DRAFT

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ENVIRONMENT

Mr. Steven M. Scharf, P.E.
New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Bureau A
625 Broadway, 12th Floor
Albany, New York 12233-7016

Subject:
Bayer MaterialScience LLC
125 New South Road – Hicksville, New York
NYSDEC Site #130004
OU4 Remedial Activities
2013 Phase 2 Delineation Soil Sampling Summary, Proposed PCB Delineation Refinement and Verification for Soil Remediation, and Proposed Arsenic Soil Cleanup Modification

Date:
November 7, 2013

Contact:
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Email:
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Our ref:
B0032305.0011 #10

Dear Mr. Scharf:

On behalf of Bayer MaterialScience LLC (Bayer), this letter summarizes the results of the delineation soil sampling performed at the above-referenced site during August and September 2013 ("Phase 2 delineation sampling for Operable Unit OU4 remediation") and presents recommendations based on the Phase 2 delineation analytical results and other data/information provided in this letter.

As summarized in Section I of this letter, the extent of soil containing polychlorinated biphenyls (PCBs) at concentrations exceeding the 10 part per million (ppm) subsurface soil cleanup level has been sufficiently delineated site-wide for purposes of the OU4 Phase 2 remedial activities, except in three isolated areas: (1) adjacent to a former shed north/northeast of former Plant 2; (2) immediately east of the former warehouse building; and (3) immediately north of former Plant 3. Limited additional PCB soil sampling is proposed for these areas to refine the soil removal limits for the OU4 Phase 2 remedial activities. Pre-excavation PCB verification soil sampling will also be performed in two areas of the site in support of the anticipated additional remedial activities. Details of the proposed additional delineation and verification soil sampling activities are provided in Section II of this letter.

As discussed with the New York State Department of Environmental Conservation (NYSDEC) during an October 15, 2013 telephone conference call attended by Bayer and ARCADIS, the Phase 2 delineation soil analytical results indicate that arsenic is widespread in soil in the northern portion of the site at concentrations exceeding the 16 ppm soil cleanup level presented in the NYSDEC-approved Remedial Design (ARCADIS, February 2013) ("the RD") and the Record of Decision (NYSDEC,

December 2012) ("the ROD"). Bayer has already excavated arsenic-impacted soil beyond the limits shown in the ROD and RD. Further excavation would be needed to achieve the excavation-based soil cleanup level presented in these documents. However, based upon a review of several historical documents and information (described within this letter)Bayer and ARCADIS propose to address the remaining unexcavated soil containing arsenic at concentrations greater than 16 ppm by capping (placement of a one-foot thick clean soil cover over a demarcation layer). This proposed change to the arsenic soil cleanup approach is supported by the following: (1) the slightly elevated and more dispersed arsenic concentrations in the northern portion of the site than known during preparation of the ROD and RD (as identified via the recent Phase 1 and 2 OU4 delineation soil sampling activities); (2) new information regarding the probable source of the arsenic (past agricultural land use instead of industrial site use); (3) the ability to control exposure via the proposed soil cover system as more fully explained in Section III of this letter; and (4) precedent for a soil cover system to address arsenic in soil at other remedial sites in New York State.

The analytical results for the Phase 2 soil delineation sampling activities are summarized in Section I below, followed by details of the proposed Phase 3 delineation/verification soil sampling activities (Section II), the basis for and details of the proposed revised cleanup approach for soil containing arsenic at concentrations exceeding the previously-established 16 ppm soil cleanup level (Section III), and the anticipated schedule for implementing the proposed additional sampling and remedial activities (Section IV).

I. PHASE 2 DELINEATION SOIL SAMPLING SUMMARY

Phase 2 delineation soil sampling activities were performed by ARCADIS in accordance with the work plan contained in a July 22, 2013 letter from ARCADIS to the NYSDEC. The Phase 2 delineation sampling was performed to further delineate the extent of soil at the site containing PCBs, arsenic, and polycyclic aromatic hydrocarbons (PAHs) at concentrations exceeding the soil cleanup levels presented in the RD and the commercial use soil cleanup objectives (SCOs) for individual PAH constituents as presented in Title 6 of the Official Compilation of Codes, Rules, and Regulations of the State of New York (6 NYCRR) Part 375-6.8(b).

The work performed as part of the Phase 2 delineation soil sampling activities is summarized below, followed by the sampling results.

A. Phase 2 Delineation Soil Sampling Activities

In accordance with the work plan, soil borings were drilled at 130 grid-based sampling locations (SB-121 through SB-251 and V-RD-101A, as shown on Figure 1). One or more soil samples from each boring was analyzed for PCBs, PAHs, and/or arsenic. Soil samples from two PCB delineation sampling locations (SB-180 and SB-181) were also analyzed for semi-volatile organic compounds (SVOCs) based on the identification of odors and staining in soil at these two locations. No volatile organic vapors were detected during photoionization detector (PID) field screening of the soil from locations SB-180 and SB-181. Therefore, the samples from these locations were not analyzed for VOCs.

The Phase 2 delineation soil sampling activities were performed between August 26, 2013 and September 9, 2013. Laboratory analysis of the delineation soil samples was performed by Accutest Laboratories.

B. Phase 2 Delineation Soil Analytical Results

The laboratory analytical results for the Phase 2 delineation soil samples collected during August/September 2013 are presented in the following tables with comparisons to the soil cleanup levels:

- Table 1 – presents soil analytical results for PCBs and arsenic
- Table 2 – presents soil analytical results for PAHs

Figure 1 shows the existing verification and delineation soil sampling locations where PCBs, arsenic, and PAHs have been identified at concentrations exceeding soil cleanup levels. The laboratory analytical results for the delineation soil samples for PCBs, arsenic, and PAHs are summarized below.

PCB Soil Analytical Results

PCBs were identified at concentrations greater than the excavation-based 10 ppm subsurface soil cleanup level at only 19 of the 91 OU4 Phase 2 PCB delineation soil sampling locations (i.e., 21% of the sampling locations). This includes sampling locations SB-135, SB-147, SB-165, SB-166, SB-167, SB-169, SB-172, SB-173, SB-178, SB-181, SB-183, SB-184, SB-186, SB-187, SB-188, SB-197, SB-219, SB-245, and SB-249. Overall, the OU4 Phase 2 PCB soil analytical data and the data from previous sampling events is sufficient to delineate the extent of soil excavation required during the Phase 2 OU4 remedial activities, with three minor exceptions as identified in the introductory paragraphs of this letter.

PCBs were identified at concentrations greater than the 50 ppm disposal threshold for a Toxic Substances Control Act- (TSCA-) regulated PCB waste and New York State hazardous waste in two areas of the site, as indicated below.

Approximate Area	Delineation Sampling Location	PCB Concentration (ppm)
Immediately southeast of former Plant 2, around OU4 Phase 1 delineation soil sampling location SB-42	SB-165 (0-0.2')	102
	SB-166 (0-0.2')	92.2
	SB-167 (0-0.2')	213
Adjacent to the former shed north/northeast of Plant 2	SB-249 (0-0.2')	214

The extent of PCB-impacted soil around sampling location SB-165 through SB-167 to be managed as a hazardous waste is defined by surrounding Phase 1 and 2 delineation sampling locations. The extent of soil around sampling location SB-249 to be managed as a hazardous waste requires further assessment.

The OU4 Phase 2 PCB delineation soil analytical results reinforce the previous assessment that the extent of surface soil containing PCBs at concentrations greater than the 1 ppm surface soil cleanup level is widespread across the site. PCBs were identified at concentrations greater than 1 ppm at slightly over half of the OU4 Phase 2 PCB delineation soil sampling locations (i.e., 52 of the 91 locations).

Arsenic Soil Analytical Results

Arsenic has been identified at concentrations exceeding the 16 ppm soil cleanup level in 12 of the 17 OU4 Phase 2 arsenic delineation soil sampling locations. The OU4 Phase 2 arsenic soil analytical results and the results from previous soil sampling for arsenic show that arsenic is prevalent at concentrations slightly elevated above 16 ppm in the northern portion of the site. The footprint of the arsenic-impacted soil generally aligns with the footprint of the >1 ppm PCB-impacted soil in the northern portion of the site.

PAH Soil Analytical Results

PAHs were not identified at concentrations exceeding their respective commercial use SCOs in 6 of the 7 OU4 Phase 2 PAH delineation soil sampling locations. One individual PAH constituent, benzo(a)pyrene, was identified in OU4 Phase 2 delineation soil sampling location SB-234 (between the parking lot and former AOC 27A, which was a former shipping/receiving area for non-hazardous off-spec

damaged product or raw material storage) at a concentration slightly exceeding its respective commercial use SCO (1.3 ppm result vs. 1 ppm SCO). PCBs were also identified at this location at a concentration exceeding the 1 ppm surface soil cleanup level.

C. Phase 2 Delineation Sampling Program Conclusions

Additional PCB soil sampling is needed to assess the extent of soil at concentrations greater than 10 ppm in three areas of the site. Additional sampling to further assess the extent of soil at the site containing arsenic and PAHs at concentrations greater than the commercial use SCOs is not needed. The exposure potential associated with the dispersed and slightly elevated levels of arsenic in soil at the site can be addressed by capping, as further explained in Section III of this letter. The isolated PAH soil impacts can be similarly addressed by capping.

II. PROPOSED FINAL PCB DELINEATION/VERIFICATION SOIL SAMPLING

Based on the findings of the Phase 2 PCB delineation soil sampling and previous PCB soil sampling at the site, limited additional sampling will be performed to further assess the extent of soil containing PCBs at concentrations greater than 10 ppm in the following areas (to finalize potential soil removal limits for OU4 Phase 2 remedial activities):

1. Adjacent to the former shed north/northeast of former Plant 2

2. Immediately east of the former warehouse building

3. Immediately north of former Plant 3

Pre-excavation PCB verification soil sampling will also be performed in two areas of the site in support of the anticipated additional remedial activities, including: (1) at the northern tip of the site (during implementation of the proposed additional delineation/refinement sampling); and (2) below the footprint of Plant 3 (during remediation, after the existing material staging area is dismantled).

Delineation/verification soil samples will be collected from the following sampling locations, which are shown on Figure 1:

- 11 delineation soil sampling locations (SB-255 through SB-265)

- 9 verification soil sampling locations (V-RD-271 through V-RD-279)

Before sampling begins, the proposed sampling locations will be field-identified using coordinates obtained from the sampling locations map. Each proposed sampling location will be marked using either a flagged metal pin or wooden stake.

A shallow soil boring will be completed at each sampling location using a hand-auger. The boring will either be 2 feet or 4 feet deep depending on location. The presence of visible staining or obvious odors in the recovered soil samples will be recorded in a field notebook. The proposed boring depth and sampling intervals for each boring location are identified in Table 3. Samples collected from each boring will be submitted to a laboratory that has New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) certification, where they will be analyzed or archived as indicated in Table 3. We currently anticipate that laboratory analysis of the samples will be performed on an expedited turnaround with results available approximately one week following sample receipt by the laboratory.

Selected archived soil samples will be released for analysis, as needed, based on the analytical results for samples from overlying intervals or adjacent sampling locations. Analysis of the archived samples will be performed within allowable holding times.

An ARCADIS survey subcontractor will conduct a property boundary survey that will be used to assess potential additional sampling locations along the eastern and southern property boundaries, near the V-RD-223 and V-RD-243 series sampling locations, respectively, where PCBs were previously identified at concentrations near or greater than 50 ppm. Once the property boundary survey is completed, Bayer and ARCADIS will contact the NYSDEC to discuss potential additional sampling locations for these areas. If possible, such additional sampling in these areas will be performed in connection with the above-identified sampling.

Quality assurance/quality control (QA/QC) samples (including blind duplicate, matrix spike, and matrix spike duplicate samples) will also be collected in support of the above-described sampling activities at a frequency of one per 20 field soil samples.

Prior to moving to the next sampling location, all down-hole equipment will be decontaminated with Alconox and water and then rinsed with water. Following completion of the sampling activities, the boreholes will be backfilled with bentonite grout. The excess soil from each sampling location and decontamination water will be containerized with other wastes generated as part of the remedial activities for proper offsite transportation and disposal.

III. PROPOSED MODIFICATION TO ARSENIC SOIL CLEANUP APPROACH

Bayer has completed the removal of arsenic-impacted soil from each of the excavation areas identified in the ROD. Based on available survey data, approximately 850 cubic yards (CY) of arsenic-impacted soil has been excavated to-date for offsite disposal. This is greater than the 577 CY of arsenic-impacted soil as specified in the ROD under the detailed description of the preferred remedial alternative (Alternative 6). Based on the verification and delineation soil sampling performed at the site to date, slightly elevated and dispersed concentrations of arsenic (>16 ppm) remain in soil in the northern half of the site, predominantly north of the driveway that bisects the site into a northern and southern section. The extent of soil containing arsenic at concentrations greater than the 16 ppm commercial use SCO is clearly much larger than that envisioned during remedy selection. A considerable amount of soil might have to be removed to achieve the excavation-based 16 ppm arsenic soil cleanup level (potentially upwards of five times that which has already been excavated as indicated by the hypothetical limits on Figure 2).

The ROD indicates that all soil containing arsenic at concentrations exceeding the 16 ppm commercial use SCO will be excavated for offsite disposal. The ROD also allows for a soil cover system to be installed as an active exposure prevention method over remaining areas of soil containing metals at concentrations greater than the commercial use SCOs.

Bayer and ARCADIS propose to extend the soil cover system already proposed in the ROD so that it also covers the remaining soil that contains arsenic at concentrations exceeding the 16 ppm commercial use SCO. The cover system will consist of a minimum of one foot of clean imported fill with no compounds exceeding the lower of the commercial use and groundwater protection soil cleanup objectives in 6 NYCRR Part 375-6.8(b). The cover will be installed over a demarcation layer with the upper six inches of soil being of sufficient quality to sustain a vegetation layer.

The expanded soil cover system will serve as an active exposure prevention method over remaining areas of soil containing not only arsenic, but also PCBs and PAHs at concentrations exceeding commercial use SCOs. The cover system will mitigate potential direct-contact exposure to remaining impacted soils and will minimize the potential for windblown transport of impacted soils. This proposed change to the remedial approach for arsenic-impacted soil is consistent with the intent of the ROD in that it will achieve the same SCO and will provide a similar level of protection for human health and the environment.

The change is justifiable based on the following, as more fully explained in the subsections below:

- A review of historical aerial photographs and other information suggests that the elevated arsenic levels in soil at the site may be primarily related to past agricultural use as opposed to the subsequent industrial development and use of the property.

- Evaluation of the arsenic soil analytical data and likely exposure pathways indicates that the arsenic in soil at the site would not be expected to present an unacceptable exposure risk under current conditions, and such risk would be lowered (controlled) in the future via the proposed soil cover system.

- A soil cover system has been selected as the preferred remedial approach for soil containing similar levels of arsenic at other remedial sites in New York State.

A. Probable Agricultural Source of Arsenic-Impacted Soil

The probable agricultural source of arsenic in soil in the northern section of the site is supported by a review of the following:

- Aerial photographs showing historical use of the northern section of the property as agricultural.

- Literature documenting that arsenic-containing pesticides were used in parts of Long Island.

- Analytical data for site soil showing clear trends in the arsenic soil analytical data in different areas of the site:

    - Higher arsenic concentrations in soil within the northern section of the site (agricultural land until between 1953 and 1966) vs. the southern section of the site (industrialized since the mid-1940s).

    - No elevated arsenic concentrations in soil near former septic tanks/leachate pits.

- Regional background study data showing similar levels of arsenic in soil in agricultural lands in New York State.

Findings from review of the above-identified items provide lines of evidence that historical agricultural use of the northern section of the site may be responsible for elevated arsenic soil concentrations. The findings are summarized below.

Aerial Photograph Review

A 1953 aerial photograph shows that less than half of the site was developed in 1953. Plant 1, the warehouse, the Pilot Plant, other support facilities, and a driveway that bisects the site into a northern and southern section (at the approximate location of the existing driveway) are visible in the photograph. The northern section of the site and adjacent properties to the north and east appear to have been cultivated (used as agricultural lands) in 1953. The 1953 aerial photograph is included on Figure 3. Aerial photographs of the site taken between 1953 and 1994 are provided in Attachment A.

