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Infrastructure, environment, facilities



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Mr. James Hosch
Wisconsin Department of Natural Resources
1401 Tower Avenue
Superior, WI 55480

INDUSTRIAL

Subject:
Koppers Inc. Superior, WI Facility – Summary of Supplemental Groundwater Investigations

Date:
September 18, 2007

Contact:
Jeffrey S. Holden

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Our ref:
B0039075.0000.00002

Dear Mr. Hosch:

This letter summarizes the scope and findings of supplemental groundwater investigation activities that were conducted by Beazer East, Inc. (Beazer) at the Koppers Inc. Superior, Wisconsin Facility (the Site) between October 2006 and June 2007. The scope of work for these investigations was presented in a letter from ARCADIS BBL to the Wisconsin Department of Natural Resources (WDNR) dated September 26, 2006[1], and included the following activities, which were discussed with and agreed to at a September 12, 2006 project meeting in Superior:

- Installation of six new A-zone monitoring wells
- Installation of one surface water gauge in the fire pond
- Two rounds of water-level measurements at the new and existing A-zone wells and the new surface water gauge
- Collection and laboratory analysis of two rounds of groundwater samples from the six new monitoring wells and five other existing wells

As discussed at the September 12, 2006 meeting, the purpose of these groundwater investigation activities was to supplement the groundwater natural attenuation investigation/evaluation activities conducted in 2004 and 2005[2], and to provide

[1] Jim Hosch (WDNR) provided verbal approval of the September 26, 2006 Work Plan during a telephone conversation with Jeffrey Holden (ARCADIS BBL) on October 2, 2006.

[2] The 2004 and 2005 groundwater natural attenuation investigation/evaluation activities were summarized in a letter report submitted to the WDNR on January 24, 2006 ("Groundwater Natural Attenuation Evaluation Report").

additional data to refine the delineation of certain constituents in shallow groundwater to further support WDNR's approval of a natural attenuation remedy for groundwater at the Site.

**Monitoring Well Installation**

Six new A-zone monitoring wells, W-35A through W-40A, were installed at the Site on October 11 and 12, 2007. The wells were drilled and installed by Boart Longyear Company (Boart Longyear) of Schofield, Wisconsin using hollow-stem augers. The wells were installed to depths of approximately 13 feet below grade, and are constructed of 2-inch diameter PVC casings with 10-foot long, 0.01-inch slotted PVC screens. Following installation, the wells were developed by pumping/bailing water from the wells and surging the well screens. In addition, the locations and measuring point (top of inner PVC casing) elevation of each new well were surveyed. The surveyed locations of the new and existing monitoring wells are show on Figure 1 and the surveyed coordinates and elevations are included on the boring/well construction logs in Attachment 1. With the exception of W-37A and W-39A, all of the new wells were installed in the locations proposed in the September 26, 2006 Work Plan. The proposed location of W-37A was inaccessible due to the presence of a building foundation, and the well location was moved approximately 60 feet to the southwest. The proposed location of W-39A was inaccessible due to the presence of thick brush and soft ground (low-lying/wetland area), and the well location was moved approximately 150 feet to the south/southeast.

Boring/well construction logs are provided in Attachment 1. In addition, WDNR Forms 4400-122 (Soil Boring Log Information), 4400-113A (Monitoring Well Construction), 4400-113B (Monitoring Well Development) and 4400-89 (Groundwater Monitoring Well Information) are provided in Attachment 2.

**Surface Water Gauge Installation**

The surface water gauge was installed in the fire pond on October 9, 2006. The gauge is a steel post driven into the bottom of the pond. Following installation, the location and measuring point (top of steel post) elevation of the surface water gauge were surveyed. The surveyed surface water gauge location is shown on Figure 1 and the measuring point elevation is provided in Table 1.

**Water-Level Monitoring**

Water-level measurements were obtained at the new and existing A-zone monitoring wells and the new surface water gauge on October 22, 2006, April 11, 2007 and June 4, 2007. The water-level measurements and associated groundwater/surface water elevations are summarized in Table 1. Groundwater elevation contour maps created based on the April 11 and June 4, 2007 water-level data are provided as Figures 2 and 3, respectively. The October 22, 2006 water-level data were not contoured because water levels at certain of the new A-zone monitoring wells had not yet fully recovered following installation.

As indicated on Figures 2 and 3, and consistent with historical groundwater contour maps, the general A-zone groundwater flow direction at the Site is to the north (i.e., A-zone groundwater elevations at the northern end of the Site are consistently lower than elevations at the southern end of the Site). However, groundwater flow patterns in the A zone indicate localized variability to the overall northerly flow because of the combined effects of low hydraulic conductivity of the clay, perched groundwater, and interactions with surface-water drainage ditches. The localized A-zone groundwater flow patterns are also inconsistent over time.

**Groundwater Sampling and Analysis**

In accordance with the September 26, 2006 Work Plan, Field & Technical Services, LLC (FTS) collected two rounds of groundwater samples from the following new and existing monitoring wells: W-14A, W-16, W-17A, W-25A, W-26A, W-35A, W-36A, W-37A, W-38A, W-39A and W-40A (Figure 1). Sampling was conducted in October 2006, April 2007, and June 2007. During the October 2006 sampling event, wells W-35A and W-40A were dry and the sample collected from W-37A was mistakenly not analyzed by the lab; accordingly, these three wells were sampled in April and June 2007. The remaining wells were sampled in October 2006 and April 2007.

Groundwater samples were analyzed by Severn Trent Laboratories (STL) for benzene (Method 8021B), polycyclic aromatic hydrocarbons (PAH) and phenolics (Method 8270C), and/or polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans (PCDDs/PCDFs; Method 8290). Table 2 summarizes the analytical scope of work for each well during each sampling event.

The October 2006 to June 2007 supplemental analytical data are summarized in Table 3 (benzene, PAHs and phenolics) and Table 4 (PCDDs/PCDFs). Laboratory analytical data sheets and are provided in Attachment 3.

To help evaluate the data, Table 3 includes calculated values for total PAHs and total phenolics, and Table 4 includes calculated values for 2,3,7,8-TCDD toxicity equivalent (TEQ)[3]. The tables also compare the data to WDNR Preventive Action Limits (PALs) and Enforcement Standards (ESs). Based on the data presented in Tables 3 and 4, the following table summarizes the PAL and ES exceedances for the October 2006 to June 2007 supplemental groundwater sample data:

| Constituent | PAL/ES (ug/L) | Wells Exceeding PAL/ES |
|---|---|---|
| Benzene | PAL: 0.5 | W-16A |
| | ES: 5 | W-16A |
| Benzo(a)pyrene | PAL: 0.02 | W-17A, W-38A |
| | ES: 0.2 | W-17A |
| Benzo(b)fluoranthene | PAL: 0.02 | W-17A, W-36A, W-38A |
| | ES: 0.2 | W-17A, W-38A |
| Chrysene | PAL: 0.02 | W-17A, W-36A, W-38A, W-40A |
| | ES: 0.2 | W-17A |
| Naphthalene | PAL: 10 | W-17A |
| | ES: 100 | None |
| Pentachlorophenol | PAL: 0.1 | W-14A, W-36A, W-37A, W-40A |
| | ES: 1 | W-14A, W-36A |
| 2,3,7,8-TCDD TEQ[4] | PAL: 0.000003 | W-16A, W-25A, W-26A, W-35A, W-36A |
| | ES: 0.00003 | W-16A, W-25A |

To evaluate the delineation of constituents in shallow groundwater, isoconcentration maps were prepared for benzene, naphthalene, total PAHs, pentachlorophenol, and 2,3,7,8-TCDD TEQ using the maximum values detected in samples collected from A

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[3] 2,3,7,8-TCDD TEQs calculated using the World Health Organization (WHO) 2005 toxic equivalency factors (TEFs).

[4] Note that the PAL and ES listed for 2,3,7,8-TCDD TEQ is actually for 2,3,7,8 TCDD; however, as previously requested by WDNR, 2,3,7,8-TCDD TEQ values are also being compared to the 2,3,7,8 TCDD PAL and ES. There were no detections of 2,3,7,8-TCDD in any of the October 2006 to June 2007 supplemental groundwater samples.

zone wells between April 2004 and June 2007 (Table 5). The isoconcentration maps are provided as Figure 4 (benzene), Figure 5 (naphthalene), Figure 6 (total PAHs), Figure 7 (pentachlorophenol), and Figure 8 (2,3,7,8-TCDD TEQ). Each isoconcentration map is discussed below.

- **Benzene (Figure 4)** – Benzene concentrations above the ES (5 ug/L) were detected at wells W-10AR2 and W-30A in the Closed Surface Impoundments Area and at well W-16A in the Former Treatment Area. In the Closed Surface Impoundments Area, benzene is delineated to the north (predominant downgradient direction), east, south and west by non-detect levels at wells W-26A, W-06A, W-04AR and W-12A, respectively. In the Former Treatment Area, benzene is delineated to the northeast and southwest by non-detect benzene levels at wells W-35A and W-26A, respectively.

- **Naphthalene (Figure 5)** – Naphthalene concentrations above the ES (100 ug/L) were detected at wells W-10AR2 and W-30A in the Closed Surface Impoundments Area and at well W-16A in the Former Treatment Area. In the Closed Surface Impoundments Area, naphthalene is delineated to the north (predominant downgradient direction), east and west by non-detect naphthalene levels at wells W-26A, W-06A and W-12A, respectively, and to the south by a maximum naphthalene concentration of 0.14 ug/L at well W-04AR. In the Former Treatment Area, naphthalene is delineated to the northeast and southwest by non-detect naphthalene levels at wells W-35A and W-26A, respectively, and to the south by a maximum naphthalene concentration of 0.02 ug/L at well W-20AR.

- **Total PAHs (Figure 6)** – Total PAH concentrations above 1 ug/L were detected at wells W-38A in the Straw Bales Area, wells W-14A and W-36A in the Former Unlined Landfill/Landfarm Area, wells W-10AR2 and W-30A in the Closed Surface Impoundments Area, and wells W-16A and W-17A in the Former Treatment Area. In the Straw Bales Area, total PAHs are delineated to the north (predominant downgradient direction) by a maximum total PAH concentration of 0.08 ug/L at well W-37A, and to the south by maximum total PAH concentrations of 0.87 ug/L, 0.12 ug/L and 0.13 ug/L at wells W-25A, W-38A and W-40A, respectively. In the Former Unlined Landfill/Landfarm Area, total PAHs are delineated to the northwest (predominant downgradient direction) by a maximum total PAH concentration of 0.4 ug/L at well W-04AR, and to the southwest by a maximum total PAH concentration of 0.08 ug/L at well W-37A. In the Closed Surface Impoundments Area, total PAHs are delineated to the north (predominant downgradient direction),

east, west and south by maximum PAH concentrations of 0.03 ug/L, 0.9 ug/L, 0.9 ug/L and 0.4 ug/L at wells W-26A, W-06A, W-12A and W-04AR, respectively. In the Former Treatment Area, total PAHs are delineated to the northeast, south and southwest by maximum total PAH concentrations of 0.08 ug/L, 0.19 ug/L and 0.03 ug/L at wells W-35A, W-20AR and W-26A, respectively.

- **Pentachlorophenol (Figure 7)** – Pentachlorophenol concentrations above the ES (1 ug/L) were detected at well W-25A in the Straw Bales Area, wells W-14A and W-36A in the Former Unlined Landfill/Landfarm Area, well W-04AR between the Former Unlined Landfill/Landfarm Area and the Closed Surface Impoundments Area, and well W-10AR2 in the Closed Surface Impoundments Area. In the Straw Bales Area, pentachlorophenol is delineated to the north (predominant downgradient direction) and south by maximum pentachlorophenol concentrations of 0.93 ug/L and 0.44 ug/L at wells W-37A and W-40A, respectively, and to the northwest and southwest by non-detect levels of pentachlorophenol at wells W-38A and W-39A, respectively. In the Former Unlined Landfill/Landfarm Area, pentachlorophenol is delineated to the northwest (predominant downgradient direction) by well W-04AR (where the maximum pentachlorophenol concentration was 2.4 ug/L, but five the six samples collected in 2004 to 2007 were non-detect), and to the southwest by a maximum pentachlorophenol concentration of 0.93 ug/L at well W-37A. In the Closed Surface Impoundment Areas, pentachlorophenol is delineated to the north (predominant downgradient direction) and east by maximum pentachlorophenol concentrations of 0.24 ug/L and 0.1 ug/L at wells W-W-30A and W-6A, respectively, to the west by non-detect levels of pentachlorophenol at well W-12A, and to the south by well W-04AR (where the maximum pentachlorophenol concentration was 2.4 ug/L, but five the six samples collected in 2004 to 2007 were non-detect). Pentachlorophenol was not detected at any of the five wells sampled in the Former Treatment Area.

- **2,3,7,8-TCDD TEQ (Figure 8)** – 2,3,7,8-TCDD TEQs above the ES ($3x10^{-5}$ ug/L) were detected at well W-25A in the Straw Bales Area, well W-30A in the Closed Surface Impoundments Area, and well W-16A in the Former Treatment Area. In the Straw Bales Area, PCDDs/PCDFs are delineated to the southwest, north (predominant downgradient direction) and northeast by maximum 2,3,7,8-TCDD TEQs of $2.7x10^{-7}$ ug/L, $3.0x10^{-9}$ ug/L and $7.9x10^{-7}$ ug/L at wells W-39A, W-04AR and W-14A, respectively. In the Closed Surface Impoundments Area, PCDDs/PCDFs are delineated to the north (predominant downgradient direction), east, south and west by 2,3,7,8-TCDD TEQs of $3.3x10^{-6}$ ug/L, $2.5x10^{-6}$ ug/L, $2.8x10^{-6}$ ug/L and $1.3x10^{-7}$ ug/L at wells W-26A, W-6A, W-10AR2 and W-12A,

respectively. In the Former Treatment Area, PCDDs/PCDFs are delineated to the northeast and southwest by 2,3,7,8-TCDD TEQs of $4.6x10^{-6}$ ug/L and $3.3x10^{-6}$ ug/L at wells W-35A and W-26A, respectively.

Mann-Kendall trend analysis tests for well W-14A presented in the January 2006 Groundwater Natural Attenuation Evaluation Report indicated no trend/non-stable conditions for naphthalene and pentachlorophenol. In accordance with an April 27, 2006 letter the WDNR, the additional sample data collected at W-14A in October 2006 and April 2007 were used to further evaluate constituent trends at this well. The Mann-Kendall tests for the July 2004 through April 2007 dataset for naphthalene and pentachlorophenol at well W-14A are presented in Attachment 4 and indicate no trend/stable conditions for naphthalene and no trend/non-stable conditions for pentachlorophenol. Note that naphthalene has only been detected in one of the last six samples at W-14A, and the detected concentration of 0.3 ug/L is well below the PAL of 10 ug/L. To supplement the Mann-Kendal test for pentachlorophenol at W-14A, a concentration versus time plot was generated for the July 2004 through April 2007 dataset and is also included in Attachment 4. The linear regression line shown on the graph in Attachment 4 indicates a decreasing pentachlorophenol trend at W-14A. Regardless of the pentachlorophenol trend at W-14A, as shown on Figure 7 and as discussed above, the extent of pentachlorophenol above the ES (1 ug/L) in shallow groundwater at the Site has been delineated in the predominant downgradient direction.

**Conclusions**

The supplemental groundwater investigations conducted between October 2006 and June 2007 provided additional data to delineate the downgradient extents of benzene, PAHs, pentachlorophenol, and PCDDs/PCDFs in shallow groundwater at the Site. These data, combined with data from the groundwater natural attenuation investigation/evaluation activities conducted in 2004 and 2005 (which, based on concentration trends, geochemical indicator parameters, and microbiological indicator parameters, concluded that natural attenuation of constituents of potential concern in groundwater at the Site was occurring), provides a robust set of scientific data that supports the suitability of a natural attenuation remedy for groundwater at the Site.

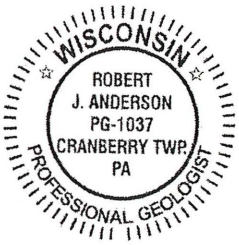
We trust that the information provided in this letter report, along with previous submittals, provides sufficient technical justification for WDNR's approval of the groundwater natural attenuation remedy presented in the Focused Corrective Measures Study (ARCADIS BBL, July 2007). If you have any questions or comments regarding the information presented herein, please contact Jeffrey Holden of ARCADIS BBL (860.645.1084, ext. 12) or Jane Patarcity of Beazer (412.208.8813).

Sincerely,

ARCADIS U.S., Inc.

Robert J. Anderson

Robert J. Anderson
Vice President
WI PG-1037

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**Tables**

**Table 1**
**Summary of A Zone Water-Level Measurements**

**Koppers Inc. Facility**
**Superior, Wisconsin**

| Well ID | Top of Inner Casing Elevation (feet AMSL) | October 22, 2006 | | April 11, 2007 | | June 4, 2007 | |
|---|---|---|---|---|---|---|---|
| | | Depth to Water (feet) | Water Elev. (feet AMSL) | Depth to Water (feet) | Water Elev. (feet AMSL) | Depth to Water (feet) | Water Elev. (feet AMSL) |
| W-04AR | 676.24 | 6.05 | 670.19 | 3.35 | 672.89 | 4.08 | 672.16 |
| W-06A | 673.31 | 11.55 | 661.76 | 11.40 | 661.91 | 3.46 | 669.85 |
| W-08A | 676.05 | 8.13 | 667.92 | 3.07 | 672.98 | 2.91 | 673.14 |
| W-10AR2 | 676.90 | Not recorded | -- | 11.69 | 665.21 | 10.36 | 666.54 |
| W-11A | 676.45 | 5.38 | 671.07 | 7.67 | 668.78 | 4.62 | 671.83 |
| W-12A | 677.07 | 8.69 | 668.38 | 9.88 | 667.19 | 5.35 | 671.72 |
| W-14A | 676.60 | 5.57 | 671.03 | 6.11 | 670.49 | 4.62 | 671.98 |
| W-16A | 674.42 | 3.35 | 671.07 | 5.52 | 668.90 | 2.91 | 671.51 |
| W-17A | 674.29 | 2.32 | 671.97 | Not measured - ice present at 2.02 feet | | 1.85 | 672.44 |
| W-19A | 675.57 | 9.33 | 666.24 | 3.73 | 671.84 | 4.36 | 671.21 |
| W-20AR | 674.01 | 11.38 | 662.63 | 4.75 | 669.26 | 5.40 | 668.61 |
| W-21A | 673.85 | 11.50 | 662.35 | 7.44 | 666.41 | 3.94 | 669.91 |
| W-25A | 675.91 | 2.88 | 673.03 | 5.10 | 670.81 | 3.61 | 672.30 |
| W-26A | 673.49 | 10.39 | 663.10 | 11.86 | 661.63 | 3.38 | 670.11 |
| W-29A | 673.30 | 1.95 | 671.35 | 3.38 | 669.92 | 1.17 | 672.13 |
| W-30A | 676.40 | 8.55 | 667.85 | 7.20 | 669.20 | 3.99 | 672.41 |
| W-35A | 675.30 | Dry | -- | 13.20 | 662.10 | 6.85 | 668.45 |
| W-36A | 678.59 | 4.57 | 674.02 | 8.38 | 670.21 | 4.65 | 673.94 |
| W-37A | 676.67 | 8.86 | 667.81 | 9.01 | 667.66 | 3.75 | 672.92 |
| W-38A | 676.90 | 10.30 | 666.60 | 6.92 | 669.98 | 3.38 | 673.52 |
| W-39A | 678.53 | 12.98 | 665.55 | 6.32 | 672.21 | 5.16 | 673.37 |
| W-40A | 676.94 | 17.73 | 659.21 | 6.71 | 670.23 | 3.59 | 673.35 |
| Fire Pond* | 675.44 | 3.35 | 672.09 | 2.70 | 672.74 | 3.02 | 672.42 |

