



# ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

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BRUCE RAUNER, GOVERNOR

ALEC MESSINA, DIRECTOR

## MEMORANDUM

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY  
RELEASABLE  
JAN 30 2018  
REVIEWER JRM

**DATE:** December 12, 2017

**TO:** Greg Dunn, Manager of RPMS

**FROM:** M.C. Jeff Guy, Site Remediation Program

**SUBJECT:** Request for Approval of Tier 3 Evaluation (Indoor Inhalation Exposure Route)

**RE:** 0316055033--Cook County  
Chicago/American Drapery Cleaners  
Site Remediation Program/Technical Reports

### Recommendation

This memorandum is hereby submitted to request approval of a Tier 3 Evaluation related to the indoor inhalation exposure route pursuant to 35 Illinois Administrative Code (35 IAC) 742.935 [Indoor Inhalation Exposure Route]. Although groundwater and soil gas data demonstrate that the applicable residential indoor inhalation objectives have been achieved, a Tier 3 evaluation is proposed since the basements walls of one on-site building are constructed of limestone and the basements of two on-site buildings are equipped with sumps.

As discussed below, the limestone walls and sumps have been properly sealed. In addition, an approved building control technology (BCT) consisting of a sub-slab depressurization (SSD) system was installed in accordance with 35 IAC 742.1210(c)(1). The technical information presented herein demonstrates that there is no actual or potential impact of contaminants of concern (COCs) for the indoor inhalation exposure route.

### Project Summary

Type of No Further Remediation (NFR) letter Requested: Focused

➤ Volatile Organic Compounds (VOCs) and Semivolatile Organic Compounds (SVOCs)

Land Use: Residential and/or Industrial/Commercial

Groundwater Classification: Class II

### Site Description

The 0.13-acre site is located within a mixed commercial and residential area in the City of Chicago, Cook County, Illinois on the south side of West Roscoe Street, approximately ½ mile east of the North Branch of the Chicago River and approximately ¾ mile south of Highway 19 (West Irving Park Road). The site is currently vacant and most recently occupied by American Drapery Cleaners & Flameproofing, Inc. (1966-2016). Historically, the site was occupied by a dye house (dry cleaning) as early as 1914. Various site maps are attached.

The site is currently developed with three commercial structures. The two interconnected north buildings total approximately 2,350 square feet and were constructed in 1910 and 1923 on separate full basements. The basement of 2235 West Roscoe Street building is constructed of limestone block walls (sealed) & concrete flooring and is equipped with a sump (sealed). The basement of 2239 West Roscoe Street building is constructed with full concrete walls and floors and is also equipped with a sump (sealed). The south site building is an approximate 2,244 square foot brick building constructed on a full concrete slab foundation. No sumps are equipped in the south site building.

The site is surrounded as follows:

- North: West Roscoe Street
- South: Public Alley beyond which are residential properties
- East: Multi-unit residential properties
- West: Residential properties

### **Investigation Summary**

- Phase I investigation performed in 2000 identified the Recognized Environmental Conditions (RECs) listed below
- 2016 investigation: 10 soil borings (collection/analysis of a total of 11 soil samples), two monitoring wells (collection/analysis of two groundwater samples), and two soil gas sampling probes (collection/analysis of two soil gas samples). The maximum depth explored was 12 to 16 feet below ground surface (bgs).
- 2017 investigation: two soil borings advanced to 13 feet bgs with collection/analysis of two soil samples and collection of one soil gas probe (collection/analysis of one soil gas sample).
- 2017 investigation: magnetometer survey to investigate potential presence of 2,000-gal. heating oil UST; no metallic anomalies were identified. It should be noted, no record of removal of the 2,000-gallon fuel oil tank was identified.

### **RECs**

There is a potential for releases of petroleum products and/or hazardous materials/waste utilized in historical dry cleaning operations to have negatively impacted the site. The site was also identified on the Resource Conservation and Recovery (RCRA) database as a large quantity generator of hazardous waste under the facility name American Drapery Cleaners, 2235 West Roscoe Street. No RCRA violations were listed on the database for this site. In addition, a Leaking Underground Storage Tank (LUST) Incident No. 952028 was reported for the site in 1995, and a NFR letter was issued in 1998 related to this incident.

Based on an August 1, 2017 *Response Letter* (received August 3, 2017; Log No. 17-65217), three 700-gallon naphtha underground storage tanks (USTs) were removed and three 1,000-gallon naphtha USTs were abandoned-in-place at the site. In addition, one 600-gallon naphtha UST is currently in use at the site. All of the USTs are within the south site building.

### **Geology and Hydrogeology**

Based on soil borings conducted, shallow soil consists of varying depths of gravel fill material underlain by silty clay to the maximum boring depth of 16 feet bgs. The City of Chicago supplies potable water from Lake Michigan to the site and surrounding area. There were no groundwater monitoring or potable wells reported or observed on the site during the site reconnaissance.

Site-specific fraction of organic carbon content ( $f_{oc}$ ): 0.0134

Depth to groundwater: 1.59 feet – 2.64 feet bgs

Hydraulic gradient: Not determined

Groundwater flow direction: Not determined

Hydraulic conductivity:  $4.42 \times 10^{-7}$  cm/sec

Surface water: The site is ½ mile east of the North Branch of the Chicago River

Water well survey information:

Private potable wells within 1,000 feet or public wells within 2,500 feet of site? No

Distance/direction to the closest wells: N/A

Site within setback zone of a potable well: No

Measured/modeled groundwater contamination within setback zone of a potable well: No

### **Remediation Objectives Summary & Miscellaneous Information**

Land Use: Residential and/or Industrial/Commercial

Groundwater Classification: Class II

Tier Level: Tier 1, Tier 2, Tier 3

Pathway Exclusion: Yes

Engineered Barriers: No

Institutional Controls: Yes

Polychlorinated Biphenyls (PCBs): Indicate if above or below 1 mg/kg: Not Applicable

Soil Gas Samples Collected: Yes

Hazardous Waste: No

Free Product/Source Material: No

Tiered Approach to Corrective Action (TACO) Volatile Chemicals Detected: Yes

Remedial Action Performed: No

### **Exposure Pathway Evaluation**

Industrial/commercial soil ingestion exposure route:

- No Exceedances

Industrial/commercial outdoor soil inhalation exposure route:

- No Exceedances

Construction worker soil ingestion exposure route:

- No Exceedances

Construction worker soil inhalation exposure route:

- Xylenes detected at one location at 8.7 mg/kg above applicable Tier 1 objective (5.6 mg/kg)
- Tier 2 objective (14.65 mg/kg) developed (Equation S-5); no exceedances of Tier 2 objective

Soil migration to groundwater exposure route:

- No Exceedances

Groundwater ingestion exposure route:

- No Exceedances

INDOOR INHALATION EXPOSURE ROUTE:

- Indoor air remediation objectives were initially utilized in the northern part of the site since the walls and sumps were previously unsealed; concentrations of volatile compounds exceeded the indoor air remediation objectives (J&E1 and J&E2).
- No exceedances of applicable objectives based on groundwater and soil gas data
- Tier 3 evaluation consists of: BCT and sealing the limestone walls and sumps
- The basement of the 2235 West Roscoe Street building is constructed of limestone block walls (previously unsealed) & concrete flooring and is equipped with a sump (previously unsealed). The basement of the 2239 West Roscoe Street building is constructed with full concrete walls and floors and is also equipped with a sump (previously unsealed). These two interconnected buildings are within the northern portion of the site and separated from the south building (the south site building is constructed on a full concrete slab foundation with no sumps).