Literature Documenting Arsenic-Containing Pesticide Use in Long Island

Based on available literature, including the *Long Island Agriculturalist* (1921 and 1922) and *Suffolk County Farm Bureau News* (1917), arsenic-containing compounds such as calcium arsenate and lead arsenate were historically used to control agricultural pests in farmland in Long Island. As indicated in July 31, 2013 e-mail correspondence from the NYSDEC, lead-arsenate compounds were spread as pesticides and were in peak use in various agricultural lands in the 1940s and early 1950s. There is no documentation of the use of arsenic-containing pesticides at the site, but available analytical data suggests that these compounds may have been used and may be primarily responsible for the elevated levels identified in soil in the northern portion of the site, as described below.

Notable Trends in Site Arsenic Soil Analytical Data

Historical and recent arsenic soil sampling locations at the site, including sampling locations from the 2004 RCRA Facility Investigation up through the 2013 Phase 2 delineation soil sampling, and corresponding arsenic soil analytical results relative to the 16 ppm commercial use SCO are shown on Figure 2. This figure shows results for all previous samples regardless of whether soil at the sampling location was excavated during the previous interim or recent remedial activities. Arsenic soil analytical data for the site is also presented in Table 4. Upon closer inspection of the arsenic data, there is a general trend in locations where arsenic has been identified in soil at concentrations above vs. below the 16 ppm commercial use SCO (refer to Figure 4):

- Concentrations >16 ppm are generally in the northern portion of the site, which appears to have been historically used as farmland until sometime between 1953 and 1966 -- the date of the next available aerial photograph, which shows manufacturing facilities encompassing the entire site. The average arsenic concentration in surface and subsurface soil in this area (represented on the figure by light orange-colored shading) is 19 ppm and 7.4 ppm, respectively.

- Concentrations <16 ppm are generally in the southern portion of the site, which was used for manufacturing following site development (around 1945) until manufacturing operations were relocated out of state in 2002. The average arsenic concentration in surface and subsurface soil in this area (represented on the figure by gray shading) is 6.9 ppm and 3.9 ppm, respectively.

As indicated above, arsenic concentrations in soil in the northern section of the site, which appears to have been used for agricultural purposes until sometime between 1953 and 1966, are generally higher than the concentrations in the southern section of the site. The southern section underwent earlier industrial development and therefore has a longer period of industrial use and would be expected to have equivalent or higher concentrations than in the northern section if the arsenic source were from industrial operations.

The limited vertical extent of arsenic in soil at the site also aligns with the probable source of the arsenic being former agricultural use of the property. Arsenic was not identified at a concentration greater than 16 ppm in any of the soil samples collected adjacent to, and from intervals coinciding with the first depths below the former septic tanks/leachate pits at the site. At locations where arsenic has been identified at concentrations exceeding the commercial use SCOs, the highest concentrations are typically in surface soil, and the concentrations decrease quickly with depth. Arsenic has not been identified at a concentration greater than 16 ppm in soil more than 2 feet below the ground surface at any of the 142 arsenic soil sampling locations shown on Figure 4, with the exception of sampling location SB-3, which is in the far northern portion of the site. The arsenic concentration identified in soil at sampling location SB-3 (2-4 feet) was 20 ppm, but decreased to less than the detection limit below 4 feet.

Regional Background Arsenic Study Data

Finally, the arsenic concentrations in soil at the site are similar to those that have been found in various agricultural settings in New York State, including on Long Island, as summarized in the following studies:

Report Title	Author	Background Arsenic Soil Concentrations
Background Versus Risk-Based Screening Levels – An Examination of Arsenic Background Soil Concentrations in Seven States. *International Journal of Soil, Sediment and Water*: Vol. 2: Iss. 2, Article 2. http://scholarworks.umass.edu/intljssw/vol2/iss2/2	Vosnakis, Kelly A.S. and Elizabeth Perry. 2009.	All NYS Soils: **24.2 ppm** NYS Surface Soils: **22.8 ppm** NYS Subsurface Soils: **24.7 ppm**
Residues of Arsenic and Lead in Potato Soils on Long Island. *Chemosphere*, 30(4): 803-806. World Health Organization. 2001. Environmental Health Criteria 224. Arsenic and Arsenic Compounds. 2nd Edition. http://whqlibdoc.who.int/ehc/WHO_EHC_224.pdf	Sanok WJ, Ebel JG, Manzel KL, Gutenmann WH & Lisk DJ. 1995.	Long Island Sandy Loam Soil: **2.3 ppm** Long Island Sandy Loam Soil, potato soil treated with lead arsenate: **27.8 - 51 ppm (range of means)**
Persistence, Phytotoxicity, and Management of Arsenic, Lead and Mercury Residues in Old Orchard Soils of New York State. Chemosphere, 29(6): 1361-1367. World Health Organization. 2001. Environmental Health Criteria 224. Arsenic and Arsenic Compounds. 2nd Edition. http://whqlibdoc.who.int/ehc/WHO_EHC_224.pdf	Merwin I, Pruyne PT, Ebel JG, Manzel KL & Lisk DJ. 1994.	NYS Orchard soil: **1.8 – 30 ppm** NYS Orchard soil previously treated with lead arsenate: **1.6 – 141 ppm**

B. Exposure Pathway Controlled Via Soil Cover System

Because a large amount of additional arsenic soil analytical data has become available since the qualitative human health exposure evaluation (HHEE) was prepared for the *Corrective Measures Study Work Plan* (ARCADIS, May 2008), ARCADIS revisited the assumptions of the HHEE to re-assess potential exposure pathways in the context of current and future commercial site use.

Current receptors were identified as trespassers that may be exposed to surface soils via incidental ingestion, dermal contact, and inhalation. Potential future receptors include commercial workers that may be exposed to surface soils via incidental ingestion, dermal contact, and inhalation. Construction workers also represent a potential future receptor group that may be exposed to surface and subsurface soils via incidental ingestion, dermal contact, and inhalation. Depth to groundwater at the site (i.e., greater than 50 feet below ground surface [bgs]) precludes any direct contact exposures of receptors, and site groundwater is not used as a potable source.

PCBs, arsenic, and PAHs have been identified as constituents of concern (COCs) at the site based on comparison of soil analytical data to the NYSDEC commercial use SCOs. Excavation will be performed to remove remaining soil where PCBs have been identified at concentrations exceeding the 10 ppm subsurface soil cleanup level presented in the RD. Capping is the preferred remedy to address the remaining COCs in soil at the site at concentrations exceeding commercial use SCOs.

We recognize that the NYSDOH does not rely on averages for exposure evaluations. However, for a general frame of reference, ARCADIS used the site-wide arsenic soil analytical data collected to date to calculate 95% upper confidence limits (UCLs) for the data. ARCADIS found that the calculated UCLs are similar to or lower than the 16 ppm commercial use SCO for arsenic. Specifically, the 95% UCL for all data combined (surface plus subsurface soil) is 12.2 ppm. The UCL for surface soil is 16.3 ppm, and the UCL for subsurface soil is 4.4 ppm. This illustrates that although there are several arsenic concentrations above the SCO, the overall "true mean" of the data is lower than the SCO. In theory, the potential for exposure of a receptor to a specific sampling point is equal across the site (i.e., there are no areas of that site that would dictate preferential use -- although this could change in the future). Under current conditions, if a receptor is assumed to be equally exposed to soils across the site, the UCL represents an "average" soil concentration to which they would be exposed. Use of the averages indicates that even without capping, arsenic in site soils is not expected to pose an unacceptable risk to current receptors. Placement of a one-foot thick layer of imported clean fill across previously unexcavated areas of the site, use of a demarcation layer, use of institutional controls in the form of an Environmental Easement and Site Management Plan would mitigate potential exposures to both current and future receptors at this site.

C. Soil Cover System Precedent for Arsenic-Impacted Soil

Based on a search of the NYSDEC's website for recently-issued RODs (within the past five years) that included remedial decisions for soil containing arsenic, soil cover systems have been selected as the final remedy in a number of cases to address the exposure pathway presented by arsenic at levels similar to or greater than those identified at Bayer's site. Table 5 identifies 10 representative cleanup sites in New York where soil containing arsenic at concentrations greater than 16 ppm is being addressed by a soil cover system (or no further action). Table 5 also presents the corresponding NYSDEC site numbers, ROD dates, and hyperlinks to the RODs. The site listing/summary in Table 5 does not include all sites where arsenic in soil has been addressed by a soil cover system. These 10 sites were randomly selected and are identified for reference and comparison purposes.

Based on review of the RODs for these 10 sites, arsenic at concentrations up to 750 ppm (much higher than the arsenic concentrations identified at Bayer's site) are being addressed in whole (or part) by a soil cover system -- as opposed to excavation.

D. Summary and Justification of Modified Arsenic Soil Remedial Approach

The proposed change in remedial strategy (from excavation to a soil cover system) to address soil at this site containing arsenic at concentrations greater than the 16 ppm commercial use SCO is supported by: (1) the slightly elevated and more dispersed arsenic concentrations in the northern portion of the site than known during preparation of the ROD and RD; (2) historical aerial photographs and analytical data trends indicating that the elevated arsenic levels in soil at the site may be primarily related to past agricultural use; (3) human exposure evaluation indicating that the revised cleanup approach would not present unacceptable exposures; and (4) precedent from other sites for a soil cover system to address similar or higher concentrations of arsenic in soil.

IV. SCHEDULE

Bayer proposes to move forward with implementation of the proposed additional PCB delineation soil sampling described in Section II of this letter pending NYSDEC approval. We have assumed that the field surveying and sampling in connection with the additional delineation (refinement) will take two to three days to complete. We anticipate that the fieldwork will be performed during the week of November 18, 2013. Based on this schedule, the anticipated timing for work activities leading up to and necessary to begin implementing the OU4 Phase 2 remedial activities is presented in the table below. However, we are prepared to alter and expedite select field tasks should weather allow for such change.

Activity	Duration	Milestone Completion Date
2013 Phase 3 Delineation Soil Sampling		
• NYSDEC Approval to Implement Additional Sampling	--	November 11, 2013
• Implement Delineation Soil Sampling	1 week	November 18-22, 2013
• Laboratory Analysis	1 week turnaround	December 4, 2013
• Data Review & Reporting	1½ weeks	December 13, 2013

Activity	Duration	Milestone Completion Date
OU4 Phase 2 Remedial Action		
• Prepare 2013 Remedial Design Addendum	~1 month	January 31, 2014
• Submit RD Addendum to Bayer	--	January 31, 2014
• Bayer Review/Revisions to Addendum	2 weeks	February 14, 2014
• Submit RD Addendum to NYSDEC	--	February 17, 2014
• Hold Pre-Bid Meeting	--	February 27, 2014
• NYSDEC Review/Approval	3 weeks	March 7, 2014
• Bayer Contractor Procurement	4 weeks	March 14, 2014
• Mobilization	--	March 24, 2014

We have assumed that the RD Addendum outlining the scope of the OU4 Phase 2 remedial action will be submitted to the NYSDEC in mid-February 2014 and that approval to implement the work will be received in March 2014. We have assumed that mobilization will begin toward the end of the winter, after an end to freezing conditions.

ARCADIS and Bayer would be happy to participate in a conference call or meeting with the NYSDEC, if needed, to discuss any of the information presented in this letter. Please do not hesitate to contact Mr. Scott Krall of Bayer at 412.777.5568 or the undersigned at 315.671.9441 if you have any questions, require additional information, and/or would like to schedule a meeting or call. We appreciate the NYSDEC's continued support on this project toward site closure.

Sincerely,

ARCADIS of New York, Inc.

John C. Brussel, PE
Principal Engineer

Copies:
Ms. Katy Murphy, New York State Department of Environmental Conservation (via e-mail)
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Tables

TABLE 1
2013 PHASE 2 DELINEATION SOIL ANALYTICAL RESULTS FOR PCBs AND ARSENIC (ppm)

FINAL REMEDIAL ACTION - OPERABLE UNIT 4
BAYER MATERIALSCIENCE LLC
125 NEW SOUTH ROAD
HICKSVILLE, NEW YORK

Location ID: / Sample Depth(Feet): / Date Collected:	Restricted Use SCOs Commercial	SB-121 0 - 0.2 09/04/13	SB-121 0.5 - 2 09/04/13	SB-121 2 - 4 09/04/13	SB-122 0 - 0.2 09/03/13	SB-122 2 - 4 09/03/13	SB-123 0 - 0.2 09/03/13	SB-123 2 - 4 09/03/13	SB-124 0 - 0.2 09/03/13	SB-124 2 - 4 09/03/13	SB-125 0 - 0.2 09/04/13	SB-125 2 - 4 09/04/13	SB-126 0 - 0.2 09/03/13
PCBs													
Aroclor 1016	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1221	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1232	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1242	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1248	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1254	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1260	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total PCBs	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals													
Arsenic	16	**32.4 [27.1]**	**34.8**	3.30	3.10	11.3	12.1	13.0	**19.3**	2.90	**28.1**	3.60	**23.2**

Location ID: / Sample Depth(Feet): / Date Collected:	Restricted Use SCOs Commercial	SB-126 2 - 4 09/03/13	SB-127 0 - 0.2 09/03/13	SB-127 2 - 4 09/03/13	SB-128 0 - 0.2 09/03/13	SB-128 2 - 4 09/03/13	SB-129 0 - 0.2 09/03/13	SB-129 2 - 4 09/03/13	SB-130 0 - 0.2 09/04/13	SB-130 0.5 - 2 09/04/13	SB-131 0 - 0.2 09/03/13	SB-131 0.5 - 2 09/03/13	SB-133 0 - 0.2 08/28/13
PCBs													
Aroclor 1016	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.0350
Aroclor 1221	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.0350
Aroclor 1232	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.0350
Aroclor 1242	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.0350
Aroclor 1248	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.180
Aroclor 1254	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.225
Aroclor 1260	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0232 J
Total PCBs	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.428 J
Metals													
Arsenic	16	**16.1**	13.5	2.80	14.3 [10.7]	<2.10	**26.4**	<2.00	8.20	4.50	**16.2**	7.30	NA

TABLE 1
2013 PHASE 2 DELINEATION SOIL ANALYTICAL RESULTS FOR PCBs AND ARSENIC (ppm)

