November 19, 2012

WORK PLAN FOR ADDITIONAL SOIL SAMPLING AND PCDD/PCDF ANALYSIS

BEAZER EAST, INC.
FORMER KOPPERS WOOD-TREATING SITE
CARBONDALE, ILLINOIS

Introduction/Purpose

As a follow-up to the sampling activities conducted in August 2012, and discussions with the United States Environmental Protection Agency (USEPA) during a November 9, 2012 conference call, Beazer East, Inc. (Beazer) has prepared this Work Plan for the collection of additional soil samples from the residential area south of the Former Koppers Wood-Treating Site in Carbondale, Illinois (the Site). The samples will be analyzed for polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans (PCDDs/PCDFs).

Scope/Procedures

Soil samples will be collected from a total of 16 locations in the residential area south of the Site (A1-64 through A1-79; Figure 1). As shown on Figure 1, samples will be collected from rights-of-way along North Allman Street, North Robert A. Stalls Avenue, North Pierce Street, and North Wall Street. Consistent with the sampling approach used during the August 2012 sampling event, samples representing the 16 proposed sample locations will each be a composite from five discrete locations near the target sample area. For a given location, each discrete sample will be collected using a stainless-steel trowel and composited into a single sample for laboratory analysis. The five discrete locations will be collected from the surveyed sample location, as well as from four additional locations (5 feet and 10 feet from either side of the surveyed location, parallel to the road). To the extent possible, samples will be collected from areas that do not collect runoff from roads or driveways and are at least 10 feet from potential sources of dioxins (e.g., utility poles, fences, and landscape materials from treated wood). For example, where drainage ditches parallel the road, try to collect samples on the far side of the ditch from the road if accommodated by the right-of-way boundary. All samples will be collected from the 0- to 0.5-foot depth interval.

Soil types/characteristics and descriptions of staining, odors or other noteworthy characteristics will be recorded in a field notebook. Recovered soils will be homogenized prior to placing them into sample containers. Excess soils will be placed back into the holes following sample collection. Each sample location will be staked and surveyed at the central discrete sample location so that they can be accurately depicted on the site plan and re-established in the future, if necessary.

All 16 samples will be submitted to Vista Analytical Laboratory in El Dorado Hills, California for PCDDs/PCDFs analysis via USEPA SW-846 Method 8290. Initially, eight samples (A1-68 through A1-75) will be analyzed on a 21-day turn-around-time. The remaining eight samples (A1-64 through A1-67 and A1-76 through A1-79) will be held at the lab pending the results of the eight initially analyzed samples (see Data Review and Reporting section below for additional details). The hold times for Method 8290 are 30 days from collection to extraction, and 45 days from extraction to analysis. If necessary depending on the timing of a decision following the initial analyses, Beazer will instruct the laboratory to extract the remaining samples before the hold time expires until a decision is made regarding which, if any, of the held samples require analysis.

Table 1 provides additional details on the sample location description, and summarizes the “analyze vs. hold” approach for each sample.

Property Access

All of the proposed sample locations are located in public rights-of-way adjacent to roadways. Individual access agreements with adjacent property owners will not be necessary. The City of Carbondale will be contacted to provide a representative to be present during the surveying and sampling activities in the event there are any disputes over ownership of the rights-of-way.

Quality Assurance/Quality Control

Quality assurance/quality control (QA/QC) samples will be collected at the frequencies specified in the Quality Assurance Project Plan (QAPP; ARCADIS, February 2008): one blind duplicate per 10 field samples, one matrix spike/matrix spike duplicate per 20 field samples, one equipment rinse blank per day. Analytical data will be validated in accordance with USEPA National Functional Guidelines for Data Review, as discussed in the QAPP.

Equipment Cleaning and Waste Management

Non-dedicated/non-disposable sampling equipment will be cleaned prior to use at each sample location following procedures outlined in the QAPP (i.e., non-phosphate detergent wash, distilled/deionized water rinse, and triple rinse sequence of solvent followed by distilled/deionized water).

Equipment cleaning fluids will be collected for treatment at the onsite wastewater treatment system (WWTS). Used personal protective equipment, disposable sampling equipment, and other miscellaneous wastes will be placed into a 55-gallon drum and staged at a designated area near the WWTS for subsequent characterization and disposal by Beazer.

Data Review and Reporting

Following receipt of the preliminary laboratory results for the eight initially analyzed samples, Beazer will prepare a figure showing the calculated 2,3,7,8-TCDD Toxic Equivalent (TEQ) concentration for each sample, and participate in a web meeting/conference call with USEPA to discuss the results and mutually agree upon which, if any, of the eight held samples will be released for analysis.

Following receipt of final data reports from the lab, the analytical data will be validated, and final data tables and sample location maps will be prepared for submittal to the USEPA.

