

September 1, 2005

Mr. Nnamdi Madakor  
Washington State Department of Ecology  
Toxics Cleanup Program  
PO Box 47600  
Olympia, Washington 98504-7600

Re: 410 West Harrison Street and 410 Elliott Avenue West, Seattle, Washington  
Voluntary Cleanup Program Facility ID 69317824

Dear Mr. Madakor:

ENVIRON International Corporation (ENVIRON) has prepared this letter in response to the Washington State Department of Ecology's (the Department) March 1, 2005 letter to ENVIRON. In that letter, the Department offered several observations regarding the environmental conditions at 410 West Harrison Street and 410 Elliott Avenue West, Seattle, Washington ("the Properties;" see Figure 1), based on its review of environmental reports prepared by ENVIRON and submitted to the Department under the Voluntary Cleanup Program (VCP).

In this letter, we summarize the relevant soil and ground water conditions at the Properties, review the Department's March 1<sup>st</sup> letter and the applicable considerations in selecting a remedial approach, and recommend a course of action going forward. Specifically, it is ENVIRON's opinion that for reasons outlined in this letter, performing active cleanup to address ground water beneath the Properties is neither warranted nor practicable, and ENVIRON suggests that the contamination beneath the Properties be managed through institutional controls, and by establishing a restrictive covenant on the Properties to eliminate future threat to human health and the environment. ENVIRON believes that this approach is appropriate given the marginal level of ground water impact at the Properties, and is functionally consistent with the goals of site cleanups under Model Toxics Control Act (MTCA) Cleanup Regulations.

#### **SUMMARY OF SITE CONDITIONS**

Since February 2004, ENVIRON has performed several environmental investigations at the Properties, including a Phase I Environmental Site Assessment (Phase I), two subsurface soil and ground water (Phase II) investigations, and installation and sampling of eight ground water monitoring wells.

ENVIRON's Phase II investigations included collecting shallow soil and ground water samples from several locations throughout the Properties. Results of Phase II investigations identified concentrations of PCE in ground water slightly above the MTCA Method A cleanup level in the northeast corner of the Properties, although PCE was not detected in soil.

Based on these results, ENVIRON installed several monitoring wells on the Properties, and off-site along 4<sup>th</sup> Avenue West. Analytical results of ground water samples collected from the monitoring wells confirmed the presence of PCE in ground water at concentrations slightly above the MTCA Method A cleanup level beneath the northeastern corner of the Properties (MW-7; see attached figure), and in the off-site well MW-1, located upgradient from the Properties; these are the only monitoring wells of all those sampled on and adjacent to the Properties where the MCTA Method A cleanup level for PCE is exceeded. Even at these locations, the concentrations of PCE only slightly exceeded the cleanup level, ranging from 6.85 µg/L to 9.4 µg/L, with the highest concentration being detected in the off-site upgradient well. ENVIRON presented the results of its ground water sampling events to the Department in January 2005, and in its March 1, 2005 letter, the Department indicated that the observed PCE concentrations are suggestive of an off-site source. The Department also determined that, even if the source of PCE impacting the Properties is located off-site, further action is required to address ground water beneath the Properties in order to obtain a No Further Action (NFA) determination.

#### **GOAL OF CLEANUP ALTERNATIVES UNDER MTCA**

The ultimate goal of cleanup actions under MTCA is the protection of human health and the environment. To the extent practicable, MTCA requires that cleanup actions employ permanent solutions. However, MTCA also recognizes that in certain situations, permanent solutions may not be practicable. To evaluate whether or not certain cleanup actions are practicable for a given site, there is a well-defined process that weighs incremental costs of alternatives versus their potential benefits. If no permanent solutions are deemed practicable for an impacted site, cleanup actions consisting of institutional controls and a restrictive covenant in lieu of costly, active remediation that would likely result in minimal net benefit, can be a satisfactory approach to managing impacted sites at a reasonable cost. It is ENVIRON's opinion that the Properties discussed herein represent an example of a site where a permanent cleanup action would not be deemed practicable, and institutional controls and a restrictive covenant are appropriate cleanup measures.

#### **EVALUATION OF CLEANUP ALTERNATIVES**

In its evaluation of alternatives for cleanup actions at the Properties, ENVIRON has considered several factors, including the source, magnitude and extent of the contamination, current and future ground water use at the Properties and downgradient of the Properties, and potential risks to future site occupants due to the impacted ground water. These factors are discussed below.

