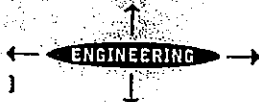


# Environmental Safety Health Geotechnical

O'Reilly, Talbot & Okun  
[ A S S O C I A T E S ]



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August 30, 2004  
File No. 796-11-01

Richard Cushing, LSP  
c/o Ducharme & Wheeler, Inc.  
1092 Main Street  
Bolton, MA 01740

Subject: Notice of Noncompliance (NON-CE-04-3076)  
CRWSC - Ayer  
211 West Main Street  
Former Empire Cleaners  
Explanation of Imminent Hazard Evaluation

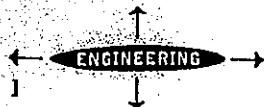
Dear Mr. Cushing:

This letter is to describe the relationship between O'Reilly, Talbot & Okun Associates, Inc. (OTO), yourself, and Ducharme & Wheeler, Inc. in connection to the preparation of an Imminent Hazard Evaluation for the above referenced Site. The letter also discusses certain exceptions taken by MA DEP with regards to the approach used by OTO in its work.

On September 30, 2003, Ducharme & Wheeler provided OTO with soil gas data from the Site and asked OTO to calculate preliminary indoor air inhalation risks for site workers. As you know, OTO offers risk assessment services to LSPs as part of our consulting business. The soil gas data indicated that tetrachloroethene (also known as perchloroethylene or PCE) was detected in sample SG-1 (located on the west side of the building) at 159,000 ug/m<sup>3</sup>, and in sample SG-5 (located on the northside of the building) at 2,400,000 ug/m<sup>3</sup>.

Based on the maximum soil gas concentration of PCE (i.e., 2,400,000 ug/m<sup>3</sup>), an indoor air concentration for PCE was calculated, in accordance with the MA DEP recommended approach, using the USEPA soil gas screening (SG-SCREEN) spreadsheets (Version 2.0, 04/03) for the adaptation of the "Johnson and Ettinger (1991) Model for Subsurface Vapor Intrusion into Buildings". Inhalation risks were calculated for a site worker assumed to be present in the building for 8 hours/day, 5 days/week, 236 days/year for 27 years. Toxicity values for PCE were obtained from a review of the most recent MA DEP and USEPA sources. The selected toxicity value for PCE were those presented in the USEPA Region III Risk-based Concentration Tables (April 2003), since these values incorporated the most recent toxicological data. The calculated risks exceeded MA DEP risk limits for No Significant Risk.

At that time, OTO verbally informed Ducharme & Wheeler of this finding. Ducharme & Wheeler and OTO discussed collecting indoor air samples to provide a better representation of indoor air conditions.



On February 19, 2004, Rich Cushing, representing Ducharme & Wheeler, called us to request that we prepare an Imminent Hazard Evaluation for the Site in accordance with 310 CMR 40.0955. It is our understanding that your request in this situation was prompted by the measurement of indoor air concentrations of PCE in two samples collected on February 10, 2004 in the building at 211 West Main Street. The building was occupied by a video store.

On February 23, 2004, OTO submitted an Imminent Hazard Evaluation for the site to Ducharme & Wheeler. In this evaluation, OTO selected an inhalation unit risk for tetrachloroethylene (PCE) of  $5.7E-06$  ( $\mu\text{g}/\text{m}^3$ )<sup>-1</sup>. This unit risk factor was obtained from USEPA Region III Risk-based Concentration Tables (April 2003). It was at that time, and continues to be, OTO's best scientific judgment that this toxicity factor best reflects the state of toxicological knowledge, since it is based on the most recent toxicological data.

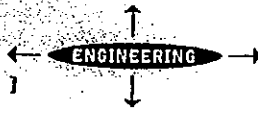
Note that an inhalation unit risk was not available in other USEPA sources, including Integrated Risk Information Service (IRIS) (February 2004) and Health Effects Assessment Summary Tables (HEAST) (July 1997). These are the preferred sources for risk characterizations under the MCP.

The human health risk calculated by OTO using the USEPA unit risk factor did not identify an Imminent Hazard Condition for part-time workers at the site (calculated as a 2 year exposure period for an employee working five 4-hour shifts per week). However, the evaluation did conclude that there was a potential for significant carcinogenic risk to full-time workers (an employee working for a 5 year exposure period for five 8-hour shifts per week).

On March 8, 2004, Ducharme & Wheeler informed OTO that in the course of a MA DEP review, the Department had identified "errors" in the risk calculations. The specific "error" that MA DEP identified was that the MA DEP recommended inhalation unit risk PCE ( $5.5E-05$  ( $\mu\text{g}/\text{m}^3$ )<sup>-1</sup>) had not been used in the evaluation. The MA DEP's unit risk was posted on the MA DEP web page in 1998, and was derived based on toxicological data published in 1985 and 1986. OTO's use of the USEPA Region III risk factor was based on our conclusion that the USEPA value better reflected current scientific knowledge and also on the MCP's clearly stated preference for toxicity values from USEPA sources (310 CMR 40.0993(5)).

OTO subsequently recalculated the inhalation risks for workers at the site building using the MA DEP inhalation unit risk. These calculations identified an Imminent Hazard Condition for full-time and part-time site workers.

OTO acknowledges that the MA DEP inhalation unit risk for PCE was not used in the Imminent Hazard Evaluation. While still required by the Department, the MA DEP inhalation unit risk for PCE will be used by OTO in future MA DEP submittals.



If you have any questions or comments regarding this information, please contact us.

Very truly yours,  
O'Reilly, Talbot & Okun Associates, Inc.

Debra M. Listernick  
Associate/Senior Risk Assessor

for James D. Okun  
Principal