BCT (2235 West Roscoe Site Building)

As stated above, the basements walls of one north site building are constructed of limestone and each basement (two northern buildings) is equipped with a sump. To exclude the indoor inhalation exposure route, an approved BCT consisting of a SSD system was installed in accordance to 35 IAC 742.1210(c)(1). The regulations of 35 IAC 742.1210(c)(1)(A-E) have been satisfied as summarized below and presented in the October 26, 2017 *Response Letter and Tier 3 Evaluation* (received November 9, 2017; Log No. 17-65813):

- ✓ 742.1210(c)(1)(A): The SSD system consists of three sub-slab suction pits (approximately two cubic feet per location) and greater than six inches below the slab;
- ✓ 742.1210(c)(1)(B): The SSD system includes 3-inch diameter PVC piping properly vented to the exterior, and the required static vacuum & differential pressure have been achieved;
- ✓ 742.1210(c)(1)(C): All visible cracks in the concrete floor were sealed following installation of the SSD system. In addition, the limestone walls in the basement of the 2235 West Roscoe building were sealed with Emocote, a water/vapor proof sealant to prevent the migration of potential vapors within the 2235 West Roscoe building. Furthermore, the sumps in the basements of the 2235 and 2239 North Roscoe Street buildings have been properly sealed.
- ✓ 742.1210(c)(1)(D): The SSD exhaust piping was installed at least 10 feet above the ground and at least 10 feet from doors and windows; and
- ✓ 742.1210(c)(1)(E): Based on the quantitative testing results, no additional suction pits are required to achieve the measurable vacuum beneath the slab in the potentially impacted area on the site.

### **Tier 3 Evaluation – Indoor Inhalation Exposure Route - 35 IAC 742.935(a)**

Although groundwater and soil gas data demonstrate that the applicable residential indoor inhalation objectives have been achieved and a BCT has been installed, a Tier 3 evaluation is necessary because the basements walls of one on-site building are constructed of limestone and the basements of two on-site buildings are equipped with sump systems. The following information is provided to facilitate review of a sealing both sumps in addition to sealing the limestone walls in order to evaluate the site for the indoor inhalation exposure route in accordance with 35 IAC 742.935(a).

#### **A description of the site and physical site characteristics:**

A detailed description of the site is provided above

#### **A description of building characteristics and methods of construction, including a description of man-made pathways:**

Building characteristics are described above. Man-made pathways (gas, sewer, water, etc.) are not expected to be an issue based on the Exposure Pathway Evaluation (i.e. site conditions) presented above.

#### **Sealing of Limestone Walls & Sump Systems**

In addition to the installation of the SSD system beneath the 2235 West Roscoe building, the limestone walls of the basement (2235 West Roscoe building) have been sealed with waterproof/vapor proof sealant (e.g. EMECOLE® Emekote® 100 and EmeSealCrete®) to effectively prevent any potential vapors from migrating into the 2235 West Roscoe site building. A copy of the specific information regarding the sealing material utilized is attached.

Additionally, the sumps in both the 2235 and 2239 West Roscoe buildings have been sealed using Emecole Radon Shield Sealant®. These products were applied according to all manufactures specifications and guidelines (refer to attached illustrations of the foundation/sump sealing). Product specification information is also attached. It should be noted that the sumps are not vented because a SSD system is in place.

The sealing of the limestone walled basement and sumps is a method to reduce the risks associated with potential vapor mitigation within the 2235 and 2239 West Roscoe buildings. The quantitative sub-slab tests to verify the negative pressure field were sufficient in extent to encompass the entire square footage of the applicable area. Based on the results of the quantitative testing, test point readings were within the differential pressure of at least 0.014" Water Column (WC) below the concrete slab, thereby demonstrating the system is in conformance with the generated sub-slab vacuum requirement of 0.003" WC as specified in 35 IAC 742.1210(B). Therefore, the current BCT is demonstrated to be effective in mitigating the potential vapor intrusion.

In summary, the indoor inhalation exposure route is addressed as follows:

- The installed BCT consists of a SSD system installed beneath the 2235 West Roscoe site building [35 IAC 742.1210(c)(1)];

- Utilizing an institutional control requiring that sumps in the basements of the 2235 and 2239 North Roscoe Street buildings be properly sealed to exclude the indoor inhalation exposure route pursuant to 35 IAC 742.935;
- Utilizing an institutional control requiring that the limestone walls in the basement of the 2235 North Roscoe Street building be properly sealed pursuant to 35 IAC 742.935; and
- With the exception of the BCT, restriction of all existing and future buildings to have full concrete slab-on-grade foundations or full concrete basement floors and walls and no sumps.

*NOTE: It has been demonstrated that volatile chemicals associated with the indoor inhalation exposure route have not migrated beyond the remediation site boundary.*

### **NFR Restrictions**

**Soil:** None

**Groundwater:** None

**Indoor Inhalation:**

- No building shall be occupied within the “BCT Area” (correlating to footprint of the current 2235 North Roscoe Street building) unless a BCT meeting the requirements of 35 IAC Part 742 Subpart L is operational prior to human occupancy. This BCT must be properly maintained to address the indoor inhalation pathway. If the BCT becomes inoperable, the site owner/operator shall notify building occupants and workers to implement protective measures. With the exception of the BCT Area, any existing buildings or any future buildings constructed must contain a full concrete slab-on-grade floor or full concrete basement floor and walls with no sumps.
- The on-site limestone basement walls must remain sealed with the approved sealant. In addition, the on-site sumps must remain sealed with the approved sealant, and the sump cover must be resealed if it is ever removed for sump pump inspection, replacement, maintenance or for any other reason.

### **Sources**

April 19, 2017 *Focused Site Investigation Report/Remediation Objectives Report/Remedial Action Plan* (received May 1, 2017; Log No. 17-64666)

August 1, 2017 *Response Letter* (received August 3, 2017; Log No. 17-65217);

August 1, 2017 *Remedial Action Completion Report* (received August 3, 2017; Log No. 17-65219); and

October 26, 2017 *Response Letter and Tier 3 Evaluation* (received November 9, 2017; Log No. 17-65813);

- Photographic documentation related to sealing of the basement walls was provided in the October 26, 2017 document

### **Attachments**

Figure 1 - Site Location Map

Site Base Map (identifies location of SSD Sump Pits)

Figure 2 – Site Map (identifies RECs)

Figure 3 – Boring, Soil Gas Sample and Monitoring Well Location Map  
Figure 4 – Extent of Contamination Exceeding TACO Indoor Air Remediation Objectives  
Figure 5 – Sub Slab Depressurization System Location Map  
Figure 6 – Sub Slab Depressurization Cross Section Map  
Figure 7 – Barrier Cross-Section Illustration (related to limestone walls sealant)  
Figure 8 – Sump Cover Schematic

EMECOLE® Emekote® 100 and EmeSealCrete® sealant information (limestone walls)  
EMECOLE® Radonshield sealant information (sumps)

Yes: ☒

No: ☐

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

12/13/17





ENVIRONMENTAL SERVICES, INC.  
DIVISION OF RECORDS MANAGEMENT  
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# FIGURE 1 - SITE LOCATION MAP

