



# Ecosystems Strategies, Inc.

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February 10, 2012

New York City Office of Environmental Remediation  
City Brownfield Cleanup Program  
c/o Shaminder Chawla  
100 Gold Street, 2<sup>nd</sup> Floor  
New York, NY 10038

**Re: 12CBCP017X**  
**4-12 Gouverneur Place**  
**Remedial Action Work Plan (RAWP) Stipulation List**  
**ESI File: WB08037**

Dear Mr. Chawla:

Ecosystems Strategies, Inc. (ESI) in conjunction with the project's Remedial Engineer, Morris Associates, hereby submits a Remedial Action Work Plan (RAWP) Stipulation List for the subject site to the New York City Office of Environmental Remediation (NYCOER) on behalf of Westhab, Inc. This letter serves as an addendum to the RAWP to stipulate additional content, requirements and procedures that will be followed during the site remediation. The contents of this list are added to the RAWP and will supersede the content in the RAWP where there is a conflict in purpose or intent. The additional requirements/procedures include the following:

## **Stipulation List**

1. The criterion attached in **Addendum 1** will be utilized if petroleum containing tank or vessel is identified during the remedial action or subsequent redevelopment excavation activities. All petroleum spills will be reported to the NYSDEC hotline as required by applicable laws and regulations. This contingency plan is designed for heating oil tanks and other small or moderately sized storage vessels. If larger tanks, such as gasoline storage tanks are identified, OER will be notified before this criterion is utilized.
2. A map indicating post-remedial End Point Sampling Locations is attached as **Addendum 2**. The locations of these post-excavation samples are general to the extent that:
  - Actual locations may be altered based on Site conditions (e.g., exposed rock for base samples). Any substantive deviations will be described in the Remedial Action Report (RAR); and

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- Site conditions may warrant the collection/analysis of additional samples (e.g., presence of limited contamination). Any additional sampling will be represented in the RAR.
3. The remedy will include installation of a passive sub-slab depressurization system (SSDS) beneath the building slab. The Sub Slab Depressurization System (SSDS) will consist of subslab PVC piping placed in the subgrade gravel (beneath the vapor barrier referenced in Paragraph 4, below), plumbed to a roof-top vent. The SSDS will be constructed of schedule 80 PVC (3" outer diameter) piping under the slab connected to black iron (or equivalent) piping above-grade and then manifolded to a single roof top emission point. The subgrade piping will be perforated at all locations prior to the vertical risers, as shown on the Schematic Layout of SSDS in **Addendum 3**. The exact locations may change based on site conditions. The pipe will be grouted at the surface to improve the system's vacuum. Drawings of the SSDS as provided by the project engineer are included as **Addendum 3**.
  4. The vapor barrier planned for this project is a VaporBlock 20 Plus with an effective thickness of 20 mil barrier to be installed beneath the building slab. Relevant information on the vapor barrier is provided in **Addendum 4**.
  5. A schematic drawing of the installation of the vapor barrier (including installation guidelines as provided by the manufacturer) is attached in **Addendum 5**.
  6. Certified letter/ project description from architect/ engineer of record describing the development, including plans to install vapor barrier and sub-slab depressurization system is included in **Addendum 6**.

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7. This NYC BCP project currently anticipates the removal and transport of non-hazardous waste. In the event that laboratory data document that hazardous wastes are present at this Site, it is understood that the Site may be subject to the New York State Department of Environmental Conservation's Special Assessment Tax (ECL 27-0923) and Hazardous Waste Regulatory Fees (ECL 72-00402). See DEC's website for more information:  
<http://www.dec.ny.gov/chemical/9099.html>.
8. A CD containing the final RAWP including this approved Stipulation List will be placed in the library that constitutes the primary public repository for project documents.
9. Signage for the project will include a sturdy placard mounted in a publically accessible right of way to building and other permits signage will consist of the NYC BCP Information Sheet (attached **Addendum 7**) announcing the remedial action. The Information sheet will be laminated and permanently affixed to the placard.
10. Signed and stamped RAWP certification page is provided in **Addendum 8**.

Sincerely,

ECOSYSTEMS STRATEGIES, INC.



Paul H. Ciminello  
President

PHC:cpr

cc: H. Moore  
H. Rosenberg  
J. Dennis  
P. Setaro

### **Addendum 1**

#### Generic Procedures for Management of Underground Storage Tanks identified under the NYC BCP

Prior to Tank removal, the following procedures should be followed:

- Remove all fluid to its lowest draw-off point.
- Drain and flush piping into the tank.
- Vacuum out the “tank bottom” consisting of water product and sludge.
- Dig down to the top of the tank and expose the upper half.
- Remove the fill tube and disconnect the fill, gauge, product, vent lines and pumps. Cap and plug open ends of lines.
- Temporarily plug all tank openings, complete the excavation, remove the tank and place it in a secure location.
- Render the tank safe and check the tank atmosphere to ensure that petroleum vapors have been satisfactorily purged from the tank.
- Clean tank or remove to storage yard for cleaning.
- If the tank is to be moved, it must be transported by licensed waste transporter. Plug and cap all holes prior to transport leaving a 1/8 inch vent hole located at the top of the tank during transport.
- After cleaning, the tank must be made acceptable for disposal at a scrap yard, cleaning the tanks interior with a high pressure rinse and cutting the tank in several pieces.

During the tank and pipe line removal, the following field observations should be made and recorded:

- A description and photographic documentation of the tank and pipe line condition (pitting, holes, staining, leak points, evidence of repairs, etc.).
- Examination of the excavation floor and sidewalls for physical evidence of contamination (odor, staining, sheen, etc.).
- Periodic field screening (through bucket return) of the floor and sidewalls of the excavation, with a calibrated photoionization detector (PID).

ADDENDUM 1 - continued

### Impacted Soil Excavation Methods

The excavation of the impacted soil will be performed following the removal of the existing tanks. Soil excavation will be performed in accordance with the procedures described under Section 5.5 of Draft DER-10 as follows:

- A description and photographic documentation of the excavation.
- Examination of the excavation floor and sidewalls for physical evidence of contamination (odor, staining, sheen, etc.).
- Periodic field screening (through bucket return) of the floor and sidewalls of the excavation, with calibrated photoionization detector (PID).

Final excavation depth, length, and width will be determined in the field, and will depend on the horizontal and vertical extent of contaminated soils as identified through physical examination (PID response, odor, staining, etc.). Collection of verification samples will be performed to evaluate the success of the removal action as specified in this document.

The following procedure will be used for the excavation of impacted soil (as necessary and appropriate):

- Wear appropriate health and safety equipment as outlined in the Health and Safety Plan.
- Prior to excavation, ensure that the area is clear of utility lines or other obstructions. Lay plastic sheeting on the ground next to the area to be excavated.
- Using a rubber-tired backhoe or track mounted excavator, remove overburden soils and stockpile, or dispose of, separate from the impacted soil.
- If additional UST's are discovered, the NYSDEC will be notified and the best course of action to remove the structure should be determined in the field. This may involve the continued trenching around the perimeter to minimize its disturbance.

ADDENDUM 1 - continued

- If physically contaminated soil is present (e.g., staining, odors, sheen, PID response, etc.) an attempt will be made to remove it, to the extent not limited by the site boundaries or the bedrock surface. If possible, physically impacted soil will be removed using the backhoe or excavator, segregated from clean soils and overburden, and staged on separated dedicated plastic sheeting or live loaded into trucks from the disposal facility. Removal of the impacted soils will continue until visibly clean material is encountered and monitoring instruments indicate that no contaminants are present.
- Excavated soils which are temporarily stockpiled on-site will be covered with tarp material while disposal options are determined. Tarp will be checked on a daily basis and replaced, repaired or adjusted as needed to provide full coverage. The sheeting will be shaped and secured in such a manner as to drain runoff and direct it toward the interior of the property.