**Notes:**
AMSL = above mean sea level
* = surface water gauge

**Table 3**
**Summary of 2006-2007 VOC and SVOC Supplemental Groundwater Sample Data**

**Koppers Inc. Facility**
**Superior, Wisconsin**

| Constituent | WDNR ES | WDNR PAL | Units | W-14A 10/23/06 | W-14A 04/16/07 | W-16A 10/23/06 | W-16A 04/17/07 | W-17A 10/24/06 | W-17A 04/17/07 | W-26A 10/24/06 | W-26A 04/16/07 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 5 | 0.5 | ug/L | NA | NA | 110 | 82.0 | NA | NA | 0.206 U | 0.730 U |
| 2,3,4,6-Tetrachlorophenol | -- | -- | ug/L | 0.130 J | 0.560 J | NA | NA | 3.10 U | 2.70 U | 0.157 U | 0.530 U |
| 2,3,5,6-Tetrachlorophenol | -- | -- | ug/L | 1.67 U | 0.820 J | NA | NA | 33.3 U | 7.30 U | 1.67 U | 1.50 U |
| 2,4,5-Trichlorophenol | -- | -- | ug/L | 0.0320 J | 0.370 U | NA | NA | 2.03 U | 1.80 U | 0.0999 U | 0.370 U |
| 2,4,6-Trichlorophenol | -- | -- | ug/L | 0.0833 U | 0.0900 U | NA | NA | 1.67 U | 0.430 U | 0.0833 U | 0.0900 U |
| 2,4-Dichlorophenol | -- | -- | ug/L | 0.290 J | 0.190 J | NA | NA | 1.50 U | 0.250 U | 0.0733 U | 0.0500 U |
| 2,4-Dimethylphenol | -- | -- | ug/L | 1.80 U | 1.10 U | NA | NA | 34.0 J | 8.90 | 1.80 U | 1.10 U |
| 2,4-Dinitrophenol | -- | -- | ug/L | 0.699 U | 5.00 U | NA | NA | 14.0 U | 24.0 U | 0.699 U | 5.00 U |
| 2-Chlorophenol | -- | -- | ug/L | 0.0932 U | 0.0530 U | NA | NA | 1.90 U | 0.270 U | 0.0932 U | 0.0530 U |
| 2-Methylphenol | -- | -- | ug/L | 1.50 U | 0.470 U | NA | NA | 120 | 14.0 | 1.50 U | 0.470 U |
| 2-Nitrophenol | -- | -- | ug/L | 0.127 U | 0.0870 U | NA | NA | 2.50 U | 0.430 U | 0.127 U | 0.0900 U |
| 4,6-Dinitro-2-Methylphenol | -- | -- | ug/L | 0.799 U | 0.400 U | NA | NA | 16.0 U | 2.10 U | 0.799 U | 0.400 U |
| 4-Chloro-3-Methylphenol | -- | -- | ug/L | 0.0799 U | 0.0700 U | NA | NA | 1.63 U | 0.370 U | 0.0799 U | 0.0700 U |
| 4-Methylphenol | -- | -- | ug/L | 1.27 U | 0.530 U | NA | NA | 190 | 5.70 | 1.27 U | 0.530 U |
| 4-Nitrophenol | -- | -- | ug/L | 1.47 U | 4.33 U | NA | NA | 29.3 U | 21.0 U | 1.47 U | 4.30 U |
| Pentachlorophenol | 1 | 0.1 | ug/L | 0.660 J | 1.90 | NA | NA | 4.00 U | 1.50 U | 0.203 U | 0.300 U |
| Phenol | 6,000 | 1,200 | ug/L | 0.0810 J | 0.0930 U | NA | NA | 170 | 2.00 J | 0.183 U | 0.0930 U |
| Total Phenolics | -- | -- | ug/L | 1.19 J | 3.47 J | NA | NA | 514 J | 30.6 J | ND | ND |
| Acenaphthene | -- | -- | ug/L | 0.0250 J | 0.0190 J | NA | NA | 91.0 J | 130 | 0.0699 U | 0.0430 U |
| Acenaphthylene | -- | -- | ug/L | 0.127 U | 0.0290 J | NA | NA | 2.53 U | 2.30 J | 0.127 U | 0.0400 U |
| Anthracene | 3,000 | 600 | ug/L | 0.260 J | 0.390 J | NA | NA | 7.00 J | 7.20 | 0.0999 U | 0.0300 J |
| Benzo(a)anthracene | -- | -- | ug/L | 0.193 U | 0.0490 J | NA | NA | 4.00 U | 2.00 J | 0.193 U | 0.120 U |
| Benzo(a)pyrene | 0.2 | 0.02 | ug/L | 0.103 U | 0.0770 U | NA | NA | 2.06 U | 0.720 J | 0.103 U | 0.0770 U |
| Benzo(b)fluoranthene | 0.2 | 0.02 | ug/L | 0.127 U | 0.130 U | NA | NA | 2.50 U | 0.980 J | 0.127 U | 0.130 U |
| Benzo(g,h,i)perylene | -- | -- | ug/L | 0.0999 U | 0.0390 J | NA | NA | 2.00 U | 0.150 J | 0.0999 U | 0.0730 U |
| Benzo(k)fluoranthene | -- | -- | ug/L | 0.160 U | 0.120 U | NA | NA | 3.20 U | 0.520 J | 0.160 U | 0.120 U |
| Chrysene | 0.2 | 0.02 | ug/L | 0.0999 U | 0.0670 U | NA | NA | 2.00 U | 2.00 J | 0.0999 U | 0.0670 U |
| Dibenzo(a,h)anthracene | -- | -- | ug/L | 0.0633 U | 0.0870 U | NA | NA | 1.27 U | 0.430 U | 0.0633 U | 0.0870 U |
| Fluoranthene | 400 | 80 | ug/L | 0.230 J | 0.110 J | NA | NA | 7.60 J | 21.0 | 0.110 U | 0.0530 U |
| Fluorene | 400 | 80 | ug/L | 0.0899 U | 0.0190 J | NA | NA | 38.0 J | 40.0 | 0.0899 U | 0.0370 U |
| Indeno(1,2,3-cd)pyrene | -- | -- | ug/L | 0.0699 U | 0.0290 J | NA | NA | 1.40 U | 0.150 J | 0.0699 U | 0.0470 U |
| Naphthalene | 100 | 10 | ug/L | 0.0733 U | 0.0770 U | NA | NA | 79.0 | 7.30 | 0.0733 U | 0.0770 U |
| Phenanthrene | -- | -- | ug/L | 0.0470 J | 0.0190 J | NA | NA | 27.0 J | 15.0 | 0.110 U | 0.0500 U |
| Pyrene | 250 | 50 | ug/L | 0.280 J | 0.170 J | NA | NA | 3.40 J | 15.0 | 0.147 U | 0.160 U |
| Total PAHs | -- | -- | ug/L | 0.842 J | 0.873 J | NA | NA | 253 J | 244 J | ND | 0.0300 J |

See Notes on Page 4

**Table 3**
**Summary of 2006-2007 VOC and SVOC Supplemental Groundwater Sample Data**

**Koppers Inc. Facility**
**Superior, Wisconsin**

| Constituent | WDNR ES | WDNR PAL | Units | W-35A 04/17/07 | W-35A 06/13/07 | W-36A 10/24/06 | W-36A 04/17/07 | W-37A 04/17/07 | W-37A 06/13/07 |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 5 | 0.5 | ug/L | 0.730 U | 0.733 U [0.733 U] | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | -- | -- | ug/L | 0.530 U | 0.599 U [0.533 U] | 3.40 J | 22.0 J [34.0 J] | 0.530 U | 0.533 U |
| 2,3,5,6-Tetrachlorophenol | -- | -- | ug/L | 1.50 U | 1.60 U [1.47 U] | 3.33 U | 4.70 J [5.10 J] | 1.50 U | 1.47 U |
| 2,4,5-Trichlorophenol | -- | -- | ug/L | 0.370 U | 0.400 U [0.366 U] | 0.240 J | 3.70 U [2.20 J] | 0.370 U | 0.366 U |
| 2,4,6-Trichlorophenol | -- | -- | ug/L | 0.0900 U | 0.0966 U [0.0899 U] | 0.280 J | 1.10 J [1.50 J] | 0.0900 U | 0.0899 U |
| 2,4-Dichlorophenol | -- | -- | ug/L | 0.0500 U | 0.0533 U [0.0500 U] | 1.30 J | 0.500 U [0.500 U] | 0.0500 U | 0.0500 U |
| 2,4-Dimethylphenol | -- | -- | ug/L | 1.10 U | 1.17 U [1.10 U] | 3.66 U | 11.0 U [11.0 U] | 1.10 U | 1.10 U |
| 2,4-Dinitrophenol | -- | -- | ug/L | 5.00 U | 5.33 U [5.00 U] | 1.40 U | 50.0 U [50.0 U] | 5.00 U | 5.00 U |
| 2-Chlorophenol | -- | -- | ug/L | 0.0530 U | 0.0566 U [0.0533 U] | 0.230 J | 0.530 U [0.530 U] | 0.0530 U | 0.0533 U |
| 2-Methylphenol | -- | -- | ug/L | 0.470 U | 0.500 U [0.466 U] | 3.00 U | 4.70 U [4.70 U] | 0.470 U | 0.466 U |
| 2-Nitrophenol | -- | -- | ug/L | 0.0870 U | 0.0932 U [0.0866 U] | 0.0840 J | 0.870 U [0.870 U] | 0.0870 U | 0.0866 U |
| 4,6-Dinitro-2-Methylphenol | -- | -- | ug/L | 0.400 U | 0.433 U [0.400 U] | 1.60 U | 4.00 U [4.00 U] | 0.400 U | 0.400 U |
| 4-Chloro-3-Methylphenol | -- | -- | ug/L | 0.0700 U | 0.0766 U [0.0699 U] | 0.0590 J | 0.700 U [0.700 U] | 0.0700 U | 0.0699 U |
| 4-Methylphenol | -- | -- | ug/L | 0.530 U | 0.566 U [0.533 U] | 2.53 U | 5.30 U [5.30 U] | 0.530 U | 0.533 U |
| 4-Nitrophenol | -- | -- | ug/L | 4.30 U | 4.66 U [4.33 U] | 2.93 U | 43.0 U [43.0 U] | 4.30 U | 4.33 U |
| Pentachlorophenol | 1 | 0.1 | ug/L | 0.300 U | 0.326 U [0.303 U] | **31.0** | **190 [240]** | **0.930** | 0.303 U |
| Phenol | 6,000 | 1,200 | ug/L | 0.0930 U | 0.0999 U [0.0932 U] | 0.130 J | 0.930 U [0.930 U] | 0.0930 U | 0.0932 U |
| Total Phenolics | -- | -- | ug/L | ND | ND [ND] | 36.7 J | 218 J [283 J] | 0.930 | ND |
| Acenaphthene | -- | -- | ug/L | 0.0430 U | 0.0466 U [0.0433 U] | 2.20 J | 1.50 J [1.20 J] | 0.0430 U | 0.0433 U |
| Acenaphthylene | -- | -- | ug/L | 0.0400 U | 0.0433 U [0.0400 U] | 0.160 J | 0.400 U [0.400 U] | 0.0400 U | 0.0400 U |
| Anthracene | 3,000 | 600 | ug/L | 0.0190 J | 0.0500 U [0.0466 U] | 0.930 J | 0.200 J [0.290 J] | 0.0200 J | 0.0190 J |
| Benzo(a)anthracene | -- | -- | ug/L | 0.120 U | 0.133 U [0.123 U] | 0.400 U | 1.20 U [1.20 U] | 0.120 U | 0.123 U |
| Benzo(a)pyrene | 0.2 | 0.02 | ug/L | 0.0770 U | 0.0833 U [0.0766 U] | 0.206 U | 0.770 U [0.770 U] | 0.0770 U | 0.0766 U |
| Benzo(b)fluoranthene | 0.2 | 0.02 | ug/L | 0.130 U | 0.143 U [0.133 U] | **0.160 J** | 1.30 U [1.30 U] | 0.130 U | 0.133 U |
| Benzo(g,h,i)perylene | -- | -- | ug/L | 0.0730 U | 0.0799 U [0.0733 U] | 0.200 U | 0.730 U [0.730 U] | 0.0730 U | 0.0733 U |
| Benzo(k)fluoranthene | -- | -- | ug/L | 0.120 U | 0.130 U [0.120 U] | 0.320 U | 1.20 U [1.20 U] | 0.120 U | 0.120 U |
| Chrysene | 0.2 | 0.02 | ug/L | 0.0670 U | 0.0733 U [0.0666 U] | **0.190 J** | 0.670 U [0.670 U] | 0.0670 U | 0.0666 U |
| Dibenzo(a,h)anthracene | -- | -- | ug/L | 0.0870 U | 0.0932 U [0.0866 U] | 0.127 U | 0.870 U [0.870 U] | 0.0870 U | 0.0866 U |
| Fluoranthene | 400 | 80 | ug/L | 0.0390 J | 0.0220 J [0.0533 U] | 1.00 J | 0.200 J [0.290 J] | 0.0530 U | 0.0190 J |
| Fluorene | 400 | 80 | ug/L | 0.0370 U | 0.0400 U [0.0366 U] | 1.20 J | 0.370 U [0.370 U] | 0.0370 U | 0.0366 U |
| Indeno(1,2,3-cd)pyrene | -- | -- | ug/L | 0.0470 U | 0.0500 U [0.0466 U] | 0.140 U | 0.470 U [0.470 U] | 0.0470 U | 0.0190 J |
| Naphthalene | 100 | 10 | ug/L | 0.0770 U | 0.0799 U [0.0766 U] | 0.560 | 0.770 U [0.770 U] | 0.0770 U | 0.0766 U |
| Phenanthrene | -- | -- | ug/L | 0.0190 J | 0.0533 U [0.0210 J] | 0.490 J | 0.500 U [0.500 U] | 0.0500 U | 0.0190 J |
| Pyrene | 250 | 50 | ug/L | 0.160 U | 0.170 U [0.157 U] | 0.940 J | 1.60 U [1.60 U] | 0.160 U | 0.157 U |
| Total PAHs | -- | -- | ug/L | 0.0770 J | 0.0220 J [0.0210 J] | 7.83 J | 1.90 J [1.78 J] | 0.0200 J | 0.0760 J |

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**Table 3**
**Summary of 2006-2007 VOC and SVOC Supplemental Groundwater Sample Data**

**Koppers Inc. Facility**
**Superior, Wisconsin**

| Constituent | WDNR ES | WDNR PAL | Units | W-38A 10/25/06 | W-38A 04/16/07 | W-39A 10/25/06 | W-39A 04/16/07 | W-40A 04/17/07 | W-40A 06/13/07 |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 5 | 0.5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | -- | -- | ug/L | 0.157 U | 0.530 U | 0.157 U | 0.530 U | 0.530 U | 0.533 U |
| 2,3,5,6-Tetrachlorophenol | -- | -- | ug/L | 1.67 U | 1.50 U | 1.67 U | 1.50 U | 1.50 U | 1.47 U |
| 2,4,5-Trichlorophenol | -- | -- | ug/L | 0.0999 U | 0.370 U | 0.0999 U | 0.370 U | 0.370 U | 0.366 U |
| 2,4,6-Trichlorophenol | -- | -- | ug/L | 0.0833 U | 0.0900 U | 0.0833 U | 0.0900 U | 0.0900 U | 0.0899 U |
| 2,4-Dichlorophenol | -- | -- | ug/L | 0.0733 U | 0.0500 U | 0.0733 U | 0.0500 U | 0.0500 U | 0.0500 U |
| 2,4-Dimethylphenol | -- | -- | ug/L | 1.80 U | 1.10 U | 1.80 U | 1.10 U | 1.10 U | 1.10 U |
| 2,4-Dinitrophenol | -- | -- | ug/L | 0.699 U | 5.00 U | 0.699 U | 5.00 U | 5.00 U | 5.00 U |
| 2-Chlorophenol | -- | -- | ug/L | 0.0932 U | 0.0530 U | 0.0932 U | 0.0530 U | 0.0530 U | 0.0533 U |
| 2-Methylphenol | -- | -- | ug/L | 1.50 U | 0.470 U | 1.50 U | 0.470 U | 0.470 U | 0.466 U |
| 2-Nitrophenol | -- | -- | ug/L | 0.127 U | 0.0870 U | 0.127 U | 0.0870 U | 0.0870 U | 0.0866 U |
| 4,6-Dinitro-2-Methylphenol | -- | -- | ug/L | 0.799 U | 0.400 U | 0.799 U | 0.400 U | 0.400 U | 0.400 U |
| 4-Chloro-3-Methylphenol | -- | -- | ug/L | 0.0799 U | 0.0700 U | 0.0799 U | 0.0700 U | 0.0700 U | 0.0699 U |
| 4-Methylphenol | -- | -- | ug/L | 1.27 U | 0.530 U | 1.27 U | 0.530 U | 0.530 U | 0.533 U |
| 4-Nitrophenol | -- | -- | ug/L | 1.47 U | 4.30 U | 1.47 U | 4.30 U | 4.30 U | 4.33 U |
| Pentachlorophenol | 1 | 0.1 | ug/L | 0.203 U | 0.303 U | 0.203 U | 0.300 U | 0.300 U | **0.440** |
| Phenol | 6,000 | 1,200 | ug/L | 0.0680 J | 0.0930 U | 0.183 U | 0.0930 U | 0.0930 U | 0.0932 U |
| Total Phenolics | -- | -- | ug/L | 0.0680 J | ND | ND | ND | ND | 0.440 |
| Acenaphthene | -- | -- | ug/L | 0.0699 U | 0.0430 U | 0.0699 U | 0.0190 J | 0.0430 U | 0.0433 U |
| Acenaphthylene | -- | -- | ug/L | 0.127 U | 0.0190 J | 0.127 U | 0.0400 U | 0.0400 U | 0.0400 U |
| Anthracene | 3,000 | 600 | ug/L | 0.0540 J | 0.0970 J | 0.0999 U | 0.0470 U | 0.0470 U | 0.0466 U |
| Benzo(a)anthracene | -- | -- | ug/L | 0.193 U | 0.140 J | 0.193 U | 0.120 U | 0.120 U | 0.123 U |
| Benzo(a)pyrene | 0.2 | 0.02 | ug/L | **0.0730 J** | **0.170 J** | 0.103 U | 0.0770 U | 0.0770 U | 0.0766 U |
| Benzo(b)fluoranthene | 0.2 | 0.02 | ug/L | **0.210 J** | **0.510** | 0.127 U | 0.130 U | 0.130 U | 0.133 U |
| Benzo(g,h,i)perylene | -- | -- | ug/L | 0.0999 U | 0.160 J | 0.0999 U | 0.0730 U | 0.0730 U | 0.0420 J |
| Benzo(k)fluoranthene | -- | -- | ug/L | 0.0550 J | 0.170 J | 0.160 U | 0.120 U | 0.120 U | 0.120 U |
| Chrysene | 0.2 | 0.02 | ug/L | **0.0800 J** | **0.120 J** | 0.0999 U | 0.0670 U | 0.0670 U | **0.0210 J** |
| Dibenzo(a,h)anthracene | -- | -- | ug/L | 0.0633 U | 0.0390 J | 0.0633 U | 0.0870 U | 0.0870 U | 0.0310 J |
| Fluoranthene | 400 | 80 | ug/L | 0.0790 J | 0.170 J | 0.110 U | 0.0190 J | 0.0530 U | 0.0533 U |
| Fluorene | 400 | 80 | ug/L | 0.0899 U | 0.0370 U | 0.0899 U | 0.0190 J | 0.0370 U | 0.0366 U |
| Indeno(1,2,3-cd)pyrene | -- | -- | ug/L | 0.0380 J | 0.170 J | 0.0699 U | 0.0470 U | 0.0470 U | 0.0310 J |
| Naphthalene | 100 | 10 | ug/L | 0.0733 U | 0.0770 U | 0.0733 U | 0.0290 J | 0.0770 U | 0.0766 U |
| Phenanthrene | -- | -- | ug/L | 0.110 U | 0.0490 J | 0.110 U | 0.0290 J | 0.0500 U | 0.0500 U |
| Pyrene | 250 | 50 | ug/L | 0.110 J | 0.230 J | 0.147 U | 0.160 U | 0.160 U | 0.157 U |
| Total PAHs | -- | -- | ug/L | 0.699 J | 2.04 J | ND | 0.115 J | ND | 0.125 J |

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**Table 3**
**Summary of 2006-2007 VOC and SVOC Supplemental Groundwater Sample Data**

**Koppers Inc. Facility**
**Superior, Wisconsin**

**Notes:**
VOCs = volatile organic compounds (Method 8021B)
SVOCs = semivolatile organic compounds (Method 8270C ion trap)
WDNR = Wisconsin Department of Natural Resources
ES = Enforcement Standard
PAL = Preventive Action Limit
ug/L = micrograms per liter
[ ] = duplicate result
U = constituent not detected; associated value is the laboratory quantitation limit
J = estimated result (less than the reporting limit)
NA = not analyzed
ND = non-detect
**Light shading indicates result exceed the PAL**
**Dark shading indicated result exceeds ES**

**Table 4**
**Summary of 2006-2007 PCDD/PCDF Supplemental Groundwater Sample Data**

**Koppers Inc. Facility**
**Superior, Wisconsin**

| Constituent | WDNR ES | WDNR PAL | Units | W-14A 10/23/06 | W-14A 04/16/07 | W-16A 10/23/06 | W-16A 04/17/07 | W-25A 10/24/06 | W-25A 04/17/07 | W-26A 10/24/06 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,3,4,6,7,8-HpCDD | -- | -- | ug/L | 0.000057 B | 0.000053 | 0.0025 | 0.0025 | 0.0075 [0.01] | 0.0041 | 0.00017 B |
| 1,2,3,4,6,7,8-HpCDF | -- | -- | ug/L | 0.00001 U | 0.000011 U | 0.00021 | 0.0002 | 0.0027 [0.0038] | 0.0014 | 0.00004 JB |
| 1,2,3,4,7,8,9-HpCDF | -- | -- | ug/L | 0.0000021 J | 0.000012 U | 0.000021 J | 0.000022 J | 0.00037 [0.00052] | 0.00018 | 0.0000043 U |
| 1,2,3,4,7,8-HxCDD | -- | -- | ug/L | 0.0000027 U | 0.000019 U | 0.0000095 J | 0.0000091 JJA | 0.000035 J [0.000055] | 0.000019 JJA | 0.0000028 U |
| 1,2,3,4,7,8-HxCDF | -- | -- | ug/L | 0.0000019 U | 0.000016 U | 0.000017 J | 0.000018 J | 0.0002 [0.00031] | 0.00017 | 0.0000042 U |
| 1,2,3,6,7,8-HxCDD | -- | -- | ug/L | 0.0000026 U | 0.000019 U | 0.000053 | 0.000061 | 0.00037 [0.00055] | 0.00022 | 0.0000048 JB |
| 1,2,3,6,7,8-HxCDF | -- | -- | ug/L | 0.0000018 U | 0.000015 U | 0.0000041 U | 0.0000036 U | 0.00013 [0.00016] | 0.000057 | 0.0000022 U |
| 1,2,3,7,8,9-HxCDD | -- | -- | ug/L | 0.0000025 U | 0.000018 U | 0.00002 J | 0.000056 | 0.0001 [0.00016] | 0.000042 J | 0.0000032 U |
| 1,2,3,7,8,9-HxCDF | -- | -- | ug/L | 0.0000022 U | 0.000018 U | 0.0000022 U | 0.0000043 U | 0.000025 J [0.000036 J] | 0.000015 J | 0.0000028 U |
| 1,2,3,7,8-PeCDD | -- | -- | ug/L | 0.0000046 U | 0.000029 U | 0.0000075 U | 0.0000062 U | 0.0000087 U [0.000017 U] | 0.0000067 JJA | 0.0000047 U |
| 1,2,3,7,8-PeCDF | -- | -- | ug/L | 0.0000022 U | 0.000017 U | 0.000003 U | 0.0000044 U | 0.000043 J [0.000063] | 0.000025 J | 0.0000021 U |
| 2,3,4,6,7,8-HxCDF | -- | -- | ug/L | 0.000002 U | 0.000017 U | 0.0000031 U | 0.0000041 U | 0.000061 [0.0001] | 0.000033 J | 0.0000025 U |
| 2,3,4,7,8-PeCDF | -- | -- | ug/L | 0.0000022 U | 0.000017 U | 0.000003 U | 0.0000045 U | 0.000022 J [0.000039 J] | 0.000014 J | 0.0000021 U |
| 2,3,7,8-TCDD | 0.00003 | 0.000003 | ug/L | 0.0000015 U | 0.0000043 U | 0.0000024 U | 0.0000038 U | 0.0000036 U [0.0000033 U] | 0.0000027 U | 0.000002 U |
| 2,3,7,8-TCDF | -- | -- | ug/L | 0.0000014 U | 0.0000092 U | 0.0000016 U | 0.0000027 U | 0.0000034 UCON [0.0000055 CON] | 0.0000033 JJA | 0.0000017 U |
| OCDD | -- | -- | ug/L | 0.00063 | 0.00061 | 0.023 | 0.023 B | 0.046 E [0.064 E] | 0.025 B | 0.0021 |
| OCDF | -- | -- | ug/L | 0.000041 BJ | 0.000049 | 0.00091 | 0.001 | 0.005 [0.0069] | 0.003 | 0.00015 B |
| TOTAL HpCDD | -- | -- | ug/L | 0.00013 | 0.00013 | 0.0078 | 0.0085 | 0.011 [0.015] | 0.0062 | 0.00031 |
| TOTAL HpCDF | -- | -- | ug/L | 0.000034 | 0.000012 U | 0.001 | 0.00087 | 0.01 [0.015] | 0.0052 | 0.00014 |
| TOTAL HxCDD | -- | -- | ug/L | 0.0000096 | 0.000019 U | 0.0007 | 0.00078 | 0.00086 [0.0013] | 0.00051 | 0.0000048 |
| TOTAL HxCDF | -- | -- | ug/L | 0.0000057 | 0.000018 U | 0.00019 | 0.00018 | 0.0033 [0.0053] | 0.002 | 0.000022 |
| TOTAL PeCDD | -- | -- | ug/L | 0.000017 U | 0.000029 U | 0.000011 U | 0.000012 U | 0.0000087 U [0.000017 U] | 0.0000067 | 0.000013 U |
| TOTAL PeCDF | -- | -- | ug/L | 0.000004 U | 0.000017 U | 0.0000036 | 0.0000045 U | 0.00024 [0.00035] | 0.00012 | 0.000003 U |
| TOTAL TCDD | -- | -- | ug/L | 0.000002 | 0.0000043 U | 0.0000035 U | 0.0000038 U | 0.0000036 U [0.0000033 U] | 0.0000027 U | 0.000002 U |
| TOTAL TCDF | -- | -- | ug/L | 0.0000016 | 0.0000092 U | 0.0000016 U | 0.0000027 U | 0.000013 [0.000019] | 0.0000076 | 0.0000017 U |
| 2,3,7,8-TCDD TEQ | 0.00003 | 0.000003 | ug/L | 0.000000792 | 0.000000728 | 0.0000444 | 0.0000488 | 0.000221 [0.000316] | 0.000133 | 0.00000326 |

