JOHN E. OSBORN P.C.

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ROBERT J. EGIELSKI*
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——OF COUNSEL ——
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MAR 2 2 2011

BY FEDERAL EXPRESS

March 21, 2010

Ms. Robin Hackett
Division of Environmental Remediation
New York State Department of
Environmental Conservation
625 Broadway
Albany, New York 12233-7014

Re

West 19th Street Development Site NYSDEC BCP Site No. C231017

Certification of Institutional Controls/Engineering Controls

Dear Ms. Hackett:

Enclosed please find the annual certification package for the above-referenced Brownfield Cleanup Program site. Enclosed with this letter are:

- 1. The completed Institutional and Engineering Controls Certification Form with original signatures;
- 2. The Periodic Review Report prepared by Environmental Liability Management, LLC and dated March 19, 2011;
- 3. "Walkthrough Inspection and Repair Observations" Report by Simpson Gumpertz & Heger dated March 16, 2011, describing the structural inspection and subsequent grout injection work;

Robin Hackett March 21, 2011 Page 2

4. Report on Testing and Balancing at the West 19th Street Development Site by Independent Testing and Balancing, dated February 8, 2011 (HVAC report).

Please call me if there are any questions. Thank you for your attention to this matter.

Sincerely,

Mark C. Pennington

Cc: Christian Bryan, IAC

Craig Puerta, Environmental Liability Management, LLC

Lauren Smith, Georgetown

INDEPENDENT TESTING AND BALANCING CORP.

254 North Main Street, New City, NY 10956 / Phone: (845) 634-8554 Fax: (845) 634-8541

REPORT

ON

SURVEYING

THE

WEST 19TH STREET DEVELOPMENT SITE

AT

555 WEST 19TH STREET GARAGE

PREPARED FOR:

ENVIROMENTAL LIABILITY MANAGEMENT OF NEW YORK, LLC 267 BROADWAY
FIFTH FLOOR
NEW YORK, NY 10007
212.581.8023

1T&B Project 7969

Tuesday, February 8, 2011

MAR 2 2 2011

Fan Test Sheet

254 North Main Street, New City, NY 10956 / (845) 634-8554 Fax: (845) 634-8541

Project:	West 19th Street Development Site			Number:	7969
System:	GSF-C-1	Location:	Garage	Date:	02/03/2011
Tech:	Anthony Famularo	IA No:	831927	Certification No:	DOB 11/4/61

Fan Make: LOREN COOK
Fan Size: 365CPS

Motor HP:20.00Motor RPM:1,745Voltage Rated:200Voltage Actual:202Amperage Rated:57.00Amperage Actual:39.00

Suction: -0.73 IN. W.G.

Discharge: +1.81 IN. W.G.

 Fan RPM:
 Reqd
 960
 Actual
 904

 System CFM:
 Reqd
 26,000
 Actual
 23,770

Duct Traverse Sheet

254 North Main Street, New City, NY 10956 / Phone: (845) 634-8554 Fax: (845) 634-8541

Project:	West 19th Street Development Site	Number:	7969		
System:	GSF-C-1	TP: 1	Location: Garage	Date:	02/03/2011
Tech:	Anthony Famularo	IA No:	831927	Certification No:	DOB 11/4/61

Design Data

Duct Type	Main	Hgt/Diam (in.)	24.00	Serves Outlets
Duct Shape	Square	Width (in.)	70.00	Air Flow Temp °F
Insulation Type		Area (sq. ft.)	11.67	

Test Data

Point	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
A	2,406	2,484	2,360	2,264	2,687	2,594	2,535								
В	2,336	2,541	2,324	2,268	2,763	2,948	2,207								
C	1,191	1,306	689	1,279	1,239	1,679	674								

Design CFM	Total FPM	Num of Readings	Average FPM	Area (sq. ft.)	Total CFM
26,000.00	42,774.00	21	2,036.86	11.67	23,770.12
% of Design	Static Pre	ssure, in w.g.			
91.42	0.07				

Fan Test Sheet

254 North Main Street, New City, NY 10956 / (845) 634-8554 Fax: (845) 634-8541

Project:	West 19th Street Development Site			Number:	7969
System:	GEF-C-1	Location:	Cellar	Date:	02/03/2011
Tech:	Anthony Famularo	IA No:	831927	Certification No:	DOB 11/4/61

Fan Make: LOREN COOK
Fan Size: 402 CPS

Motor HP:20.00Motor RPM:1,765Voltage Rated:200Voltage Actual:202Amperage Rated:54.30Amperage Actual:37.50

Static Pressure:

Suction: ______ IN. W.G.

Discharge: +0.47 IN. W.G.

 Fan RPM:
 Reqd
 785
 Actual
 773

 System CFM:
 Reqd
 26,000
 Actual
 25,486

Duct Traverse Sheet

254 North Main Street, New City, NY 10956 / Phone: (845) 634-8554 Fax: (845) 634-8541

Project:	West 19th Street Develop		Number:	7969	
System:	GEF-C-1	TP: 1	Location: Cellar	Date:	02/03/2011
Tech:	Anthony Famularo	IA No:	831927	Certification No:	DOB 11/4/61

Design Data

Duct Type	Main	Hgt/Diam (in.)	24.00	Serves Outlets
Duct Shape	Square	Width (in.)	96.00	Air Flow Temp °F
Insulation Type		Area (sq. ft.)	16.00	

Test Data

Point	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
A	1,600	1,105	1,821	2,291	1,668	1,957	1,573								
В	1,168	341	1,653	1,777	1,203	1,550	2,087								
C	1,070	2,133	2,104	2,136	2,198	416	1,600								

Design CFM	Total FPM	Num of Readings	Average FPM	Area (sq. ft.)	Total CFM
26,000.00	33,451.00	21	1,592.90	16.00	25,486.48
% of Design	Static Pre	ssure, in w.g.			
98.02	-	0.65			

Fan Test Sheet

254 North Main Street, New City, NY 10956 / (845) 634-8554 Fax: (845) 634-8541

Project:	West 19th Street Development Site			Number:	7969
System:	GEF-C-2	Location:	Cellar	Date:	02/03/2011
Tech:	Anthony Famularo	IA No:	831927	Certification No:	DOB 11/4/61

Fan Make: LOREN COOK
Fan Size: 150 SONH

Motor HP:0.50Motor RPM:1,725Voltage Rated:200Voltage Actual:217Amperage Rated:1.80Amperage Actual:1.90

Static Pressure:

Suction: ______ IN. W.G.

Discharge: +0.27 IN. W.G.

Fan RPM: Reqd 1407 Actual
System CFM: Reqd 800 Actual 919

Duct Traverse Sheet

254 North Main Street, New City, NY 10956 / Phone: (845) 634-8554 Fax: (845) 634-8541

Project:	West 19th Street Development Si	te		Number:	7969
System:	GEF-C-2	TP: 1	Location: Cellar	Date:	02/03/2011
Tech:	Anthony Famularo	IA No:	831927	Certification No:	DOB 11/4/61

Design Data

Duct Type	Main	Hgt/Diam (in.)	8.00	Serves Outlets
Duct Shape	Square	Width (in.)	20.00	Air Flow Temp °F
Insulation Type		Area (sq. ft.)	1.11	

Test Data

Point	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
A	876	1,183	511												
В	919	1,113													

Design CFM	Total FPM	Num of Readings	Average FPM	Area (sq. ft.)	Total CFM
800.00	4,971.00	6	828.50	1.11	919.64
% of Design	Static Pre	ssure, in w.g.			
114.96	-	0.25			

Fan Test Sheet

254 North Main Street, New City, NY 10956 / (845) 634-8554 Fax: (845) 634-8541

Project:	West 19th Street Development Site			Number:	7969
System:	GEF-C-4	Location	: Cellar	Date:	02/03/2011
Tech:	Anthony Famularo	IA No:	831927	Certification No:	DOB 11/4/61

Fan Make: LOREN COOK
Fan Size: 135 SONH

Motor HP:0.50Motor RPM:1,725Voltage Rated:200Voltage Actual:217Amperage Rated:2.50Amperage Actual:2.60

Static Pressure:

Suction: 0.75 IN. W.G.

Discharge: +.15 IN. W.G.

Fan RPM: Reqd 1492 Actual

System CFM: Reqd 1,000 Actual 919

Duct Traverse Sheet

254 North Main Street, New City, NY 10956 / Phone: (845) 634-8554 Fax: (845) 634-8541

Project:	West 19th Street Development Site	Number:	7969		
System:	GEF-C-4	Date:	02/03/2011		
Tech:	Anthony Famularo	IA No:	831927	Certification No:	DOB 11/4/61

Design Data

Duct Type	Main	Hgt/Diam (in.)	20.00	Serves Outlets
Duct Shape	Square	Width (in.)	10.00	Air Flow Temp °F
Insulation Type		Area (sq. ft.)	1.39	

Test Data

Point	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
A	595	819	660												
В	446	757	694												

Design CFM	Total FPM	Num of Readings	Average FPM	Area (sq. ft.)	Total CFM
1,000.00	3,971.00	6	661.83	1.39	919.95
% of Design	Static Pre	ssure, in w.g.			
92.00	-	0.75			

Fan Test Sheet

254 North Main Street, New City, NY 10956 / (845) 634-8554 Fax: (845) 634-8541

Project:	West 19th Street Development Site			Number:	7969
System:	GEF-C-5	Location:	Cellar	Date:	02/03/2011
Tech:	Anthony Famularo	IA No:	831927	Certification No:	DOB 11/4/61

Fan Make: LOREN COOK
Fan Size: 100 SON

Motor HP:0.50Motor RPM:1,725Voltage Rated:200Voltage Actual:217Amperage Rated:2.50Amperage Actual:2.70

Static Pressure:

Suction:

-0.46

IN. W.G.

