



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

*We Protect Hoosiers and Our Environment.*

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October 9, 2009

VIA CERTIFIED MAIL 7000 0600 0086 8552 6861

Mr. Jamieson M. Schiff  
Textron, Inc.  
40 Westminster Street  
Providence, RI 02903

Re: **Further Site Investigation Request**  
Textron-TORX Facility  
Acument Global Technologies  
4366 North Old US Route 31  
Rochester, Fulton County  
State Cleanup Site #7100149

Dear Mr. Schiff:

The Indiana Department of Environmental Management (IDEM) has evaluated the file for the former Textron-TORX facility (Site), now owned and operated by Acument Global Technologies. The facility is located near Rochester, Indiana and the Site includes properties in the vicinity for a distance of nearly one mile (east, southeast, and southwest) that have been affected by contaminant migration. Specifically, the following documents were evaluated:

- *Further Site Investigation* (MACTEC, August 13, 2009)
- *Vapor Monitoring Report* (MACTEC, April 14, 2009)

As a result of our evaluations, we have determined that you must conduct an additional phase of Further Site Investigation (FSI) in order to fully delineate the nature and extent of contamination in accordance with Indiana Code IC 13-25-4 for hazardous substances. For clarity, please enumerate future report titles for reference (i.e.: *Further Site Investigation 2*). Guidance on how to characterize the nature and extent of the contamination can be found in IDEM's *Risk Integrated System of Closure (RISC) Technical Resource Guidance Document*, February 2001. The RISC guidance documents are available online at <http://www.in.gov/idem/4200.htm>.

Listed below are General and Specific Comments which must be addressed in the next phase of FSI. The IDEM comments will be presented separately for each report. The first set of comments pertains to the Vapor Monitoring Report.

### Vapor Monitoring Report General Comments

In December 2008, MACTEC installed 24 soil vapor probes in 12 soil vapor monitoring wells. In April 2009, 21 vapor samples were collected. The soil vapor monitoring data are useful, but are

not in complete conformance with IDEM guidance. IDEM prefers to collect samples from within residences paired with subslab sampling to directly measure vapors in and under the residences. The MACTEC method of placing soil vapor wells in yards near the residences was less intrusive, but also less effective to make a determination of the potential for vapors within the residences. In addition, the full Quality Assurance/Quality Control (QA/QC) data were not submitted to allow validation of the data collected. IDEM will decide on the validity of the soil vapor data after the QA/QC data are submitted and evaluated.

### **Vapor Monitoring Report Specific Comments**

The soil vapor monitoring results were less than the IDEM Draft Vapor Intrusion Pilot Program Guidance (DVIPPG) residential screening results found in Table 7. The soil vapor monitoring well sample results showed no detections of contaminants that were at or near a level that would be a threat to public health. However, the QA/QC documentation for the samples listed in Appendix VI of the DVIPPG was not provided. Please submit this documentation for validation by the IDEM Chemist.

The full extent of the ground water plume has not been delineated. The locations of the vapor monitoring wells, graphically described in Figure 2 of the Vapor Monitoring Report, appear to include all properties with buildings within 100 feet of the ground water contamination as defined at the time. The adequacy of the sampling locations will be reconsidered once the plume is fully delineated.

The text is not clear as to what size canister was used for sampling the soil gases in this investigation. IDEM recommends the use of 400 milliliter (mL) or one liter (1 L) canister when sampling sub-slab or soil gas samples. Please clarify what size canister was used.

According to the IDEM DVIPPG, the preferred method to assess indoor air impacts for chlorinated compounds is to collect indoor air samples paired with sub-slab or crawlspace air samples from buildings. Also, in conformance with the DVIPPG, with comparisons to the ground water sample results, the Jefferies residence should be investigated with indoor air and sub-slab vapor sample collection. Soil gas samples are recommended when indoor air, sub-slab, or crawlspace samples cannot be collected.

### **Vapor Monitoring Report Conclusions**

MACTEC did not collect indoor air samples paired with subslab or crawlspace samples, but instead collected samples from soil vapor wells near on-site buildings and in the yards of residences. In consideration of the lack of significant detections from the non-ideal soil vapor monitoring wells and the subsequent subsurface investigation results (the August 13, 2009 FSI Report) it appears that there are no threats to residential indoor air in the area of the site. However, IDEM requires submittal of the QA/QC data for the analytical results before being able

to reach a final conclusion. The soil vapor monitoring results remain inconclusive until the QA/QC data are submitted and evaluated to validate the data.