**2235-2239 West Roscoe Street  
Chicago, Illinois**



EPS Environmental Services, Inc.  
7237 West Devon Avenue, Chicago, Illinois 60631

not to scale  
Date: 10/26/17

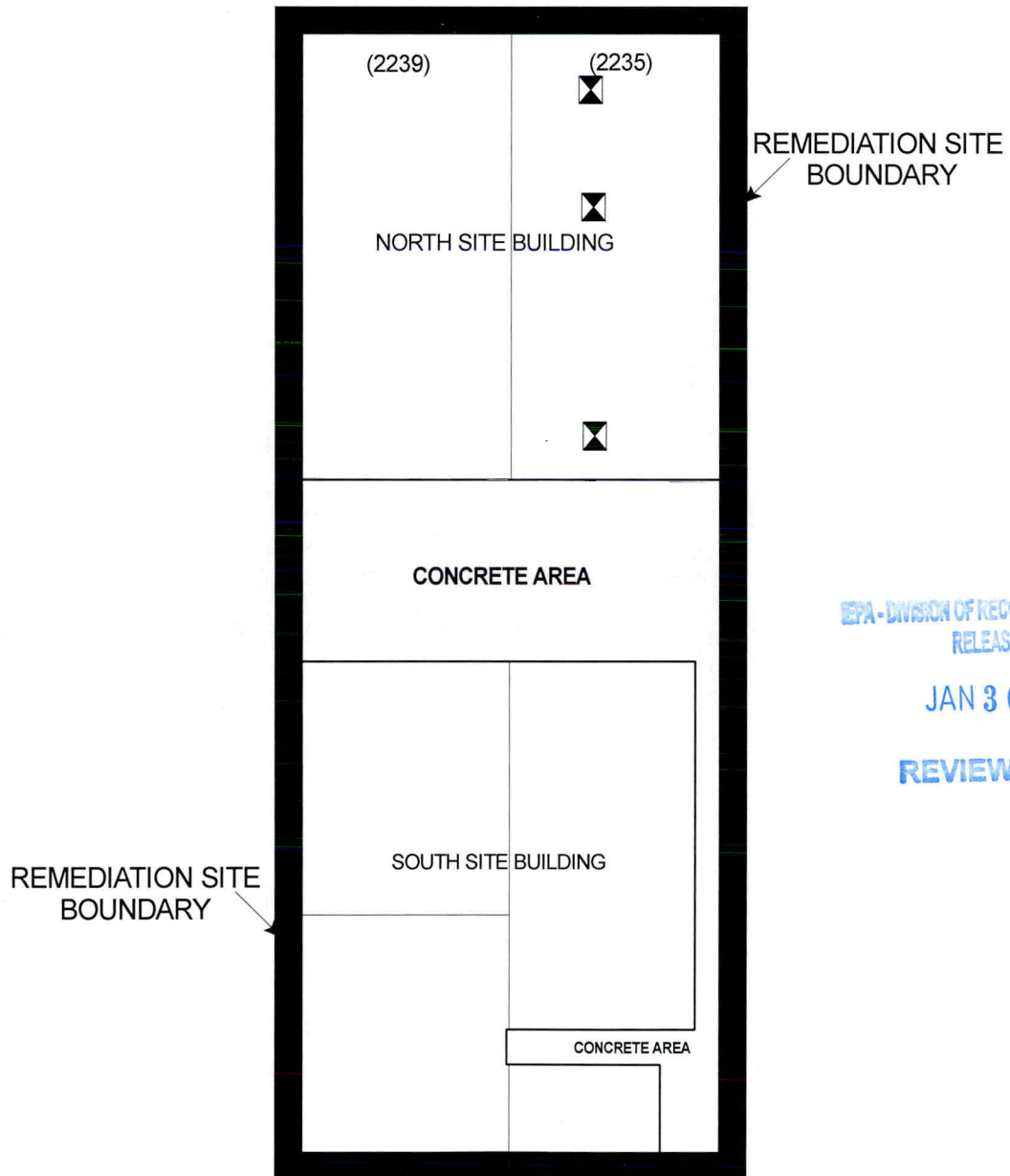
Project #: 17460-0816CO#1



Site Base Map  
LPC#: 0316055033 - Cook County  
Chicago/American Drapery Cleaners  
Site Remediation Program/Technical Reports



WEST ROSCOE STREET




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PUBLIC ALLEY

 = Location of SSD Sump Pit

Scale:  
1 inch = 20 feet  
0' 20'

Helios Center for Movement  
2236 West Roscoe Street

LUSH Wine and Spirits  
2232 West Roscoe Street

## WEST ROSCOE STREET

Gas Line      Sewer Line      Water Lines      Sewer Line      Gas Line

(2239)

(2235)

Site Border

NORTH SITE BUILDINGS

Residential  
2243 West Roscoe Street

Residential  
2241 West Roscoe Street

Multi-Unit Residential  
2233 West Roscoe Street

Sewer Lines

CONCRETE AREA

BOILER ROOM

SOUTH SITE BUILDING

Site Border

AREA OF THE 1995  
RELEASE INCIDENT

Overhead Electrical Lines




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Public Alley

Residential

-  = THREE (3) 1,000-GALLON ABANDONED-IN-PLACE USTs
-  = THREE (3) 700-GALLON REMOVED USTs
-  = CURRENTLY IN USE 600-GALLON UST

## FIGURE 2 - SITE MAP 2235-2239 West Roscoe Street Chicago, Illinois

EPS Environmental Services, Inc.  
7237 West Devon Avenue, Chicago, Illinois 60631

Approximate Scale:  
1 inch = 20 feet

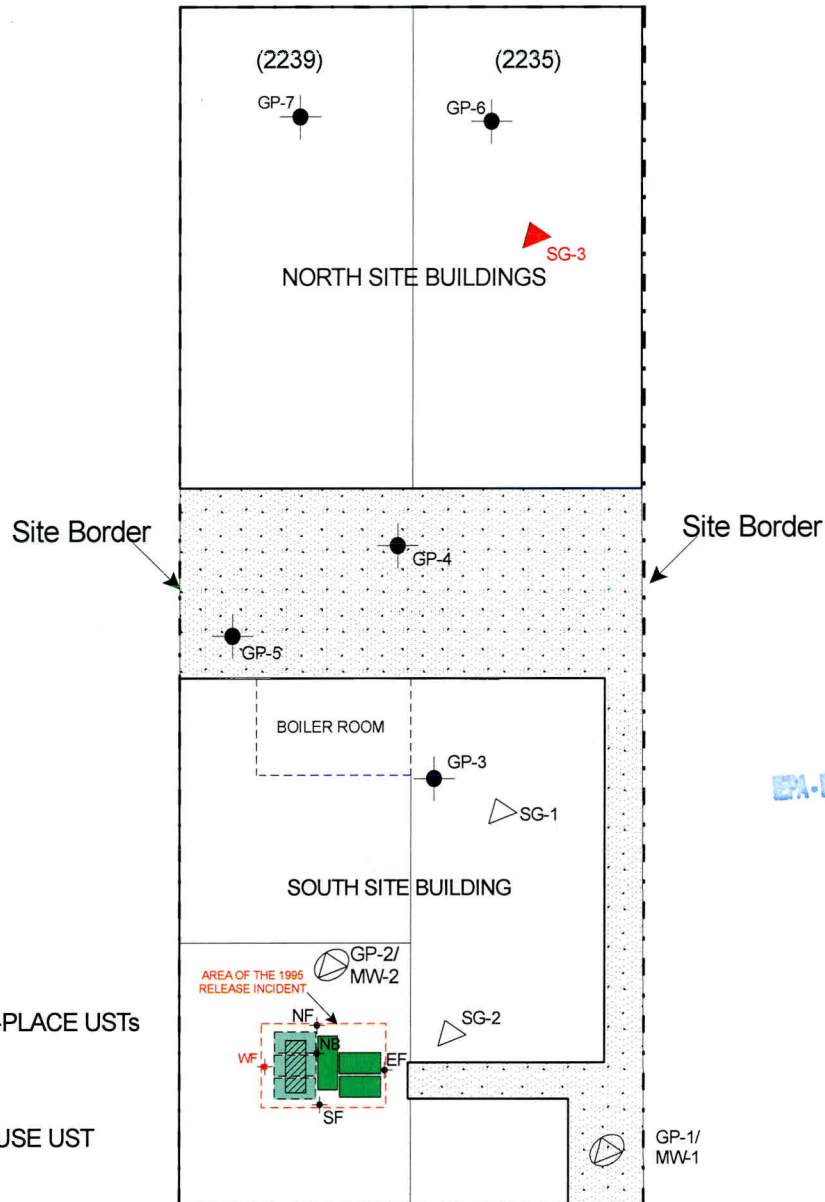
0'      20'