Discharge:

+0.07

IN. W.G.

Fan RPM:

System CFM:

Reqd 2186

Reqd

800

Actual

Actual 1,004

Duct Traverse Sheet

254 North Main Street, New City, NY 10956 / Phone: (845) 634-8554 Fax: (845) 634-8541

Project:	West 19th Street Develop	ment Site		Number:	7969
System:	GEF-C-5	TP: 1	Location: Cellar	Date:	02/03/2011
Tech:	Anthony Famularo	IA No: 8	331927	Certification No:	DOB 11/4/61

Design Data

Duct Type	Main	Hgt/Diam (in.)	8.00	Serves Outlets
Duct Shape	Square	Width (in.)	20.00	Air Flow Temp °F
Insulation Type		Area (sq. ft.)	1.11	

Test Data

Point	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
A	966	1,027	892												
В	937	718	889								3,300,				

Design CFM	Total FPM	Num of Readings	Average FPM	Area (sq. ft.)	Total CFM
800.00	5,429.00	6	904.83	1.11	1,004.37
% of Design	Static Pressure, in w.g.		-		
125.55	-	0.34			

Report Summary Sheet

Project: West 19th Street Development Site

Project Number:

7969

Location: 555 WEST 19TH STREET

GARAGE

Customer Job Number:

Attn: Craig Puerta

System	Design CFM	Final CFM	Total CFM	Remarks
GSF-C-1	26,000		23,770	
GEF-C-1	26,000		25,486	
GEF-C-2	800		920	
GEF-C-4	1,000		920	
GEF-C-5	800		1,004	

MEMORANDUM

TO: Mr. William Ottoway, P.E.

New York State Department of Environmental Conservation

FROM: The ELM Group / Environmental Liability Management, L.L.C.

DATE: March 19, 2011

RE: 19th Street Development Site, 80 11th Avenue, New York, NY

Site Number C231017

Site Management Periodic Review Report

The ELM Group (ELM), on behalf of the volunteers (multiple entities) to Brownfield Cleanup Agreement No. W2-1012-04-07, is hereby submitting this Periodic Review Report (PRR) for the property located at 80 11th Avenue, New York, NY (Site).

I. INTRODUCTION

A. Site Summary. The Site, 80 11th Avenue (Block 690, Lot 12 and Block 690, Lot 54), is one parcel of numerous parcels that comprise the former West 18th Street Gas Works Site, a former manufactured gas plant (MGP) operated by predecessors of Consolidated Edison Company of New York (Con-Ed). The Site has been redeveloped circa 2008 into a modern ten story office building.

Remediation of this Site was conducted pursuant to a Brownfield Cleanup Agreement (BCA), Index No. W2-1012-04-07, between the volunteers (multiple entities) and the New York State Department of Environmental Conservation (NYSDEC). The Site remediation was performed concurrently with the construction of the foundation for the 10-story office building with a subsurface garage.

In August 2006, Remedial Engineering, P.C. submitted a Final Engineering Report for the remediation to NYSDEC that presented the results of environmental remediation as required by the NYSDEC.

Environmental Liability Management, LLC also known as The ELM Group

267 Broadway, Fifth Floor, New York, NY 10007

As part of the remedy, institutional and engineering controls were established for this Site, as follows.

Institutional Controls

The institutional control aspects of the Site remedy have been recorded in an environmental easement, dated August 2, 2006. The environmental easement imposes Site use restrictions, required monitoring and maintenance of the engineering controls, and prohibits any modification or removal of the engineering controls without prior notification and/or approval of the NYSDEC.

Engineering Controls

The engineering control aspects of the Site remedy include a Site perimeter watertight sheeting and grouting, a barrier layer (comprised of the mud slab, waterproof/vapor barrier membrane, structural concrete slab and foundation walls) and continuous venting of the garage sub level of the building with an active mechanical ventilation system.

B. Effectiveness of Remedial Program. The Site Management Plan (SMP), prepared by Turner Construction Company, dated July 18, 2006 outlines the inspection, operation and maintenance activities for the barrier layer and the ventilation system. In a letter dated August 10, 2006, NYSDEC approved the institutional and engineering controls. On August 31, 2006, NYSDEC issued a Certificate of Completion approving the completion of the active remediation outlined in the Site BCA.

The Site has been occupied circa January 2008. Following occupancy, IAC/Georgetown 19th Street LLC ("IAC/Georgetown") has implemented the Site Management Plan, Monitoring Plan (MP), and Operations and Maintenance Plan (OMP). The institutional and engineering controls have been certified and approved via reports submitted as follows:

- a. Certification of Institutional and Engineering Controls was submitted to NYSDEC February 9, 2007 and approved on February 27, 2007.
- b. Certification of Institutional and Engineering Controls was submitted to NYSDEC March 24, 2008 and approved on April 25, 2008.
- Certification of Institutional and Engineering Controls was submitted to NYSDEC February 27, 2009 and approved on April 15, 2009
- d. Certification of Institutional and Engineering Controls was submitted to NYSDEC February 19, 2010 and approved on April 19, 2010

C. Compliance

No areas of non-compliance have been identified in this report.

D. Recommendations

No changes to the SMP are recommended at this time.

As part of the 2009 Certification Report, ELM submitted to the NYSDEC a letter dated February 24, 2009 which reaffirmed the prior' year's notice to NYSDEC that PID monitoring was not being conducted, and explained that (i) ambient conditions would have interfered with PID monitoring, (ii) the potential need for monitoring was eliminated by a conservative approach to crack repair, and (iii) that the HVAC system was effectively venting any potential ambient vapors, regardless of their source. It is ELM's understanding, based on NYSDEC's approval of the 2009 Certification Report that current practices may continue as long as these conditions, repairs, and effective venting remain in effect.

II. SITE OVERVIEW

A. Site Location. The Site, 80 11th Avenue (Block 690, Lot 12 and Block 690, Lot 54), is one parcel of numerous parcels that comprised the former West 18th Street Gas Works Site, a former manufactured gas plant (MGP) operated by predecessors of Consolidated Edison Company of New York (Con-Ed). Currently, the Site has been redeveloped into a modern ten story office building.

The area around the Site contains a mix of commercial, residential, and industrial establishments. High-rise residential buildings are located on blocks immediately to the north, east and south of the Site.

Prior to remediation, the Site consisted of a two-story brick structure (demolished prior to beginning the remediation activities) that served as a mid- to long term parking garage and a small vacant lot in the southwestern part of the property.

- **B.** Remediation Chronology. The following reports present a chronological summary of the investigations and remedial work performed at the Site.
 - Preliminary Site Investigation Report, November 2002, Blasland, Bouck & Lee;
 - 2. Site Investigation Report, June 2003, Blasland, Bouck & Lee;
 - 3. Remedial Action Work Plan (RAWP), December 2003, Blasland, Bouck & Lee;
 - 4. RAWP Modifications Letter, May 6, 2004, Blasland, Bouck & Lee;
 - 5. RAWP Modifications Letter, May 28, 2004, ROUX Associates;
 - 6. Site Operations Plan (SOP), June 24, 2004, ROUX Associates;

- 7. SOP Modification, Adjustments to Watertight Steel Sheet Piling due to Subsurface Obstructions, October 13, 2004, ROUX Associates/Remedial Engineering;
- 8. SOP Modification, Alternative Vapor Barrier Membrane, February 4, 2005, ROUX Associates/Remedial Engineering;
- 9. SOP Modification, Revised Barrier Wall Design, April 22, 2005, ROUX Associates/Remedial Engineering.
- 10. Environmental Easement, dated August 2, 2006
- 11. Final Engineering Report, August 2006, Remedial Engineering, P.C.

The selected remedy for this Site consisted of institutional and engineering controls as described in Section I. No changes to the selected remedy have occurred.

III. EVALUATION OF REMEDY

The objective of the remedy for this Site, detailed through the approved SMP, is to ensure that the approved Site remedy continues to remain in place and be effective in protecting the public health and the environment.

IAC/Georgetown has completed four previous certifications for the controls at the Site which have been approved by NYSDEC. In addition, IAC/Georgetown has completed grout injection repairs due to structural findings to the foundation walls as detailed by Simpson, Gumpertz & Heger (SGH) in a report to ELM dated March 16, 2011. The grout injection repairs were performed by SSESCO on February 17 and February 18, 2011, in accordance with recommendations from SGH and the OMP. SGH additionally stated, as of February 19, 2011, there are no active water leaks in the below-grade level, and the barrier-layer system is effectively functioning to inhibit water infiltration.

