**B**	**Wood**	**4.0**
Rear stairwell	**Wall**	**C**	**Wood**	**2.2**
Rear stairwell	**Door**	**A**	**Wood**	**4.1**
Rear stairwell	**Door**	**B**	**Metal**	**6.4**
Rear stairwell	**Window trim**	**D**	**Wood**	**4.9**
Rear stairwell	**Window sash**	**D**	**Wood**	**4.0**
Rear stairwell	Stair riser	C	Metal	0.6
Rear stairwell	Handrail	C	Metal	0.0

Synopsis of Results

Baltic Mill

On the exterior of the mill building, the lead-based paint screen revealed that the external window frames and external door frames contained toxic levels of lead. Also, in the interior of the building on the basement level, doors, walls, columns, and window systems, contain toxic levels of lead. The walls, door and window components in the rear stairwell also contain lead based paint. The paint is defective because of damaged substrates and moisture in the building.

3.3 Discussion

OSHA has no set limit for the content of lead in paint below which the lead-in construction standard (29 CFR 1926.62) does not apply: the OSHA requirements are task-based and are based on airborne exposure and blood lead levels. Therefore the results of this survey are intended to provide guidance to contractors for occupational exposure control to lead as well as for demolition waste disposition.

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.

3.4 Conclusion

The results of the lead survey indicate that lead paint is present at the site. Materials must be characterized for disposal purposes in accordance with the USEPA Resource Conservation and Recovery Act (RCRA) and the State of Connecticut Department of Environmental Protection (DEP). Materials that exceed limits specified in RCRA regulations for given compounds may require treatment as hazardous waste. The results of the overall screening indicate lead is present requiring the anticipated waste materials from building demolition to be characterized for disposal purposes. Waste materials containing lead are subject to the RCRA regulations.

Segregation of waste materials that may disturb lead containing paint must be conducted in accordance with OSHA regulations.

Lead paint was also identified on building materials that may be salvaged from the building. Materials to be salvaged or recycled are exempt from RCRA regulations. However, any salvage efforts that may disturb lead containing paint must be conducted in accordance with OSHA regulations. In addition, any by products such as paint chips or debris resulting from stripping paint from surfaces of salvage materials must be properly characterized and disposed of as lead containing or lead contaminated waste.

Materials transferred to another party to be salvaged or recycled must include a disclosure report indicating that the materials contain lead paint.

4.0 TCLP SAMPLING FOR WASTE (LEAD)

4.1 Introduction

A waste is a solid or liquid material that one no longer uses. A waste is defined by the United States Environmental Protection Agency (USEPA) to be hazardous if it contains certain properties that could pose dangers to human health and the environment after it is discarded. Wastes that are ignitable, corrosive, reactive, or contain certain toxic metals and chemicals are regulated under the Hazardous Waste Regulations. Toxic Characteristic Leachate Procedure (TCLP) is a method that extracts the compounds of interest in a standard way simulating landfill conditions (40 CFR Part 261). RCRA establishes limits for various compounds. TCLP results exceeding limits established for a given compound are considered hazardous waste and must be treated in accordance with RCRA regulations. The regulations detail the proper handling, treatment, storage and disposal of hazardous waste materials.

4.2 Field Work

On March 13, 2006, EnviroScience 's Paul Bateman and Pat Sharkany collected representative samples of building components at the Baltic Mill site.

Collection of samples for TCLP analysis involved cutting a cross-section of various building components to obtain the volume of individual parts of the building represented by the sampling. These individual parts e.g. wood, concrete, brick etc. were mixed in the same volume ratio as they occur on-site.

One sample was analyzed by the laboratory. The Resource Conservation and Recovery Act (RCRA) defines toxic concentrations for lead, which is commonly found in paint.

Compound	Regulatory Level (ppm)
Lead	5

4.3 Results

The following Table 7 summarizes the results of TCLP sample analysis performed at the site:

TABLE 5
TCLP Sample Results

Sample No.	Location	Results mg/L(ppm)
3-22-PB-03	Baltic Mill building	BDL*

*BDL = Below Detectable Limit (laboratory detection limit = 0.05 Mg/L). Samples were analyzed by EAS Laboratories of Watertown, Connecticut, a Connecticut Certified Laboratory (#PH0558).

Refer to Appendix VII for sample results and chain of custody.

4.4 Conclusion

The results of sampling and analysis of sample 4-22-PB-03 indicates that the waste represented by the material is non-hazardous for lead and may be disposed of as construction debris. The result from this sample indicates the resulting waste from building demolition would be non-hazardous under the USEPA RCRA regulations.

5.0 PCB-CONTAINING FLUORESCENT BALLASTS AND MERCURY-CONTAINING LAMPS

5.1 PCB-Containing Fluorescent Ballasts

On March 13, 2006, EnviroScience's representatives, Paul Bateman and Pat Sharkany, 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. Table 6 summarizes the result of ballasts that are suspected of containing PCB's in the building.

Results

The following ballasts did not have labels indicating "No-PCB":

TABLE 6
Location and Quantity of Fixtures with PCB

Location	Quantity
Basement level	20
1st floor	50
2nd floor	5
3rd floor	20
TOTAL:	**95**

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.

5.2 Mercury-Containing Lamps and Switch Gear

On March 13, 2006, EnviroScience's representative, Paul Bateman and Pat Sharkany, performed an inventory of mercury lamps, thermometers, and mercury switches. These fixtures were inventoried in-place. Table 7 summarizes the location and quantity of mercury containing lamps identified in the building.

Results

No mercury thermometers, switches or gauges were identified. The following areas have fluorescent lamps:

TABLE 7
Location and Quantity of Mercury Containing Lamps

Location	Quantity
Basement level	40
1st floor	100
2nd floor	10
3rd floor	40
TOTAL:	**190**

Recommendation

Typically mercury lamps from fluorescent fixtures are stored in cardboard containers supplied by a recycling facility. EnviroScience recommends that all unbroken lamps be transferred to proper disposal/recycling containers.

It is possible that mercury switches could exist within existing machinery, however no external switches were identified during the inspections.

6.0 ABATEMENT RECOMMENDATIONS AND COST ESTIMATES

6.1 Abatement Recommendations

EnviroScience has reviewed the conditions at the site in relation to all those materials that have been determined to contain asbestos. It is our understanding that the intent of the project is to completely demolish the building. Based on this understanding and review of the proposed work the following work is required.

Mill Building

The building has been partially gutted on the interior. Non-friable ACM has been identified on the exterior and in debris fields surrounding the building. Asbestos containing roofing and window glazing have been identified on the exterior of the structure. The 1st, 2nd, 3rd floors and roof are unsound and care must be exercised in conducting required removal work..

- In some locations, the floor structure and several areas of the roof have collapsed and are unsound; care must be exercised in conducting required removal work.
- Any additional selective demolition or segregation work must be performed in compliance with OSHA regulations for lead due to the presence of lead paint in the building. The resulting demolition waste from whole building demolition was determined to be non-hazardous for disposal purposes. If any materials are to be salvaged, a letter disclosing the existence of lead paint must be provided to the party accepting the material. Any on site paint removal to be conducted as part of salvage efforts must be performed in accordance with OSHA regulations for lead.
- The exterior roofing on the entire building and debris fields have been identified as containing asbestos. The non-friable materials are not regulated by the CT DPH as long as the materials do not become friable (non RACM). Materials must be removed in accordance with NESHAP requirements and CT DEP for disposal of waste. OSHA asbestos regulations must also be adhered to for worker protection. Several areas of roof have collapsed and the roof is structurally unsound. The materials should be left in place during building demolition and segregated once the building is razed for disposal.
- An allowance for fluorescent light fixtures should be included for disposal of ballasts containing PCB's or DEHP including transfer of stored ballasts into proper containers. The allowance shall also include cost for recycling of fluorescent lamps that contain mercury including transfer of stored lamps into proper containers.
- Some areas of brick were identified as containing lead. If crushing of brick masonry for use as fill is proposed, further testing to determine if leachable lead is present on brick should be performed by use of TCLP.

West Side Debris Field

The west section of the mill building has been demolished. The debris pile has been observed to contain three types of roofing materials that have been determined to contain asbestos. Asbestos bulk samples were collected from soil of the west side debris field. The soil and mixed debris is non-ACM but roofing debris in the debris field is asbestos containing material.

- EnviroScience recommends that the demolition debris be segregated in order to remove asbestos containing non-friable roofing materials from other debris for disposal as asbestos waste. Alternatively all whole building waste can be disposed of as friable asbestos containing/contaminated waste materials to save the labor of segregating the materials.

- Any additional selective demolition or segregation work must be performed in compliance with OSHA regulations for lead due to the presence of lead paint in the debris pile. The demolition waste was determined, for lead, to be non-hazardous for disposal purposes. If any materials are to be salvaged, a letter disclosing the existence of lead paint must be provided to the party accepting the material. Any on site paint removal conducted as part of salvage efforts must be performed in accordance with OSHA regulations for lead.

6.2 Estimate of Probable Cost for Hazardous Materials Abatement

The estimated cost of abating materials listed in abatement recommendations were determined using unit prices currently associated with industry standards. Costs have been generated n consideration of specific job conditions and material quantities. This is an estimate only and is solely intended to assist the client for budgetary purposes. Actual cost will vary inversely with the size of the project and will depend on market condition.

The estimated removal costs are summarized in Tables 8. In addition Table 9 includes estimated cost for industrial hygiene services and consulting costs associated with the project.

TABLE 8
Hazardous Materials Abatement Estimate of Probable Cost
(Building Exteriors)

Location	Material Type	Estimated Quantity	Estimated Cost
Exterior-on ground	Roofing-Type I-black roofing	15,000 SF**	$75,000.00
Exterior-on ground	Roofing type II- roofing with tar	15,000 SF**	
Exterior-on ground	Roofing-Type III-gray paper roofing	15,000 SF**	
Exterior	Window glazing compound per window	165 Each**	$33,000.00
Exterior west end of debris field	West end of debris field-gray paper roofing(similar to sample 3A)	10,000 SF**	$50,000.00
		SUBTOTAL	$158,000.00
		10% Contingency	$15,800.00
		TOTAL	**$173,800.00**

LF = Linear Feet, SF = Square Feet,
**This material may have to be segregated form the debris once the building is demolished.

Additional project administration and abatement monitoring costs should be factored into the overall cost of the project budget.

TABLE 9
Consulting Cost Estimates

Consulting Item	Cost	Total
1. Contract Administration and Project Monitoring	~15% of Construction cost	$26,200.00
	PROJECT TOTAL	**$200,000.00**

Y:\WORD\Projects\06\06-136.10c.doc

APPENDIX I

ASBESTOS SAMPLE RESULTS AND CHAINS OF CUSTODY
(EMSL ANALYZED MATERIALS)

Asbestos Lead Environmental Materials & Indoor Air Analysis

EMSL Analytical, Inc.
http://www.emsl.com

107 Haddon Ave.
Westmont, NJ 08108
Phone: (856) 858-4800
Fax: (856) 858-4960

FACSIMILE TRANSMITTAL SHEET

TO:	Paul Bateman	**FROM:**	EMSL Analytical, Inc.
COMPANY:	EnviroScience Consultants, Inc.	DATE:	3/16/2006 11:51:48 AM
FAX:	(413) 647-0018	PAGES INCLUDING COVER:	9
PHONE:	(860) 953-2700		

RE: Analysis Results for Order 040604805

The following report covers the analysis performed on samples submitted to EMSL Analytical, Inc. on 3/15/2006. The samples are for TETRA TECH 06-136.10.

Notice: **If you are not the stated recipient of this fax and have received this in error, please discard immediately and contact EMSL Analytical at the phone number listed above.**

If you have any questions, please do not hesitate to contact us at (856) 858-4800.

