STS
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Memorandum

Date: 2-14-08

To: Rochester Hills BRA

CC: E. Anzek, D. Delacourt

From: Jim Anderson, STS

Subject: Summary of Hamlin & Adams Properties Brownfield Redevelopment

This Memorandum was prepared at the request of the Planning and Development Department, as a primer prior to the scheduled meeting on February 21, 2008.

The Rochester Hills Brownfield Redevelopment Authority and the City Council approved a MI Act 381 Workplan that was submitted to the Michigan Department of Environmental Quality (MDEQ) in early 2007. Several meetings were held with the MDEQ, the Applicant, City Staff and Consultants. As required, the MDEQ subsequently reviewed and approved that plan and the eligible activities that it included, allowing the reimbursement of the Applicant's environmental expenditures through Tax Increment capture.

In May, June and July of 2007, the Applicant's consultant, AKT Peerless Environmental Services (AKT), conducted an intensive investigation on the subject property (at the northeast corner of Adams and Hamlin roads). The consultant investigated soil, water and soil gas beneath the site in an effort to quantify the environmental condition of the property prior to designing any type of long term remedy that would facilitate redevelopment. The following text summarizes the investigation conducted by AKT and their findings.

Prior investigations conducted by AKT Peerless and other consultants (on behalf of the State and other interested parties) confirm that the site is a "facility" according to MI rules. In the most basic terms, the facility designation means that the site possesses contamination of soil or groundwater that exceeds Generic Residential Cleanup Criteria established by the MDEQ. The facility designation allows the site to be eligible to capture tax increment revenue to offset the cost of the eligible environmental activities required to redevelop the site. The MDEQ plays a significant role in these situations by reviewing and approving of the work plans and eligible activities projected by the consultant. In addition, local taxes can be used to reimburse developers for activities that the MDEQ deems would not be reimbursable with State taxes. Recent changes made to Act 381 have given the MDEQ greater latitude to approve for reimbursement activities that applicants traditionally would have had to finance by other means.

According to AKT Peerless, the following areas on the site warranted additional investigation (a figure is included for your reference):

- Area A; area of uncharacterized buried waste/debris material in the north central portion of the property.
- Area B; Area of PCB impacted surface soils in the northern portion of the eastern parcel.
- Area C; Area of uncharacterized buried waste/debris/drum material in the western portion of the east parcel and east portion of the west parcel.
- Area D; uncharacterized buried waste/debris/drum material in the south central portion of the property.

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- Area E; Fenced-in area in the east parcel previously identified as containing drums and soils impacted with poly chlorinated biphenyls (PCBs) and volatile organic compounds (VOCs).
- Area F; Potential heating fuel use near a former structure (presumably the former slaughterhouse).
- Entire subject property to evaluate the potential presence of methane gas due to off-site migration of methane gas from the adjoining Suburban Softball/former Cardinal Landfill site.

In order to address the environmental concerns in these areas, AKT Peerless conducted an investigation that included the following:

1. The advancement of 12 soil borings to be converted to permanent monitoring wells throughout the subject property.
2. The advancement of 40 soil borings in the Area B location.
3. Advancement of 40 soil borings in the Area E location.
4. Completion of 51 test pits and 2 trenches (Areas A, C, D and F).
5. Collection of 234 soil samples.
6. Completion of two groundwater sampling events.
7. collection of 21 groundwater samples
8. Completion of three methane field screening events.
9. Analysis of 425 chemical samples from the 234 soil and 21 water samples.

The samples were typically analyzed for VOCs, Semi Volatile Organic Compounds (SVOCs), PCBs, and the USEPA 13 Priority Pollutant Metals.

Findings:

Based on their field observations, AKT Peerless found that soil types are similar to those previously observed and are consistent with those documented in the text of “The Quarternary Geology of Southern Michigan”. Groundwater was located in 73 of 92 boring locations with depths ranging from 2-feet below grade to 29-feet below grade, depending on the area of investigation. Additionally, AKT Peerless finds that the groundwater appears to be hydraulically continuous and no underlying confining layer was identified, which is a departure from information generated by other consultants historically. AKT determined that the groundwater flow direction was primarily to the east with a northern component.

