

**Environmental Engineers** 

November 24, 1999

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Rc:

IVI Project No. E9104681
Preliminary Results Letter
Office Depot Shopping Center
Ulster, New York

Dear Mr. Kosonen:

IVI Environmental, Inc. ("IVI") is pleased to provide you with the preliminary results of our Phase II Environmental Investigation ("Investigation"), performed on the Office Depot Shopping Center property located on Boices Lane and Ulster Avenue in Ulster, New York ("Subject"). This investigation was performed to delineate the extent of on-site groundwater contamination, encountered during a previous subsurface investigation performed by Property Solutions, as a result of a release from a former on-site dry cleaner.

On October 21, 1999, IVI installed six (6) groundwater monitoring wells (designated as MW-1, through MW-6) on the Subject. Three (3) wells were installed in the vicinity of the former dry cleaner (MW-1, MW-4, and MW-5), one (1) well was installed near the former septic system (MW-2), and two (2) wells were installed along the southern properly border (MW-3 and MW-6). Groundwater was encountered in the well borings at depths ranging from 7.28' to 9.42' below ground surface ("bgs"). As such, these wells were generally installed to a depth of 20' bgs, at least 10' below the groundwater elevation. Between October 22 and 25, 1999, IVI developed and sampled the monitoring wells. The samples were sent to York Analytical Lahoratories, Inc. for analysis of volatile organic compounds ("VOCs") in accordance with EPA Method 8260.

Laboratory analysis detected elevated concentrations of chlorinated solvents in monitoring wells MW-2, MW-3, MW-4, MW-5, and MW-6, above applicable NYSDEC Groundwater Quality Standards ("GQS"). Specifically, tetrachloroethylene ("PCE") was detected at concentrations between 6 ug/l and 160 ug/l in wells MW-2 through MW-6, trichloroethylene ("TCE") was detected at 31 ug/l in well MW-2, and 1-2-dichloroethylene ("DCE") was detected at 6 ug/l in well MW-2. The NYSDEC GQS for PCE, TCE, and DCE is 5 ug/l. No contaminants were detected in MW-1. The laboratory data is summarized in the table below.

Bear Stearns Commercial Mortgage, Inc. Preliminary Results Letter November 24, 1999 Page 2 of 2

Analytical Parameter	NYSDEC GQS (ug/l)	Sample Locations and Concentrations (ug/l)							
		MW-I	MW-2	MW-3	MW-4	MW-5	MW-6		
Teirachloroethylene	5	ND	140	47	160	6	50		
Trichloroethylene	5	ND	31	ND	ND	ND	ND		
1,2-Dichloroethylene	5	מא	6	2	ND	ND	3		
Trichlorofluoromethane		ND	ND	ND	1	ND	.ND		

#### Notes:

- 1. ND = Not Detected.
- 2. ... = No NYSDEC GQS available for this compound.
- 3. Shaded cells indicate an exceedance of NYSDEC GOS.

The analytical results indicate that the highest levels of contamination were encountered immediately behind the dry cleaner at well MW-4 and in the location of the former septic system at MW-2. However, elevated concentrations of PCE were also detected along the southern property border at MW-3, MW-5, and MW-6 indicating that groundwater contamination exceeding the NYSDEC GQS has migrated off the property.

IVI is currently awaiting the completion of the monitoring well survey by the Chazen Companies. Once the wells have been surveyed, IVI will be able to develop a groundwater contour map indicating direction of groundwater flow, as well as isopleth maps indicating the extent of the groundwater contamination. Upon completion of the maps, the Phase II Environmental Investigation Report will be completed by IVI summarizing all field activities, and analytical results, and providing recommendations for remediation and associated remedial cost estimates.

Please do not hesitate to call me at (914) 694-9600 should you have any questions regarding these preliminary results.

Sincerely,

IVI Environmental, Inc.

Brad Fisher

Project Manager

Reviewed by:

Jerry F. Vorbach, P.E., C H.M.M.