As submitted with this 2011 certification report, no significant deficiencies have been noted for either the HVAC or structural engineering controls, and all recommendations of the structural report have been addressed via grout injection via the SMP protocols and the repairs are documented in the SGH report.

Based on our review of current conditions with comparison to the objectives of the remedy, the remedy remains effective.

IV. IC/EC PLAN COMPLIANCE REPORT

A. IC/EC Requirements and Compliance

Institutional Control (IC)

The institutional control (IC) for the Site consists of an environmental easement. The easement designates the Site for commercial and/or industrial use only (not residential). The IC further stipulates the following:

- 1. Requires maintenance of the engineering controls developed for the Site and continuous venting of the garage sub level with an active ventilation system;
- 2. Grants NYSDEC/New York State Department of Health (NYSDOH) uncontrolled access to the Site to inspect the engineering controls;
- 3. Stipulates that any disturbance or alteration of the barrier layer (part of the engineering controls) may occur only after notification to and in accordance with NYSDEC regulations and directives; and
- 4. Requires annual certification of engineering controls.

The IC is currently in place, effective, and is evaluated on a yearly basis by the law offices of John E. Osborn P.C. as part of the annual certification by confirming with the City of New York Register's Office for the Borough of Manhattan that the easement remains in place, and no changes or legal amendments have been made to the easement filing.

Engineering Control (EC)

Engineering controls relative to the Site remedy consist of a Site perimeter watertight sheeting and grouting, a barrier layer that is integrated into the building foundation (comprised of a mud slab, waterproofing/vapor barrier membrane, and a structural concrete slab and foundation walls), and an active venting system in the cellar of the building.

The ECs are evaluated on an annual basis as part of the certification process to verify that ECs are in place and serving their intended purpose, as follows:

- Venting System Inspection and Maintenance The venting system that has been installed in the cellar's parking area and utility rooms provides fresh air and vents the basement, thereby providing additional controls in the unlikely event of any breach to the barrier layer. As with the barrier layer, the venting systems are inspected annually to verify that the fans are in good operating conditions and the findings documented in a report.
- 2. Barrier Layer Inspection and Maintenance The interior face of the perimeter foundation walls and the foundation slab are inspected once a year by a structural

Page 6

engineer. Under the SMP, they will also be inspected in the event of a severe weather event or other event that might compromise the foundation integrity. The inspection examines the entire surface of each element for conditions that could lead to vapor infiltration or indicate actual infiltration at the time of inspection.

The aperture of individual cracks and/or degree of crack density in a particular area of the basement floor slab or wall requiring additional investigation and/or repair is determined by the engineer.

The inspection is performed under the supervision of a New York State licensed professional engineer and documented in a report that is provided to the NYSDEC. If a crack is observed and the aperture and/or density of more numerous yet smaller aperture cracks are determined to require immediate repair by the engineer, the cracks will be repaired per the SMP, under the supervision of the certifying engineer.

The EC is currently in place, effective, and is evaluated on a yearly basis as part of the annual certification reports. Any deficiencies in the effectiveness of the ECs are repaired per the protocols of the SMP.

B. IC/EC Certification. The Site Institutional Controls remain in place. The Engineering Controls have been properly maintained per the applicable protocols described in the MP and OMP.

V. MONITORING PLAN COMPLIANCE & O&M PLAN COMPLIANCE

A. Components. The OMP was developed to provide procedures to operate and maintain institutional and engineering controls on the Site. The OMP includes a detailed protocol to be followed in the event that any compliance issues are noted in connection with the environmental easement during annual inspection of the institutional controls, as presented in the Monitoring Plan. The OMP also includes repair procedures for the engineering controls that are part of the Site remedy. These repairs may become necessary as determined through evaluation of Site information gathered during the Monitoring Plan. These operation and maintenance actions ensure that the Site remedy continues to be effective for the protection of public health and the environment through continued implementation of the engineering and institutional controls.

Barrier Layer

The barrier layer, which is comprised of a mud slab, waterproofing/vapor barrier membrane, and a structural concrete slab and foundation walls, is maintained to ensure its continued effectiveness as a barrier to the potential intrusion of vapors into the building foundation. As such, any activities that would compromise the integrity of the barrier layer will be managed to

effectively maintain the barrier layer.

The IAC/Georgetown instructs its management team to perform preventative maintenance of the barrier layer. The team has been instructed to monitor daily activities, which have the potential to compromise the integrity of the barrier layer. Examples of such activities would include, but are not limited to:

- 1. Movement or storage of heavy objects with the potential to affect the integrity of the barrier layer;
- 2. Installation of floor drains, elevator pits or other building features that may compromise the barrier layer;
- 3. Spilled liquid or chemicals in direct contact with the barrier layer;
- 4. Activities (e.g., foundation construction) at adjacent properties.

The management team has been instructed to look for and report to the Building Manager or designee any actions or conditions that have the potential to compromise the intended remedial function of the barrier layer. The Building Manager or designee will immediately contact a dedicated qualified professional to determine if these activities have impacted the integrity of the barrier layer and if the barrier layer requires repair. No such actions or conditions have been observed by the management team during this reporting period.

Ventilation System

The ventilation system is comprised of fans that exhaust the utility rooms and those that supply and exhaust air to the garage. The Operation and Maintenance Plan requires the ventilation system to be maintained and operated in accordance with its manufacturer's specifications. The IAC/Georgetown has instructed their management team to be aware of the operating standards of the ventilation system and to make observations that may indicate that the system is not in compliance with its operation standards, including but not limited to:

- 1. Persistent odors or exhaust in the cellar of the building;
- 2. Fans are not operational.

The management team has been instructed to look for and report any actions or conditions that have the potential to compromise the intended function of the ventilation system to the Building Manager or designee. The Building Manager will immediately contact the dedicated qualified professional to determine if these activities have impacted the function of the ventilation system and if the ventilation system requires repair. As necessary, preventative maintenance (e.g., replacing filters, cleaning lines, etc) repairs and/or adjustments will be made to ensure the systems continued effectiveness. No such actions or conditions have been

observed by the management team during this reporting period.

- **B.** Summary of O&M Completed. O&M tasks were completed during the certification year, following the protocols of the SMP and no deficiencies were observed.
- Conclusions/Recommendations. The remedy is compliant with the SMP/OMP and the environmental easement. The environmental easement remains in place and is effective.

VI. OVERALL PERIODIC REVIEW REPORT CONCLUSIONS AND RECOMMENDATIONS

The Site Institutional Controls remain in place. The Engineering Controls have been properly maintained per the applicable protocols described in the SMP & OMP.

Please feel free to contact ELM at 212-962-4301 with any questions regarding this Periodic Review Report.

cc: Christian Bryan – IAC
Lauren Smith - Georgetown
Mark Pennington – John E. Osborn, P.C.
Peter Zimmermann - ELM

Attachments -

Walkthrough Inspection and Repair Observations, prepared by Simson Gumpterz & Heger, dated March 16, 2011

Report on Surveying the West 19th Street Development Site at 555 West 19th Street, prepared by Independent Testing & Balancing, dated February 8, 2011

Site Management Periodic Review Report Notice – Institutional and Engineering Controls Certification Form



Enclosure 1 NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION Site Management Periodic Review Report Notice Institutional and Engineering Controls Certification Form



	Sit	te No.	C231017	Site Details		Box 1			
	Sit	te Name 19th	n Street Developme	ent Site					
	Cit Co Alle Sit Ov	ty/Town: New bunty: New Yor owable Use(s te Acreage: 0 vner: Respons c/o Men	rk) (if applicable, does .7 sive Realty, LLC	Zip Code: 10011 s not address local zoning 662 Kingsland Ave, Brook		ıstrial			
				Varification of City Date	-11-		Вох	(2	
				Verification of Site Det	aiis	YE	S	NO	
	1.	Is the inform	ation in Box 1 corre	ct?		×			
		If NO, are ch	nanges handwritten	above or included on a se	eparate sheet?				
	2.		r all of the site prope endment during this	rty been sold, subdivided Reporting Period?	I, merged, or undergone	a 🗆	,	×	
			cumentation or evid cluded with this cert	ence that documentation fication?	has been previously				
	3.		deral, state, and/or le property during this	ocal permits (e.g., buildin Reporting Period?	g, discharge) been issue	ed 🖂	•	×	
			cumentation (or evid cluded with this cer	lence that documentation tification?	n has been previously				
	4.	If use of the restrictions?	site is restricted, is t	he current use of the site	consistent with those	×			
		If NO, is an e	explanation included	with this certification?					
has a	has any new	-significant-threat Brownfield Cleanup Program Sites subject to ECL 27-1415 new information revealed that assumptions made in the Qualitative Exposurement regarding offsite contamination are no longer valid?	sure		_				
			new information or cluded with this Cert	evidence that new inforn ification?	nation has been previous	sly	V۱۱	A	:
		are the assur certified ever	nptions in the Quali y five years)?	ield Cleanup Program Si tative Exposure Assessm ment included with this c	nent still valid (must be			□ A :	

SITE NO. C231017 Box 3

Description of Institutional Controls

<u>Parcel</u> <u>Institutional Control</u>

S_B_L Image: **690-12**

Landuse Restriction

Site Management Plan

S_B_L Image: 690-54

Landuse Restriction Site Management Plan

Box 4

Description of Engineering Controls

<u>Parcel</u> <u>Engineering Control</u>

S_B_L Image: 690-12

Subsurface Barriers

Vapor Mitigation

S_B_L Image: 690-54

Subsurface Barriers Vapor Mitigation

Attach documentation if IC/ECs cannot be certified or why IC/ECs are no longer applicable. (See instructions)

Control Description for Site No. C231017

Parcel: 690-12

An Environmental Easement for the property was filed on July 31, 2006, restricting future use to industrial/commercial, and requiring: 1)monitoring and maintenence of the subsurface barrier, 2)continuous operation of a sub-level ventilation system 3)annual certification.

