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January 18, 2005

GeoInsight Project 2532-002

Alewife Neighbors, Inc.  
Attn.: Gretchen Von Grossmann  
11B Jackson Street  
Cambridge, MA 02140

RE: Review of Response Action Outcome Statement, Risk Characterization,  
and Activity and Use Limitation  
W.R. Grace & Co.-Conn  
62 Whittemore Avenue  
Cambridge, Massachusetts  
DEP RTN 3-0277

Dear Ms. Von Grossmann:

GeoInsight, Inc. (GeoInsight) prepared this letter to summarize our comments regarding the public comment draft of the Class A-3 Response Action Outcome (RAO), Method 3 Risk Characterization, and Activity and Use Limitation (AUL) associated with the W.R. Grace & Co. – Conn. site located at 62 Whittemore Avenue in Cambridge, Massachusetts. Our specific comments to these documents are summarized below.

## **RESPONSE ACTION OUTCOME STATEMENT AND METHOD 3 RISK CHARACTERIZATION**

### 1. No Conceptual Site Model

Based upon a review of historical reports for the site, we were unable to find or identify a formal “Conceptual Site Model” associated with the site and historical releases/conditions. The absence of a conceptual site model to explain the distribution and magnitude of impacts at the site makes it difficult to evaluate whether the scope of historical sampling activities completed at the site was appropriate to properly characterize impacts. Without an understanding and discussion of suspected sources and likely migration characteristics, it is difficult to evaluate whether appropriate data were collected to fully support the Method 3 Risk Characterization and whether the appropriate range of potential site risks were evaluated. The conceptual site model is an important Massachusetts Contingency Plan (MCP) tool for identifying suspected source(s), showing how the impacts associated with these source(s) migrated to areas where they have been detected, and how these impacts may behave in the future. The apparent absence of a conceptual site model for the W.R. Grace & Co. – Conn site makes it difficult to evaluate whether all potential sources or migration pathways have been properly characterized.



## 2. Discounting In-Situ Bioremediation as a Comprehensive Response Action

In-situ bioremediation (ISB) was conducted as part of a Release Abatement Measure (RAM) in a localized area of the site to treat petroleum hydrocarbons that exceeded Upper Concentration Limits (UCLs) in a soil boring. Results from the RAM indicated that ISB was successful in reducing hydrocarbon concentrations in soil. However, ISB was not considered during evaluations completed for the Phase III – Identification, Evaluation and Selection of Comprehensive Remedial Action Alternative or RAO as a comprehensive remedial solution to address impacts (that are present below the UCL) in other areas of the site. Instead, the RAO indicates that remediating petroleum hydrocarbons in soil would require excavation and soil disposal at a secure landfill, and (because of the presence of asbestos) this was estimated to cost greater than \$1,000,000. However, it is unclear why ISB was not considered a potential remedial alternative when ISB was shown to be effective at the site. Unlike excavation and off-site disposal, it appears that ISB would not disturb the asbestos-impacted soil to the same degree as large-scale soil excavation, and therefore, may be less expensive than large-scale soil excavation. In addition, it may be feasible to apply ISB to those portions of the site where residual petroleum impacts to soil are greatest or most localized.

## 3. Remediating Beyond the Area Exceeding UCL

The enhanced ISB remedial program included in the RAM referenced above was conducted in a relatively localized area where the concentrations of petroleum hydrocarbons in soil exceeded applicable UCLs. While it is certainly appropriate to remediate UCL exceedences due to future public welfare concerns, additional response actions are usually conducted under the MCP even when concentrations are below UCLs. Where feasible, MCP remedial goals are to achieve background.

## 4. Other Potential Contaminants of Concern

Without a CSM, it is difficult to evaluate whether other compounds associated with the release(s) may be present that could contribute to total site risk and should have been included in the risk characterization. For example, polychlorinated biphenyls (PCBs) were detected at concentrations ranging from 0.046 milligrams per kilogram (mg/kg) to 0.260 mg/kg in each of the soil samples collected by the United States Environmental Protection Agency (USEPA) from the former bioremediation beds. Although these concentrations are below applicable Massachusetts Reportable Concentrations, the presence of PCBs in these samples suggests that PCBs were associated with a release at the site, because PCBs are not naturally-occurring compounds and could be associated with petroleum hydrocarbons, which have been detected at the site. Although they were detected in samples of soil from the former bioremediation beds, cumulative risks associated with PCBs were not included in the Method 3 Risk Characterization attached to the RAO.

