



Cambrian Geological, LLC
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January 30, 2008
Alex Marathas
Mid-Block Development
41 Trumbull Street
New Haven, CT 06510-1003

**Re: Sampling of Fill Material at Former Kresge Building
Center, Chapel, Church and Orange Streets
New Haven, CT
G08-010**

Dear Mr. Marathas,

At your request, Cambrian Geological, LLC (Cambrian) collected and analyzed samples of the fill material places at the site of the former Kresge Building, located near the center of the block formed by Chapel, Orange, Center, and Church Streets, New Haven.

Cambrian entered the site on January 25, 2008. A reconnaissance of the material was conducted to determine whether any obviously different types of fill had been placed there. No obvious differences were discerned, with the exception of a small area, about two square feet in extent, of oil-contaminated soil. This release clearly post-dated emplacement of the fill and because of its size, was not considered a significant feature of the fill.

Four samples were collected, one in each quadrant of the site. HS1, HS2, HS3, and HS4 were collected in the northwest, southwest, southeast, and northeast quadrants, respectively. All samples were collected at the surface of the fill material, since there was no known reason to sample from greater depth. No material from the small oil spill was included in the samples.

The samples were analyzed for Extractable Total Petroleum Hydrocarbons (ETPH) and total RCRA 8 metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium,

and silver). These are in general the most common soil contaminants. Cambrian had no knowledge that would suggest the presence of other contaminants excepting Polynuclear Aromatic Hydrocarbons (PAHs), which are always found with either petroleum or lead. Table 1 summarizes the laboratory data.

Table 1. Analytical Data.						
Sample	HS-1	HS-2	HS-3	HS-4	Res-DEC	GB-PMC
Depth, ft	0	0	0	0		
Units	mg/kg	mg/kg	mg/kg	mg/kg	ppm	ppm
ETPH	115	84	119	907	500	2500
Total Arsenic	2.2	4.1	2.9	2.4	10	ne
Total Barium	34.9	68	39.1	37.2	4,700	ne
Total Cadmium	0.8	0.9	1.1	0.8	34	ne
Total Chromium	13.4	14.2	16.8	11.1	100	ne
Total Lead	18.5	42.4	35.6	69.1	500	ne
Total Mercury	ND<0.5	ND<0.5	ND<0.5	ND<0.5	20	ne
Total Selenium	ND<0.5	ND<0.5	ND<0.5	ND<0.5	340	ne
Total Silver	ND<0.5	ND<0.5	ND<0.5	ND<0.5	340	ne

Metal concentrations in the samples were typical of uncontaminated soils. The lead concentration in sample HS4 suggests that a release may have occurred, but by itself is not conclusive. Concentrations of all total metals are below the Residential Direct Exposure Criteria (Res-DECs).

In contrast, all samples were found to contain ETPH, indicating that all have been impacted by a release or releases of petroleum since uncontaminated soil does not contain petroleum hydrocarbons at detectable concentrations (above 10 mg/kg). Sample HS4 exceeded the Residential DEC for ETPH.

Please call us at (203) 264-0607 if you have any questions.

Sincerely,
Cambrian Geological, LLC

Dennis R. Mac Caskie
PhD, LEP, CHMM, CPG
Geological Services Manager

Total Metals Analysis Report

TO: Dennis MacCaskie, Ph.D.
Cambrian Geological, LLC
339 Fish Rock Road
Southbury, CT 06488

Report Date: January 30, 2008
Sampled By: D. MacCaskie

RE: Analysis of four soil samples collected 1/25/08; received 1/25/08

Site Location: Church St., New Haven, CT

<u>Earthwise ID #>></u>	<u>16415</u>	<u>16416</u>	<u>16417</u>	<u>16418</u>		<u>QC</u>	
<u>Parameter</u>	<u>HS-1</u>	<u>HS-2</u>	<u>HS-3</u>	<u>HS-4</u>	<u>Units</u>	<u>Method</u>	<u>% Rec.</u>
Total Arsenic	2.2	4.1	2.9	2.4	mg/kg	6010B	104
Total Barium	34.9	68	39.1	37.2	mg/kg	6010B	100
Total Cadmium	0.8	0.9	1.1	0.8	mg/kg	6010B	102
Total Chromium	13.4	14.2	16.8	11.1	mg/kg	6010B	96
Total Lead	18.5	42.4	35.6	69.1	mg/kg	6010B	98
Total Mercury	ND<0.5	ND<0.5	ND<0.5	ND<0.5	mg/kg	6010B	99
Total Selenium	ND<0.5	ND<0.5	ND<0.5	ND<0.5	mg/kg	6010B	99
Total Silver	ND<0.5	ND<0.5	ND<0.5	ND<0.5	mg/kg	6010B	104

Please call if you have any questions or require additional information.

Report Certified By:
Michael F. Berman, Ph.D. _____
Laboratory Director
CT Certification PH-0227

ND=Not Detected
mg/kg=parts per million