An Environmental Easement for the property was filed on July 31, 2006, restricting future use to industrial/commercial, and requiring: 1)monitoring and maintenence of the subsurface barrier, 2)continuous operation of a sub-level ventilation system 3)annual certification.

Parcel: 690-54

An Environmental Easement for the property was filed on July 31, 2006, restricting future use to industrial/commercial, and requiring: 1)monitoring and maintenance of the subsurface barrier, 2)continuous operation of a sub-level ventilation system 3)annual certification.

		Box 5
	Periodic Review Report (PRR) Certification Statements	
1	l. I certify by checking "YES" below that:	
	 a) the Periodic Review report and all attachments were prepared under the direction of, reviewed by, the party making the certification; 	and
	b) to the best of my knowledge and belief, the work and conclusions described in this care in accordance with the requirements of the site remedial program, and generally according to the site of th	
	engineering practices; and the information presented is accurate and compete. YES	NO
	\bowtie	
2	If this site has an IC/EC Plan (or equivalent as required in the Decision Document), for each In or Engineering control listed in Boxes 3 and/or 4, I certify by checking "YES" below that all of the following statements are true:	
	(a) the Institutional Control and/or Engineering Control(s) employed at this site is uncha the date that the Control was put in-place, or was last approved by the Department;	nged since
	(b) nothing has occurred that would impair the ability of such Control, to protect public h the environment;	ealth and
	(c) access to the site will continue to be provided to the Department, to evaluate the remincluding access to evaluate the continued maintenance of this Control;	nedy,
	(d) nothing has occurred that would constitute a violation or failure to comply with the Si Management Plan for this Control; and	te
	(e) if a financial assurance mechanism is required by the oversight document for the site mechanism remains valid and sufficient for its intended purpose established in the document.	
	YES	NO
	\Join	
3.	If this site has an Operation and Maintenance (O&M) Plan (or equivalent as required in the Decoument);	cision
	I certify by checking "YES" below that the O&M Plan Requirements (or equivalent as required in	the
	Decision Document) are being met. YES	NO
	×	
4.	If this site has a Monitoring Plan (or equivalent as required in the remedy selection document);	

I certify by checking "YES" below that the requirements of the Monitoring Plan (or equivalent as required in the Decision Document) is being met.

YES

NO

CONTROL CERTIFICATIONS SITE NO. C231017

Box 5

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE certify that all information and statements in Boxes 2 & 3 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.
1 Christian Bryan (print name)
(print business address), am certifying as
(Owner or Owner's Designated Site Representative (if the site consists of multiple properties, I have been
authorized and designated by all site owners to sign this certification) for the Site named in the Site Details
section of this form.
3/21/11
Signature of Site Owner or Representative-Rendering Certification Date
QUALIFIED ENVIRONMENTAL PROFESSIONAL (QEP) SIGNATURE certify that all information and statements in Box 4 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.
Signature of Qualified Environmental Professional, for the Owner's Representative, Rendering Certification

Walkthrough Inspection and Repair Observations

West 19th Street Development Site 528 West 19th Street New York, NY

16 March 2011

SGH Project 110043



PREPARED FOR:

Mr. Craig Puerta Project Manager Environmental Liability Management, LLC 267 Broadway, Fifth Floor New York, NY 10007

PREPARED BY:

Simpson Gumpertz & Heger Inc. 19 W. 34th Street, Suite 1000 New York, NY 10001

Tel: 212.271.7000 Fax: 212.271.0111

> Boston Los Angeles New York San Francisco Washington, DC

Design, Investigate, and Rehabilitate

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Engineering of Structures and Building Enclosures

16 March 2011

Mr. Craig Puerta
Project Manager
ENVIRONMENTAL LIABILITY MANAGEMENT, LLC
267 Broadway, Fifth Floor
New York, NY 10007

Project 110043 - Walkthrough Inspection and Repair Observations

West 19th Street Development Site, 528 West 19th Street, New York, NY

Dear Mr. Puerta:

You asked us to perform a visual inspection and to oversee repairs, if needed, in the basement of the above-named building. This report summarizes our observations, the repairs that have been made in response to them, and our further recommendations.

1. EXECUTIVE SUMMARY

The purpose of this annual inspection was to identify cracks and visible signs of water infiltration into the space, per the inspection requirements set forth in the Monitoring Plan Section 3.2, developed as part of the New York State Department of Conservation Brownfield Cleanup Program.

Rebecca A. Melton and Andrea K. Reese of Simpson Gumpertz & Heger Inc. (SGH) performed a visual inspection on 3 February 2011. Rebecca A. Melton returned to the site on 11 February 2011. We noted isolated visual evidence of active (wet areas), as well as isolated cracks in the basement slab and foundation walls. We did not perform any tests to identify or measure actual vapor infiltration into the basement space, as this was beyond the agreed scope of our work and expertise. However, signs of water infiltration and visible cracking can be used as indicators of breaches with potential for vapor infiltration, when the groundwater table is lower than a potential breach (e.g. cracks). Therefore, we recommend injection repairs for areas where we observed active or past water infiltration, in accordance with best maintenance practices and the Operations and Maintenance Plan (OMP). We did not make any probes or perform tests to evaluate or observe the components of the barrier-layer system behind the foundation walls or below the basement slab.

On 17 and 18 February 2011, we visited the building to observe SSESCO perform the grout inject repairs recommended. The repairs were done in accordance with our recommendations and with the OMP. As of 19 February 2011, there were no active water leaks in the below-grade level, and the barrier-layer system is effectively functioning to inhibit water infiltration. To confirm continual effectiveness of the barrier layer, as described above, preventative maintenance should be performed on an ongoing basis in accordance with Section 3.0 of the Operations and Maintenance Plan.

Boston

2. BACKGROUND

2.1 Description of the Site

The West 19th Street Development Site is an office building located on one of many parcels used as a former manufactured-gas plant (Photo 1). The building is a mid-rise structure with an undulating glass curtain-wall facade. The building has one below-grade level that includes a concrete pressure slab and cast-in-place concrete foundation walls. The foundation slab is supported on piles. The below-grade area is used for parking, for housing mechanical equipment, and for storage space.

The approximately 0.7-acre site is located on Block 690, Lots 12 and 54, between West 18th and West 19th Streets, and Tenth and Eleventh Avenues in the Borough of Manhattan, New York. It is our understanding that contamination on the site was remediated concurrently with construction for the current office building. Furthermore, we understand that remediation was conducted pursuant to a Brownfield Cleanup Agreement with New York State Department of Environmental Conservation (NYSDEC), effective 14 July 2004 (Index No. W2-1012-04-07, Site No. C231017). The remediation on the site was documented in a Final Engineering Report, prepared by Roux Associates, Inc., and dated 17 August 2006. A Certificate of Completion was issued for the site remediation dated 31 August 2006.

In accordance with the NYSDEC-approved remediation and the environmental easement established pursuant to the site's Brownfield Cleanup Agreement, we understand that the following engineering controls are in place on the site:

- Watertight, corrugated metal sheeting and jet grouting around the perimeter of the site.
- A barrier-layer system. The designed barrier-layer system consists of the following components:
 - Mud slab
 - Waterproofing/vapor barrier membrane, manufactured by Grace Construction Products
 - Structural concrete slab or foundation walls
 - Subsequent to the construction, grout injection at the foundation walls and slabs was employed at areas of former and suspected leaks.
- An active venting system in the cellar of the building.

2.2 Description and Purpose of the Barrier-Layer Monitoring Program

The Site Management Plan (SMP) states that, "the interior face of the perimeter foundation walls and foundation slab shall be inspected once a year or in the event of a severe weather event (e.g., flooding) or other event that might compromise the foundation integrity". The purpose of the visual inspection is to identify "the presence and density of cracks and/or evidence of water infiltration".

Visible conditions identified as allowing or potentially allowing vapor infiltration shall be either repaired per the OMP, or monitored with a photoionization detector (or other monitoring

equipment) and telltales. The repair outlined in the OMP involves chemical grout injection with Hydro Active Sealfoam, a grout manufactured by DeNeef. For additional information on the chemical grout, see Appendix A of this report.