Schedule

The field work will be conducted in late November or early December, pending USEPA approval of this Work Plan and availability of the survey and sampling crews. The field activities are anticipated to require approximately three days to complete. The web meeting/conference call with USEPA to review and discuss the preliminary results of the eight initially analyzed samples is anticipated to be held within approximately three days following receipt of the preliminary results from the lab. Because laboratory results may be expected during a holiday period, Beazer will provide as much notice as possible of the target date for scheduling the web meeting/conference call. It will be important to hold the meeting in a timely manner and determine which of the held samples will be analyzed so that the laboratory can complete the work within the method-specified holding times. To account for the data validation timeframe, final data summary tables and sample location maps will be submitted to the USEPA within approximately six weeks following receipt of all associated laboratory analytical data.

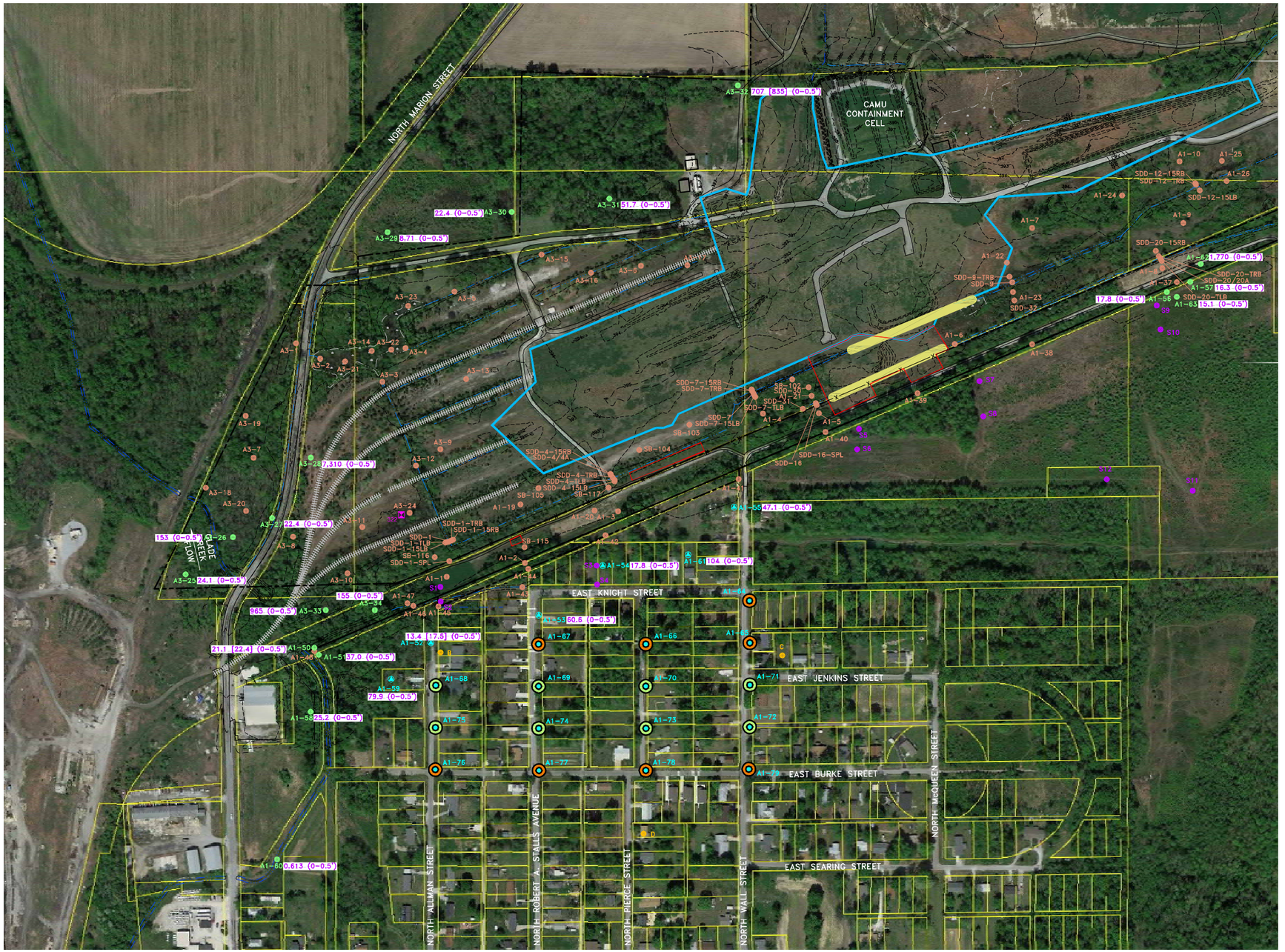
TABLE 1
SAMPLE LOCATION DESCRIPTIONS AND ANALYTICAL APPROACH

Beazer East, Inc.
Former Koppers Wood-Treating Site
Carbondale, Illinois

Sample ID	Location Description	Analyze or Hold[1]
A1-64	Right-of-way on east side of N Wall St, south of intersection with E Knight St	Hold
A1-65	Right-of-way on east side of N Wall St	Hold
A1-66	Right-of-way on east side of N Pierce St	Hold
A1-67	Right-of-way on east side of N Robert A Stalls Ave	Hold
A1-68	Right-of-way on east side of N Allman St	Analyze
A1-69	Right-of-way on east side of N Robert A Stalls Ave	Analyze
A1-70	Right-of-way on east side of N Pierce St	Analyze
A1-71	Right-of-way on east side of N Wall St, south of intersection with E Jenkins St	Analyze
A1-72	Right-of-way on east side of N Wall St	Analyze
A1-73	Right-of-way on east side of N Pierce St	Analyze
A1-74	Right-of-way on east side of N Robert A Stalls Ave	Analyze
A1-75	Right-of-way on east side of N Allman St	Analyze
A1-76	Right-of-way on east side of N Allman St, north of intersection with E Burke St	Hold