Once the site representative and regulatory personnel are satisfied with the removal effort, verification of confirmatory samples will be collected from the excavation in accordance with DER-10.



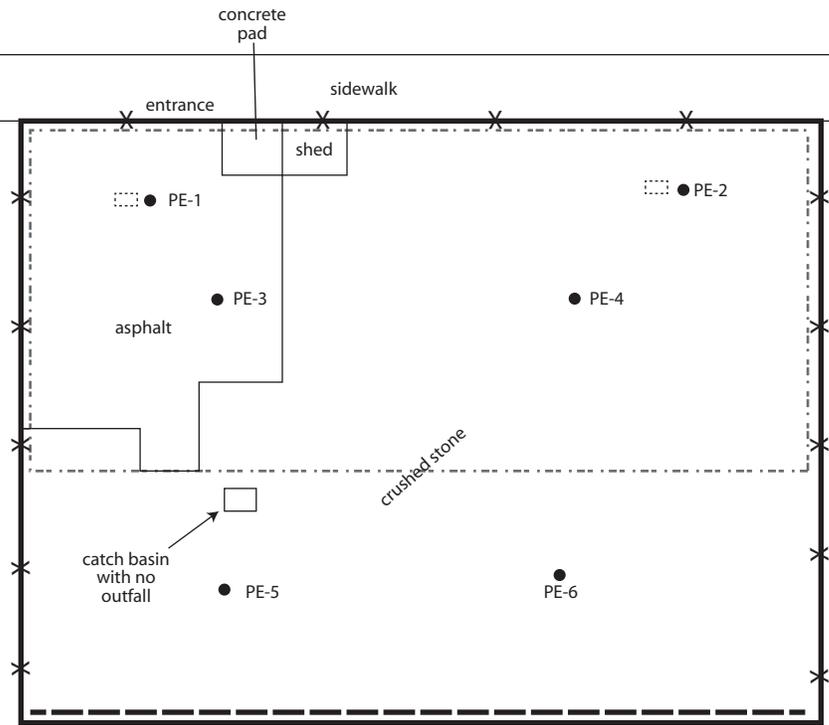
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**Addendum 2**  
End Point Sampling Plan



GOUVERNEUR PLACE



● Base Samples (6)

Note: Additional samples may be collected if warranted by Site conditions.

All feature locations are approximate. Map based on survey map by Gerald T. Olecley, PLS

**End-Point Sampling Plan**

4, 6, 8, 10 and 12 Gouverneur Place  
Borough of Bronx, New York

Legend:

- subject property border
- x-x-x- chain link fence
- - - - - proposed building
- GPR anomaly
- brick wall
- sample locations

ESI File: WB08037.50

January 2012

Scale: 1" = 31'

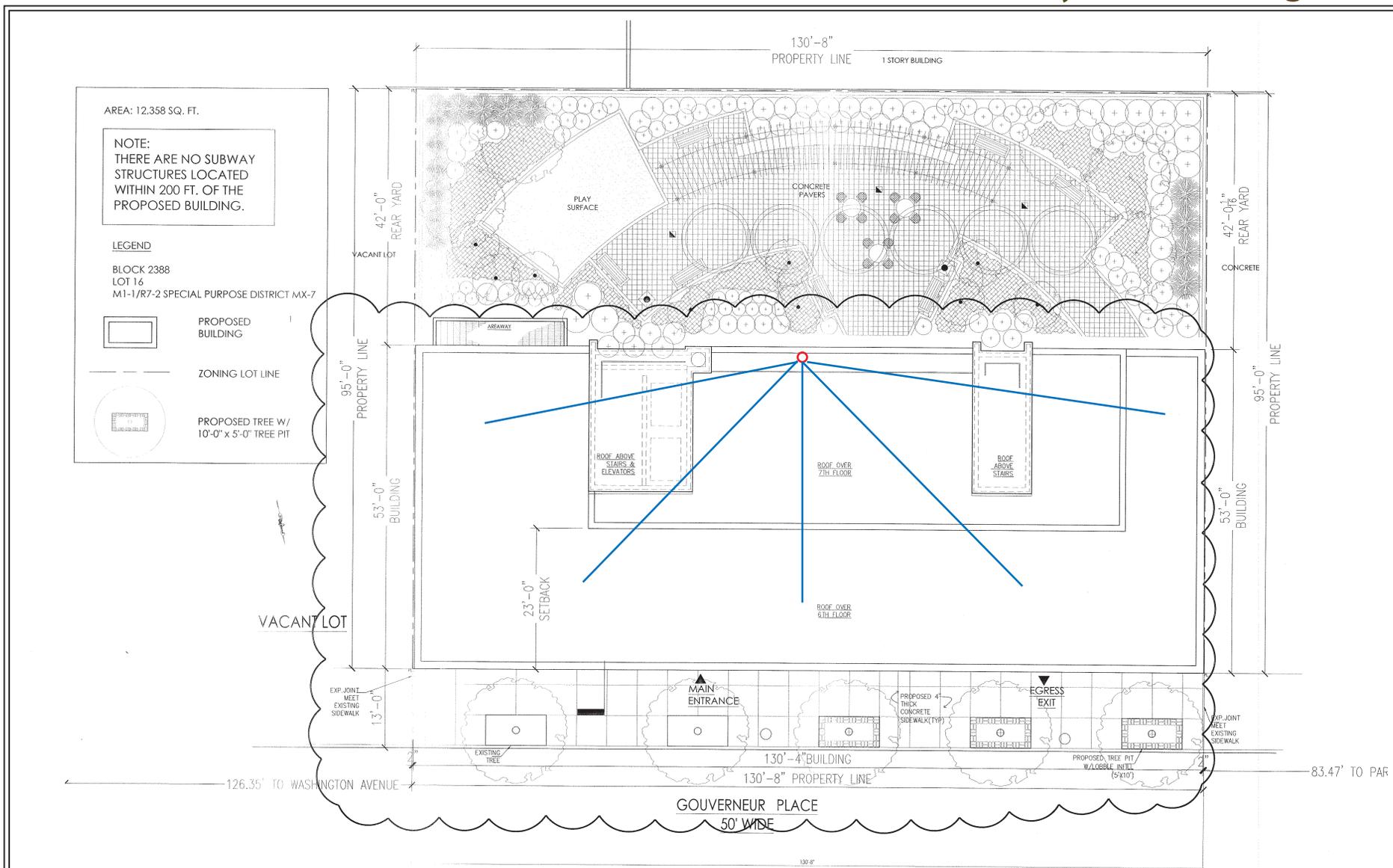
Addendum 2



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**Addendum 3**  
Schematic Layout of SSDS  
And  
Detailed SSDS Drawing



All feature locations are approximate. This map is intended as a schematic to be used in conjunction with the associated report, and it should not be relied upon as a survey for planning or other activities.