FINAL REMEDIAL ACTION - OPERABLE UNIT 4
BAYER MATERIALSCIENCE LLC
125 NEW SOUTH ROAD
HICKSVILLE, NEW YORK

Location ID: / Sample Depth(Feet): / Date Collected:	Restricted Use SCOs Commercial	SB-134 0 - 0.2 08/28/13	SB-135 0 - 0.2 08/28/13	SB-135 0.5 - 2 08/28/13	SB-136 0 - 0.2 08/28/13	SB-137 0 - 0.2 08/28/13	SB-138 0 - 0.2 08/28/13	SB-139 0 - 0.2 08/28/13	SB-140 0 - 0.2 08/28/13	SB-145 0 - 0.2 08/28/13	SB-146 0 - 0.2 08/28/13	SB-147 0 - 0.2 08/28/13	SB-147 0.5 - 2 08/28/13
PCBs													
Aroclor 1016	- -	<0.0350	<0.0330	<0.0340	<0.0330	<0.0330	<0.0340	<0.0340	<0.0330	<0.0340	<0.0330	<0.0340	<0.0350
Aroclor 1221	- -	<0.0350	<0.0330	<0.0340	<0.0330	<0.0330	<0.0340	<0.0340	<0.0330	<0.0340	<0.0330	<0.0340	<0.0350
Aroclor 1232	- -	<0.0350	<0.0330	<0.0340	<0.0330	<0.0330	<0.0340	<0.0340	<0.0330	<0.0340	<0.0330	<0.0340	<0.0350
Aroclor 1242	- -	<0.0350	<0.0330	<0.0340	<0.0330	<0.0330	<0.0340	<0.0340	<0.0330	<0.0340	<0.0330	<0.0340	<0.0350
Aroclor 1248	- -	0.674	7.30	0.380	6.62	0.386	0.639	0.102	0.296	1.18	2.77	29.1	1.49
Aroclor 1254	- -	0.290	2.38	0.188	2.29	0.183	0.262	0.130	0.176	0.804	1.21	4.53	1.30
Aroclor 1260	- -	0.0532	0.383	<0.0340	0.379	0.0333	0.0403	<0.0340	0.0260 J	0.298	<0.0330	<0.0340	0.406
Total PCBs	1	**1.02**	**10.1**	0.568	**9.29**	0.602	0.941	0.232	0.498 J	**2.28**	**3.98**	**33.6**	**3.20**
Metals													
Arsenic	16	**25.6**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Location ID: / Sample Depth(Feet): / Date Collected:	Restricted Use SCOs Commercial	SB-148 0 - 0.2 08/28/13	SB-148 0.5 - 2 08/28/13	SB-151 0 - 0.2 08/28/13	SB-152 1 - 2 08/30/13	SB-152 2 - 4 08/30/13	SB-153 1 - 2 09/03/13	SB-153 2 - 4 09/03/13	SB-153 4 - 6 09/03/13	SB-154 1 - 2 08/30/13	SB-154 2 - 4 08/30/13	SB-160 0 - 0.2 08/29/13	SB-161 0 - 0.2 08/29/13
PCBs													
Aroclor 1016	- -	<0.0320	<0.0340	<0.0340	<0.0340	<0.0300	<0.0310	<0.0340	<0.0340	<0.0350	<0.0310	<0.0340	<0.0360
Aroclor 1221	- -	<0.0320	<0.0340	<0.0340	<0.0340	<0.0300	<0.0310	<0.0340	<0.0340	<0.0350	<0.0310	<0.0340	<0.0360
Aroclor 1232	- -	<0.0320	<0.0340	<0.0340	<0.0340	<0.0300	<0.0310	<0.0340	<0.0340	<0.0350	<0.0310	<0.0340	<0.0360
Aroclor 1242	- -	<0.0320	<0.0340	<0.0340	0.0533	<0.0300	<0.0310	<0.0340	<0.0340	0.0670	<0.0310	<0.0340	<0.0360
Aroclor 1248	- -	0.217	0.344	4.13	<0.0340	<0.0300	<0.0310	<0.0340	<0.0340	<0.0350	<0.0310	5.78	1.36
Aroclor 1254	- -	0.0777	0.224	3.08	<0.0340	<0.0300	<0.0310	<0.0340	<0.0340	<0.0350	<0.0310	1.66	0.932
Aroclor 1260	- -	0.0483	0.0398	0.910	<0.0340	<0.0300	<0.0310	<0.0340	<0.0340	<0.0350	<0.0310	0.320	0.178
Total PCBs	1	0.343	0.608	**8.12**	0.0533	<0.0300	<0.0310	<0.0340	<0.0340	0.0670	<0.0310	**7.76**	**2.47**
Metals													
Arsenic	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 1
2013 PHASE 2 DELINEATION SOIL ANALYTICAL RESULTS FOR PCBs AND ARSENIC (ppm)

FINAL REMEDIAL ACTION - OPERABLE UNIT 4
BAYER MATERIALSCIENCE LLC
125 NEW SOUTH ROAD
HICKSVILLE, NEW YORK

Location ID: / Sample Depth(Feet): / Date Collected:	Restricted Use SCOs Commercial	SB-162 0 - 0.2 08/29/13	SB-163 0 - 0.2 08/29/13	SB-165 0 - 0.2 08/29/13	SB-165 0.5 - 2 08/29/13	SB-165 2 - 4 08/29/13	SB-166 0 - 0.2 08/29/13	SB-166 0.5 - 2 08/29/13	SB-166 2 - 4 08/29/13	SB-167 0 - 0.2 08/29/13	SB-167 0.5 - 2 08/29/13	SB-167 2 - 4 08/29/13
PCBs												
Aroclor 1016	- -	<0.0360	<0.0340	<0.0340	<0.0360	<0.0340	<0.0330	<0.0360	<0.0390	<0.0350	<0.0350	<0.0370
Aroclor 1221	- -	<0.0360	<0.0340	<0.0340	<0.0360	<0.0340	<0.0330	<0.0360	<0.0390	<0.0350	<0.0350	<0.0370
Aroclor 1232	- -	<0.0360	<0.0340	<0.0340	<0.0360	<0.0340	<0.0330	<0.0360	<0.0390	<0.0350	<0.0350	<0.0370
Aroclor 1242	- -	<0.0360	<0.0340	<0.0340	<0.0360	<0.0340	<0.0330	<0.0360	<0.0390	<0.0350	<0.0350	<0.0370
Aroclor 1248	- -	1.71	0.915	47.6	<0.0360	<0.0340	33.3	0.168	0.0375 J	73.2	<0.0350	<0.0370
Aroclor 1254	- -	1.19	0.575	50.4	0.203	<0.0340	56.3	0.369	0.0665	140	45.7	0.368
Aroclor 1260	- -	0.225	0.101	3.98 E	<0.0360	<0.0340	2.58 E	<0.0360	<0.0390	<0.0350	<0.0350	<0.0370
Total PCBs	1	**3.13**	**1.59**	**102**	0.203	<0.0340	**92.2**	0.537	0.104 J	**213**	**45.7**	0.368
Metals												
Arsenic	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Location ID: / Sample Depth(Feet): / Date Collected:	Restricted Use SCOs Commercial	SB-168 0 - 0.2 08/29/13	SB-168 0.5 - 2 08/29/13	SB-169 0 - 0.2 08/28/13	SB-169 0.5 - 2 08/28/13	SB-170 0 - 0.2 08/29/13	SB-171 0 - 0.2 08/29/13	SB-172 0 - 0.2 08/29/13	SB-172 0.5 - 2 08/29/13	SB-173 0 - 0.2 08/29/13	SB-173 0.5 - 2 08/29/13	SB-174 0 - 0.2 08/29/13
PCBs												
Aroclor 1016	- -	<0.0390	<0.0360	<0.0340	<0.0350	<0.0330	<0.0340	<0.0330	<0.0340	<0.0330	<0.0320	<0.0330
Aroclor 1221	- -	<0.0390	<0.0360	<0.0340	<0.0350	<0.0330	<0.0340	<0.0330	<0.0340	<0.0330	<0.0320	<0.0330
Aroclor 1232	- -	<0.0390	<0.0360	<0.0340	<0.0350	<0.0330	<0.0340	<0.0330	<0.0340	<0.0330	<0.0320	<0.0330
Aroclor 1242	- -	<0.0390	<0.0360	<0.0340	<0.0350	<0.0330	<0.0340	<0.0330	<0.0340	<0.0330	<0.0320	<0.0330
Aroclor 1248	- -	<0.0390	<0.0360	<0.0340	<0.0350	4.39	0.572	3.54	0.0836	14.2	3.41	1.65
Aroclor 1254	- -	0.240	0.0467	23.3	0.0629	3.44	0.952	9.30	0.182	34.4	7.85	3.43
Aroclor 1260	- -	<0.0390	<0.0360	<0.0340	<0.0350	0.524	0.121	<0.0330	<0.0340	<0.0330	0.246	0.334
Total PCBs	1	0.240	0.0467	**23.3**	0.0629	**8.35**	**1.65**	**12.8**	0.266	**48.6**	**11.5**	**5.41**
Metals												
Arsenic	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 1
2013 PHASE 2 DELINEATION SOIL ANALYTICAL RESULTS FOR PCBs AND ARSENIC (ppm)

FINAL REMEDIAL ACTION - OPERABLE UNIT 4
BAYER MATERIALSCIENCE LLC
125 NEW SOUTH ROAD
HICKSVILLE, NEW YORK

Location ID: / Sample Depth(Feet): / Date Collected:	Restricted Use SCOs Commercial	SB-175 0.2 - 0.4 08/29/13	SB-176 0 - 0.2 08/29/13	SB-177 6 - 8 09/04/13	SB-178 6 - 8 09/05/13	SB-178 8 - 10 09/05/13	SB-179 4 - 6 09/05/13	SB-180 0 - 0.2 09/09/13	SB-180 0.5 - 2 09/09/13	SB-180 2 - 4 09/09/13	SB-181 0 - 0.2 09/09/13
PCBs											
Aroclor 1016	- -	<0.0340	<0.0340 [<0.0340]	<0.0350	<0.0330	<0.0340	<0.0330	<0.0410	<0.0340	<0.0350	<0.0350
Aroclor 1221	- -	<0.0340	<0.0340 [<0.0340]	<0.0350	<0.0330	<0.0340	<0.0330	<0.0410	<0.0340	<0.0350	<0.0350
Aroclor 1232	- -	<0.0340	<0.0340 [<0.0340]	<0.0350	<0.0330	<0.0340	<0.0330	<0.0410	<0.0340	<0.0350	<0.0350
Aroclor 1242	- -	<0.0340	<0.0340 [<0.0340]	<0.0350	<0.0330	<0.0340	<0.0330	<0.0410	<0.0340	<0.0350	<0.0350
Aroclor 1248	- -	1.38	4.11 [5.48]	3.15	10.1	<0.0340	0.0533	0.514	8.22	1.70	9.86
Aroclor 1254	- -	1.86	2.17 [2.18]	<0.0350	<0.0330	0.0344	<0.0330	<0.0410	<0.0340	0.355	<0.0350
Aroclor 1260	- -	0.0927	0.399 [0.410]	<0.0350	<0.0330	<0.0340	<0.0330	0.0913	0.645	0.141	0.616
Total PCBs	1	**3.33**	**6.68 [8.07]**	**3.15**	**10.1**	0.0344	0.0533	0.605	**8.87**	**2.20**	**10.5**
Metals											
Arsenic	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Location ID: / Sample Depth(Feet): / Date Collected:	Restricted Use SCOs Commercial	SB-181 0.5 - 2 09/09/13	SB-181 2 - 4 09/09/13	SB-182 1 - 2 09/06/13	SB-183 2 - 4 09/06/13	SB-183 4 - 6 09/06/13	SB-184 0 - 0.2 09/06/13	SB-184 2 - 4 09/06/13	SB-185 0 - 0.2 09/05/13	SB-185 0.5 - 2 09/05/13	SB-185 2 - 4 09/05/13
PCBs											
Aroclor 1016	- -	<0.0390	<0.0360	<0.0350	<0.0350	<0.0340	<0.0350 [<0.0340]	<0.0340	<0.0340 [<0.0340]	<0.0330	<0.0340
Aroclor 1221	- -	<0.0390	<0.0360	<0.0350	<0.0350	<0.0340	<0.0350 [<0.0340]	<0.0340	<0.0340 [<0.0340]	<0.0330	<0.0340
Aroclor 1232	- -	<0.0390	<0.0360	<0.0350	<0.0350	<0.0340	<0.0350 [<0.0340]	<0.0340	<0.0340 [<0.0340]	<0.0330	<0.0340
Aroclor 1242	- -	<0.0390	<0.0360	<0.0350	<0.0350	<0.0340	<0.0350 [<0.0340]	<0.0340	<0.0340 [<0.0340]	<0.0330	<0.0340
Aroclor 1248	- -	18.2	3.12	0.185	14.4	3.80	5.35 [8.57]	6.40	1.74 [2.38]	1.75	0.566
Aroclor 1254	- -	<0.0390	<0.0360	0.0710	<0.0350	1.74	6.46 [<0.0340]	<0.0340	1.80 [0.970]	<0.0330	<0.0340
Aroclor 1260	- -	0.664	0.234	<0.0350	0.498	0.457	0.435 [0.536]	0.339	<0.0340 [<0.0340]	<0.0330	<0.0340
Total PCBs	1	**18.9**	**3.35**	0.256	**14.9**	**6.00**	**12.2 [9.11]**	**6.74**	**3.54 [3.35]**	**1.75**	0.566
Metals											
Arsenic	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 1
2013 PHASE 2 DELINEATION SOIL ANALYTICAL RESULTS FOR PCBs AND ARSENIC (ppm)

FINAL REMEDIAL ACTION - OPERABLE UNIT 4
BAYER MATERIALSCIENCE LLC
125 NEW SOUTH ROAD
HICKSVILLE, NEW YORK

Location ID: / Sample Depth(Feet): / Date Collected:	Restricted Use SCOs Commercial	SB-185 4 - 6 09/05/13	SB-185 6 - 8 09/05/13	SB-186 0 - 0.2 09/05/13	SB-186 0.5 - 2 09/05/13	SB-186 2 - 4 09/05/13	SB-186 4 - 6 09/05/13	SB-186 6 - 8 09/05/13	SB-186 8 - 10 09/05/13	SB-187 0 - 0.2 09/05/13	SB-187 0.5 - 2 09/05/13	SB-187 2 - 4 09/05/13
PCBs												
Aroclor 1016	- -	<0.0350	<0.0340	<0.0340 [<0.0340]	<0.0330	<0.0340	<0.0340	<0.0340	<0.0330	<0.0340	<0.0320	<0.0330
Aroclor 1221	- -	<0.0350	<0.0340	<0.0340 [<0.0340]	<0.0330	<0.0340	<0.0340	<0.0340	<0.0330	<0.0340	<0.0320	<0.0330
Aroclor 1232	- -	<0.0350	<0.0340	<0.0340 [<0.0340]	<0.0330	<0.0340	<0.0340	<0.0340	<0.0330	<0.0340	<0.0320	<0.0330
Aroclor 1242	- -	<0.0350	<0.0340	<0.0340 [<0.0340]	<0.0330	<0.0340	<0.0340	<0.0340	<0.0330	<0.0340	<0.0320	<0.0330
Aroclor 1248	- -	2.72	4.61	3.59 [3.04]	10.1	9.27	25.6	17.7	8.49	5.76	12.0	3.51
Aroclor 1254	- -	<0.0350	<0.0340	<0.0340 [<0.0340]	<0.0330	<0.0340	<0.0340	<0.0340	<0.0330	<0.0340	<0.0320	<0.0330
Aroclor 1260	- -	<0.0350	<0.0340	<0.0340 [<0.0340]	<0.0330	<0.0340	<0.0340	<0.0340	0.310	<0.0340	<0.0320	<0.0330
Total PCBs	1	**2.72**	**4.61**	**3.59 [3.04]**	**10.1**	**9.27**	**25.6**	**17.7**	**8.80**	**5.76**	**12.0**	**3.51**
Metals												
Arsenic	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Location ID: / Sample Depth(Feet): / Date Collected:	Restricted Use SCOs Commercial	SB-187 4 - 6 09/06/13	SB-187 6 - 8 09/06/13	SB-188 0 - 0.2 09/05/13	SB-188 2 - 4 09/05/13	SB-189 0 - 0.2 09/05/13	SB-189 2 - 4 09/05/13	SB-190 0 - 0.2 09/05/13	SB-190 2 - 4 09/05/13	SB-191 0 - 0.2 09/05/13	SB-191 2 - 4 09/05/13	SB-192 0 - 0.2 09/05/13
PCBs												
Aroclor 1016	- -	<0.0330	<0.0330	<0.0330	<0.0350	<0.0350	<0.0330	<0.0350	<0.0330	<0.0340	<0.0330	<0.0340
Aroclor 1221	- -	<0.0330	<0.0330	<0.0330	<0.0350	<0.0350	<0.0330	<0.0350	<0.0330	<0.0340	<0.0330	<0.0340
Aroclor 1232	- -	<0.0330	<0.0330	<0.0330	<0.0350	<0.0350	<0.0330	<0.0350	<0.0330	<0.0340	<0.0330	<0.0340
Aroclor 1242	- -	<0.0330	<0.0330	<0.0330	<0.0350	<0.0350	<0.0330	<0.0350	<0.0330	<0.0340	<0.0330	<0.0340
Aroclor 1248	- -	5.30	0.121	12.9	<0.0350	2.05	<0.0330	8.97	<0.0330	3.47	<0.0330	0.454
Aroclor 1254	- -	<0.0330	0.285	<0.0330	<0.0350	<0.0350	<0.0330	<0.0350	<0.0330	2.81	<0.0330	<0.0340
Aroclor 1260	- -	0.183	0.0421	<0.0330	<0.0350	<0.0350	<0.0330	<0.0350	<0.0330	<0.0340	<0.0330	0.0776
Total PCBs	1	**5.48**	0.448	**12.9**	<0.0350	**2.05**	<0.0330	**8.97**	<0.0330	**6.28**	<0.0330	0.532
Metals												
Arsenic	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 1
2013 PHASE 2 DELINEATION SOIL ANALYTICAL RESULTS FOR PCBs AND ARSENIC (ppm)