VISIT OUR WEBSITE AT HTTP://WWW.EMSL.COM
YOU CAN DOWNLOAD AND PRINT
CERTIFICATIONS OF ACCREDITATIONS AND CHAIN OF CUSTODY FORMS

EMSL Analytical, Inc.
107 Haddon Ave., Westmont, NJ 08108
Phone: (856) 858-4800 Fax: (856) 858-4571 Email: westmontlab@emsl.com

Attn: **Paul Bateman**
EnviroScience Consultants, Inc.
795 North Mountain Road
Newington, CT 06111

Fax: (413) 647-0018 Phone: (860) 953-2700
Project: **TETRA TECH 06-136.10**

Customer ID: ENVI54
Customer PO:
Received: 03/15/06 10:35 AM
EMSL Order: 040604805

EMSL Proj:
Analysis Date: 3/16/2006
Report Date: 3/16/2006

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
3-13-PB-01A *040604805-0001*	EXTERIOR ROOF	Black Fibrous Heterogeneous		80% Non-fibrous (other)	**20% Chrysotile**
3-13-PB-01B *040604805-0002*	EXTERIOR ROOF				**Not Analyzed**
3-13-PB-01C *040604805-0003*	EXTERIOR ROOF				**Not Analyzed**
3-13-PB-02A *040604805-0004*	EXTERIOR ROOF	Black Fibrous Heterogeneous	20% Cellulose	80% Non-fibrous (other)	**None Detected**
3-13-PB-02B *040604805-0005*	EXTERIOR ROOF	Black Fibrous Heterogeneous	20% Cellulose	80% Non-fibrous (other)	**None Detected**
3-13-PB-02C *040604805-0006*	EXTERIOR ROOF	Black Fibrous Heterogeneous	10% Cellulose	80% Non-fibrous (other)	**10% Chrysotile**
3-13-PB-03A *040604805-0007*	EXTERIOR ROOF	Black/Silver Fibrous Heterogeneous		70% Non-fibrous (other)	**30% Chrysotile**
3-13-PB-03B *040604805-0008*	EXTERIOR ROOF				**Not Analyzed**

Analyst(s)

Will DiBella (36)

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.
[illegible]

Attn: **Paul Bateman**
EnviroScience Consultants, Inc.
795 North Mountain Road
Newington, CT 06111

Fax: (413) 647-0018 Phone: (860) 953-2700
Project: **TETRA TECH 06-136.10**

Customer ID: ENVI54
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Report Date: 3/16/2006

Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos			Asbestos
Sample	Location	Appearance	% Fibrous		% Non-Fibrous	% Type
3-13-PB-03C *040604805-0009*	EXTERIOR ROOF					**Not Analyzed**
3-13-PB-04A *040604805-0010*	EXTERIOR WINDOWS	White Fibrous Heterogeneous			95% Non-fibrous (other)	5% **Chrysotile**
3-13-PB-04B *040604805-0011*	EXTERIOR WINDOWS					**Not Analyzed**
3-13-PB-04C *040604805-0012*	EXTERIOR WINDOWS					**Not Analyzed**
3-13-PB-05A *040604805-0013*	APT-3RD FLOORS	White Fibrous Heterogeneous	90%	Cellulose	10% Non-fibrous (other)	**None Detected**
3-13-PB-05B *040604805-0014*	APT-3RD FLOORS	Black Fibrous Heterogeneous	70%	Cellulose	30% Non-fibrous (other)	**None Detected**
3-13-PB-05C *040604805-0015*	APT-3RD FLOORS	Black Fibrous Heterogeneous	70%	Cellulose	30% Non-fibrous (other)	**None Detected**
3-13-PB-06A *040604805-0016*	BASEMENT-SCATTERED IN ALL AREAS	White Fibrous Heterogeneous	5%	Cellulose	95% Non-fibrous (other)	**None Detected**

Analyst(s)
Will DiBella (36)

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.
[illegible]

Attn: **Paul Bateman**
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795 North Mountain Road
Newington, CT 06111

Fax: (413) 647-0018 Phone: (860) 953-2700
Project: **TETRA TECH 06-136.10**

Customer ID: ENVI54
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EMSL Order: 040604805

EMSL Proj:
Analysis Date: 3/16/2006
Report Date: 3/16/2006

Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos			Asbestos
Sample	Location	Appearance	% Fibrous		% Non-Fibrous	% Type
3-13-PB-06B *040604805-0017*	BASEMENT-SCATTERED IN ALL AREAS	White Fibrous Heterogeneous	5%	Cellulose	95% Non-fibrous (other)	None Detected
3-13-PB-06C *040604805-0018*	BASEMENT-SCATTERED IN ALL AREAS	White Fibrous Heterogeneous	5%	Cellulose	95% Non-fibrous (other)	None Detected
3-13-PB-07A *040604805-0019*	BASEMENT-NE CORNER	White Fibrous Heterogeneous	10%	Cellulose	90% Non-fibrous (other)	None Detected
3-13-PB-07B *040604805-0020*	BASEMENT-NE CORNER	White Fibrous Heterogeneous	10%	Cellulose	90% Non-fibrous (other)	None Detected
3-13-PB-07C *040604805-0021*	BASEMENT-NE CORNER	White Fibrous Heterogeneous	10%	Cellulose	90% Non-fibrous (other)	None Detected
3-13-PB-08A *040604805-0022*	BASEMENT-NE CORNER	Brown Non-Fibrous Heterogeneous			100% Non-fibrous (other)	None Detected
3-13-PB-08B *040604805-0023*	BASEMENT-NE CORNER	Brown Non-Fibrous Heterogeneous			100% Non-fibrous (other)	None Detected
3-13-PB-08C *040604805-0024*	BASEMENT-NE CORNER	Brown Non-Fibrous Heterogeneous			100% Non-fibrous (other)	None Detected

Analyst(s)

Will DiBella (36)

Stephen Siegel, CIH
or other approved signatory

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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) 858-4571 Email: westmont@EMSL.com

Attn: **Paul Bateman**
EnviroScience Consultants, Inc.
795 North Mountain Road
Newington, CT 06111

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Project: **TETRA TECH 06-136.10**

Customer ID: ENVI54
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EMSL Order: 040604805

EMSL Proj:
Analysis Date: 3/16/2006
Report Date: 3/16/2006

Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	Location	Appearance	% Fibrous	% Non-Fibrous	% Type
3-13-PB-09A *040604805-0025*	BASEMENT-NE CORNER	Brown Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
3-13-PB-09B *040604805-0026*	BASEMENT-NE CORNER	Brown Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
3-13-PB-09C *040604805-0027*	BASEMENT-NE CORNER	Brown Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
3-13-PB-10A *040604805-0028*	BASEMENT-SW CORNER	Black Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
3-13-PB-10B *040604805-0029*	BASEMENT-SW CORNER	Black Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
3-13-PB-10C *040604805-0030*	BASEMENT-SW CORNER	Black Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
3-13-PB-11A *040604805-0031*	DEBRIS FIELD-EAST END CLOSEST TO BUILDING	Various Fibrous Heterogeneous	5% Cellulose	95% Non-fibrous (other)	None Detected

Analyst(s)

Will DiBella (36)

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.
197 Haddon Ave., Westmont, NJ 08108
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Newington, CT 06111

Fax: (413) 647-0018 Phone: (860) 953-2700
Project: **TETRA TECH 06-136.10**

Customer ID: ENVI54
Customer PO:
Received: 03/15/06 10:35 AM
EMSL Order: 040604805
EMSL Proj:
Analysis Date: 3/16/2006
Report Date: 3/16/2006

Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	Location	Appearance	% Fibrous	% Non-Fibrous	% Type
3-13-PB-11B *040604805-0032*	DEBRIS FIELD-EAST END CLOSEST TO BUILDING	Various Fibrous Heterogeneous	5% Cellulose	95% Non-fibrous (other)	None Detected
3-13-PB-11C *040604805-0033*	DEBRIS FIELD-EAST END CLOSEST TO BUILDING	Various Non-Fibrous Heterogeneous	2% Cellulose	98% Non-fibrous (other)	None Detected
3-13-PB-12A *040604805-0034*	DEBRIS FIELD-WEST END-CLOSER TO FORMER POWER HOUSE	Black Fibrous Heterogeneous	5% Cellulose	80% Non-fibrous (other)	15% Chrysotile
3-13-PB-12B *040604805-0035*	DEBRIS FIELD-WEST END-CLOSER TO FORMER POWER HOUSE				Not Analyzed
3-13-PB-12C *040604805-0036*	DEBRIS FIELD-WEST END-CLOSER TO FORMER POWER HOUSE				Not Analyzed

Analyst(s)

Will DiBella (36)

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

PLM-1

THIS IS THE LAST PAGE OF THE REPORT.

0406048C3

EnviroScience Consultants inc. ENVI54

Environmental Engineering • Industrial Hygiene • Laboratory Services

Office Locations:
Newington, CT
Greenwich, CT
Boston, MA

SAMPLE LOG FOR ASBESTOS BULKS

Sheet No. ____ Of ____

Project Name: Tyco Tech Project Number: 06-136.10

Building: 29 - Bothell Bill Mill - Service (T Project Manager: Eric May

Holes R.F

Sample ID Number	Sample Location	Material Type	Result (%)
2-A PB1A	Exterior Cast (on ground) (Ref manhole)	Ceiling Type I	15 Chrysotile
2-A-PB B			
2-A-PB C		Type II	
2-A-PB02A			
2-A-PB B			
2-A-PB C		Type III	
2-A-PB03A			
2-A-PB B			
2-A-PB C			
2-A-PB04A	Exterior Window	Window glazing (no caulking)	10% Chrysotile
2-A PB B			
2-A-PB C			

Analysis Method: ☒ PLM ☐ Other: ____ Turnaround Time 24 hrs

Based on the turnaround time indicated above, analyses are due to EnviroScience no later than this date: ____ Please call the EnviroScience Laboratory at 860-953-2700 if analysis will be late.

Fax Results To: EnviroScience Consultants Inc. Laboratory at 413-647-0018

Special Instructions: Please analyze on floor positive samples to check homogeneous nature of asbestos throughout the material. Do not take samples unless instructed. Fax results and keep copies of correspondence. Analyze ~~2~~ 1 sample of each on all floors.

Samples Collected By: C. Cox Date: 3/13/06 Time: ____

Samples (Rec'd)(Sent) By: 1 2 Date: 1 2 Time: 1 2

Samples Received By: DHL-EX-10357A Date: ____ Time: ____

Shipped To: EMSL (State) NJ ☐ Other ____

Method of Shipment: ☒ Fed Ex ☐ UPS Overnight ☐ UPS Ground ☐ Other ____

735 North Mountain Road, Newington, Connecticut 06111
Phone: 860-953-2700 Fax: 860-953-0301

0406047605

Zodiac Number:

EnviroScience Consultants inc

Environmental Engineering • Industrial Hygiene • Laboratory Services

Office Locations:
Newington, CT
Greenwich, CT
Boston, MA

SAMPLE LOG FOR ASBESTOS BULKS

Sheet No. ____ Of ____

Project Name: Tyco Tech Project Number: 06.136.10

Building: 29 Batterson Park Rd, Bldg Mill Spring CT Project Manager: Rick Bay

Sample ID Number	Sample Location	Material Type	Result (%)
3-13 PB 1A	1st Flr	Paper under flooring	2.00%
3-13 PB B			
3-13 PB C			
3-13 PB 2A	Basement Hallway	Textured ceiling paint	2.00%
3-13 PB B			
3-13 PB C			
3-13 PB 3A	NE room	Black sealant	4%
3-13 PB B		Compound	
3-13 PB C			
3-13 PB 4A	Basement NE room	Gyp. Board & Paper	4%
3-13 PB B			
3-13 PB C			

Analysis Method: PLM Other ____ Turnaround Time 24 hr

Based on the turnaround time indicated above, analyses are due to EnviroScience on or before this date: ____. Please call the EnviroScience Laboratory at 860-352-2700 if analyses will be late.

Fax Results To: EnviroScience Consultants Inc. Laboratory at 413-847-0018

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: Rick Bayliss Date: 3/13/06 Time: ____

Samples Received By: ____ Date: ____ Time: ____

Shipped To: EMSL (State) NJ Other ____

Method of Shipment: Fed Ex UPS Overnight UPS Ground Other ____

755 North Mountain Road, Newington, Connecticut 06111
Phone: 860-352-2700 Fax: 860-953-3393

0406048805

EnviroScience Consultants inc.

Environmental Engineering • Industrial Hygiene • Laboratory Services

Office Locations:
Newington, CT
Glastonbury, CT
Boston, MA

SAMPLE LOG FOR ASBESTOS BULKS

Sheet No. ____ of ____

Project Name: Tetra Tech Project Number: 06.136.10

Building: Bulk Mill Ipswich CT Project Manager: Bob Bay

Sample ID Number	Sample Location	Material Type	Result (%)
3-13 PB 9A	Room 1 - NE corner	Carpet glue	2.0% C
3-13- PB B			
3-13- PB C			
3-13- PB 10A	Room 1 - SW corner	Flooring - Brown	1.0% C
3-13 - PB B			
3-13 - PB C			
3-13 PB 11A	Room Fold - East		2.5% C
3-13 - PB B		Clay in Folds	> 5.0% C
3-13 - PB C			
3-13 - PB 12A	Wall and - Hallway		
3-13 - PB B		Brown Paper Mark	
3-13 - PB C			

Analysis Method: PLM Other: _____ Turnaround Time 24 hrs

Based on the turnaround time indicated above, analyses are due to EnviroScience on or before this date: _____ Please call the EnviroScience Laboratory at 860-953-2700 if analyses will be late.

Fax Results To: EnviroScience Consultants Inc. 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 <1% asbestos content. >1% positive stop on all point counts

Samples Collected By: Rob Bay Date: 3/12/06 Time: _____

Samples [Faxed][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 _____

795 Main Mountain Road, Newington, Connecticut 06111
Phone: 860-953-2700 Fax: 860-953-3203

APPENDIX II

DEFINITIONS AND REGULATIONS

DEFINITIONS

ACTIONABLE: Identified ACM which is recommended for immediate abatement activity based on the material's accessibility and condition, and the occupancy of the surrounding space and the material was found to be damaged or significantly damaged.

ABATEMENT: A range of procedures to control fiber release from ACM. Abatement options include removal, repair and encapsulation, enclosure, or operations and maintenance activities.

ACCESSIBLE: With regard to ACM it means that the material is subject to disturbance by building occupants including custodial or maintenance personnel in the course of their normal activities.

ACCREDITED: When referring to a person or laboratory this means that such person or laboratory is accredited in accordance with Section 206 of Title II of the Toxic Substances Control Act. Accreditation is given to laboratories that analyze bulk material samples for asbestos and satisfy the proficiency requirements established by the National Institute for Science and Testing (NIST).

ASBESTOS: The term asbestos includes chrysotile, amosite, crocidolite, tremolite, anthophyllite, atinolite including any of these minerals which have been chemically treated and/or altered.

ASBESTOS-CONTAINING MATERIAL (ACM): Material composed of asbestos of any type and in an amount greater than one percent (>1%) by weight, either alone or mixed with other fibrous or non-fibrous materials (i.e., surfacing, thermal system insulation, miscellaneous material).

ASBESTOS DEBRIS: Pieces of ACM that can be identified by color, texture or composition. This includes dust, if the dust is determined by an accredited inspector or laboratory to contain asbestos.

ENCAPSULANT: A liquid sealant which can be applied to ACM which controls the possible release of asbestos fibers from the material either by creating a membrane over the surface (bridging encapsulant) or by penetrating into the material and binding its components together (penetrating encapsulant). Any such encapsulants shall be in conformance with building and fire safety code requirements.

