EXPLANATION OF SIGNIFICANT DIFFERENCE

for the

Former Koppers Wood-Treating Facility

Beazer East, Inc.

Carbondale, Illinois

EPA ID: ILD 000 819 946

Issued by:

Edward Nam
Director
Land, Chemicals and Redevelopment Division
U.S. Environmental Protection Agency

9/27/19

Date

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I. PURPOSE

The U.S. Environmental Protection Agency (EPA) issued a Final Decision and Response to Comments ("Final Decision") in 2004 for the Beazer East, Inc. ("Beazer East") former Koppers Wood-Treating Facility ("Facility" or "Site"), located in Carbondale, Illinois. The Final Decision required Beazer to excavate contaminated soils and Glade Creek sediments, reroute a segment of Glade Creek, construct soil covers, install trenches and a well to collect subsurface creosote and creosote chemicals, and construct an on-site containment cell for placement of consolidated remediation waste. In addition, the Final Decision required Beazer to place an institutional control on the property deed restricting the use of land and groundwater and monitor groundwater conditions and the natural recovery of creek sediments.

This Explanation of Significant Difference (ESD) document describes and records the EPA's decision to modify the selected remedy to address additional contaminated soil on the Site. Since the Final Decision, Beazer identified contaminated soil in the former operations area that is above risk standards for the environment. EPA determined that an additional 15.8 acres of contaminated soil needs to be remediated. This is the "significant difference" from the Final Decision.

The soil will be remediated by expanding areas of existing soil covers in some areas and excavating soils for off-site disposal from other areas. The additional soil remediation does not fundamentally alter the overall cleanup approach at the Site and it complies with the statutory requirements of the Resource Conservation and Recovery Act (RCRA), as amended, 42 U.S.C. § 6901 et seq.

EPA received public comment on the modified remedy. Refer to Section V, Public Participation for details, and Attachment 3, EPA Response to Comments.

II. FACILITY DESCRIPTION AND SELECTED REMEDY

The former Koppers Wood-Treating Facility ("Koppers Site") is located at 1555 North Marion Street, Carbondale, Illinois, in Jackson County. A wood-treating facility operated on the Site from circa 1905 to 1991, treating railroad ties, utility poles, and other wood products with various chemical preservatives. The Koppers Site occupies approximately 219 acres of relatively flat land, of which about 120 acres were used for manufacturing. In 1986, Beazer entered into an Administrative Order on Consent with EPA pursuant to Section 3008(h) of RCRA, and into a Consent Decree with the State of Illinois. Both legal instruments require Beazer to investigate chemical releases and contaminated media, and to remediate contamination at the facility in accordance with plans approved by EPA and Illinois EPA. Beazer performed the required investigations and provided the results to the agencies.

EPA evaluated the investigation results and determined that Beazer must take remedial action to protect human health and the environment. In the Final Decision, EPA selected a remedy that required the following activities:

1) Construct an on-Site containment cell for contaminated media, specifically a "Corrective Action Management Unit";
2) Excavate contaminated media, including soils, creek sediment, waste piles and deconstruction debris, and consolidate the material into the containment cell;
3) Cover the containment cell with an impermeable geomembrane cap;
4) Relocate a portion of Glade Creek;
5) Construct interceptor/barrier trenches and a recovery well to collect subsurface creosote chemicals (dense non-aqueous phase liquid) for off-site disposal or off-site re-use;
6) Place engineered covers over contaminated soil;
7) Seal specific wells, eliminate a subsurface drainage system, backfill a small pond;
8) Contain any contaminated groundwater within Site boundaries;
9) Monitor natural recovery (MNR) of residual contamination in the creeks;
10) Place an institutional control on the property to restrict how land and groundwater are used; and
11) Perform a long-term operation, maintenance and monitoring program.

Beazer constructed these remedies between 2004 and 2010. The creosote chemical recovery and MNR remedies are ongoing.

III. DESCRIPTION OF CHANGE TO THE SELECTED REMEDY

Following remedy selection, during a review of historic files and data, EPA noted that dioxin/furans had been detected at high concentrations in a small number of samples in the historic operations area. However, these chemicals had not been included in the original site-wide remedial investigation, risk analyses, or remediation proposal. At EPA's request, Beazer collected additional samples across the Site in areas that had not been remediated, including creeks and floodplains, and analyzed them for Site constituents, including dioxin/furan compounds. In addition, Beazer sampled for dioxin/furan compounds in the nearby neighborhood, which had previously been sampled for Site-related constituents.

The new data generated from these sampling events were used in risk analyses that identified potential unacceptable risks to the environment in specific areas on the Site, based on dioxin/furan compounds and other constituent concentrations in the soil. The risk analysis using data collected in the neighborhood concluded no risk to residents. The changes to the remedy documented herein require remediation of an additional 15.8 acres of soil. The remediation and off-site disposal of additional areas of contaminated soil is the significant difference to the Final Decision.

Soil will be excavated from four discrete areas comprising approximately 8.4 acres and taken to a landfill in DeSoto, Illinois. The excavated areas will be filled with clean

backfill. In three other areas comprising 7.4 acres, one-foot thick engineered soil covers will be placed over the contaminated areas. In general, the soil covers will be placed near areas where soil covers have been previously constructed. Excavation will occur generally around areas that have not been disturbed for several years and which have more habitat, including the area with the highest dioxin concentrations. Clearing of trees and brush will be necessary to accomplish this remedy. Impacted areas will be seeded with native grass and other plants. The remediated areas will be added to the routine inspection and maintenance plans for the Site. (See Figure 1.)

The soil remediation work required in this ESD document will proceed in accordance with federal, state, and local regulations; some of these require permits. Under the Clean Water Act, permits will be required for impacts to 4.3 acres of wetlands and ditches, and for preventing pollution of waterways during construction. This ESD requires prevention of soil runoff into waterways during rainfall by using hay bales or silt fences around excavation areas, placing covers over stockpiled soil, and dust suppression measures.