FINAL REMEDIAL ACTION - OPERABLE UNIT 4
BAYER MATERIALSCIENCE LLC
125 NEW SOUTH ROAD
HICKSVILLE, NEW YORK

Location ID: / Sample Depth(Feet): / Date Collected:	Restricted Use SCOs Commercial	SB-192 2 - 4 09/05/13	SB-193 0 - 0.2 09/05/13	SB-193 2 - 4 09/05/13	SB-194 0 - 0.2 09/05/13	SB-194 2 - 4 09/05/13	SB-195 0 - 0.2 08/27/13	SB-196 0 - 0.2 08/27/13	SB-197 0 - 0.2 08/29/13	SB-197 0.5 - 2 09/09/13	SB-198 0 - 0.2 08/29/13	SB-199 0 - 0.2 08/29/13
PCBs												
Aroclor 1016	- -	<0.0330	<0.0340	<0.0330	<0.0340	<0.0330	<0.0350	<0.0370 [<0.0370]	<0.0330	<0.0390	<0.0340	<0.0350
Aroclor 1221	- -	<0.0330	<0.0340	<0.0330	<0.0340	<0.0330	<0.0350	<0.0370 [<0.0370]	<0.0330	<0.0390	<0.0340	<0.0350
Aroclor 1232	- -	<0.0330	<0.0340	<0.0330	<0.0340	<0.0330	<0.0350	<0.0370 [<0.0370]	<0.0330	<0.0390	<0.0340	<0.0350
Aroclor 1242	- -	<0.0330	<0.0340	<0.0330	<0.0340	<0.0330	<0.0350	<0.0370 [<0.0370]	<0.0330	<0.0390	<0.0340	<0.0350
Aroclor 1248	- -	0.0595	0.155	<0.0330	2.69	2.51	7.57	3.73 [4.07]	23.0	1.50	0.975	0.140
Aroclor 1254	- -	0.117	0.287	0.126	<0.0340	3.72	1.39	0.927 [0.702]	5.04	<0.0390	0.191	0.0886
Aroclor 1260	- -	<0.0330	<0.0340	<0.0330	<0.0340	<0.0330	0.274	0.127 [0.131]	1.01	<0.0390	0.0374	<0.0350
Total PCBs	1	0.177	0.442	0.126	**2.69**	**6.23**	**9.23**	**4.78 [4.90]**	**29.1**	**1.50**	**1.20**	0.229
Metals												
Arsenic	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Location ID: / Sample Depth(Feet): / Date Collected:	Restricted Use SCOs Commercial	SB-200 1 - 2 09/09/13	SB-200 2 - 4 09/09/13	SB-201 2 - 4 09/06/13	SB-202 2 - 4 09/06/13	SB-203 2 - 4 09/06/13	SB-208 0 - 0.2 08/29/13	SB-209 0 - 0.2 08/29/13	SB-210 1 - 2 08/30/13	SB-213 0 - 0.2 08/29/13	SB-213 0.5 - 2 08/29/13	SB-214 0 - 0.2 08/29/13
PCBs												
Aroclor 1016	- -	<0.0360	<0.0370	<0.0350	<0.0360	<0.0350	<0.0340	<0.0330	<0.0390	<0.0340	<0.0380	<0.0360
Aroclor 1221	- -	<0.0360	<0.0370	<0.0350	<0.0360	<0.0350	<0.0340	<0.0330	<0.0390	<0.0340	<0.0380	<0.0360
Aroclor 1232	- -	<0.0360	<0.0370	<0.0350	<0.0360	<0.0350	<0.0340	<0.0330	<0.0390	<0.0340	<0.0380	<0.0360
Aroclor 1242	- -	<0.0360	<0.0370	<0.0350	<0.0360	<0.0350	<0.0340	<0.0330	<0.0390	<0.0340	<0.0380	<0.0360
Aroclor 1248	- -	<0.0360	<0.0370	0.0453	<0.0360	0.0428	0.184	1.92	<0.0390	2.61	0.152	0.511
Aroclor 1254	- -	<0.0360	<0.0370	<0.0350	<0.0360	<0.0350	<0.0340	<0.0330	<0.0390	<0.0340	0.194	0.168
Aroclor 1260	- -	<0.0360	<0.0370	<0.0350	<0.0360	<0.0350	<0.0340	0.0933	<0.0390	<0.0340	<0.0380	<0.0360
Total PCBs	1	<0.0360	<0.0370	0.0453	<0.0360	0.0428	0.184	**2.01**	<0.0390	**2.61**	0.346	0.679
Metals												
Arsenic	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 1
2013 PHASE 2 DELINEATION SOIL ANALYTICAL RESULTS FOR PCBs AND ARSENIC (ppm)

FINAL REMEDIAL ACTION - OPERABLE UNIT 4
BAYER MATERIALSCIENCE LLC
125 NEW SOUTH ROAD
HICKSVILLE, NEW YORK

Location ID: / Sample Depth(Feet): / Date Collected:	Restricted Use SCOs Commercial	SB-214 0.5 - 2 08/29/13	SB-215 0 - 0.2 08/29/13	SB-215 0.5 - 2 08/29/13	SB-216 0 - 0.2 08/29/13	SB-216 0.5 - 2 08/29/13	SB-217 0 - 0.2 08/29/13	SB-217 0.5 - 2 08/29/13	SB-218 0 - 0.2 08/30/13	SB-218 0.5 - 2 08/30/13	SB-219 0 - 0.2 08/29/13	SB-219 0.5 - 2 08/29/13
PCBs												
Aroclor 1016	- -	<0.0330	<0.0340	<0.0360	<0.0340	<0.0380	<0.0340	<0.0350	<0.0340	<0.0340	<0.0370 [<0.0380]	<0.0350
Aroclor 1221	- -	<0.0330	<0.0340	<0.0360	<0.0340	<0.0380	<0.0340	<0.0350	<0.0340	<0.0340	<0.0370 [<0.0380]	<0.0350
Aroclor 1232	- -	<0.0330	<0.0340	<0.0360	<0.0340	<0.0380	<0.0340	<0.0350	<0.0340	<0.0340	<0.0370 [<0.0380]	<0.0350
Aroclor 1242	- -	<0.0330	<0.0340	<0.0360	<0.0340	<0.0380	<0.0340	<0.0350	<0.0340	<0.0340	<0.0370 [<0.0380]	<0.0350
Aroclor 1248	- -	<0.0330	0.0984	<0.0360	1.42	<0.0380	3.08	<0.0350	0.568	0.0687	11.5 [10.4]	0.604
Aroclor 1254	- -	<0.0330	0.0669	0.0307 J	0.286	<0.0380	0.661	<0.0350	<0.0340	<0.0340	0.729 [<0.0380]	0.236
Aroclor 1260	- -	<0.0330	<0.0340	<0.0360	<0.0340	<0.0380	<0.0340	<0.0350	<0.0340	<0.0340	<0.0370 [<0.0380]	0.0305 J
Total PCBs	1	<0.0330	0.165	0.0307 J	**1.71**	<0.0380	**3.74**	<0.0350	0.568	0.0687	**12.2 [10.4]**	0.871 J
Metals												
Arsenic	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Location ID: / Sample Depth(Feet): / Date Collected:	Restricted Use SCOs Commercial	SB-220 0 - 0.2 09/04/13	SB-221 0 - 0.2 09/04/13	SB-222 0 - 0.2 09/04/13	SB-223 0 - 0.2 09/04/13	SB-225 0 - 0.2 09/04/13	SB-226 0 - 0.2 09/04/13	SB-227 0 - 0.2 09/04/13	SB-228 0 - 0.2 09/04/13	SB-233 0 - 0.2 08/27/13	SB-234 0 - 0.2 09/03/13	SB-244 0 - 0.2 08/30/13
PCBs												
Aroclor 1016	- -	<0.0340	<0.350	<0.340	<0.690	<0.360 [<0.0370]	<0.350	<0.0330	<0.360	<0.0340	<0.0350	NA
Aroclor 1221	- -	<0.0340	<0.350	<0.340	<0.690	<0.360 [<0.0370]	<0.350	<0.0330	<0.360	<0.0340	<0.0350	NA
Aroclor 1232	- -	<0.0340	<0.350	<0.340	<0.690	<0.360 [<0.0370]	<0.350	<0.0330	<0.360	<0.0340	<0.0350	NA
Aroclor 1242	- -	<0.0340	<0.350	<0.340	<0.690	<0.360 [<0.0370]	<0.350	<0.0330	<0.360	<0.0340	<0.0350	NA
Aroclor 1248	- -	5.76	1.47	1.32	9.95	0.815 [0.548]	1.12	0.202	1.04	0.320	2.56	NA
Aroclor 1254	- -	<0.0340	<0.350	<0.340	<0.690	<0.360 [<0.0370]	<0.350	<0.0330	<0.360	0.502	<0.0350	NA
Aroclor 1260	- -	<0.0340	<0.350	<0.340	<0.690	<0.360 [<0.0370]	<0.350	<0.0330	<0.360	0.0747	<0.0350	NA
Total PCBs	1	**5.76**	**1.47**	**1.32**	**9.95**	0.815 [0.548]	**1.12**	0.202	**1.04**	0.897	**2.56**	NA
Metals												
Arsenic	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**33.5**

TABLE 1
2013 PHASE 2 DELINEATION SOIL ANALYTICAL RESULTS FOR PCBs AND ARSENIC (ppm)

FINAL REMEDIAL ACTION - OPERABLE UNIT 4
BAYER MATERIALSCIENCE LLC
125 NEW SOUTH ROAD
HICKSVILLE, NEW YORK

Location ID: / Sample Depth(Feet): / Date Collected:	Restricted Use SCOs Commercial	SB-235 0 - 0.2 09/03/13	SB-236 0 - 0.2 09/03/13	SB-237 0 - 0.2 09/03/13	SB-238 0 - 0.2 09/03/13	SB-240 0 - 0.2 08/30/13	SB-240 0.5 - 2 08/30/13	SB-241 0 - 0.2 08/30/13	SB-241 0.5 - 2 08/30/13	SB-242 0 - 0.2 08/30/13	SB-242 2 - 4 08/30/13	SB-243 0 - 0.2 08/30/13
PCBs												
Aroclor 1016	- -	<0.0360	<0.0380	<0.0330	<0.0360	<0.0320	<0.0340	<0.0330	<0.0330	NA	NA	NA
Aroclor 1221	- -	<0.0360	<0.0380	<0.0330	<0.0360	<0.0320	<0.0340	<0.0330	<0.0330	NA	NA	NA
Aroclor 1232	- -	<0.0360	<0.0380	<0.0330	<0.0360	<0.0320	<0.0340	<0.0330	<0.0330	NA	NA	NA
Aroclor 1242	- -	<0.0360	<0.0380	<0.0330	<0.0360	<0.0320	<0.0340	<0.0330	<0.0330	NA	NA	NA
Aroclor 1248	- -	<0.0360	<0.0380	0.0870	0.328	0.0430	<0.0340	<0.0330	<0.0330	NA	NA	NA
Aroclor 1254	- -	<0.0360	0.0966	0.0948	0.326	0.0674	<0.0340	<0.0330	<0.0330	NA	NA	NA
Aroclor 1260	- -	<0.0360	<0.0380	<0.0330	<0.0360	<0.0320	<0.0340	<0.0330	<0.0330	NA	NA	NA
Total PCBs	1	<0.0360	0.0966	0.182	0.654	0.110	<0.0340	<0.0330	<0.0330	NA	NA	NA
Metals												
Arsenic	16	NA	NA	NA	NA	**38.6**	NA	**20.8**	NA	**29.7 [29.8]**	2.20	**42.0**

Location ID: / Sample Depth(Feet): / Date Collected:	Restricted Use SCOs Commercial	SB-243 2 - 4 08/30/13	SB-244 0.5 - 2 08/30/13	SB-245 0 - 0.2 09/05/13	SB-245 0.5 - 2 09/05/13	SB-246 0 - 0.2 09/05/13	SB-247 0 - 0.2 09/05/13	SB-248 0 - 0.2 09/05/13	SB-249 0 - 0.2 09/05/13	SB-249 0.5 - 2 09/05/13	V-RD-101A 6 - 8 09/06/13
PCBs											
Aroclor 1016	- -	NA	NA	<0.340	<0.0330	<0.330	<0.700	<0.350	<0.0330	<0.0360	<0.0350
Aroclor 1221	- -	NA	NA	<0.340	<0.0330	<0.330	<0.700	<0.350	<0.0330	<0.0360	<0.0350
Aroclor 1232	- -	NA	NA	<0.340	<0.0330	<0.330	<0.700	<0.350	<0.0330	<0.0360	<0.0350
Aroclor 1242	- -	NA	NA	<0.340	<0.0330	<0.330	<0.700	<0.350	<0.0330	<0.0360	<0.0350
Aroclor 1248	- -	NA	NA	31.8	22.0	1.79	6.79	4.19	234	41.7	0.787
Aroclor 1254	- -	NA	NA	<0.340	<0.0330	<0.330	<0.700	<0.350	<0.0330	<0.0360	<0.0350
Aroclor 1260	- -	NA	NA	<0.340	1.11	<0.330	<0.700	<0.350	3.03	1.37	<0.0350
Total PCBs	1	NA	NA	**31.8**	**23.1**	**1.79**	**6.79**	**4.19**	**237**	**43.1**	0.787
Metals											
Arsenic	16	<2.00	5.50	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 1

2013 PHASE 2 SOIL DELINEATION ANALYTICAL RESULTS FOR PCBs AND ARSENIC (ppm)

FINAL REMEDIAL ACTION - OPERABLE UNIT 4
BAYER MATERIALSCIENCE LLC
125 NEW SOUTH ROAD
HICKSVILLE, NEW YORK

Notes:

1. Samples were collected by ARCADIS on the dates indicated.
2. PCBs = Polychlorinated biphenyls.
3. NA = Not Analyzed.
4. Samples were analyzed by Accutest located in Marlborough, Massachusetts and Dayton, New Jersey for:
   - PCBs using USEPA SW-846 Method 8082.
   - Arsenic using USEPA SW-846 Method 6010.
5. All concentrations reported in dry weight parts per million (ppm), which is equivalent to milligrams per kilogram (mg/kg).
6. Data qualifiers are defined as follows:
   E - The compound was quantitated above the calibration range.
   J - Indicates that the associated numerical value is an estimated concentration.
   < - The compound was not detected above the reported detection limit.
7. Soil cleanup levels are from the New York State Department of Environmental Conservation- (NYSDEC-) approved Remedial
8. Design (ARCADIS, February 2013) and consist of the following:
   - PCB surface soil and arsenic soil cleanup levels: Commercial use soil cleanup objectives from Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6 NYCRR) Part 375-6.8(b).
   - PCB subsurface soil cleanup levels: from the NYSDEC document titled "CP-51 / Soil Cleanup Guidance", dated October 21, 2010.
9. Shading indicates that the result exceeds the project soil cleanup levels.
10. - - = No cleanup level applicable.
11. Data has not been validated.