Date: 10/26/17  
Project #: 17460-0816CO#1



North

# WEST ROSCOE STREET



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## PUBLIC ALLEY

- GP-3 = Approximate Soil Boring Location
- WF = Soil Sample Exceeds Tier 1 SROs
- ⊗ GP-1/ MW-1 = Approximate Boring and Well Location
- △ SG-1 = Approximate Soil Gas Sample Location
- ▲ SG-3 = Soil Gas Sample Exceeds Indoor Air Remediation Objectives

FIGURE 3 - BORING, SOIL GAS SAMPLE AND MONITORING WELL LOCATION MAP

**2235-2239 West Roscoe Street**  
**Chicago, Illinois**

EPS Environmental Services, Inc.  
 7237 West Devon Avenue, Chicago, Illinois 60631

Approximate Scale:  
 1 inch = 20 feet

0' 20'

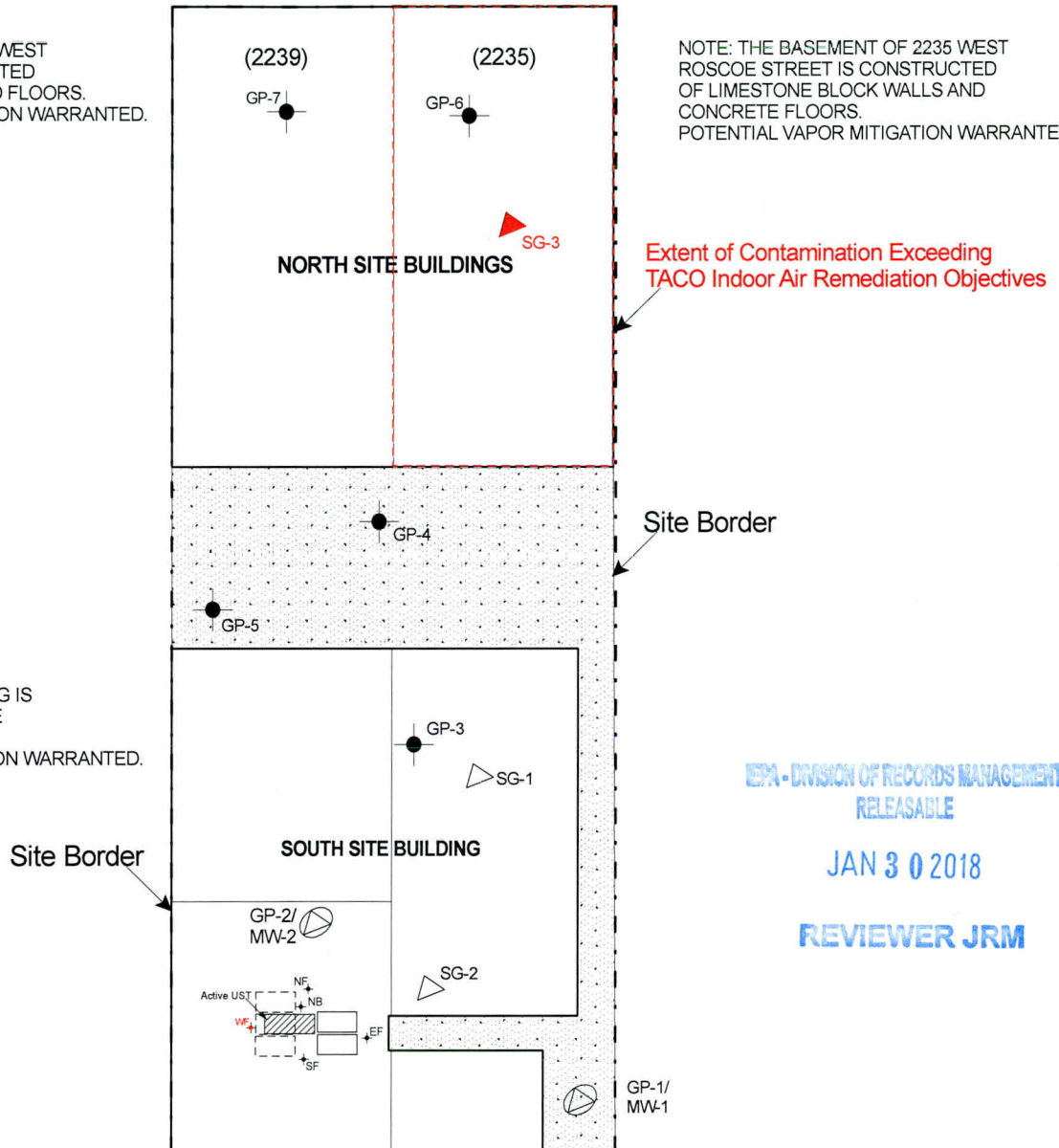
Date: 10/26/17  
 Project #: 17460-0816CO#1



# WEST ROSCOE STREET

NOTE: THE BASEMENT OF 2239 WEST ROSCOE STREET IS CONSTRUCTED OF FULL CONCRETE WALLS AND FLOORS. NO POTENTIAL VAPOR MITIGATION WARRANTED.

NOTE: THE BASEMENT OF 2235 WEST ROSCOE STREET IS CONSTRUCTED OF LIMESTONE BLOCK WALLS AND CONCRETE FLOORS. POTENTIAL VAPOR MITIGATION WARRANTED.



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## PUBLIC ALLEY

- GP-3 = Approximate Soil Boring Location
- WF = Soil Sample Exceeds Tier 1 SROs
- ⊗ GP-1/ MW-1 = Approximate Boring and Well Location
- △ SG-1 = Approximate Soil Gas Sample Location
- ▲ SG-3 = Soil Gas Sample Exceeds Indoor Air Remediation Objectives

FIGURE 4 - EXTENT OF CONTAMINATION EXCEEDING TACO INDOOR AIR REMEDIATION OBJECTIVES

**2235-2239 West Roscoe Street**  
**Chicago, Illinois**

EPS Environmental Services, Inc.  
7237 West Devon Avenue, Chicago, Illinois 60631

Approximate Scale:  
1 inch = 20 feet

0' 20'