## 5. Conditions of Substantial Release Migration

There appears to be a Condition of Substantial Release Migration (SRM) associated with impacted ground water from the site leaking into the MBTA tunnel. This condition was described in previous characterization reports and therefore does not require new notification to



the Massachusetts Department of Environmental Protection (MADEP).<sup>1</sup> The response to the detection of impacted ground water entering the MBTA tunnel described in the RAO consisted of providing the analytical data to the MBTA and suggesting “that it would be appropriate for them to fix the leaks in the tunnel.” The actions completed to “address” this condition (i.e., letter to MBTA) do not appear to be appropriate based upon the type and nature of the SRM condition (i.e., it appears unusual to request MBTA to fix a leak that is only a problem because of impacts associated with release site conditions). It is unknown where the ground water accumulating in the MBTA tunnel is ultimately discharged and whether the impacts from this site are adversely affecting the receiving water body. In addition, it is unknown how long this condition will continue to occur and whether conditions may change over time. Regardless of risk, response actions should be considered to mitigate the impacts associated with this condition of SRM.

#### 6. MCP Response Action Deadlines

Although Enhanced ISB was selected in the February 2000 Phase III Remedial Action Plan as the remedial action alternative for the site, enhanced ISB was actually implemented as a Release Abatement Measure (RAM), which appears to have been an unusual change from the phased MCP process. Under the phased MCP process, the Phase III selects the remedial alternative, and remedial design and proposed implementation are usually presented in a Phase IV Remedy Implementation Plan. System installation and monitoring are then described in the Phase IV As-Built Construction Report and Phase V Operation, Maintenance and/or Monitoring reports, respectively. The RAO report does not indicate why the phased MCP process was apparently discontinued after Phase III activities were completed and the response actions were conducted as a RAM. The deadlines and reporting requirements for the Phase IV and Phase V reports appear to have been missed. To ensure that performance standards are met at release sites, the MCP specifies certain requirements for documenting the design, installation, operation, and closure of remedial systems. This type of information is typically presented in the Phase IV and Phase V reports, and provides a basis for documenting and evaluating future remedial actions. The RAO report did not indicate whether information provided in the RAM documentation was consistent with the Phase IV and Phase V requirements of the MCP.

#### 7. Future Research on Asbestos Health Risks

The unit risk for asbestos fibers provided by the United States Environmental Protection Agency (0.23/f/ml) was developed using Phase Contrast Microscopy (PCM) as the measurement tool for asbestos fibers in air samples. The PCM method uses an optical microscope to measure asbestos fibers, and the smallest fiber size that can be quantified by this technique is approximately 5 microns in length. Therefore, because the occupational studies used to develop the unit risk relied upon the PCM method to quantify asbestos fibers, the unit risk for asbestos fibers was based upon measurements of fibers greater than 5 microns. However, newer analytical methods, such as transmission electron microscopy (TEM) are capable of measuring asbestos fibers smaller than 5 microns in length. Future occupational studies may provide additional information on risks associated with the fraction of asbestos fibers that are smaller than 5

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<sup>1</sup> For reference, new conditions of SRM require notification to MADEP within 72 hours and implementation of Immediate Response Actions (IRAs) in response to the release condition. Please note that notification for the new Condition of SRM referenced above is based upon detectable concentrations in subsurface structures, not whether potential risks associated with these impacts exist (i.e., response actions are required regardless of risk).



microns in length. The Risk Assessment should be re-evaluated if future data indicate a change in the unit risk or in the size of asbestos fibers that are a health risk.

## ACTIVITY AND USE LIMITATION

### 1. Required Minimum Activities for Future Development

The AUL should be modified to specifically reference the plans, field procedures, and public notification actions required for future “Intrusive Activity” as defined in the AUL. The specific items that should be incorporated into the AUL are listed below.

- RAM Plan – The AUL should specify that if intrusive activities are proposed for the site, a Release Abatement Measure Plan must be prepared for public comment and submitted to MADEP.
- Field Procedures – The AUL should specify the minimum field procedures, including ambient air monitoring and work stoppage conditions, that must be followed in the event of future intrusive activity. The minimum field procedures specified in the AUL can be based upon the existing Cambridge Asbestos Ordinance.
- Public Notification – The AUL should specify the minimum public involvement procedures that must be conducted in the event of intrusive activity, including notification to local residents at least 20 days prior to the estimated start of on-site activities.
- Municipal Notification – The AUL should indicate that, at a minimum, notification regarding proposed intrusive activities should be provided to the City of Cambridge at least 20 days prior to the estimated start of on-site activities.

### 2. Licensed Site Professional Participation

We concur with and support comments presented at the December 16, 2004 Public Meeting that the AUL be modified to specify that a Licensed Site Professional (LSP) must assist a Certified Industrial Hygienist in preparing a site-specific Health and Safety Plan for future activities that will result in disturbance of subsurface soils at the site.

Please contact us if you have questions or would like to discuss the information summarized above.

Sincerely,  
GEOINSIGHT, INC.

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