ENCAPSULATION: The application of an encapsulant to ACM to control the release of asbestos fibers into the air.

ENCLOSURE: All herein specified procedures necessary to completely enclose ACM behind airtight, impermeable, temporary or permanent barriers.

FITTINGS: That part of a steam or water piping system which is used to connect straight piping runs and which may be covered with asbestos-containing thermal insulation. Fittings

include elbows, either 45° or 90°, tees or valves.

FIBER RELEASE EPISODES: Any uncontrolled or unintentional disturbance of ACM resulting in visible emission.

FRIABLE ASBESTOS MATERIAL: Material that contains more than one percent asbestos by weight and that be crumbled, pulverized, or reduced to powder by hand pressure when dry.

FUNCTIONAL SPACE: A room, group of rooms, or similar homogeneous area (including crawl spaces or the space between a dropped ceiling and the floor or roof deck above), designated by a person accredited to prepare management plans, design abatement projects, or conduct response actions.

HOMOGENEOUS AREA: An area of surfacing material, thermal system insulation material, or miscellaneous material that is uniform in color and texture.

MISCELLANEOUS MATERIAL: Interior building material applied to structural components, structural members or fixtures Examples of miscellaneous materials include fire doors; but do not include surfacing materials or thermal system insulation.

NESHAPS: National Emission Standards for Hazardous Air Pollutants. These standards are administered by the EPA and include asbestos as a hazardous air pollutant.

NIOSH: National Institute for Occupational Safety and Health.

NON-FRIABLE ASBESTOS MATERIAL: Material that contains asbestos such that the fibers have been locked in by a bonding agent, coating, binder, or other material so that the asbestos will not release fibers in excess of the asbestos control limit during any reasonably appropriate use, handling, storage, transportation, or processing.

OPERATIONS AND MAINTENANCE (O & M) PROGRAM: A program of work practices designed to maintain undamaged ACM in good condition, and to repair ACM and clean-up asbestos fibers which may be inadvertently released during fiber release episodes.

REMOVAL: The complete removal of ACM from a damaged area, a functional space, or a homogeneous area in a building.

REPAIR: Returning damaged ACM to an undamaged condition so as to prevent fiber release.

RESPONSE ACTION: A method, including removal, encapsulation and repair, enclosure or operations and maintenance, which protects against the release of fibers from friable ACM.

ROUTINE MAINTENANCE AREA: An area, such as a boiler room or mechanical room, which is not normally occupied by non-maintenance individuals and in which maintenance employees or contracted workers regularly conduct maintenance activities.

STABLE: Identified ACM that has not been categorized as actionable. Stable ACM can be maintained via an O & M plan.

SURFACING MATERIAL: Material that is sprayed-on, trowelled-on, or otherwise applied to surfaces. Examples include acoustical plaster on ceilings, and fireproofing materials on structural members.

THERMAL SYSTEM INSULATION: Material in a building applied to pipes, fittings, boilers, breeching, tanks, ducts, or other components to improve the thermal characteristics of the component by preventing heat loss or gain, or preventing water condensation.

VISIBLE ASBESTOS-CONTAINING MATERIAL: Any quantity of ACM that is visible to the unaided eye, including dust and other types of debris.

REGULATIONS

REGULATORY OVERVIEW

Over the past two decades, the regulatory community has become increasingly aware of the potential hazards of inhaled asbestos fibers. Regulations have been developed by federal, state, and local agencies to protect workers and the general public from released fibers. Departments of the U.S. federal government responsible for the regulation of asbestos include:

- The Department of Labor (DOL) through the Occupational Safety and Health Administration (OSHA) has developed two standards designed to protect employees at their work sites. These two standards are the Asbestos Regulations for General Industry (29 CFR 1910.1001) and Asbestos Regulations for the Construction Industry (29 CFR 1926.1101). These OSHA regulations apply only to employees. These OSHA regulations apply only to employees. First, under the General Industry Standards maintenance employees involved in performing O & M activities who might potentially come into contact with asbestos-containing materials would clearly be addressed by the regulations. Second, maintenance or outside contractors' employees who might inadvertently be exposed to asbestos-containing materials during the normal course of their work activities, such as tenants and other personnel, would also be covered by these regulations. The Construction Industry Standard applies to workers involved in asbestos removal work.

- Department of Transportation (DOT) regulates the transport of commercial asbestos and asbestos waste and dictates labeling of waste bags and transport vehicles. The primary responsibility under DOT regulations lies with the waste-hauler. However, it is incumbent upon the Town of Plainfield to determine that waste hauled from their facilities is properly bagged and labeled; that the waste arrives at an approved landfill and that a proper manifest is completed; and that the hauler is properly licensed to haul asbestos waste.

- The Environmental Protection Agency (EPA) has promulgated a series of regulations that focus on asbestos issues. Pertinent stipulations in these regulations are as follows:

Clean Air Act (CAA)

The EPA regulates asbestos under the National Emission Standards for Hazardous Air Pollutants (NESHAP) which is listed as Section 112 of the Clean Air Act (CAA). Under NESHAP, hazardous pollutants have been defined as "an air pollutant to which no ambient air quality standard is applicable and which, in the judgement of the Administrator, causes or contributes to air pollution which may reasonably be anticipated to result in an increase in mortality or an increase in serious irreversible or incapacitating illness". The NESHAP program currently regulates arsenic, benzene, beryllium, mercury, radionuclides, and vinyl chloride along with asbestos. The purpose of the asbestos NESHAP is to protect the public from exposure to asbestos in the ambient air. The asbestos NESHAP program pertains primarily to demolition and renovation of buildings containing asbestos building materials. (The asbestos NESHAP also regulates manufacturing and fabricating operations, spray application of asbestos, waste disposal

for asbestos mills, inactive waste disposal sites, and established standards for asbestos mills and roadways.) The specific provisions of NESHAP demolition or renovation of buildings containing asbestos are broken down into categories of notification, work practices, waste handling, and waste disposal.

The Town of Plainfield, asbestos abatement contractor, and demolition contractor would be responsible for compliance with NESHAP regulations primarily during abatement activities. Issues such as work practices, waste handling and waste disposal are normally specified in the project plans and specifications. Adherence to these plans and specifications during the abatement process would be the responsibility of the Town of Plainfield to verify.

Resource Conservation Recovery Act (RCRA)

The disposal of asbestos was originally listed by RCRA in 1976. However, in that same year, asbestos, because it does not migrate in the soil or pose any threat to ground water, was not listed by RCRA and the authority for asbestos control was transferred to NESHAP. Therefore, the current RCRA regulations pertain only to facility siting and general landfill operation. The facility siting/licensing issue that would involve the Town of Plainfield is the determination by the Town of Plainfield that the facility where asbestos waste is disposed is an EPA licensed facility.

Comprehensive Environmental Response, Compensation, and Liability ACT (CERCLA)

This act is most commonly referred to as "Superfund". The authority of CERCLA, as clarified in the Superfund Amendments Reauthorization Act (SARA), regulates asbestos as a hazardous substance. Reportable quantities have been established to deal with releases or threats of releases of hazardous substances from vessels and from facilities including trucks and landfills. The trigger reportable quantity (RQ) for a release or threat of release of asbestos is one pound.

Superfund issues relate primarily to improper disposal of asbestos waste. The Town of Plainfield is responsible to see that a manifest for the waste is completed and signed by the licensed landfill facility and returned to the Town of Plainfield for inclusion to the permanent record.

APPENDIX III

SURVEY, SAMPLING AND ANALYTICAL PROTOCOL

SURVEY, SAMPLING AND ANALYTICAL PROTOCOL

SURVEY PROTOCOL

The scope of survey work includes the details of how the survey was to be conducted, the information to be gathered and the form and content of the report.

One or more EPA-certified EnviroScience surveyors conducted the survey. The specifics of the survey included the following:

- Accessible building areas were visually inspected to determine the location of ACM.
- Impacted materials, including both friable and non-friable suspect ACM, were quantified.
- Suspect ACM was sampled following the protocol detailed in the following section, Bulk Sampling Protocol.
- Information concerning locations, quantities and types of material impacting the planned renovation work was gathered during the survey.

BULK SAMPLING PROTOCOL

During the survey of this facility, bulk samples of suspect ACM were collected for laboratory analysis. The bulk samples were collected and categorized according to the homogeneous building material being evaluated. The designation of a homogeneous material was made by the EnviroScience surveyor. Once suspect homogeneous materials were identified, bulk samples were collected based upon collecting additional samples to bring the sampling in line with the EPA protocols. The number of these additional samples collected was based upon the number of existing samples of a homogeneous material collected from past surveys. If a single sample of a homogeneous material was found to contain asbestos, then that homogeneous material was identified as containing asbestos throughout the building. Homogeneous material were determined by similarity of size, color, and age if determinable. Sampling techniques generally involved collecting one full thickness sample of materials such as pipe insulation collected by core boring or breaking off an end piece of the material.

All samples were given a unique sample number that included the project number and placed in sample containers for transportation to our laboratory for analysis. The location of each sample was noted on the building drawing. Information regarding the sample location was also entered onto EnviroScience's chain-of-custody form.

ANALYTICAL PROTOCOL

Samples collected during this facility asbestos survey were transported to an accredited laboratory for microscopic analysis. The EMSL Analytical Laboratory is accredited by the National Institute for Standards and Technology (NIST) under the National Voluntary Laboratory Accreditation Program (NVLAP) for bulk asbestos analysis as required under EPA

regulations. EnviroScience's laboratory is also accredited by the American Industrial Hygiene Association (AIHA) for asbestos air sample analysis. Chain-of-custody was maintained by the laboratory through the use of EnviroScience chain-of-custody forms. These forms are available for your use upon request. After being logged in by the laboratory and prepared for analysis, samples were then analyzed following the EPA-recommended method of bulk sample analysis by polarized light microscopy with dispersion staining. A description of this analytical method is contained in Appendix V of this document.

In preparing the bulk materials for analysis, a small representative portion of the sample was selected from the bulk material collected in the field and mounted on a glass slide. If the bulk material appeared to have a uniform consistency, a minimum of two separate slides were prepared for viewing. If, however, the bulk material appeared to contain layers, a separate set of slides was prepared for each layer and results for each layer determined independently. Analytical results for layered samples were reported as an average of the asbestos composition of the material as a whole. In some situations multiple slides were prepared from particularly complex samples which were suspected to contain low percentages of asbestos. In cases where replicate samples of a homogeneous material were collected they were analyzed until one was found to be positive (which meant the entire homogeneous area was deemed positive) or until each sample was analyzed to prove a negative result.

Sample results were reported either as "none detected" (ND) if no asbestos was found, or by type and percent composition if any form of asbestos was observed. EPA recognizes a level of greater than one percent (>1%) asbestos by weight content as the minimum level for requiring a material to be treated as asbestos-containing. The identification of the presence or absence of asbestos in a material involves several specific analytical procedures. The percentage composition, on the other hand, is simply a visual approximation on the part of the analyst and may vary based on the way the sample slide was prepared and the specific analyst performing the identification. Estimating an accurate percentage composition of low level asbestos-containing materials is very difficult. Therefore, if an analyst identified and confirmed the presence of asbestos, but at a percentage composition of less than five percent (<5%), it was reported as being one to five percent (1-5%) asbestos.

It should be noted here that the analysis of a debris sample is a qualitative analysis of the presence or absence of asbestos in that particular sample. The EPA interim PLM method for analyzing bulk samples was intended to be utilized for analyzing asbestos-containing manufactured products or materials with near uniform concentrations of asbestos and not for the analysis of debris or other possibly contaminated materials which are not uniform in nature. Therefore, percentage composition for soils, debris, or dust samples is not indicated in this report. Further, a negative finding in these samples indicates only that the debris actually sampled was not found to contain asbestos. No inference should be made from any negative result concerning other debris that was not specifically sampled.

After the completion of both analytical procedures, samples are stored in EnviroScience's sample storage area files and are maintained there for at least 90 days. At the end of 90 days EnviroScience will offer Tetra Tech NUS, Inc. the opportunity to either have the samples

properly disposed of by EnviroScience or have them returned for retention by Tetra Tech NUS, Inc.

APPENDIX IV

POLARIZED LIGHT MICROSCOPIC ANALYTICAL METHOD

SURVEY, SAMPLING AND ANALYTICAL PROTOCOL

SURVEY PROTOCOL

The scope of survey work includes the details of how the survey was to be conducted, the information to be gathered and the form and content of the report.

One or more EPA-certified EnviroScience surveyors conducted the survey. The specifics of the survey included the following:

- Accessible building areas were visually inspected to determine the location of ACM.
- Impacted materials, including both friable and non-friable suspect ACM, were quantified.
- Suspect ACM was sampled following the protocol detailed in the following section, Bulk Sampling Protocol.
- Information concerning locations, quantities and types of material impacting the planned renovation work was gathered during the survey.

BULK SAMPLING PROTOCOL

During the survey of this facility, bulk samples of suspect ACM were collected for laboratory analysis. The bulk samples were collected and categorized according to the homogeneous building material being evaluated. The designation of a homogeneous material was made by the EnviroScience surveyor. Once suspect homogeneous materials were identified, bulk samples were collected based upon collecting additional samples to bring the sampling in line with the EPA protocols. The number of these additional samples collected was based upon the number of existing samples of a homogeneous material collected from past surveys. If a single sample of a homogeneous material was found to contain asbestos, then that homogeneous material was identified as containing asbestos throughout the building. Homogeneous material were determined by similarity of size, color, and age if determinable. Sampling techniques generally involved collecting one full thickness sample of materials such as pipe insulation collected by core boring or breaking off an end piece of the material.

All samples were given a unique sample number that included the project number and placed in sample containers for transportation to our laboratory for analysis. The location of each sample was noted on the building drawing. Information regarding the sample location was also entered onto EnviroScience's chain-of-custody form.