## Schematic Layout of SSDS

4, 6, 8, 10 and 12 Gouverneur Place  
Borough of Bronx, New York

Legend:

- Vertical Riser
- Subslab Piping (perforated)

ESI File: WB08037.50

January 2012

Not to scale

Addendum 3



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**Addendum 4**

Relevant Information for Vapor Barrier

# UNDER-SLAB GAS BARRIER / VAPOR RETARDER (Class A)

## PART 1 – GENERAL

### 1.1 SUMMARY

#### A. Products Supplied Under This Section

1. Gas Barrier / Vapor Retarder, Seam Tape, and Pipe Boots

### 1.2 REFERENCES

#### A. American Society for Testing and Materials (ASTM)

1. ASTM E 1745 Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil Or Granular Fill Under Concrete Slabs
2. ASTM E 154 Standard Test Methods for Water Vapor Retarders Used in Contact with Earth Under Concrete Slabs
3. ASTM E 96 Standard Test Methods for Water Vapor Transmission of Materials
4. ASTM E 1643 Standard Practice for Installation of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs
5. ASTM D 1434 Standard Test Method for Determining Gas Permeability Characteristics of Plastic Film and Sheeting

#### B. SP Technical Research Institute of Sweden

#### C. American Concrete Institute (ACI)

1. ACI 302.1R-6 & 7 Section 3.2.3 Vapor Retarder

### 1.3 SUBMITTALS

#### A. Testing/Specifications

1. Laboratory test results showing compliance with ASTM & ACI Standards.
2. Manufacturer's samples, literature.
3. Manufacturer's installation instructions for placement and seaming.

## PART 2 – PRODUCTS

### 2.1 MATERIALS

#### **A. Provide a Gas Barrier / Vapor Retarder that meets the following:**

1. ASTM E-1745 Standard for Plastic Water Vapor Retarders Used in Contact with Earth Under Concrete Slabs
  - a) Must meet all Class "A" criteria.
2. ASTM D 1434 Standard Test Method for Determining Gas Permeability Characteristics of Plastic Film and Sheeting
  - a) Methane Permeability:  $< 5 \times 10^{-10} \text{ m}^2/\text{d}\cdot\text{atm}$
  - b) Radon Diffusion Coefficient:  $< 0.25 \times 10^{-12} \text{ m}^2/\text{s}$

- VaporBlock® Plus™ 20

*Other Manufacturer accepted meeting the above specification:*

- CETCO Liquid Boot Company - 714-384-0111

## 2.2 ACCESSORIES

### A. Seam Tape

1. VaporBond Plus or other 4" wide gas barrier tape approved by the gas barrier / vapor retarder manufacturer.
2. Butyl Seal Tape by Raven Industries, or other 2" wide double -sided reinforced butyl rubber tape.

### B. Pipe Boots

1. VaporBoot Plus System or other manufacturer's supplied pipe boot system.

## PART 3 – EXECUTION

### 3.1 PREPARATION

#### A. Ensure that subsoil is approved by architect

1. Level and tamp or roll aggregate, sand or tamped earth base.

### 3.2 INSTALLATION

#### A. Install Gas Barrier / Vapor Retarder:

1. Installation shall be in accordance with manufacturer's instructions and ASTM E 1643. (Instructions on architectural or structural drawings should be reviewed and followed.)
  - A. Unroll VaporBlock Plus with the longest dimension parallel with the direction of the pour and pull open all folds to full width.
  - B. Lap VaporBlock Plus over footings and seal to the vertical foundation walls with 2-Sided Butyl Seal tape.
  - C. Overlap joints a minimum of 12 inches and seal in-between overlap with 2-Sided Butyl Seal tape then seal overlap with VaporBond Plus Tape or other 4" wide barrier tape approved by gas barrier / vapor retarder manufacturer.
  - D. Seal around sewer pipes, support columns or any other penetration with the VaporBoot System or at minimum a combination of VaporBlock Plus and VaporBond Plus Tape, creating a monolithic membrane between the surface of the slab and moisture sources below as well as at the slab perimeter.
  - E. When VaporBlock Plus gas barrier is used as a part of an active control system for radon gas and other VOCs, a ventilation system will be required. When installed as a passive system it is still recommended to include a ventilation system that could be converted to an active system later.
  - F. Repair damaged areas by cutting patches of VaporBlock Plus, overlapping damaged area 12 inches and taping all four sides with VaporBond Plus Tape or other 4" wide barrier tape approved by vapor retarder / gas barrier manufacturer.

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Vista, CA 92081  
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Fax: 760-597-9574  
[www.globalplasticsheeting.com](http://www.globalplasticsheeting.com)

## PRODUCT DESCRIPTION

VaporBlock Plus<sup>™</sup> is a seven-layer co-extruded barrier made from state-of-the-art polyethylene and barrier resins to provide unmatched impact strength as well as superior resistance to gas and moisture transmission. VaporBlock Plus is a highly resilient underslab / vertical wall barrier designed to restrict naturally occurring gases such as radon and/or methane from migrating through the ground and concrete slab. VaporBlock Plus is more than 50 times less permeable than typical high-performance polyethylene vapor retarders against Methane, Radon and other harmful VOC's.

VaporBlock Plus is one of the most effective underslab barriers in the building industry today far exceeding ASTM E-1745 (Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs) Class A, B and C requirements. Available in 6 (Class C) and 20 (Class A) mil thicknesses designed to meet the most stringent requirements. VaporBlock Plus is produced within the strict guidelines of our ISO 9001:2000 Certified Management System.

## PRODUCT USE

VaporBlock Plus resists gas and moisture migration into the building envelop when properly installed. It can be installed as a passive or active control system extending across the entire building including floors, walls and crawl spaces. When installed as a passive system it is recommended to also include a ventilated system with sump(s) that could be converted to an active control system with properly designed ventilation fans.

VaporBlock Plus works to protect your flooring and other moisture-sensitive furnishings in the building's interior from moisture and water vapor migration, greatly reducing condensation, mold and degradation.

## SIZE & PACKAGING

VaporBlock Plus 6 is available in 12' x 200' rolls and VaporBlock Plus 20 in 10' x 150' rolls to maximize coverage. All rolls are folded on heavy-duty cores for ease in handling and installation. Other custom sizes with factory welded seams are available based on minimum volume requirements. Installation instructions and ASTM E-1745 classifications accompany each roll.

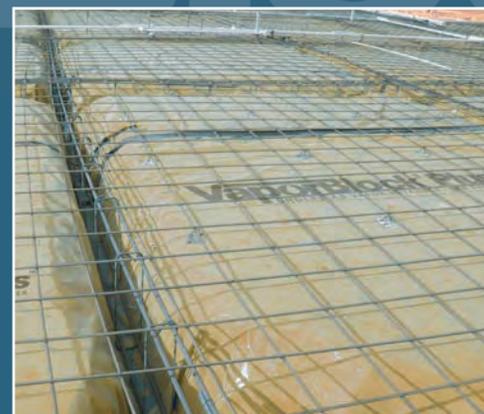
PRODUCT	PART NUMBER
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VaporBlock Plus 6	..... VBP 6
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VaporBlock Plus 20	.... VBP 20
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## COMMON APPLICATIONS

- Radon Barrier
- Methane Barrier
- VOC's Barrier
- Under-Slab Vapor Retarder
- Foundation Wall Vapor Retarder



TECHNICAL DATA SHEET					
PROPERTIES	TEST METHOD	VAPORBLOCK PLUS 6		VAPORBLOCK PLUS 20	
		English	Metric	English	Metric
APPEARANCE		White/Black		White/Gold	
THICKNESS, NOMINAL		6 mil	0.15 mm	20 mil	0.51 mm
WEIGHT		28 lbs/MSF	139 g/m <sup>2</sup>	102 lbs/MSF	498 g/m <sup>2</sup>
CLASSIFICATION	ASTM E 1745	CLASS C		CLASS A, B & C	
TENSILE STRENGTH 1" (2.54 cm) Average MD & TD (New Material)	ASTM E 154 Section 9 (D882)	22 lbs	98 N	58 lbs	258 N
PUNCTURE RESISTANCE	ASTM D 1709 *Method B	800 g		2600 g	
MAXIMUM USE TEMPERATURE		180°F	82°C	180°F	82°C
PERMEANCE (New Material)	ASTM E 154 Section 7  ASTM E 96 Procedure B	0.090 U.S. Perms	0.060 Metric Perms	0.025 U.S. Perms	0.016 Metric Perms
**RADON DIFFUSION COEFFICIENT		N/A		< 0.25 x 10 <sup>-12</sup> m <sup>2</sup> /s	
METHANE PERMEABILITY	ASTM D 1434	N/A		< 5 x 10 <sup>-10</sup> m <sup>2</sup> /d·atm	

\*Method B conditioned at 65% humidity for 14 days.