Other requirements of the remedy include construction monitoring, a health and safety plan, transportation safety measures, and perimeter air monitoring. This change also requires the addition of signage on Marion Street warning of truck traffic. The truck beds will be covered with a tarp to prevent material from falling off or blowing out of the truck.

Table 1. Summary of Significant Change to the Selected Remedy (former Koppers Wood-Treating Facility, Carbondale, IL

Remedial Component	Original Remedy Final Decision (2004)	Significant Difference Remedy (2019)
Soil Cover	2005 Soil Cover: 27 acres in the former operations area, based on original constituents identified in the Final Remedy 2010 Soil Cover: additional 7.9 acres for dioxin/furan contamination near the Former Lagoon Area and northern drainage ditch, as a stabilization measure.	Additional 7.4 acres of soil cover for dioxin/furan compounds, adjacent to existing soil cover
Soil Excavation	2004 -2005 Soil Excavation[1]: small areas with surface creosote; waste piles and underlying soil 2008 – 2010 Soil Excavation: Approximately 3,700 cubic yards from two on-Site drainage ditches and four discrete areas. *All excavated materials were placed in the Site engineered containment cell.*	Additional 8.4 acres soil excavation (estimated 14,000 cubic yards) for dioxin/furan contamination, for off-Site disposal

[1] Additional materials excavated as part of creek and interceptor barrier trench remedies were placed in containment cell

IV. STATUTORY DETERMINATIONS

EPA's approval of the soil remediation expansion will prevent environmental exposure to unacceptable levels of Site constituents, including dioxin/furan compounds. This revision to the Final Decision is necessary to ensure the remedy fulfills EPA's mission to protect human health and the environment.

V. PUBLIC PARTICIPATION

This ESD and copies of other documents related to the corrective action program for the former Koppers Wood-Treating Site are available at:

- Web site: Former Koppers Wood-Treating Site Carbondale https://www.epa.gov/hwcorrectiveactionsites/hazardous-waste-cleanup-former-koppers-wood-treatment-facility-carbondale

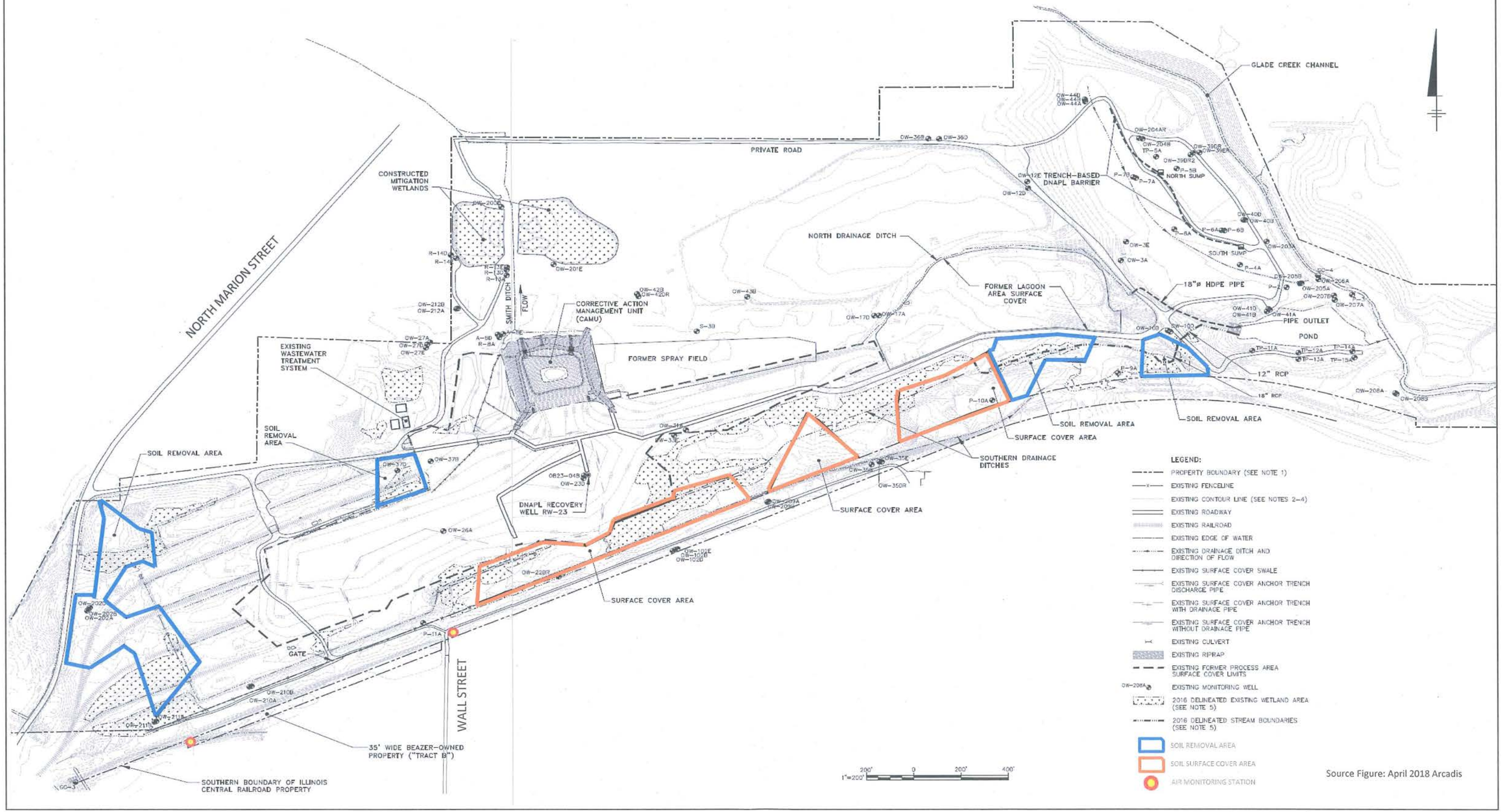
- Carbondale Public Library
  405 W. Main Street
  Carbondale, IL 62901

- U.S. EPA Region 5 Records Center
  77 West Jackson Boulevard
  Chicago, Illinois 60604

The significant change described in this ESD involves expanding the soil contamination remedy based on additional characterization of Site constituents that were identified after the initial remedy was selected and constructed. Soil excavation and additional soil cover are proposed based on dioxin/furan concentrations above risk-based levels for environmental, or ecological exposure. The expansion does not fundamentally alter the overall remedial design or objectives.