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**Table 4**
**Summary of 2006-2007 PCDD/PCDF Supplemental Groundwater Sample Data**

**Koppers Inc. Facility**
**Superior, Wisconsin**

| Constituent | WDNR ES | WDNR PAL | Units | W-26A 04/16/07 | W-35A 04/17/07 | W-35A 06/13/07 | W-36A 10/24/06 | W-36A 04/17/07 | W-39A 10/25/06 | W-39A 04/16/07 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,3,4,6,7,8-HpCDD | -- | -- | ug/L | 0.000017 U | 0.00029 | 0.00012 [0.000092] | 0.00086 B | 0.00076 | 0.00002 JB | 0.000018 U |
| 1,2,3,4,6,7,8-HpCDF | -- | -- | ug/L | 0.00001 U | 0.000061 | 0.000033 J [0.000024 J] | 0.00013 B | 0.00011 | 0.0000056 U | 0.000013 U |
| 1,2,3,4,7,8,9-HpCDF | -- | -- | ug/L | 0.000011 U | 0.0000044 U | 0.0000032 J [0.0000026 J] | 0.0000078 U | 0.0000057 U | 0.0000019 U | 0.000014 U |
| 1,2,3,4,7,8-HxCDD | -- | -- | ug/L | 0.000017 U | 0.0000042 U | 0.0000007 U [0.00000063 U] | 0.0000026 U | 0.0000055 U | 0.0000028 U | 0.000022 U |
| 1,2,3,4,7,8-HxCDF | -- | -- | ug/L | 0.000013 U | 0.0000034 U | 0.0000036 J [0.0000028 J] | 0.0000038 U | 0.0000041 U | 0.0000019 U | 0.000019 U |
| 1,2,3,6,7,8-HxCDD | -- | -- | ug/L | 0.000016 U | 0.000004 U | 0.0000042 J [0.0000033 J] | 0.000027 JB | 0.000022 J | 0.0000027 U | 0.000022 U |
| 1,2,3,6,7,8-HxCDF | -- | -- | ug/L | 0.000012 U | 0.0000032 U | 0.0000011 J [0.00000062 U] | 0.0000023 U | 0.0000038 U | 0.0000018 U | 0.000018 U |
| 1,2,3,7,8,9-HxCDD | -- | -- | ug/L | 0.000015 U | 0.0000038 U | 0.0000012 U [0.0000011 J] | 0.0000071 J | 0.000005 U | 0.0000026 U | 0.000021 U |
| 1,2,3,7,8,9-HxCDF | -- | -- | ug/L | 0.000014 U | 0.0000038 U | 0.00000088 U [0.00000078 U] | 0.0000028 U | 0.0000046 U | 0.0000022 U | 0.000021 U |
| 1,2,3,7,8-PeCDD | -- | -- | ug/L | 0.000019 U | 0.0000057 U | 0.00000064 U [0.00000068 U] | 0.0000035 U | 0.0000071 U | 0.0000037 U | 0.000035 U |
| 1,2,3,7,8-PeCDF | -- | -- | ug/L | 0.000015 U | 0.0000038 U | 0.00000066 U [0.00000062 J] | 0.0000021 U | 0.0000044 U | 0.0000021 U | 0.000021 U |
| 2,3,4,6,7,8-HxCDF | -- | -- | ug/L | 0.000014 U | 0.0000036 U | 0.00000093 U [0.00000069 U] | 0.0000025 U | 0.0000044 U | 0.000002 U | 0.00002 U |
| 2,3,4,7,8-PeCDF | -- | -- | ug/L | 0.000015 U | 0.0000038 U | 0.00000053 U [0.00000053 J] | 0.0000021 U | 0.0000045 U | 0.000002 U | 0.000021 U |
| 2,3,7,8-TCDD | 0.00003 | 0.000003 | ug/L | 0.0000048 U | 0.0000028 U | 0.00000047 U [0.00000044 U] | 0.0000016 U | 0.0000036 U | 0.0000016 U | 0.0000087 U |
| 2,3,7,8-TCDF | -- | -- | ug/L | 0.0000082 U | 0.0000026 U | 0.00000071 U [0.00000065 U] | 0.0000015 U | 0.0000026 U | 0.0000016 U | 0.000004 U |
| OCDD | -- | -- | ug/L | 0.00027 | 0.0031 B | 0.0017 [0.0012] | 0.0088 | 0.0083 B | 0.00021 | 0.000065 JA |
| OCDF | -- | -- | ug/L | 0.000026 U | 0.00035 | 0.0001 J [0.000073 J] | 0.00086 B | 0.0009 | 0.000019 JB | 0.000028 U |
| TOTAL HpCDD | -- | -- | ug/L | 0.000017 U | 0.0006 | 0.00027 [0.0002] | 0.0016 | 0.0014 | 0.000044 | 0.000018 U |
| TOTAL HpCDF | -- | -- | ug/L | 0.000011 U | 0.00025 | 0.00014 [0.0001] | 0.0007 | 0.00057 | 0.000012 | 0.000014 U |
| TOTAL HxCDD | -- | -- | ug/L | 0.000017 U | 0.0000055 U | 0.000017 [0.0000096] | 0.000095 | 0.000071 | 0.0000028 U | 0.000022 U |
| TOTAL HxCDF | -- | -- | ug/L | 0.000014 U | 0.00003 | 0.000042 [0.000028] | 0.000081 | 0.000051 | 0.0000022 U | 0.000021 U |
| TOTAL PeCDD | -- | -- | ug/L | 0.000019 U | 0.0000057 U | 0.00000096 U [0.00000083 U] | 0.0000098 U | 0.0000071 U | 0.000012 U | 0.000035 U |
| TOTAL PeCDF | -- | -- | ug/L | 0.000015 U | 0.0000038 U | 0.00000066 U [0.0000012] | 0.0000029 U | 0.0000045 U | 0.0000038 U | 0.000021 U |
| TOTAL TCDD | -- | -- | ug/L | 0.0000048 U | 0.0000028 U | 0.0000012 U [0.000001 U] | 0.0000016 U | 0.0000036 U | 0.0000018 U | 0.0000087 U |
| TOTAL TCDF | -- | -- | ug/L | 0.0000082 U | 0.0000026 U | 0.00000071 U [0.00000065 U] | 0.0000015 U | 0.0000026 U | 0.0000016 U | 0.000004 U |
| 2,3,7,8-TCDD TEQ | 0.00003 | 0.000003 | ug/L | 0.000000081 | **0.00000455** | 0.00000299 [0.00000247] | **0.0000162** | **0.0000137** | 0.000000269 | 0.0000000195 |

See Notes on Page 3

**Table 4**
**Summary of 2006-2007 PCDD/PCDF Supplemental Groundwater Sample Data**

**Koppers Inc. Facility**
**Superior, Wisconsin**

**Notes:**
PCDDs/PCDFs = polychlorinated dibenzo-p-dioxins and dibenzofurans (Method 8290)
WDNR = Wisconsin Department of Natural Resources
ES = Enforcement Standard
PAL = Preventive Action Limit
ug/L = micrograms per liter
TEQ = toxicity equivalent (See Note 2)
[ ] = duplicate result
U = constituent not detected; associated value is the laboratory detection limit
J = estimated result (less than the reporting limit)
JA = constituent was positively identified, but the quantitiation is estimated
B = the associated method blank contains the constituent at a reportable level
E = estimated result (exceed calibration range)
CON = result obtained from confirmation analysis
**Light shading indicates result exceed the PAL**
**Dark shading indicated result exceeds ES**
1. At the request of WDNR, 2,3,7,8-TCDD TEQs compared to the PAL and ES for 2,3,7,8-TCDD.
2. 2,3,7,8-TCDD TEQs calculated using the following toxic equivalecy factors (TEFs; WHO 2005):

| | |
|---|---|
| 1,2,3,4,6,7,8-HpCDD | 0.01 |
| 1,2,3,4,6,7,8-HpCDF | 0.01 |
| 1,2,3,4,7,8,9-HpCDF | 0.01 |
| 1,2,3,4,7,8-HxCDD | 0.1 |
| 1,2,3,4,7,8-HxCDF | 0.1 |
| 1,2,3,6,7,8-HxCDD | 0.1 |
| 1,2,3,6,7,8-HxCDF | 0.1 |
| 1,2,3,7,8,9-HxCDD | 0.1 |
| 1,2,3,7,8,9-HxCDF | 0.1 |
| 1,2,3,7,8-PeCDD | 1 |
| 1,2,3,7,8-PeCDF | 0.03 |
| 2,3,4,6,7,8-HxCDF | 0.1 |
| 2,3,4,7,8-PeCDF | 0.3 |
| 2,3,7,8-TCDD | 1 |
| 2,3,7,8-TCDF | 0.1 |
| OCDD | 0.0003 |
| OCDF | 0.0003 |

*** Non-detect values excluded from TEQ calculation**

**Table 5**
**Summary of Maximum Groundwater Sample Concentrations (A-Zone Wells, 2004-2007)**

**Koppers Inc. Facility**
**Superior, Wisconsin**

| Constituent | WDNR ES | WDNR PAL | Units | W-04AR | W-06A | W-10AR2 | W-12A | W-14A | W-16A | W-17A | W-20AR | W-25A |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.5 | 5 | ug/L | ND | ND | 54 | ND | NA | 110 | NA | NA | NA |
| Pentachlorophenol | 0.1 | 1 | ug/L | 2.4 | 0.096 | 42 | ND | 9.9 | ND | ND | ND | 14 |
| Naphthalene | 10 | 100 | ug/L | 0.14 | ND | 2100 | ND | 0.03 | 7100 | 79 | 0.02 | 0.03 |
| Total PAHs | -- | -- | ug/L | 0.4 | 0.9 | 2353 | 0.9 | 9.8 | 8323 | 253 | 0.19 | 0.87 |
| 2,3,7,8-TCDD TEQ | 3.0E-05 | 3.0E-06 | ug/L | 3.0E-09 | 2.5E-06 | 2.8E-06 | 1.3E-07 | 7.9E-07 | 4.9E-05 | NA | NA | 3.2E-04 |

**Notes:**
WDNR = Wisconsin Department of Natural Resources
ES = Enforcement Standard
PAL = Preventive Action Limit
ug/L = micrograms per liter
ND = constituent not detected (2004-2007)
NA = constituent not analyzed for (2004-2007)
**Light shading indicates result exceed the PAL**
**Dark shading indicated result exceeds ES**
1. At the request of WDNR, 2,3,7,8-TCDD TEQs compared to the PAL and ES for 2,3,7,8-TCDD.

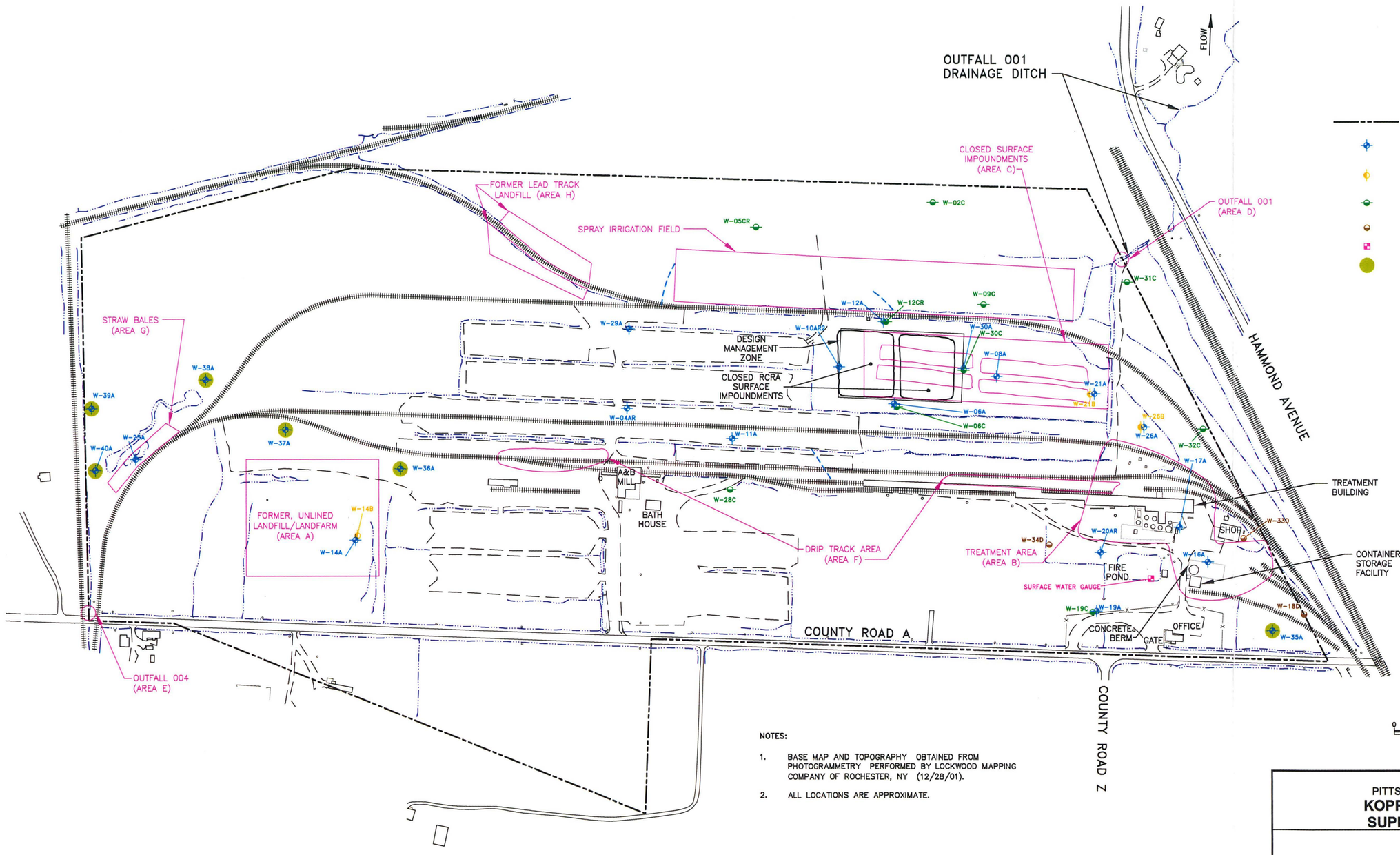
**Table 5**
**Summary of Maximum Groundwater Sample Concentrations (A-Zone Wells, 2004-2007)**

**Koppers Inc. Facility**
**Superior, Wisconsin**

| Constituent | WDNR ES | WDNR PAL | Units | W-26A | W-30A | W-35A | W-36A | W-37A | W-38A | W-39A | W-40A |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.5 | 5 | ug/L | ND | 13 | ND | NA | NA | NA | NA | NA |
| Pentachlorophenol | 0.1 | 1 | ug/L | ND | 0.24 J | ND | 240 | 0.93 | ND | ND | 0.44 |
| Naphthalene | 10 | 100 | ug/L | ND | 2,500 | ND | 0.56 | ND | ND | 0.03 | ND |
| Total PAHs | -- | -- | ug/L | 0.03 | 3023 | 0.08 | 7.8 | 0.08 | 2 | 0.12 | 0.13 |
| 2,3,7,8-TCDD TEQ | 3.0E-05 | 3.0E-06 | ug/L | 3.3E-06 | 1.2E-04 | 4.6E-06 | 1.6E-05 | NA | NA | 2.7E-07 | NA |

**Notes:**
WDNR = Wisconsin Department of Natural Resources
ES = Enforcement Standard
PAL = Preventive Action Limit
ug/L = micrograms per liter
ND = constituent not detected (2004-2007)
NA = constituent not analyzed for (2004-2007)
**Light shading indicates result exceed the PAL**
**Dark shading indicated result exceeds ES**
1. At the request of WDNR, 2,3,7,8-TCDD TEQs compared tc the PAL and ES for 2,3,7,8-TCDD.

# Figures




NOTES:

1. BASE MAP AND TOPOGRAPHY OBTAINED FROM PHOTOGRAMMETRY PERFORMED BY LOCKWOOD MAPPING COMPANY OF ROCHESTER, NY (12/28/01).
2. ALL LOCATIONS ARE APPROXIMATE.

BEAZER EAST, INC.
PITTSBURGH, PENNSYLVANNIA
**KOPPERS INC. FACILITY**
**SUPERIOR, WISCONSIN**

# SITE PLAN

ARCADIS BBL
Infrastructure, environment, facilities

FIGURE
1

SYR-85-LAF LAYER: ON=*; OFF=*REF*
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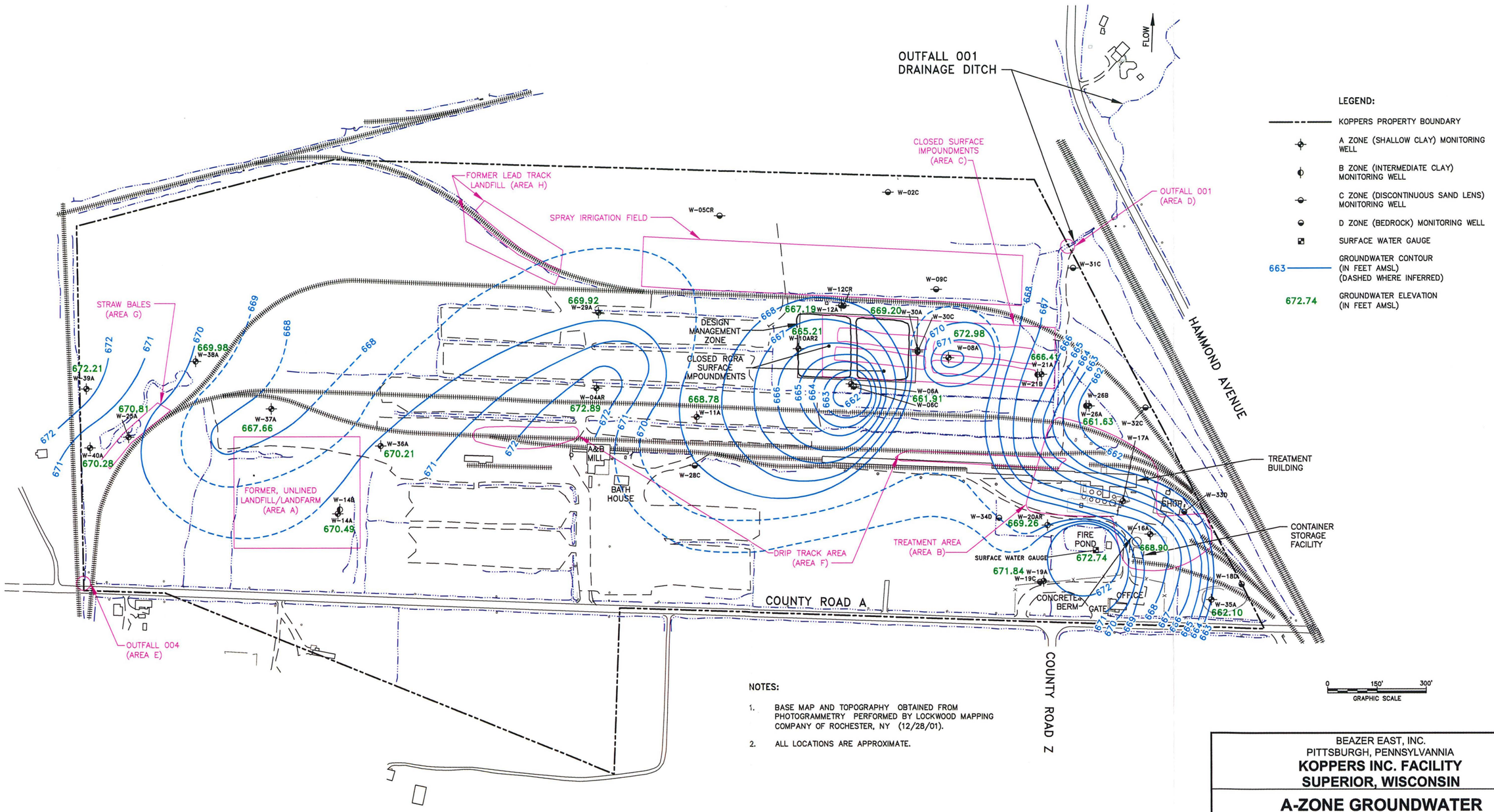


LEGEND:

- KOPPERS PROPERTY BOUNDARY
- A ZONE (SHALLOW CLAY) MONITORING WELL
- B ZONE (INTERMEDIATE CLAY) MONITORING WELL
- C ZONE (DISCONTINUOUS SAND LENS) MONITORING WELL
- D ZONE (BEDROCK) MONITORING WELL
- SURFACE WATER GAUGE
- 663 — GROUNDWATER CONTOUR (IN FEET AMSL) (DASHED WHERE INFERRED)
- 672.74 — GROUNDWATER ELEVATION (IN FEET AMSL)

NOTES:

1. BASE MAP AND TOPOGRAPHY OBTAINED FROM PHOTOGRAMMETRY PERFORMED BY LOCKWOOD MAPPING COMPANY OF ROCHESTER, NY (12/28/01).
2. ALL LOCATIONS ARE APPROXIMATE.