\*\*SP Technical Research Institute of Sweden.

## VaporBlock<sup>®</sup> Plus<sup>™</sup> Placement

All instructions on architectural or structural drawings should be reviewed and followed.

Detailed installation instructions accompany each roll of VaporBlock<sup>®</sup> Plus<sup>™</sup> and can also be located on our website.

ASTM E-1643 also provides general installation information for vapor retarders.



VaporBlock<sup>®</sup> Plus<sup>™</sup> is a seven-layer co-extruded barrier made using high quality virgin-grade polyethylene and barrier resins to provide unmatched impact strength as well as superior resistance to gas and moisture transmission.

Note: To the best of our knowledge, unless otherwise stated, these are typical property values and are intended as guides only, not as specification limits. NO WARRANTIES ARE MADE AS TO THE FITNESS FOR A SPECIFIC USE OR MERCHANTABILITY OF PRODUCTS REFERRED TO, no guarantee of satisfactory results from reliance upon contained information or recommendations and we disclaim all liability for resulting loss or damage.



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 CERTIFIED MANAGEMENT SYSTEM

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## VaporBlock®20 Plus-Stop Radon, Methane Gas and Mold Migration!



**VaporBlock 20 Plus** is a highly resilient underslab / vertical wall barrier designed to restrict naturally occurring gases such as radon and/or methane from migrating through the ground and concrete slab. VaporBlock Plus is more than 50 times less permeable than typical high performance polyethylene vapor retarders against Methane, Radon and other harmful VOC's. This is due to the tight cell structure.

**VaporBlock 20 Plus™** is a seven-layer co-extruded barrier made from state-of-the-art polyethylene and barrier resins to provide unmatched impact strength as well as superior resistance to gas and moisture transmission.

**VaporBlock 20 Plus** is one of the most effective underslab (underlayment for concrete) barriers in the building industry today far exceeding ASTM E-1745 (Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs) Class A, B and C requirements. Available in 6 (Class C) and 20 (Class A) mil thicknesses designed to meet the most stringent requirements.

**VaporBlock20 Plus** is produced within the strict guidelines of our ISO 9001:2000 Certified Management System.

### PRODUCT USE

**VaporBlock 20 Plus** resists gas and moisture migration into the building envelop when properly installed. It can be installed as a passive or active control system extending across the entire building including floors, walls and crawl spaces. When installed as a passive system it is recommended to also include a ventilated system with sump(s) that could be converted to an active control system with properly designed ventilation fans.

**VaporBlock 20 Plus** works to protect your flooring and other moisture-sensitive furnishings in the building's interior from moisture and water vapor migration, greatly reducing condensation, mold and degradation.

### SIZE & PACKAGING

**VaporBlock Plus 20 comes in 10' x 150' rolls** to maximize coverage. All rolls are folded on heavy-duty cores for ease in handling and installation. Other custom sizes with factory welded seams are available based on minimum volume requirements. Installation instructions and ASTM E-1745 classifications accompany each roll.

#### [More information and photos](#)

For a quote, please phone or email us about this product.

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Part Number: VB20+ 12X200

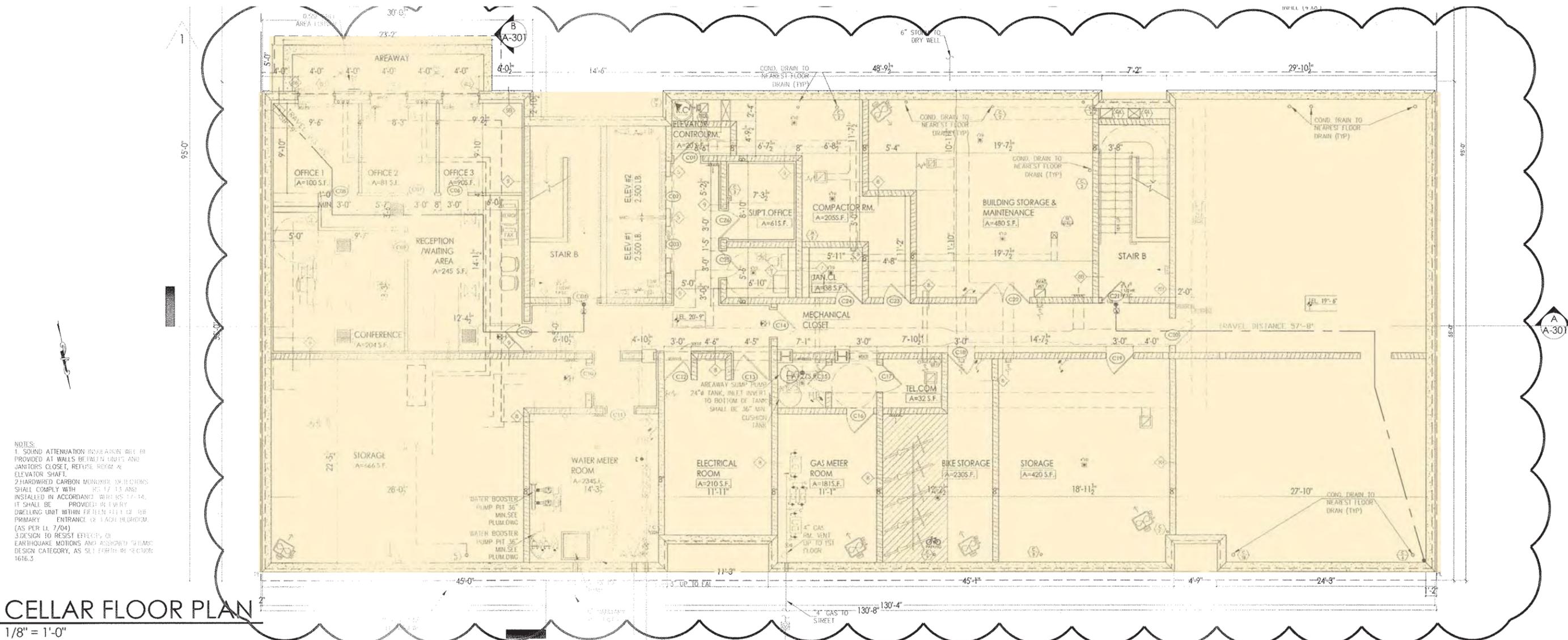


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**Addendum 5**

Schematic Drawing of Vapor Barrier and Manufacturer Installation Guidelines



NOTES:  
 1. SOUND ATTENUATION BARRIERS WILL BE PROVIDED AT WALLS BETWEEN OFFICE AND JANITORS CLOSET, REFUSE ROOM & ELEVATOR SHAFT.  
 2. HANDED CARBON MONOXIDE DETECTORS SHALL COMPLY WITH 90.17.13 AND BE INSTALLED IN ACCORDANCE WITH 90.14. IT SHALL BE PROVIDED IN EVERY DWELLING UNIT WITHIN FIFTEEN (15) FEET OF PRIMARY ENTRANCE OR EACH BEDROOM (AS PER LL 7.04)  
 3. DESIGN TO RESIST EFFECTS OF EARTHQUAKE MOTIONS AND ASSIGNED SEISMIC DESIGN CATEGORY, AS SET FORTH IN SECTION 1616.3