A formal public comment period was held from March 28, 2019 to June 21, 2019. EPA hosted a public meeting on June 12, 2019 for additional comment.

Attachment One Figure 1.
Former Koppers Wood-Treating Site, Carbondale, IL
New Soil Remediation Areas – May 2018



Source Figure: April 2018 Arcadis

Attachment 2

Administrative Record

U.S. ENVIRONMENTAL PROTECTION AGENCY

ADMINISTRATIVE RECORD
FOR THE
FORMER KOPPERS WOOD-TREATING FACILITY
BEAZER EAST, INC.
CARBONDALE, JACKSON COUNTY, ILLINOIS
EPA ID: ILD 000 819 946

EXPLANATION OF SIGNIFICANT DIFFERENCE
SEPTEMBER, 2019
SEMS ID: 943716

NO.	SEMS ID	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
1	950658	1/1/1932	Northwestern University Student	Bury, C. U.S. EPA	Historical Document - Management of Negro Laborers in a Southern Industrial Plant (Reference Item No. 101)	29
2	942586	5/1/2004	U.S. EPA	File	RCRA Corrective Action Final Decision and Response to Comments on the Selection of Remedies to Address Contamination	68
3	941158	3/22/2007	File	File	Tables 1-4 Risk Assumption Tables 1-4	5
4	942583	2/8/2008	Holden, J., Arcadis	Bury, C., U.S. EPA	Revised Quality Assurance Project Plan (QAPP)	1243
5	940614	5/22/2008	Arcadis	File	Glade Creek Floodplain Sample Location - Figure 1	1
6	940615	7/21/2008	File	File	Glade Creek Floodplain Soil Sample Analytical Data	23
7	940601	12/18/2008	Bury, C., U.S. EPA	Slenska, M., Beazer East, Inc.	Letter Re: Administrative Order on Consent - Response to August 2008 Conceptual Site Model for Dioxin/Furan Transport at the South Drainage Ditch Area and Request for Soil/Sediment SAP	6
8	940620	5/7/2009	Beazer East, Inc.	Bury, C., U.S. EPA	PCDD/PCDF Characterization Work Plan - (Attached with Cover Letter)	16

NO.	SEMS ID	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
9	940621	5/7/2009	Slenska, M., Beazer East, Inc.	Bury, C., U.S. EPA	Beazer East, Inc. - Sampling and Analysis Plan For Crab Orchard Creek	5
10	940622	5/7/2009	Slenska, M., Beazer East, Inc.	Bury, C., U.S. EPA	Beazer East, Inc. - Sampling and Analysis Plan For Southern Drainage Ditches Area	22
11	940602	8/10/2009	Bury, C., U.S. EPA	Slenska, M., Beazer East, Inc.	Letter Re: Review of Sampling and Analysis Plans for Dioxin/Furan Evaluation Areas	2
12	941136	8/10/2009	Bury, C., U.S. EPA	Slenska, M., Beazer East, Inc.	Letter Re: Review of Sampling and Analysis Plans for Dioxin/Furan Evaluation Areas	13
13	941138	8/10/2009	Bury, C., U.S. EPA	Slenska, M., Beazer East, Inc.	Enclosure to August 10, 2009 Letter PCDD-PCDFS SAP	11
14	940604	9/2/2009	Slenska, M., Beazer East, Inc.	Bury, C., U.S. EPA	Letter Re: Former Koppers Wood-Treating Site - Response to August 10, 2009 Comment Letter	5
15	940605	9/24/2009	Bury, C., U.S. EPA	Slenska, M., Beazer East, Inc.	Letter Re: Draft February 2008 Quality Assurance Plan and EA SAPs	3
16	940608	10/1/2009	Beazer East, Inc.	File	Proposed Sample Scope and Rationale SDD & SAP Tables	3
17	940609	10/1/2009	Holden, J., Arcadis	Bury, C., U.S. EPA	Letter Re: Responses to USEPA's September 24, 2009 Comment Letter	6
18	940619	10/1/2009	Arcadis	File	Site Plan and Southern Drainage Ditches Area Sample Locations - Figure 1	1
19	940598	10/26/2009	Beazer East, Inc.	U.S. EPA	Work Plan for Additional Investigations - (Attached w/Cover Letter)	113
20	940613	10/26/2009	Bessingpas, D., Arcadis	Bury, C., U.S. EPA	Email Re: Work Plan for Additional Investigations	1
21	940616	11/6/2009	Bury, C., U.S. EPA	Slenska, M., Beazer East, Inc.	Letter Re: Conditional EA SAPs Work Plan for Additional Investigations	3