TABLE 2

2013 PHASE 2 DELINEATION SOIL ANALYTICAL RESULTS FOR SVOCs (ppm)

FINAL REMEDIAL ACTION - OPERABLE UNIT 4
BAYER MATERIALSCIENCE LLC
125 NEW SOUTH ROAD
HICKSVILLE, NEW YORK

Location ID: / Sample Depth(Feet): / Date Collected:	Restricted Use SCOs Commercial	SB-180 0 - 0.2 09/09/13	SB-180 0.5 - 2 09/09/13	SB-180 2 - 4 09/09/13	SB-181 0 - 0.2 09/09/13	SB-181 0.5 - 2 09/09/13	SB-181 2 - 4 09/09/13	SB-234 0 - 0.2 09/03/13	SB-235 0 - 0.2 09/03/13	SB-236 0 - 0.2 09/03/13	SB-237 0 - 0.2 09/03/13	SB-238 0 - 0.2 09/03/13
SVOCs												
2-Methylnaphthalene	- -	<0.120	<1.10	<1.10	<0.540	<0.570	<0.110	NA	NA	NA	NA	NA
Acenaphthene	500	<0.120	<1.10	<1.10	<0.540	<0.570	<0.110	0.0443	<0.0350 [<0.0330]	0.0170 J	<0.0320	0.0155 J
Acenaphthylene	500	<0.120	<1.10	<1.10	<0.540	<0.570	<0.110	0.0233 J	<0.0350 [<0.0330]	0.0184 J	<0.0320	0.0348 J
Anthracene	500	<0.120	<1.10	<1.10	<0.540	<0.570	<0.110	0.103	0.0178 J [0.0165 J]	0.0461	0.0153 J	0.0646
Benzo(a)anthracene	5.6	0.164	<1.10	<1.10	<0.540	<0.570	<0.110	0.826	0.114 [0.0955]	0.170	0.0946	0.350
Benzo(a)pyrene	1	0.188	<1.10	<1.10	<0.540	<0.570	<0.110	**1.34**	0.144 [0.118]	0.203	0.120	0.519
Benzo(b)fluoranthene	5.6	0.221	<1.10	<1.10	<0.540	<0.570	0.133	1.43	0.213 [0.170]	0.306	0.186	0.891
Benzo(ghi)perylene	500	0.123	<1.10	<1.10	<0.540	<0.570	<0.110	1.12	0.137 [0.0998]	0.176	0.110	0.470
Benzo(k)fluoranthene	56	0.152	<1.10	<1.10	<0.540	<0.570	<0.110	1.05	0.0713 [0.0630]	0.0945	0.0721	0.296
Chrysene	56	0.221	<1.10	<1.10	<0.540	<0.570	0.118	1.17	0.163 [0.129]	0.226	0.150	0.594
Dibenzo(a,h)anthracene	0.56	<0.120	<1.10	<1.10	<0.540	<0.570	<0.110	0.247	0.0330 J [0.0239 J]	0.0421	0.0284 J	0.114
Fluoranthene	500	0.369	<1.10	<1.10	0.828	<0.570	0.156	1.50	0.269 [0.214]	0.377	0.250	0.891
Fluorene	500	<0.120	<1.10	<1.10	<0.540	<0.570	<0.110	0.0362	<0.0350 [<0.0330]	<0.0370	<0.0320	0.0173 J
Indeno(1,2,3-cd)pyrene	5.6	<0.120	<1.10	<1.10	<0.540	<0.570	<0.110	1.18	0.106 [0.0748]	0.136	0.0860	0.381
Naphthalene	500	<0.120	<1.10	<1.10	<0.540	<0.570	<0.110	0.0256 J	<0.0350 [<0.0330]	<0.0370	<0.0320	<0.0370
Phenanthrene	500	0.148	<1.10	<1.10	<0.540	<0.570	<0.110	0.476	0.0884 [0.0736]	0.149	0.0849	0.266
Pyrene	500	0.292	<1.10	<1.10	0.629	<0.570	0.137	1.38	0.282 [0.208]	0.398	0.239	0.889
Total PAHs	- -	2.36	<9.35	<9.35	5.51	<4.85	1.26	12.0 J	1.71 J [1.35 J]	2.40 J	1.50 J	5.81 J

Notes:

1. Samples were collected by ARCADIS on the dates indicated.
2. SVOCs = Semi-volatile organic compounds.
3. Samples were analyzed by Accutest located in Marlborough, Massachusetts and Dayton, New Jersey for:
   - SVOCs using USEPA SW-846 Method 8270.
4. All concentrations reported in dry weight parts per million (ppm), which is equivalent to milligrams per kilogram (mg/kg).
5. Data qualifiers are defined as follows:
   J - Indicates that the associated numerical value is an estimated concentration.
   < - The compound was not detected above the reported detection limit.
6. Soil cleanup levels are from the New York State Department of Environmental Conservation- (NYSDEC-) approved Remedial Design (ARCADIS, February 2013) and consist of the following:
   - SVOC surface soil cleanup levels: Commercial use soil cleanup objectives from Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6 NYCRR) Part 375-6.8(b).
   - PAH subsurface soil cleanup level: NYSDEC document entitled "CP-51 / Soil CleanupGuidance", dated October 21, 2010.
7. Shading indicates that the result exceeds the project soil cleanup levels.
8. - - = No cleanup level applicable.
9. Data has not been validated.

TABLE 3
PROPOSED ADDITIONAL PCB DELINEATION AND VERIFICATION
SOIL SAMPLING LOCATIONS AND INTERVALS

FINAL REMEDIAL ACTION - OPERABLE UNIT 4
BAYER MATERIALSCIENCE LLC
125 NEW SOUTH ROAD
HICKSVILLE, NEW YORK

Proposed Sample ID	Proposed Boring Depth (feet bgs)	Proposed Sample Depth (feet bgs)	Proposed Laboratory Analyses PCBs
Proposed Delineation Sampling Locations			
SB-255	4.0	0-0.2	**Archive**
		0.5-2	**Archive**
		2-4	**Archive**
SB-256	4.0	0-0.2	**Archive**
		0.5-2	**Archive**
		2-4	**Archive**
SB-257	4.0	0-0.2	**Archive**
		0.5-2	**Archive**
		2-4	**Archive**
SB-258	4.0	0-0.2	**Archive**
		0.5-2	**Archive**
		2-4	**Archive**
SB-259	2.0	0-0.2	**X**
		0.5-2	**Archive**
SB-260	2.0	0-0.2	**Archive**
		0.5-2	**Archive**
SB-261	2.0	0-0.2	**Archive**
		0.5-2	**Archive**
SB-262	2.0	0-0.2	**X**
		0.5-2	**Archive**
SB-263	2.0	0-0.2	**X**
		0.5-2	**Archive**
SB-264	2.0	0-0.2	**Archive**
		0.5-2	**Archive**
SB-265	2.0	0-0.2	**Archive**
		0.5-2	**Archive**
Proposed Verification Soil Sampling Locations			
V-RD-271	4.0	0-0.2	**X**
		0.5-2	**X**
		2-4	**X**
V-RD-272	4.0	0-0.2	**X**
		0.5-2	**X**
		2-4	**X**
V-RD-273	4.0	0-0.2	**X**
		0.5-2	**X**
		2-4	**Archive**
V-RD-274	4.0	0-0.2	**X**
		0.5-2	**X**
		2-4	**Archive**
V-RD-275	4.0	0-0.2	**X**
		0.5-2	**X**
		2-4	**Archive**
V-RD-276	4.0	0-0.2	**X**
		0.5-2	**X**
		2-4	**Archive**
V-RD-277	4.0	0-0.2	**X**
		0.5-2	**X**
		2-4	**Archive**
V-RD-278	4.0	0-0.2	**X**
		0.5-2	**X**
		2-4	**Archive**
V-RD-279	4.0	0-0.2	**X**
		0.5-2	**X**
		2-4	**Archive**

Notes:
1. Soil sampling intervals will be adjusted, as appropriate, based on field observations (e.g., obstructions, staining, obvious odors), if encountered.
2. Proposed sampling and boring depths are measured in feet below ground surface (ft bgs).
3. Samples to be submitted for laboratory analysis for polychlorinated biphenyls (PCBs) using United States Environmental Protection Agency (USEPA) SW-846 Method 8082.
4. Soil samples from locations V-RD-274 through V-RD-279 will be collected during the OU4 Phase 2 remedial activities after the staging area liner is removed.

TABLE 4
SITE-WIDE SOIL ANALYTICAL RESULTS FOR ARSENIC (ppm)

FINAL REMEDIAL ACTION - OPERABLE UNIT 4
BAYER MATERIALSCIENCE LLC
125 NEW SOUTH ROAD
HICKSVILLE, NEW YORK

Location ID:	Sample Depth (Feet):	Date Collected:	Concentration (ppm)
Commercial Use SCO (Exceedances Shaded):			16
AOC1-2	0 - 1	02/12/04	17.6
AOC3-3	0 - 1	02/12/04	13.9
AOC3-4	0 - 1	02/12/04	7.10 B
AOC4-2	0 - 1	02/12/04	2.80 B [2.80 B]
AOC7-1	0 - 1	02/12/04	3.50 B
AOC7-2	0 - 1	02/12/04	3.50 B
AOC12-1	1 - 2	02/16/04	9.20 B
AOC13-1	0 - 1	02/16/04	7.50 B
AOC15-3	0 - 1	02/16/04	<10.1
AOC16-2	0 - 1	02/16/04	2.00 B
AOC20-2	0 - 1	02/16/04	10.2 B
AOC23-3	0 - 1	02/17/04	2.00 BJ [1.00 BJ]
AOC23-4	0 - 1	02/17/04	8.00 BJ
AOC31-1	0 - 1	02/09/04	8.00 BJ
AOC31-2	0 - 1	02/09/04	<10.7 J [<10.7 J]
AOC35A-1	12 - 14	02/23/04	<9.00
AOC35A-2	12 - 14	02/23/04	<9.10
AOC35B-1	12 - 14	02/23/04	<9.40 [<9.90]
AOC35B-2	12 - 14	02/23/04	<9.50
AOC35C-1	12 - 14	02/23/04	<9.50
AOC35C-2	12 - 14	02/23/04	<9.70
AOC35C-3	12 - 14	02/23/04	<8.90
AOC35D-1	6 - 8	02/23/04	<9.30
AOC35D-2	12 - 14	02/23/04	<10.3
AOC35E-1	6 - 8	02/24/04	<9.50
AOC35E-2	12 - 14	02/24/04	<9.90
AOC35F-1	6 - 8	02/24/04	<9.80
AOC35F-2	12 - 14	02/24/04	<9.50
AOC35F-3S	6 - 8	10/20/04	<9.50
AOC35G-1	6 - 8	02/24/04	<10.0
AOC35G-2	12 - 14	02/24/04	<9.00
AOC35H-1S	12 - 14	10/19/04	<5.40
AOC35I-1S	12 - 14	10/19/04	<4.50
AOC35I-2S	12 - 14	10/19/04	<5.60
AOC35J-1S	12 - 14	10/19/04	1.80 B
AOC35K-1S	12 - 14	10/19/04	<4.30
AOC35L-1S	12 - 14	10/20/04	<9.90
AOC35M-1S	12 - 14	10/19/04	<4.70
AOC35N-1S	12 - 14	10/20/04	<9.20 [<4.70]
AOC35-O	12 - 14	05/04/06	<4.50 N
AOC37-3	0 - 1	02/18/04	10.0 J
AOC41-4	0 - 1	02/19/04	7.10 BJ
AOC41-5	0 - 1	02/19/04	8.90 BJ
AOC41-6	0 - 1	02/19/04	14.9 J
AOC41-7	0 - 1	02/19/04	7.70 BJ
AOC41-8	0 - 1	02/19/04	6.40 BJ
AOC45-4	0 - 1	02/19/04	<9.40
AOC46-4	0 - 1	02/19/04	2.70 BJ
AOC48-1	0 - 1	02/19/04	9.50 BJ
AOC48-2	0 - 1	02/19/04	4.70 BJ
AOC49-4	0 - 1	02/19/04	<10.4

TABLE 4
SITE-WIDE SOIL ANALYTICAL RESULTS FOR ARSENIC (ppm)

FINAL REMEDIAL ACTION - OPERABLE UNIT 4
BAYER MATERIALSCIENCE LLC
125 NEW SOUTH ROAD
HICKSVILLE, NEW YORK

Location ID:	Sample Depth (Feet):	Date Collected:	Concentration (ppm)
Commercial Use SCO (Exceedances Shaded):			16
AOC52-1	1.5 - 2	08/22/06	4.70 BN
	2 - 3	08/22/06	<4.00 N
AOC52-2	1 - 1.5	08/22/06	6.00 N
	1.5 - 2.5	08/22/06	<4.10 N
AOC52-3	1.5 - 2.5	08/22/06	5.70 BN
	2.5 - 3.5	08/22/06	2.70 BN [3.60 BN]
BL-MS-1	0.5 - 1	03/06/13	7.81
BL-MS-2	0.5 - 1	03/06/13	5.84
BL-MS-3	0.5 - 1	03/06/13	11.4
BL-MS-4	0.5 - 1	03/06/13	10.4
BL-MS-5	0.5 - 1	03/06/13	9.27
M-S1	0 - 0.5	07/15/11	4.30 J
	0.5 - 2	07/15/11	2.20 J
	2 - 4	07/15/11	2.00 J
M-S2	0 - 0.5	07/14/11	6.20
	0.5 - 2	07/14/11	6.10
	2 - 4	07/14/11	<5.00
M-S3	0 - 0.5	07/14/11	29.3
	0.5 - 2	07/14/11	13.9
	2 - 4	07/14/11	2.10 J
M-S4	0 - 0.5	07/14/11	9.50
	0.5 - 2	07/14/11	24.0
	2 - 4	07/14/11	3.90 J
M-S5	0 - 0.5	07/14/11	25.9
	0.5 - 2	07/14/11	5.50
	2 - 4	07/14/11	3.60 J
M-S6	0 - 0.5	07/14/11	7.10
	0.5 - 2	07/14/11	4.40 J
	2 - 4	07/14/11	1.90 J
M-S7	0 - 0.5	07/14/11	4.80 J
	0.5 - 2	07/14/11	4.00 J [4.90 J]
	2 - 4	07/14/11	<5.10
M-S8	0 - 0.5	07/13/11	3.90 J
	0.5 - 2	07/13/11	4.80 J
	2 - 4	07/13/11	4.80 J
M-S9	0 - 0.5	07/13/11	5.40
	0.5 - 2	07/13/11	<5.20
	2 - 4	07/13/11	<5.30
M-S10	0 - 0.5	07/13/11	4.80 J
	0.5 - 2	07/13/11	4.10 J [4.70 J]
	2 - 4	07/13/11	<5.00
M-S11	0 - 0.5	07/13/11	4.10 J
	0.5 - 2	07/13/11	3.40 J
	2 - 4	07/13/11	2.60 J
M-S12	0 - 0.5	07/13/11	11.4
	0.5 - 2	07/13/11	2.40 J
	2 - 4	07/13/11	2.40 J
M-S13	0 - 0.5	07/13/11	2.60 J
	0.5 - 2	07/13/11	1.70 J
	2 - 4	07/13/11	2.10 J

TABLE 4
SITE-WIDE SOIL ANALYTICAL RESULTS FOR ARSENIC (ppm)

FINAL REMEDIAL ACTION - OPERABLE UNIT 4
BAYER MATERIALSCIENCE LLC
125 NEW SOUTH ROAD
HICKSVILLE, NEW YORK

Location ID:	Sample Depth (Feet):	Date Collected:	Concentration (ppm)
Commercial Use SCO (Exceedances Shaded):			16
M-S14	0 - 0.5	07/12/11	4.40 J
	0.5 - 2	07/12/11	6.70
	2 - 4	07/12/11	2.40 J
M-S15	0 - 0.5	07/15/11	21.4
	0.5 - 2	07/15/11	3.00 J [2.40 J]
	2 - 4	07/15/11	4.00 J
M-S16	0 - 0.5	07/15/11	22.5
	0.5 - 2	07/15/11	4.70 J
	2 - 4	07/15/11	4.10 J
M-S17	0 - 0.5	07/15/11	11.2
	0.5 - 2	07/15/11	15.5
	2 - 4	07/15/11	5.60
M-S18	0 - 0.5	07/14/11	14.6
	0.5 - 2	07/14/11	16.2
	2 - 4	07/14/11	4.30 J
M-S19	0 - 0.5	07/14/11	5.80
	0.5 - 2	07/14/11	6.10
	2 - 4	07/14/11	5.10 J
M-S20	0 - 0.5	07/13/11	25.7
	0.5 - 2	07/13/11	4.50 J
	2 - 4	07/13/11	2.10 J
M-S21	0 - 0.5	07/13/11	6.10
	0.5 - 2	07/13/11	13.4
	2 - 4	07/13/11	3.90 J
M-S22	0 - 0.5	07/12/11	32.9
	0.5 - 2	07/12/11	5.80
	2 - 4	07/12/11	3.10 J
M-S23	0 - 0.5	07/12/11	4.00 J
	0.5 - 2	07/12/11	3.90 J [4.20 J]
	2 - 4	07/12/11	4.40 J
M-S24	0 - 0.5	07/12/11	5.20 J
	0.5 - 2	07/12/11	3.20 J
	2 - 4	07/12/11	2.20 J
M-S25	0 - 0.5	07/12/11	4.70 J
	0.5 - 2	07/12/11	1.70 J
	2 - 4	07/12/11	3.30 J
M-S26	2 - 4	07/12/11	6.00
	4 - 6	07/12/11	2.80 J
SB-1	0 - 0.2	05/13/13	7.50
	0.5 - 2	05/13/13	3.70
	2 - 4	05/13/13	1.10
SB-3	0 - 0.2	05/16/13	13.3
	0.5 - 2	05/16/13	2.60
	2 - 4	05/16/13	20.2
	4 - 6	05/16/13	<0.950
	6 - 8	05/16/13	1.20
SB-12	0 - 0.2	05/15/13	46.1
	0.5 - 2	05/15/13	14.0
	2 - 4	05/15/13	11.9
SB-19	0 - 0.2	05/16/13	44.1
	0.5 - 2	05/16/13	21.1
	2 - 4	05/16/13	<0.950

