State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
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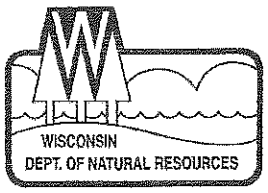

December 21, 2016

Mr. Michael Slenska
Beazer East, Inc.
c/o Three Rivers Management, Inc.
One Oxford Center, Suite 3000
Pittsburgh, PA 15219

Mr. Michael Kellogg
Connell Aluminum Properties, LLC
One International Place
Boston, MA 02110

Subject: Review of Remedial Action Options Report

Former Koppers Tar Plant and Wabash Alloys Site
9100 S. 5th Avenue, Oak Creek, WI
BRRTS # 02-41-553761, FID # 241379050
Connell VPLE BRRTS # 06-41-560058
Beazer VPLE BRRTS # 06-41-561509

City of Oak Creek Utility Corridor, Lot 1
9170 S. 5th Avenue, Oak Creek, WI
BRRTS # 02-41-561425, FID # 341074470
Beazer VPLE BRRTS # 06-41-561426

Dear Mr. Slenska and Mr. Kellogg:

On January 2, 2015, the Wisconsin Department of Natural Resources (DNR) received a "Remedial Action Options Report" (RAOR) prepared by Tetra Tech and Natural Resource Technology (NRT) for the sites identified above. The submittal of the RAOR is required per Wis. Admin. § NR 722, as these sites are subject to regulation under Wis. Stat. § 292. A meeting was held on October 1, 2015, with representatives from Beazer, Connell, Tetra Tech, NRT, City of Oak Creek, and DNR to discuss the RAOR and the options presented.

Large industrial facilities formerly operated on one site that has subsequently been subdivided into two parcels at 9100 and 9170 S. 5th Avenue in Oak Creek. An environmental repair case (ERP) was opened to address the contamination at each of the parcels. Furthermore, both subdivided parcels are also in the DNR's Voluntary Party Liability Exemption (VPLE) Program. Connell's VPLE property includes the 20-acre parcel (Wabash Parcel) owned by Connell. Beazer has two VPLE properties, including the Wabash Parcel and a 2-acre portion of the utility corridor (City Parcel) owned by the City of Oak Creek.

The RAOR pertains to both of the subdivided parcels as one parent property. The RAOR proposes remedial actions to address the on-site contamination remaining from historic site operations.

Background

Past uses of the site have included coal tar distillation operations performed by the Koppers Tar Plant from 1917-1960 and aluminum smelting operations conducted by Vulcan Materials and Wabash Alloys from 1968-2001.

Beazer is conducting the investigation and remediation of environmental impacts related to the coal tar distillation operations, as they relate to the historic Koppers Tar Plant activities. Contaminants associated with the former coal tar plant include volatile organic compounds (VOCs), and polycyclic aromatic hydrocarbons (PAHs) in the soil and groundwater. Soil borings have identified potentially mobile tar on-site located at depths of more than 20 feet, ranging in thickness from 0.2-5.5 feet. Primary source areas occur in the vicinity of the former tar plant lagoon/ponds, tank farm and truck loading area.

Connell is conducting the investigation and remediation of environmental impacts related to the aluminum smelting operations. Contaminants associated with the former aluminum smelter include polychlorinated biphenyls (PCBs), and metals (arsenic, mercury, lead, and nickel). Primary PCB source areas occur in the raw scrap storage yard area on the east side of the facility. In this area, PCB concentrations are greatest in the upper 3 feet and decrease with depth. Isolated source areas also exist in the low area between the railroad tracks, the southeast side of the building and in an isolated unknown source/spill to the east. These areas exhibit slightly deeper PCB impacts below 3 feet to approximately 5-8 feet, where fill was placed on top of the impacted soil.

RAOR Summary

The RAOR presented various remedial action alternatives and recommended completion of the following remedial activities:

1. Excavation of PCB-contaminated soil in three (3) areas to remove soil with PCB concentrations above 10 mg/kg total PCBs from the site.
2. Excavation of tar-impacted soil within wetland areas to a depth of 4 feet.
3. Construction of a barrier "cap" over the remaining areas of the site affected by tar, metals, PAHs, or PCBs.
4. Natural attenuation to remediate tar-related contamination and prevent migration of the residual tar to groundwater.