Vice President

K. Projects/E9104681/Prelim Results due

# PHASE II ENVIRONMENTAL INVESTIGATION

Office Depot Shopping Center Boices Lane and Ulster Avenue Ulster, New York 12401

IVI Project Number: E9104681

Prepared for: Bear Stearns Commercial Mortgage, Inc. New York, New York

> Prepared by: IVI Environmental, Inc. White Plains, New York

December 10, 1999



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December 10, 1999

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Re:

IVI Project No. E9094594 Phase II Environmental Investigation

Office Depot Shopping Plaza

Ulster, New York

Dear Mr. Kosonen:

IVI Environmental is pleased to provide you with this Phase II Environmental Investigation Report for the Office Depot Shopping Center located in Ulster, New York. This report summarizes the findings of our investigation, compares these findings with applicable New York State Department of Environmental Conservation regulatory ("NYSDEC") standards, and provides our conclusions and recommendations regarding follow-up activities.

Please do not hesitate to call me at (914) 694-9600 should you have any questions regarding this investigation.

Sincerely,

IVI Environmental, Inc.

Brad Fisher

Project Manager

Reviewed by:

Jerry Vobach, P.E., C.H.M.M.

Vice President

Sent-By-DHL

# TABLE OF CONTENTS

# Transmittal Letter

			Pag
1.0	Intr	oduction	I
	1.1	Project Background	
	1.2	Project Background	
	1.3	Previous Reports	
	1.3	Purpose and Scope	
2.0	Site	Geology/Hydrogeology	
	2.1	Site Topography	
	2.2	Site Soils	
	2.3	Site Geology	
	2.4	Site Hydrogeology	
3.0	Field	Investigation	
	3.1		
	3.2	Monitoring Well Installation	
	3.3	water 126 of Mounoling	
	د.د	Groundwater Sampling	
4.0	Findi	ings	
	4.1	Field Screening	
	4.2	Analytical Results	
5.0	Conc	lusions and Recommendations	
		APPENDICES	
	Site L	ocation Man	
	Boring	ocation Map	$\mathcal{L}_{i}$
		J **** 5'' *****************************	В
			C
			Ð
	200010	itory Results of Soil and Groundwater Samples	E
		FIGURES	
	Figure	1: Monitoring Well Location Map	<b>:</b>
	rigure	2: Groundwater Gradient Map	
	Figure.	3: Dissolved PCE Concentration Isopleth Map	_

#### 1.0 INTRODUCTION

IVI Finvironmental, Inc. ("IVI") is pleased to provide the results of our Phase II Environmental Investigation ("Investigation") of the Office Depot Shopping Center located at Boices Lane and Ulster Avenue (Route 9W) in Ulster, Ulster County, New York ("Subject").

IVI was retained by Bear Stearns Commercial Mortgage, Inc. ("BSCM") to perform a Phase II Environmental Investigation on the Subject in accordance with our agreement dated September 17, 1999. This Report is addressed to Bear Stearns Commercial Mortgage, Inc. ("BSCM"), such others persons as may be designated by BSCM, and their respective successors and assigns.

Reliance on the Report and the information contained herein shall mean (i) the Report may be relied upon by BSCM in determining whether to make a loan evidenced by a note ("the Mortgage Note") secured by the Property, (ii) the Report may be relied upon by any purchaser in determining whether to purchase the Mortgage Note from BSCM or an interest in the Mortgage Note including mortgage-backed securities, and any rating agency rating securities representing an interest in the Mortgage Note including mortgage-backed securities, (iii) the Report may be referred to in and included with materials offering for sale the Mortgage Note or an interest in the Mortgage Note, (iv) the Reports speaks only as of its date in the absence of a specific written update of the Report signed and delivered by IVI Environmental, Inc. ("IVI").

# 1.1 Project Background

The Subject is located on the southwest corner of the intersection of Boices Lane and Ulster Avenue (Route 9W) in Ulster, Ulster County, New York. The Subject is identified as Section 48.42, Block 3, Lot 20. A USGS Topographic Map depicting the Subject's location is provided in Appendix A.

The Subject is an irregularly-shaped 4.27-acre parcel improved with an approximately 37-year-old shopping center comprised of one (1) 1-story building occupied by Office Depot. Miron Liquors, and Empire Vision. The building foundation is slab-on-grade and the construction is of steel and masonry block. The building is heated and cooled by natural gas-fired rooftop package units. Surrounding properties are characterized by commercial development.