AKT Peerless conducted a brief analysis of relevant pathways. Pathways are routes by which sensitive receptors (humans, animals, surface water, etc.) can be exposed to contaminants. Restriction or elimination of relevant pathways eliminates exposure or reduces the sensitive receptors exposure to acceptable levels. AKT determined that the following exposure pathways were relevant at the site:

- Ingestion of Groundwater
- Groundwater Venting to Surface water
- Groundwater Contact
- Volatilization to Indoor Air
- Volatilization to Ambient Air

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- Particulate Inhalation
- Direct Contact

AKT Peerless confirmed that the site is a facility with these analyses. AKT Peerless projects that the following cleanup criteria will be applicable to the site based on comparisons with the relevant pathways (please note that a cleanup criterion is not applicable if an exposure pathway is not relevant):

- Drinking Water Protection Criteria
- Groundwater Surface Water Interface Protection Criteria/Groundwater Surface Water Interface Criteria
- Groundwater Contact Protection Criteria/Groundwater Contact Criteria
- Soil volatilization to Indoor Air Inhalation Criteria/Groundwater Volatilization to Indoor Air Indoor Air Inhalation Criteria
- Infinite Source Volatile Soil Inhalation Criteria
- Particulate Soil Inhalation Criteria
- Soil Direct Contact Criteria/Groundwater Contact Criteria

Of the soil samples analyzed, 27 chemicals (a mix of VOCs, SVOCs, PCBs, and Metals) exceeded one or more of the applicable criteria. Additionally, several soil samples exceeded their Csat Criteria or the concentration of soil saturation, meaning that free phase liquid contaminants *could* be present at those concentrations.

As stated previously, AKT Peerless submitted 21 groundwater samples for analysis. Eleven contaminants exceed either the Drinking Water criteria or the Groundwater Surface Water Interface Protection Criteria. It should be noted that the well that yielded the sample that contained the greatest variety and highest concentration of contaminants was located at the southeast corner of the fenced-parcel.

Debris:
Thousands of cubic yards of buried solid waste materials were located at numerous locations on the site. This condition was unexpected prior to the investigation. It is likely that portions of the debris were detected by AKT's magnetometer survey conducted in 2005 but were presumed to be remnants of drums. The materials were typically glass and metal debris with some plastic and rubber mixed in. There was also some evidence of industrial debris (parts). It was apparent that the debris was affected by fire at some point. It is unclear whether the debris was delivered to the site in a charred/melted condition or whether the site operator engaged in burning materials as they arrived. This material will likely not be conducive to compaction for building foundations and AKT Peerless demonstrated that some of the material is contaminated by several numerous contaminants. Thus it is likely that proper off-site disposal will be necessary for at least a portion of the debris.

Methane: During AKT's methane screening, methane was only detected in two of the twelve wells (found within the fenced area) at relatively low concentrations. AKT Peerless concludes, due to the centralized distribution, that the methane is likely attributable to the contaminants in the subsurface in Area E.

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Conclusions:
AKT concludes that soil has exceeded at least one cleanup criteria (under the Commercial IV category) in areas A, C, D, E, and F. Groundwater contamination exceeds at least one set of cleanup criteria under Commercial IV in areas B, C, and E.

AKT recommends that in order to redevelop the site, numerous steps are needed. AKT indicates the following:

1. The non-native fill materials (glass and metal debris) that are disturbed during the redevelopment will require offsite disposal.
2. In Area E, AKT Peerless recommends removal of the SVOC, VOC and metals contamination.
3. AKT Peerless is recommending the encapsulation and management, in-place, of the PCB contaminated soils in Area E.
4. AKT Peerless is proposing to install a passive methane venting system under two of the proposed buildings rather than install the formerly-proposed cut-off trench along Hamlin Road to capture and divert methane.

Discussion:
The Applicant will likely present a synopsis of their investigation and their proposed remedy for you to consider as a part of the recently submitted Act 381 Workplan. This plan has not been sent to the MDEQ by the City because your approvals are necessary first. The proposed remedy is briefly described as:

- Excavation and proper disposal of the solid waste debris and contaminated soils (Areas A, C, D)
- Excavation and proper disposal of VOC, SVOC and metals contaminated soil and solid waste in Area E.
- Encapsulation of the PCBs remaining in Area E. This consists of installing compacted clay walls and a cap section with a flexible membrane liner covered by pavement. This area will also be deed-restricted.
- Installation of soil gas/methane venting systems under the two buildings proposed in the proximity of Area E.

Additionally, portions of a subsurface stormwater detention system have been submitted as a reimbursable expense for consideration.