DNR Review of the RAOR

Following the DNR's review of the RAOR and meetings and subsequent conversations with site representatives, the DNR requests additional actions to be taken to demonstrate compliance with code and statute requirements. The findings and interpretation by the DNR regarding the RAOR are summarized below:

- Restoration of the environment

  Wis. Stat. § 292.11(3) requires actions be taken to restore the environment to the extent practicable. Additionally, Wis. Admin. § NR722.07(4)(a)(4) requires an evaluation of the restoration time frame.

  The proposed limited excavation and construction of a barrier cap do very little to restore the environment, regardless of the time frame. This requirement is particularly applicable to potential future wetland impacts, but also to the restoration of groundwater quality to the extent practicable, as very little source removal or treatment is proposed. The "environment" in this area cannot be expected to be

restored by natural processes within any reasonable time frame. Previous site evaluations, nor the RAOR do not provide a restoration time frame for tar-impacted soil and groundwater for the recommended remedial action. Further, the report does not adequately address the proximity of coal tar contaminants to receptors and the presence of sensitive receptors, in particular Lake Michigan. The report should address how the remedial action will be protective of Lake Michigan over the short-and long-term, including the issue of bluff erosion at the property and the impact of such erosion on any selected remedial action.

- Reduction in the volume of contamination

  Wis. Admin. § NR722.07(4)(a)(1)(a) requires an evaluation of the degree to which the toxicity, mobility and volume of contamination is expected to be reduced.

  Limited excavation does not significantly reduce the contaminant mass or toxicity. The proposed remedial actions are limited to excavation and disposal of limited volumes of contaminated soil in the wetland areas. The mass of contaminated material proposed for removal appears to be a minimal percentage of the known mass of contamination. The actual existing mass of contamination is likely larger, but has not been determined, as the vertical extent of investigation did not identify the full depth of contamination. An evaluation of how to achieve a more significant mass reduction is required.

- Monitoring the effectiveness of the remedial action, including naturally occurring biodegradation

  Wis. Admin. § NR 722.07(4)(a)(3)(d) requires consideration of the difficulties associated with monitoring the effectiveness of the remedial action option. Additionally, Wis. Admin. § NR722.07(4)(a)(3)(h) requires consideration of the technical feasibility of naturally occurring biodegradation at the site or facility. Finally, Wis. Admin. § NR 722.07(4)(a)(4)(h) requires consideration of naturally occurring biodegradation processes at the site which are expected to reduce the total mass of contamination in an effective and timely manner.

  Monitoring to date has not demonstrated that there are naturally occurring biodegradation processes that are expected to reduce the mass of contamination within any reasonable time frame. Based on the extent to which the coal tar and associated high levels of contamination have spread laterally and vertically, it does not appear that the contamination source is stable or receding. The minimal groundwater sampling in water table wells adjacent to the site has not been, and likely will not be, successful in demonstrating a stable source or reducing contaminant mass. The presence of significant contamination extending to depths of more than 20 feet is indicative of a mobile source and contaminant plume. No assessment has been completed to determine the rate of movement of the contaminant mass, nor the potential impact(s) of the contamination to possible receptors. Even with additional source removal, more wells and associated monitoring will be needed to determine the stability of the plume. The proposed cap does not provide any infiltration protection from the precipitation of rain and snow, and thus does not prevent or limit continued leaching of contaminants to groundwater and surface water features via infiltrating precipitation.

- Redevelopment potential after remedial action

  Wis. Admin. § NR 722.07(4)(a)(3)(i) requires consideration of the redevelopment potential of the site once the remedy has been implemented.

In previous discussions during the course of this project, we have stated that leaving extreme levels of contamination (free tar in soil) within construction excavation depths over most of the site will significantly increase the difficulty and costs for redevelopment of the site. Additionally, the impact of exposure via direct contact and vapor pathways would be significant and elevate the need to take extra protective measures to ensure any engineering controls put in place do not fail, which may preclude placing foundations within the contaminated area. The risk of exposure to construction workers will be an on-going future issue that would require diligence and increased costs in the maintenance of engineering controls and site construction restrictions. Finally, the cap proposed does not consider any protection for the groundwater pathway. Creating a cap to effectively limit infiltration would require control of slopes and limitations on cap penetrations, as well as monitoring cap effectiveness for a significant period of time.