NO.	SEMS ID	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
22	940600	11/24/2009	U.S. EPA	File	Functional QAPP Approval/Signature Page	3
23	940611	1/27/2010	Arcadis	File	Sampling Locations - Figures 1-4	4
24	941153	3/11/2010	File	File	Former Koppers Wood-Treating Site - Meeting Agenda	1
25	941125	6/3/2010	Slenska, M., Beazer East, Inc.	Bury, C., U.S. EPA	March 2010 Investigation Analytical Data Submittal - (Attached Cover Letter)	273
26	941149	6/30/2010	Arcadis	File	Summary of TCDD-TEQ Concentrations and On-Property Locations Exceeding 5,000 PPT - Figure 9	1
27	942584	6/30/2010	Beazer East, Inc.	Bury, C., U.S. EPA	Proposed Interim Measures	79
28	941144	8/11/2010	Arcadis	Bury, C., U.S. EPA		15
29	942585	8/24/2010	Bury, C., U.S. EPA	Slenska, M., Beazer East, Inc.	Letter Re: Conditional Conceptual Design for Soil Removal and CAMU Closure	12
30	943713	9/7/2010	Slenska, M., Beazer East, Inc.	Bury, C., U.S. EPA	Letter Re: Response to USEPA Conditional Approval Conceptual Design for Soil Removal and CAMU Closure	24
31	941150	10/25/2010	Beazer East, Inc.	File	Draft Work Plan for Additional PCDD/PCDF Sampling	7
32	941151	1/5/2011	Bury, C., U.S. EPA	Slenska, M., Beazer East, Inc.	Letter Re: October 2010 Final Draft DF Additional Sampling Work Plan	2
33	941137	1/24/2011	Beazer East, Inc.	U.S. EPA	Work Plan for Additional PCDD/PCDF Sampling	5
34	944525	3/12/2012	Kieninger, T., Illinois Dept. of Natural Resources	Beauchemin, M., Arcadis	Email Re: Natural Heritage Database Request	2

NO.	SEMS ID	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
35	941139	6/21/2012	Arcadis	File	Carbondale Final Draft - Proposed Additional PCDD/PCDF Sample Locations - Figure 1	1
36	941128	10/17/2012	Slenska, M., Beazer East, Inc.	Bury, C., U.S. EPA	August 2012 Dioxin Sampling Final/Validated Data Submittal - (Attached w/Cover Letter)	72
37	941140	11/1/2012	Arcadis	File	Carbondale Soil Sample Locations - Figure 1	1
38	942869	5/1/2013	Arcadis	U.S. EPA	Potential Exposure and Future Use Areas	1
39	944501	5/1/2013	File	File	Carbondale Draft Screening ERA Summary Tables	8
40	944516	5/16/2013	Dodds, J., U.S. EPA	Bury, C., U.S. EPA	Memo Re: Review of Draft Carbondale Screening Ecological Risk Assessment (ERA) Summary Tables 1, 2, 4, and 6 for the Carbondale, IL Site	3
41	943714	6/4/2013	File	File	Carbondale Terrestrial Dose Modeling - Bootstrap	1
42	943715	6/4/2013	File	File	Carbondale Terrestrial Dose Modeling - Spatially Weighted EPCs	1
43	942871	6/4/2013	File	File	Screening-Level Ecological Risk Assessment Results, Rev. 4	13
44	944505	6/24/2013	U.S. EPA	File	Memo Re: Preliminary Responses to EPA Comments - SLERA Tables, Carbondale, IL	4
45	944504	7/18/2013	Bury, C., U.S. EPA	Slenska, M., Beazer East, Inc.	Memo Re: EPA Preliminary Review of June 24, July 15, and July 16, 2013	2
46	944512	8/13/2013	Arcadis	File	Dioxin-Furan Thiessen Polygon Map	1
47	944526	8/23/2013	Anderson, P., and Weaver, A., Arcadis	Bury. C., U.S. EPA	Memo Re: Derivation of Spatially-Weighted Exposure Point Concentrations	7

NO.	SEMS ID	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
48	944502	9/9/2013	Anderson, P., and Beauchemin, M., Arcadis	Bury, C., U.S. EPA	Memo Re: Summary of Ecological Risk Assessment Findings and Path Forward	27
49	944503	1/22/2014	File	File	Memo Re: Summary - Afternoon Technical Meeting	4
50	944509	2/20/2014	Holden, J., Arcadis	Bury, C., U.S. EPA	Email Re: Carbondale - Eco-Risk Tables	2
51	944513	3/12/2014	File	File	Memo Re: PA Notes From 03-04-2014 Conference Call With Beazer, Carbondale, IL Site	2
52	944506	3/18/2014	Anderson, P., and Beauchemin, M., Arcadis	Bury, C., U.S. EPA	Memo Re: Ecological Risk Evaluation Follow-Up Action Items: January 22, 2014 Meeting Former Koppers Wood-Treating Site in Carbondale, IL.	19
53	944511	3/18/2014	Arcadis	File	Dioxin-Furan Thiessen Polygon Map, New Boundary	1
54	944515	4/7/2014	Dodds, J., U.S. EPA	Bury, C., U.S. EPA	Memo Re: Review of March 18, 2014 Technical Memorandum Regarding Ecological Risk Evaluation Follow-Up Action Items (Memo), For the Former Koppers Wood-Treating Site in Carbondale, IL	3
55	942868	4/18/2014	Beazer East, Inc.	File	Memo Re: Response to "Draft Ecological Risk Perspective"	4
56	944508	4/18/2014	Bury, C., U.S. EPA	Slenska, M., Beazer East, Inc.	Email Re: Ecological Risk Perspective Draft	6
57	944518	4/18/2014	Holden, J., Arcadis; Slenska, M., Beazer East, Inc.	Bury, C., U.S. EPA	Email Re: Koppers Site - Eco-Risk Teleconference Discussion Document, April 21, 2014	1
58	944520	4/21/2014	Slenska, M., Beazer East, Inc.	U.S. EPA	Email Re: Eco-Risk Conference, Analysis	1
59	944524	4/21/2014	Cisneros, J., U.S. EPA	Slenska, M., Beazer East, Inc.	Email Re: Koppers Site - Eco risk Teleconference Discussion Document	2