**CELLAR FLOOR PLAN**  
 1/8" = 1'-0"

Legend:

lateral extent of vapor barrier

<b>Schematic of Vapor Barrier</b>	
4-12 Gouverneur Place Bronx, New York	
ESI File: WB08037	
February 2012	Addendum 5

# VaporBlock® Plus™

UNDERSLAB VAPOR RETARDER / GAS BARRIER

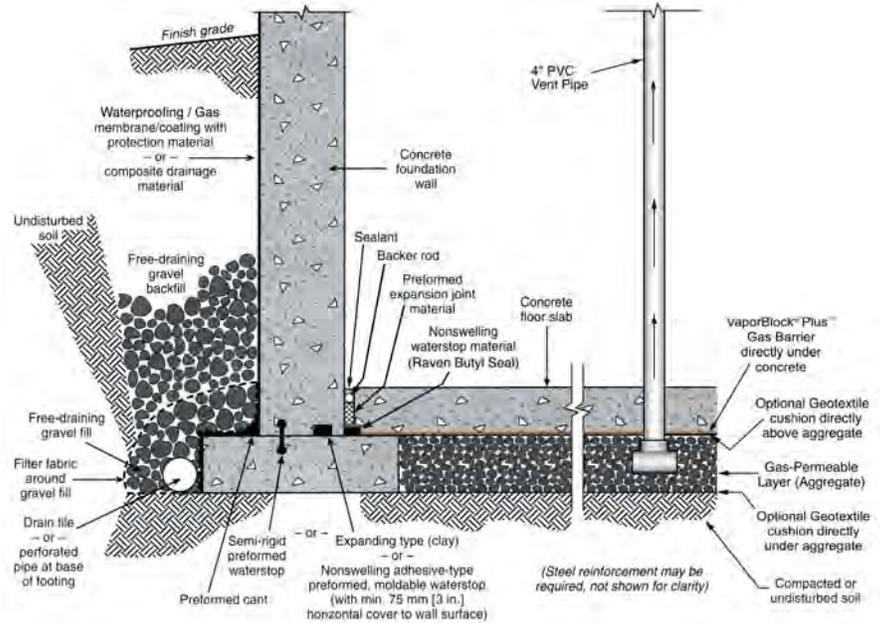
## INSTALLATION GUIDELINES

**Please Note:** Read these instructions thoroughly before installation to ensure proper use of VaporBlock® Plus™. ASTM E 1465, ASTM E 2121 and, ASTM E 1643 also provide valuable information regarding the installation of vapor / gas barriers. When installing this product, contractors shall conform to all applicable local, state and federal regulations and laws pertaining to residential and commercial building construction.

- When VaporBlock Plus gas barrier is used as part of an active control system for radon or other gas, a ventilation system will be required.
- If designed as a passive system, it is recommended to install a ventilation system that could be converted to an active system if needed.

### Materials List:

VaporBlock® Plus™ Vapor / Gas Barrier  
 VaporBond Plus 4" Foil Seaming Tape  
 Butyl Seal 2-Sided Tape  
 VaporBoot Plus Pipe Boots 12/Box (recommended)  
 VaporBoot Tape (optional)



Elements of a moisture/gas-resistant floor system. General illustration only. (Note: This example shows multiple options for waterstop placement.)

## VaporBlock® Plus™ PLACEMENT

- 1.1. Level and tamp or roll granular base as specified. A base for a gas-reduction system may require a 4" to 6" gas permeable layer of clean coarse aggregate as specified by your architectural or structural drawings after installation of the recommended gas collection system. In this situation, a cushion layer consisting of a non-woven geotextile fabric placed directly under VaporBlock Plus will help protect the barrier from damage due to possible sharp coarse aggregate.
- 1.2. Unroll VaporBlock Plus running the longest dimension parallel with the direction of the pour and pull open all folds to full width. (Fig. 1)
- 1.3. Lap VaporBlock Plus over the footings and seal with Raven Butyl Seal tape at the footing-wall connection. Overlap joints a minimum of 6" and seal overlap with Raven VaporBond Tape. When used as a gas barrier, overlap joints a minimum of 12" and seal in-between overlap with 2-sided Raven Butyl Seal Tape then seal overlap with VaporBond Plus Tape. (Fig. 2)

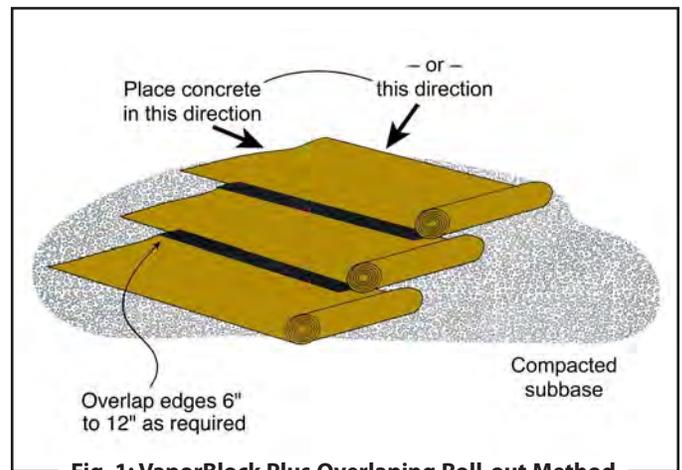


Fig. 1: VaporBlock Plus Overlapping Roll-out Method

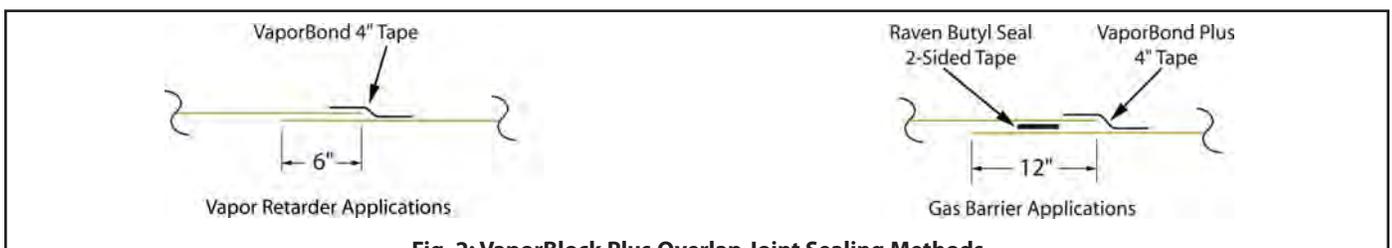


Fig. 2: VaporBlock Plus Overlap Joint Sealing Methods

# SINGLE PENETRATION PIPE BOOT INSTALLATION

1.4. Seal around all plumbing, conduit, support columns or other penetrations that come through the **VaporBlock Plus** membrane. Pipes four inches or smaller can be sealed with Raven VaporBoot Plus preformed pipe boots. VaporBoot Plus preformed pipe boots are formed in steps for 1", 2", 3" and 4" PVC pipe or IPS size and are sold in units of 12 per box (Fig. 3 & 5).