According to available information, a dry cleaner was present in the building approximately 15 years ago and occupied the space for approximately two (2) years. During the time the dry cleaner occupied the building, the Subject was connected to a private sanitary sewer system located on the western portion of the Subject.

# 1.0 INTRODUCTION - continued

### 1.2 Previous Reports

IVI reviewed environmental reports entitled *Phase I Environmental Site Assessment* and *Limited Phase II Subsurface Investigation*, dated September 9, 1999 prepared by Property Solutions, Inc. on behalf of BSCM. A brief summary of the findings of each of these reports is presented below.

Phase I Environmental Site Assessment

Property Solutions, Inc. conducted a Phase I Environmental Site Assessment ("Assessment") on the Subject. A review of this report indicated that a dry cleaner was located in the space currently occupied by Miron Liquors approximately 15 years ago. According to Mr. George Crevling, the Property Manager at the time of the Assessment, the dry cleaner occupied the space for approximately two (2) years. Mr. Crevling indicated that the Subject building, including the dry cleaner, were connected to a private septic system located on the western portion of the Subject. Property Solutions, Inc. recommended a Phase II Subsurface Investigation be performed on the property to determine the presence or absence of soil and/or groundwater contamination due to the former usage of the property by the dry cleaner.

# Limited Phase II Subsurface Investigation

Property Solutions, Inc. conducted a Limited Phase II Subsurface Investigation ("Investigation") on the Subject to determine whether historical on-site dry cleaning operations have contaminated the Subject's soil and groundwater. This investigation included the advancement of Geoprobe and hand-auger borings in the vicinity of the former dry cleaner, in the building, and in the vicinity of the former septic system, as well as the collection of soil and groundwater samples.

Property Solutions, Inc. advanced a total of four (4) borings in the vicinity of the former dry cleaner (designated as SB-01, SB-02, SB-05, and SB-6), two (2) borings inside the former dry cleaner space (designated as SB-03, SB-04, and SB-04a), and two (2) borings in the vicinity of the former septic system (designated as SB-07 and SB-08). The borings advanced around the former dry cleaner and in the vicinity of the former septic system were advanced into the soil/shallow groundwater interface at a depth of 12' below ground surface ("bgs") and the borings advanced inside the former dry cleaner space were advanced to depths of 3' and 12' bgs.

### 1.0 INTRODUCTION - continued

Nine (9) soil samples and three (3) groundwater samples were collected as part of the Investigation. The analytical results of the soil samples indicated that tetrachloroethylene ("PCE") was detected in borings SB-03, SB-04, SB-04a, SB-05, and SB-06 at concentrations between 42 ug/kg and 4.000 ug/kg. Only the 4.000 ug/kg concentration in boring SB-04 (advanced inside dry cleaner to a depth of 3° bgs) was detected at a concentration greater than the 1.400 ug/kg NYSDEC TAGM #4046 Soil Cleanup Objective for PCE.

The analytical results of the groundwater samples indicated that PCE and trichloroethene ("TCE") were detected in the groundwater samples collected from boring SB-07 (advanced in the area of the former septic system) and boring SB-04 (advanced inside the dry cleaner). Elevated concentrations of PCE above its NYSDEC Groundwater Quality Standard ("GQS") of 5 ug/l were detected in borings SB-07 and SB-04 at concentrations of 5.1 and 320 ug/l, respectively.

Based on the detected concentrations of PCE above its NYSDEC GQS, Property Solutions, Inc. recommended that the contamination be reported to the NYSDEC and an additional investigation be performed to delineate PCE groundwater levels following the installation of permanent monitoring wells.

## 1.3 Purpose and Scope

The purpose of this Investigation was to delineate the extent of PCE groundwater contamination in the vicinity of the former dry cleaner facility and the former septic system in excess of its NYSDEC GQS, and to provide remedial cost estimates, if warranted. Specifically, six (6) monitoring wells (designated as MW-1 through MW-6) were installed on the Subject and sampled as part of this Investigation.