An issue that has remained unanswered at this time is the question of United States Environmental Protection Agency (EPA) involvement or jurisdiction over the project. The Applicant has maintained that the site is not within EPA jurisdiction because the waste materials that caused the PCB contamination of the site were deposited prior to June of 1978. The 1978 date is important because that is the effective starting date of what is known as the Toxic Substance Control Act that federally regulates PCBs and to which, the MDEQ typically defaults. If the waste was deposited prior to June 1978 the rules indicate that significant parts of TSCA do not apply. However, in an effort to obtain a final ruling on this issue, STS conducted anonymous conversations with the EPA in 2007 that led to the Applicant's consultant communicating with the EPA and

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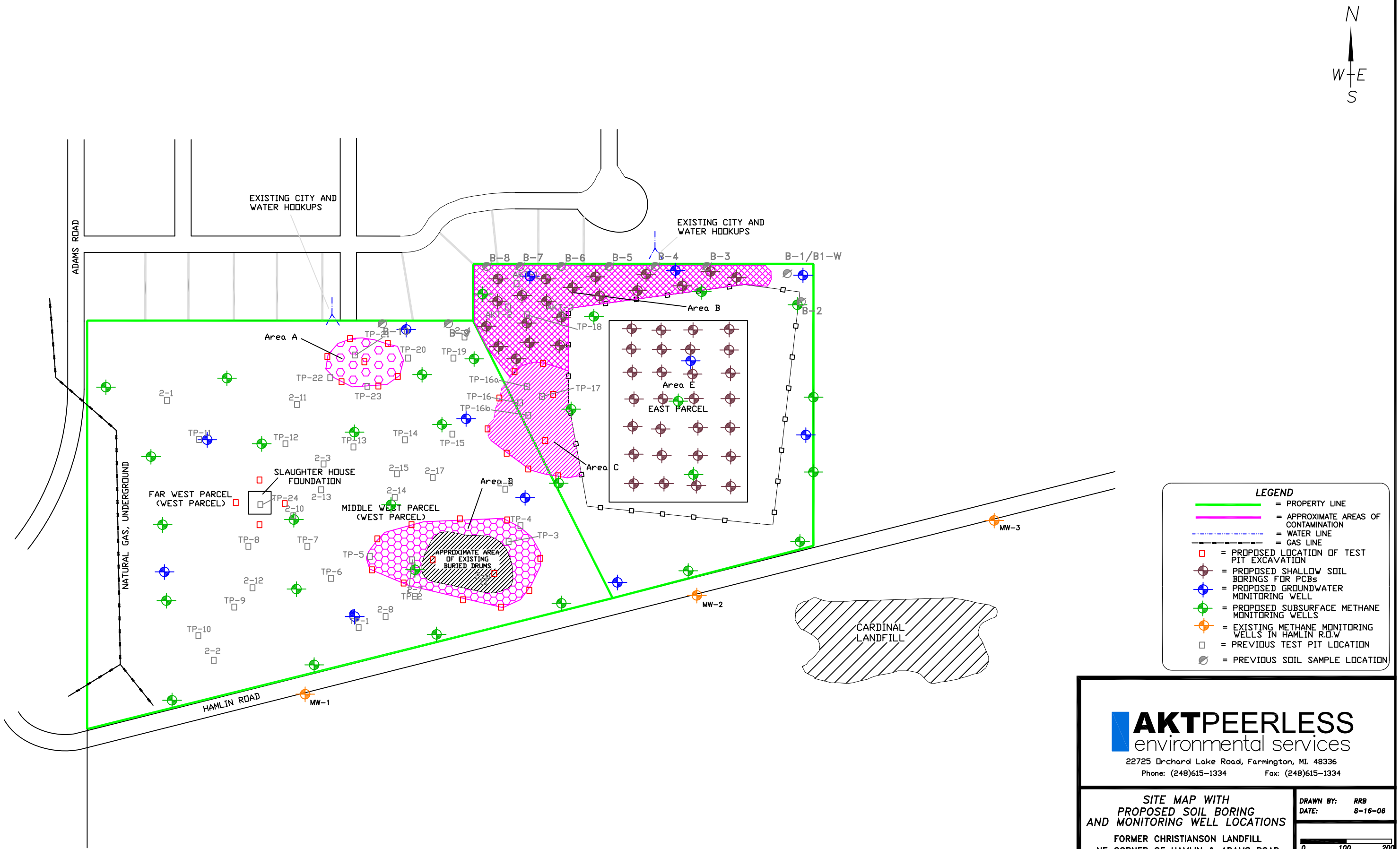
forwarding a package of information about the site (early December 2007). Neither STS nor the Applicant's team had received substantive communication from the EPA prior to a joint conference call that was held February 11, 2008 between the City, the Applicant's attorney, the City Attorney and consultants. The outcome of that call was that the EPA did indicate that they typically leave pre-1978 sites of deposition to the local regulating authority (MDEQ) unless the EPA determines that a level of risk is associated with the site (which the EPA representative indicated is possible at this location due to the proximity of adjacent residences, the Clinton River, Riverbend Park and wetlands). The EPA asked the Applicant to supply additional information in order that they (EPA) effectively evaluate the risk associated with the site. The Applicant's consultant is in the process of gathering information to submit to the EPA. The Applicant's team has indicated that the City will be provided a copy of the information submitted to the EPA. Accordingly, this remains an open issue.