0 150' 300'
GRAPHIC SCALE

BEAZER EAST, INC.
PITTSBURGH, PENNSYLVANNIA
**KOPPERS INC. FACILITY**
**SUPERIOR, WISCONSIN**

# A-ZONE GROUNDWATER CONTOUR MAP - APRIL 11, 2007

ARCADIS BBL
Infrastructure, environment, facilities

FIGURE
**2**

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OUTFALL 001
DRAINAGE DITCH

FLOW

CLOSED SURFACE
IMPOUNDMENTS
(AREA C)

OUTFALL 001
(AREA D)

FORMER LEAD TRACK
LANDFILL (AREA H)

SPRAY IRRIGATION FIELD

STRAW BALES
(AREA G)

DESIGN
MANAGEMENT
ZONE

CLOSED RCRA
SURFACE
IMPOUNDMENTS

HAMMOND AVENUE

TREATMENT
BUILDING

CONTAINER
STORAGE
FACILITY

FORMER, UNLINED
LANDFILL/LANDFARM
(AREA A)

A&B
MILL

BATH
HOUSE

DRIP TRACK AREA
(AREA F)

TREATMENT AREA
(AREA B)

FIRE
POND

SHOP

OFFICE

GATE

CONCRETE
BERM

SURFACE WATER GAUGE
672.42

COUNTY ROAD A

COUNTY ROAD Z

OUTFALL 004
(AREA E)

W-02C
W-05CR
W-29A 672.13
W-12A 671.72
W-12CR
W-09C
W-10AR2 666.54
W-30A 672.41
W-30C
W-08A 673.14
W-21A 669.91
W-21B
W-06A 669.85
W-06C
W-31C
W-26B
W-26A 670.11
W-32C 672.44
W-17A
W-33C
W-34D
W-20AR 668.61
W-16A 671.51
W-19C
W-19A 671.21
W-18D
W-35A 668.45
W-04AR 672.16
W-11A 671.83
W-28C
W-36A 673.94
W-37A 672.92
W-38A 673.52
W-39A 673.37
W-25A 672.30
W-40A 673.35
W-14B
W-14A 671.98

672 673 671 670 669 668 667

0 150' 300'
GRAPHIC SCALE

NOTES:

1. BASE MAP AND TOPOGRAPHY OBTAINED FROM PHOTOGRAMMETRY PERFORMED BY LOCKWOOD MAPPING COMPANY OF ROCHESTER, NY (12/28/01).
2. ALL LOCATIONS ARE APPROXIMATE.

LEGEND:

- KOPPERS PROPERTY BOUNDARY
- A ZONE (SHALLOW CLAY) MONITORING WELL
- B ZONE (INTERMEDIATE CLAY) MONITORING WELL
- C ZONE (DISCONTINUOUS SAND LENS) MONITORING WELL
- D ZONE (BEDROCK) MONITORING WELL
- SURFACE WATER GAUGE
- 669 GROUNDWATER CONTOUR (IN FEET AMSL) (DASHED WHERE INFERRED)
- 669.85 GROUNDWATER ELEVATION (IN FEET AMSL)

BEAZER EAST, INC.
PITTSBURGH, PENNSYLVANNIA
**KOPPERS INC. FACILITY**
**SUPERIOR, WISCONSIN**

# ZONE A GROUNDWATER CONTOUR MAP - JUNE 4, 2007

ARCADIS BBL
Infrastructure, environment, facilities

FIGURE
3

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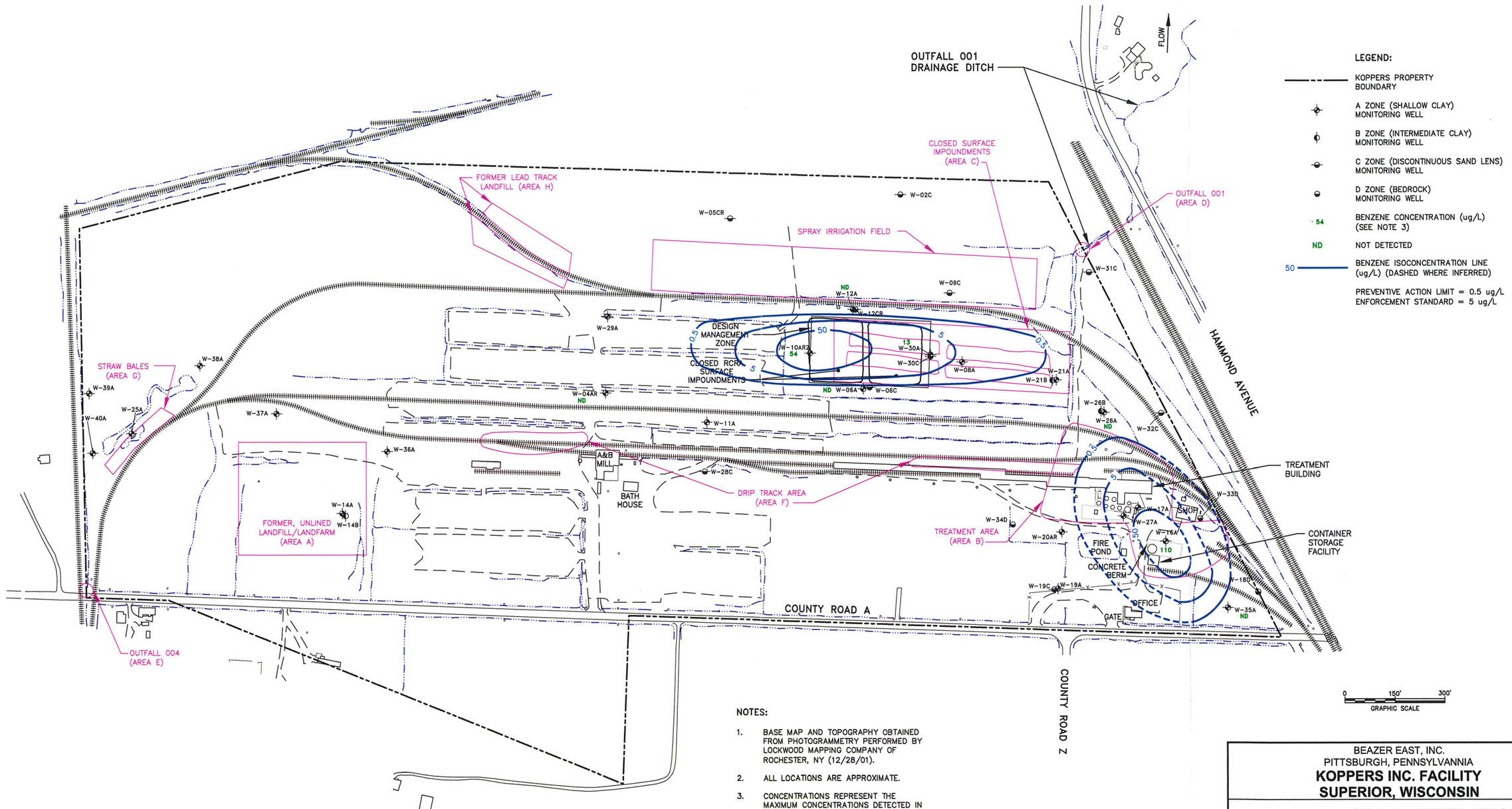


LEGEND:

- KOPPERS PROPERTY BOUNDARY
- A ZONE (SHALLOW CLAY) MONITORING WELL
- B ZONE (INTERMEDIATE CLAY) MONITORING WELL
- C ZONE (DISCONTINUOUS SAND LENS) MONITORING WELL
- D ZONE (BEDROCK) MONITORING WELL
- 54 — BENZENE CONCENTRATION (ug/L) (SEE NOTE 3)
- ND — NOT DETECTED
- 50 — BENZENE ISOCONCENTRATION LINE (ug/L) (DASHED WHERE INFERRED)

PREVENTIVE ACTION LIMIT = 0.5 ug/L
ENFORCEMENT STANDARD = 5 ug/L

NOTES:

1. BASE MAP AND TOPOGRAPHY OBTAINED FROM PHOTOGRAMMETRY PERFORMED BY LOCKWOOD MAPPING COMPANY OF ROCHESTER, NY (12/28/01).
2. ALL LOCATIONS ARE APPROXIMATE.
3. CONCENTRATIONS REPRESENT THE MAXIMUM CONCENTRATIONS DETECTED IN APRIL 2004, JULY 2004, OCTOBER 2004, FEBRUARY 2005, APRIL 2005, OCTOBER 2005, APRIL 2006, OCTOBER 2006, APRIL 2007, OR JUNE 2007.
4. ONLY DATA FROM A ZONE WELLS USED TO GENERATE ISOCONCENTRATION LINES.

BEAZER EAST, INC.
PITTSBURGH, PENNSYLVANNIA
**KOPPERS INC. FACILITY**
**SUPERIOR, WISCONSIN**

# BENZENE ISOCONCENTRATIONS - A ZONE WELLS (2004 - 2007)

ARCADIS BBL
Infrastructure, environment, facilities

FIGURE
**4**


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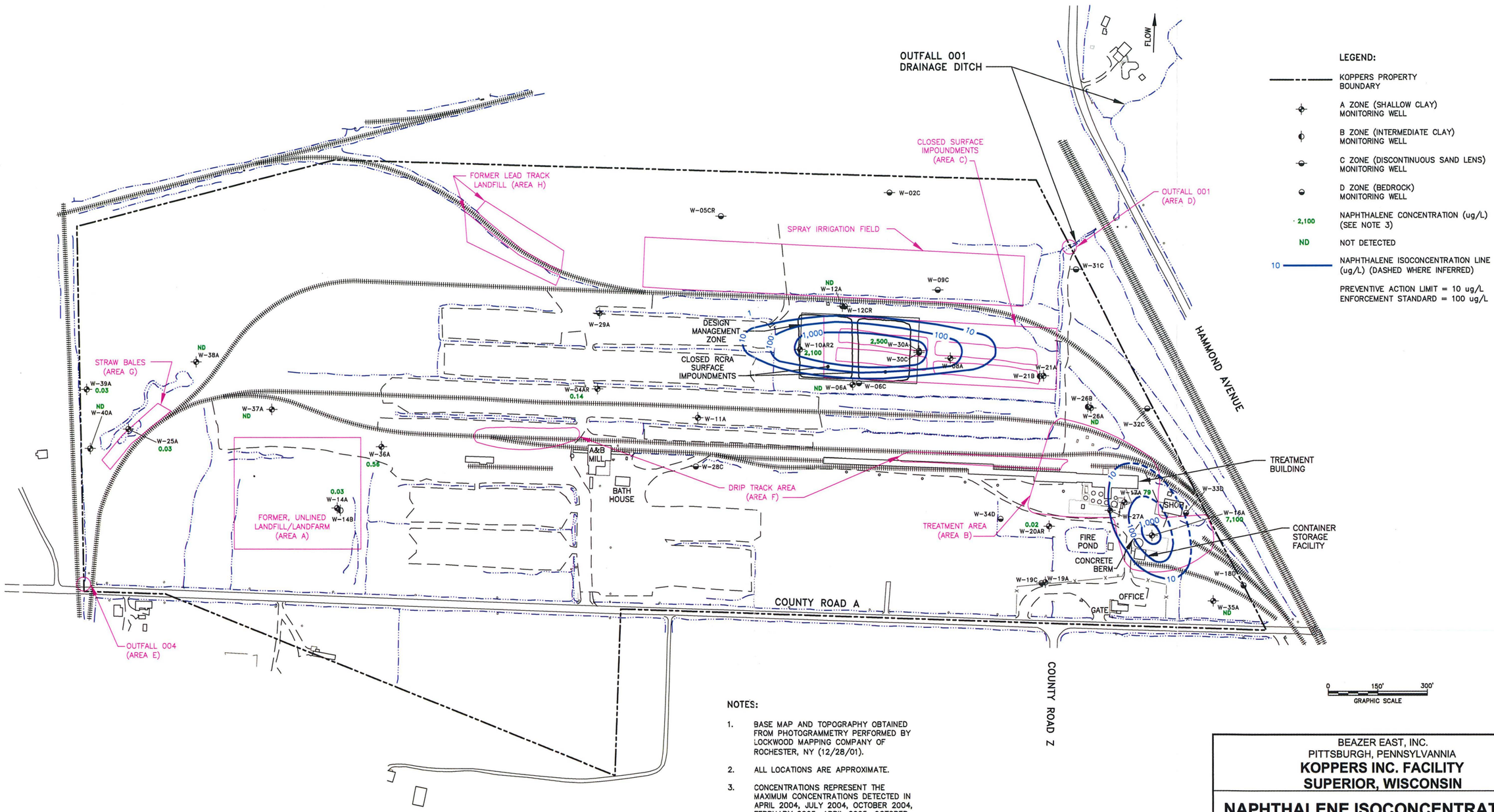


LEGEND:

- KOPPERS PROPERTY BOUNDARY
- A ZONE (SHALLOW CLAY) MONITORING WELL
- B ZONE (INTERMEDIATE CLAY) MONITORING WELL
- C ZONE (DISCONTINUOUS SAND LENS) MONITORING WELL
- D ZONE (BEDROCK) MONITORING WELL
- 2,100 — NAPHTHALENE CONCENTRATION (ug/L) (SEE NOTE 3)
- ND — NOT DETECTED
- 10 — NAPHTHALENE ISOCONCENTRATION LINE (ug/L) (DASHED WHERE INFERRED)

PREVENTIVE ACTION LIMIT = 10 ug/L
ENFORCEMENT STANDARD = 100 ug/L

NOTES:

1. BASE MAP AND TOPOGRAPHY OBTAINED FROM PHOTOGRAMMETRY PERFORMED BY LOCKWOOD MAPPING COMPANY OF ROCHESTER, NY (12/28/01).
2. ALL LOCATIONS ARE APPROXIMATE.
3. CONCENTRATIONS REPRESENT THE MAXIMUM CONCENTRATIONS DETECTED IN APRIL 2004, JULY 2004, OCTOBER 2004, FEBRUARY 2005, APRIL 2005, OCTOBER 2005, APRIL 2006, OCTOBER 2006, APRIL 2007, OR JUNE 2007.
4. ONLY DATA FROM A ZONE WELLS USED TO GENERATE ISOCONCENTRATION LINES.

0 150' 300'
GRAPHIC SCALE

BEAZER EAST, INC.
PITTSBURGH, PENNSYLVANNIA
**KOPPERS INC. FACILITY**
**SUPERIOR, WISCONSIN**

# NAPHTHALENE ISOCONCENTRATIONS - A ZONE WELLS (2004 - 2007)

ARCADIS BBL
Infrastructure, environment, facilities

FIGURE
**5**

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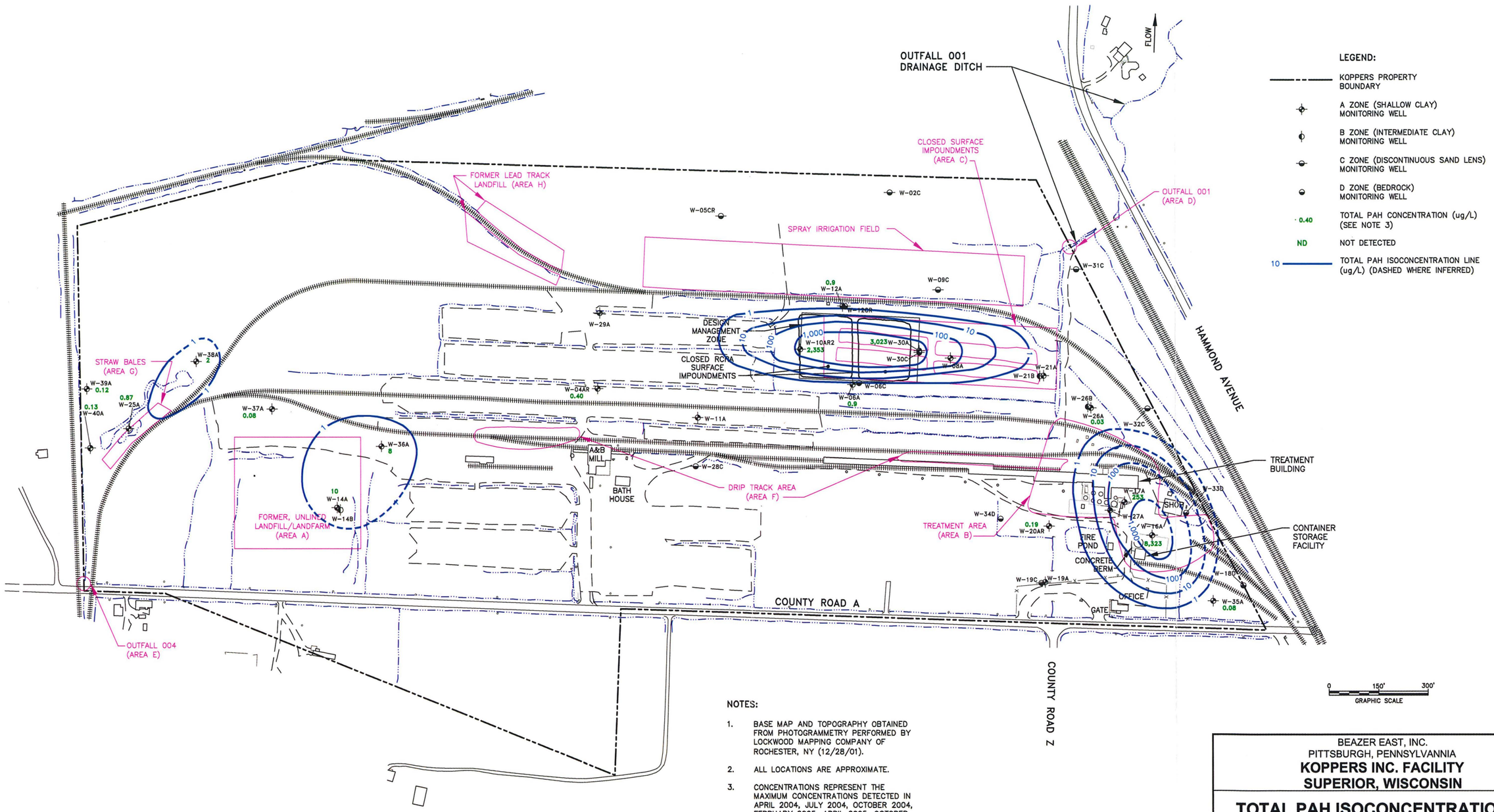



LEGEND:

- KOPPERS PROPERTY BOUNDARY
- A ZONE (SHALLOW CLAY) MONITORING WELL
- B ZONE (INTERMEDIATE CLAY) MONITORING WELL
- C ZONE (DISCONTINUOUS SAND LENS) MONITORING WELL
- D ZONE (BEDROCK) MONITORING WELL
- 0.40 — TOTAL PAH CONCENTRATION (ug/L) (SEE NOTE 3)
- ND — NOT DETECTED
- 10 — TOTAL PAH ISOCONCENTRATION LINE (ug/L) (DASHED WHERE INFERRED)

0 150' 300'
GRAPHIC SCALE

NOTES:

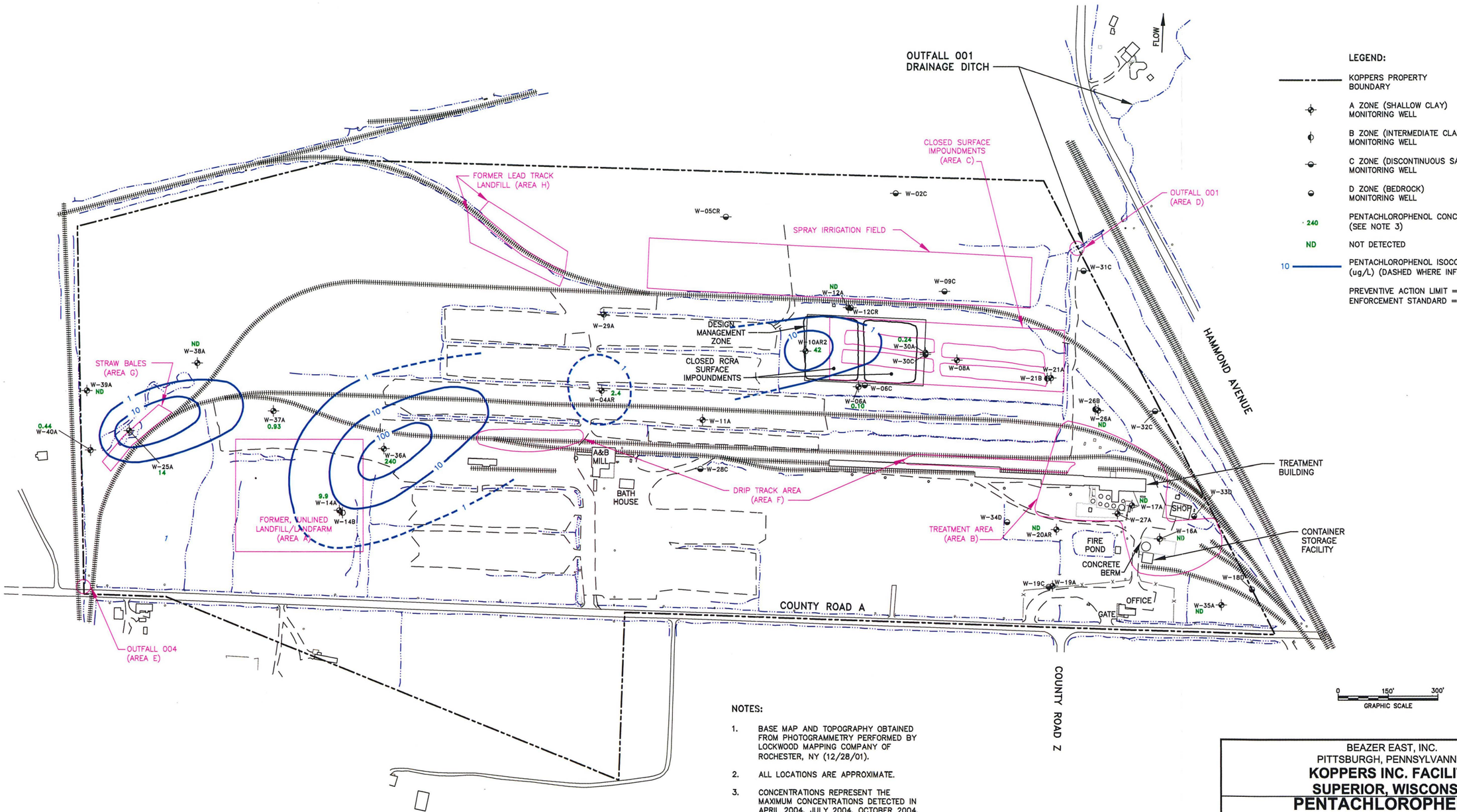
1. BASE MAP AND TOPOGRAPHY OBTAINED FROM PHOTOGRAMMETRY PERFORMED BY LOCKWOOD MAPPING COMPANY OF ROCHESTER, NY (12/28/01).
2. ALL LOCATIONS ARE APPROXIMATE.
3. CONCENTRATIONS REPRESENT THE MAXIMUM CONCENTRATIONS DETECTED IN APRIL 2004, JULY 2004, OCTOBER 2004, FEBRUARY 2005, APRIL 2005, OCTOBER 2005, APRIL 2006, OCTOBER 2006, APRIL 2007, OR JUNE 2007.
4. ONLY DATA FROM A ZONE WELLS USED TO GENERATE ISOCONCENTRATION LINES.

