

# MEMO

## ASTI Environmental

**Date:** February 5, 2019, revised March 1, 2019

**To:** Sara Roediger, City of Rochester Hills  
Pam Valentik, City of Rochester Hills

**From:** Tom Wackerman

**Subject:** Review of Environmental Aspects of Site Plan for Redevelopment of the Northeast Corner of Hamlin and Adams Roads, Legacy of Rochester Hills, Rochester Hills, Michigan (ASTI files No. 9675-21)

As requested, this memo is a review of the following documents, as amended:

1. *Brownfield Details for Legacy of Rochester Hills, Sheet C-2.1, dated October 12, 2018 with most recent revision January 25, 2019 (Encapsulation Area Details)*
2. *Overall Preliminary Site Plan for Legacy of Rochester Hills, Sheet C-2.0, dated October 12, 2018 with most recent revision January 25, 2019 (Site Plan)*
3. *Letter of February 18, 2019 to Tom Wackerman of ASTI Environmental and Sara Roediger and Pam Valentick at City of Rochester Hills from Brian Westhoff of AKT Peerless titled "Response to February 5, 2019 ASTI Memo, Review of Environmental Aspects of Site Plan for Redevelopment of the Northeast Corner of Hamlin and Adams Roads, Legacy of Rochester Hills, Michigan"*

### Background

The areas for remediation in Parcel A (Areas A through D), as originally described in the Brownfield Plan dated April 9, 2018, were enlarged in order to remove urban fill materials as determined by field observations and soil sampling. According to the applicant, the remediation has achieved residential closure criteria for Parcel A soils, based on over 300 soil samples from the excavation areas. The report is being prepared with no firm delivery date.

The area for remediation in Parcel B (Area E) was partially removed as part of the Area C remediation, and additional remediation in Area E is proposed. However, based on test trenches conducted in Parcel B in January of 2019, the presence of "paint waste" and drums, or partial drum fragments, indicates that the extent of PCB and lead impacted waste materials (those materials originally intended to be included in the encapsulation area) may extend further than anticipated when the Brownfield Plan was prepared. As such, the applicant has proposed that the location and size of the encapsulation area (consisting of slurry wall and cap) be enlarged and reconfigured to incorporate portions of Area E. This enlarged encapsulation area (at 1.3 acres) is noted on the Site Plan, and is a modification to the encapsulation area included in the Brownfield Plan (at 1.0 acres). Construction details for both the cover and the encapsulation area walls were provided. According to communications with the applicant's consultant, slurry wall and cap construction will begin in spring of 2019.



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## Review of Site Plan

In general, soils will be removed from two areas in Parcel B (the north and east areas on the Site Plan), and the encapsulation area will be moved to the south to incorporate impacts identified in the southern portion of Area E. As indicated on the Site Plan, portions of Area E will still be excavated and removed for off-site disposal (the east area as indicated in yellow). In addition, new excavations will be conducted north of the encapsulation area (the north area as indicated in green) and these materials will be removed for off-site disposal. The removal and off-site disposal of the soils from the north excavation area is a change from the submitted site plan, which originally indicated that these soils would be placed in the encapsulation area, and was modified by the February 18 letter.

The original intent of the Brownfield Plan was that excavation in Area E would be conducted until “paint waste” was encountered and then that waste would be included in the encapsulation area. With the proposed revisions, both the north and east excavation areas will be excavated as indicated regardless of the materials encountered. These areas will then be backfilled with clean soils. This therefore better defines the boundaries of the final encapsulation area.

Two types of walls for the encapsulation area are included in the Encapsulation Area Details: a compacted clay barrier wall for areas adjacent to excavations, and a slurry wall for all other areas. Both walls will be to a depth of 36 to 50 feet below the cover, and in all cases will penetrate a minimum of two-feet into the underlying native clay. The walls will be a minimum of 2-feet thick and will be constructed to a permeability of  $10^{-7}$  cm/sec. The construction details indicate that an approved alternative could be used, but details are not provided and approval should be required by the City.

The cover construction details on the Encapsulation Area Detail drawing indicate the installation of a two-foot thick compact clay cover with  $10^{-7}$  cm/sec permeability, overlaid with a flexible membrane liner, 2-feet of protective soils, and 6-inches of top soil and seed. The construction details indicate that an alternative geo-synthetic liner with a  $10^{-7}$  cm/sec permeability may be substituted for the clay cover and flexible membrane liner, and the insert drawings list the geo-synthetic liner rather than the compact clay with liner originally proposed.

In all cases the cover will extend two feet beyond the slurry wall, as originally proposed. Along the eastern property boundary the location of the slurry wall will include all identified PCB impacts that exceed direct contact criteria (specifically sampling locations EB-36 and EB-37) within the encapsulation area because the slurry wall will be two feet west of the property boundary. This will require that a 14-foot area be cleared of trees and de grubbed on the City Park property to accommodate the installation equipment as indicated in the Site Plan. Tree removal and replacement, as well as final grading of the City Park property impacted by this activity, are detailed elsewhere.

Two vents will be installed on the cover. Per the site plan, and subsequent discussions with the applicant’s consultant, each vent opening will be approximately 6-inches above the cover with a 12-inch slotted stack, and will be enclosed in a decorative housing (this is a change from the February 18 letter). Each vent will be connected to a lateral pipe to capture gases generated by the encapsulated waste materials.

Once completed, the adequacy of the excavation and encapsulation will be determined by the MDEQ through review and approval of a Documentation of Due Care Compliance report for Parcel B. Procedures for operation and maintenance of the cover, slurry wall and ventilation system will be included in that report.



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**Recommendations:**

Encapsulation of a 30% larger area does not impose any additional risk or use restrictions for Parcel B. Relocating the encapsulation area to the south will contain more of the impacted materials, and will move the encapsulated materials further from the adjacent residences.

Removal of materials from the northern area will allow installation of trees and landscape in that area that would not be permitted if that area included a cap. In addition, it will provide clean fill for the installation of the utilities, and move impacted materials further away from the residential developments to the north. Installation of the storm sewer in this area will still include waterproofing seals and gaskets as described in the 381 Work Plan. The area south of the encapsulation area that was identified as being previously remediated can now be used to install landscaping along Hamlin Road.

Because of the contents of the encapsulated waste materials, the limited soil gas data, and the location of the vent openings at 6-inches above grade, the proposed vents should be sampled quarterly to determine actual emissions of methane and volatile organics, and to monitor odors. This sampling plan will be included in the Documentation of Due Care Compliance for Parcel B and should be conducted until a sufficient understanding of landfill gas conditions and venting is provided. In the event that the concentration of any constituent, or the identified odors, is unacceptable for park use, as determined by the MDEQ, vent redesign and possibly control should be required to remove vapors from the breathing zone. Please note that the monitoring proposed in the February 18 letter does not fulfill this objective and was modified by an email dated March 1<sup>st</sup> that changed to quarterly monitoring in the vents.

The notes on the Encapsulation Area Details, drawing C-2.1, indicate that an alternative cover may be used for the encapsulation area (Section 02510 K), and the insert drawings reference this alternative cover. The February 18 letter indicates that the applicant intends to use the alternative geo-synthetic clay cover. This will provide equivalent encapsulation and is acceptable.

Please contact me if you have any questions, or need additional information.



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