The Applicant has recently added some basic information to the Act 381 Plan about tasks that need to be conducted prior to and during the remediation efforts. These include: air monitoring, dust emission response, site control, dewatering, response to unforeseen conditions and deed restrictions.

I believe the most recent submittal of the Act 381 Workplan to be administratively complete and an improvement over prior submittals. There are yet numerous practical and procedural issues to work out with the Applicant that are typically not included in the scope of a 381 Workplan though could increase or reduce eligible activities (cost) in the future. They include:

- EPA involvement
- MDEQ coordination with EPA (if needed)
- MDEQ requirements for workplans and engineering design
- Design of the encapsulation walls, cap section and its constructability and long term O&M of remedies or engineered controls
- Traffic control (population and trucks)
- Site control
- Erosion control planning
- Air monitoring (minor issues remain)
- Verification sampling for soils
- Disposition of C_{sat} soils (may be handled through proposed excavation remedy)
- Stormwater system
- Remediation sequencing and overall projected schedule of events, reports and meetings
- Potential exposure of City employees during inspections (minor questions remain)

If BRA members have questions about this summary prior to the next scheduled meeting, I may be contacted directly at the telephone number in the heading of this document.



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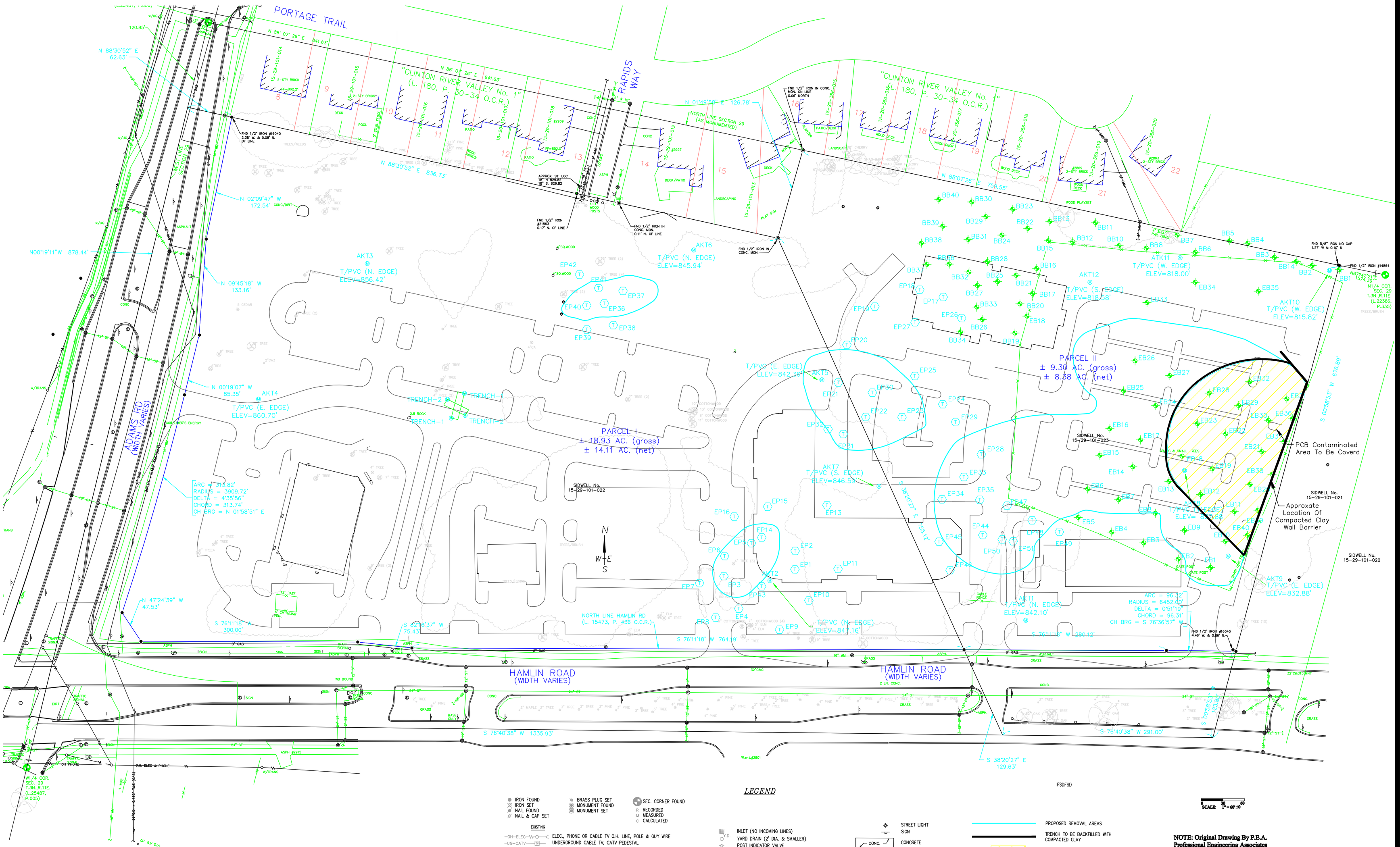
SITE MAP WITH PROPOSED SOIL BORING AND MONITORING WELL LOCATIONS