Furthermore, "the visual inspection shall note any evidence of water infiltration; which could indicate that the vapor membrane adhered to the exterior side of the wall may have been breached. If it is determined by the qualified structural engineer that water is discharging through the crack(s) or in the area of the crack(s), then:

- 1. The source of the water infiltration will be determined and addressed; and
- 2. The most practicable means of repair to the vapor membrane and/or other barrier layer system components should be determined and implemented per the guidance provided in the OMP".

The SMP states that, "the structural engineer shall include in the final report any additional information as to the cause of the crack(s) and/or vapor membrane breach and how further such breaches will be avoided in the future".

2.3 Review of Previous Reports

Environmental Liability Management, LLC (ELM) provided SGH with the following relevant documents:

- Waterproofing Recommendation letter by Remedial Engineering, P.C. Environmental Engineers, dated 4 February 2005. This letter describes revisions to the Site Operations Plan (SOP), dated 24 June 2004. The revisions to the SOP include substitution of the Grace products, as listed above, in lieu of a Liquid Boot membrane as the waterproofing/vapor barrier.
- Site Management Plan for West 19th Street Development Site, dated 18 July 2006 and approved by the NYSDEC on 10 August 2006. This document outlined SGH's scope of work for the inspection of the basement space for signs of water infiltration through the barrier-layer. The pertinent sections of this report are included in Appendix A.
- Limited Structural Evaluation Letter by Rand Engineering and Architects (Rand) dated 9 January 2007. The survey performed by Rand was conducted on 8 December 2006 when the construction was nearing completion. Remediation on the project site was documented in a Final Engineering Report, prepared by Roux Associates, Inc. and dated 17 August 2006.
- Certificate of Completion from NYSDEC, dated 31 August 2006.

In preparation for this year's inspection, we also reviewed our previous reports:

- Walkthrough Inspection and Repair Observation, Barrier Layer Engineering Control letter dated 5 September 2007, and updated 24 March 2008.
- Walkthrough Inspection of Barrier Layer Engineering Control letter dated 18 February 2009.

- Operations and Maintenance Plan Repairs letter dated 8 April 2009.
- Walkthrough Inspection of Barrier Layer Engineering Control letter dated 12 February 2010.
- Operations and Maintenance Plan Repairs letter dated 10 March 2010, and revised 12 March 2010.
- Operations and Maintenance Plan Repairs letter dated 14 April 2010.

3. OBSERVATIONS

On 3 and 11 February 2011, representatives of SGH met with representatives of ELM and IAC to walk through the below-grade level to conduct a visual survey. On 17 and 18 February 2011, we revisited the building to observe the repairs.

At the time of our walkthrough inspection, the below-grade level of the building was being used for car parking, storage, and as mechanical rooms. The building was operational at the time of our inspection, and cars were parked in the garage at the below-grade level. Some of the storage and mechanical rooms contained objects, which prohibited us from viewing the entire surface of the perimeter foundation walls and the foundation slab in some areas. We inspected the unobstructed concrete floor slab and foundation walls for visible cracks and/or any evidence of water infiltration, as well as looked for areas of water staining. In addition, our scope included a focus on inspection of our 2010 findings.

The survey on 3 February 2011 was conducted about one week after a snowstorm, and one day following a heavy rain shower. The 11 February 2011 survey was conducted after two days of no precipitation (Appendix B). During the visits, we observed evidence of previous repairs. We also observed several locations with hairline concrete cracks and isolated areas of active water infiltration.

A summary of our observations from our 3 February 2011 and 11 February 2011 site visits follow. Please refer to the Engineering Control Checklist – Cracking, in Appendix C, and an annotated plan in Appendix D for a graphical representation of our surveys. In Appendix D, an X-Y coordinate system is shown. In our observations below, we use this coordinate system to help locate where our observations were made.

3.1 Previous Repairs Observations

SGH observed numerous grout injection ports at all four of the foundation walls and within the building interior. We primarily observed grout injection ports at the foundation walls and wall-to-slab interface, but we also observed some grout injection ports in the interior walls and slab.

We previously observed the grout injection ports installed on:

- 16 and 24 January 2008 by Starbrite Waterproofing under our observation.
- 26 March 2009 by SSESCO Inc. under our observation.
- 25 February 2010, 1 March 2010 and 2 April 2010 by SSESCO Inc. under our observation.

To our knowledge, no new grout injection ports were installed at the site since our last inspection in April 2010.

3.2 Foundation Slab Observations

A traffic-deck coating is applied in the parking-lot portion of the basement, as well as in the mechanical and storage rooms at the north and east perimeter walls. The traffic-deck coating prevents us from determining if there are small-width (hairline) cracks in the concrete slab. We did not observe cracks through the traffic-deck coating, but we noted one area of water trapped under the traffic-deck coating.

 We observed water infiltration at the slab in the mechanical room on the east side of the building (X=210, Y=90). We observed a line of blistered traffic deck coating, approximately 2-1/2 ft long. We opened a small section of the blister and found moisture under the traffic-deck coating (Photo 2).

The traffic-deck coating was not applied in the storage rooms along the west foundation wall (X=60, Y=140) and (X=115, Y= 35). In these storage rooms, we observed what appeared to be isolated shrinkage cracks in a raised concrete topping slab. The cracks appear to be isolated shrinkage cracks that show no evidence of past or current water infiltration. We noted that the width of a few of the cracks have widened approximately .00 in. to .02 in. between 21 January 2010 and 3 February 2011 (Appendix D).

Over the past year, the maintenance staff has repainted and restriped some of the foundation slab area.

3.3 Foundation Wall Observations

As described fully in the paragraphs that follow, we observed isolated active water infiltration, predominantly in the slab-wall interface locations. All observations described in this section were made on 3 February 2011, unless otherwise noted.

3.3.1 Active Water Infiltration Observations

In the mechanical room on the east side of the building, we noted water infiltration at the slab-to-wall interface (X=210, Y=100) at the north elevation along approximately 4 ft of wall (Photo 3). We noted water trapped behind the traffic deck coating at the base of the wall.

- We found active water infiltration at the far northwest corner of the building in the water meter room (X=40, Y=200). We removed the vinyl baseboard and felt that the foundation slab-to-wall interface was wet along about 2 ft of the north elevation (Photo 4). On 11 February 2011, this area was dry. This area had been previously grout injected under our observation on 26 March 2009. During our 2010 walkthrough, we did not observe any signs of water infiltration. We observed that the amount of water infiltration is less than that of two years ago.
- We noted water infiltration near a pipe penetration along the south wall of the fan room (X=240, Y=20). We found water infiltration at a grout injection port just below a pipe penetration (Photo 6). On 11 February 2011, this location was dry. The grout injection in this location had been performed prior to 24 August 2007. Between 24 August 2007 and 3 February 2011, we did not observe water infiltration at this location during our annual walkthrough inspections.

3.3.2 Evidence of Previous Water Infiltration and Cracking Observations

During our survey, we noted many areas of the perimeter foundation walls and foundation slab that were water stained which indicates previous water entry. We have typically not recommended grout injection at stains, which are proximate to grout injection ports and show no signs of growth over time. We noted one location, however, where the wall staining has worsened.

• We noted additional brown staining on the north wall of the gas meter room (X=165, Y=200). We found this location to be dry on both 3 February 2011 and 11 February 2011. Our comparison of photos taken on 21 January 2010 and 3 February 2011 shows a greater extent of stains at the wall and along the crack (Photos 6 and 7). The grout injection in this area was performed prior to 24 August 2007.

On 3 February 2011, a member of the maintenance staff informed us that he had seen water on the floor of the mechanical room (X=210, Y=100), and thought it flowed in from a pipe penetration (Photo 8). We observed that the area around the penetration, as well as the wall and floor directly below the penetration, were dry and free of water stains. We observed that the area on the fall and floor below the pipe were covered with grout injection material. On 24 January 2008, we had observed technicians seal this pipe penetration and grout inject the annulus between the hose and the surrounding concrete. During subsequent annual walkthrough inspections, we did not observe signs of water infiltration at this location.

We noted no instances of cracks or water staining without nearby grout injection ports.

Over the past year, the maintenance staff has repainted some of the foundation walls.

4. DISCUSSION AND RECOMMENDATIONS

Below is a summary of our discussion and recommendations for repairs to the barrier as part of the OMP.

4.1 2010 Repair Performance

In 2010, five active and suspect locations of water entry were grout injected. We observed that the previous repairs appear to be effective in terms of preventing water entry at all of the five locations; we observed no signs of active leaks through the repaired cracks that would indicate further water entry. We do not recommend any further action with regards to the previously repaired cracks that are not actively leaking.

4.2 2011 Recommendations for Active Leak Locations with Previous Repairs

Three of the four areas of active leaks, observed in this year's walkthrough, had been formerly repaired, as described in Section 3.3.

- Two of these areas (fan room and gas meter room) were repaired prior to 24 August 2007, under the supervision of others, and had exhibited no signs of water infiltration during our 2007/2008, 2009, and 2010 annual walkthroughs.
- The third area (water meter room) was repaired under SGH observation on 26 March 2009 and was dry in 2010. The amount of current water entry was significantly less than that of 2009.

