CASE ACTIVITY REPORT
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State of Wisconsin
Department of Natural Resources

| Case Number | Case Title | |
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| Casetrack ID # 2017-NEEE-022 | Beazer East, Inc. | |
| Activity | | Date of Activity |
| August 17, 2017 Meeting Summary | | August 17, 2017 |

On July 26, 2017 the Department of Natural Resources met with representatives of Beazer East, Inc. (Beazer) to discuss the contents of the July 14, 2017 Notice of Violation (NOV) during an Enforcement Conference (EC). Beazer and department staff determined it was necessary to have a follow-up meeting to discuss technical aspects of the remediation project in further detail. The purpose of this report is to summarize the discussion during the technical meeting.

## MEETING

- Logistics: August 17, 2017 from 1:00 – 4:00 at DNR Milwaukee Service Center

- Attendees: Beazer – Mike Slenska, Mike Noel, and Lori Huntoon; DNR – Judy Fassbender, Michele Norman, Eric Amadi, David Swimm, and Kody Hansen

## DISCUSSION

**Beazer explained its general investigation and department staff responded:**

- Beazer explained the soil boring and groundwater data that was collected. The groundwater data was shown for two depths; shallow water table results and deeper piezometer results. The information was used to explain where contaminants are located, how the contaminants have affected groundwater and Beazer's rationale as to why the investigation should be considered complete. Beazer believes the extent of the contamination is adequate based on the remedy that has been recommended. Additional data is not necessary because it will not change the recommended remedy. Beazer emphasized that the groundwater contamination was limited to near where the coal tar filled vertical clay fractures exist (DNAPL source material) and that groundwater contaminant trend data suggested stable or receding levels.

- The department understood the data and Beazer's perspective regarding whether the proposed work and remedial action were sufficient. The department acknowledged that by virtue of the mostly clay soils, groundwater contamination is limited to areas near the source material. However, <u>in the source material</u>, groundwater contamination is elevated (naphthalene > 10,000 ug/L, and in one case is still above aqueous saturation). Furthermore, the observation that the source material covers 5-6 acres of the site is a significant concern. The stable trends in source material are not sufficient to waive source remediation. After 80-100 years, source material has not appreciably reduced as the result of natural processes. Pursuant to ch. NR 722, Wisconsin Administrative Code, the source material will need to be remedied by a treatment option(s) that reduces the toxicity and volume.

**Vapor intrusion (VI) potential to future commercial redevelopment was discussed:**

- Beazer asked why a separation of four feet from the source material to the surface was not adequate to address future VI potential, and suggested that based on its experience this was acceptable at other sites. In addition, residual source material that would remain would be addressed through vapor mitigation systems at any future building construction.

- The department stated that upwardly migrating DNAPL tar may re-contaminate overlying clean fill and that shallow contaminated groundwater would still contain high levels of naphthalene near the source material. Both conditions already exist, and they would likely cause problematic VI issues for future building structures if a significant source material volume is left in place.

- Beazer was asked if any VI mitigation equipment vendors could certify that their equipment would operate appropriately if tar migrated to or penetrated the equipment. No confirmation was provided, but Beazer indicated the department was overstating the mobility of the DNAPL tar.

- The department indicated that per s. NR 726.05(8), Wis. Adm. Code, adequate source remediation must precede vapor mitigation actions. The department acknowledged Beazer's position that some levels of residual contamination will remain, VI mitigation would still likely be required, and this was typical for sites with significant source materials. A more extensive excavation with off-site disposal, on-site treatment, or a combination of both is technically feasible and has been conducted at other coal tar sites. The goal is to remove a majority of the source material and reduce VI potential such that follow-up VI mitigation could be protective of future redevelopment.

**Discussion regarding the mobility of the DNAPL tar source material:**

- The department indicated it was unusual for the DNAPL tar to repeatedly reach the surface since it tends to migrate downward in aquifers due to its greater density, and the shallow vertical hydraulic gradient at the site tends to also be strongly downward. It is important to understand the mechanism for upward DNAPL tar migration due to the VI potential issue described above. It appeared that the surface expression was driven by differential infiltration under and along the edge of the former Wabash facility foundation and parking area covers which could be problematic for future redevelopment (i.e., new covers and new infiltration patterns) considering the extensive source material area.

- Beazer questioned the repeated nature of the DNAPL surface seep along the southeastern portion of the former Wabash facility. The department indicated that it appeared to be repeatedly seeping from the same area based on sequential historical aerial photographs. Beazer explained its position that the surface seep was the result of summer soil heating and truck traffic.

**The rescinded site investigation was discussed:**

- Beazer requested an explanation as to why additional data is necessary to define the extent of the contamination.

- The department acknowledged the extensive investigation effort shown by the number of soil borings and monitoring wells that were installed. Nevertheless, the department believes that a small number of specific borings are not deep enough to identify the depth of the source material, including areas between currently mapped separate source material accumulations. Department staff understands that there are circumstances where the extent of contamination is generally obtained, but believes this circumstance (i.e., extensive source area requiring a more extensive remediation than suggested by Beazer) necessitates additional information prior to remediation to identify the extent of the source material and better design an appropriate remedy.

- The department expressed concerns regarding the completeness of the utility corridor groundwater investigation. Water level information suggests an apparent hydraulic sink along the utility corridor toward Lake Michigan which was not highlighted as such in the investigation report. This may indicate the utility trench intersects permeable native soils near the sink or that groundwater in the deeper portion of the trench is not being measured and/or sampled in the wells closer to Lake Michigan.

- Beazer indicated it was certain of the latter condition and that it would install a new monitoring well in the deeper portion of the corridor that would provide documentation of the groundwater flow along the utility trench.

**Hazardous waste characterization for DNAPL tar source material:**

- Beazer requested and the department concurred that additional testing would be useful to better qualify costs for an appropriate remedial action.

**Further discussions regarding remedial options and activities going forward:**

- The department does not agree with Beazer's position that the DNAPL is "potentially mobile". Based on the information gathered by Beazer and the history of the site, the department believes the DNAPL is presently mobile and is relatively unweathered (i.e., still a "potent" source of soil, groundwater and potential VI contamination) and as such represents a significant source of contamination. For example, if a commercial building is constructed with subterranean structures in any part of the DNAPL, tar could upwardly migrate to the structure causing harm to any VI mitigation system and/or the building materials themselves. This poses a threat to the integrity of the structure and a potential VI hazard that may be very difficult to address after construction. As a result, it is reasonable to remove a large portion of the most highly contaminated source material.

- Beazer stated that it is willing to conduct additional investigation efforts (additional soil borings and additional utility corridor groundwater monitoring well installations, and additional waste characterization), but it is unlikely that Beazer management will agree to removing additional source material over and above what has already been proposed in the January 2015 Remedial Actions Options Report (0 – 4 feet of source removal in a wetland complex was previously proposed). Beazer has completed remedial actions in the past at other sites without conducting source removal and continues to believe that a more extensive excavation remedy is not necessary.

- After discussions both Beazer and the department agreed that additional site investigation would be conducted in the most contaminated source areas of the property.