Date: 10/26/17  
Project #: 17460-0816CO#1

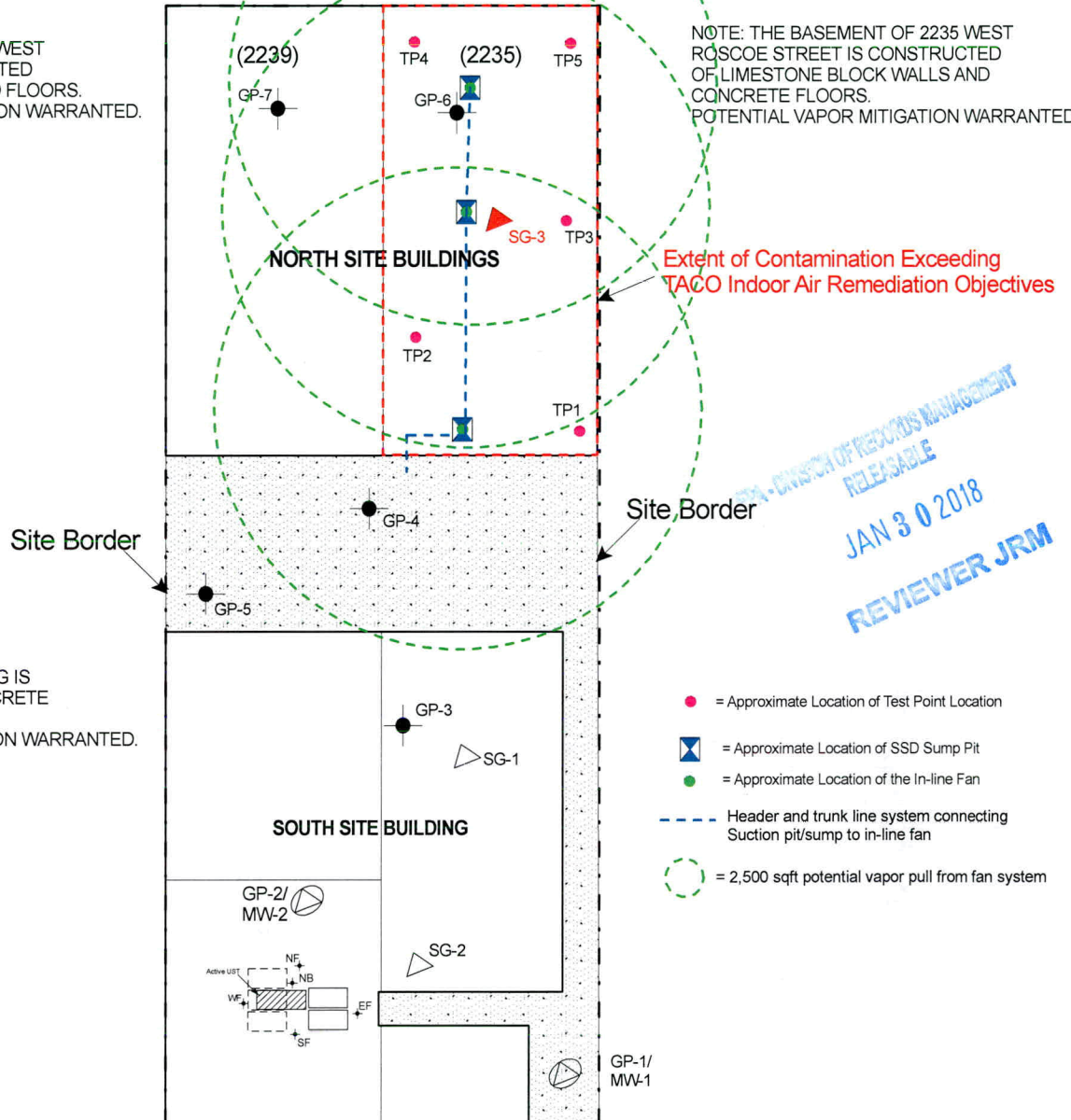




# WEST ROSCOE STREET

NOTE: THE BASEMENT OF 2239 WEST ROSCOE STREET IS CONSTRUCTED OF FULL CONCRETE WALLS AND FLOORS. NO POTENTIAL VAPOR MITIGATION WARRANTED.

NOTE: THE BASEMENT OF 2235 WEST ROSCOE STREET IS CONSTRUCTED OF LIMESTONE BLOCK WALLS AND CONCRETE FLOORS. POTENTIAL VAPOR MITIGATION WARRANTED.



NOTE: THE SOUTH SITE BUILDING IS CONSTRUCTED ON A FULL CONCRETE SLAB ON GRADE FOUNDATION. NO POTENTIAL VAPOR MITIGATION WARRANTED.

## PUBLIC ALLEY

- GP-3 = Approximate Soil Boring Location
- GP-1/ MW-1 = Approximate Boring and Well Location
- SG-1 = Approximate Soil Gas Sample Location
- SG-3 = Soil Gas Sample Exceeds Indoor Air Remediation Objectives

FIGURE 5 - SUB SLAB DEPRESSURIZATION SYSTEM LOCATION MAP

2235-2239 West Roscoe Street  
Chicago, Illinois

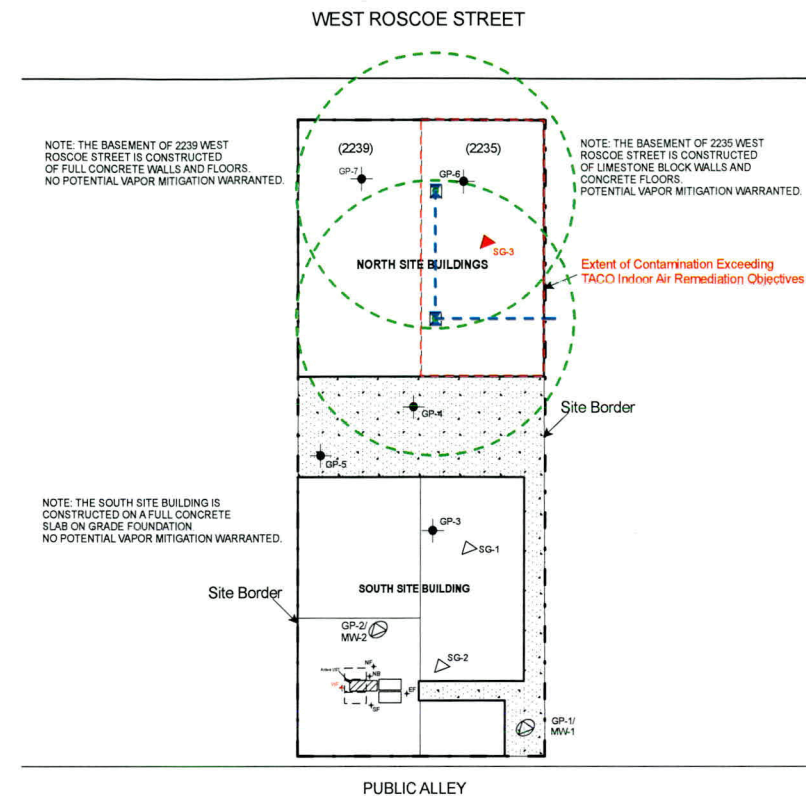
EPS Environmental Services, Inc.  
7237 West Devon Avenue, Chicago, Illinois 60631

Approximate Scale:  
1 inch = 20 feet

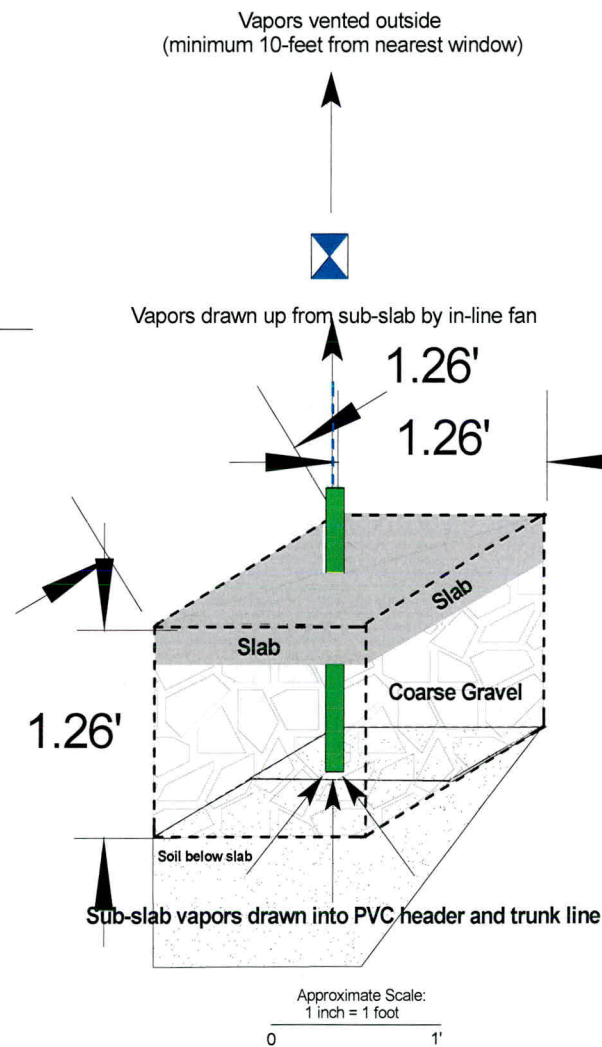
0' 20'