Based on the results of ENVIRON's investigations, PCE in ground water above the MTCA Method A cleanup level is present upgradient from the Properties in the vicinity of well MW-1, and on site in the vicinity of well MW-7. The results of ENVIRON's investigations did not identify PCE in soil beneath the northeastern portion of the Properties. The absence of PCE in soil beneath the Properties, and the presence of PCE in the upgradient, off-site monitoring well at a higher concentration than on site suggests that the source of the contamination is located off site. ENVIRON did make an effort to

identify the off-site source by reviewing historical aerial photographs, Sanborn fire insurance maps, and Kroll Directories; an obvious off-site source was not identified.

Nonetheless, the results of ground water sampling from the network of onsite monitoring wells and discrete ground water sampling points (i.e., HydroPunch samples) demonstrate that ground water impacted above MTCA Method A cleanup levels is present upgradient from the Properties, and beneath the locally adjacent portion of the Properties in the immediate vicinity of well MW-7. The limited presence of PCE at concentrations below the MTCA Method A cleanup level at locations downgradient from well MW-7 indicate that PCE has not migrated significantly in the downgradient direction.

Although the PCE impacted ground water has not migrated off-site, ENVIRON reviewed a search of state and federal databases provided by Environmental Data Resources, Incorporated (EDR) to identify any potential downgradient or nearby drinking water wells. Based on the EDR report, no drinking water wells are located within one-half mile of the Properties, and none are located downgradient of the Properties. Given that the ground water in the vicinity of the site is not a used, or presumably usable, source of drinking water, and since the City of Seattle obtains the majority of its water from the Cedar River and Tolt River watersheds, there is not reason to believe that ground water from beneath or downgradient from the Properties, would ever be used as a drinking water supply.

ENVIRON has not performed a detailed risk assessment for the Properties. Nonetheless, based on the existing site use and zoning (commercial) and future redevelopment plans for the Properties (commercial), the only reasonably anticipated potentially significant exposure scenario would be for workers at the site via the vapor inhalation pathway. However, a conceptual evaluation of this possibility suggests that such exposure pathway does not and will not pose an unacceptable health risk. This conclusion is based on the combination of the very low PCE concentrations in ground water and the fact that the highest concentrations, such as they are, are beneath a well ventilated, three-story parking garage and not beneath the office space where people would be expected to spend more time and that could contain small spaces that could allow vapor concentrations to build.

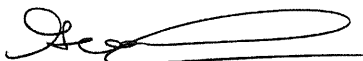
Having considered the above, it is ENVIRON's professional opinion that remediation of the ground water beneath the Properties is unwarranted based on the fact that the impacted ground water is limited to a small area and is not migrating off-site, the impacted ground water does not threaten any current or likely future drinking water supply, and the PCE concentrations pose no significant health risk for potential occupants of the Properties. In addition, because the PCE originates off site, remediation activities on the Properties, regardless of their nature, would not and could not provide the Department's preferred permanent solution because they would not address conditions at the unknown, upgradient source. In other words, a permanent solution is impractical from any reasonable perspective, and the implementation of a remedial scheme to incrementally lower already low PCE concentrations that pose no material threat to human health or a drinking water resource is unwarranted. The potential benefits of any active cleanup alternative will not be justified by its cost.

**CLEANUP SOLUTION**

Even though ground water beneath the Properties is impacted at concentrations barely above MTCA cleanup levels, the Department has indicated that it will not issue a NFA determination without additional action. Given that the existing ground water concentrations do not present a threat to human health or the environment, and that it is not practicable to implement any permanent cleanup solution, a cleanup approach using institutional controls and a restrictive covenant would mitigate future potential threat to human health and the environment by eliminating potential routes of exposure to contaminated ground water and vapors in contact with the ground water beneath the Properties. Institutional controls including prohibiting the installation of any drinking water wells, maintaining an impermeable surface cap (concrete, asphalt or building slab) throughout the Properties, and restrictions against any site activities that could result in exposure to impacted ground water or vapors (e.g., excavation) would be used. ENVIRON believes that such an approach is appropriate for the Properties and is consistent with the goals of MTCA's selection of cleanup action guidelines. ENVIRON requests the Department's concurrence with this approach.

If you have any questions regarding this letter, please contact George Linkletter or Farshad Razmdjoo at (949) 261-5151, or Devon Rowe at (360) 601-8315.