TABLE 4
SITE-WIDE SOIL ANALYTICAL RESULTS FOR ARSENIC (ppm)

FINAL REMEDIAL ACTION - OPERABLE UNIT 4
BAYER MATERIALSCIENCE LLC
125 NEW SOUTH ROAD
HICKSVILLE, NEW YORK

Location ID:	Sample Depth (Feet):	Date Collected:	Concentration (ppm)
Commercial Use SCO (Exceedances Shaded):			16
SB-110	0 - 0.2	05/15/13	17.9
	0.5 - 2	05/15/13	3.90
	2 - 4	05/15/13	1.10
SB-111	0 - 0.2	05/13/13	21.6
	0.5 - 2	05/13/13	45.5
	2 - 4	05/13/13	4.80
SB-112	0 - 0.2	05/15/13	23.2
	0.5 - 2	05/15/13	5.00
SB-113	0 - 0.2	05/15/13	4.80
	0.5 - 2	05/15/13	5.40
SB-114	0 - 0.2	05/15/13	29.7
	0.5 - 2	05/15/13	25.4
	2 - 4	05/15/13	4.20
SB-115	0 - 0.2	05/15/13	30.2 [29.5]
	0.5 - 2	05/15/13	25.3
	2 - 4	05/15/13	1.40
SB-116	0 - 0.2	05/15/13	25.3
	0.5 - 2	05/15/13	3.60
SB-117	0 - 0.2	05/13/13	32.9
	0.5 - 2	05/13/13	21.4
	2 - 4	05/13/13	5.80
SB-118	0 - 0.2	05/16/13	16.2
	0.5 - 2	05/16/13	5.80
	2 - 4	05/16/13	1.10
SB-119	0 - 0.2	05/15/13	16.4
	0.5 - 2	05/15/13	25.7
	2 - 4	05/15/13	4.00
SB-120	0 - 0.2	05/15/13	139
	0.5 - 2	05/15/13	9.80
SB-121	0 - 0.2	09/04/13	32.4 [27.1]
	0.5 - 2	09/04/13	34.8
	2 - 4	09/04/13	3.30
SB-122	0 - 0.2	09/03/13	3.10
	2 - 4	09/03/13	11.3
SB-123	0 - 0.2	09/03/13	12.1
	2 - 4	09/03/13	13.0
SB-124	0 - 0.2	09/03/13	19.3
	2 - 4	09/03/13	2.90
SB-125	0 - 0.2	09/04/13	28.1
	2 - 4	09/04/13	3.60
SB-126	0 - 0.2	09/03/13	23.2
	2 - 4	09/03/13	16.1
SB-127	0 - 0.2	09/03/13	13.5
	2 - 4	09/03/13	2.80
SB-128	0 - 0.2	09/03/13	14.3 [10.7]
	2 - 4	09/03/13	<2.10
SB-129	0 - 0.2	09/03/13	26.4
	2 - 4	09/03/13	<2.00
SB-130	0 - 0.2	09/04/13	8.20
	0.5 - 2	09/04/13	4.50

TABLE 4
SITE-WIDE SOIL ANALYTICAL RESULTS FOR ARSENIC (ppm)

FINAL REMEDIAL ACTION - OPERABLE UNIT 4
BAYER MATERIALSCIENCE LLC
125 NEW SOUTH ROAD
HICKSVILLE, NEW YORK

Location ID:	Sample Depth (Feet):	Date Collected:	Concentration (ppm)
Commercial Use SCO (Exceedances Shaded):			16
SB-131	0 - 0.2	09/03/13	16.2
	0.5 - 2	09/03/13	7.30
SB-134	0 - 0.2	08/28/13	25.6
	0.5 - 2	08/28/13	46.4
SB-141	0 - 0.2	08/28/13	7.4
	0.5 - 2	08/28/13	10.8
SB-239	0 - 0.2	08/30/13	14.1
	0.5 - 2	08/30/13	11.1
SB-240	0 - 0.2	08/30/13	38.6
	0.5 - 2	08/30/13	36.2
SB-241	0 - 0.2	08/30/13	20.8
	0.5 - 2	08/30/13	15.3
SB-242	0 - 0.2	08/30/13	29.7 [29.8]
	2 - 4	08/30/13	2.20
SB-243	0 - 0.2	08/30/13	42.0
	2 - 4	08/30/13	<2.00
SB-244	0 - 0.2	08/30/13	33.5
	0.5 - 2	08/30/13	5.50
V-RD-1	0 - 0.5	04/09/13	8.80
V-RD-2	0 - 0.5	04/09/13	6.59
V-RD-3	0 - 0.5	04/09/13	5.47
V-RD-5	0 - 0.5	04/09/13	10.3
V-RD-6	0 - 0.5	04/09/13	34.2
V-RD-7	0 - 0.5	04/09/13	66.0
V-RD-8	0 - 0.5	04/09/13	17.6
V-RD-9	0.5 - 2	04/05/13	1.18
V-RD-10	0.5 - 2	04/05/13	3.21
V-RD-11	0.5 - 2	04/05/13	3.04
V-RD-12	0.5 - 2	04/05/13	7.03
V-RD-13	0.5 - 2	04/05/13	12.3
V-RD-14	0.5 - 2	04/05/13	9.46
V-RD-15	0.5 - 2	04/09/13	12.8 [14.2]
V-RD-16	0 - 0.5	04/05/13	23.3
V-RD-17	0 - 0.5	04/05/13	21.3
V-RD-18	0 - 0.5	04/05/13	37.9
V-RD-19	0 - 0.5	04/05/13	26.7
V-RD-20	0 - 0.5	04/05/13	35.3
V-RD-21	0 - 0.5	04/09/13	3.59
V-RD-22	0 - 0.5	04/09/13	8.57
V-RD-24	0 - 0.5	04/09/13	3.55
V-RD-25	0 - 0.5	04/09/13	50.6
V-RD-26	0 - 0.5	04/09/13	8.81
V-RD-27	0 - 0.5	04/09/13	34.1
V-RD-28	0 - 0.5	04/09/13	13.9
V-RD-29	0 - 0.5	04/09/13	7.72
V-RD-30	0 - 0.5	04/09/13	3.31
V-RD-42	0 - 0.5	04/18/13	4.67 [4.34]
V-RD-43	0 - 0.5	04/18/13	4.02
V-RD-44	0 - 0.5	04/18/13	3.12
V-RD-45	0 - 0.5	04/18/13	10.1

TABLE 4

SITE- WIDE SOIL ANALYTICAL RESULTS FOR ARSENIC (ppm)

FINAL REMEDIAL ACTION - OPERABLE UNIT 4
BAYER MATERIALSCIENCE LLC
125 NEW SOUTH ROAD
HICKSVILLE, NEW YORK

Notes:

1. Samples were collected by ARCADIS on the dates indicated.
2. Samples were analyzed by Accutest located in Marlborough, Massachusetts and Dayton, New Jersey for:
   - Arsenic using USEPA SW-846 Method 6010.
3. All concentrations reported in dry weight parts per million (ppm), which is equivalent to milligrams per kilogram (mg/kg).
4. Data qualifiers are defined as follows:
   B - The compound was found in the sample as well as its associated blank.
   N - The spike recovery exceeded th upper and lower control limits.
   J - Indicates that the associated numerical value is an estimated concentration.
   < - The compound was not detected above the reported detection limit.
5. Soil cleanup levels are from the New York State Department of Environmental Conservation- (NYSDEC) approved Remedial
6. Design (ARCADIS, February 2013) and consist of the following:
   - Arsenic soil cleanup levels: Commercial use soil cleanup objectives from Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6 NYCRR) Part 375-6.8(b).
7. Shading indicates that the result exceeds the project soil cleanup levels.
8. Data has not been validated.

TABLE 5
SOIL COVER SYSTEM PRECEDENTS FOR ARSENIC-CONTAINING SOIL IN NEW YORK

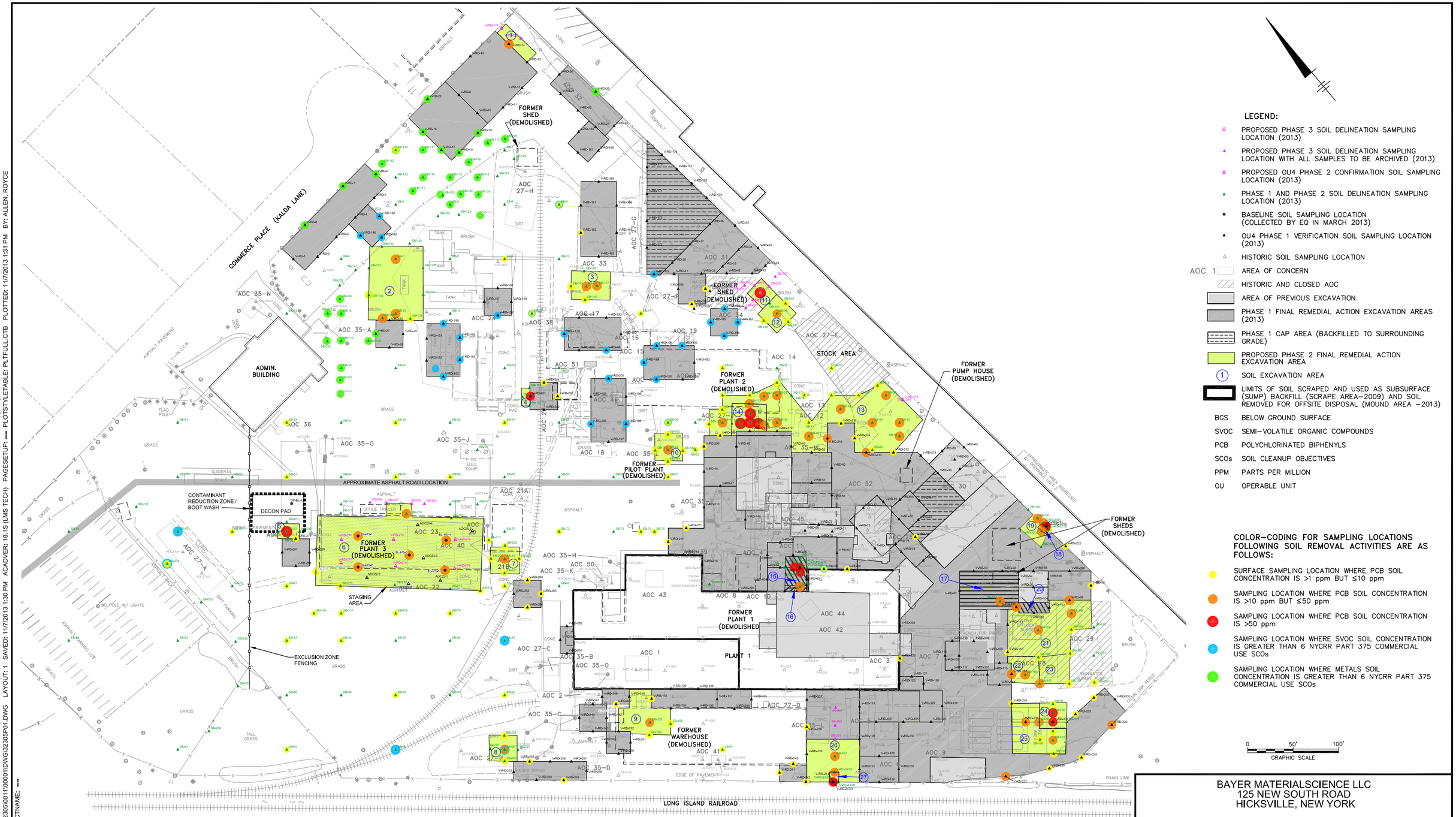
FINAL REMEDIAL ACTION - OPERABLE UNIT 4
BAYER MATERIALSCIENCE LLC
125 NEW SOUTH ROAD
HICKSVILLE, NEW YORK

	Site Name/Location	NYSDEC Site #	ROD Date	ROD Soil Cleanup Approach for Arsenic	Arsenic Soil Concentration Range (ppm)		Hyperlink to ROD
					Low	High	
1.	Pan American Tannery Gloversville, NY	B00175	March 2013	Soil Cover System	Surface: **17.5** Subsurface: **22.8**	Surface: **252** Subsurface: **750**	Pan American Tannery Record of Decision (PDF) - New York State ... www.dec.ny.gov/docs/remediation_hudson_pdf/b00175rod.pdf
2.	Former Service Station Clarkson, NY	E828143	March 2012	No Further Action	All Soil: 2.1	All Soil: **19.6**	Former Service Station Environmental Restoration Project - Record ... www.dec.ny.gov/docs/remediation_hudson_pdf/b00175rod.pdf
3.	Former Syracuse Rigging Syracuse, NY	B00146	March 2012	Soil Cover System	All Soil: **23**	All Soil: **118**	Record Of Decision - New York State Department of Environmental ... www.dec.ny.gov/docs/remediation_hudson_pdf/b00146rod.pdf
4.	Eighteen Mile Creek Corridor Lockport, NY	932121	March 2010	Soil Cover System			
	OU3				Surface: 3.6 Subsurface: 1.9	Surface: **66** Subsurface: **123**	http://www.dec.ny.gov/docs/regions_pdf/18milerod.pdf www.dec.ny.gov/docs/regions_pdf/18milerod.pdf
	OU4				Surface: 4.7 Subsurface: 3.0	Surface: **63** Subsurface: **81**	
	OU5				Surface: 5.5 Subsurface: 1.1	Surface: **30** Subsurface: **19**	
	OU6				Surface: 5.3 Subsurface: 3.8	Surface: **67** Subsurface: **24**	
5.	Former Hettling Farm Clermont, NY	E411015	March 2008	Soil Cover System	All Soil: **19**	All Soil: **63**	March 2008 Record of Decision, Former Hettling Farm - E411015 ... www.dec.ny.gov/docs/remediation_hudson_pdf/e411015r1.pdf
6.	Former Rome Cable OU2 Rome, NY	E633053	March 2011	No Further Action (4 surface & 2 subsurface exceedances)	Surface: ND Subsurface: ND	Surface: **57** Subsurface: **50**	Former Rome Cable Site Record of Decision (PDF) - New York State ... www.dec.ny.gov/docs/remediation_hudson_pdf/e633053rod.pdf
7.	Sewall's Island Watertown, NY	E623021	March 2013	Soil Cover System	Surface: NA Subsurface: NA	Surface: **20** Subsurface: **80**	Sewall's Island Record of Decision (PDF) - New York State ... www.dec.ny.gov/docs/remediation_hudson_pdf/e623021rod.pdf
8.	Three Star Anodizing Wappingers Falls, NY	314058	March 2009	Soil Cover System	NA	Surface: **41** Subsurface: **55**	Three Star Anodizing Record of Decision (PDF) - New York State ... www.dec.ny.gov/docs/remediation_hudson_pdf/314058r.pdf
9.	Former Scolite Troy, NY	E442037	March 2011	Soil Cover System	Subsurface: 17	Subsurface: **44**	Former Scolite Site Record of Decision (PDF) - New York State ... www.dec.ny.gov/docs/remediation_hudson_pdf/e442037rod.pdf
10.	Mohawk Valley Warehouse Mohawk, NY	E622022	March 2009	Soil Cover System	Surface: 4 Subsurface: 5	Surface: **115** Subsurface: **37**	Mohawk Valley Warehouse Site Record of Decision (PDF) www.dec.ny.gov/docs/remediation_hudson_pdf/E622022r.pdf