BEAZER EAST, INC.
PITTSBURGH, PENNSYLVANNIA
**KOPPERS INC. FACILITY**
**SUPERIOR, WISCONSIN**

# TOTAL PAH ISOCONCENTRATIONS - A ZONE WELLS (2004 - 2007)

ARCADIS BBL
Infrastructure, environment, facilities

FIGURE
**6**




LEGEND:

- KOPPERS PROPERTY BOUNDARY
- A ZONE (SHALLOW CLAY) MONITORING WELL
- B ZONE (INTERMEDIATE CLAY) MONITORING WELL
- C ZONE (DISCONTINUOUS SAND LENS) MONITORING WELL
- D ZONE (BEDROCK) MONITORING WELL
- 240 — PENTACHLOROPHENOL CONCENTRATION (ug/L) (SEE NOTE 3)
- ND — NOT DETECTED
- 10 — PENTACHLOROPHENOL ISOCONCENTRATION LINE (ug/L) (DASHED WHERE INFERRED)

PREVENTIVE ACTION LIMIT = 0.1 ug/L
ENFORCEMENT STANDARD = 1 ug/L

NOTES:

1. BASE MAP AND TOPOGRAPHY OBTAINED FROM PHOTOGRAMMETRY PERFORMED BY LOCKWOOD MAPPING COMPANY OF ROCHESTER, NY (12/28/01).
2. ALL LOCATIONS ARE APPROXIMATE.
3. CONCENTRATIONS REPRESENT THE MAXIMUM CONCENTRATIONS DETECTED IN APRIL 2004, JULY 2004, OCTOBER 2004, FEBRUARY 2005, APRIL 2005, OCTOBER 2005, APRIL 2006, OCTOBER 2006, APRIL 2007, OR JUNE 2007.
4. ONLY DATA FROM A ZONE WELLS USED TO GENERATE ISOCONCENTRATION LINES.

BEAZER EAST, INC.
PITTSBURGH, PENNSYLVANNIA
**KOPPERS INC. FACILITY**
**SUPERIOR, WISCONSIN**

# PENTACHLOROPHENOL ISOCONCENTRATIONS - A ZONE WELLS (2004 - 2007)

ARCADIS BBL
Infrastructure, environment, facilities

FIGURE
**7**

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ARCADIS BBL

**Attachments**

ARCADIS BBL

**Attachment 1**

Boring/Well Construction Logs

| | | | | | |
|---|---|---|---|---|---|
| **Date Start/Finish:** | October 11, 2006 | **Northing:** | 547310 | **Well/Boring ID:** | W-35A |
| **Drilling Company:** | Boart Longyear | **Easting:** | 1449487 | | |
| **Driller's Name:** | Gary Jones | **Casing Elevation:** | 675.30 feet amsl | **Client:** | Beazer East Inc. |
| **Drilling Method:** | Hollow-stem Auger | | | | |
| **Bit Size:** | | **Borehole Depth:** | 13 feet bgs | **Location:** | 3185 South County Road A<br>Superior, Wisconsin |
| **Auger Size:** | 4.25-inch | **Surface Elevation:** | 672.53 feet amsl | | |
| **Rig Type:** | B-57 ORV 811 | | | | |
| **Sampling Method:** | 2-inches by 2-feet (split spoons) | **Geologist:** | David M. Mack | | |

| DEPTH / ELEVATION | Recovery (feet) | Blows / 6 Inches | PID Headspace (ppm) | Geologic Column | Stratigraphic Description | Well/Boring Construction |
|---|---|---|---|---|---|---|
| 675 | | | | | | 4-inch diameter Protective Steel Casing with Locking Cover (3 feet ags to 2 feet bgs) |
| 0 | NA | NA | 0.0<br>0.0 | | Red-brown and black SILT, some clay and organics, moist. | Concrete Pad (0 to 0.5 feet bgs)<br>Hydrated Bentonite Seal (0.5 to 2.5 feet bgs) |
| 670 | 2 / 2 | 3, 2, 3, 1 | 0.0<br>0.0<br>0.0<br>0.0 | | Red-brown CLAY, little silt, moist. | 2-inch diameter PVC (2 feet ags to 3 feet bgs)<br>BB No. 7 Sand Pack (2.5 to 2.75 feet bgs) |
| 5 | 1.5 / 2 | 3, 8, 11, 11 | 0.0<br>0.0<br>0.0<br>0.0 | | Red-brown CLAY, little silt, trace coal fragments, moist.<br>Red-brown CLAY, little silt, moist. | |
| 665 | 1 / 2 | 1, 1, 1, 1 | 0.0<br>0.0<br>0.0<br>0.0 | | Red-brown CLAY, little silt, moist.<br>No recovery.<br>Red-brown CLAY, some plyablity, trace medium sand, moist. | No. 40 Sand Pack (2.75 to 13 feet bgs) |
| 10 | 2 / 2 | 2, 3, 3, 3 | 0.0<br>0.0<br>0.0<br>0.0 | | Red-brown CLAY, some plyability, moist.<br>Red-brown plyable CLAY, moist.<br>Red-brown CLAY, some plyability, moist. | |
| | 2 / 2 | 2, 2, 3, 4 | 0.0<br>0.0<br>0.0<br>0.0 | | Red-brown CLAY, some plyability, moist. | 2-inch diameter 0.010-inch slotted PVC Screen (3 to 13 feet bgs) |
| 660 | 2 / 2 | 2, 3, 3, 5 | 0.0<br>0.0<br>0.0<br>0.0 | | Red-brown CLAY, some plyability, moist. | |

ARCADIS BBL
Infrastructure, environment, facilities

**Remarks:** bgs - below ground surface
amsl - above mean sea level
Split-spoons were driven using a 300 lb hammer.

Project: 39075.001
Data File:W-35A.dat

Template:
Date: October 10, 2006

| | | | | | |
|---|---|---|---|---|---|
| **Date Start/Finish:** | October 11, 2006 | **Northing:** | 544792 | **Well/Boring ID:** | W-36A |
| **Drilling Company:** | Boart Longyear | **Easting:** | 1449022 | | |
| **Driller's Name:** | Gary Jones | **Casing Elevation:** | 678.59 feet amsl | **Client:** | Beazer East Inc. |
| **Drilling Method:** | Hollow-stem Auger | | | | |
| **Bit Size:** | | **Borehole Depth:** | 13 feet bgs | **Location:** | 3185 South County Road A<br>Superior, Wisconsin |
| **Auger Size:** | 4.25-inch | **Surface Elevation:** | 676.15 feet amsl | | |
| **Rig Type:** | B-57 ORV 811 | | | | |
| **Sampling Method:** | 2-inches by 2-feet (split spoons) | **Geologist:** | David M. Mack | | |

| DEPTH | ELEVATION | Recovery (feet) | Blows / 6 Inches | PID Headspace (ppm) | Geologic Column | Stratigraphic Description | Well/Boring Construction |
|---|---|---|---|---|---|---|---|
| 0 | 675 | | | 0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0 | | Gray coarse to fine GRAVEL, some coarse to fine sand and silt, moist. | 4-inch diameter Protective Steel Casing with Locking Cover (3 feet ags to 2 feet bgs)<br>Concrete Pad (0 to 0.5 feet bgs)<br>Hydrated Bentonite Seal (0.5 to 2.5 feet bgs)<br>2-inch diameter PVC (2 feet ags to 3 feet bgs)<br>BB No. 7 Sand Pack (2.5 to 2.75 feet bgs) |
| 5 | 670 | 0.5 / 2 | 3, 4, 4, 4 | 0.0<br>0.0<br>0.0<br>0.0 | | No recovery.<br>Gray coarse to fine GRAVEL, some coarse to fine sand and silt, moist.<br>Red-brown CLAY, some silt and plyability, wet. | |
| | | 1 / 2 | 2, 2, 2, 2 | 0.0<br>0.0<br>0.0<br>0.0 | | Red-brown plyable CLAY, wet. | No. 40 Sand Pack (2.75 to 13 feet bgs) |
| | | 2 / 2 | 3, 2, 2, 3 | 0.0<br>0.0<br>0.0<br>0.0 | | Red-brown plyable CLAY, wet. | |
| 10 | 665 | 2 / 2 | 3, 4, 4, 2 | 0.0<br>0.0<br>0.0<br>0.0 | | Red-brown plyable CLAY, wet. | 2-inch diameter 0.010-inch slotted PVC Screen (3 to 13 feet bgs) |
| | | 1 / 1 | 4, 2 | 0.0<br>0.0 | | Red-brown plyable CLAY, wet. | |

ARCADIS BBL
Infrastructure, environment, facilities

**Remarks:** bgs - below ground surface
amsl - above mean sea level
Split-spoons were driven using a 300 lb hammer.
Could not collect split-spoons from 0 to 4 feet bgs due to large gravel.
Wet clay appears to be wet due to water in first 4 feet of overburden.

| | | | | | |
|---|---|---|---|---|---|
| **Date Start/Finish:** | October 11, 2006 | **Northing:** | 544461 | **Well/Boring ID:** | W-37A |
| **Drilling Company:** | Boart Longyear | **Easting:** | 1448910 | | |
| **Driller's Name:** | Gary Jones | **Casing Elevation:** | 676.67 feet amsl | **Client:** | Beazer East Inc. |
| **Drilling Method:** | Hollow-stem Auger | | | | |
| **Bit Size:** | | **Borehole Depth:** | 13 feet bgs | **Location:** | 3185 South County Road A<br>Superior, Wisconsin |
| **Auger Size:** | 4.25-inch | **Surface Elevation:** | 674.25 feet amsl | | |
| **Rig Type:** | B-57 ORV 811 | | | | |
| **Sampling Method:** | 2-inches by 2-feet (split spoons) | **Geologist:** | David M. Mack | | |

| DEPTH | ELEVATION | Recovery (feet) | Blows / 6 Inches | PID Headspace (ppm) | Geologic Column | Stratigraphic Description | Well/Boring Construction |
|---|---|---|---|---|---|---|---|
| | 675 | | | | | | 4-inch diameter Protective Steel Casing with Locking Cover (3 feet ags to 2 feet bgs) |
| 0 | | | | 0.0<br>0.0<br>0.0<br>0.0 | | Red-brown coarse to fine GRAVEL and SILT, little coarse to fine sand, moist. | Concrete Pad (0 to 0.5 feet bgs)<br>Hydrated Bentonite Seal (0.5 to 2.5 feet bgs)<br>2-inch diameter PVC (2 feet ags to 3 feet bgs) |
| | | | | 0.0<br>0.0 | | Red-brown CLAY, little silt, moist. | BB No. 7 Sand Pack (2.5 to 2.75 feet bgs) |
| | 670 | 1 / 2 | 2, 2, 3, 6 | 0.0<br>0.0<br>0.0<br>0.0 | | Red-brown plyable CLAY, moist | |
| 5 | | 2 / 2 | 3, 3, 2, 3 | 0.0<br>0.0<br>0.0<br>0.0 | | Red-brown plyable CLAY, moist | |
| | | 2 / 2 | 1, 2, 3, 3 | 0.0<br>0.0<br>0.0<br>0.0 | | Red-brown CLAY, some plyability, moist. | No. 40 Sand Pack (2.75 to 13 feet bgs) |
| | 665 | 2 / 2 | 1, 1, 2, 3 | 0.0<br>0.0<br>0.0<br>0.0 | | Red-brown CLAY, some plyability, moist. | |
| 10 | | | | | | | 2-inch diameter 0.010-inch slotted PVC Screen (3 to 13 feet bgs) |
| | | 2 / 2 | 1, 1, 1, 2 | 0.0<br>0.0<br>0.0<br>0.0 | | Red-brown CLAY, some plyability, moist. | |

ARCADIS BBL
Infrastructure, environment, facilities

**Remarks:** bgs - below ground surface
amsl - above mean sea level
Split-spoons were driven using a 300 lb hammer.
Split-spoons could not be collected 0 to 3 feet bgs due to large gravel.

| | | | | | |
|---|---|---|---|---|---|
| **Date Start/Finish:** | October 11, 2006 | **Northing:** | 544232 | **Well/Boring ID:** | W-38A |
| **Drilling Company:** | Boart Longyear | **Easting:** | 1448767 | | |
| **Driller's Name:** | Gary Jones | **Casing Elevation:** | 676.90 feet amsl | **Client:** | Beazer East Inc. |
| **Drilling Method:** | Hollow-stem Auger | | | | |
| **Bit Size:** | | **Borehole Depth:** | 13 feet bgs | **Location:** | 3185 South County Road A<br>Superior, Wisconsin |
| **Auger Size:** | 4.25-inch | **Surface Elevation:** | 674.47 feet amsl | | |
| **Rig Type:** | B-57 ORV 811 | | | | |
| **Sampling Method:** | 2-inches by 2-feet (split spoons) | **Geologist:** | David M. Mack | | |

| DEPTH | ELEVATION | Recovery (feet) | Blows / 6 Inches | PID Headspace (ppm) | Geologic Column | Stratigraphic Description | Well/Boring Construction |
|---|---|---|---|---|---|---|---|
| | 675 | | | | | | 4-inch diameter Protective Steel Casing with Locking Cover (3 feet ags to 2 feet bgs) |
| 0 | | | | 0.0<br>0.0 | | Red-brown and black SILT and CLAY, little organic matter moist. | Concrete Pad (0 to 0.5 feet bgs)<br>Hydrated Bentonite Seal (0.5 to 2.5 feet bgs) |
| | | 0.66 / 2 | 2, 2, 3, 3 | 0.0<br>0.0<br>0.0<br>0.0 | | No recovery.<br>Red-brown CLAY, some plyability, moist. | 2-inch diameter PVC (2 feet ags to 3 feet bgs)<br>BB No. 7 Sand Pack (2.5 to 2.75 feet bgs) |
| | 670 | 1.5 / 2 | 2, 2, 3, 3 | 0.0<br>0.0<br>0.0<br>0.0 | | Red-brown CLAY, some plyability, moist. | |
| 5 | | 2 / 2 | 2, 2, 2, 2 | 0.0<br>0.0<br>0.0<br>0.0 | | Red-brown CLAY, some plyability, moist. | |
| | | 2 / 2 | 2, 3, 3, 2 | 0.0<br>0.0<br>0.0<br>0.0 | | Red-brown CLAY, some plyability, moist. | No. 40 Sand Pack (2.75 to 13 feet bgs) |
| | 665 | 2 / 2 | 6, 6, 7, 7 | 0.0<br>0.0<br>0.0<br>0.0 | | Red-brown CLAY, some plyability, moist. | |
| 10 | | 2 / 2 | 1, 1, 2, 1 | 0.0<br>0.0<br>0.0<br>0.0 | | Red-brown plyable CLAY, moist. | 2-inch diameter 0.010-inch slotted PVC Screen (3 to 13 feet bgs) |

ARCADIS BBL
Infrastructure, environment, facilities

**Remarks:** bgs - below ground surface
amsl - above mean sea level
Split-spoons were driven using a 300 lb hammer.

Project: 39075.002
Data File:W-38A.dat

Template:
Date: October 10, 2006

| | | | | | |
|---|---|---|---|---|---|
| **Date Start/Finish:** | October 12, 2006 | **Northing:** | 543900 | **Well/Boring ID:** | W-39A |
| **Drilling Company:** | Boart Longyear | **Easting:** | 1448849 | | |
| **Driller's Name:** | Gary Jones | **Casing Elevation:** | 678.53 feet amsl | **Client:** | Beazer East Inc. |
| **Drilling Method:** | Hollow-stem Auger | | | | |
| **Bit Size:** | | **Borehole Depth:** | 13 feet bgs | **Location:** | 3185 South County Road A<br>Superior, Wisconsin |
| **Auger Size:** | 4.25-inch | **Surface Elevation:** | 675.77 feet amsl | | |
| **Rig Type:** | B-57 ORV 811 | | | | |
| **Sampling Method:** | 2-inches by 2-feet (split spoons) | **Geologist:** | David M. Mack | | |

| DEPTH | ELEVATION | Recovery (feet) | Blows / 6 Inches | PID Headspace (ppm) | Geologic Column | Stratigraphic Description | Well/Boring Construction |
|---|---|---|---|---|---|---|---|
| 0 | 675 | | | 0.0<br>0.0 | | Gray and black coarse to fine GRAVEL and SILT, little coarse to fine sand, moist | 4-inch diameter Protective Steel Casing with Locking Cover (3 feet ags to 2 feet bgs)<br>Concrete Pad (0 to 0.5 feet bgs)<br>Hydrated Bentonite Seal (0.5 to 2.5 feet bgs)<br>2-inch diameter PVC (2 feet ags to 3 feet bgs)<br>BB No. 7 Sand Pack (2.5 to 2.75 feet bgs) |
| | | 0 / 2 | 2, 5, 6, 4 | 0.0<br>0.0<br>0.0<br>0.0 | | No recovery. | |
| | | 0.5 / 2 | 2, 2, 3, 4 | 0.0<br>0.0<br>0.0<br>0.0 | | No recovery.<br>Red-brown CLAY, some plyability, moist. | |
| 5 | 670 | 0.5 / 2 | 2, 3, 2, 2 | 0.0<br>0.0<br>0.0<br>0.0 | | No recovery.<br>Red-brown CLAY, some plyability, moist. | |
| | | 2 / 2 | 2, 3, 3, 4 | 0.0<br>0.0<br>0.0<br>0.0 | | Red-brown CLAY, some plyability, moist. | No. 40 Sand Pack (2.75 to 13 feet bgs) |
| 10 | 665 | 2 / 2 | 1, 1, 2, 2 | 0.0<br>0.0<br>0.0<br>0.0 | | Red-brown CLAY, some plyability, moist. | 2-inch diameter 0.010-inch slotted PVC Screen (3 to 13 feet bgs) |
| | | 2 / 2 | 2, 2, 1, 3 | 0.0<br>0.0<br>0.0<br>0.0 | | Red-brown CLAY, some plyability, moist. | |

ARCADIS BBL
Infrastructure, environment, facilities

**Remarks:** bgs - below ground surface
amsl - above mean sea level
Split-spoons were driven using a 300 lb hammer.

Project: 39075.002
Data File:W39A.dat

Template:
Date: October 10, 2006

| | | | | | |
|---|---|---|---|---|---|
| **Date Start/Finish:** | October 12, 2006 | **Northing:** | 543912 | **Well/Boring ID:** | W-40A |
| **Drilling Company:** | Boart Longyear | **Easting:** | 1449027 | | |
| **Driller's Name:** | Gary Jones | **Casing Elevation:** | 676.94 feet amsl | **Client:** | Beazer East Inc. |
| **Drilling Method:** | Hollow-stem Auger | | | | |
| **Bit Size:** | | **Borehole Depth:** | 13 feet bgs | **Location:** | 3185 South County Road A<br>Superior, Wisconsin |
| **Auger Size:** | 4.25-inch | **Surface Elevation:** | 674.33 feet amsl | | |
| **Rig Type:** | B-57 ORV 811 | | | | |
| **Sampling Method:** | 2-inches by 2-feet (split spoons) | **Geologist:** | David M. Mack | | |

| DEPTH / ELEVATION | Recovery (feet) | Blows / 6 Inches | PID Headspace (ppm) | Geologic Column | Stratigraphic Description | Well/Boring Construction |
|---|---|---|---|---|---|---|
| 675 | | | | | | 4-inch diameter Protective Steel Casing with Locking Cover (3 feet ags to 2 feet bgs) |
| 0 | | | 0.0<br>0.0 | | Red-brown and black SILT and CLAY, some organics, moist. | Concrete Pad (0 to 0.5 feet bgs)<br>Hydrated Bentonite Seal (0.5 to 2.5 feet bgs) |
| | 0 / 2 | 1, 1, 1, 1 | 0.0<br>0.0<br>0.0<br>0.0 | | No recovery. | 2-inch diameter PVC (2 feet ags to 3 feet bgs) |
| 670 | 2 / 2 | 2, 3, 2, 2 | 0.0<br>0.0<br>0.0<br>0.0 | | Red-brown CLAY, some plyability, moist. | BB No. 7 Sand Pack (2.5 to 2.75 feet bgs) |
| 5 | 2 / 2 | 2, 2, 2, 2 | 0.0<br>0.0<br>0.0<br>0.0 | | Red-brown CLAY, some plyability, moist. | |
| | 2 / 2 | 3, 4, 2, 2 | 0.0<br>0.0<br>0.0<br>0.0 | | Red-brown CLAY, some plyability, moist. | No. 40 Sand Pack (2.75 to 13 feet bgs) |
| 665 | 2 / 2 | 2, 2, 2, 3 | 0.0<br>0.0<br>0.0<br>0.0 | | Red-brown CLAY, some plyability, moist. | |
| 10 | 2 / 2 | 2, 3, 3, 3 | 0.0<br>0.0<br>0.0<br>0.0 | | Red-brown CLAY, some plyability, moist. | 2-inch diameter 0.010-inch slotted PVC Screen (3 to 13 feet bgs) |

ARCADIS BBL
Infrastructure, environment, facilities

**Remarks:** bgs - below ground surface
amsl - above mean sea level
Split-spoons were driven using a 300 lb hammer.

Project: 39075.002
Data File:W-40A.dat

Template:
Date: October 10, 2006

ARCADIS BBL

**Attachment 2**

WDNR Well Forms

State of Wisconsin
Department of Natural Resources

# SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 5-97

Route To: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☒ Other ☐



| Facility/Project Name | License/Permit/Monitoring Number | Boring Number |
|---|---|---|
| Koppers Inc. Facility | | W-35A |

| Boring Drilled By (Firm name and name of crew chief) | Date Drilling Started | Date Drilling Completed | Drilling Method |
|---|---|---|---|
| Boart Longyear Company - G. Jones | 10/11/2006 | 10/11/2006 | 4 1/4" HSA |

| WI Unique Well No. | DNR Well ID No. | Common Well Name | Final Static Water Level | Surface Elevation | Borehole Diameter |
|---|---|---|---|---|---|
| | | W-35A | Feet MSL | 672.5 Feet MSL | 8.0 Inches |