We recommended that the three previously repaired areas that show signs of subsequent leakage be repaired by grout injection, as described in the OMP as part of best maintenance practice.

4.3 2011 Foundation Slab Recommendations

Consistent with the previous year's findings, the pattern and size of the cracks in the concrete topping slab inside of the storage rooms (X=60, Y=140) and (X=115, Y= 35), observed in 2011, are indicative of concrete shrinkage cracks. These cracks are typically shallow in depth and would not allow water to penetrate through the slab. As such, we believe that they do not represent a breach or significant damage to the barrier-layer system. The isolated growth of the cracks may be attributed to thermal shrinkage. This year, we recommended no remedial action be taken at this time.

Per the OMP, only cracks where the water is discharging through the crack are required to be repaired, while cracks with suspect water infiltration are required to be monitored. In lieu of monitoring, we recommend that the active water infiltration we observed this year at the slab in the mechanical room on the east side of the building (X=210, Y=90) be repaired using the grout injection technique described in the OMP as part of best maintenance practice.

4.4 2011 Foundation Wall Recommendations

Per the OMP, only cracks where the water is discharging through the crack are required to be repaired. This year, we recommended that all four locations listed above in Section 3.3 (including leaks at slab-to-wall interface and grout injection ports, as well as areas of stain growth) be repaired using the grout injection technique described in the OMP.

We did not recommend repairing the pipe penetration at the mechanical room (X=210, Y=100). We found no indication of water infiltration in this location. The reported water observed by the maintenance staff member may have been the residual grout injection material.

5. REPAIRS

Repairs related to all of our recommendations were performed by SSESCO Inc. over two days. On 17 February 2011, the areas were grout injected. On 18 February 2011, the ports were removed, the holes were patched, and spilled grout material was removed from the walls and floors. The grout injection in all areas was performed in accordance with the OMP guidelines. We observed the following repairs:

- We observed grout injection repairs on the slab in the mechanical room (X=210, Y=90).
 The technicians injected grout into three ports along the line of a blister below the traffic deck coating. The technicians pumped grout until grout material pushed out of the crack (Photo 9).
- We observed grout injection repairs at the slab-to-wall interface in the mechanical room (X=210, Y=100). The technicians drilled and pumped fort ports along the base of the foundation wall until grout material surfaced (Photo 10).
- We observed grout injection repairs at the slab-to-wall interface of the northwest corner of the water meter room (X=40, Y=200). The technicians injected grout into five injection points along the base of the foundation wall until grout material surfaced at the face of the wall above the ports and at the slab-to-wall interface (Photo 11).
- In the fan room (X=240, Y=20), the technicians removed the existing port that was wet during our walkthrough and installed a new port in the same location. The technicians also installed one injection port below the penetration. The technicians pumped injection grout material at both injection ports until the material surfaced at a nearby port and at the face of the wall (Photo 12).
- In the gas meter room (X=165, Y=200), the technicians removed loose cementitious parge material above the stain, and revealed what appeared to be a patch for an abandoned penetration. The technician drilled seven ports in a circle around the patch. When he injected the bottom ports, grout material filled the crack from which the stain originated (Photo 13).

6. SUMMARY AND CONCLUSIONS

We identified the following conditions that required repair or remediation:

- Active water infiltration in four separate locations, shown on plan in Appendix D and described in Sections 2.2 and 2.3.
- One location of stain growth as shown on plan in Appendix D described in Section 2.3.2.

We recommended that these five areas be repaired in accordance with the grout injection technique described in the OMP. All of the indentified areas were then repaired (per Section 3.0 of the OMP) under our observation on 17 and 18 February 2011.

The slab cracks we observed were generally narrow in width, likely a result of concrete shrinkage, and did not appear to be structurally significant; therefore, we did not attempt to determine the cause or to remediate the observed cracks.

We did not look for or measure vapor infiltration; however, signs of water infiltration can be used to estimate the likelihood of vapor infiltration because the basement is reportedly below the groundwater table, especially during periods after heavy rains.

As of 19 February 2011, there were no active water leaks in the below-grade level, and the barrier-layer system is effectively functioning to inhibit water infiltration. To confirm continual effectiveness of the barrier layer, as described above, preventative maintenance should be performed on an ongoing basis in accordance with Section 3.0 of the Operations and Maintenance Plan.

Sincerely yours,

Rebecca A. Melton

Senior Staff I – Structures NY License No. 087508-1

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Milan Vatovec Senior Principal

NY License No. 083106

Encls.



Photo 1

528 West 19th Street,
New York, NY looking south.



Crack previously repaired with grout injection. Opening the blister revealed wet grout repair foam.

Photo 2



Photo 3

Active water infiltration at the wall-to-slab interface in the mechanical room on the east side of the building.



Photo 4

Active water infiltration at the wall-to-slab interface at the northwest corner of the water meter room.

The paper strips in the photo are water-finding paper, which turn magenta when wet.



Photo 5

Active water infiltration at a pipe penetration on the south wall of the fan room.

The paper strip in the photo is water-finding paper, which turn magenta when wet (arrow).



Photo 6 2010 Photo

Water staining at gas meter room.



Photo 7 2011 Photo

Water staining at gas meter room. Additional staining along crack lines and on wall.



Photo 8

Pipe penetration at north wall of the mechanical room.



Completed grout injection at the slab in the mechanical room (X=210, Y=90).



Completed grout injection at the north wall of the mechanical room (X=210, Y=100).



Photo 11

Completed grout injection in the water meter room (X=40, Y=200).



Photo 12

In progress grout injection repair in the fan room (X=240, Y=20).



Photo 13

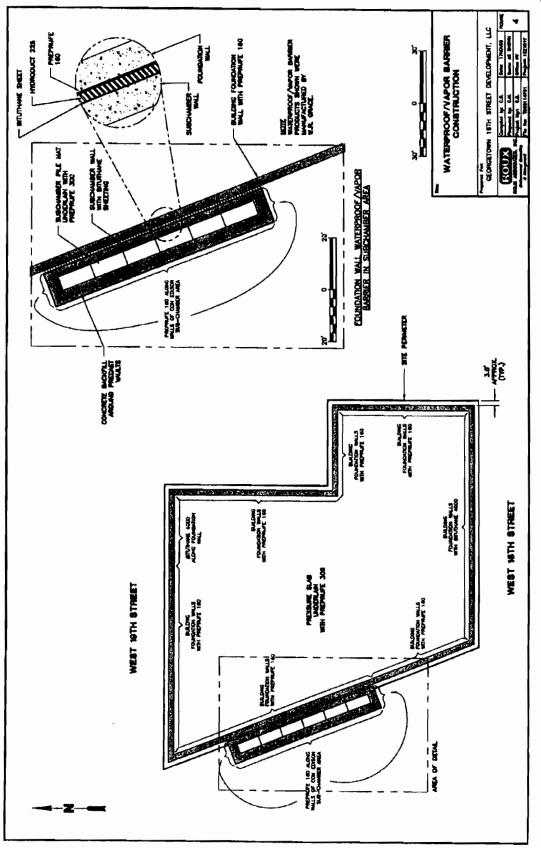
Completed grout injection repair at the north wall of the fan room (X=165, Y=200).

July 2006

Site Management Plan

Attachment C

Figure 4, Waterproof / Vapor Barrier Construction, reprinted from Roux Final Engineering Report, July 2006



July 2006

Monitoring Plan

industrial use only (not residential), restricts the use of groundwater at the site, grants NYS DEC/NYS DOH uncontrolled access to the site to inspect the engineering controls, requires that any breach of the barrier layer occur with NYS DEC notification and/or approval and in accordance with the Soil Management Plan. (Attachment G of the Site Management Plan), and requires annual certification of engineering controls.

On an annual basis, the Certification provided to the NYSDEC will state whether any modifications to the Environmental Easement have been filled with City of New York Register's Office for the Borough of Manhattan, Land Division.

3.2 Engineering Controls

Barrier Layer Monitoring

The interior face of the perimeter foundation walls and the foundation slab shall be inspected once a year or in the event of a severe weather event (e.g., flooding) or other event that might compromise the foundation integrity.

The inspection shall investigate the entire surface of each element for conditions that could lead to vapor infiltration or indicate actual infiltration at the time of inspection, as described below. The inspection shall be performed by a qualified structural engineer(s) familiar with the barrier layer system. The initial stage will be a visual inspection to determine the presence and density of cracks and/or any evidence of water infiltration.

The aperture of individual cracks and/or degree of crack density in a particular area of the basement floor slab or wall requiring additional investigation and/or repair will be determined by the qualified structural engineer(s).

If a crack is observed and the aperture and/or density of more numerous yet smaller aperture cracks are determined to require immediate repair by the qualified structural engineer(s), the crack shall be repaired per the guidance provided in Section 4 of the Operations and Maintenance Plan (OMP). If the qualified structural engineer(s) determines that the crack(s) does not require immediate repair, the crack(s) will be monitored both with a photoionization detector (PID) and with telltales, as described below, prior to their repair in accordance with the guidance provided in Section 4 of the OMP.