Date: 10/26/17  
Project #: 17460-0816CO#1





- = Approximate Location of the Sump Pit  
 = Approximate Location of the In-line Fan  
 = Header and trunk line system connecting Suction pit/sump to in-line fan  
 = 2,500 sqft potential vapor pull from fan system



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- GP-3 = Approximate Soil Boring Location  
 GP-1/ MW-1 = Approximate Boring and Well Location  
 SG-1 = Approximate Soil Gas Sample Location  
 SG-3 = Soil Gas Sample Exceeds Indoor Air Remediation Objectives

FIGURE 6 - SUB SLAB DEPRESSURIZATION CROSS SECTION MAP

2235-2239 West Roscoe Street  
Chicago, Illinois

EPS Environmental Services, Inc.  
7237 West Devon Avenue, Chicago, Illinois 60631



Date: 00/26/2017

Project #: 17460-0816CO#1



## BARRIER CROSS-SECTION ILLUSTRATION

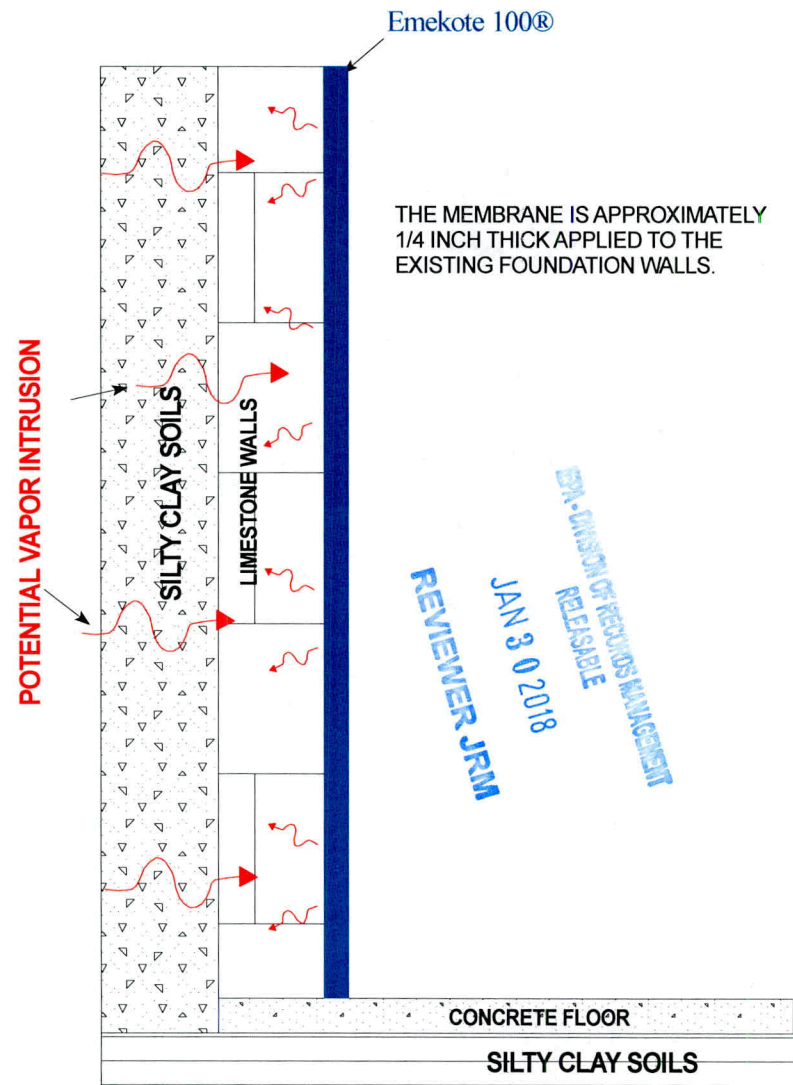


FIGURE 7 - BARRIER CROSS-SECTION

**2235-2239 West Roscoe Street  
Chicago, Illinois**

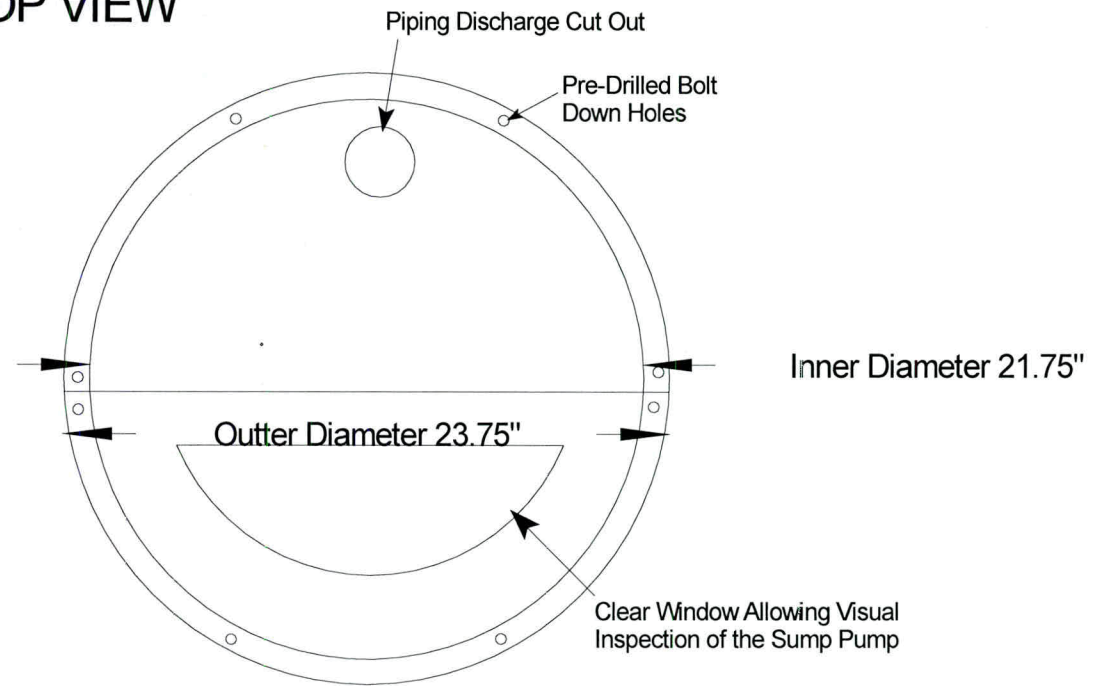


EPS Environmental Services, Inc.  
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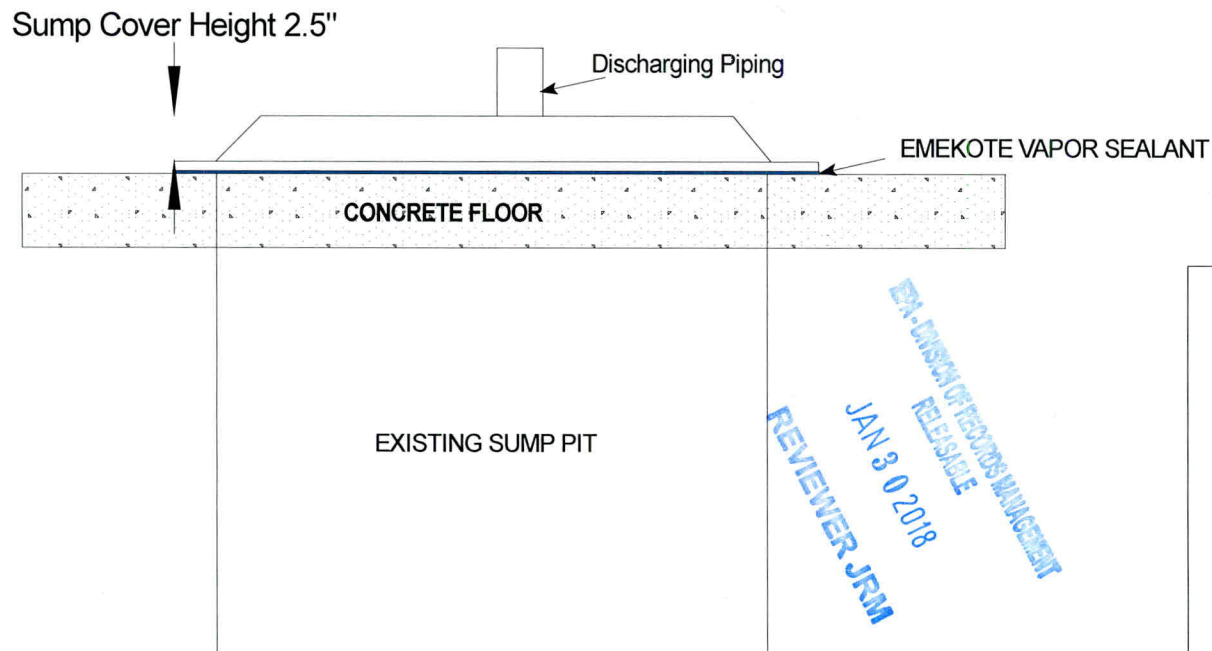
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Project #: 17460-0816CO#1

## TOP VIEW



## VERTICAL PROFILE



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FIGURE 8 - SUMP COVER SCHEMATIC

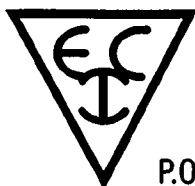
**2235-2239 West Roscoe Street  
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Date: 10/26/2017

Project #: 17460-0816CO#1



# EMECOLE

P.O. Box 7486, Romeoville, IL 60446  
800-844-2713 815-372-2493

[www.emecole.com](http://www.emecole.com)

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## EmeKote 100

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### CEMENT BASED COATING FOR CONCRETE & MASONRY

#### GENERAL DESCRIPTION

EmeKote 100 is a blended Portland cement based compound formulated to fill and seal vertical, overhead, and non-traffic bearing horizontal concrete and masonry surfaces. EmeKote 100 is used on interior or exterior, above or below grade where a seamless, breathable, coating is required. Typical applications include: foundations, concrete and masonry walls, parapets, median barriers, water tanks and reservoirs, tunnels, cisterns, retaining walls and basements. EmeKote 100 may also be used to hide blemishes and surface defects in architectural concrete. COLOR: gray

#### BENEFITS

Cured coating becomes an integral part of the wall or substrate...Exhibits good chemical resistance.

#### COMPOSITION

Cements selected and finely graded aggregates, proprietary waterproofing agents and surface rheology modifiers.

**TECHNICAL DATA:** Complies with Federal Specification TT-P21 Type I Class A

#### WORKING AND PERFORMANCE PROPERTIES @ 70° F (21° C) –APPROXIMATE VALUES:

Density (Wet mix) per ASTM C 138:	130 lbs./cu.ft. (2.08 kg. /cu. me.)
Working time (pot life):	45-90 minutes
Yield – for a base coat @ 1/16" (1.6 mm):	225 sq. ft / 5 gal pail (50 Lbs.) (20.9 sq. me ./ 22.7 kg)
Yield – for a topcoat @ 1/32" (0.8 mm):	450 sq. ft / 5 gal pail (50 Lbs.) (41.8 sq. me ./ 22.7 kg)
Coverage from above applications:	150 sq. ft / 5 gal pail (50 Lbs.) (13.9 sq. me ./ 22.7 kg)

### DIRECTIONS FOR USE

#### SURFACE PREPARATION:

Surfaces to be coated must be structurally sound, clean and free of dirt, dust, oil, paint and all contaminants that could contribute to loss of bond of EmeKote 100 to the substrate. Roughen or blast extremely smooth surfaces such as precast or cast-in-place concrete to ensure good mechanical adhesion of EmeKote 100. New concrete and masonry surfaces must be cured 28 days. Repair all surface defects, water leaks, cracks and voids prior to applying EmeKote 100. Dampen the surface with water immediately before the application of EmeKote 100.