### **Further Site Investigation General Comments**

A wide-ranging investigation, primarily of ground water conditions, has been conducted during the first half of 2009. This included 24 soil borings and 82 monitoring wells installed in the unconsolidated and bedrock aquifers on-site and down-gradient toward the Tippecanoe River. The broad features of the plume of chlorinated hydrocarbons in ground water due to historic activities at the TORX facility have been identified. Vertical delineation may have been achieved, however full QA/QC documentation of the sample data was not provided. IDEM cannot agree with the determination of the vertical extent of contamination until the QA/QC requirements are met. The details of the vertical distribution of contaminants are obscure due to the intricate inter-layering of fine-grained strata with the locally more abundant gravelly sand. The consultant believes that vertical gradients explain these details. These likely cause much of the observed irregularity in contaminant distribution, but the numerous, discontinuous clay layers and lenses must also play an important role. Small pockets of dense non-aqueous phase liquids (DNAPL) or contaminated soil are likely present in patterns determined by both of these hydrogeologic factors.

The historical on-site soil sampling near the former degreaser pit did not include any sampling locations directly below the pit due to the technical difficulties of obtaining such samples, as well as the now obsolete soil sampling methods employed. Sludge sampling at the wastewater pond was confined to relatively shallow depths. The oily sludge in the pond may have contributed to a chemically reducing environment in which the chlorinated compounds of concern broke down much more quickly than in the aquifer at large. The septic drain field and tank areas have not been investigated. It is appropriate to conduct further source area investigation at the site below the former degreaser, below the former footprint of the pond, and in the septic drain field and tank areas to adequately assess the potential source areas. These efforts need to be included in the next phase of FSI.

There is a core area in the aquifer near and immediately down-gradient of the former TORX facility where contaminant concentrations are much higher than in the dilute plume tail. An active remedy, such as pumping or chemical oxidation, may be capable of reducing contaminant concentrations here to significantly reduce the lifetime of the contaminant plume.

### **Further Site Investigation Specific Comments**

Several volatile organic compounds (VOCs) were detected at concentrations in excess of the RISC Residential Default Closure Levels (RDCLs), and are reported in Tables 11 and 13. Cis-1,2-dichloroethene (cis-1,2-DCE), trichloroethene (TCE), vinyl chloride (VC), and 1,1,-DCE were all detected in samples from at least 1 sampling location. These are the chemicals of concern for the subsurface investigation.

MACTEC did not provide the full Level IV QA/QC documentation necessary to validate the data as described in Appendix 2 of the RISC Technical Resource Guidance Document, and listed on the internet at: [http://www.in.gov/idem/files/riscotech\\_app2.pdf](http://www.in.gov/idem/files/riscotech_app2.pdf). The off-site laboratory information provided was only sufficient to fulfill the Minimum Data Documentation Requirements, also on the internet at: <http://www.in.gov/idem/5058.htm>, which is acceptable only for monitoring data from petroleum sites, not for determination of the final nature and extent of contaminations or closure status. Therefore, the data provided can only be viewed as an indication of the current site conditions and to direct how future investigations should proceed, but cannot be used for determination of the nature and extent of contamination. Full QA/QC documentation is required.

According to Table 14, no metals were detected at reportable concentrations. However, the QA/QC documentation supporting the data was not sufficient to validate the results. Therefore, IDEM does not accept the determination of the nature and extent of contamination as complete. Please provide full QA/QC documentations for the sample data.

#### **Pond Surface Water and Sediment Sampling**

The East Pond surface water and sediments were sampled and no contaminants were reported above their RDCLs. However, the QA/QC documentation supporting the data was insufficient to validate the results. Please provide full QA/QC documentations for the sample data.

The text often references USEPA Maximum Contaminant Levels (MCLs). Please note that IDEM is managing this site in accordance with the RISC guidance and the RISC Closure Levels should be cited for closure levels.

Samples were collected to determine the efficiency of the drinking water filters at several of the residences in the area surrounding the property. Samples were collected from the raw water, midpoint, and the finished water sampling locations. Results indicated that the filtration systems were functioning well and were adequately protecting the residents from exposure. However, the results reported in this document were not supported by the full QA/QC documentation that would allow for validation of these data.

MACTEC concluded that based on contaminant distribution, 1,4-dioxane is due to up-gradient sources and not the former TORX facility. Ground water flow has been established to be towards the south and southeast. It is reasonable to state that much if not all of the 1,4-dioxane originates from up-gradient of the site.