Pipe boots may also be fabricated from excess **VaporBlock Plus** membrane (Fig. 4 & 6) and sealed with VaporBoot Tape or VaporBond Plus Tape (sold separately).

*Reminder Note: All holes or penetrations through the membrane will need a patch cut to a minimum of 12" from the opening in all directions.*

To fabricate pipe boots from **VaporBlock Plus** excess material (see Fig. 4 & 6 for A-F):

- A) Cut a square large enough to overlap 12" in all directions.
- B) Mark where to cut opening on the center of the square and cut four to eight slices about 3/8" less than the diameter of the pipe.
- C) Force the square over the pipe leaving the tightly stretched cut area around the bottom of the pipe with approximately a 1/2" of the boot material running vertically up the pipe. *(no more than a 1/2" of stretched boot material is recommended)*

D) Once boot is positioned, seal the perimeter to the membrane by applying 2-sided Raven Butyl Seal Tape inbetween the two layers. Secure boot down firmly over the membrane taking care not to have any large folds or creases.

E) Use VaporBoot Tape or VaporBond Plus Tape to secure the boot to the pipe.

VaporBoot Tape (option) – fold tape in half lengthwise, remove half of the release liner and wrap around the pipe allowing 1" extra for overlap sealing. Peel off the second half of the release liner and work the tape outward gradually forming a complete seal.

VaporBond Plus Tape (option) - Tape completely around the pipe overlapping the to get a tight seal against the pipe.

F) Complete the process by taping over the boot perimeter edge with VaporBond Plus Tape to create a monolithic membrane between the surface of the slab and gas/moisture sources below and at the slab perimeter. (Fig. 4 & 6)

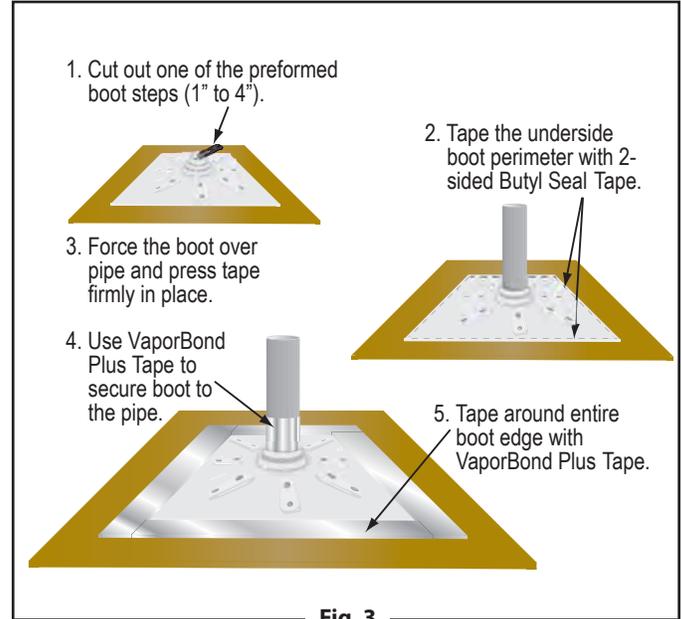


Fig. 3

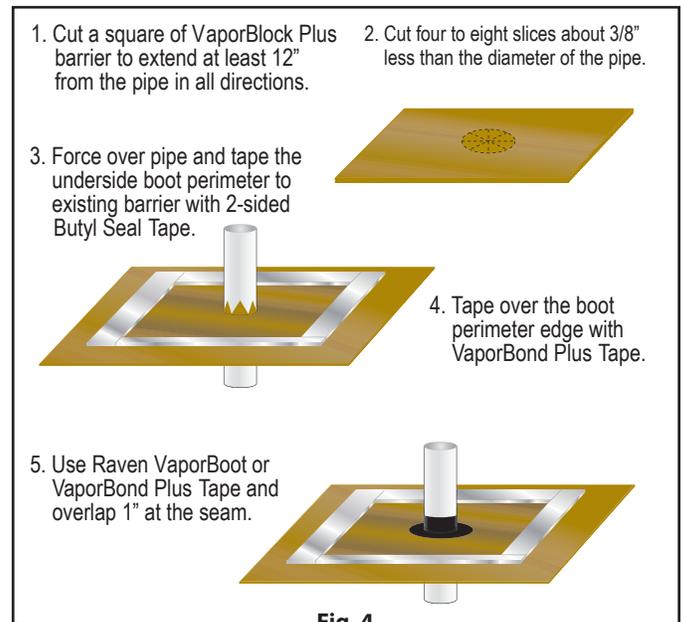


Fig. 4

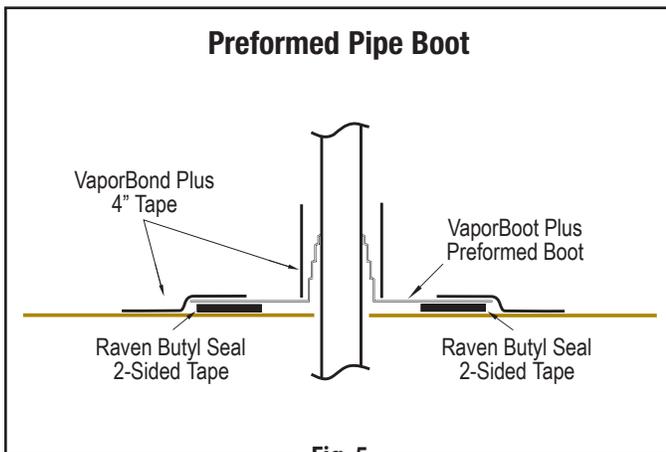


Fig. 5

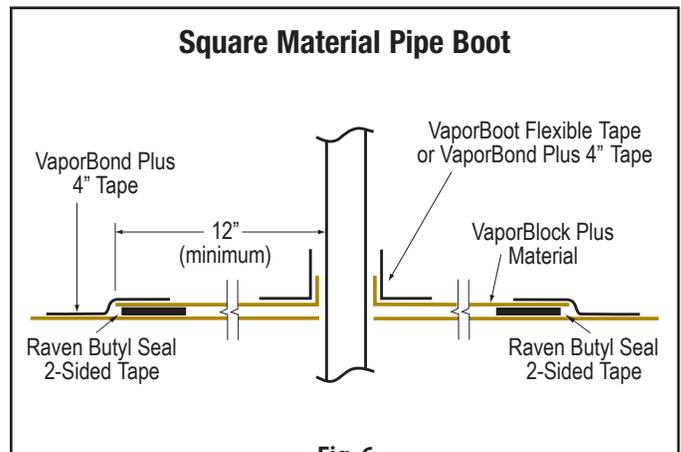


Fig. 6

# MULTIPLE PENETRATION PIPE BOOT INSTALLATION

1.5. For side-by-side multiple penetrations;

- A) Cut a patch large enough to overlap 12" in all directions (Fig. 7) of penetrations.
- B) Mark where to cut openings and cut four to eight slices about 3/8" less than the diameter of the penetration for each.
- C) Slide patch material over penetration to achieve a tight fit.
- D) Once patch is positioned, seal the perimeter to the membrane by applying 2-sided Raven Butyl Seal Tape in-between the two layers. (Fig. 8)
- E) After applying Raven Butyl Seal Tape between the patch and membrane, tape around each of the penetrations and the patch with VaporBond Plus 4" foil tape. (Fig. 9) For additional protection apply an acceptable polyurethane elastomeric sealant around the penetrations. (Fig. 10)

1.6. Holes or openings through **VaporBlock Plus** are to be repaired by cutting a piece of **VaporBlock Plus** 12" larger in all directions from the opening. Seal the patch to the barrier with 2-sided Raven Butyl Seal Tape and seal the edges of the patch with VaporBond Plus Tape.