- Discharges to surface water or wetlands

  Wis. Admin. § NR 722.09(2)(c) requires that the selected remedial action ensure that discharges to surface water or wetlands will not result in a surface water quality standard being exceeded, and that remedial actions prevent or minimize, to the extent practicable, potential and actual hazardous substance discharges and environmental pollution that may attain or exceed surface water or wetland criteria.

  Wetland areas are present on the site which are already impacted by the tar contaminants. These areas will require remediation; however, areas around the wetlands will also need to be remediated to prevent future discharges to these wetlands. The rate of movement of the contaminant mass has not been evaluated, nor the potential impact(s) of the contamination to possible receptors, including wetlands. The proposed actions are not clearly designed to prevent future discharges to the wetlands, as significant areas of tar will remain close to the surface and have the potential for run off or subsurface movement toward wetlands.

- Restoration of soil and groundwater

  Wis. Admin. § NR 722.09(2)(a) and (b) require restoration of soil and groundwater.

  The proposed actions do not provide for soil or groundwater contamination levels to be reduced at all, but rather rely on engineered barriers and presumed, but not demonstrated, natural attenuation to protect all pathways. Because the mass of contamination is so large and consists of high concentrations, the reliance on these types of remedies, if demonstrated to have long-term, technical feasibility would necessitate: 1) a lengthy monitoring period, possibly several years, and as stated above, 2) potential limitation on barrier/cap design and maintenance. Such measures were not included in the RP's recommended remedy. Obtaining case closure from the DNR would take years, if not decades.

Additional Comments

With respect to future development, vapor intrusion risks are proposed to be "mitigated" as the site is redeveloped and structures are built. Prior to installing any type of vapor control system in future construction, the DNR will require a vapor assessment to determine the need for a vapor mitigation system in any proposed buildings.

As stated previously, the site was used historically for industrial operations. The property is currently zoned as commercial, thus the land use classification for this property under Wis. Admin. § NR 720 is as a non-industrial site. The site is currently vacant, with foundation slabs remaining in place. Current zoning and the land use

classification under NR 720 must be considered when determining appropriate remedial actions and eventual continuing obligations. Proposing to leave high/undefined volumes of toxic contaminants at the site in a non-industrial setting would likely not achieve the DNR's case closure criteria in Wis. Admin. § NR 726.

The DNR hereby requests that you re-evaluate your remedy selection process in consideration of the above listed administrative code and statutory factors and requirements. For the reasons outlined above, the DNR cannot approve the proposed remedy, as it does not: 1) appear to effectively comply with the hazardous substance discharge law and applicable sections of the Wis. Admin. §§ NR 700 rule series; 2) comply with other applicable local, state, and federal laws; and 3) does not present a viable, long-term strategy for protectiveness and contaminant reduction, especially at a site located on the shore of Lake Michigan.

In addition, the DNR is still waiting for completion of the off-site investigation of the degree and extent of contamination, as requested by the DNR in a letter dated August 12, 2015.

The DNR recognizes the technical and economic challenges with remediation at a site with this level of contamination due to historic use. The DNR is confident that Beazer, Connell, and their consultants can successfully attain the goal of adequate source control through treatment, removal, or a combination of those methods. Reconsideration of natural attenuation through biodegradation can be performed at a later time after additional source control is completed. Per Wis. Admin. § NR 722.15(2)(c), the submittal of a revised RAOR to the DNR is requested by April 1, 2017, in addition to the completed off-site investigation.

The DNR appreciates the efforts you are taking to address the historic contamination at this site. If you have any questions regarding this site or this letter, please contact the DNR Project Manager, Eric Amadi, at 414.263.8639 or eric.amadi@wisconsin.gov.

Sincerely,

Michele R. Norman on behalf of

Eric Amadi
Hydrogeologist
Remediation & Redevelopment Program
SER-Milwaukee Service Center

cc: Julie Zimdars, NRT (via e-mail)
Michael Noel, Tetra Tech (via e-mail)
Larry Haskin, Haskin & Karls (via e-mail)
Kathryn Huibregtse, Ramboll Environ (via e-mail)
SER case file BRRTS # 02-41-553761
SER case file BRRTS # 02-41-561425