#### 2.0 SITE GEOLOGY/HYDROGEOLOGY

#### 2.1 Site Topography

According to the United States Geological Survey (USGS) Kingston East. New York 7.5 Minute Series topographic map, the Subject's elevation ranges between 180° and 190° above mean sea level (msl). The topography of the area is characterized as generally flat with a slight downwards slope to the west-southwest. A copy of the USGS Topographic Map for the Subject is provided in Appendix A.

#### 2.2 Site Soils

According to the Soil Survey of Ulster County, New York, issued by the United States Soil Conservation Service, the soils at the site are classified as the Riverhead fine sandy loam (0-8% slope), a deep, well-drained, nearly level, coarse loamy sand formed in glacial lake and stream environments.

Observations made during the advancement of the monitoring wells indicates that the underlying soils are generally comprised of a fine to medium grain brown dark brown sand and clay with trace amounts of silt and gravel extending to a depth of approximately 15° below ground surface ("bgs") underlain by gray clay with trace silt extending to a depth of 17° bgs (the depth of termination of the wells). Boring logs depicting the lithology of the subsurface soils are provided in Appendix B.

# 2.3 Site Geology

There are no predominant geological surface features such as rock outcroppings on the Subject. According to a review of the Geologic Map of New York, dated 1970, the Subject is underlain by the Port Ewen Formation, the Alsen Limestone, the Becraft Limestone, the New Scotland Formation, the Kalkberg Limestone, the Coeymans Limestone, the Manlius Limestone, and the Rondout Dolostone. These formations consist of shales and limestones. Observations made during the advancement of the monitoring wells indicates that the depth to bedrock is greater than 17' bgs.

# 2.4 Site Hydrogeology

Observations made during the advancement of the monitoring wells indicates that shallow groundwater is present between 7.28° and 9.42° bgs. The direction of groundwater flow has been documented to be to the southwest. A copy of the groundwater contour map is provided in Appendix C as Figure 2.



#### 3.0 FIELD ACTIVITIES

The scope of this Investigation consisted of the following tasks: 1) installation and development of six (6) monitoring wells. 2) water level monitoring, and 3) groundwater sampling. These tasks are discussed in further detail below.

### 3.1 Monitoring Well Installation

On October 21, 1999 IVI installed six (6) monitoring wells (designated as MW-1, MW-2, MW-3, MW-4, MW-5, and MW-6) on the Subject. Specifically, three (3) wells were installed in the vicinity of the former dry cleaner (MW-1, MW4, and MW-5), one (1) well was installed near the former septic system (MW-2), and two (2) wells were installed along the southern property border (MW-3 and MW-6) in the downgradient direction from the former dry cleaner and septic system. The locations of the monitoring wells were selected based on the results of the previous Phase II Investigation. Monitoring well locations are shown on the Monitoring Well Location Map provided in Appendix C as Figure 1.

Monitoring well MW-1 was advanced 20' north of the front entrance of the former dry cleaner to a depth of 19.7' bgs. Monitoring well MW-2 was advanced near the former septic system on the western portion of the property to a depth of 19.69' bgs. Monitoring well MW-3 was advanced along the southern property border to a depth of 18.95' bgs. Monitoring well MW-4 was advanced 15' south of the rear door of the former dry cleaner to a depth of 19.80' bgs. Monitoring well MW-5 was advanced 75' east of MW-4 to a depth of 19.74' bgs. Monitoring well MW-6 was advanced along the southern property border 120' south of the rear door of the former dry cleaner to a depth of 19.78' bgs.

The monitoring wells were installed utilizing a truck-mounted drill rig. Prior to advancement of each well, all down hole drilling equipment was decontaminated in accordance with EPA protocols and good commercial and customary practice. At each well location, a nominal 8" borehole was advanced via 8" outer diameter hollow stem augers, from the ground surface until a depth of at least 10" below the soil/shallow groundwater interface (approximately 20" bgs).