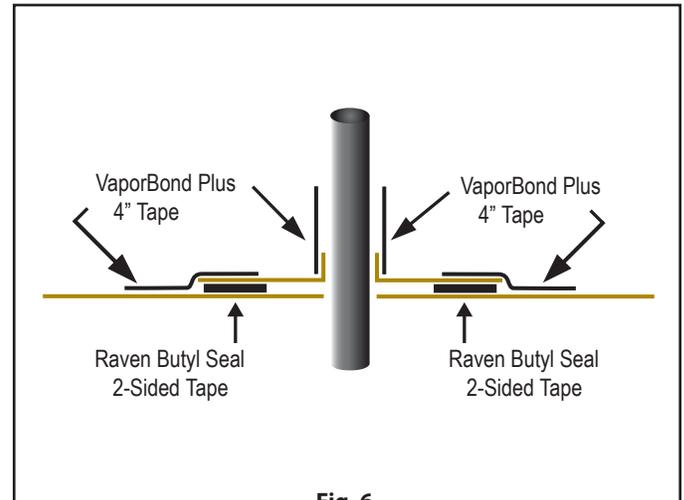


Fig. 6

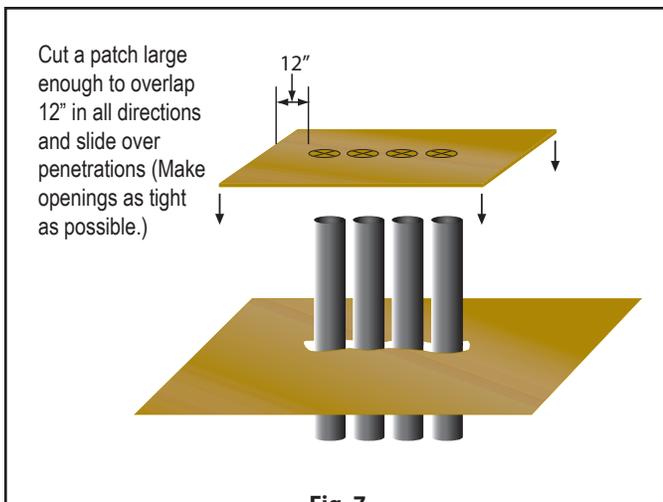


Fig. 7

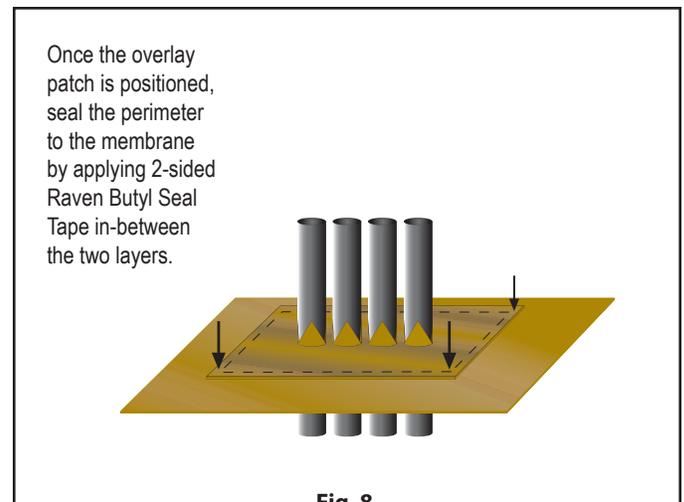


Fig. 8

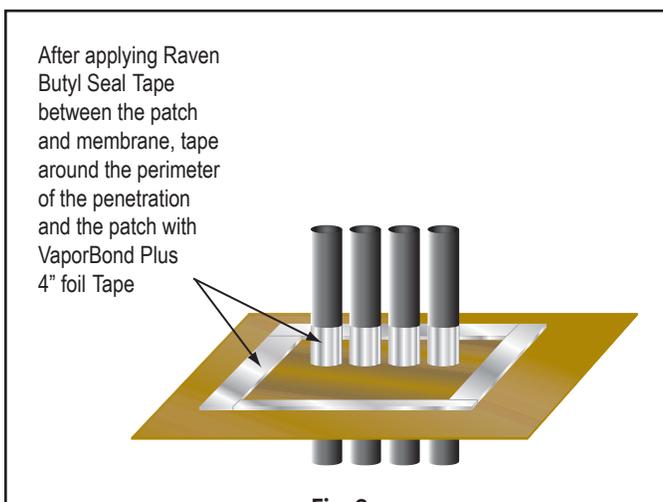


Fig. 9

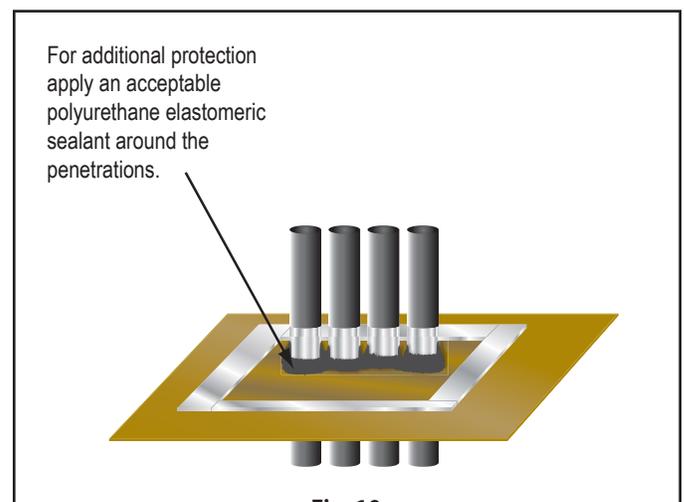


Fig. 10

- 2.1. When installing reinforcing steel and utilities, in addition to the placement of concrete, take precaution to protect **VaporBlock Plus**. Carelessness during installation can damage the most puncture-resistant membrane. Sheets of plywood cushioned with geotextile fabric temporarily placed on **VaporBlock Plus** provide for additional protection in high traffic areas including concrete buggies.
- 2.2. Use only brick-type or chair-type reinforcing bar supports to protect **VaporBlock Plus** from puncture.
- 2.3. Avoid driving stakes through **VaporBlock Plus**. If this cannot be avoided, each individual hole must be repaired.
- 2.4. If a cushion or blotter layer is required in the design between **VaporBlock Plus** and the slab, additional care should be given if sharp crushed rock is used. Washed rock will provide less chance of damage during placement. Care must be taken to protect blotter layer from precipitation before concrete is placed.



Note: To the best of our knowledge, unless otherwise stated, these are typical property values and are intended as guides only, not as specification limits. NO WARRANTIES ARE MADE AS TO THE FITNESS FOR A SPECIFIC USE OR MERCHANTABILITY OF PRODUCTS REFERRED TO, no guarantee of satisfactory results from reliance upon contained information or recommendations and disclaims all liability for resulting loss or damage.



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Ecosystems Strategies, Inc.