Boring Location or Local Grid Origin (Check if estimated: ☐ )
State Plane 547310 N, 1499987 E S / C / (N)
SE 1/4 of SW 1/4 of Section 12, T 48 N, R 14 W
Lat. ° ' "
Long. ° ' "
Local Grid Location (If applicable)
Feet ☐ N ☐ S Feet ☐ E ☐ W

| Facility ID | County | County Code | Civil Town/City/ or Village |
|---|---|---|---|
| 816009810 | Douglas | 16 | Superior |

| Sample Number and Type | Length Att. & Recovered (in) | Blow Counts | Depth In Feet | Soil/Rock Description And Geologic Origin For Each Major Unit | USCS | Graphic Log | Well Diagram | PID/FID | Soil Properties: Compressive Strength | Moisture Content | Liquid Limit | Plasticity Index | P 200 | RQD/ Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | EARTH DRILL | | | | | | | | | | |
| 1 SS | 18 | 2 2 1 | 2 | | | | | | | | | | | |
| 2 SS | 24 12 | 3 8 11 11 | 3 4 | | | | | | | M | | | | |
| 3 SS | 24 10 | 1 1 1 1 | 5 6 | Red CLAY | | | | | | M | | | | |
| 4 SS | 24 24 | 2 2 3 4 | 7 8 | | | | | | | M | | | | |
| 5 SS | 24 24 | 2 2 3 4 | 9 10 | | | | | | | M | | | | |
| 6 SS | 24 24 | 2 3 3 | 11 12 | | | | | | | M | | | | |

I hereby certify that the information on this form is true and correct to the best of my knowledge.

| Signature | Firm | |
|---|---|---|
| John C Koch | Boart Longyear Company<br>101 Alderson Street Schofield, WI 54476 | Tel: 715-359-7090<br>Fax: 715-355-5715 |

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completions of this form is mandatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

# SOIL BORING LOG INFORMATION SUPPLEMENT

Form 4400-122A Rev. 5-97

Boring Number W-35A Use only as an attachment to Form 4400-122. 

| Sample | | | | | | | | | Soil Properties | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Number and Type | Length Att. & Recovered (in) | Blow Counts | Depth In Feet | Soil/Rock Description And Geologic Origin For Each Major Unit | U S C S | Graphic Log | Well Diagram | PID/FID | Compressive Strength | Moisture Content | Liquid Limit | Plasticity Index | P 200 | RQD/ Comments |
| | | 5 | 13 | | | | | | | | | | | |
| | | | 14 | EOB 14.0'<br>Well Set 13.0' | | | | | | | | | | |

State of Wisconsin
Department of Natural Resources

# SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 5-97

Route To: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☒ Other ☐



| Facility/Project Name | License/Permit/Monitoring Number | Boring Number |
|---|---|---|
| Koppers Inc. Facility | | W-36A |

| Boring Drilled By (Firm name and name of crew chief) | Date Drilling Started | Date Drilling Completed | Drilling Method |
|---|---|---|---|
| Boart Longyear Company - G. Jones | 10/11/2006 | 10/11/2006 | 4 1/4" HSA |

| WI Unique Well No. | DNR Well ID No. | Common Well Name | Final Static Water Level | Surface Elevation | Borehole Diameter |
|---|---|---|---|---|---|
| | | W-36A | Feet MSL | 676.2 Feet MSL | 8.0 Inches |

Boring Location or Local Grid Origin (Check if estimated: ☐ )
State Plane S 44792 N, 1949021 E S/C/N
SE 1/4 of SW 1/4 of Section 12, T 48 N, R 17 W
Lat. ° ' "
Long. ° ' "
Local Grid Location (If applicable)
Feet ☐ N ☐ E
Feet ☐ S ☐ W

| Facility ID | County | County Code | Civil Town/City/ or Village |
|---|---|---|---|
| 816009810 | Douglas | 16 | Superior |

| Sample Number and Type | Sample Length Att. & Recovered (in) | Blow Counts | Depth In Feet | Soil/Rock Description And Geologic Origin For Each Major Unit | USCS | Graphic Log | Well Diagram | PID/FID | Soil Properties: Compressive Strength | Moisture Content | Liquid Limit | Plasticity Index | P 200 | RQD/ Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | Rock & Gravel FILL | | | | | | | | | | |
| | | | 2 | | | | | | | | | | | |
| | | | 3 | Red & Brn Moist CLAY | | | | | | | | | | |
| 1 SS | 24 6 | 3 4 4 4 | 4 5 | | | | | | | | | | | |
| 2 SS | 24 12 | 2 2 2 2 | 6 7 | | | | | | | | | | | |
| 3 SS | 24 24 | 3 2 2 3 | 8 9 | | | | | | | | | | | |
| 4 SS | 24 24 | 3 4 4 2 | 10 11 12 | | | | | | | | | | | |

I hereby certify that the information on this form is true and correct to the best of my knowledge.

| Signature | Firm | Tel: 715-359-7090 |
|---|---|---|
| John F Rich | Boart Longyear Company<br>101 Alderson Street Schofield, WI 54476 | Fax: 715-355-5715 |

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completions of this form is mandatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

**SOIL BORING LOG INFORMATION SUPPLEMENT**
Form 4400-122A Rev. 5-97

Boring Number W-36A Use only as an attachment to Form 4400-122. 

| Sample | | | | | | | | | Soil Properties | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Number and Type | Length Att. & Recovered (in) | Blow Counts | Depth In Feet | Soil/Rock Description And Geologic Origin For Each Major Unit | U S C S | Graphic Log | Well Diagram | PID/FID | Compressive Strength | Moisture Content | Liquid Limit | Plasticity Index | P 200 | RQD/ Comments |
| 5 SS | 12 12 | 4 2 | 13 | | | | | | | | | | | |
| | | | 14 | EOB 14.0' Well Set 13.0' | | | | | | | | | | |

State of Wisconsin
Department of Natural Resources

# SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 5-97

Route To: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☒ Other ☐



| Facility/Project Name | License/Permit/Monitoring Number | Boring Number |
|---|---|---|
| Koppers Inc. Facility | | W-37A |

| Boring Drilled By (Firm name and name of crew chief) | Date Drilling Started | Date Drilling Completed | Drilling Method |
|---|---|---|---|
| Boart Longyear Company - G. Jones | 10/11/2006 | 10/11/2006 | 4 1/4" HSA |

| WI Unique Well No. | DNR Well ID No. | Common Well Name | Final Static Water Level | Surface Elevation | Borehole Diameter |
|---|---|---|---|---|---|
| | | W-37A | Feet MSL | 679.3 Feet MSL | 8.0 Inches |

Boring Location or Local Grid Origin (Check if estimated: ☐ ) Local Grid Location (If applicable)

(State Plane) 544461 N, 1448910 E S/C/(S) Lat. ° ' " ☐ N ☐ E

SE 1/4 of SW 1/4 of Section 12, T 48 N, R 14 W Long. ° ' " Feet ☐ S Feet ☐ W

| Facility ID | County | County Code | Civil Town/City/ or Village |
|---|---|---|---|
| 816009810 | Douglas | 16 | Superior |

| Sample Number and Type | Sample Length Att. & Recovered (in) | Blow Counts | Depth In Feet | Soil/Rock Description And Geologic Origin For Each Major Unit | USCS | Graphic Log | Well Diagram | PID/FID | Soil Properties: Compressive Strength | Moisture Content | Liquid Limit | Plasticity Index | P 200 | RQD/ Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | Red & Brn SILT w/F-C Gravel | | | | | | | | | | |
| | | | 2 | | | | | | | | | | | |
| 1 SS | 24 12 | 2 2 3 6 | 3 4 | Red & Brn CLAY | | | | | | | | | | |
| 2 SS | 24 24 | 3 3 2 3 | 5 6 | | | | | | | | | | | |
| 3 SS | 24 24 | 1 2 3 3 | 7 8 | | | | | | | | | | | |
| 4 SS | 24 24 | 1 1 2 3 | 9 10 | | | | | | | | | | | |
| 5 SS | 24 24 | 1 1 1 | 11 12 | | | | | | | | | | | |

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature John F Rich Firm Boart Longyear Company
101 Alderson Street Schofield, WI 54476
Tel: 715-359-7090
Fax: 715-355-5715

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completions of this form is mandatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

# SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 5-97

Route To: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☒ Other ☐



| Facility/Project Name | License/Permit/Monitoring Number | Boring Number |
|---|---|---|
| Koppers Inc. Facility | | W-38A |

| Boring Drilled By (Firm name and name of crew chief) | Date Drilling Started | Date Drilling Completed | Drilling Method |
|---|---|---|---|
| Boart Longyear Company - G. Jones | 10/11/2006 | 10/11/2006 | 4 1/4" HSA |

| WI Unique Well No. | DNR Well ID No. | Common Well Name | Final Static Water Level | Surface Elevation | Borehole Diameter |
|---|---|---|---|---|---|
| | | W-38A | Feet MSL | 679.5 Feet MSL | 8.0 Inches |

Boring Location or Local Grid Origin (Check if estimated: ☐ )
State Plane 544232 N, 1448767 E S/C/N
SE 1/4 of SW 1/4 of Section 12, T 48 N, R 14 W
Lat. ° ' "
Long. ° ' "
Local Grid Location (If applicable)
Feet ☐ N ☐ S Feet ☐ E ☐ W

| Facility ID | County | County Code | Civil Town/City/ or Village |
|---|---|---|---|
| 816009810 | Douglas | 16 | Superior |

| Sample Number and Type | Length Att. & Recovered (in) | Blow Counts | Depth In Feet | Soil/Rock Description And Geologic Origin For Each Major Unit | USCS | Graphic Log | Well Diagram | PID/FID | Soil Properties: Compressive Strength | Moisture Content | Liquid Limit | Plasticity Index | P 200 | RQD/ Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | SILT w/Organic Layers | | | | | | | | | | |
| 1 SS | 24 8 | 3 3 2 2 | 2 | Red & Brn CLAY | | | | | | | | | | |
| 2 SS | 24 18 | 3 3 2 2 | 3 4 | | | | | | | | | | | |
| 3 SS | 24 24 | 2 2 2 2 | 5 6 | | | | | | | | | | | |
| 4 SS | 24 24 | 2 3 3 2 | 7 8 | | | | | | | | | | | |
| 5 SS | 24 24 | 6 6 7 7 | 9 10 | | | | | | | | | | | |
| 6 SS | 24 24 | 1 1 2 | 11 12 | | | | | | | | | | | |

I hereby certify that the information on this form is true and correct to the best of my knowledge.

| Signature | Firm | |
|---|---|---|
| John C Rich | Boart Longyear Company<br>101 Alderson Street Schofield, WI 54476 | Tel: 715-359-7090<br>Fax: 715-355-5715 |

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completions of this form is mandatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

# SOIL BORING LOG INFORMATION SUPPLEMENT

Form 4400-122A Rev. 5-97

Boring Number W-38A. Use only as an attachment to Form 4400-122. 

| Sample | | | | | | | | | Soil Properties | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Number and Type | Length Att. & Recovered (in) | Blow Counts | Depth In Feet | Soil/Rock Description And Geologic Origin For Each Major Unit | U S C S | Graphic Log | Well Diagram | PID/FID | Compressive Strength | Moisture Content | Liquid Limit | Plasticity Index | P 200 | RQD/ Comments |
| | | | 13 | | | | | | | | | | | |
| | | | 14 | EOB 14.0'<br>Well Set 13.0' | | | | | | | | | | |

State of Wisconsin
Department of Natural Resources

# SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 5-97

Route To: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☒ Other ☐



| Facility/Project Name | License/Permit/Monitoring Number | Boring Number |
|---|---|---|
| Koppers Inc. Facility | | W-39A |

| Boring Drilled By (Firm name and name of crew chief) | Date Drilling Started | Date Drilling Completed | Drilling Method |
|---|---|---|---|
| Boart Longyear Company - G. Jones | 10/12/2006 | 10/12/2006 | 4 1/4" HSA |

| WI Unique Well No. | DNR Well ID No. | Common Well Name | Final Static Water Level | Surface Elevation | Borehole Diameter |
|---|---|---|---|---|---|
| | | W-39A | Feet MSL | 675.3 Feet MSL | 8.0 Inches |

Boring Location or Local Grid Origin (Check if estimated: ☐ )
(State Plane) 543900 N, 1448496 E S/C/N
SE 1/4 of SW 1/4 of Section 12, T 48 N, R 14 W
Lat. ° ' "
Long. ° ' "
Local Grid Location (If applicable)
Feet ☐ N ☐ E
Feet ☐ S ☐ W

| Facility ID | County | County Code | Civil Town/City/ or Village |
|---|---|---|---|
| 816009810 | Douglas | 16 | Superior |

| Sample Number and Type | Length Att. & Recovered (in) | Blow Counts | Depth In Feet | Soil/Rock Description And Geologic Origin For Each Major Unit | USCS | Graphic Log | Well Diagram | PID/FID | Soil Properties: Compressive Strength | Moisture Content | Liquid Limit | Plasticity Index | P 200 | RQD/ Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 SS | 24 0 | 2 5 6 5 | 1–2 | Rocky FILL | | | | | | | | | | |
| 2 SS | 24 6 | 2 2 3 4 | 3–4 | | | | | | | | | | | |
| 3 SS | 24 6 | 2 3 2 2 | 5–6 | Red & Brn CLAY | | | | | | | | | | |
| 4 SS | 24 24 | 2 3 3 4 | 7–8 | | | | | | | | | | | |
| 5 SS | 24 24 | 1 1 2 2 | 9–10 | | | | | | | | | | | |
| 6 SS | 24 24 | 2 2 1 | 11–12 | | | | | | | | | | | |

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: John C Rich | Firm: Boart Longyear Company, 101 Alderson Street Schofield, WI 54476 | Tel: 715-359-7090 Fax: 715-355-5715

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completions of this form is mandatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

# SOIL BORING LOG INFORMATION SUPPLEMENT

Form 4400-122A Rev. 5-97

Boring Number W-39A Use only as an attachment to Form 4400-122. 

| Sample | | | | | | | | | | Soil Properties | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Number and Type | Length Att. & Recovered (in) | Blow Counts | Depth In Feet | Soil/Rock Description And Geologic Origin For Each Major Unit | U S C S | Graphic Log | Well Diagram | PID/FID | Compressive Strength | Moisture Content | Liquid Limit | Plasticity Index | P 200 | RQD/ Comments |
| | | 3 | 13 | | | | | | | | | | | |
| | | | 14 | EOB 14.0'<br>Well Set 13.0' | | | | | | | | | | |

State of Wisconsin
Department of Natural Resources

# SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 5-97

Route To: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☒ Other ☐



| Facility/Project Name | License/Permit/Monitoring Number | Boring Number |
|---|---|---|
| Koppers Inc. Facility | | W-40A |

| Boring Drilled By (Firm name and name of crew chief) | Date Drilling Started | Date Drilling Completed | Drilling Method |
|---|---|---|---|
| Boart Longyear Company - G. Jones | 10/12/2006 | 10/12/2006 | 4 1/4" HSA |

| WI Unique Well No. | DNR Well ID No. | Common Well Name | Final Static Water Level | Surface Elevation | Borehole Diameter |
|---|---|---|---|---|---|
| | | W-40A | Feet MSL | 679.3 Feet MSL | 8.0 Inches |

Boring Location or Local Grid Origin (Check if estimated: ☐ )
State Plane 543912 N, 1449027 E S/C ☒
SE 1/4 of SW 1/4 of Section 12, T 48 N, R 14 W
Lat. ° ' "
Long. ° ' "
Local Grid Location (If applicable)
Feet ☐ N ☐ S Feet ☐ E ☐ W

| Facility ID | County | County Code | Civil Town/City/ or Village |
|---|---|---|---|
| 816009810 | Douglas | 16 | Superior |

| Sample Number and Type | Length Att. & Recovered (in) | Blow Counts | Depth In Feet | Soil/Rock Description And Geologic Origin For Each Major Unit | USCS | Graphic Log | Well Diagram | PID/FID | Soil Properties: Compressive Strength | Moisture Content | Liquid Limit | Plasticity Index | P 200 | RQD/ Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | Red & Brn Silty CLAY | | | | | | | | | | |
| 1 SS | 24 6 | 2 2 3 3 | 2 | | | | | | | | | | | |
| 2 SS | 24 18 | 2 2 3 3 | 3 4 | | | | | | | | | | | |
| | | | 5 | Red & Brn CLAY | | | | | | | | | | |
| 3 SS | 24 24 | 2 2 2 2 | 6 | | | | | | | | | | | |
| 4 SS | 24 24 | 2 3 3 2 | 7 8 | | | | | | | | | | | |
| 5 SS | 24 24 | 6 6 7 7 | 9 10 | | | | | | | | | | | |
| 6 SS | 24 24 | 1 1 2 | 11 12 | | | | | | | | | | | |

I hereby certify that the information on this form is true and correct to the best of my knowledge.

| Signature | Firm | Tel: 715-359-7090 |
|---|---|---|
| John F Rich | Boart Longyear Company<br>101 Alderson Street Schofield, WI 54476 | Fax: 715-355-5715 |

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State of Wisconsin
Department of Natural Resources

**SOIL BORING LOG INFORMATION SUPPLEMENT**
Form 4400-122A Rev. 5-97

Boring Number W-40A Use only as an attachment to Form 4400-122. 

| Sample | | | | | | | | | | Soil Properties | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Number and Type | Length Att. & Recovered (in) | Blow Counts | Depth In Feet | Soil/Rock Description And Geologic Origin For Each Major Unit | U S C S | Graphic Log | Well Diagram | PID/FID | Compressive Strength | Moisture Content | Liquid Limit | Plasticity Index | P 200 | RQD/ Comments |
| | | 1 | 13 | | | | | | | | | | | |
| | | | 14 | EOB 14.0'<br>Well Set 13.0' | | | | | | | | | | |

State of Wisconsin
Department of Natural Resources

Route To: Watershed/Wastewater ☐ Waste Management ☒ Remediation/Redevelopment ☒ Other ☐

# MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 6-97

| | | |
|---|---|---|
| Facility/Project Name: Koppers Inc. Facility | Local Grid Location of Well: ____ ft. ☐N. ☐S. ____ ft. ☐E. ☐W. | Well Name: W-35A |
| Facility License, Permit or Monitoring No. | Grid Origin Location (Check if estimated: ☐) Lat. ° ' " Long. ° ' " or | Wis. Unique Well No. / DNR Well Number |
| Facility ID: 816009810 | St. Plane 547310 ft. N, 149987 ft. E. S/C (N) | Date Well Installed: 10/10/2006 |
| Type of Well: Well Code 11/mw | Section Location of Waste/Source: SE 1/4 of SW 1/4 of Sec. 12, T. 98 N, R. 14 ☐E ☒W | Well Installed By: (Person's Name and Firm): G. Jones; Boart Longyear Company |
| Distance Well Is From Waste/Source Boundary ____ ft. | Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known | |

A. Protective pipe, top elevation ____ ft. MSL

B. Well casing, top elevation 675.3 ft. MSL

C. Land surface elevation 672.5 ft. MSL

D. Surface seal, bottom ____ ft. MSL or 0.5 ft.

12. USC classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis attached? ☐ Yes ☐ No

14. Drilling method used: Rotary ☐ 50; Hollow Stem Auger ☒ 41; ____ Other ☐

15. Drilling fluid used: Water ☐ 02 Air ☐ 01 Drilling Mud ☐ 03 None ☐ 99

16. Drilling additives used? ☐ Yes ☒ No

Describe ____

17. Source of water (attach analysis): ____

E. Bentonite seal, top ____ ft. MSL or 0.5 ft.

F. Fine sand, top ____ ft. MSL or 2.5 ft.

G. Filter pack, top ____ ft. MSL or 2.8 ft.

H. Screen joint, top ____ ft. MSL or 3.0 ft.

I. Well bottom ____ ft. MSL or 13.0 ft.

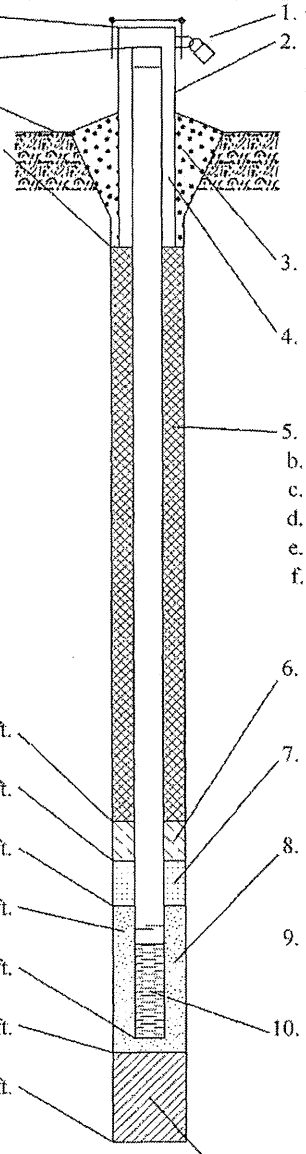
J. Filter pack, bottom ____ ft. MSL or 14.0 ft.

K. Borehole, bottom ____ ft. MSL or 14.0 ft.

L. Borehole, diameter 8.0 in.

M. O.D. well casing 2.37 in.

N. I.D. well casing 2.06 in.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 4.0 in.
b. Length: 5.0 ft.
c. Material: Steel ☒ 04; ____ Other ☐
d. Additional protection? ☐ Yes ☒ No
If yes, describe: ____
3. Surface seal: Bentonite ☐ 30; Concrete ☒ 01; ____ Other ☐
4. Material between well casing and protective pipe: Bentonite ☐ 30; Gravel; ____ Other ☒
5. Annular space seal: a. Granular Bentonite ☒ 33
b. ____ Lbs/gal mud weight . Bentonite-sand slurry ☐ 35
c. ____ Lbs/gal mud weight . . . Bentonite slurry ☐ 31
d. ____ % Bentonite . . . Bentonite-cement grout ☐ 50
e. ____ $Ft^3$ volume added for any of the above
f. How installed: Tremie ☐ 01; Tremie pumped ☐ 02; Gravity ☒ 08
6. Bentonite seal: a. Bentonite granules ☒ 33
b. ☐ 1/4 in. ☐ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐ 32
c. ____ Other ☐
7. Fine sand material: Manufacturer, product name and mesh siz
a. #7 Badger
b. Volume added ____ $ft^3$
8. Filter pack material: Manufacturer, product name and mesh si
a. #40 Badger
b. Volume added ____ $ft^3$
9. Well casing: Flush threaded PVC schedule 40 ☒ 23; Flush threaded PVC schedule 80 ☐ 24; ____ Other ☐
10. Screen material: PVC
a. Screen Type: Factory cut ☒ 11; Continuous slot ☐ 01; ____ Other ☐
b. Manufacturer Boart Longyear Company
c. Slot size: 0.010 in.
d. Slotted length: 10.0 ft.
11. Backfill material (below filter pack): None ☒ 14; ____ Other ☐

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: John C Rich

Firm: Boart Longyear Company, 101 Alderson Street Schofield, WI 54476

Tel: 715-359-7090
Fax: 715-355-5715

Please complete both Forms 4400-113A and 4400-113B and return to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduit involved. Personnally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

Route To: Watershed/Wastewater ☐ Waste Management ☒ Remediation/Redevelopment ☒ Other ☐

**MONITORING WELL CONSTRUCTION**
Form 4400-113A Rev. 6-97

| | | |
|---|---|---|
| Facility/Project Name: Koppers Inc. Facility | Local Grid Location of Well: ☐ N. ft. ☐ S. ☐ E. ft. ☐ W. | Well Name: W-36A |
| Facility License, Permit or Monitoring No. | Grid Origin Location (Check if estimated: ☐) Lat. ° ' " Long. ° ' " or St. Plane 544792 ft. N, 1449022 ft. E. S/C/N | Wis. Unique Well No. / DNR Well Number |
| Facility ID: 816009810 | Section Location of Waste/Source: SE 1/4 of SW 1/4 of Sec. 12 T. 48 N, R. 14 ☐ E ☒ W | Date Well Installed: 10/11/2006 |
| Type of Well: Well Code 11/mw | Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known | Well Installed By: (Person's Name and Firm) G. Jones; Boart Longyear Company |
| Distance Well Is From Waste/Source Boundary ft. | | |

A. Protective pipe, top elevation _____ ft. MSL
B. Well casing, top elevation 678.6 ft. MSL
C. Land surface elevation 676.2 ft. MSL
D. Surface seal, bottom _____ ft. MSL or 0.5 ft.