The wells were installed with 13' of screen from a depth of approximately 2' above the soil/groundwater interface, observed during the advancement of each boring, to the bottom of the boring. The monitoring wells were constructed with 2" inner diameter, Schedule 40 PVC, 10-slot screen and a PVC riser equipped with a locking cap. A sandpack was placed around the well screen, extending above the top of the screen. Above the sandpack, a 3' layer of bentonite seal was placed and hydrated with potable water. The monitoring wells were completed with flush-mounted roadbox casings which were cemented in-place. Monitoring Well Installation Details are provided in Appendix 1).

#### 3.0 FIELD INVESTIGATION - continued

Following the completion of the monitoring wells, the wells were developed to establish the hydraulic connection between the well and the formation. A minimum of four (4) well volumes were purged from each well using dedicated bailers on October 22, 1999,

#### 3.2 Water Level Monitoring

Following the completion of the wells, the top of PVC casing and roadbox elevations were surveyed for relative elevation to the nearest hundredth of a foot. An arbitrary reference elevation of 50° for the top of the PVC easing of monitoring well MW-1 was used as a basis to determine relative easing and groundwater elevations. Water levels were recorded from each well to the nearest hundredth of a foot using an electronic water level indicator. The well installation data is provided in Table 2, below.

Table 2 Summary of Well Installation Data

Well Identification	Total Well Depth	Screened Interval	Diameter	PVC Casing Relative Elevation	Depth to Groundwater	Groundwater Elevation*
MW-1	19.70	6.70*-19.70*	2"	50.31	7.94	12 27
MW-2	19.69'	6.69*-19.69*	2"	49.10		42.37
MW-3	18.95	5.95`-18.95`	2"		7.28	41.82
MW-4	19.80`		·	49,97	9.42	40.55
A CONTRACTOR OF THE PARTY OF TH		6.80*-19.80*	2"	50.17*	7.86	42.31
MW-5	19.74	6.741-19.741	2"	50.86	8.56	
MW-6 Elevation data is ba	19.78	6.781-19.781	2"	40.56	\$.38	41.18

<sup>\*</sup> Elevation data is based on an arbitrary reference of 100° for the top of PVC casing of MW-1.

Based on the water level measurements obtained by IVI on October 25, 1999, the direction of groundwater flow is to the southwest. A Groundwater Contour Map is provided in Appendix C as Figure 2.

#### 3.3 **Groundwater Sampling**

On October 25, 1999 groundwater samples were collected from the monitoring wells for laboratory analysis utilizing the following procedures: 1) the wells were inspected for integrity and identification; 2) the static water level in the well was measured to the nearest hundredth of a foot; 3) the volume of water in the well was calculated using a volume factor of 0.163 gal/ft for 2" diameter well casings; 4) monitoring wells were purged using polyethylene bailers connected to a nylon rope; 5) each well was purged of at least (4) well volumes of water, and 6) VOC samples were collected in two (2) 40 ml vials in such a way that no air bubbles or headspace were present.

# 3.0 FIELD INVESTIGATION - continued

Groundwater samples were placed in appropriate sample containers, packed on ice in a cooler, shipped under proper chain-of-custody to York Analytical Laboratories, Inc. ("York") and analyzed for volatile organic compounds ("VOCs") in accordance with EPA Method 8260.



### 4.0 FINDINGS

#### 4.1 Field Screening

All collected soil samples were inspected for visual and olfactory evidence of contamination and screened for VOCs using a PID. PID readings of less than 2.5 parts per million ("ppm") were detected in boring MW-1 between 5° and 12° bgs; PID readings of less than 8.4 ppm were detected in boring MW-2 between 0° and 17° bgs; and PID readings of less than 3 ppm were detected in boring MW-3 between 10° and 12° bgs. No PID readings were detected during the advancement of monitoring wells MW-4, MW-5, and MW-6. Furthermore, no visual or olfactory indications of contamination were identified during the advancement of the monitoring wells.

One (1) soil sample was collected for analysis from MW-2 at a depth of 6'-7' bgs, representative of the highest PID reading. The soil sample was placed in an appropriate sample container, packed on ice in a cooler, shipped under proper chain-of-custody to York, and analyzed for VOCs in accordance with EPA Method 8260.