Should it be determined that the crack(s) does not require immediate repair, two (2) monitoring activities will be undertaken:

 PID and/or other monitoring equipment recommended by a qualified professional will be used to detect if any vapors associated with the

July 2006

Monitoring Plan

contamination surrounding the site is entering the building. The monitoring will be performed using methods provided by a qualified professional and using appropriately qualified technicians to avoid interference of ambient air from the basement parking garage operations. Readings will be recorded and attached to the inspection report. The reporting protocol will include a contingency plan for actions to be taken should the readings be interpreted by the qualified professional as indicating a breach of the barrier layer. The contingency plan will incorporate any community notification(s), as necessary.

Monitoring telltales shall be installed in said observed cracks. Attachment C is an article from the National Park Service's Technical Preservation Services for Historic Bulldings on Monitoring programs. It includes descriptions and a photo of a typical telltale. These telltales shall be checked for a period of time, as determined by the qualified structural engineer(s), to investigate if the crack is continuing to widen. If the crack is stable, the monitoring shall stop. If the crack continues to widen, then a more thorough investigation as to the cause of the movement shall be performed by the qualified structural engineer(s), and appropriate corrective action will be taken.

The visual inspection shall also note any evidence of water infiltration; which could indicate that the vapor membrane adhered to the exterior side of the wall may have been breached. If it is determined by the qualified structural engineer(s) that water is discharging through the crack(s) or in the area of the crack(s), then: (1) the source of the water infiltration will be determined and addressed, and (2) the most practicable means of repair to the vapor membrane and/or other barrier layer system components should be determined and implemented per the guidance provided in Section 4 of the OMP. In the event such condition is observed, alternate potential sources of water infiltration must also be considered in order to avoid unnecessary and impracticable response actions.

The barrier layer inspection will be documented in a report prepared for NYSDEC. The report will document the conditions of the observed crack(s) and the presence of moisture, the procedures that were followed for the monitoring of the crack(s), the actions taken to address sources of any observed water infiltration, and any repair of the vapor membrane and cracks. The report will also include any additional information as to the cause of the crack(s) and/or vapor membrane breach and how further such breaches will be avoided in the future.

If the aforementioned monitoring procedure is noted to have changed in any way during the annual inspection, an addendum will be issued to the Monitoring Plan,

July 2006

Monitoring Plan

which will provide an updated protocol for the annual inspection and Certification and will detail any material changes from the previous protocol. Any such procedural changes will be noted in the annual Certification that is provided to NYS DEC and the Addendum to the Monitoring Plan will be included as an attachment to the Certification.

Ventilation System Monitoring

The fans that exhaust the utility rooms and those that supply fresh air to the garage shall be inspected once a year. This inspection shall be performed by qualified HVAC professionals and/or mechanical engineers. The objective of the inspection will be to verify that the fans are in good operating condition and that the volume of air being either exhausted or supplied by the fans is in compliance with the design volumes and air changes specified.

 If the testing uncovers that the volumes are not as specified, then corrections would be performed in accordance with the guidance provided in Section 4 of the OMP:

If the aforementioned monitoring procedure is noted to have changed in any way during the annual inspection, an addendum will be Issued to the Monitoring Plan, which will provide an updated protocol for the annual inspection and Certification and will detail any material changes from the previous protocol. Any such procedural changes will be noted in the annual Certification that is provided to NYS DEC and the Addendum to the Monitoring Plan will be Included as an attachment to the Certification.

3.3 Future Modifications

Any actions that have the potential to involve disturbance of the barrier layer and/or soil beneath the barrier layer would require NYSDEC notification and approval and would be performed in accordance with the Soil Management Plan (SoMP), which is attached to the SMP.

4.0 Site Monitoring Report

The inspections outlined above shall be performed under the direction of a professional either licensed or certified in the State of New York. The Barrier Layer and Ventilation System inspections shall be incorporated into a report that documents the inspections. These reports shall be submitted to the NYSDEC for review. Additionally, on an annual basis, these reports will be accompanied by a certification that the respective system is functioning as originally designed.

Appendix A

West 19th Street Development Site Borough of Manhattan, Block 690, Lots 12 and 54 Brownfield Cleanup Agreement Index No. W2-1012-04-07 Site No. C231017

July 2006

Monitoring Plan

Attachment A

Engineering Control Checklist-Cracking

Monitoring Plan

Data Date:

Engineering Control Checklist-Cracking

		 -		Structural is	nvestigation	Vapor in	vestigation	
Crack		8	Size	Movement	Repair	Moisture	Old Old	
Identification	Location	Width	Length	Monitored	Monitored Performed	Infiltration	Infiltration Readings	Notes
			-					

July 2006

Operations and Maintenance Plan

The active venting system will be constructed as a part of the future commercial office building.

2.0 Site Description

The approximately 0.7-acre site is located on Block 690, Lots 12 and 54, between West 18th and West 19th Streets and Tenth and Eleventh Avenues in the Borough of Manhattan, New York City. The development site is one parcel of numerous parcels that comprised the former West 18th Street Gas Works Site, which is currently under a Voluntary Cleanup Agreement (VCA) between the NYSDEC and Con Edison, effective August 25, 2002. Remediation of this site was conducted pursuant to a Brownfield Cleanup Agreement with the NYSDEC, effective July 14, 2004 (Index No. W2-1012-04-07, Site No. C231017, the "BCA").

This BCA was entered into via an application for transition into the Brownfields Cleanup Program from the Voluntary Cleanup Program under which one of the volunteers, Georgetown 19th Street Development, LLC, had entered with the NYSDEC, effective March 13, 2003 (Index No. W2-0948-03-02, Site No. V-00624-2).

For more information on site remediation, please refer to Section 3.0 of the Site Management Plan, to which the MP and this plan are attached.

3.0 Operation and Maintenance Activities

This OMP includes a description of activities necessary to operate, maintain and repair (as required) the engineering controls (barrier layer and venting system) based upon the conditions observed during implementation of the Monitoring Plan.

Barrier Layer

The barrier layer, which is comprised of a mud slab, waterproofing/vapor barrier membrane, and a structural concrete slab or foundation walls, must be maintained to ensure its continued effectiveness as a barrier to the intrusion of vapors into the building foundation. As such, any activities that would compromise the integrity of the barrier layer must be managed to effectively maintain the barrier layer over the long term.

The building management will instruct its management team to perform preventative maintenance of the barrier layer. The team should be instructed to be aware of actions observed during their daily activities, which have the

July 2006

Operations and Maintenance Plan

potential to compromise the integrity of the barrier layer. Examples of such activities would include, but are not limited to:

- Movement or storage of heavy objects with the potential to affect the integrity of the barrier layer.
- Installation of floor drains, elevator pits or other building features that may compromise the barrier layer.
- Spilled liquid or chemicals in direct contact with the barrier layer.
- Activities (e.g., foundation construction) at adjacent properties.

The management team shall be instructed to look for and report to the Building Manager or designee any actions or conditions that have the potential to compromise the intended remedial function of the barrier layer. The Building Manager or designee will immediately contact a dedicated qualified professional to determine if these activities have impacted the integrity of the barrier layer and if the barrier layer requires repair. Any repair activities will be performed in accordance with Section 4 of this OMP.

Ventilation System

The ventilation system is comprised of fans that exhaust the utility rooms and those that supply and exhaust air to the garage. The ventilation system shall be maintained to operate in accordance with its manufacturer's specifications. The building management will instruct their management team to be aware of the operating standards of the ventilation system and to make observations that may indicate that the system is not in compliance with its operation standards, including, but not limited to,

- persistent odors or exhaust in the cellar of the building
- fans are not operational

The management team shall be instructed to look for and report any actions or conditions that have the potential to compromise the intended function of the ventilation system to the Building Manager or designee. The Building Manager will immediately contact the dedicated qualified professional to determine if these activities have impacted the function of the ventilation system and if the ventilation system requires repair. Any repair activities will be performed in accordance with Section 4 of this OMP.

As necessary, preventative maintenance (e.g., replacing filters, cleaning lines, etc.) repairs and/or adjustments will be made to ensure the system's continued effectiveness.

July 2006

Operations and Maintenance Plan

4.0 Contingency Plan

Resulting from the observations of either the annual inspections identified in the MP or from the daily maintenance operations outlined in Section 3.0 above, repairs may be required of either the barrier layer or the venting systems. The NYSDEC must be notified of the requirement of such necessary repairs and/or must approve the work prior to its completion.

All personnel involved with the repairs must follow the safety guidance offered by the attached Health and Safety Plan (HASP), the rules and regulations of the NYSDEC and NYSDOH, the rules and regulations of the Federal Occupation and Safety Health Administration (OSHA) and any other governing body.

The following offices can provide further assistance as required:

Consultant	Company	Telephone	Contact
	DeSimone Consulting Engineers		Stephen
Structural Consultant	PLLC	212-532-2211	DeSimone
	Cosentini Associates Consulting		
Mechanical Consultant	Engineers	212-615-3600	Douglas Mass
	Environmental Liability		Peter
Environmental Consultant	Management of NY, LLC	212-581-8023	Zimmerman
NYSDEC		518-402-9564	
NYSDOH			

Repair guidelines for the barrier system are contained in Attachment A. They have been developed by WR Grace, the supplier of the vapor barrier component. These guidelines should be strictly followed and WR Grace must be contacted to provide technical assistance during the repair. This will ensure continued warranty coverage of the WR Grace product.