12. USC classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis attached? ☐ Yes ☐ No

14. Drilling method used: Rotary ☐ 50; Hollow Stem Auger ☒ 41; _____ Other ☐

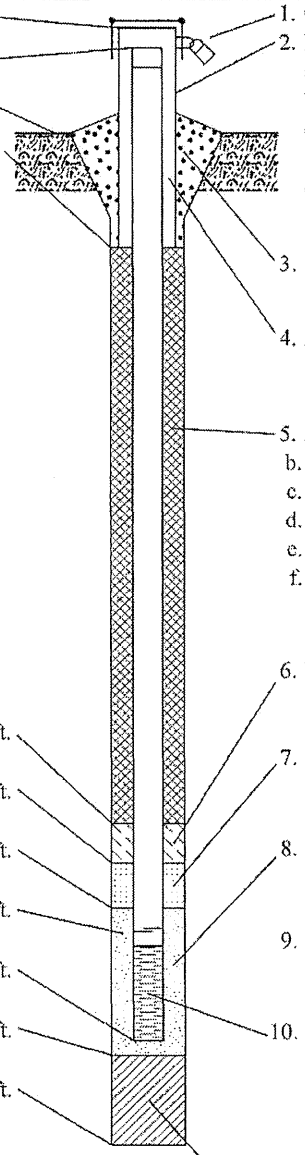
15. Drilling fluid used: Water ☐ 02 Air ☐ 01 Drilling Mud ☐ 03 None ☐ 99

16. Drilling additives used? ☐ Yes ☒ No

Describe _____

17. Source of water (attach analysis): _____

E. Bentonite seal, top _____ ft. MSL or 0.5 ft.
F. Fine sand, top _____ ft. MSL or 2.5 ft.
G. Filter pack, top _____ ft. MSL or 2.8 ft.
H. Screen joint, top _____ ft. MSL or 3.0 ft.
I. Well bottom _____ ft. MSL or 13.0 ft.
J. Filter pack, bottom _____ ft. MSL or 14.0 ft.
K. Borehole, bottom _____ ft. MSL or 14.0 ft.
L. Borehole, diameter 8.0 in.
M. O.D. well casing 2.37 in.
N. I.D. well casing 2.06 in.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 4.0 in.
b. Length: 5.0 ft.
c. Material: _____ Steel ☒ 04 Other ☐
d. Additional protection? ☐ Yes ☒ No
If yes, describe: _____
3. Surface seal: Bentonite ☐ 30 Concrete ☒ 01 _____ Other ☐
4. Material between well casing and protective pipe: Bentonite ☐ 30 Sand Other ☒
5. Annular space seal: a. Granular Bentonite ☒ 33
b. _____ Lbs/gal mud weight . Bentonite-sand slurry ☐ 35
c. _____ Lbs/gal mud weight . . . Bentonite slurry ☐ 31
d. _____ % Bentonite . . . Bentonite-cement grout ☐ 50
e. _____ $Ft^3$ volume added for any of the above
f. How installed: Tremie ☐ 01 Tremie pumped ☐ 02 Gravity ☒ 08
6. Bentonite seal: a. Bentonite granules ☒ 33
b. ☐ 1/4 in. ☐ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐ 32
c. _____ Other ☐
7. Fine sand material: Manufacturer, product name and mesh siz
a. #7 Badger
b. Volume added _____ $ft^3$
8. Filter pack material: Manufacturer, product name and mesh si
a. #40 Badger
b. Volume added _____ $ft^3$
9. Well casing: Flush threaded PVC schedule 40 ☒ 23 Flush threaded PVC schedule 80 ☐ 24 _____ Other ☐
10. Screen material: PVC
a. Screen Type: Factory cut ☒ 11 Continuous slot ☐ 01 _____ Other ☐
b. Manufacturer Boart Longyear Company
c. Slot size: 0.010 in.
d. Slotted length: 10.0 ft.
11. Backfill material (below filter pack): _____ None ☒ 14 Other ☐

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature John E Rich | Firm Boart Longyear Company, 101 Alderson Street Schofield, WI 54476 | Tel: 715-359-7090 Fax: 715-355-5715

Please complete both Forms 4400-113A and 4400-113B and return to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and condut involved. Personnally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources Route To: Watershed/Wastewater ☐ Waste Management ☒ Remediation/Redevelopment ☒ Other ☐

**MONITORING WELL CONSTRUCTION**
Form 4400-113A Rev. 6-97

| | | |
|---|---|---|
| Facility/Project Name: Koppers Inc. Facility | Local Grid Location of Well: ____ ft. ☐N. ☐S. ____ ft. ☐E. ☐W. | Well Name: W-37A |
| Facility License, Permit or Monitoring No. | Grid Origin Location (Check if estimated: ☐) Lat. ° ' " Long. ° ' " or | Wis. Unique Well No. / DNR Well Number |
| Facility ID: 816009810 | St. Plane 544961 ft. N, 1498910 ft. E. S/C/N | Date Well Installed: 10/11/2006 |
| Type of Well: Well Code 11/mw | Section Location of Waste/Source: SE 1/4 of SW 1/4 of Sec. 12 T. 48 N, R. 14 ☐E ☒W | Well Installed By: (Person's Name and Firm): G. Jones / Boart Longyear Company |
| Distance Well Is From Waste/Source Boundary ft. | Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known | |

A. Protective pipe, top elevation ____ ft. MSL
B. Well casing, top elevation 676.7 ft. MSL
C. Land surface elevation 674.3 ft. MSL
D. Surface seal, bottom ____ ft. MSL or 0.5 ft.

12. USC classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis attached? ☐ Yes ☐ No

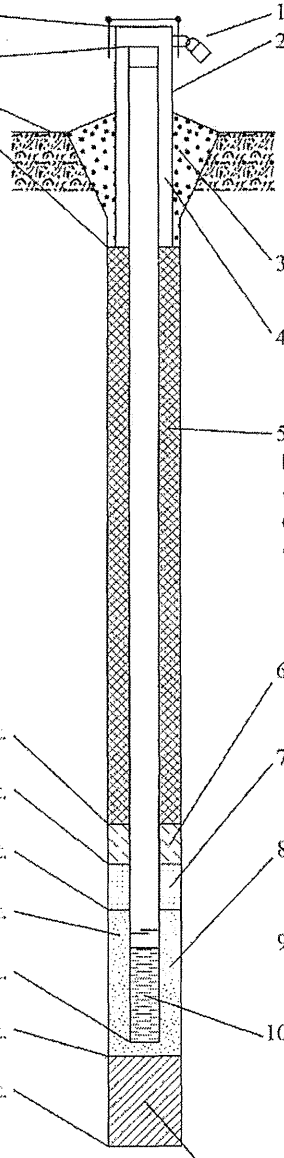
14. Drilling method used: Rotary ☐ 50 / Hollow Stem Auger ☒ 41 / ____ Other ☐

15. Drilling fluid used: Water ☐ 02 Air ☐ 01 / Drilling Mud ☐ 03 None ☐ 99

16. Drilling additives used? ☐ Yes ☒ No
Describe ____

17. Source of water (attach analysis): ____

E. Bentonite seal, top ____ ft. MSL or 0.5 ft.
F. Fine sand, top ____ ft. MSL or 2.5 ft.
G. Filter pack, top ____ ft. MSL or 2.8 ft.
H. Screen joint, top ____ ft. MSL or 3.0 ft.
I. Well bottom ____ ft. MSL or 13.0 ft.
J. Filter pack, bottom ____ ft. MSL or 14.0 ft.
K. Borehole, bottom ____ ft. MSL or 14.0 ft.
L. Borehole, diameter 8.0 in.
M. O.D. well casing 2.37 in.
N. I.D. well casing 2.06 in.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 4.0 in.
b. Length: 5.0 ft.
c. Material: Steel ☒ 04 / ____ Other ☐
d. Additional protection? ☐ Yes ☒ No
If yes, describe: ____
3. Surface seal: Bentonite ☒ 30 / Concrete ☐ 01 / ____ Other ☐
4. Material between well casing and protective pipe: Bentonite ☐ 30 / Sand Other ☒
5. Annular space seal: a. Granular Bentonite ☒ 33
b. ____ Lbs/gal mud weight . Bentonite-sand slurry ☐ 35
c. ____ Lbs/gal mud weight . . . Bentonite slurry ☐ 31
d. ____ % Bentonite . . . Bentonite-cement grout ☐ 50
e. ____ $Ft^3$ volume added for any of the above
f. How installed: Tremie ☐ 01 / Tremie pumped ☐ 02 / Gravity ☒ 08
6. Bentonite seal: a. Bentonite granules ☒ 33
b. ☐ 1/4 in. ☐ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐ 32
c. ____ Other ☐
7. Fine sand material: Manufacturer, product name and mesh siz
a. #7 Badger
b. Volume added ____ $ft^3$
8. Filter pack material: Manufacturer, product name and mesh si
a. #40 Badger
b. Volume added ____ $ft^3$
9. Well casing: Flush threaded PVC schedule 40 ☒ 23 / Flush threaded PVC schedule 80 ☐ 24 / ____ Other ☐
10. Screen material: PVC
a. Screen Type: Factory cut ☒ 11 / Continuous slot ☐ 01 / ____ Other ☐
b. Manufacturer Boart Longyear Company
c. Slot size: 0.010 in.
d. Slotted length: 10.0 ft.
11. Backfill material (below filter pack): None ☒ 14 / ____ Other ☐

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: John C Rich | Firm: Boart Longyear Company, 101 Alderson Street Schofield, WI 54476 | Tel: 715-359-7090 Fax: 715-355-5715

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State of Wisconsin
Department of Natural Resources

Route To: Watershed/Wastewater ☐ Waste Management ☒ Remediation/Redevelopment ☒ Other ☐

**MONITORING WELL CONSTRUCTION**
Form 4400-113A Rev. 6-97

| | | |
|---|---|---|
| Facility/Project Name: Koppers Inc. Facility | Local Grid Location of Well: ____ ft. ☐ N. ☐ S. ____ ft. ☐ E. ☐ W. | Well Name: W-38A |
| Facility License, Permit or Monitoring No. | Grid Origin Location . (Check if estimated: ☐ ) Lat. ° ' " Long. ° ' " or | Wis. Unique Well No. / DNR Well Number |
| Facility ID: 816009810 | St. Plane 544232 ft. N, 1478767 ft. E. S/C/N | Date Well Installed: 10/11/2006 |
| Type of Well: Well Code 11/mw | Section Location of Waste/Source: SE 1/4 of SW 1/4 of Sec. 12 T. 48 N, R. 14 ☐ E ☒ W | Well Installed By: (Person's Name and Firm): G. Jones / Boart Longyear Company |
| Distance Well Is From Waste/Source Boundary ____ ft. | Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known | |

A. Protective pipe, top elevation ____ ft. MSL
B. Well casing, top elevation 676.9 ft. MSL
C. Land surface elevation 674.5 ft. MSL
D. Surface seal, bottom ____ ft. MSL or 0.5 ft.

12. USC classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis attached? ☐ Yes ☐ No

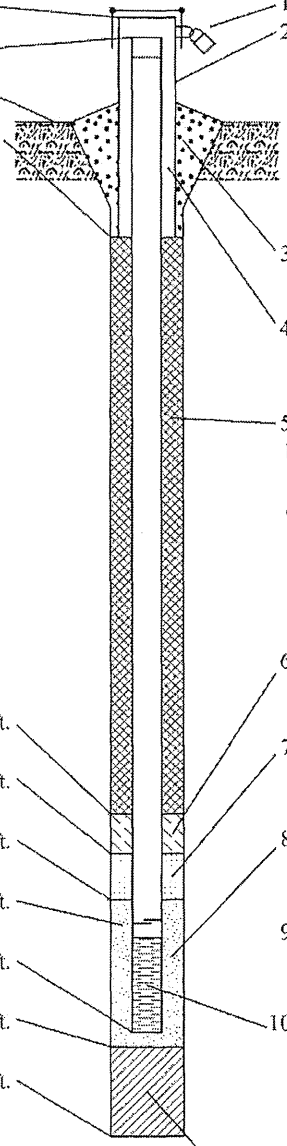
14. Drilling method used: Rotary ☐ 5 0 / Hollow Stem Auger ☒ 4 1 / ____ Other ☐

15. Drilling fluid used: Water ☐ 0 2 Air ☐ 0 1 Drilling Mud ☐ 0 3 None ☐ 9 9

16. Drilling additives used? ☐ Yes ☒ No
Describe ____

17. Source of water (attach analysis): ____

E. Bentonite seal, top ____ ft. MSL or 0.5 ft.
F. Fine sand, top ____ ft. MSL or 2.5 ft.
G. Filter pack, top ____ ft. MSL or 2.8 ft.
H. Screen joint, top ____ ft. MSL or 3.0 ft.
I. Well bottom ____ ft. MSL or 13.0 ft.
J. Filter pack, bottom ____ ft. MSL or 14.0 ft.
K. Borehole, bottom ____ ft. MSL or 14.0 ft.
L. Borehole, diameter 8.0 in.
M. O.D. well casing 2.37 in.
N. I.D. well casing 2.06 in.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 4.0 in.
b. Length: 5.0 ft.
c. Material: Steel ☒ 0 4 / ____ Other ☐
d. Additional protection? ☐ Yes ☒ No
If yes, describe: ____
3. Surface seal: Bentonite ☐ 3 0 / Concrete ☒ 0 1 / ____ Other ☐
4. Material between well casing and protective pipe: Bentonite ☐ 3 0 / Sand Other ☒
5. Annular space seal: a. Granular Bentonite ☒ 3 3
b. ____ Lbs/gal mud weight . Bentonite-sand slurry ☐ 3 5
c. ____ Lbs/gal mud weight . . . Bentonite slurry ☐ 3 1
d. ____ % Bentonite . . . Bentonite-cement grout ☐ 5 0
e. ____ $Ft^3$ volume added for any of the above
f. How installed: Tremie ☐ 0 1 / Tremie pumped ☐ 0 2 / Gravity ☒ 0 8
6. Bentonite seal: a. Bentonite granules ☒ 3 3
b. ☐ 1/4 in. ☐ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐ 3 2
c. ____ Other ☐
7. Fine sand material: Manufacturer, product name and mesh siz
a. #7 Badger
b. Volume added ____ $ft^3$
8. Filter pack material: Manufacturer, product name and mesh si
a. #40 Badger
b. Volume added ____ $ft^3$
9. Well casing: Flush threaded PVC schedule 40 ☒ 2 3 / Flush threaded PVC schedule 80 ☐ 2 4 / ____ Other ☐
10. Screen material: PVC
a. Screen Type: Factory cut ☒ 1 1 / Continuous slot ☐ 0 1 / ____ Other ☐
b. Manufacturer Boart Longyear Company
c. Slot size: 0.010 in.
d. Slotted length: 10.0 ft.
11. Backfill material (below filter pack): None ☒ 1 4 / ____ Other ☐

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: John F Rucker | Firm: Boart Longyear Company, 101 Alderson Street Schofield, WI 54476 | Tel: 715-359-7090 Fax: 715-355-5715

Please complete both Forms 4400-113A and 4400-113B and return to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and condut involved. Personnally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

Route To: Watershed/Wastewater ☐ Waste Management ☒ Remediation/Redevelopment ☒ Other ☐

# MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 6-97

| | | |
|---|---|---|
| Facility/Project Name: Koppers Inc. Facility | Local Grid Location of Well: ____ ft. ☐ N. ☐ S. ____ ft. ☐ E. ☐ W. | Well Name: W-39A |
| Facility License, Permit or Monitoring No. | Grid Origin Location (Check if estimated: ☐ ) Lat. ° ' " Long. ° ' " or St. Plane 543900 ft. N, 1448849 ft. E. S/C/N | Wis. Unique Well No. / DNR Well Number |
| Facility ID: 816009810 | Section Location of Waste/Source: SE 1/4 of SW 1/4 of Sec. 12, T. 48 N, R. 14 ☐ E ☒ W | Date Well Installed: 10/12/2006 |
| Type of Well: Well Code 11/mw | Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known | Well Installed By: (Person's Name and Firm) G. Jones; Boart Longyear Company |
| Distance Well Is From Waste/Source Boundary ____ ft. | | |

A. Protective pipe, top elevation ____ ft. MSL
B. Well casing, top elevation 678.5 ft. MSL
C. Land surface elevation 675.8 ft. MSL
D. Surface seal, bottom ____ ft. MSL or 0.5 ft.

12. USC classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis attached? ☐ Yes ☐ No

14. Drilling method used: Rotary ☐ 50; Hollow Stem Auger ☒ 41; ____ Other ☐

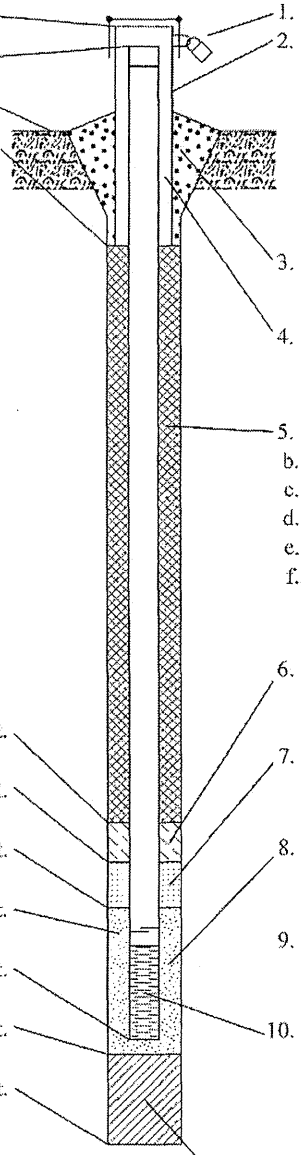
15. Drilling fluid used: Water ☐ 02 Air ☐ 01 Drilling Mud ☐ 03 None ☐ 99

16. Drilling additives used? ☐ Yes ☒ No

Describe ____

17. Source of water (attach analysis):

E. Bentonite seal, top ____ ft. MSL or 0.5 ft.
F. Fine sand, top ____ ft. MSL or 2.5 ft.
G. Filter pack, top ____ ft. MSL or 2.8 ft.
H. Screen joint, top ____ ft. MSL or 3.0 ft.
I. Well bottom ____ ft. MSL or 13.0 ft.
J. Filter pack, bottom ____ ft. MSL or 14.0 ft.
K. Borehole, bottom ____ ft. MSL or 14.0 ft.
L. Borehole, diameter 8.0 in.
M. O.D. well casing 2.37 in.
N. I.D. well casing 2.06 in.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 4.0 in.
b. Length: 5.0 ft.
c. Material: Steel ☒ 04; ____ Other ☐
d. Additional protection? ☐ Yes ☒ No
If yes, describe: ____
3. Surface seal: Bentonite ☐ 30; Concrete ☒ 01; ____ Other ☐
4. Material between well casing and protective pipe: Bentonite ☐ 30; Sand Other ☒
5. Annular space seal: a. Granular Bentonite ☒ 33
b. ____ Lbs/gal mud weight . Bentonite-sand slurry ☐ 35
c. ____ Lbs/gal mud weight . . . Bentonite slurry ☐ 31
d. ____ % Bentonite . . . Bentonite-cement grout ☐ 50
e. ____ $Ft^3$ volume added for any of the above
f. How installed: Tremie ☐ 01; Tremie pumped ☐ 02; Gravity ☒ 08
6. Bentonite seal: a. Bentonite granules ☒ 33
b. ☐ 1/4 in. ☐ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐ 32
c. ____ Other ☐
7. Fine sand material: Manufacturer, product name and mesh siz
a. #7 Badger
b. Volume added ____ $ft^3$
8. Filter pack material: Manufacturer, product name and mesh si
a. #40 Badger
b. Volume added ____ $ft^3$
9. Well casing: Flush threaded PVC schedule 40 ☒ 23; Flush threaded PVC schedule 80 ☐ 24; ____ Other ☐
10. Screen material: PVC
a. Screen Type: Factory cut ☒ 11; Continuous slot ☐ 01; ____ Other ☐
b. Manufacturer Boart Longyear Company
c. Slot size: 0.010 in.
d. Slotted length: 10.0 ft.
11. Backfill material (below filter pack): None ☒ 14; ____ Other ☐

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: John C Rich | Firm: Boart Longyear Company, 101 Alderson Street Schofield, WI 54476 | Tel: 715-359-7090 Fax: 715-355-5715

Please complete both Forms 4400-113A and 4400-113B and return to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduit involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

Route To: Watershed/Wastewater ☐ Waste Management ☒ Remediation/Redevelopment ☒ Other ☐

**MONITORING WELL CONSTRUCTION**
Form 4400-113A Rev. 6-97

| | | |
|---|---|---|
| Facility/Project Name: Koppers Inc. Facility | Local Grid Location of Well: ____ ft. ☐ N. ☐ S. ____ ft. ☐ E. ☐ W. | Well Name: W-40A |
| Facility License, Permit or Monitoring No. | Grid Origin Location (Check if estimated: ☐) Lat. ° ' " Long. ° ' " or St. Plane 543912 ft. N, 1449027 ft. E. S/C/Ⓝ | Wis. Unique Well No. / DNR Well Number |
| Facility ID: 816009810 | Section Location of Waste/Source: SE 1/4 of SW 1/4 of Sec. 12 T. 48 N, R. 14 ☐ E ☒ W | Date Well Installed: 10/12/2006 |
| Type of Well: Well Code 11/mw | Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known | Well Installed By: (Person's Name and Firm) G. Jones; Boart Longyear Company |
| Distance Well Is From Waste/Source Boundary ____ ft. | | |

A. Protective pipe, top elevation ____ ft. MSL
B. Well casing, top elevation 676.9 ft. MSL
C. Land surface elevation 674.3 ft. MSL
D. Surface seal, bottom ____ ft. MSL or 0.5 ft.