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**Addendum 6**

Certified Letter / Project Description



# MORRIS ASSOCIATES

ENGINEERING CONSULTANTS, PLLC

9 Elks Lane, Poughkeepsie, New York 12601 Tel: (845) 454-3411 Fax: (845) 473-1962  
 64 Green Street, Suite 1, Hudson, New York 12534 Tel: (518) 828-2300 Fax: (518) 828-3963

February 1, 2012

New York City Office of Environmental Remediation  
City Brownfield Cleanup Program  
100 Gold Street, 2<sup>nd</sup> Floor  
New York, NY 10038

Attn: Shaminder Chawla

**Re: 12CBCP017X  
4-12 Gouverneur Place  
Remedial Action Work Plan (RAWP) Stipulation List  
MA # 212001.00**

Dear Mr. Chawla:

In regard to the above, Westhab has applied for enrollment in the New York City Brownfield Cleanup Program (NYC BCP) to investigate and remediate a 12,350-square foot site located at 4, 6, 8, 10 and 12 Gouverneur Place in the Borough of Bronx, New York. A remedial investigation (RI) was performed to compile and evaluate data and information necessary to develop this Remedial Action Work Plan (RAWP). The remedial action described in this document provides for the protection of public health and the environment consistent with the intended property use, complies with applicable environmental standards, criteria and guidance and conforms with applicable laws and regulations.

### **Site Location and Current Usage**

The Site is identified as Block 2388, lots 16-20 on the New York City Tax Map. The Site is 12,350-square feet and is bounded by Gouverneur Place to the north, to the south by a warehouse, vacant lot to the east, and parking lot and residential buildings to the west. Currently, the Site is vacant and contains a paved/stone parking lot with a small shed and an asphalt-paved parking area in the northern portion of the property.

### **Summary of Proposed Redevelopment Plan**

The proposed development includes a 7-story plus cellar administrative and residential structure. The cellar area is proposed to contain utility rooms, storage, and office space. The first floor is proposed to contain offices and common space. Floors 2

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4-12 Gouverneur Place  
Remedial Action Work Plan (RAWP) Stipulation List  
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through 7 will be used for residential units. The northern portion of the site will contain an approximately 42' by 130' rear yard, consisting of a paved concrete surfacing and 'Play Surface.' The foundation excavation will extend to approximately 12 feet below grade across the building footprint and to approximately 2-3 feet below grade in the area of the proposed rear yard. Excavation is not anticipated to extend below the water table located at 20 feet below grade.

It is noted that the remedial action contemplated under this RAWP may be implemented independently of the proposed redevelopment plan.

### **Summary of the Remedy**

The proposed remedial action achieves protection of public health and the environment for the intended use of the property. The proposed remedial action achieves all of the remedial action objectives established for the project and addresses applicable standards, criterion, and guidance; is effective in both the short-term and long-term and reduces mobility, toxicity and volume of contaminants; is cost effective and implementable; and uses standards methods that are well established in the industry.

The proposed remedial action will consist of:

1. Preparation of a Community Protection Statement and implementation of a Citizen Participation Plan.
2. Implementation of a Community Air Monitoring Program for particulates and volatile organic carbon compounds.
3. Establishment of Track 1 and Track 4 Soil Cleanup Objectives (SCOs) for site areas A and B, respectively. Excavation and removal of soil/fill exceeding SCOs.
4. Application of an oxygen release compound at the base of the Site's excavation if a contaminant source is identified during excavation for the purpose of reducing VOC concentrations in the on-site groundwater.

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5. Collection and analysis of end-point samples to determine the performance of the remedy with respect to attainment of SCOs.
6. Removal of underground storage tanks and closure of petroleum spills (if encountered) in compliance with applicable local, State and Federal laws and regulations.
7. Construction and maintenance of an engineered composite cover consisting of a building slab covering 55% of the site (site area A), and open space cover consisting of concrete covering the remaining 45% (site area B) to prevent human exposure to residual soil/fill remaining under the Site;
8. As part of construction of the building, installation of a vapor barrier system beneath the building slab.
9. As part of construction of the building, installation and operation of a passive sub-slab depressurization system.
10. Demarcation of residual soil/fill.
11. Import of materials to be used for backfill and cover in compliance with this plan and in accordance with applicable laws and regulations.
12. Transportation and off-Site disposal of all soil/fill material at permitted facilities in accordance with applicable laws and regulations for handling, transport, and disposal, and this plan. Sampling and analysis of excavated media as required by disposal facilities. Appropriate segregation of excavated media onsite.
13. Screening of excavated soil/fill during intrusive work for indications of contamination by visual means, odor, and monitoring with a PID.
14. Site mobilization involving Site security setup, equipment mobilization, utility mark outs and marking & staking excavation areas.
15. Implementation of storm-water pollution prevention measures in compliance with applicable laws and regulations.

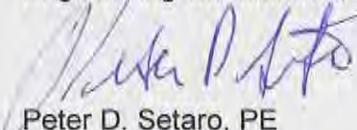
**Re: 12CBCP017X  
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16. Performance of all activities required for the remedial action, including permitting requirements and pretreatment requirements, in compliance with applicable laws and regulations.
17. Submission of a RAR that describes the remedial activities certifies that the remedial requirements have been achieved, defines the Site boundaries, and describes all Engineering and Institutional Controls to be implemented at the Site, and lists any changes from this RAWP.
18. Submission of an approved Site Management Plan (SMP) in the RAR for long-term management of residual contamination, including plans for operation, maintenance, monitoring, inspection and certification of Engineering and Institutional Controls and reporting at a specified frequency (may be applicable if Track 1 cleanup is not achieved for all or some of the Site).

If you have any questions, please do not hesitate to contact Joseph Dennis, PE at (845) 454-3411, extension 47.

Very truly yours,

MORRIS ASSOCIATES  
Engineering Consultants, PLLC



Peter D. Setaro, PE  
Partner

JPD/PDS/sg

cc: Paul Ciminello, ESI  
Helen Rosenberg, Westhab, Inc.



Ecosystems Strategies, Inc.

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**Addendum 7**  
Signage



# NYC Brownfield Cleanup Program

## 4-12 Gouverneur Place Site

Site #: 12CBCP017X

This property is enrolled in the New York City Brownfield Cleanup Program for environmental remediation. This is a voluntary program administered by the NYC Office of Environmental Remediation.

For more information, log on to:

[www.nyc.gov/oer](http://www.nyc.gov/oer)



If you have questions or would like more information, please contact:

Shaminder Chawla at (212) 788-8841  
or email us at [brownfields@cityhall.nyc.gov](mailto:brownfields@cityhall.nyc.gov)



Ecosystems Strategies, Inc.

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**Addendum 8**  
RAWP Certification Page

# CERTIFICATION

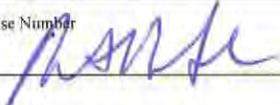
I, Peter Setaro, am a Professional Engineer licensed in the State of New York. I have primary direct responsibility for implementation of the remedial action for the 4,6,8,10, and 12 Gouverneur Place Site 12CBCP017X.

I, Paul H. Ciminello am a Qualified Environmental Professional as defined in §43-140. I have primary direct responsibility for implementation of the remedial action for the 4,6,8,10, and 12 Gouverneur Place Site 12CBCP017X.

I certify that this Remedial Action Work Plan (RAWP) has a plan for handling, transport and disposal of soil, fill, fluids and other materials removed from the property in accordance with applicable City, State and Federal laws and regulations. Importation of all soil, fill and other material from off-Site will be in accordance with all applicable City, State and Federal laws and requirements. This RAWP has provisions to control nuisances during the remediation and all invasive work, including dust and odor suppression.

Peter D. Setaro  
Name

077008  
NYS PE License Number

  
Signature

01-03-12  
Date

Paul H. Ciminello

QEP Name

  
QEP Signature

01-03-12  
Date