NO.	SEMS ID	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
60	942579	4/21/2014	Slenska, M., Beazer East, Inc.	Bury, C., U.S. EPA	Email Re: Koppers Site: Eco Risk Teleconference Discussion Document April 21, 2014	2
61	942865	5/5/2014	Bury, C., U.S. EPA	Slenska, M., Beazer East, Inc.	Memo Re: Teleconference Discussion	1
62	944510	5/20/2014	Arcadis	File	Dioxin-Furan Thiessen Polygon Map	1
63	942581	5/28/2014	Holden, J., Arcadis	Bury, C. & Cisneros, J., U.S. EPA	Email Re: Carbondale - Revised Eco Risk Table and Figures	2
64	942864	5/28/2014	File	File	Remediation Activities Preliminary Evaluation of Potential Remediation Areas to Achieve Various Ecological Risk Outcomes	1
65	944517	5/29/2014	Holden, J., Arcadis	Bury, C., U.S. EPA	Email Re: Draft and Figure Review	1
66	944500	10/13/2014	Arcadis	U.S. EPA	Proposed Scope and Rationale for Ecological-Based Remediation at the Former Koppers Wood-Treating Site in Carbondale, IL	31
67	944514	11/4/2014	Dodds, J., U.S. EPA	Bury, C., U.S. EPA	Memo Re: Review of the October 14, 2014 Proposed Scope and Rationale for Ecological-Based Remediation at the Former Koppers Wood-Treating Site Located in Carbondale, IL	5
68	942874	5/4/2015	Arcadis	File	Carbondale Ecological Risk Assessment Scenarios, Table and Figures, A1 through C2	7
69	944521	10/1/2015	File	File	Briefing Presentation Power Point Slide, Simulated Remedial Analysis	1

NO.	SEMS ID	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
70	944507	10/16/2015	Cisneros, J., U.S. EPA	Charters, D. and Greenberg, M., U.S. EPA	Memo Re: Ecological Risk Evaluation and Risk Management Decisions at the Former Koppers Wood-Treating Corrective Action Site, Carbondale, IL	4
71	944519	10/19/2015	Charters, D. and Greenberg, M., U.S. EPA	Cisneros, J., U.S. EPA	Memo Re: Ecological Risk Evaluation and Risk Management Decisions at the Former Koppers Wood-Treating Corrective Action Site, Carbondale, IL	2
72	943705	12/8/2015	Cisneros, J., U.S. EPA	Slenska, M., Beazer East, Inc. & Holden, J., Arcadis	Email Re: Additional Clarification on Ecological Risk Approach to the Dioxin Contamination at the Koppers Site	2
73	941009	1/26/2016	Slenska, M., Beazer East, Inc.	Cisneros, J., U.S. EPA	Draft of Proposed Conceptual Approach for Additional Ecological- Based Remediation	23
74	942580	3/11/2016	Cisneros, J., U.S. EPA	Bury, C., & Dodds, J., U.S. EPA	EPA Re: EPA Response to January 26th Ecological-Based Remediation Proposal	2
75	942866	4/4/2016	Cisneros, J., U.S. EPA	Slenska, M., Beazer East, Inc.	Email Re: EPA Response to January 26th Ecological-Based Remediation Proposal	4
76	942582	4/4/2016	Slenska, M., Beazer East, Inc.	Bury, C., & Dodds, J., U.S. EPA	Email Re: EPA Response to January 26th Ecological-Based Remediation Proposal	3
77	941010	5/11/2016	Slenska, M., Beazer East, Inc.	Cisneros, J., U.S. EPA	Revised Draft of Proposed Conceptual Approach for Additional Ecological-Based Remediation	34
78	941006	8/10/2016	Arcadis U.S. Inc.	File	2016 Delineated Wetland and Proposed Remediation Areas Overlay	1
79	941008	8/16/2016	Arcadis U.S. Inc.	File	Delineated Wetlands and Surface Waters - West and East	2
80	940623	9/27/2016	Bury, C., U.S. EPA	Bury, C., U.S. EPA	Letter Email FW Carbondale Update	3

NO.	SEMS ID	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
81	941015	10/24/2016	Slenska, M., Beazer East, Inc.	Bury, C., U.S. EPA	Email Re: Question - Draft Proposed Conceptual Approach for Additional Ecological Based Remediation	2
82	941012	11/29/2016	Cisneros, J., U.S. EPA	Slenska, M., Beazer East, Inc.	Letter Re: Review of May 11, 2016 Draft Proposed Conceptual Approach for Additional Ecological Based Remediation, Former Koppers Company Wood-Treating Site, Carbondale, IL	24
83	941000	10/27/2017	Arcadis U.S. Inc.	U.S. EPA	Soil Removal and Surface Cover Remedial Design	53
84	941011	12/19/2017	Bury, C., U.S. EPA	Slenska, M., Beazer East, Inc.	Letter Re: Review/Disapproval of Soil Removal and Surface Cover Remedial Design	2
85	943708	2/1/2018	Arcadis U.S. Inc.	U.S. EPA	Soil Removal and Surface Cover Remedial Design (Draft)	20
86	941003	2/1/2018	Arcadis U.S. Inc.	U.S. EPA	Appendix B - Calculation Sheet: Pre- and Post-Construction Stormwater Hydrologic Analysis	22
87	941004	2/1/2018	Google	U.S. EPA	Appendix C - Maps - 1555 N. Marion St., Carbondale, IL 62901 to Southern Illinois Regional Landfill	1
88	941002	2/1/2018	Arcadis U.S. Inc.	U.S. EPA	Appendix A - Design Drawings, Soil Removal and Surface Cover	10
89	941001	2/1/2018	Bessingpas, D., Arcadis U.S. Inc.	Bury, C., U.S. EPA	Letter Re: Response to Comments and Revised Remedial Design Former Koppers Wood-Treating Site - Carbondale, IL	5
90	943703	2/23/2018	Arcadis U.S. Inc.	File	Site Drainage Plan - Figure 2	1
91	941014	3/8/2018	Bury, C., U.S. EPA	Slenska, M., Beazer East, Inc.	Letter Re: Conditional Approval of Soil Removal and Surface Cover Remedial Design	6