A1-77	Right-of-way on east side of N Robert A Stalls Ave, north of intersection with E Burke St	Hold
A1-78	Right-of-way on east side of N Pierce St, north of intersection with E Burke St	Hold
A1-79	Right-of-way on east side of N Wall St, north of intersection with E Burke St	Hold

Notes:

1. Eight samples will be held at the lab pending the results of the eight initially analyzed samples, and discussions between Beazer and USEPA.
2. Samples designated for analysis will be analyzed for PCDDs/PCDFs via USEPA Method 8290.



LEGEND:

- EDGE OF WATER
- DRAINAGE DITCH AND DIRECTION OF FLOW
- PROPERTY BOUNDARY (SEE NOTE 2)
- PARCEL BOUNDARY
- FENCELINE
- EXISTING CONTOUR LINE
- FORMER PROCESS AREA SURFACE COVER
- SOIL REMOVAL AREA (SOIL/DEBRIS PILES AND SURFICIAL ASPHALT-LIKE MATERIALS)
- PORTIONS OF SOUTHERN DRAINAGE DITCHES THAT HAVE BEEN FILLED IN PRIOR TO OR DURING SURFACE COVER CONSTRUCTION OR REMOVAL OF SOIL AND DEBRIS PILES.
- S1 2005 RESIDENTIAL SAMPLE LOCATIONS (USEPA)
- SB-102 2005–2010 SAMPLE LOCATIONS (BEAZER)
- B 2006 RESIDENTIAL SAMPLE LOCATIONS (CITY OF CARBONDALE)
- A1-57 AUGUST 2012 GRAB SAMPLE LOCATION
- A1-55 AUGUST 2012 COMPOSITE SAMPLE LOCATION
- 15.1 (0-0.5') TCDD-TEQ CONCENTRATION (ppt) AND SAMPLE DEPTH INTERVAL
- PROPOSED COMPOSITE SAMPLE LOCATION (ANALYZE)
- PROPOSED COMPOSITE SAMPLE LOCATION (HOLD)

NOTES:

1. SITE FEATURES AND TOPOGRAPHY OBTAINED FROM PHOTOGRAMMETRIC MAPPING PROVIDED BY LOCKWOOD MAPPING COMPANY IN SEPTEMBER 2001 AND SURVEY DATA PROVIDED BY ENGINEERING DESIGN SOURCE, INC. IN JANUARY 2004, AND BASED ON AERIAL PHOTOGRAPHY PROVIDED BY LOCKWOOD MAPPING, INC. TAKEN ON NOVEMBER 22, 1996 AT AN APPROXIMATE SCALE OF 1"=500'. TOPOGRAPHY IN THE EASTERN SOUTHERN DRAINAGE DITCHES AREA BASED ON TOPOGRAPHIC FIELD SURVEY CONDUCTED IN AUGUST 2007.
2. PROPERTY BOUNDARY IS APPROXIMATE; OBTAINED FROM A COMBINATION OF SITE SURVEY DATA, HISTORICAL MAPS AND TAX MAPS.
3. THE 2006 RESIDENTIAL SAMPLE LOCATIONS ARE APPROXIMATE.
4. AERIAL IMAGE OBTAINED FROM GOOGLE EARTH AND DATED APRIL 2, 2012.

0 200' 400'
GRAPHIC SCALE

BEAZER EAST, INC.
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PROPOSED SAMPLE LOCATIONS

ARCADIS

FIGURE 1