ANALYTICAL PROTOCOL

Samples collected during this facility asbestos survey were transported to an accredited laboratory for microscopic analysis. The EMSL Analytical Laboratory is accredited by the National Institute for Standards and Technology (NIST) under the National Voluntary Laboratory Accreditation Program (NVLAP) for bulk asbestos analysis as required under EPA

regulations. EnviroScience's laboratory is also accredited by the American Industrial Hygiene Association (AIHA) for asbestos air sample analysis. Chain-of-custody was maintained by the laboratory through the use of EnviroScience chain-of-custody forms. These forms are available for your use upon request. After being logged in by the laboratory and prepared for analysis, samples were then analyzed following the EPA-recommended method of bulk sample analysis by polarized light microscopy with dispersion staining. A description of this analytical method is contained in Appendix C of this document.

In preparing the bulk materials for analysis, a small representative portion of the sample was selected from the bulk material collected in the field and mounted on a glass slide. If the bulk material appeared to have a uniform consistency, a minimum of two separate slides were prepared for viewing. If, however, the bulk material appeared to contain layers, a separate set of slides was prepared for each layer and results for each layer determined independently. Analytical results for layered samples were reported as an average of the asbestos composition of the material as a whole. In some situations multiple slides were prepared from particularly complex samples which were suspected to contain low percentages of asbestos. In cases where replicate samples of a homogeneous material were collected they were analyzed until one was found to be positive (which meant the entire homogeneous area was deemed positive) or until each sample was analyzed to prove a negative result.

Sample results were reported either as "none detected" (ND) if no asbestos was found, or by type and percent composition if any form of asbestos was observed. EPA recognizes a level of greater than one percent (>1%) asbestos by weight content as the minimum level for requiring a material to be treated as asbestos-containing. The identification of the presence or absence of asbestos in a material involves several specific analytical procedures. The percentage composition, on the other hand, is simply a visual approximation on the part of the analyst and may vary based on the way the sample slide was prepared and the specific analyst performing the identification. Estimating an accurate percentage composition of low level asbestos-containing materials is very difficult. Therefore, if an analyst identified and confirmed the presence of asbestos, but at a percentage composition of less than five percent (<5%), it was reported as being one to five percent (1-5%) asbestos.

It should be noted here that the analysis of a debris sample is a qualitative analysis of the presence or absence of asbestos in that particular sample. The EPA interim PLM method for analyzing bulk samples was intended to be utilized for analyzing asbestos-containing manufactured products or materials with near uniform concentrations of asbestos and not for the analysis of debris or other possibly contaminated materials which are not uniform in nature. Therefore, percentage composition for soils, debris, or dust samples is not indicated in this report. Further, a negative finding in these samples indicates only that the debris actually sampled was not found to contain asbestos. No inference should be made from any negative result concerning other debris that was not specifically sampled.

After the completion of both analytical procedures, samples are stored in EnviroScience's sample storage area files and are maintained there for at least 90 days. At the end of 90 days EnviroScience will offer Tetra Tech NUS, Inc. the opportunity to either have the samples

properly disposed of by EnviroScience or have them returned for retention by Tetra Tech NUS, Inc.

The EPA point count method was developed in response to analyst bias toward reporting higher asbestos contents in materials which contain less than ten percent (<10%) asbestos. Polarized Light Microscopy (PLM) analysts in the past had a tendency to focus more on the fibrous components and asbestos in a sample than the non-fibrous components present, especially in samples which contain less than ten percent (<10%) asbestos. This resulted in a higher reporting of percent of asbestos than was actually present in the sample.

1. Point Counting. For point counting, an ocular reticle (cross-line or point array) should be used to visually superimpose a point or points on the microscope field of view. The cross-line reticle is preferred. Its use requires the scanning of most, if not all, of the slide area, thereby minimizing bias that might result from lack of homogeneity in the slide preparation. In conjunction with this reticle, a click-stop counting stage can be used to preclude introducing bias during slide advancement. Magnification used will be dictated by fiber visibility. The slide should be examined along multiple parallel traverses that adequately cover the sample area. The analyst should score (count) only points directly over occupied (non-empty) areas. Empty points should not be scored on the basis of the closest particle. If an asbestos fiber and a non-asbestos particle overlap so that a point is superimposed on their visual intersection, a point should be scored for both categories. If the point(s) is/are superimposed on an area which has several overlapping particles, the slide should be moved to another field. While not including them in the total asbestos points counted, the analyst should record the presence of any asbestos detected but not lying under the reticle cross-line or array points. A minimum of 400 counts (maximum eight (8) slides with fifty (50) counts each to minimum two (2) slides with 200 counts each) per sample is suggested, but it should be noted that accuracy and precision improve with number of counts. Point counting provides a determination of the projected area percent asbestos. Conversion of area percent to dry weight percent is not feasible unless the specific gravities and relative volumes of the different materials are known. It should be noted that the total amount of material to be analyzed is dependent on the asbestos concentration, i.e. the lower the concentration of asbestos, the larger the amount of sample that should be analyzed, in both the visual estimation and point counting methods. Quantitation by either method is made more difficult by low asbestos concentration, small fiber size, and presence of interfering materials.

   It is suggested that asbestos concentration be reported as volume percent, weight percent, or area percent depending on the method of quantitation used. A weight concentration cannot be determined without knowing the relative specific gravities and volumes of the sample components.

2. Point Counting Criteria. A point is a discrete point or the intersection of two mutually perpendicular lines in the eyepiece reticle. Thus there is a single point in a cross-hair reticule and 25 points in a Chalkley reticle. A nonempty point is the visual superposition of a point over any material in the slide preparation. A nonempty point must be categorized as a specific asbestos variety, as a specific non-asbestos fiber type, or as nonfibrous material, while empty points are those points that lie over areas containing no materials. Ideally, slide

preparations should contain approximately 50% nonempty points. Moving to new fields of view must be done at random, with the analyst looking away temporarily while moving the slide. The slide must never be deliberately moved to preferred fields of view under the reticle. If the point(s) lie over an area where particles are heavily clumped, the analyst should move the slide to a new field to avoid attempting to count multiple layers under a point. For the occasional superposition of a point over two particles, the analyst should count both particles as separate nonempty points.

3. Counting Rules. Point counting must be done on the PLM, usually with the slide between crossed polars and with a 1st-order red compensator inserted in the 45° port above the slide. In some situations where extremely fine asbestos fibers are present, it may be preferable to analyze the sample between *slightly* uncrossed polars without the compensator. Other situations may warrant point counting in a dispersion-staining mode. All point counting must be done at 100x magnification although it will be advantageous at times to switch to higher magnification(s) for enhanced visualization of identification criteria. For each of the 1st four slides, counting must be performed until *either* one asbestos point is counted *or* 50 nonempty points are counted. No more than one asbestos point may be counted per preparation. If four asbestos points have been counted after all preparations have been analyzed, analysis should be halted and calculations based on the total points counted. If less than four asbestos points have been counted, additional coverslip preparations must be analyzed (at the rate of 50 nonempty points per preparation) until either: a) at least four asbestos points have been counted, or b) at least 400 nonempty points from at least 8 slide preparations have been counted. When analysis is performed with a multi-point eyepiece, a uniform scan pattern must always be followed so that an asbestos fiber is not automatically the 1st point counted in field. For example, the top left point is always the 1st point counted, the bottom right point is always the 1st point counted, the bottom right point is always the last point counted and all points between are counted in a systematic pattern. Non-asbestos fibers may be counted separately to produce point-count quantitation or they may be counted as part of a larger "non-asbestos" category and then quantitation done by visual estimation similar to the Scanning Option (Section 4). Sample composition is calculated based on the nonempty points counted as detailed in Section ___.

4. Scanning Option for Negative Samples. If, based on the stereobinocular microscopical observation, the analyst is confident that the sample contains no asbestos, a scanning option may be substituted for point counting. This option requires the analyst to scan the entire area of all four mandatory slide preparations by PLM at 100x magnification. If no asbestos is detected on any of these slides, the sample in non-ACM and percentages of fibrous components may be determined by visual estimation. If asbestos is detected during this scan, stratified point-counting must be initiated. Starting with the slide on which the asbestos was detected, the analyst returns to the normal starting position on the coverslip and begins counting the 50 points (or up to the 1st asbestos point) as required on that slide and any remaining slides. Slides from that particular sample which were already scanned in their entirety and contained no asbestos will be considered to contain 50 non-asbestos points each.

5. Trace Levels of Asbestos. If asbestos appears in a field of view but does not lie directly under a point, the analyst must note this on the analysis sheet. If the analyst suspects that, based on the stereobinocular examination, asbestos is present but none is detected during the point-count analysis, the analyst must retrieve the original bulk material, remove any suspicious fibers, mount them in an appropriate medium, and determine their identity. If the fibers are confirmed as asbestos, this should be noted on the analysis sheet. Although these observations will not be used for quantitation, they will be incorporated into the final report to warn about potential false negatives.

6. Calculations. Calculations are performed in the same manner as the EPA point-count method. The percentage of each asbestos type, each non-asbestos fiber type, and nonfibrous components are calculated by dividing the number of nonempty points of that component by the total nonempty points counted for that sample. Thus:

   %Asbestos = (AP x 100%)/TP
   where
   AP = number of points counted for a specific asbestos type
   TP = total number of nonempty points counted

   For example, if point counting yielded a chrysotile point as the fifteenth nonempty point on the fist slide and as the thirtieth nonempty point on the second slide, no asbestos was detected in 50 nonempty points on the third slide, chrysotile was counted as the tenth nonempty point on the fourth slide and amosite as counted as the forty-second nonempty point on the fifth slide, then:

   TP = 15 + 30 + 50 + 10 + 42 = 147
   AP for chrysotile = 3
   thus (3 x 100%)/147 = 20% Chrysotile
   AP for amosite = 1
   thus (1 x 100%)/147 = 0.68% Amosite
   AP for total asbestos = 1 (amosite) + 3 (chrysotile) = 4 (total)
   thus (4 x 100%)/147 = 2.7% Asbestos

   The point counting method is more precise in ascertaining percentages of asbestos in a bulk material because a visual estimate is not performed. Point counting is usually performed on materials in which PLM has yielded a result of less than ten percent (<10%) asbestos by visual estimation.

APPENDIX V

LEAD PAINT TESTING PROCEDURES AND EQUIPMENT

STANDARD OPERATING PROCEDURES
HUD AND STATE OF CONNECTICUT LEAD-BASED PAINT INSPECTIONS

TESTING PROCEDURES AND EQUIPMENT

The U. S. Department of Housing and Urban Development (HUD) AGuidelines for the Evaluation and Control of Lead Hazards in Housing, September 1997", were consulted for this lead evaluation. 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 report. The State of Connecticut Department of Public Health's current lead regulations, Lead Poisoning Prevention and Control (19a-111-1 through 19a-111-11) were also consulted.

This lead evaluation was either comprehensive or a spot test, also known as a lead screen. Both the proposed scope of work and the final report will note which type of evaluation was done. A comprehensive inspection means that representative painted surfaces were systematically evaluated on a room by room basis in accordance with the Guidelines and the State of Connecticut regulations.

A spot test, or lead screen, means that only a few surfaces were tested and that conclusions about untested areas cannot be reliably determined based on the limited testing that was done. A disclaimer will be employed in the report to note that the lead evaluation done is not in complete accordance with the testing protocol in the Guidelines and in the Connecticut regulations.

Lead-based paint surfaces and components were identified by utilizing on-site x-ray fluorescence (XRF) instruments. EnviroScience Consultants, Inc. 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/cm5, 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/cm5)
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/cm5)	Inconclusive Range (mg/cm5)
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/cm5)
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/cm5)
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/cm5)	Inconclusive Range (mg/cm5)
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 requires 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.

F:\EVERYONE\WORD\PROJECTS\01\01-111.14A.DOC
February 8, 2001

APPENDIX VI

LEAD TESTING FIELD DATA SHEETS

EnviroScience Consultants inc.