## **MIXING:**

Mechanically mix EmeKote 100 using a slow speed motor and paddle mixer for best results. Each 5 gal. pail (50 lbs.) of EmeKote 100 will require 2.0 gallons of water for proper consistency (mix only half of the 5 gal. pail to 1 gal of water at a time / do not mix 2nd half until needed). Mechanically mix for 2-3 minutes, until lump free and a smooth "pancake batter" consistency is obtained. Allow the mixed EmeKote 100 to "fatten" for 5-10 minutes. If the material is too thick, adjust to a brush consistency by adding additional water and re-mix.

## **APPLICATION:**

Dampen the entire surface with water immediately before the application of EmeKote 100. Apply EmeKote 100 mixture with either a mason's hand brush with stiff bristles, a larger push broom of the same bristle type, by use of textured spray equipment, or by trowel. Spray applications of the first coat will require back brushing or brooming to properly fill all voids and achieve uniformity. Apply enough material to fill the voids, placing the material into the substrate using horizontal strokes for coating consistency. It is important to work the first coat thoroughly into the substrate to completely fill and cover all voids, holes, and non-moving cracks. Do not over-brush. For ordinary wall waterproofing conditions, apply EmeKote 100 in two coats with 24 hours drying time between the initial coat and the finish coat. Apply the base coat at 2 lbs/sq. yd. and the finish coat at 1 lb/sq. yd for a total of 3 lbs/ sq. yd. One 5 gal. pail (50 lbs.) EmeKote 100 will cover 150 square feet in two coats resulting in a coating approximately 1/16" thick cured nominal thickness. For severe water pressure, double the pounds per square yard or apply additional coats.

## **CAUTIONS:**

Do not apply EmeKote 100 to frozen or frost filled surfaces or when the temperature is below 40° F. Do not apply to previously painted surfaces. Do not apply to substrates with active water leaks or moving cracks. Repair any cracks with Emecole epoxy or urethane injection resin. Windy, dry, or hot conditions may require re-wetting of EmeKote 100 during cure and the use of polyethylene barriers. Higher application temperatures and low relative humidity can shorten working pot life.

**WARNINGS:** Contains cement and silica, avoid inhalation of dust. Wear gloves, safety goggles, and OSHA approved dust respirator during mixing and placement. Refer to product M.S.D.S. (Material Safety Data Sheet) for additional safety information. Do not take internally. Avoid prolonged contact with skin.

**KEEP OUT OF REACH OF CHILDREN.**

## **NPCS HMIS SAFETY RATINGS:**

HEALTH	2	FLAMMABILITY	0	REACTIVITY	0	PERSONAL PROTECTION	E
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**PACKAGING:** 50# (22.70 kg) bags and pails.

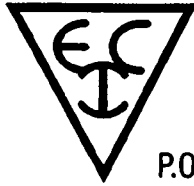
**STORAGE:** 40° F (4.4° C) to 90° F (32.2° C) in a dry environment

**SHELF LIFE:** 1 year properly stored

**FREIGHT CLASS:** Item #42130, Sub 0, LTL 50 - Cement base coating material in bags or pails

## **WARRANTY**

Recommendations concerning the performance or use of this product are based upon independent test reports believed to be reliable. If the product is proven to be defective, at the option of the Manufacturer, it will be either replaced or the purchase price refunded. The Manufacturer will not be liable in excess of the purchase price. The user will be responsible for deciding if the product is suitable for his application and will assume all risk associated with the use of the product. This warranty is in lieu of any other warranty expressed or implied, including but not limited to an implied warranty of merchantability or an implied warranty of fitness for a particular use.