Sincerely,



George Linkletter, Ph.D., P.G.  
Principal



Farshad Razmdjoo, REA  
Principal

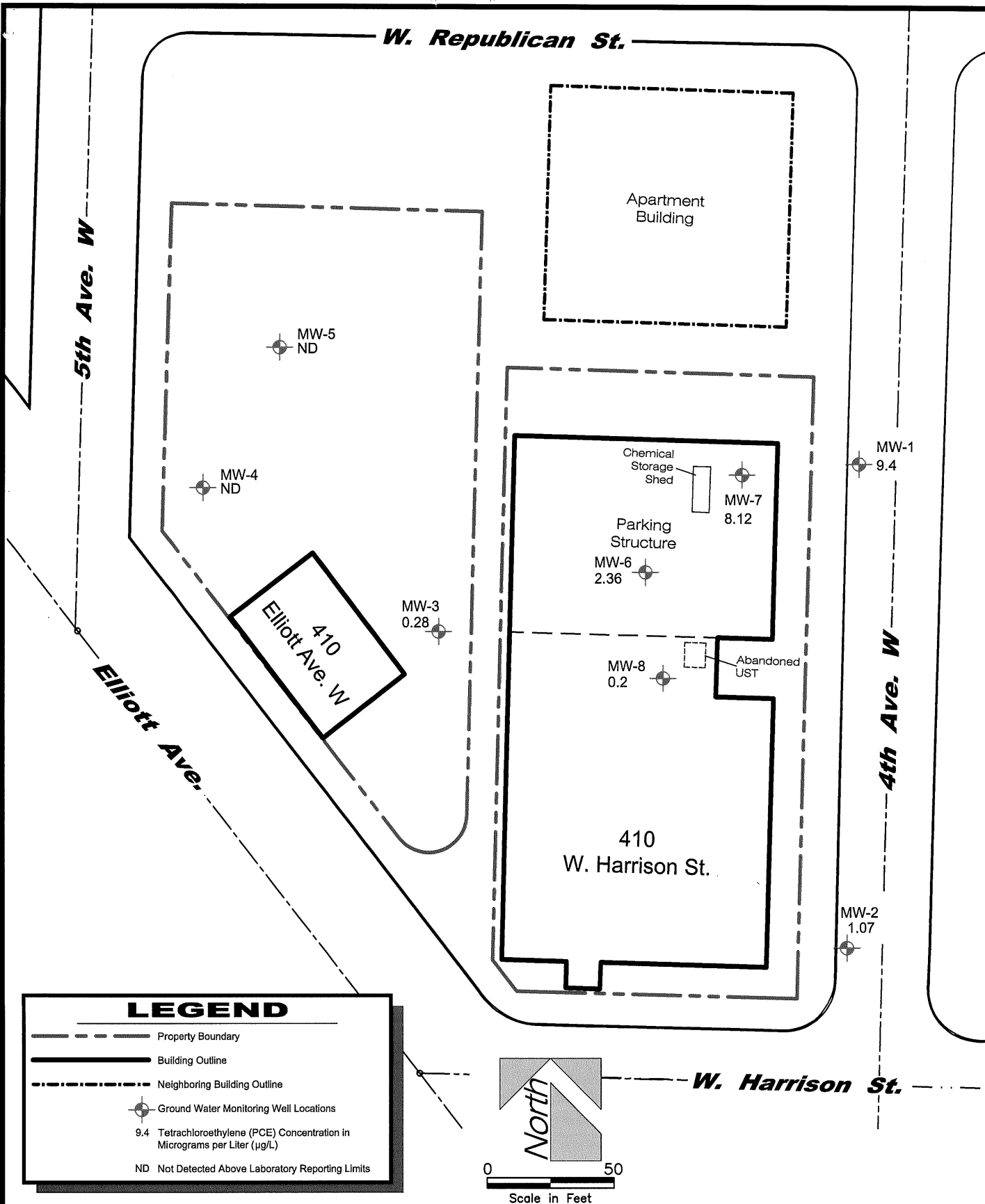


Devon Rowe, L.G.  
Senior Associate

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Attachment: Figure 1

cc: Vahe Simitian - Alexandria Real Estate Equities, Inc.  
Preston Brooks, Esq. - Cox, Castle & Nicholson LLP



**ENVIRON**

**PCE Concentrations in Ground Water - October 2004**

410 W. Harrison St. and 410 Elliott Ave. W  
Seattle, Washington

**Figure  
1**

Drafter: JJC

Date: 11/03/04

Contract Number: 04-7590DR.3

Approved:

Revised:

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