### 4.2 Analytical Results

Soil Samples

One (1) soil sample was collected as part of this investigation. The analytical results of the soil sample indicated that no detectable concentrations of chlorinated VOCs were found in the soil sample obtained from MW-2. The complete laboratory report is provided in Appendix E.

Groundwater Samples

Six (6) groundwater samples were collected as part of this investigation. Laboratory analysis detected elevated concentrations of chlorinated solvents in monitoring wells MW-2, MW-3, MW-4, MW-5, and MW-6, above applicable NYSDEC GQS. Specifically, PCE was detected at concentrations between 6 ug/l and 160 ug/l in wells MW-2 through MW-6, trichloroethylene ("TCE") was detected at 31 ug/l in well MW-2, and 1-2-dichloroethylene ("DCE") was detected at 6 ug/l in well MW-2. The NYSDEC GQS for PCE, TCE, and DCE is 5 ug/l. No contaminants were detected in MW-1.

A summary of the groundwater sample results is provided in Table 3, below. The complete laboratory report is provided in Appendix E.

# 4.0 FINDINGS - continued

Table 3
Summary of Laboratory Results for Groundwater Samples

Analytical Parameter	NYSDEC GQS	Sample Locations and Concentrations (ug/l)						
	(ug/l)	MW-1	MW-2	MW-3	MW4	MW-5	3134-6	
Tetrachloroethylene	5	ΩZ	140	47	160	Ġ	50	
Trichloroethylene	3	ND	31	ND	NO	ND	ND.	
1.2-Dichloroethylene	5	NĐ	6	2	ND	ND		
Trichlorofluoromethane	1	ND	\o	ND	1	ND	- ND	

Notes:

- 1. Levels are based on NYSDEC's January 24, 1994 Technical and Administrative Guidance Memorandum (TAGM) #4046 on Determination of Soil Cleanup Objectives and Cleanup Levels.
- 2. ND = Not Detected.
- 3. Only constituents detected in at least one sample are shown.
- 4. --- = No NYSDEC GQS available for this compound.
- 5. Shaded cells indicate an exceedance of NYSDEC GQS.

The analytical results indicate that the highest levels of contamination were encountered immediately behind the dry cleaner at well MW-4 and in the location of the former septic system at MW-2. However, elevated concentrations of PCE were also detected along the southern property border at MW-3, MW-5, and MW-6 indicating that groundwater contamination exceeding the NYSDEC GQS has likely migrated off the property. A Dissolved PCE Concentration Isopleth Map is provided in Appendix C as Figure 3.

# 5.0 CONCLUSIONS AND RECOMMENDATIONS

Elevated concentrations of PCE above NYSDEC GQS were detected in five (5) of the six (0) wells advanced on the Subject. Based on the close proximity of the wells to the former dry cleaner and the septic system, and the absence of detectable concentrations of dry cleaner solvents in the upgradient well MW-1, the contaminants found in the monitoring wells can be attributed to historical releases from the former on-site dry cleaner. The presence of contaminants in wells MW-3 through MW-6, which are located along the downgradient southern border of the property, indicates that contaminated groundwater has migrated off site.

IVI recommends that an additional investigation be conducted on the downgradient property, identified as Section 48.042 Block 03 Lot 26 and owned by Thomas J. Hoffman, Sr., involving the installation of monitoring wells, to delineate the extent of off-site contamination in excess of NYSDEC GQS. The estimated cost to complete this additional investigation is approximately \$10,000 to \$15,000.

Due to the presence of elevated levels of VOCs in wells MW-2 through MW-6 in excess of their respective NYSDEC GQS, IVI recommends that these exceedances be reported to the NYSDEC as a release as required under 6 NYCRR Part 595.3(b). A copy of this Investigation should also be submitted to the NYSDEC.

Following the completion of the additional investigation, the contaminated groundwater with levels of VOCs in excess of their respective NYSDEC GQS will require remediation. The most cost effective and most rapid remediation technology available for the VOC contaminated groundwater identified is in-situ chemical oxidation. The estimated cost to perform this remediation is approximately \$150,000 to \$200,000, depending on the extent of off-site contamination.

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