LEAD INSPECTION COVER SHEET

Inspector's Information

Inspector's Name: PATRICK SHARKANY License Number: 000107

XRF Model: RMD LPA-1 Serial Number: 1138

Date of Inspection: 3/13/06 Project Number: 06-136.10

Property Information

Building Address: 29 Bushnell Hollow Rd Baltic Mill

(street)

Sprague (city) CT (state) Age of Property: +/- 100 yrs

Describe Structure: VACANT 3 Story structure. Wood windows/doors/floors/ceilings; Brick + Stone exterior - Front damaged/unsafe limited screen

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	1215	0.8	0.9	0.9	0.9 mg/cm^2
Second Check	1310	1.1	0.8	0.9	0.9 mg/cm^2
Third Check					
Fourth Check					

795 North Mountain Road, Newington, Connecticut 06111
Phone (860) 953-2700 Fax (860) 953-3203
E-Mail: enviro.science@envirosci.com
Web Site: www.envirosci.com

Baltic mill

Address: 29 Boshnell Hollow Rd. Sprague CT Apt.: _____

Floor: _____ Room: _____ Page ____ of _____

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	N.C		Wood						
	Skirt Board	N.C		Wood						
	Corner Boards	N.C		Wood						
	Siding	N.C		Wood						
	Upper Trim	N.C								
A 1	Door	O.O		W						
A 1	Casing									
A 1	Jamb									
A 1	Threshold									
A 1	Kick Board									
A 1	Storm Door									
A	Window Sill	N.C		W		Paint work around				
A	Trim	N.C		W						
A	Sash	N.C		W						
A	Blind Stops	N.C		W						
A	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									
A-2										

Substrate Type: Metal = M Wood = W Plaster = P Sheetrock = S Concrete = C Brick = B

Notes: COV = Covered
N.C = Not Coated
NA = Not Accessible
VR = Vinyl Replacement

Baltic mill

Address: 29 Bushnell Hollow Rd. Sprague CT Apt.: _____

Floor: _____ Room: _____ Page ___ of _____

EXTERIOR OF SIDE B

Side	Surface	X.R.F. Readings	Defective	Substrate Type	Substrate SEL	CLC	Result POS	Result NEG	Paint Chip Sample #	Paint Chip Result
	Foundation	N.C		Stone						
	Skirt Board	N.C		Stone						
	Corner Boards	N.C		Stone						
	Siding	N.C		Stone						
	Upper Trim									
B	Door	0.4		M						
	Casing	0.1		M						
	Jamb	0.4		M						
	Threshold	N.C		Stone						
	Kick Board	N.C		Stone						
	Storm Door									
	Window Sill									
	Trim									
	Sash									
	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: COV = Covered VR = Vinyl Replacement

N.C = Not Coated

NA = Not Accessible

VR = Vinyl Replacement

Baltic Mill

Address: 29 Bushnell Hollow - Sprague CT Apt.: _____

Floor: _____ Room: _____ Page ____ of _____

EXTERIOR OF SIDE C

Side	Surface	X.R.F. Readings	Defective	Substrate Type	Substrate SEL	CLC	Result POS	Result NEG	Paint Chip Sample #	Paint Chip Result
C	Foundation	N.C		Stone						
C	Skirt Board	N.C		Stone						
C	Corner Boards	N.C		Stone						
C	Siding	N.C		Stone						
	Upper Trim									
C	Door									
	Casing	1.6	✓	W			✓			
	Jamb									
	Threshold	N.C		Stone						
	Kick Board	N.C		Stone						
	~~Storm Door~~									
C	Window Sill	1.6		W			✓			
	Trim	2.5		W						
	Sash									
	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: COV = Covered VR = Vinyl Replacement

N.C = Not Coated

NA = Not Accessible

VR = Vinyl Replacement

Baltic Mill

Address: 29 Bushnell Hollow - Sprague CT Apt.: _____

Floor: _____ Room: _____ Page ___ of _____

EXTERIOR OF SIDE D

Side	Surface	X.R.F. Readings	Defective	Substrate		CLC	Result		Paint Chip	
				Type	SEL		POS	NEG	Sample #	Result
D	Foundation	N.C		Stone						
D	Skirt Board	N.C		Stone						
D	Corner Boards	N.C		Stone						
D	Siding	N.C		Stone						
	Upper Trim									
D	Door	0.6		W						
	Casing	0.5		W						
	Jamb									
	Threshold									
	Kick Board									
	Storm Door									
	Window Sill									
	Trim									
	Sash									
	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: COV = Covered VR = Vinyl Replacement

N.C = Not Coated

NA = Not Accessible

VR = Vinyl Replacement

Baltic Mill

A = South wall

Address: 29 Bushnell Hollow - Sprague CT Apt.: _____

Floor: Basement Room: 1 West Entry Room Page ___ of ___

Side	Surface	X.R.F. Readings	Defective	Substrate Type	Substrate SEL	CLC	Result POS	Result NEG	Paint Chip Sample #	Paint Chip Result
	Floor	N.C								
	Baseboards									
A	Wall									
B	Wall									
C	Wall									
D	Wall	0.0		B						
	Chairrail									
	Ceiling									
	Crown Molding									
	Door									
	Casing									
	Jamb									
D	Door	4.2	✓	M			✓			
	Casing									
	Jamb									
	Window Trim									
	Sill									
	Sash									
	Well									
	Cabinet Base									
	Door Exterior									
	Door Interior									
	Walls									
	Shelves									
	Shelf Supports									
	Closet Shelf									
	Shelf Supports									
	Radiator									
	Wall Molding									
C	Column	6.3	✓	W			✓			

Substrate Type: Metal = M Wood = W Plaster = P Sheetrock = S Concrete = C Brick = B

Notes: COV = Surface Covered
N.C = Surface Not Coated
VR = Vinyl Replacement
NA = Not Accessible

EnviroScience Consultants Inc.

Baltic Mill

Address: 29 Bushnell Hollow - Sprague CT Apt.: _____

Floor: Basement Room: 2 - 2x1 small room/Stair Page ___ of ___

Side	Surface	X.R.F. Readings	Defective	Substrate Type	Substrate SEL	CLC	Result POS	Result NEG	Paint Chip Sample #	Paint Chip Result
	Floor	N.C								
	Baseboards									
A	Wall									
B	Wall									
C	Wall									
D	Wall									
	Chairrail									
	Ceiling									
	Crown Molding									
D	Door	4.2	-	W			/			
	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									

Substrate Type: Metal = M Wood = W Plaster = P Sheetrock = S Concrete = C Brick = B

Notes: COV = Surface Covered
N.C = Surface Not Coated
VR = Vinyl Replacement
NA = Not Accessible

Baltic Mill

Address: 29 Bushnell Hollow - Sprague CT Apt.: _____

Floor: Basement Room: 3 - Main storage area Page ___ of ___

Side	Surface	X.R.F. Readings	Defective	Substrate Type	Substrate SEL	CLC	Result POS	Result NEG	Paint Chip Sample #	Paint Chip Result
	Floor	N.C								
	~~Baseboards~~									
A	Wall	0.4		B						
B	Wall	1.9	—	B			✓			
C	Wall									
D	Wall	3.5		B						
	Chairrail									
	Ceiling									
	Crown Molding									
B	Door	5.6	—	✓			✓			
	Casing									
	Jamb									
A	Door	2.3	—	✓						
	Casing									
	Jamb									
D	Window Trim	2.6		✓			✓			
	Sill	3.6		✓			✓			
	Sash	2.5		✓			✓			
	Well	5.0		✓			✓			
	Cabinet Base									
	Door Exterior									
	Door Interior									
	Walls									
	Shelves									
	~~Shelf Supports~~									
	Closet Shelf									
	~~Shelf Supports~~									
	Radiator									
	Wall Molding									
C	Column	0.0	—	W			✓			
A	Wainscoting	0.0		W						

Substrate Type: Metal = M Wood = W Plaster = P Sheetrock = S Concrete = C Brick = B

Notes: COV = Surface Covered
N.C = Surface Not Coated
VR = Vinyl Replacement
NA = Not Accessible

Baltic Mill

Address: 29 Bushnell Hollow. Sprague CT Apt.: _____

Floor: 1 Room: (1) Stairwell Page ___ of ___

Side	Surface	X.R.F. Readings	Defective	Substrate Type	Substrate SEL	CLC	Result POS	Result NEG	Paint Chip Sample #	Paint Chip Result
	Floor	N.C								
	Baseboards									
A	Wall									
B	Wall	4.0		W			✓			
C	Wall	3.2		W			✓			
D	Wall									
	Chairrail									
	Ceiling									
	~~Crown Molding~~									
A	Door	4.1	✓	W			✓			
	Casing									
	Jamb									
B	Door	6.4		M						
	Casing									
	Jamb									
D	Window Trim	4.4	✓	W			✓			
	Sill									
	Sash	4.0	✓	W			✓			
	Well									
	~~Cabinet Base~~									
	~~Door Exterior~~									
	~~Door Interior~~									
	~~Walls~~									
	~~Shelves~~									
	~~Shelf Supports~~									
	~~Closet Shelf~~									
	~~Shelf Supports~~									
	~~Radiator~~									
	~~Wall Molding~~									
C	Stair riser	0.6		M						
C	handrail	0.0		M						
D										

Substrate Type: Metal = M Wood = W Plaster = P Sheetrock = S Concrete = C Brick = B

Notes: COV = Surface Covered
N.C = Surface Not Coated
VR = Vinyl Replacement
NA = Not Accessible

APPENDIX VII

TCLP SAMPLES RESULTS AND CHAIN OF CUSTODY

eas
LABORATORIES

April 03, 2006

ENVIROSCIENCE CONSULTANTS, INC.
795 North Mountain Road
Newington, CT 06111

Attention: Mr. Bob May

EAS Project Number: 06030234
Location Collected: Baltic Mill, Sprague CT

Copies of this report and the supporting computer stored data are retained in our files in the event they are required for future reference.

Any sample submitted to our laboratory will be retained for a maximum of thirty (30) days from receipt of the report.

All analytical data, unless otherwise specified, is reported on a wet weight (as received) basis.

Our laboratory is a multi-state Certified Public Health Laboratory, offering a full range of analytical services that include:

Water and Wastewater Analysis
Hazardous Waste Analysis (RCRA)
Full Priority Pollutant Analysis
Drinking Water Analysis

Gregory C. Lawrence
Laboratory Director

encl.

ENVIROSCIENCE CONSULTANTS, INC.

Location Collected: Baltic Mill, Sprague CT
Date Sample Collected: 03/22/06
Sample Description: Solids Sample #3
EAS Sample Number: 06030234-01
LIMS ID Number: AH03267
Date Sample Received: 03/23/06
Client Project Number: 06-136.10

Parameter	Data	Detection Limit	Units	Analysis Date	Method	Analyst
TCLP for Trace Metals	Completed			03/23/06	SW-846 1311	JAA
Lead, Leachable	ND	0.05	mg/L	03/28/06	SW-846 6010B	DWR

ND = Not Detected

EAS Laboratories, 105 Commercial Street, Watertown, CT 06795 Phone (860) 274-5461 Fax (860) 945-0449

Company Name: Enviro Science Consultants

Project Manager: Bob May

Invoice To:

Reports To:

P.O. Number: 06-136.10

Project Location: Sample (3) - Baltic mill Sprague CT
Sample # (4) 26 Shipping St Norwich, CT

Project Number: 06-136.10

Samplers Signature: Paul B[illegible]

Analyses Requested

#	Date/Time Sample Collected	Comp.	Grab	Sample Description	No. of Containers	(S) Solid, (L) Liquid, (O) Oil	TCLP Lead	TCLP Lead	EAS ID Number
03	3/22/06	✓		Baltic Mill - Sprague, CT	1	S	✓		06030234-01
04	3/22/06	✓		26 Shipping St Norwich, CT	1	S		✓	06030235-01

Sample Preservation

Cooler Temp (C°)	
Received Ice	
Received Ambient	X
Preserved (Yes) (No)	No (circled)

Relinquished By: (Signature)	Date/Time	Received By: (Signature)
Paul B[illegible]	3/22/06 1055	[signature]
	3-23/1320	[signature]

Comments/Remarks

Turnaround Time Requested: 6 Day

Project Complete:

White: Lab, Canary: File, Pink: Customer

Page ____ of ____

EAS Project Number: 06030234
Location Collected: Baltic Mill, Sprague CT

EAS Certifications:

Connecticut Certified Laboratory Number: PH 0558

Massachusetts Certified Laboratory Number: M-CT020

Maine Certified Laboratory Number: CT 020

New York Certified Laboratory Number: 10916

Rhode Island Certified Number: 139

The enclosed analyses were conducted in accordance with:

1. APHA Standard Methods for the Examination of Water and Wastewater, 18th Edition, 1992
2. Clean Water Act, List of Approved Test Procedures, 40 CFR
3. EPA Test Methods for the Evaluation of solid Waste, SW-846, 3rd Edition, January 1998

DRAFT

APPENDIX VIII

DRAWINGS

EnviroScience Consultants inc

Address: 29 Bushnell Hollow Road

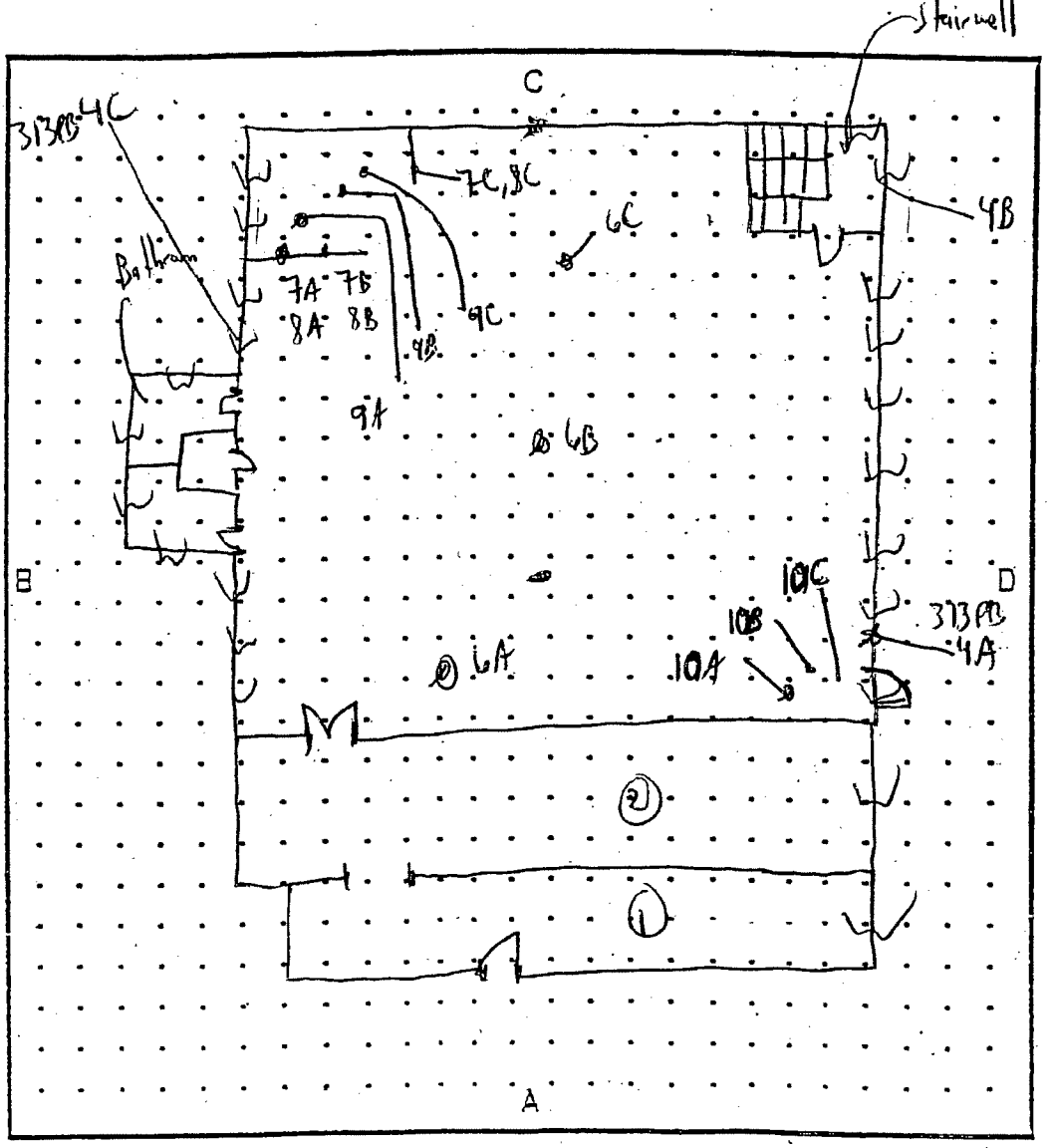
Apartment:

Diagram of: Asbestos bulk sample locations

Floor: Basement

No. of Doors: No. of Windows:

Date: 3/13/06



ROOM NUMBER DOOR

W WINDOW

EnviroScience Consultants inc

Address: 29 Bushnell Hollow Road

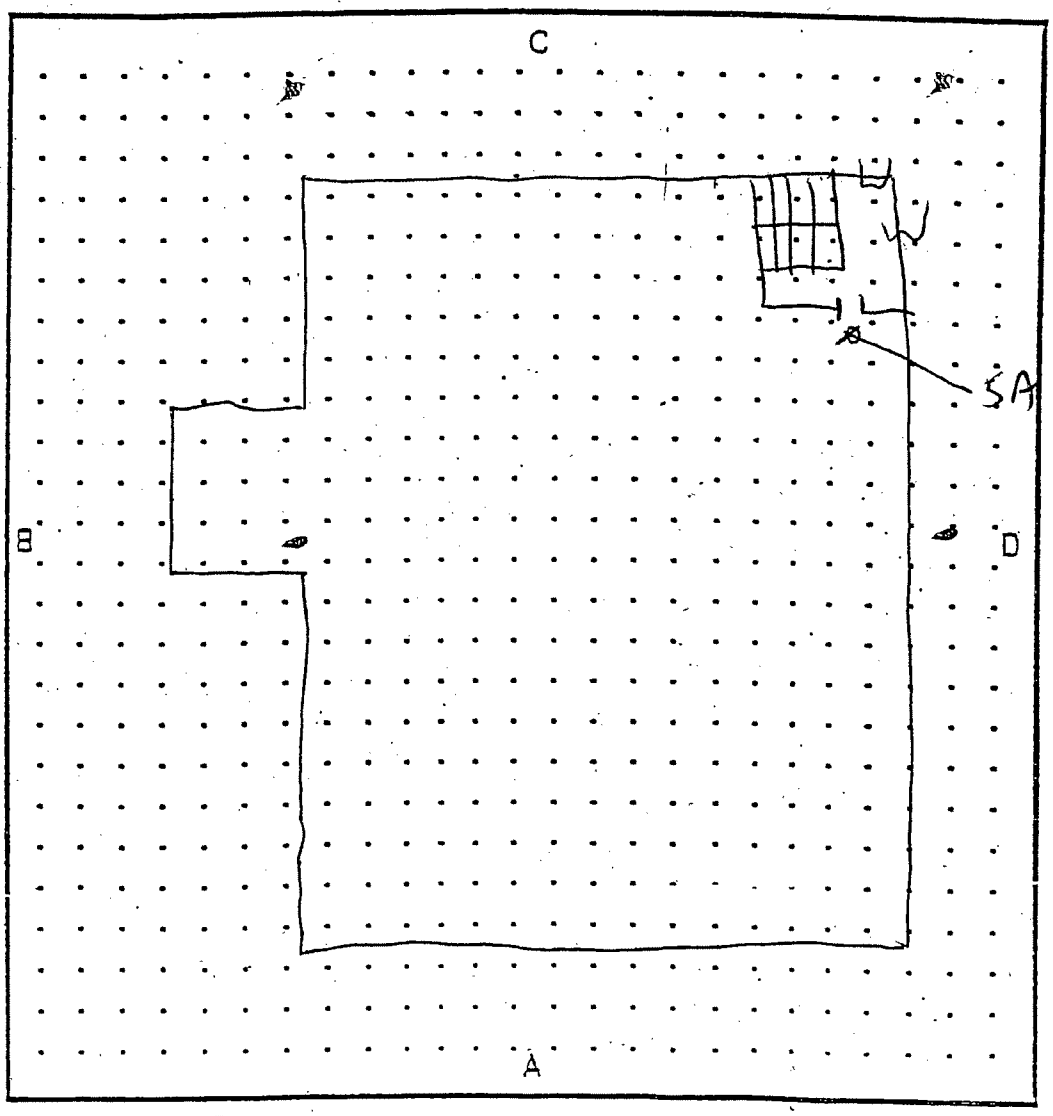
Apartment:

Diagram of: Asbestos Bulk Sample Locations

Floor: 1

No. of Doors: No. of Windows:

Date: 3/13/06



(#) ROOM NUMBER DOOR WINDOW

EnviroScience Consultants inc

Address: 29 Bushnell Hollow Road

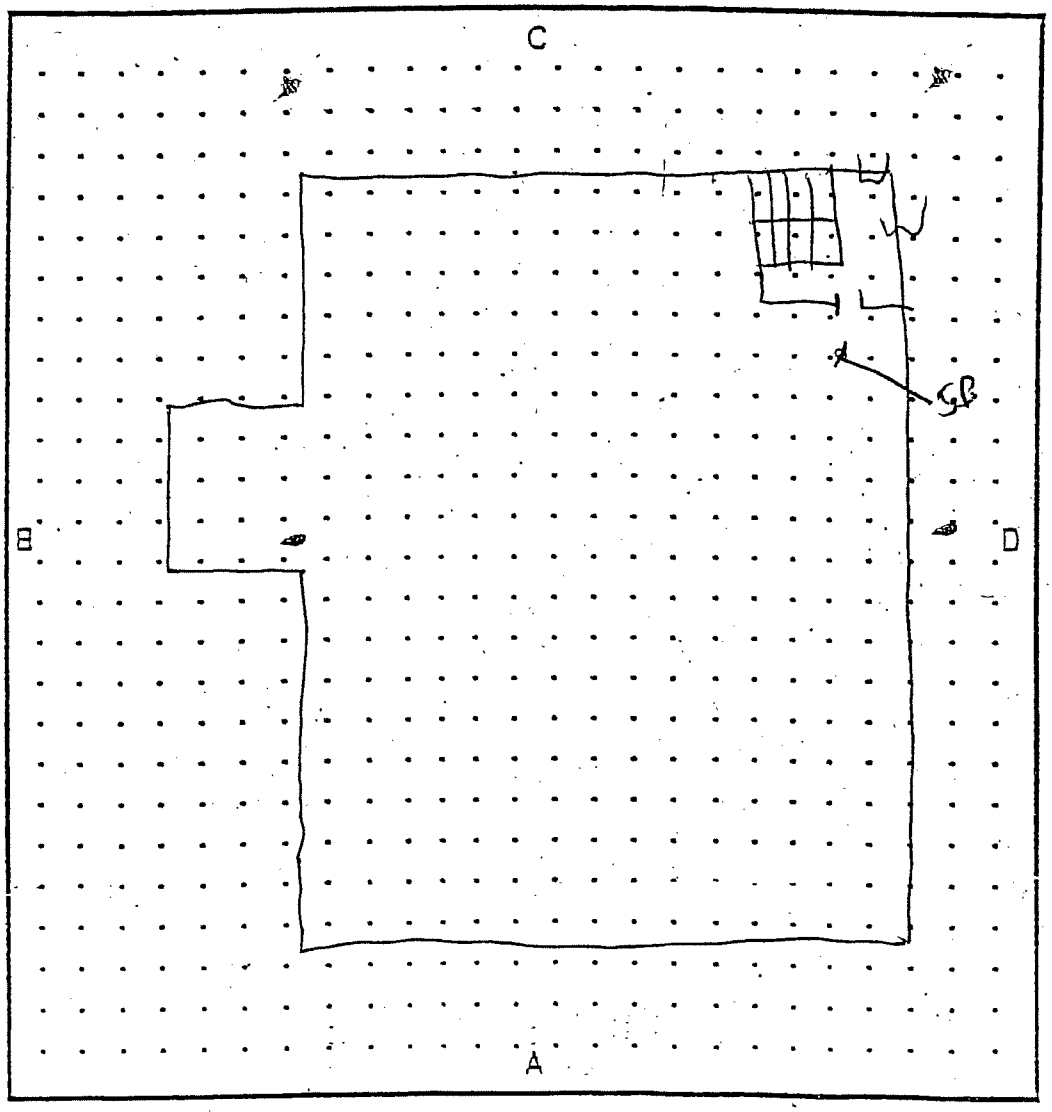
Apartment:

Diagram of: Asbestos Bulk Sample Location

Floor: 2

No. of Doors: No. of Windows:

Date: 3/13/06



(#) ROOM NUMBER DOOR

W WINDOW

EnviroScience Consultants inc

Address: 29 Bushwell Hollow Road

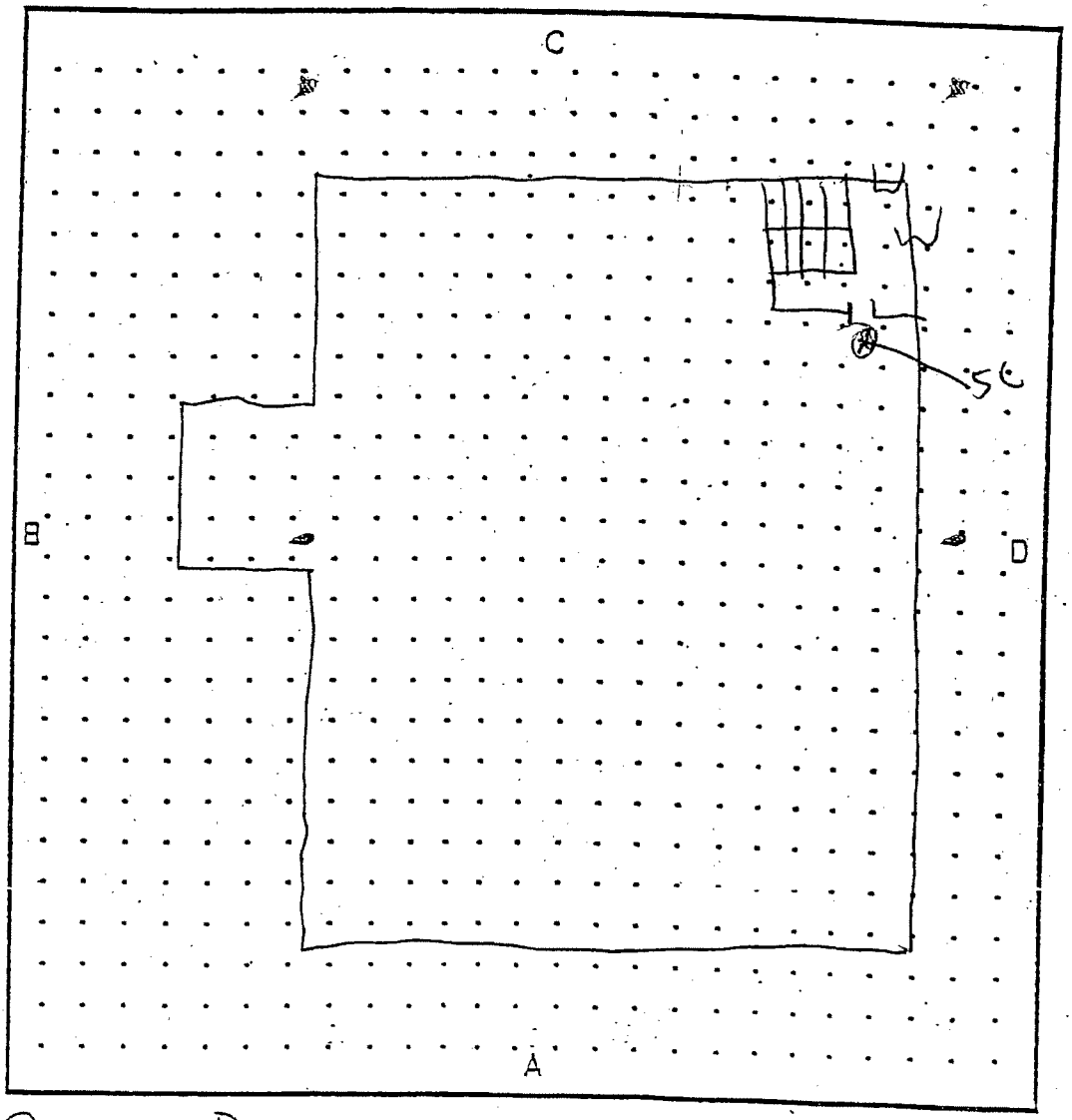
Apartment:

Diagram of: Asbestos Bulk Sample Location

Floor: 3

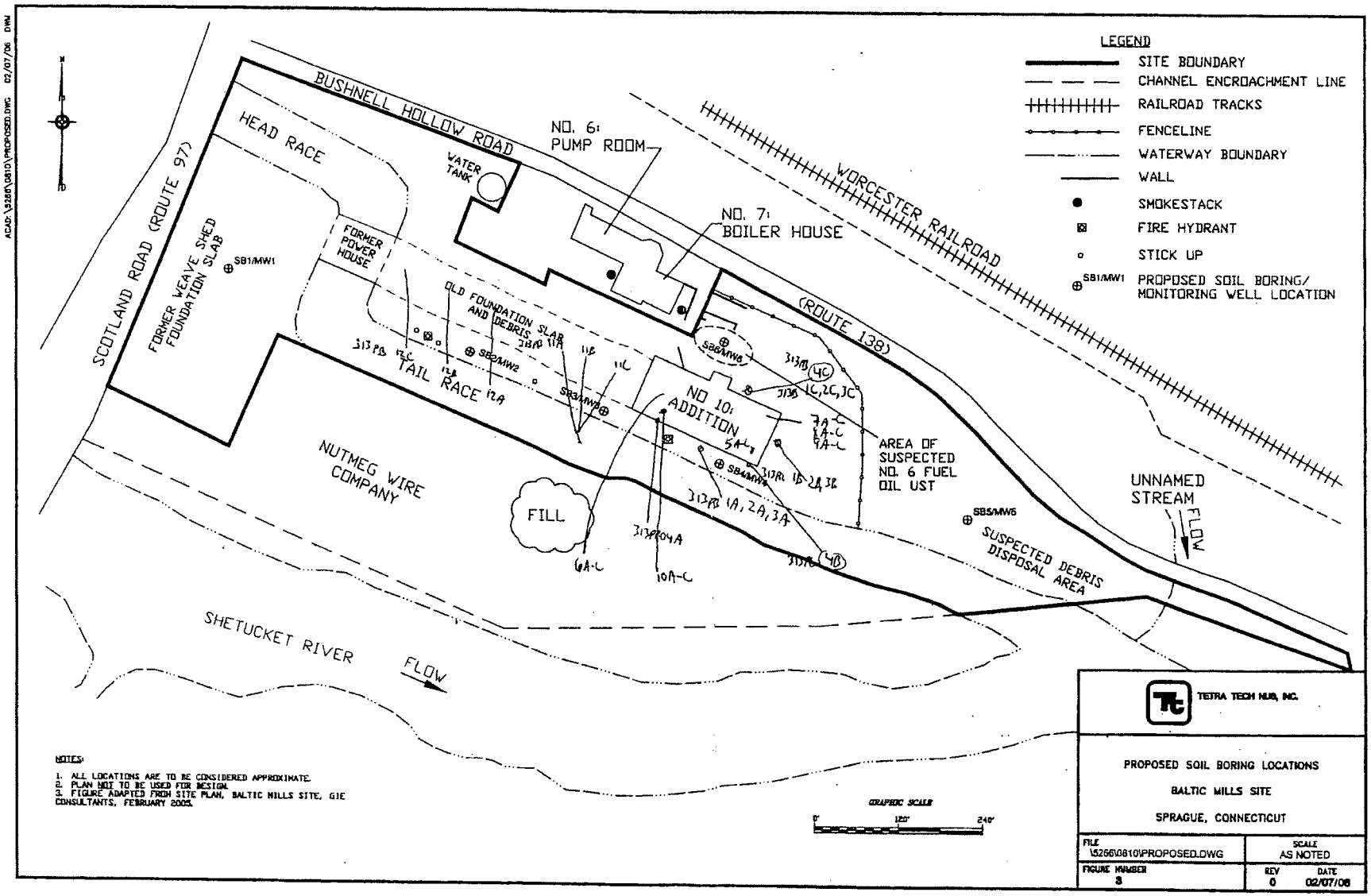
No. of Doors: _____ No. of Windows: _____