FORMER CHRISTIANSON LANDFILL
NE CORNER OF HAMLIN & ADAMS ROAD
ROCHESTER HILLS, MICHIGAN
PROJECT NUMBER : 3679F2

DRAWN BY: RRB
DATE: 8-16-06

0 100 200
SCALE: 1"= 200'±

FIGURE 2



LEGEND

- IRON FOUND
- IRON SET
- NAIL FOUND
- NAIL & CAP SET
- BRASS PLUG SET
- MONUMENT FOUND
- MONUMENT SET
- SEC. CORNER FOUND
- R RECORDED
- M MEASURED
- C CALCULATED

EXISTING

- ELEC., PHONE OR CABLE TV O.H. LINE, POLE & GUY WIRE
- UNDERGROUND CABLE TV, CATV PEDESTAL
- TELEPHONE U.G. CABLE, PEDESTAL & MANHOLE
- ELECTRIC U.G. CABLE, MANHOLE, METER & HANDHOLE
- GAS MAIN, VALVE & GAS LINE MARKER
- WATERMAIN, HYD., GATE VALVE, TAPPING SLEEVE & VALVE
- SANITARY SEWER, CLEANOUT & MANHOLE
- STORM SEWER, CLEANOUT & MANHOLE
- CATCH BASIN
- INLET (NO INCOMING LINES)
- YARD DRAIN (2" DIA. & SMALLER)
- POST INDICATOR VALVE
- WATER VALVE BOX/HYDRANT VALVE BOX, SERVICE SHUTOFF
- MAILBOX, TRANSFORMER, IRRIGATION CONTROL VALVE
- UNIDENTIFIED STRUCTURE
- 670 CONTOUR LINE
- FENCE
- GUARD RAIL
- STREET LIGHT
- SIGN
- CONC. CONCRETE
- ASPH. ASPHALT
- SHALLOW SOIL BORING
- T TEST PIT EXCAVATION LOCATION
- W GROUNDWATER MONTIERING WELL
- PROPOSED REMOVAL AREAS
- TRENCH TO BE BACKFILLED WITH COMPACTED CLAY
- PCB CONTAMINATED AREA TO BE COVERED

SCALE: 0 30 60 1"=60'±0

NOTE: Original Drawing By P.E.A. Professional Engineering Associates

REFERENCE DRAWINGS

OTHER "TOPOGRAPHIC SURVEY" P.E.A. JN#2003258, DATED 5-12-04

DRAWN BY: KHE
DATE: 10-9-07

FIGURE 2

PROPOSED RESPONSE DUE CARE ACTIVITIES MAP

HAMLIN & ADAMS PROPERTIES, LLC
ROCHESTER, MICHIGAN
PROJECT NUMBER : 3679F2-10-20

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