NO.	SEMS ID	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
92	941013	4/26/2018	Bury, C., U.S. EPA	Slenska, M., Beazer East, Inc.	Letter Re: Response to Soil Removal and Surface Cover Remedial Design	2
93	943704	5/24/2018	Arcadis U.S. Inc.	U.S. EPA	Final Soil Removal and Surface Cover Remedial Design	58
94	943707	6/19/2018	Bury, C., U.S. EPA	Slenska, M., Beazer East, Inc.	Letter Re: May 24, 2018 Soil Removal and Surface Cover Remedial Design	2
95	943706	7/3/2018	File	File	Preliminary Project Schedule for Soil Removal and Surface Cover Remediation Activities	1
96	950654	9/22/2018	Concerned Private Citizen	U.S. EPA	FOIA Request w/Attachments (Redacted)	21
97	950655	3/28/2019	Hyde, T., U.S. EPA	File	Draft Explanation of Significant Difference	15
98	950647	4/18/2019	Concerned Citizens of Carbondale	Bury, C., U.S. EPA	Letter re: Cleanup Plan Public Comment Period (Redacted) (Reference Item No. 100)	2
99	950648	4/19/2019	Slenska, M., Beazer East, Inc.	Bury, C., U.S. EPA	Letter re: Comments on Draft ESD	4
100	950652	4/19/2019	Concerned Private Citizen	Bury, C., U.S. EPA	Email re: Cleanup Plan Public Comments (Redacted) (Reference Item No. 98)	1
101	950657	4/22/2019	Ray, W., Southern Illinois University	Bury, C., U.S. EPA	Email re: Management of Negro Laborers Manuscript (Redacted) (Reference Item No. 1)	1
102	950650	6/21/2019	General Public	Bury, C., U.S. EPA	Public Comment Compilation (Redacted)	4
103	_____	_____	Nam, E., U.S. EPA	_____	Final Explanation of Significant Difference	_____

Attachment 3

EPA Response to Comments

Comments and Responses

Please note that similar comments were combined.

Citizen Comments:

1) Comment: The comment period was too short.

   EPA response: The initial comment period from March 28, 2019 to April 19, 2019 was extended to June 21, 2019.

2) Comment: EPA should hold a public meeting.

   EPA response: EPA held a public meeting on the Explanation of Significant Difference (ESD) on June 12, 2019 at the Carbondale Civic Center.

3) Comment: The meeting wasn't sufficiently advertised and these meetings shouldn't be held on Wednesdays when many people are at church.

   EPA response: EPA will do better publicizing future public meetings and will try to avoid Wednesday nights.

4) Comment: People living nearby the site and others in the wider community are concerned about contamination that lies outside of the boundaries of the property and additional testing should be completed that is not random sampling.

   EPA response: The neighborhood to the south of the site was sampled three times between 2005 and 2012 and found not to be contaminated with wood-treating chemicals.

   In March 2005, EPA and Illinois EPA sampled for polynuclear aromatic hydrocarbons (PAHs), and pentachlorophenol in locations near the property boundary and in low-lying areas, nearest the potential source and where run-off would accumulate. Certain sampled locations were assumed to be "biased," that is, were places where these contaminants would be particularly likely to be found. For example, many of the sample locations were close to the former Koppers property.

   The PAHs also would be associated with the descriptions of "soot" that reportedly deposited in the neighborhood during past plant operations. In addition to locations biased by potential migration, community members were present to suggest sample locations based on their historical knowledge of plant operations, and areas that might have been impacted from some off-site storage of Koppers products. Sample depth was six inches, which corresponds to the standard depth for estimating residential exposure risk.

   In response to requests from the community, in July 2006, the City of Carbondale hired a consultant who sampled for wood treating chemicals at one-foot and two-foot depths at random and biased locations in the neighborhood. The community asked

that the City sample in particular places such as Thomas School, and to have an independent verification of the off-site sampling that EPA had completed in 2005.

The most recent sampling in August and November of 2012 was completed by Beazer East Inc., ("Beazer East") for dioxin/furan compounds. The sampling was not "random," as suggested, but was completed using a modified grid. Sample locations were in public rights-of-way (ROW) along streets and as close to private property boundaries as possible, guided by surveyors provided by the City. Sampling was completed in ROWs after property owners did not respond to requests for access or denied permission to sample their private property. Sample depth was six inches, which corresponds to the standard depth for estimating residential exposure risk. EPA presented the sample results to the community during a public meeting held in May 2013. These results were also discussed during the June 12, 2019 public meeting on the ESD.

Additionally, in response to requests from the community, EPA directed Beazer East to take soil samples, including at deep intervals, and to install well nests along the facility's southern boundary, which is near the residential area. The new wells were added to the groundwater monitoring network. The results of this sampling were reported in the document *Former Koppers Wood-Treating Site – Carbondale, IL, Groundwater Monitoring Network Modifications Report* (February 2016), located in the Carbondale Public Library. Soil samples reported low concentrations of dioxin/furan compounds, within urban background levels.

5) Comment: The neighborhood should be tested for the new contamination.

EPA Response: The contamination is not new. Rather, the original site characterization completed during the 1990's did not include dioxin/furan compounds. Also, since the original characterization, research on these compounds has reported them to be toxic at lower levels than previously understood. Therefore, EPA required new sampling for these compounds which resulted in additional cleanup requirements.

6) Comment: Why will some soil be removed off site, while some will be held and reburied on the land. Why are you only going to take a portion of the material away?

EPA response: The remedial approach selected in 2004 was a combination of removal, containment, and managing contaminated materials in place. Consistent with this approach, in this revision to the original remedy, EPA agrees with Beazer's proposed construction of soil covers for some contaminated areas where soil covers are already in use. Areas where the dioxin/furan contaminant concentrations were highest were in low spots in wooded areas and around drainage ways. For these areas, EPA is requiring excavation and off-site disposal, for habitat protection. This approach is expected to satisfy those community members who had requested that some contamination be taken off-site.