# EMECOLE

P.O. Box 7486, Romeoville, IL 60446

800-844-2713

815-372-2493

[www.emecole.com](http://www.emecole.com)

## EMESEALCRETE PENETRATING CONCRETE SEALER

### GENERAL DESCRIPTION

Concentrated liquid sealer used to densify, strengthen, dust proof, and waterproof new and existing concrete. EmeSealCrete penetrates concrete surfaces and chemically forms crystalline structures that micro seals pores, voids and cracks. It minimizes moisture and radon penetration through basement walls and slabs.

### USES

Use on concrete surfaces above or below grade, interior or exterior, vertical or horizontal. Applications include walls, slabs, basements, garages, traffic bearing structures, docks, ramps, pre-cast concrete elements; containment and retaining walls; and any concrete or masonry surface. It can also be used as a curing compound on green concrete and reduces surface dusting.

### ADVANTAGES

- Reduces moisture and radon penetration in basements
- Hardens concrete and improves impact, abrasion and wear resistance
- Reduces porosity improving resistance to most soils, acids, oils, and salts
- Reduces spalling from freeze thaw cycles
- Protects against efflorescence and leaching
- Minimizes dusting and chalking
- Provides resistance to chemicals, mildew and fungus
- Permanent subsurface protection to depth of penetration eliminating the need for reapplication
- Penetrates into the pores of concrete forming insoluble crystals that become part of the concrete
- Colorless, non yellowing, residual-free surface
- Odor free, non-toxic, solvent free, and non-flammable

### PACKAGING

1 gallon jugs, 5 gallon pails, 55 gallon drums

### SURFACE PREPARATION

Surface must be clean and sound. Remove dirt, dust, grease, oil, waxes, foreign particles, curing compounds, and form release agents for maximum penetration. Use detergents as needed, rinse and remove surface water.

## **MIXING**

Dilute 1 gallon of EmeSeal-Crete with 2 gallons of water (for block walls) or 3 gallons of water (for poured concrete walls) mixing thoroughly in a clean bucket or pail. Use hot water to improve penetration

## **APPLICATION**

1. Freshly placed concrete - for use as a curing agent – wait until surface water disappears and finishing operations are completed. The surface must support foot traffic without damaging the concrete.
2. New concrete – follow surface preparation instructions.
3. Existing concrete – mechanically remove membranes if needed and follow surface preparation instructions.

Temperature should be 40°F – 100°F

## **INSTRUCTIONS**

Apply generously using a low pressure sprayer, brush, roller, broom or squeegee over a pre dampened surface. Apply to the point of saturation keeping the treated area wet for a minimum of 30 minutes. Do not allow product to puddle and dry on the surface as this may cause a white blotchy discoloration. Mist treated areas that are drying to aid penetration. Two applications are recommended for typical situations. Actual drying times depend on ambient temperatures, humidity and wind conditions, 1-4 hours.

## **LIMITATIONS**

- Best results are obtained by diluting the concentrate in hot water and applying immediately.
- Product will etch glass, painted, aluminum, and other smooth surfaces. Do not wear prescription glasses. Immediately wash and rinse over-spray areas with water.
- Minimum application temperature is 40°F. Best results are obtained without direct sunlight contact.
- Avoid outdoor applications in heavy wind or if rain is imminent.
- Do not thin with solvents.
- Always spot test for suitability before applying.

## **TECHNICAL DATA**

SHELF LIFE: 1 year.

STORAGE: Store in cool, dry location. Do not freeze. May be used after thawing and agitating.

COLOR: Clear

CONCENTRATE: Dilute 1 gallon EmeSealCrete with 2-3 gallons of water, mix thoroughly. Use hot tap water and apply immediately to improve penetration.

COVERAGE: 200 sq ft gal per application, 2 to 3 applications may be required. Actual coverage depends on substrate composition and porosity.

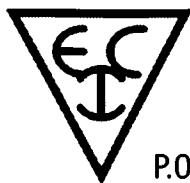
CLEAN UP: Clean sprayers, equipment, and tools with clean water immediately after use.

FOOT TRAFFIC: 24 hours

## **WARRANTY**

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EMECOLE DIVISION OF RECORDS MANAGEMENT  
RELEASABLE

JAN 30 2018

## RADONSHIELD

REVIEWER JRM

### GENERAL DESCRIPTION

RadonShield is a single component elastomeric sealant without free isocyanates or solvents (0-VOC's). It cures rapidly under the effect of atmospheric humidity to form a flexible and resistant joint with very good adhesion on most materials.

### TECHNICAL DATA

Appearance	Pasty
Color	Grey
Density at 20 °C	1.65 ± 0.05
Sagging (ISO 7390)	No
Application temperature	5 to 35 °C
Skin formation time at 23 °C and 50 % HR	50 ± 10 min
Cure time at 23 °C and 50 % HR	> 3 mm/24 h
Final Shore A hardness(ISO 868 - 3 seconds)	> 30
Modulus at 100 % (ISO 8339)	> 70 psi
Elongation at break (ISO 8339)	> 300 %
Modulus at break (ISO 8339)	> 140 psi
Temperature resistance	-40 to + 90 °C
Resistance to dilute acids and bases	Good
UV resistance	Excellent
Water and salt spray resistance	Excellent
Compatibility with paints	Yes

### APPLICATIONS

RadonShield is a hybrid, radon resistant polymer, specially designed to adhere to damp or dry surfaces, making it excellent for sealing cove joints and concrete floor cracks against radon and moisture infiltration. RadonShield possesses excellent bonding characteristics to a wide variety of materials and substrates, including (but not limited to) foundation baseboard drainage systems, vapor barriers to concrete, and plastic to plastic. RadonShield has excellent UV resistance and can be applied on exterior as well as interior surfaces.

## **INSTRUCTIONS FOR USE:**

### **Substrate preparation:**

The substrates must be clean, dry, free of dust, oil, grease and any contaminants that could harm bonding. All traces of poorly adherent paints or coatings should be systematically removed beforehand. If the substrates need to be cleaned, solvents such as methylethylketone (MEK) or acetone may be used. Check the compatibility of the solvent used with the substrates. It may be necessary to rub down the substrate beforehand. After rubbing down, the surface should be recleaned. Allow the substrate to dry after degreasing.

Note : when using solvents, extinguish all sources of ignition and carefully follow the safety and handling instructions given by the manufacturer or supplier.

### **Caulking:**

RadonShield may be applied by a manual or pneumatic gun.

After application, each joint should be tight up to the "joint lip" and smoothed out using a putty knife. This product should be used within 24 hours of opening the cartridge protection. If applied in cold weather, store the cartridges at 20 °C before use.

### **Cleaning:**

Tools should be cleaned with MEK or acetone before the sealant has completely cured. After curing, abrasion is necessary.

## **STORAGE AND SHELF LIFE:**

12 months in the original, hermetically sealed packaging between 5 and 25 °C.

## **PACKAGING:**

10.4 oz. cartridges

## **SAFETY:**

Not classified as hazardous. Read the material safety data sheet before use.

## **WARRANTY**

Recommendations concerning the performance or use of this product are based upon independent test reports believed to be reliable. If the product is proven to be defective, at the option of the Manufacturer, it will be either replaced or the purchase price refunded. The Manufacturer will not be liable in excess of the purchase price. The user will be responsible for deciding if the product is suitable for his application and will assume all risk associated with the use of the product. This warranty is in lieu of any other warranty expressed or implied, including but not limited to an implied warranty of merchantability or an implied warranty of fitness for a particular use.