Notes:
1. ppm = parts per million
2. ND = non-detect
3. NA = not available

ARCADIS

Figures



LEGEND:

- PROPOSED PHASE 3 SOIL DELINEATION SAMPLING LOCATION (2013)
- PROPOSED PHASE 3 SOIL DELINEATION SAMPLING LOCATION WITH ALL SAMPLES TO BE ARCHIVED (2013)
- PROPOSED OU4 PHASE 2 CONFIRMATION SOIL SAMPLING LOCATION (2013)
- PHASE 1 AND PHASE 2 SOIL DELINEATION SAMPLING LOCATION (2013)
- BASELINE SOIL SAMPLING LOCATION (COLLECTED BY EQ IN MARCH 2013)
- OU4 PHASE 1 VERIFICATION SOIL SAMPLING LOCATION (2013)
- HISTORIC SOIL SAMPLING LOCATION
- AOC 1 — AREA OF CONCERN
- HISTORIC AND CLOSED AOC
- AREA OF PREVIOUS EXCAVATION
- PHASE 1 FINAL REMEDIAL ACTION EXCAVATION AREAS (2013)
- PHASE 1 CAP AREA (BACKFILLED TO SURROUNDING GRADE)
- PROPOSED PHASE 2 FINAL REMEDIAL ACTION EXCAVATION AREA
- (1) SOIL EXCAVATION AREA
- LIMITS OF SOIL SCRAPED AND USED AS SUBSURFACE (SUMP) BACKFILL (SCRAPE AREA–2009) AND SOIL REMOVED FOR OFFSITE DISPOSAL (MOUND AREA –2013)
- BGS BELOW GROUND SURFACE
- SVOC SEMI–VOLATILE ORGANIC COMPOUNDS
- PCB POLYCHLORINATED BIPHENYLS
- SCOs SOIL CLEANUP OBJECTIVES
- PPM PARTS PER MILLION
- OU OPERABLE UNIT

COLOR–CODING FOR SAMPLING LOCATIONS FOLLOWING SOIL REMOVAL ACTIVITIES ARE AS FOLLOWS:

- SURFACE SAMPLING LOCATION WHERE PCB SOIL CONCENTRATION IS >1 ppm BUT ≤10 ppm
- SAMPLING LOCATION WHERE PCB SOIL CONCENTRATION IS >10 ppm BUT ≤50 ppm
- SAMPLING LOCATION WHERE PCB SOIL CONCENTRATION IS >50 ppm
- SAMPLING LOCATION WHERE SVOC SOIL CONCENTRATION IS GREATER THAN 6 NYCRR PART 375 COMMERCIAL USE SCOs
- SAMPLING LOCATION WHERE METALS SOIL CONCENTRATION IS GREATER THAN 6 NYCRR PART 375 COMMERCIAL USE SCOs

0 50' 100'
GRAPHIC SCALE

NOTES:

1. BASE MAP ADAPTED FROM A DRAWING ENTITLED "AREA OF CONCERN MAP", FIGURE 1–2, BY ENSR CORPORATION. PISCATAWAY, NJ, AT A SCALE OF 1"=60', DATED 2/14/03.
2. EXISTING SAMPLING LOCATIONS WERE SURVEYED BY ARCADIS, INC. BETWEEN FEBRUARY 2004 AND JULY 2011.
3. 6 NYCRR PART 375 COMMERCIAL AND INDUSTRIAL USE SCOs ARE FROM TITLE 6 OF THE OFFICIAL COMPILATION OF CODES, RULES, AND REGULATIONS OF THE STATE OF NEW YORK (6 NYCRR) PART 375–6.8 (b).
4. LOCATIONS OUTLINED IN GRAY ARE FORMER SITE FEATURES.
5. VERIFICATION SOIL SAMPLES COLLECTED AS PART OF THE REMEDIAL DESIGN WERE COLLECTED BY PREFERRED ENVIRONMENTAL SERVICES IN 2013.
6. 2013 PHASE 1 AND PHASE 2 SOIL DELINEATION SAMPLES WERE COLLECTED BY ARCADIS IN 2013.
7. CONFIRMATION SOIL SAMPLING LOCATIONS V–RD–274 THROUGH V–RD–279 IN EXCAVATION AREA 6 WILL BE COLLECTED DURING THE OU4 PHASE 2 REMEDIAL ACTIVITIES AFTER THE REMOVAL OF THE EXISTING STAGING AREA HIGH DENSITY POLYETHYLENE LINER.

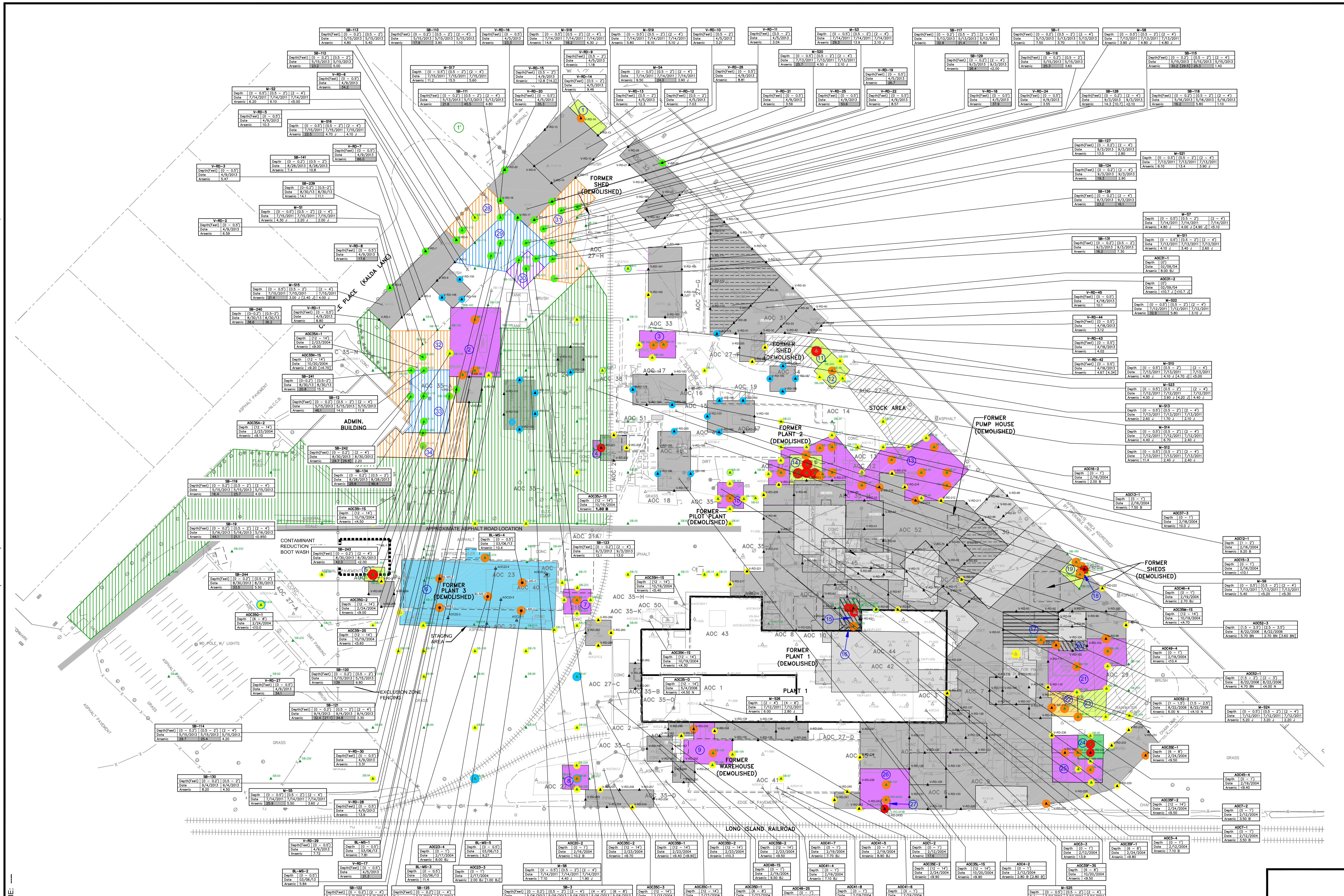
BAYER MATERIALSCIENCE LLC
125 NEW SOUTH ROAD
HICKSVILLE, NEW YORK

PROPOSED PHASE 3 SAMPLING LOCATIONS

ARCADIS

FIGURE 1

CITY: SYRACUSE, NY DIV/GROUP: ENV/IM-DV DB: R.BASSETT, A. SCHILLING, E. KRAHMER PM: J.BRUSSEL TM: J.BRUSSEL TR: R.HENSEL LYR: ON=*;OFF=*REF, (FRZ)
G:\ENV\CAD\SYRACUSE\ACTIVITIES\00323050011\000011\DWG\323305P01.DWG LAYOUT: 1 SAVED: 11/7/2013 1:30 PM ACADVER: 18.1S (LMS TECH) PAGESETUP: --- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 11/7/2013 1:31 PM BY: ALLEN, ROYCE
XREFS: 32305X01 32305XLD IMAGES: PROJECTNAME: ---



LEGEND:

- PROPOSED 1 FOOT ARSENIC SOIL EXCAVATION AREA
- PROPOSED 2 FOOT ARSENIC SOIL EXCAVATION AREA
- PROPOSED 4 FOOT ARSENIC SOIL EXCAVATION AREA
- HYPOTHETICAL (UN-DELINEATED) ADDITIONAL ARSENIC SOIL EXCAVATION AREA
- PHASE 1 AND PHASE 2 SOIL DELINEATION SAMPLING LOCATION (2013)
- BASELINE SOIL SAMPLING LOCATION (COLLECTED BY EQ IN MARCH 2013)
- OU4 PHASE 1 VERIFICATION SOIL SAMPLING LOCATION (2013)
- HISTORIC SOIL SAMPLING LOCATION
- AOC 1 — AREA OF CONCERN
- HISTORIC AND CLOSED AOC
- AREA OF PREVIOUS EXCAVATION
- PHASE 1 FINAL REMEDIAL ACTION EXCAVATION AREAS (2013)
- CAP AREA (BACKFILLED TO SURROUNDING GRADE)
- LIMITS OF SOIL SCRAPED AND USED AS SUBSURFACE (SUMP) BACKFILL (SCRAPE AREA–2009) AND SOIL REMOVED FOR OFFSITE DISPOSAL (MOUND AREA –2013)

ICM	INTERIM CORRECTIVE MEASURE
BGS	BELOW GROUND SURFACE
VOC	VOLATILE ORGANIC COMPOUNDS
SVOC	SEMI–VOLATILE ORGANIC COMPOUNDS
PCB	POLYCHLORINATED BIPHENYLS
SCOs	SOIL CLEANUP OBJECTIVES
PPM	PARTS PER MILLION

PROPOSED PHASE 2 FINAL REMEDIAL ACTION EXCAVATION AREAS:

- (1) SOIL EXCAVATION AREA
- SOIL EXCAVATION ANTICIPATED TO AVERAGE DEPTH OF 1 FOOT
- SOIL EXCAVATION ANTICIPATED TO AVERAGE DEPTH OF 2 FEET
- SOIL EXCAVATION ANTICIPATED TO AVERAGE DEPTH OF 4 FEET
- SOIL EXCAVATION ANTICIPATED TO AVERAGE DEPTH OF 6 FEET
- SOIL EXCAVATION ANTICIPATED TO AVERAGE DEPTH OF 10 FEET

AREA OF PREVIOUS EXCAVATION:

- ADDITIONAL EXCAVATION TO AVERAGE DEPTH TO 6.0 FEET (EXCAVATION AREA 21A)
- ADDITIONAL EXCAVATION TO AVERAGE DEPTH TO 8.0 FEET (EXCAVATION AREA 24A)
- ADDITIONAL EXCAVATION TO AVERAGE DEPTH TO 10.0 FEET (EXCAVATION AREAS 12A, 13A AND 14A)

COLOR–CODING FOR SAMPLING LOCATIONS FOLLOWING SOIL REMOVAL ACTIVITIES ARE AS FOLLOWS:

- SURFACE SAMPLING LOCATION WHERE PCB SOIL CONCENTRATION IS >1 ppm BUT ≤10 ppm
- SAMPLING LOCATION WHERE PCB SOIL CONCENTRATION IS >10 ppm BUT ≤50 ppm
- SAMPLING LOCATION WHERE PCB SOIL CONCENTRATION IS >50 ppm
- SAMPLING LOCATION WHERE SVOC SOIL CONCENTRATION IS GREATER THAN 6 NYCRR PART 375 COMMERCIAL USE SCOs
- SAMPLING LOCATION WHERE METALS SOIL CONCENTRATION IS GREATER THAN 6 NYCRR PART 375 COMMERCIAL USE SCOs

Commercial Use SCOs	
Constituent	SCO (ppm)
Arsenic	16

0 60' 120'
GRAPHIC SCALE

NOTES:

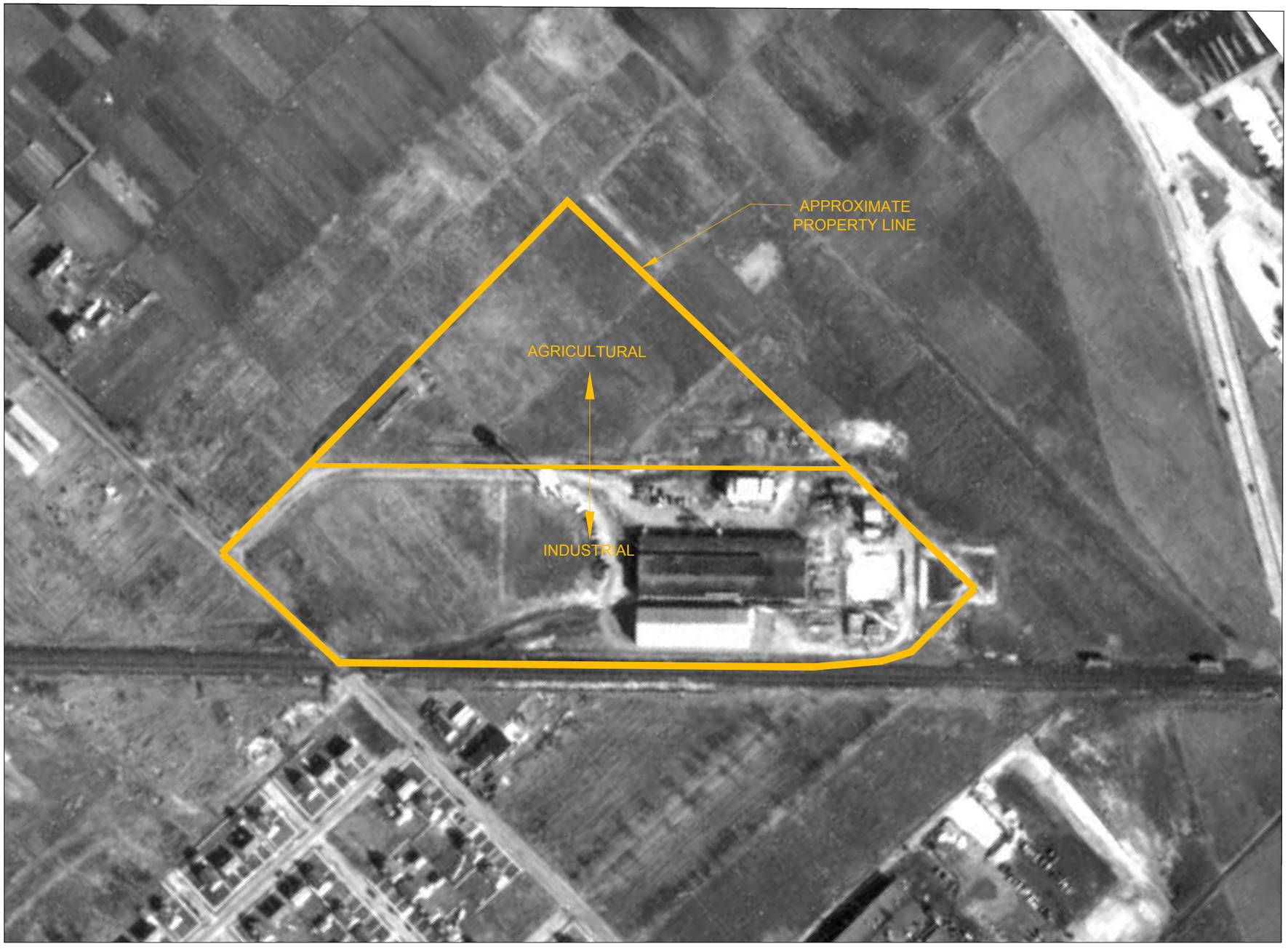
1. BASE MAP ADAPTED FROM A DRAWING ENTITLED "AREA OF CONCERN MAP", FIGURE 1–2, BY ENSR CORPORATION. PISCATAWAY, NJ, AT A SCALE OF 1"=60', DATED 2/14/03.
2. EXISTING SAMPLING LOCATIONS WERE SURVEYED BY ARCADIS, INC. BETWEEN FEBRUARY 2004 AND JULY 2011.
3. 6 NYCRR PART 375 COMMERCIAL USE SCOs ARE FROM TITLE 6 OF THE OFFICIAL COMPILATION OF CODES, RULES, AND REGULATIONS OF THE STATE OF NEW YORK (6 NYCRR) PART 375–6.8 (b).
4. LOCATIONS OUTLINED IN GRAY ARE FORMER SITE FEATURES.
5. VERIFICATION SOIL SAMPLES COLLECTED AS PART OF THE REMEDIAL DESIGN WERE COLLECTED BY PREFERRED ENVIRONMENTAL SERVICES IN 2013.
6. 2013 PHASE 1 AND PHASE 2 SOIL DELINEATION SAMPLES WERE COLLECTED BY ARCADIS IN 2013.
7. ALL CONCENTRATIONS REPORTED IN DRY WEIGHT PARTS PER MILLION (PPM), WHICH IS EQUIVALENT TO MILLOGRAMS PER KILLOGRAAM (mg/Kg).
8. FIELD DUPLICATE SAMPLE RESULTS ARE PRESENTED IN BRACKETS.
9. DATA QUALIFIERS ARE DEFINED AS FOLLOWS:
   < – CONSTITUENT NOT DETECTED AT A CONCENTRATION ABOVE THE REPORTED DETECTION LIMIT.
   B – CONSTITUENT WAS FOUND IN THE SAMPLE AS WELL AS ITS ASSOCIATED BLANK.
   J – INDICATES THAT THE ASSOCIATED NUMERICAL VALUE IS AN ESTIMATED CONCENTRATION.
   N–THE SPIKE RECOVERY EXCEEDED THE UPPER AND LOWER CONTROL LIMITS.
10. SHADING INDICATES THAT THE RESULT EXCEEDS THE 6 NYCRR PART 375 COMMERCIAL USE SCO.
11. FIGURE SHOWS ARSENIC ANALYTICAL RESULTS FOR ALL LOCATIONS SAMPLED BY ARCADIS FOR ARSENIC. FIGURE SHOWS ARSENIC ANALYTICAL RESULTS FOR LOCATIONS WHERE ARSENIC EXCEEDS SCOs FOR LOCATIONS SAMPLED BY IMPACT ENVIRONMENTAL.
12. DATA PROVIDED FOR SAMPLING LOCATIONS WITHIN PREVIOUS EXCAVATION AREAS (SHADED GRAY) AND THE SOIL SCRAPE/MOUND AREA IS FOR INFORMATIONAL USE ONLY, THE SAMPLING LOCATIONS HAVE BEEN REMOVED.

BAYER MATERIALSCIENCE LLC
125 NEW SOUTH ROAD
HICKSVILLE, NEW YORK

SITE-WIDE ARSENIC CONCENTRATIONS AND PROPOSED OU4 PHASE 2 ARSENIC SOIL EXCAVATION AREAS

ARCADIS

FIGURE
2



NOTE:

1. THE AERIAL PHOTOGRAPH WAS AQUIRED VIA DATABASE SEARCH PERFORMED BY ENVIRONMENTAL DATA RESOURCES, INC.(EDR).

0 200' 400'

GRAPHIC SCALE

BAYER MATERIALSCIENCE LLC
125 NEW SOUTH ROAD
HICKSVILLE, NEW YORK

1953 AERIAL SITE PHOTOGRAPH

ARCADIS

FIGURE
3

CITY:SYRACUSE DIV/GROUP:ENV/141 DB:R. BASSETT LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
G:\ENVCAD\SYRACUSE\ACT\B0032305\00111\00002\DWG\32305B02.DWG LAYOUT: 3 SAVED: 10/31/2013 1:16 PM ACADVER: 18.1S (LMS TECH) PAGESETUP: --- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 10/31/2013 1:17 PM BY: BASSETT, RICHARD
XREFS: IMAGES: PROJECTNAME: ---
1956 Aerial (agr. land).jpg

Northern Area (Agricultural)			
Depth	Minimum	Maximum	Average
Surface	2	139	18.7
Sub-surface	0.48	46.4	7.37

Southern Area (Industrial)			
Depth	Minimum	Maximum	Average
Surface	1	17.6	6.88
Sub-surface	1.7	6	3.91

LEGEND:

- NORTHERN AREA
- SOUTHERN AREA
- PHASE 1 AND PHASE 2 SOIL DELINEATION SAMPLING LOCATION (2013)
- BASELINE SOIL SAMPLING LOCATION (COLLECTED BY EQ IN MARCH 2013)
- OU4 PHASE 1 VERIFICATION SOIL SAMPLING LOCATION (2013)
- HISTORIC SOIL SAMPLING LOCATION

COLOR-CODING FOR SAMPLING LOCATIONS FOLLOWING SOIL REMOVAL ACTIVITIES ARE AS FOLLOWS:

- SAMPLING LOCATION WHERE ARSENIC SOIL CONCENTRATION IS GREATER THAN 6 NYCRR PART 375 COMMERCIAL USE SCO OF 16 PPM
- SAMPLING LOCATION WHERE ARSENIC SOIL CONCENTRATION IS LESS THAN 6 NYCRR PART 375 COMMERCIAL USE SCO OF 16 PPM

NOTES:

1. BASE MAP ADAPTED FROM A DRAWING ENTITLED "AREA OF CONCERN MAP", FIGURE 1-2, BY ENSR CORPORATION, PISCATAWAY, NJ, AT A SCALE OF 1"=60', DATED 2/14/03.
2. NORTHERN/SOUTHERN SURFACE SOIL DATA STATISTICS ARE BASED ON SOIL SAMPLES COLLECTED FROM 0-0.2', 0-0.5', AND 0-1' DEPTH INTERVALS.
3. NORTHERN/SOUTHERN SUBSURFACE SOIL DATA STATISTICS ARE BASED ON SAMPLES COLLECTED FROM ALL DEPTH INTERVALS BELOW THE APPLICABLE SURFACE SOIL SAMPLE DEPTH INTERVAL.
4. ALL CONCENTRATIONS ARE REPORTED IN DRY WEIGHT PARTS PER MILLION (PPM), WHICH IS EQUIVALENT TO MILLOGRAMS PER KILLOGRAMS (mg./Kg.).

0 100' 200'

GRAPHIC SCALE

BAYER MATERIALSCIENCE LLC
125 NEW SOUTH ROAD
HICKSVILLE, NEW YORK

NORTHERN AND SOUTHERN SITE ARSENIC IMPACTS

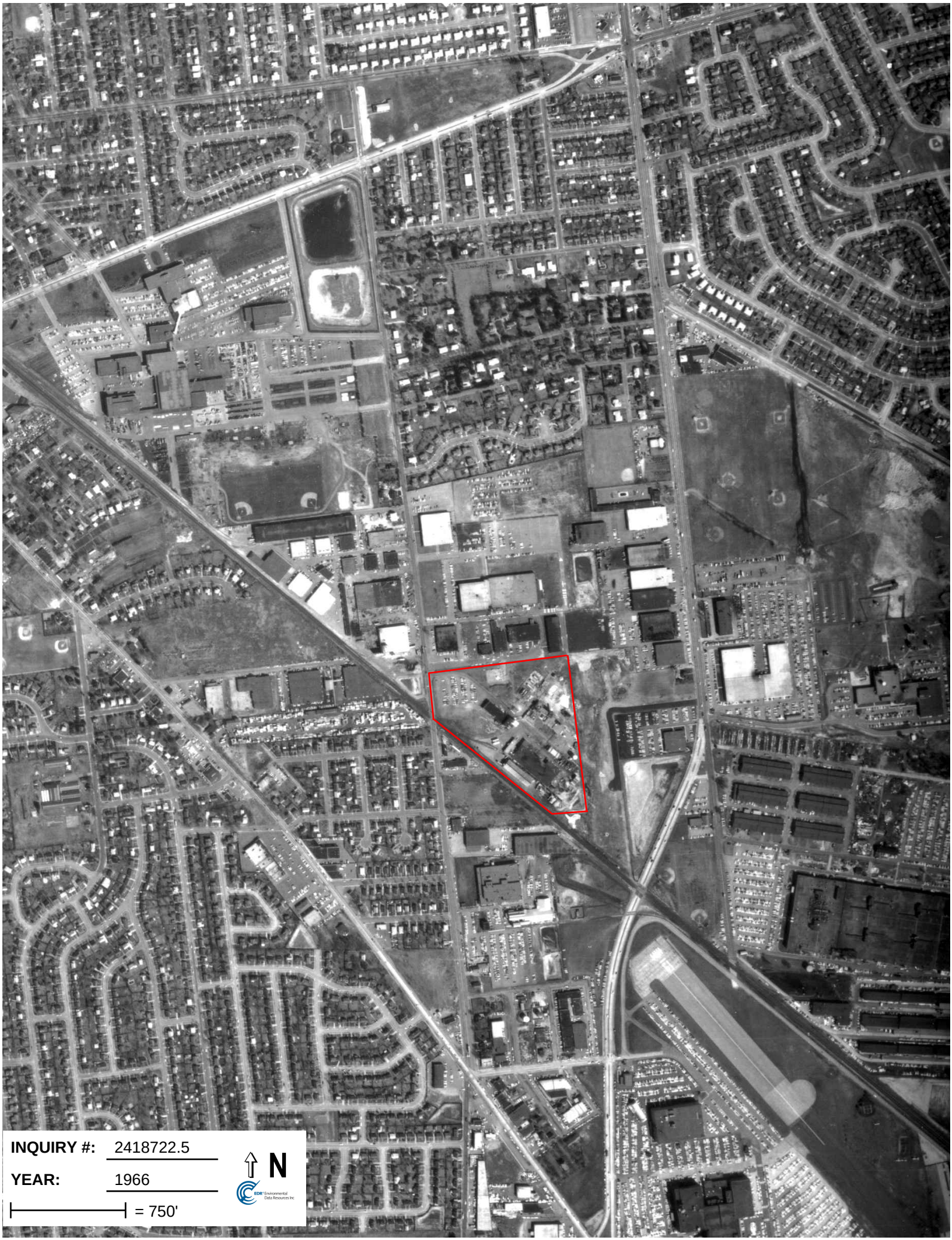
ARCADIS

FIGURE 4

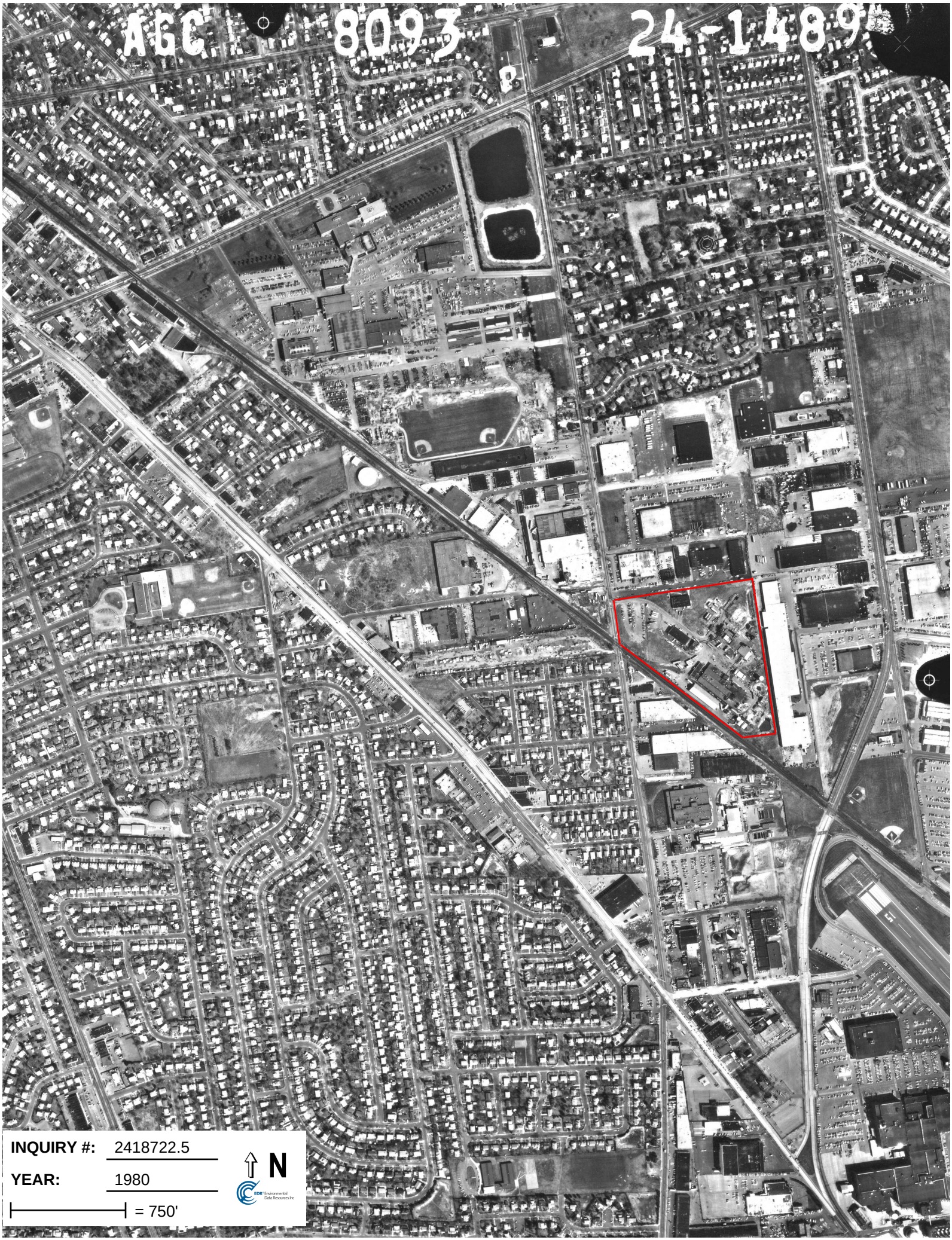
Attachment A

Aerial Photographs


INQUIRY #: 2418722.5
YEAR: 1953
= 500'
N


INQUIRY #: 2418722.5
YEAR: 1966
= 750'
N


INQUIRY #: 2418722.5
YEAR: 1974
= 750'
N



INQUIRY #: 2418722.5

YEAR: 1980

= 750'

N

EDR Environmental Data Resources Inc


INQUIRY #: 2418722.5
YEAR: 1994
= 750'
N