7) Comment: Where will the removed soil be taken for disposal?

EPA response: Beazer East will take the soil to the Southern Illinois Regional Landfill in DeSoto, Illinois, which is authorized to receive waste of this type.

8) Comment: Moving the contaminated soil to a landfill is creating new contamination in a different place.

EPA Response: Solid waste landfills are designed and used for containing and managing a variety of materials when it is preferable to place such materials, such as garbage from homes and commercial places, and non-hazardous waste, into a managed location. This practice isolates garbage and other waste and prevents people from getting exposed to chemical contaminants. Landfills for non-hazardous waste in Illinois, such as the landfill designated to receive the soils addressed in the ESD, must meet regulations and specifications, and are permitted by the Illinois EPA.

9) Comment: The community is concerned that trucks will be driven along Marion Street, which is a residential area, and this will pose a health hazard for the residents. Signage alone may not be sufficient.

EPA response: Trucks leaving the site for the landfill will exit north along Marion Street, not south towards the residential area. Trucks will drive one mile north on Marion Street to Glade Lane, then 0.7 mile to Dillinger Road, then 6.3 miles north on Highway 51, then 1.5 miles to the Southern Illinois Regional Landfill in Desoto, Illinois.

Trucks hauling clean material to the site for the soil covers will also arrive from the north.

Signage warning of truck traffic will be placed well before the site entrance, at locations that take into account the curve in the road.

10) Comment: We are requesting a mailing to the individual before the cleanup begins and be aware of the inconvenience this is going to cause to the residents in the neighborhood.

Noise from the construction will wake me up in the morning.

EPA response: The remediation work will be completed entirely on site. Truck traffic will not increase near the neighborhood rather, it will pass north of the neighborhood and the Koppers site. Please refer to question 9, above.

We apologize in advance for any inconvenience the remedial work may cause, but the work is necessary to prevent harm to the environment. Additionally, during the remedial construction completed between 2004 and 2010, which also involved some excavation and soil cover placement activities, EPA did not receive any complaints about noise levels.

Beazer East will notify the City of Carbondale before construction begins.

11) Comment: What will be the process for notifying the City and residents that construction will begin?

EPA Response: EPA has requested that Beazer East notify the City in advance of construction so that the City can notify residents. In addition, EPA will issue a press release

when remedial construction begins.

12) Comment: We would like to have access to the research that led to the determination by the US EPA that the American shrew habitat is contaminated or that the shrews are endangered. Who conducted this research and how was it funded? Where can we obtain the research? Is there a publication?

EPA response: EPA completes or requires ecological risk analysis at remedial sites where there is contaminated habitat such as chemicals in soil in a woodland or field. As the Koppers Site has not been operational for over 25 years, much of the area has reverted to field, trees and shrubs. The process for estimating risk is described in *Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments - Interim Final* (USEPA 1997) found at:

https://www.epa.gov/risk/ecological-risk-assessment-guidance-superfund-process-designing-and-conducting-ecological-risk

Sampling across the site indicated elevated levels of dioxin/furan compounds in soils. Note that dioxin/furan compounds can bioaccumulate and bioconcentrate through the food chain. As part of the ecological screening evaluation, EPA looked at potential ecological receptors (animals and plants) that could be exposed to the dioxin in the soil either through direct contact or ingestion of soil through their food items. As there are numerous animals and plants that could be exposed, the ecological risk assessment process uses "representative receptors" to model the potential risk to other receptors.

The short-tailed shrew lives much of its life burrowing in soil foraging for invertebrates such as earthworms and insects. Earthworms consume soil directly and therefore each worm eaten provides a dose of soil and the contaminants in the soil. Its life habits contribute to a shrew's relatively higher rate of exposure to soil contamination. Therefore, the shrew is frequently selected as a representative species of organisms with similar life habits and is used to estimate potential risks from exposure to contaminants in soil.

The potential impacts to the shrew were modeled using the chemical concentrations measured in the soil compared to what is known about toxicity from that level of exposure. Through this modeling with the short tail shrew, EPA determined that the potential risks were high enough to require clean-up of soils in certain areas of the site. This risk modeling approach is consistent with EPA's ecological risk guidance. Note that the short-tailed shrew is not an endangered species.

For the additional remedial work described in the ESD, EPA did not require a formal risk assessment. Rather, the risk estimate was developed through a series of submittals, revisions, and approvals that resulted in a determination that the potential risks to the shrew from the soil contamination were above acceptable levels. Documents related to this analysis can be found in the Administrative Record for the site at: https://www.epa.gov/hwcorrectiveactionsites/administrative-record-explanation-significant-difference

13) Comment: While we are encouraged that the clean-up area which will need to be cleared of

trees and brush to facilitate cleanup, will later be seeded with native grass and other plants, we are hopeful that this is a most wholesome approach.

EPA Response: Comment noted.

14) Comment: What is the plan for restoring the area where digging will occur. What will be planted there and who will be in charge of this? What kind of trees are you going to plant after the work is done? The community might request input into this- will a forum or some form of communication be established for this? Is this restoration stage of the work under the purview of the EPA?

EPA Response: Beazer East will seed the area with native grasses and forbs (herbaceous flowering plants). EPA or IEPA will inspect the work to make sure that the plants are growing and that there is no erosion. Please note that the site is private property and zoned for commercial and industrial use. Therefore, the types of trees planted, or which might start growing there through natural processes, is not a topic on which public input would be required, as it might be if the site were designated as a conservation area, public park, etc.

15) Comment: We fail to find it reassuring that in the 4.3 acres of wetlands and ditches, prevention of soil runoff into waterways during rainfall will only be accomplished by using haybales OR silt fences.