Date: 3/13/06

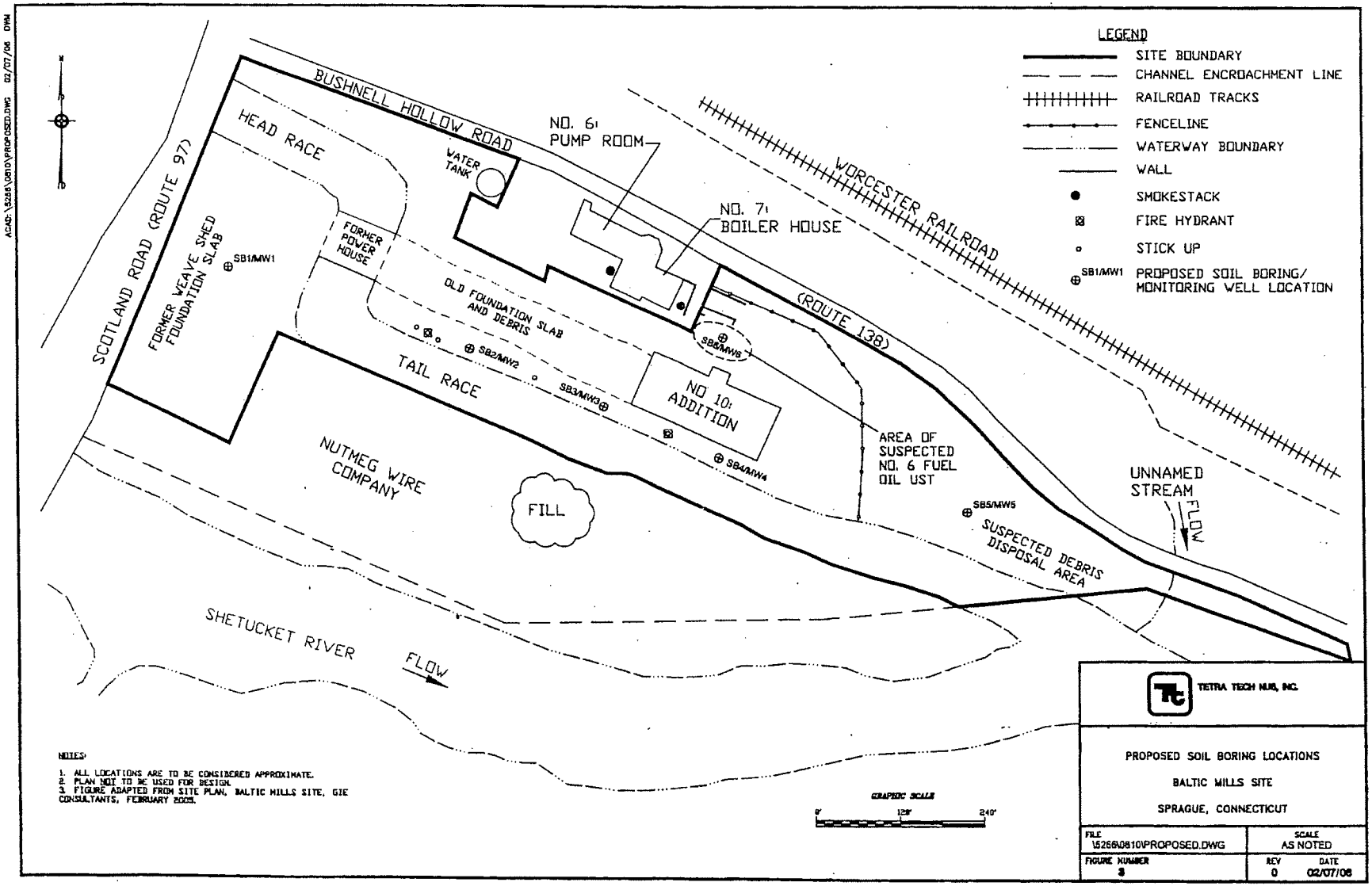


(1) ROOM NUMBER DOOR W WINDOW

Page _____ of _____



ACAD: \5266\0810\PROPOSED.DWG 02/07/06 DWW



ACAD: \5266\0810\PROPOSED.DWG 02/07/06 DWM

EnviroScience Consultants inc

Address: _____

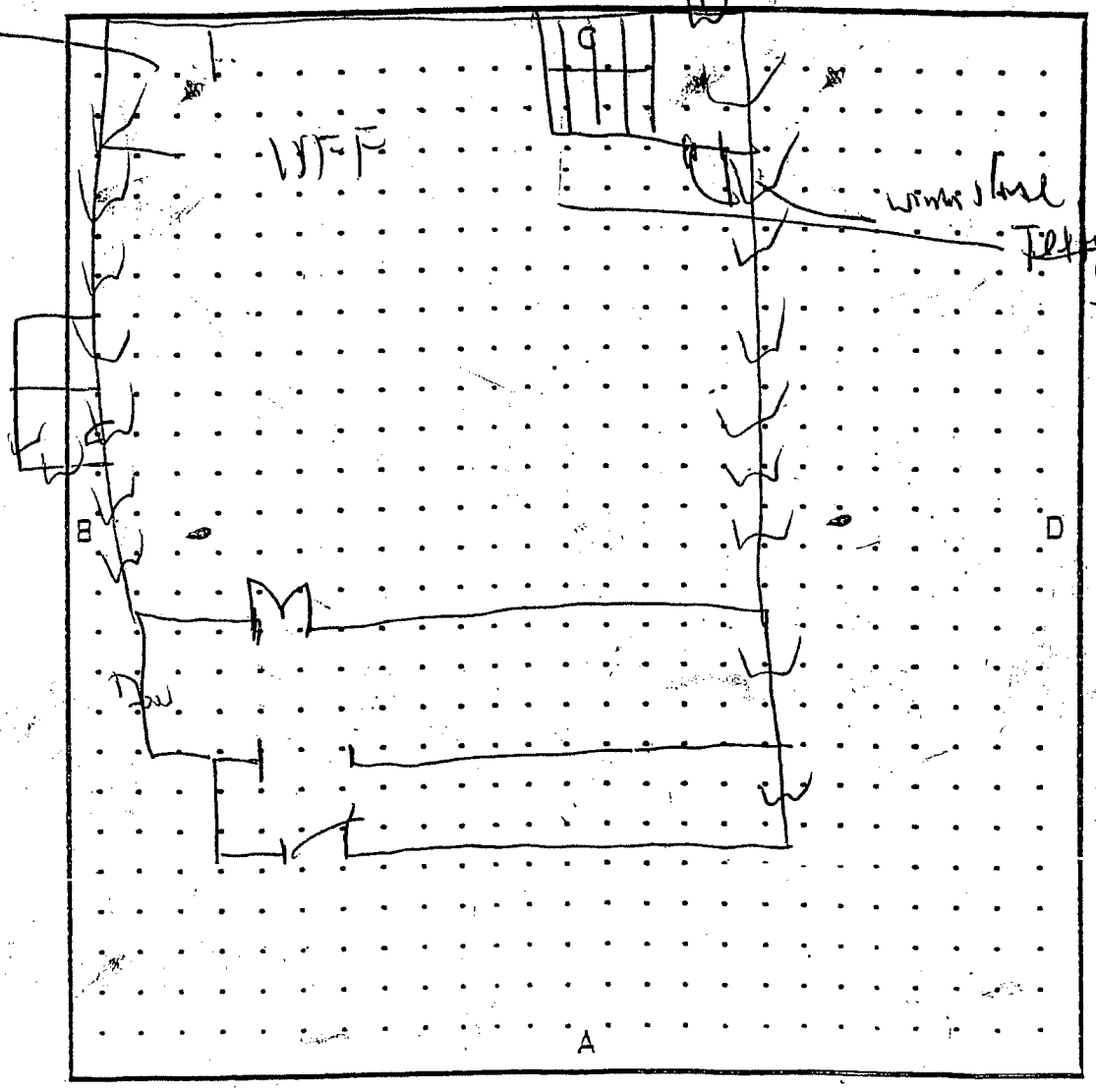
Apartment: _____

Diagram of: _____

Floor: _____

No. of Doors: _____ No. of Windows: _____

Date: _____

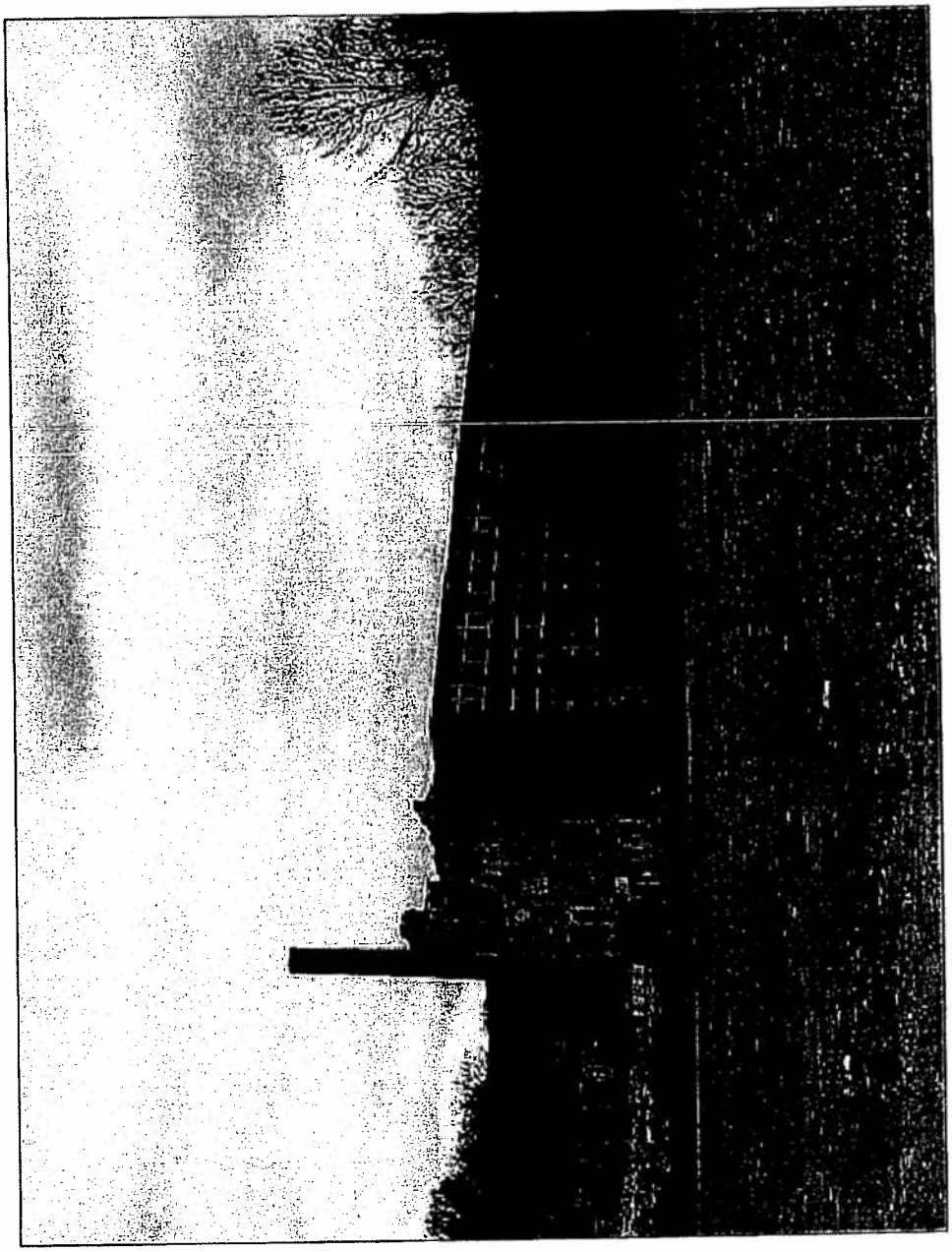


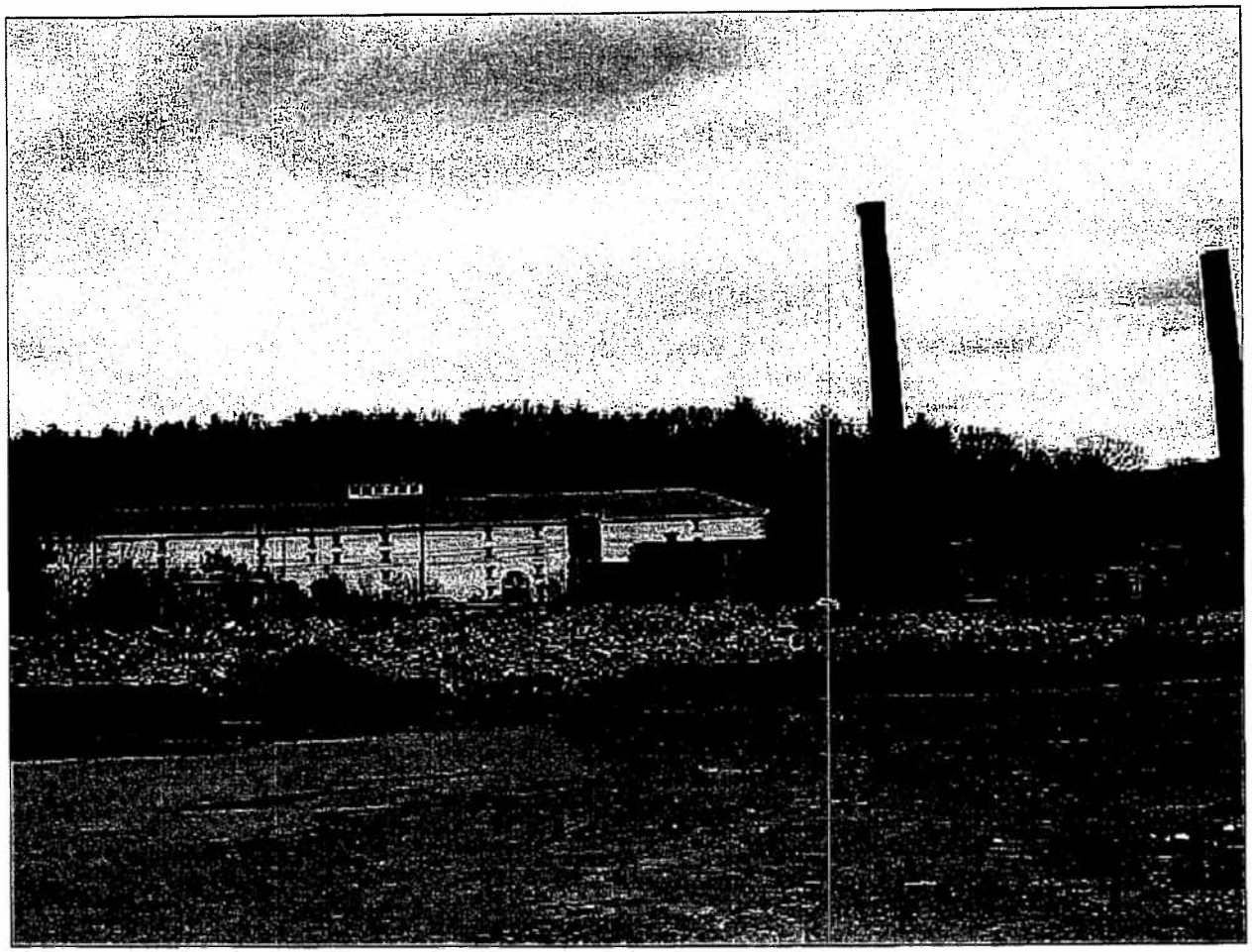
ROOM NUMBER DOOR WINDOW

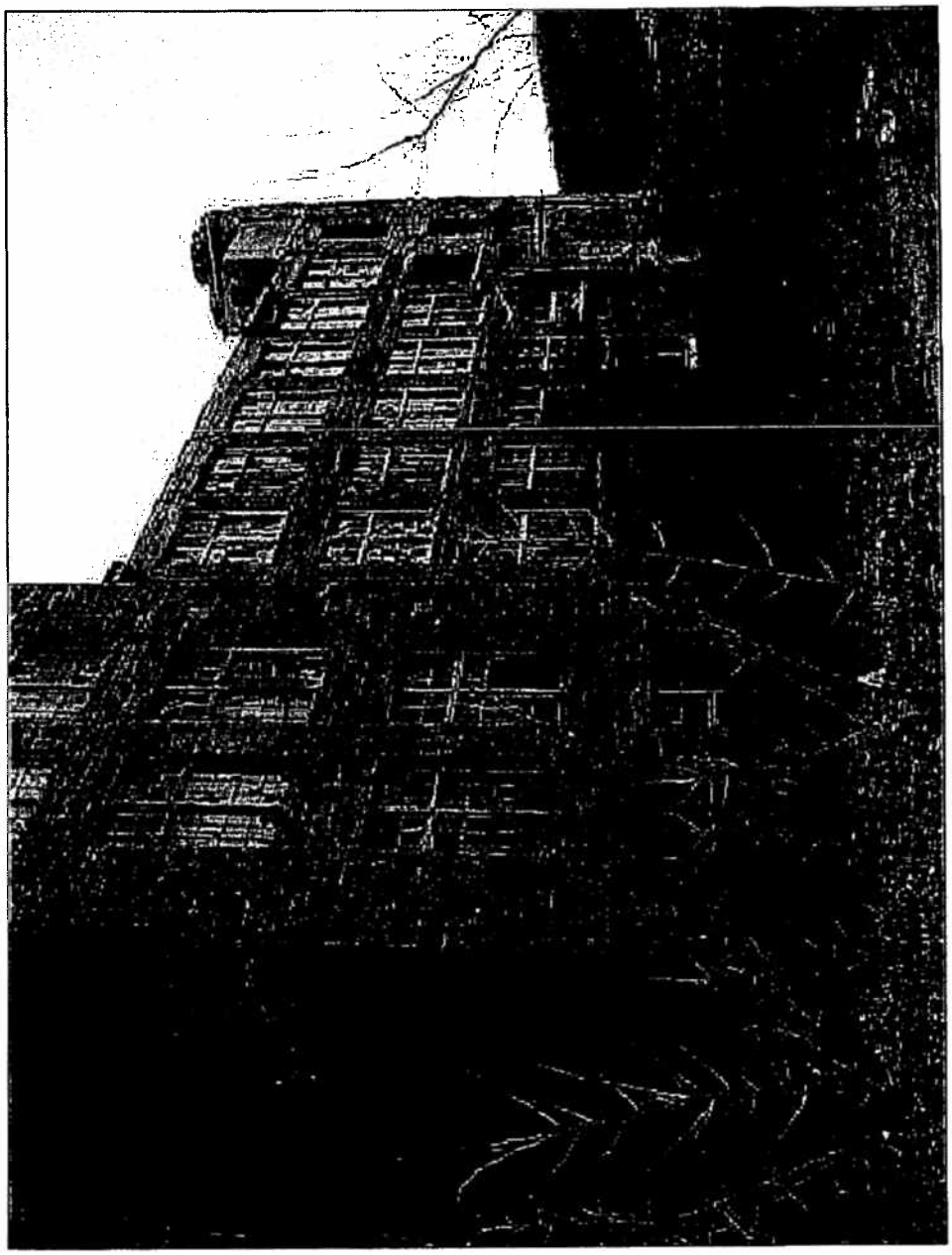
Page _____ of _____

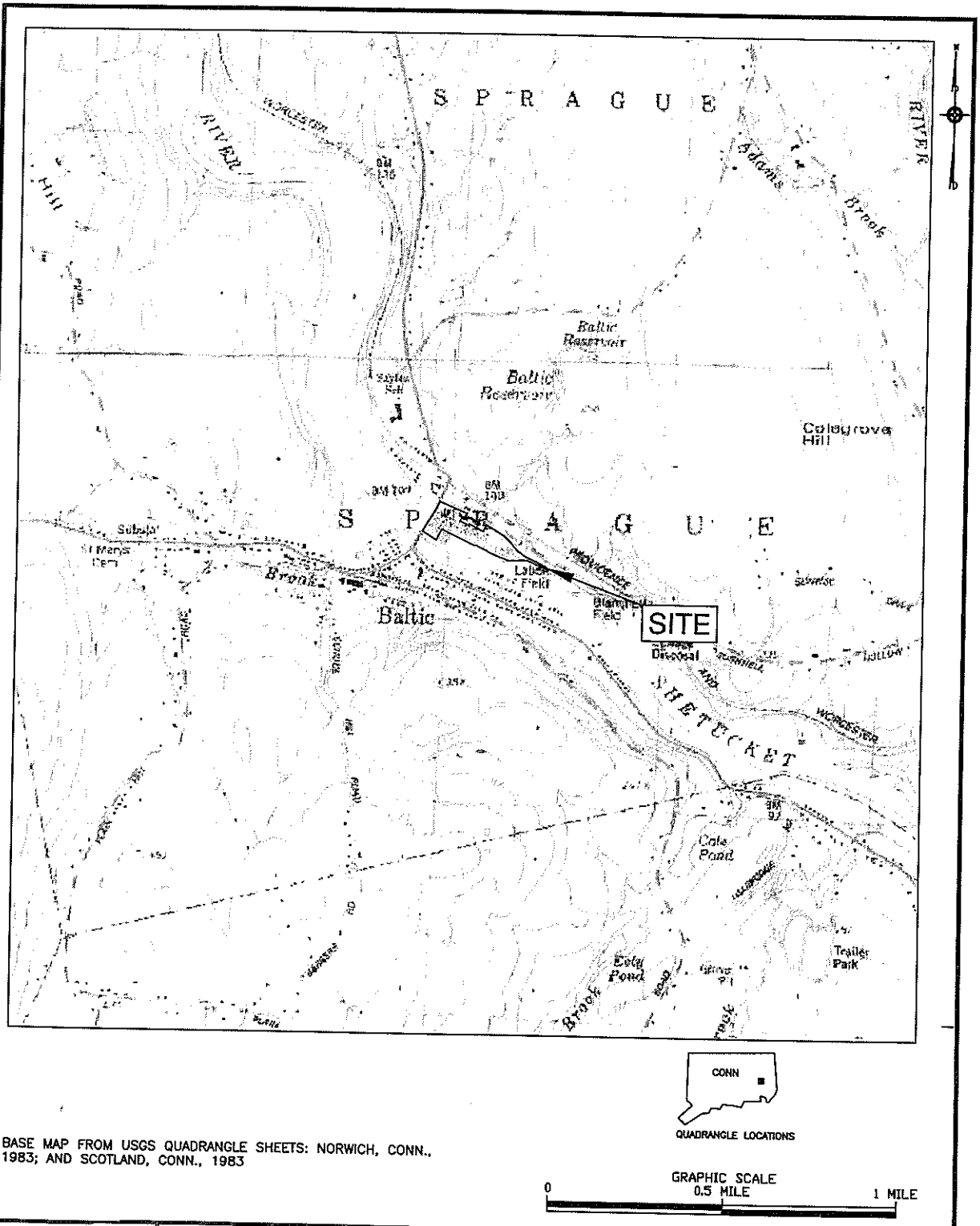
APPENDIX IX

DIGITAL PHOTOGRAPHS









TETRA TECH NUS, INC.	SITE LOCUS BALTIC MILLS SITE SPRAGUE, CONNECTICUT	SCALE: AS NOTED FILE: 5266\0870\USGS.DWG REV: 1 DATE: 08/04/06 FIGURE NUMBER: 1-1