Repairs to the ventilation system could be as simple as belt replacement or as complicated as electrical component repair. A qualified repair professional must be retained and utilized to diagnose the problem and provide prompt repair. Replacement parts should be kept in stock (where feasible) so that prolonged outages are kept to a minimum. If prolonged outages are anticipated such as during a power failure, a qualified professional should be retained to set up an air-monitoring program. This program will validate that the first line of defense, the barrier layer, is functioning as designed.

Appendix A

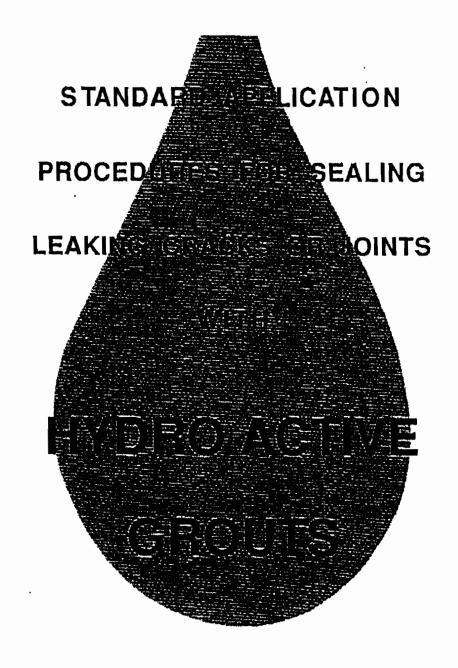
West 19th Street Development Site Borough of Manhattan, Block 690, Lots 12 and 54 Brownfield Cleanup Agreement Index No. W2-1012-04-07 Site No. C231017

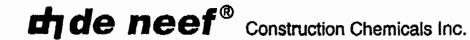
July 2006

Operation and Maintenance Plan

Attachment A

Barrier layer repair detail and procedure

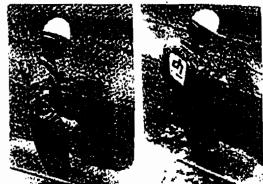




1. Cleaning/Sealing Crack Surface

DEC-14-2005(WED) 11:20

When crack is contaminated at outside, it will be necessary to clean the crack surface, so the crack can be exactly located. If it is a wide crack or high waterflows are encountered, it will be necessary to seal the surface of the crack with a surface sealing material; (example: hydraulic cement; epoxy gel; or cakum saturated with polyurethane grout). The surface sealing can be done before or after drilling the injection holes, (depending on the particular situation).



2. Drilling the Injection Holes

There are different diameter, depths, and angles of injection holes. The standard is a 1/2" or 5/8" diameter hole, the angle of drilling is 45° to the surface; and the depth of the hole will be 1/2 the thickness of the concrete. Spacing of the injection ports depends on the width of the crack, but normally varies from 6" to 36".

NOTE: Walt Thickness - Drilling distance from crack



3. Install Injection Ports or Packers

Place the packer in the drilled 1/2" or 5/8" hole so that the top of the sleeve is just below the concrete surface. Tighten by a ratchet, socket or open-end wrench by turning clockwise until firm and secure. Packers or injection ports are supplied with a one-way ball valve or check valve.





4. Prepare Injection Equipment

Two pumps, one for water and one for chemical grout is always highly suggested, must be flushed with Hydro-Active Washing Agent prior to injection. By flushing you eliminate the moisture in the pump and lubricate the system.





5. Flush Crack

it is always necessary to flush the crack with water to remove debris and drill dust out of the cracks. Flushing will tell you how the crack will behave during grout injection and the water will prime the crack for the chemical reaction to occur.

6. Injection of Hydro Active Grouts*

Depending on nature of the crack, different polyurethane grouts can be injected. Please review the technical data and MSDS.

- H.A. CUT for non-moving cracks and gushing
- H.A. FLEX or H.A. FLEX LY for moving cracks or expansion joints above or below grade.
- H.A. SEALFOAM OF SEALFOAM NF for moving cracks in continuously moist/wet environments.

Remember, Always Itush pump with Washing Agent before starting the grouting. Mix the predetermined accelerator dosage with the HYDRO ACTIVE GROUT. Remember. no reaction will occur until grout with accelerator comes into contact with water.

Begin the injection at the lowest packer on a vertical crack, or at the first packer flushed for a horizontal crack. During injection, you will notice that water is displaced from the crack by the HYDRO ACTIVE GROUT. Continue injecting until HYDRO ACTIVE GROUT appears at the adjacent packer. Disconnect and start injection at adjacent packer. After injecting a few packers, come back to the first packer and inject all the ports for the second time. Some of the ports may take some grout, which will fill up and further density the crack. Injection pressure will vary from 200 psi to 2,500 psi depending on the width of the crack, thickness of concrete and condition of concrete.

7. Re-Inject Water

When you re-inject water into the injector, you cure the resin left behind in the drill hole. After injection, the packers or injection ports can be cut flush with the concrete surface, or can be removed from the injection holes. Remember to let the HYDRO ACTIVE GROUT Totally cure before removing the packers.







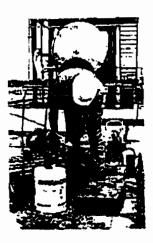
8. Surface Removal of Resin

Surface removal can be performed with a wire brush, scrappers or hand held grinders. Material will aggressively bond to concrete surfaces.



9. Equipment Cleaning

When the injection is finished, wash off all parts that have been in contact with the Grout. This should be done within 30 minutes after the injection. The washing can be easily performed by circulating DeNeel's Washing Agent through the injection pump for 10 to 20 minutes by connecting the inlet and outlet to a tank containing the Washing Agent. After recirculating the Washing Agent through the pump it is important to run the pump dry and to fill the pump all lines one more time with the fresh Washing Agent. Washing Agent is preferable since it is not flammable under normal conditions.



Equipment Required

HYDRO ACTIVE GROUTeand Accelerator (Review Material Safety Data Sheet for Safety and Handling precautions). Orli and Bits Injection Ports and tools for installation Water Pump - Hand Pump or Electric/pneumatic Pump Resin Plastic pail for mixing Rubber gloves/Goggles/Salety Equipment Rags/Oakum for surface sealing of large leaks Washing Agent - to clean pump Hand Tools

NOTE:

Our recommendations for use of the product are based upon tests believed to be reliable. Since field conditions vary widely, the user must determine the suitability of the product for the particular use and specific method(s) of application.

The following is made in fleu of all warranties, express or implied, including implied warranties of merchantability and fitness for a particular purpose. Seller's and manufacturer's only obligation shall be to replace such quantity of the product proved to be defective. Neither seller nor manufacturer shall be liable for loss or damage, direct, incidental or consequential, regardless of the legal theory asserted, including negligence and/or strict liability.



P.O. Box 1219 Waller, TX 77484 . Ph: \$36-372-9185 . Fax: \$36-372-9897 . www.deneel.com

HYDRO ACTIVE® SEALFOAM

Description

Hydre Active® Sealfoam is a low viscosity polyurethans injection resin designed to control water and seal moving non-structural cracks in concrete. Seatfoam is a hydrophilic resin which, when coming into contact with water, expands quickly to cure into a flexible closed-cell foam. After curing, it becomes an extremely tough and adheave foam capable of withstanding extreme thermal cycles and crack movement. Other applications include using saturated oil-free Osikum or open-cell feams for expansion joints or annulus soals.

Physical Properties

Uncured:
Callein

ASTM D2938 250-350 cps at 70°F Viscoelty **ASTM D1636** Color

Pale Yellow

Density 8.7 lbs/gal **ASTM D1638 Flashpoint** 75°F ASTM D93

Corrosiveness Non-corrosive

Reaction time 1/1 with water 20 sec

<u>Cured:</u> Tensile Strength 380 psi ASTM D3574-86 Elongation 400% **ASTM D3574-86** Bonding Strength 250-300 psi

Shrinkage <10% **ASTM D1042**

Toxicity Non-Toxic

Storage and Handling

Scaliform is sensitive to moisture and moderately sensitive to high storage temperatures, therefore, we recommend storage at 41°F - 60°F under dry conditions. Storage temperatures should not exceed 80°F. Once a pall has been opened, the useful life of the material is greatly reduced, and should be used as quickly as possible.

Seaffeam can be pumped using a single or plural component injection pump.

Due to the high risk of moisture contamination, Seatfoam should be removed from all application equipment immediately after use with De Neef Washing Agent.

Product Safety

Hydre Active® Sealfeam contains acetone and should be used only in well ventilated areas. Care should be taken to avoid conditions which could cause ignition: e. g., cigarettes, sparks, open flame..... Avoid eye and repeated skin contact.

Availability

Hydre Active® Sealfoam: 5 gal metal pall, close head with flexspout, filled and sealed under dry nitrogen,

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Monitoring Plan

Engineering Control Checklist-Cracking

Data Date: 3 FEB 2011

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