EPA Response: Hay bales and silt fences are standard approaches to preventing soil runoff from construction activities especially into waterways, and are considered Best Management Practices for this type of activity. Beazer East must obtain a permit from the Illinois EPA by submitting a Stormwater Pollution and Prevention Plan. The plan must provide for best management practices; the permit will provide for inspections and consequences in the event of a permit breach.

16) Comment: As a Concerned Citizen of Carbondale (CCC), I am requesting another Public Hearing concerning the additional cleanup. Although you ran your announcement about the hearing in the Legal Section of the newspaper, I feel that it was done that way so citizens would not know.

EPA response: The ad ran in the classified section of the Southern Illinoisan newspaper on three dates. The public meeting was also announced on the IEPA web page. The fact sheet announcing the ESD document was mailed to several hundred residences and was posted on the EPA and City of Carbondale web pages. The public comment period originally was to run from March 28 to April 19 but was subsequently extended to June 21, 2019. EPA's position is that enough information and time was provided for citizens to make comments on the ESD.

17) Comment: How much money will be spent on this clean-up and are public funds being used?

EPA Response: Beazer East estimates that $4 million will be spent on the cleanup. Public funds will not be used.

18) Comment: Will minorities be employed on the job?

EPA response: Per Beazer, the contract bids have not gone out and it is unknown how many minority people will be employed.

19) Comment: At a meeting last fall about the solar farm, there were statements that there were no contaminants on the property.

EPA Comment: The solar farm was proposed for one portion of the property that was never contaminated and another where the remedy was already constructed. There may have been a misunderstanding of the condition of the proposed locations.

20) Comment: CCC would like a civilian oversight committee of this extended cleanup operation, to include representatives from the community and selected members of the planning commission, to be included as witnesses of the operation. This will give the community representatives who will have a more detailed understanding of the cleanup, its extent. We request a tour be offered to the public of the land before and after the work is done, as a matter of public education. This tour should be advertised sufficiently to draw members of the public who might not yet be aware of this contaminated property.

EPA Response: As stated above, the site is private property. EPA has suggested to Beazer East that it host another Open House like the one held July 16, 2013.

ESD Emails Sent Without Comments:

1) Link to an NBC news story on the "Slave Bible"
2) A 1932 research paper titled "Management of Negro Laborer in a Southern Industrial Plant," Northwestern University
3) Freedom of Information Request that was submitted to the Illinois Environmental Protection Agency
4) Link to an article in the Southern Illinoian about the site and the ESD document.
5) Link to a video about the Atlantic slave trade.
6) Link to a video called "What Color was Jesus?"

Comments from Beazer East:

1) Comment: The period of operations dates was incorrect and should have been 1905 to 1991. Some documents identify other years when the treatment plant started.

   EPA Response: In the Draft ESD, the operations period ending date of 1999 was a typo; it should have been "1991;" the final version will reflect this correction. EPA will change 1901 to 1905 and insert "circa" in front of 1905 to indicate that the exact year that operations began is uncertain.

2) Comment: Some of the information presented in Table 1 is inaccurate and could be confusing and potentially misleading without correction and/or clarification; for example:

- The original surface cover in the Former Process Area of the Site was completed in 2005-2006, not 2004.

  EPA Response: Beazer East may have misread the table. The 2004 date in the column heading refers to the year of the remedial decision, not the remedy construction period. EPA will revise the table for clarification.

- The surface cover installed in 2010 was approximately 8 acres in size, not 10 acres.

  EPA response: Comment noted; correction will be made.

- Regarding the 2010 surface cover, the language "near a drainage ditch for dioxin/furan contamination placed during final cover of the containment cell" is confusing and potentially misleading.

  EPA response: EPA will consider alternative language for clarification.

- Substantial quantities of other soils were excavated as part of the original remedy (2004-2005) in addition to the "various small areas with visible surface creosote." Soils were also excavated during 2008-2010.

  EPA response: Beazer East is referring to the surficial waste piles which were collected and placed in the containment unit (some of the soil beneath the piles was excavated during this activity). In the table, EPA is referring to excavation as a means of remediating soil which is different from relocating surficial waste piles to the containment unit. EPA will add the 2008-2010 soil excavation to the table and otherwise revise for clarity, as needed.

3) Comment: Beazer requests that USEPA clarify in the text of Section III that the risk to ecological receptors from on-Site soil constituent concentrations is a potential risk, not an actual risk.

   EPA response: EPA agrees that risk evaluations result in a risk estimate and will revise the relevant ESD content to indicate potential risk.

4) Comment: The second sentence in Section IV contains some incorrect statements and contradicts statements in Sections III and V of the ESD: "*This revision to the Final Decision is necessary to ensure the remedy protects human health and the environment.*" As demonstrated by the risk assessment conducted for the Site, the existing remedy is protective of human health. Additional remediation is not required to protect human health. The goal of the additional remediation described in the draft ESD, as correctly stated in Sections III and V, is to protect "the environment" "or ecological exposure" (i.e., to address potentially unacceptable risk to ecological receptors). Beazer recommends that the second sentence of Section IV be revised to delete references that this remedy revision is necessary to protect human health and to clarify that the risk being mitigated is ecological risk.

EPA Response: Beazer East amended the Human Health Risk Assessment (HHRA) to include a risk-estimate based on the standard industrial-use scenario. The original HHRA modeled risk based on the site being re-used for a solar installation, which used a shorter worker exposure duration than the standard industrial-use exposure duration. The amended document bases the risk-estimate on future conditions following the additional 15.8 acres of soil remediation explained in the ESD. Therefore, the HHRA risk estimate is inherently tied to the ecological-based remediation.

Furthermore, EPA's use of its mission statement to "protect human health and the environment" is appropriate when discussing the rationale for selecting remedies in general.

5) Comment: Certain dates and other information listed in the Administrative Record portion of the draft ESD are incomplete and/or inaccurate.

EPA Comment: EPA appreciates the corrections and supplemental information provided, and will make appropriate revisions.