According to Figure 17, it appears that the eastern extent of the contamination has not been defined. IDEM agrees with the contractor's assessment that additional monitoring wells are needed to define the ground water contamination related to the site. As proposed by MACTEC, further delineation of ground water contamination due to chlorinated hydrocarbons east of the locations of monitoring wells MW-31 and MW-32 is justified.

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There is a large triangular area, defined by MW-21, MW-30, and MW-47, that does not have any monitoring wells defining the western extent of the contamination. IDEM suggests the installation of at least one additional monitoring well in this triangular area to define the contamination in this area.

Title and Signature Page: The license number for Laura Stirban, LPG should be included here.

Section 4.4, page 4-4: "Based on the drawdown recorded in the background well nest (MW-22), the static water drawdown is 0.35 feet or less." This sentence is obscure and should be clarified. Judging from the discussion in Appendix F, MACTEC may have intended to say that over the period under discussion the aquifer as a whole was dewatered due to seasonal variation in recharge, and that the amount of drop in static water elevation in MW-22 was taken to be the baseline for the aquifer. Please clarify the statement.

Section 5.2.2, page 5-3: MACTEC reasons that cessation of use of the water supply well at 4375 Old U.S. 31 is responsible for the non-appearance of vinyl chloride in the nearby monitoring wells. This may be true, but the site hydrology and stratigraphy are complicated enough that other factors may be responsible. All the wells in question should be monitored for several events to provide more data.

Appendix B, Figures 6 to 10 (Geologic Cross Sections): IDEM agrees that historic water supply well logs are often inaccurate, but their contents should be noted on these figures where applicable. In some cases they may explain discrepancies, e.g., the presence of vinyl chloride in water supply well number 4375 may be due to a stratigraphic window in the clay layer there compared to the nearby monitoring well.

Appendix F: The hydrologic calculations in this appendix appear to be reasonable.

### **Further Site Investigation Conclusions**

Results from several investigations support the contractors' conclusions that the nature and extent of the contamination has been determined with the exception of the southeastern leading edge of the contaminant plume. MACTEC's proposal to further investigate the ground water east of the locations of the MW-31 and MW-32 monitoring wells is justified. IDEM also recommends additional investigation to the west to better delineate the western edge of the plume in the area between monitoring wells MW-21, MW-30, and MW-47.

Full QA/QC documentation is necessary to validate the sample results. IDEM requires submittal of the QA/QC listed in Appendix VI of the DVIPPG for the Vapor Intrusion Investigation. IDEM also requires submittal of the full Level IV QA/QC information for the residential drinking water samples, the ground water samples, and the pond surface water and sediment samples.

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The ground water investigation has largely delineated the contaminant plume. The central area near the site may be susceptible to treatment to significantly reduce the lifetime of the plume and return the aquifer to the status of a useful resource in the future. The consultant's proposals for the next actions to take are reasonable. Some details in the report need to be clarified, as discussed above.

Please submit three (3) hard copies and one (1) digital copy on CD of the next phase of the FSI and responses to the IDEM comments within 60 days from receipt of this letter to the following address:

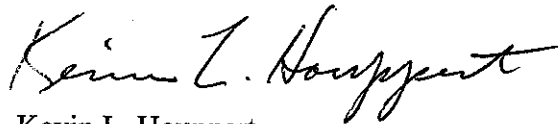
66-30  
Indiana Department of Environmental Management  
Office of Land Quality  
State Cleanup Section  
100 N. Senate Ave., IGCN, Room 1101  
Indianapolis, IN 46204-2251

IDEM requests that the FSI Report follow the general report outline format as provided in Appendix 1 of the IDEM's *RISC User's Guide*. Failure to provide this information in a timely and complete manner may subject you to civil penalties, pursuant to IC 13-30-4-1.

Be advised that under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Indiana's Hazardous Substances Response Trust Fund (HSRTF) law, an owner, operator or responsible person is liable for the costs of response or remediation incurred by the State (IC 13-25-4-8).

If you have any questions, please contact me at 317/232-8552 or toll free from within Indiana at 800/451-6027.

Sincerely,



Kevin L. Houppert  
Project Manager  
State Cleanup Section  
Office of Land Quality

KH/sb

cc: C. Pender, OLQ Chemistry Section  
P. Giesting, OLQ Geological Services  
State Cleanup File #7100149