12. USC classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis attached? ☐ Yes ☐ No

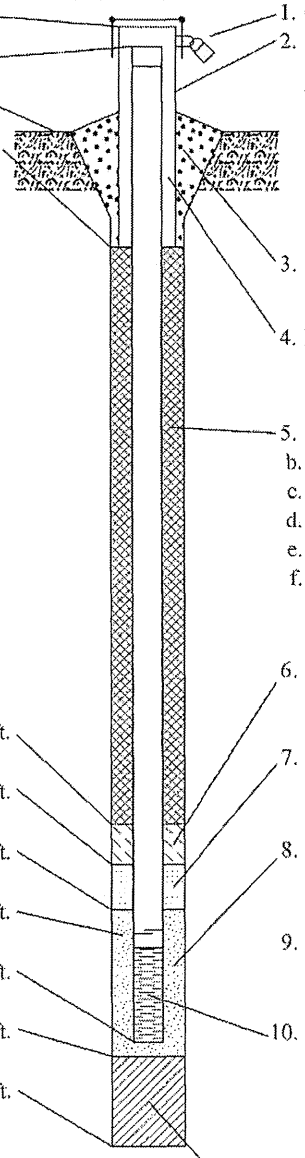
14. Drilling method used: Rotary ☐ 50
Hollow Stem Auger ☒ 41
____ Other ☐

15. Drilling fluid used: Water ☐ 02 Air ☐ 01
Drilling Mud ☐ 03 None ☐ 99

16. Drilling additives used? ☐ Yes ☒ No
Describe ____

17. Source of water (attach analysis): ____

E. Bentonite seal, top ____ ft. MSL or 0.5 ft.
F. Fine sand, top ____ ft. MSL or 2.5 ft.
G. Filter pack, top ____ ft. MSL or 2.8 ft.
H. Screen joint, top ____ ft. MSL or 3.0 ft.
I. Well bottom ____ ft. MSL or 13.0 ft.
J. Filter pack, bottom ____ ft. MSL or 14.0 ft.
K. Borehole, bottom ____ ft. MSL or 14.0 ft.
L. Borehole, diameter 8.0 in.
M. O.D. well casing 2.37 in.
N. I.D. well casing 2.06 in.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 4.0 in.
b. Length: 5.0 ft.
c. Material: Steel ☒ 04
____ Other ☐
d. Additional protection? ☐ Yes ☒ No
If yes, describe: ____
3. Surface seal: Bentonite ☐ 30
Concrete ☒ 01
____ Other ☐
4. Material between well casing and protective pipe:
Bentonite ☐ 30
Sand Other ☒
5. Annular space seal: a. Granular Bentonite ☒ 33
b. ____ Lbs/gal mud weight . Bentonite-sand slurry ☐ 35
c. ____ Lbs/gal mud weight . . . Bentonite slurry ☐ 31
d. ____ % Bentonite . . . Bentonite-cement grout ☐ 50
e. ____ $Ft^3$ volume added for any of the above
f. How installed: Tremie ☐ 01
Tremie pumped ☐ 02
Gravity ☒ 08
6. Bentonite seal: a. Bentonite granules ☒ 33
b. ☐ 1/4 in. ☐ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐ 32
c. ____ Other ☐
7. Fine sand material: Manufacturer, product name and mesh siz
a. #7 Badger
b. Volume added ____ $ft^3$
8. Filter pack material: Manufacturer, product name and mesh si
a. #40 Badger
b. Volume added ____ $ft^3$
9. Well casing: Flush threaded PVC schedule 40 ☒ 23
Flush threaded PVC schedule 80 ☐ 24
____ Other ☐
10. Screen material: PVC
a. Screen Type: Factory cut ☒ 11
Continuous slot ☐ 01
____ Other ☐
b. Manufacturer Boart Longyear Company
c. Slot size: 0.010 in.
d. Slotted length: 10.0 ft.
11. Backfill material (below filter pack): None ☒ 14
____ Other ☐

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: John F Rich Firm: Boart Longyear Company, 101 Alderson Street Schofield, WI 54476 Tel: 715-359-7090 Fax: 715-355-5715

Please complete both Forms 4400-113A and 4400-113B and return to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and condut involved. Personnally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

# MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☒ Other ☐ _____

| Facility/Project Name | County Name | Well Name |
|---|---|---|
| Koppers Inc. | Douglas | W-35A |

| Facility License, Permit or Monitoring Number | County Code | Wis. Unique Well Number | DNR Well ID Number |
|---|---|---|---|
| | 16 | _____ | ____ |

1. Can this well be purged dry? ☒ Yes ☐ No

2. Well development method

| | | |
|---|---|---|
| surged with bailer and bailed | ☒ | 41 |
| surged with bailer and pumped | ☐ | 61 |
| surged with block and bailed | ☐ | 42 |
| surged with block and pumped | ☐ | 62 |
| surged with block, bailed and pumped | ☐ | 70 |
| compressed air | ☐ | 20 |
| bailed only | ☐ | 10 |
| pumped only | ☐ | 51 |
| pumped slowly | ☐ | 50 |
| Other _____ | ☐ | |

3. Time spent developing well 30 min.

4. Depth of well (from top of well casisng) 15.9 ft.

5. Inside diameter of well 2.00 in.

6. Volume of water in filter pack and well casing ____.__ gal.

7. Volume of water removed from well 1.0 gal.

8. Volume of water added (if any) ____.__ gal.

9. Source of water added _____

10. Analysis performed on water added? ☐ Yes ☐ No
(If yes, attach results)

| | Before Development | After Development |
|---|---|---|
| 11. Depth to Water (from top of well casing) | a. 14.00 ft. | DRY. ft. |
| Date | b. 01/27/2007 (m m d d y y y y) | 01/27/2007 |
| Time | c. 14:00 ☐ a.m. ☒ p.m. | 14:30 ☐ a.m. ☒ p.m. |
| 12. Sediment in well bottom | ___.__ inches | ___.__ inches |
| 13. Water clarity | Clear ☒ 10 Turbid ☐ 15 (Describe) | Clear ☒ 20 Turbid ☐ 25 (Describe) |
| 14. Total suspended solids | ____.__ mg/l | ____.__ mg/l |
| 15. COD | ____.__ mg/l | ____.__ mg/l |

Fill in if drilling fluids were used and well is at solid waste facility:

16. Well developed by: Name (first, last) and Firm
First Name: David Last Name: Bessingpas
Firm: ARCADIS BBL

17. Additional comments on development:

Name and Address of Facility Contact/Owner/Responsible Party
First Name: _____ Last Name: _____
Facility/Firm: _____
Street: _____
City/State/Zip: _____

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: David Bessingpas
Print Name: David Bessingpas
Firm: ARCADIS BBL

NOTE: See instructions for more information including a list of county codes and well type codes.

State of Wisconsin
Department of Natural Resources

# MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☒ Other ☐ _____

| Facility/Project Name | County Name | Well Name |
|---|---|---|
| Koppers Inc. | Douglas | W-36A |

| Facility License, Permit or Monitoring Number | County Code | Wis. Unique Well Number | DNR Well ID Number |
|---|---|---|---|
| | 16 | _____ | ____ |

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method

| | |
|---|---|
| surged with bailer and bailed | ☐ 41 |
| surged with bailer and pumped | ☐ 61 |
| surged with block and bailed | ☐ 42 |
| surged with block and pumped | ☐ 62 |
| surged with block, bailed and pumped | ☐ 70 |
| compressed air | ☐ 20 |
| bailed only | ☐ 10 |
| pumped only | ☒ 51 |
| pumped slowly | ☐ 50 |
| Other _____ | ☐ |

3. Time spent developing well ____ min.

4. Depth of well (from top of well casisng) 15.7 ft.

5. Inside diameter of well 2.00 in.

6. Volume of water in filter pack and well casing ____ gal.

7. Volume of water removed from well 40.0 gal.

8. Volume of water added (if any) ____ gal.

9. Source of water added _____

10. Analysis performed on water added? ☐ Yes ☐ No
(If yes, attach results)

| | Before Development | After Development |
|---|---|---|
| 11. Depth to Water (from top of well casing) | a. 4.55 ft. | ____ ft. |
| Date | b. 10/12/2006 (m m d d y y y y) | 10/12/2006 (m m d d y y y y) |
| Time | c. ____ : ____ ☐ a.m. ☐ p.m. | ____ : ____ ☐ a.m. ☐ p.m. |
| 12. Sediment in well bottom | ____ inches | ____ inches |
| 13. Water clarity | Clear ☐ 10 Turbid ☒ 15 (Describe) | Clear ☒ 20 Turbid ☐ 25 (Describe) |
| 14. Total suspended solids | ____ mg/l | ____ mg/l |
| 15. COD | ____ mg/l | ____ mg/l |

Fill in if drilling fluids were used and well is at solid waste facility:

16. Well developed by: Name (first, last) and Firm
First Name: David Last Name: Mack
Firm: ARCADIS BBL

17. Additional comments on development:

Name and Address of Facility Contact/Owner/Responsible Party
First Name: _____ Last Name: _____
Facility/Firm: _____
Street: _____
City/State/Zip: _____

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: David Bessinger
Print Name: David Bessinger
Firm: ARCADIS BBL

NOTE: See instructions for more information including a list of county codes and well type codes.

State of Wisconsin
Department of Natural Resources

# MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☒ Other ☐ _____

| Facility/Project Name | County Name | Well Name |
|---|---|---|
| Koppers Inc. | Douglas | W-36A |

| Facility License, Permit or Monitoring Number | County Code | Wis. Unique Well Number | DNR Well ID Number |
|---|---|---|---|
| | 16 | _____ | ___ |

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method

| | |
|---|---|
| surged with bailer and bailed | ☒ 41 |
| surged with bailer and pumped | ☐ 61 |
| surged with block and bailed | ☐ 42 |
| surged with block and pumped | ☐ 62 |
| surged with block, bailed and pumped | ☐ 70 |
| compressed air | ☐ 20 |
| bailed only | ☐ 10 |
| pumped only | ☐ 51 |
| pumped slowly | ☐ 50 |
| Other _____ | ☐ |

3. Time spent developing well 25 min.

4. Depth of well (from top of well casisng) 15.8 ft.

5. Inside diameter of well 2.00 in.

6. Volume of water in filter pack and well casing ___.__ gal.

7. Volume of water removed from well 5.0 gal.

8. Volume of water added (if any) ___.__ gal.

9. Source of water added _____

10. Analysis performed on water added? ☐ Yes ☐ No
(If yes, attach results)

| | Before Development | After Development |
|---|---|---|
| 11. Depth to Water (from top of well casing) | a. 4.70 ft. | 5.20 ft. |
| Date | b. 11/22/2006 (m m d d y y y y) | 11/22/2006 |
| Time | c. 09:05 ☒ a.m. ☐ p.m. | 09:30 ☒ a.m. ☐ p.m. |
| 12. Sediment in well bottom | ___.__ inches | ___.__ inches |
| 13. Water clarity | Clear ☐ 10 Turbid ☒ 15 | Clear ☐ 20 Turbid ☒ 25 |
| (Describe) | brown very turbid | tan slightly turbid |

Fill in if drilling fluids were used and well is at solid waste facility:

| | | |
|---|---|---|
| 14. Total suspended solids | ____.__ mg/l | ____.__ mg/l |
| 15. COD | ____.__ mg/l | ____.__ mg/l |

16. Well developed by: Name (first, last) and Firm
First Name: David Last Name: Bessingpas
Firm: ARCADIS BBL

17. Additional comments on development:

Name and Address of Facility Contact/Owner/Responsible Party
First Name: _____ Last Name: _____
Facility/Firm: _____
Street: _____
City/State/Zip: _____

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: David Bessingpas
Print Name: David Bessingpas
Firm: ARCADIS BBL

NOTE: See instructions for more information including a list of county codes and well type codes.

State of Wisconsin
Department of Natural Resources

# MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☒ Other ☐ _____

| Facility/Project Name | County Name | Well Name |
|---|---|---|
| Koppers Inc. | Douglas | W-37A |

| Facility License, Permit or Monitoring Number | County Code | Wis. Unique Well Number | DNR Well ID Number |
|---|---|---|---|
| | 16 | _____ | ___ |

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method

| | |
|---|---|
| surged with bailer and bailed | ☐ 41 |
| surged with bailer and pumped | ☐ 61 |
| surged with block and bailed | ☐ 42 |
| surged with block and pumped | ☐ 62 |
| surged with block, bailed and pumped | ☐ 70 |
| compressed air | ☐ 20 |
| bailed only | ☐ 10 |
| pumped only | ☒ 51 |
| pumped slowly | ☐ 50 |
| Other _____ | ☐ |

3. Time spent developing well _____ min.

4. Depth of well (from top of well casisng) 15.4 ft.

5. Inside diameter of well 2.00 in.

6. Volume of water in filter pack and well casing _____ gal.

7. Volume of water removed from well 4.0 gal.

8. Volume of water added (if any) _____ gal.

9. Source of water added _____

10. Analysis performed on water added? ☐ Yes ☐ No
(If yes, attach results)

| | Before Development | After Development |
|---|---|---|
| 11. Depth to Water (from top of well casing) | a. 12.41 ft. | _____ ft. |
| Date | b. 10/12/2006 (m m d d y y y y) | 10/12/2006 (m m d d y y y y) |
| Time | c. _____ ☐ a.m. ☐ p.m. | _____ ☐ a.m. ☐ p.m. |
| 12. Sediment in well bottom | _____ inches | _____ inches |
| 13. Water clarity | Clear ☐ 10 Turbid ☒ 15 (Describe) | Clear ☒ 20 Turbid ☐ 25 (Describe) |
| 14. Total suspended solids | _____ mg/l | _____ mg/l |
| 15. COD | _____ mg/l | _____ mg/l |

Fill in if drilling fluids were used and well is at solid waste facility:

16. Well developed by: Name (first, last) and Firm
First Name: David Last Name: Mack
Firm: ARCADIS BBL

17. Additional comments on development:

Name and Address of Facility Contact/Owner/Responsible Party
First Name: _____ Last Name: _____
Facility/Firm: _____
Street: _____
City/State/Zip: _____

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: David Bessinger
Print Name: David Bessinggos
Firm: ARCADIS BBL

NOTE: See instructions for more information including a list of county codes and well type codes.

State of Wisconsin
Department of Natural Resources

# MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☒ Other ☐ _____

| Facility/Project Name | County Name | Well Name |
|---|---|---|
| Koppers Inc. | Douglas | W-37A |

| Facility License, Permit or Monitoring Number | County Code | Wis. Unique Well Number | DNR Well ID Number |
|---|---|---|---|
| | 16 | _____ | ____ |

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method

| | |
|---|---|
| surged with bailer and bailed | ☒ 41 |
| surged with bailer and pumped | ☐ 61 |
| surged with block and bailed | ☐ 42 |
| surged with block and pumped | ☐ 62 |
| surged with block, bailed and pumped | ☐ 70 |
| compressed air | ☐ 20 |
| bailed only | ☐ 10 |
| pumped only | ☐ 51 |
| pumped slowly | ☐ 50 |
| Other _____ | ☐ |

3. Time spent developing well 30 min.

4. Depth of well (from top of well casisng) 15.3 ft.

5. Inside diameter of well 2.00 in.

6. Volume of water in filter pack and well casing ____.__ gal.

7. Volume of water removed from well 2.5 gal.

8. Volume of water added (if any) ____.__ gal.

9. Source of water added _____

10. Analysis performed on water added? ☐ Yes ☐ No
(If yes, attach results)

| | Before Development | After Development |
|---|---|---|
| 11. Depth to Water (from top of well casing) | a. 5.50 ft. | 8.50 ft. |
| Date | b. 11/22/2006 (m m d d y y y y) | 11/22/2006 (m m d d y y y y) |
| Time | c. 09:30 ☒ a.m. ☐ p.m. | 10:00 ☒ a.m. ☐ p.m. |
| 12. Sediment in well bottom | ___.__ inches | ___.__ inches |
| 13. Water clarity | Clear ☒ 10 Turbid ☐ 15 (Describe) | Clear ☒ 20 Turbid ☐ 25 (Describe) |

Fill in if drilling fluids were used and well is at solid waste facility:

| | | |
|---|---|---|
| 14. Total suspended solids | ____.__ mg/l | ____.__ mg/l |
| 15. COD | ____.__ mg/l | ____.__ mg/l |

16. Well developed by: Name (first, last) and Firm
First Name: David Last Name: Bessingpas
Firm: ARCADIS BBL

17. Additional comments on development:

Name and Address of Facility Contact /Owner/Responsible Party
First Name: _____ Last Name: _____
Facility/Firm: _____
Street: _____
City/State/Zip: _____

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: David Bessingpas
Print Name: David Bessingpas
Firm: ARCADIS BBL

NOTE: See instructions for more information including a list of county codes and well type codes.

State of Wisconsin
Department of Natural Resources

# MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☒ Other ☐ _____

| Facility/Project Name | County Name | Well Name |
|---|---|---|
| Koppers Inc. | Douglas | W-38A |

| Facility License, Permit or Monitoring Number | County Code | Wis. Unique Well Number | DNR Well ID Number |
|---|---|---|---|
| | 16 | _ _ _ _ _ _ | _ _ _ |

1. Can this well be purged dry? ☒ Yes ☐ No

2. Well development method

| | | |
|---|---|---|
| surged with bailer and bailed | ☒ | 41 |
| surged with bailer and pumped | ☐ | 61 |
| surged with block and bailed | ☐ | 42 |
| surged with block and pumped | ☐ | 62 |
| surged with block, bailed and pumped | ☐ | 70 |
| compressed air | ☐ | 20 |
| bailed only | ☐ | 10 |
| pumped only | ☐ | 51 |
| pumped slowly | ☐ | 50 |
| Other _____ | ☐ | 00 |

3. Time spent developing well __30 min.

4. Depth of well (from top of well casisng) __15.6 ft.

5. Inside diameter of well __2.00 in.

6. Volume of water in filter pack and well casing _ _ _ . _ gal.

7. Volume of water removed from well __3.0 gal.

8. Volume of water added (if any) _ _ _ . _ gal.

9. Source of water added _____

10. Analysis performed on water added? ☐ Yes ☐ No
(If yes, attach results)

| | Before Development | After Development |
|---|---|---|
| 11. Depth to Water (from top of well casing) | a. __9.50 ft. | DRY. _ _ ft. |
| Date | b. 11/22/2006 (m m d d y y y y) | 11/22/2006 (m m d d y y y y) |
| Time | c. 10:50 ☒ a.m. ☐ p.m. | 11:20 ☒ a.m. ☐ p.m. |
| 12. Sediment in well bottom | _ _ . _ inches | _ _ . _ inches |
| 13. Water clarity | Clear ☐ 10 Turbid ☒ 15 (Describe) | Clear ☐ 20 Turbid ☒ 25 (Describe) |
| Fill in if drilling fluids were used and well is at solid waste facility: | | |
| 14. Total suspended solids | _ _ _ _ . _ mg/l | _ _ _ _ . _ mg/l |
| 15. COD | _ _ _ _ . _ mg/l | _ _ _ _ . _ mg/l |

16. Well developed by: Name (first, last) and Firm
First Name: David Last Name: Bessingpas
Firm: ARCADIS BBL

17. Additional comments on development:

Name and Address of Facility Contact /Owner/Responsible Party
First Name: _____ Last Name: _____
Facility/Firm: _____
Street: _____
City/State/Zip: _____

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: Dave Bessingpas
Print Name: David Bessingpas
Firm: ARCADIS BBL

NOTE: See instructions for more information including a list of county codes and well type codes.

State of Wisconsin
Department of Natural Resources

# MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☒ Other ☐ _____

| Facility/Project Name | County Name | Well Name |
|---|---|---|
| Koppers Inc. | Douglas | W-39A |

| Facility License, Permit or Monitoring Number | County Code | Wis. Unique Well Number | DNR Well ID Number |
|---|---|---|---|
| | 16 | _____ | ____ |

1. Can this well be purged dry? ☒ Yes ☐ No

2. Well development method

| | |
|---|---|
| surged with bailer and bailed | ☒ 41 |
| surged with bailer and pumped | ☐ 61 |
| surged with block and bailed | ☐ 42 |
| surged with block and pumped | ☐ 62 |
| surged with block, bailed and pumped | ☐ 70 |
| compressed air | ☐ 20 |
| bailed only | ☐ 10 |
| pumped only | ☐ 51 |
| pumped slowly | ☐ 50 |
| Other _____ | ☐ |

3. Time spent developing well 30 min.

4. Depth of well (from top of well casisng) 16.5 ft.

5. Inside diameter of well 2.00 in.

6. Volume of water in filter pack and well casing ____.__ gal.

7. Volume of water removed from well 5.0 gal.

8. Volume of water added (if any) ____.__ gal.

9. Source of water added _____

10. Analysis performed on water added? ☐ Yes ☐ No
(If yes, attach results)

| | Before Development | After Development |
|---|---|---|
| 11. Depth to Water (from top of well casing) | a. 8.60 ft. | DRY. ___ ft. |
| Date | b. 11/22/2006 (m m d d y y y y) | 11/22/2006 (m m d d y y y y) |
| Time | c. 10:20 ☒ a.m. ☐ p.m. | 10:50 ☒ a.m. ☐ p.m. |
| 12. Sediment in well bottom | ___.__ inches | ___.__ inches |
| 13. Water clarity | Clear ☐ 10 Turbid ☒ 15 (Describe) | Clear ☐ 20 Turbid ☒ 25 (Describe) |
| 14. Total suspended solids | _____.__ mg/l | _____.__ mg/l |
| 15. COD | _____.__ mg/l | _____.__ mg/l |

Fill in if drilling fluids were used and well is at solid waste facility:

16. Well developed by: Name (first, last) and Firm
First Name: David Last Name: Bessingpas
Firm: ARCADIS BBL

17. Additional comments on development:

Name and Address of Facility Contact/Owner/Responsible Party
First Name: _____ Last Name: _____
Facility/Firm: _____
Street: _____
City/State/Zip: _____

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: Dave Bessingpas
Print Name: David Bessingpas
Firm: ARCADIS BBL

NOTE: See instructions for more information including a list of county codes and well type codes.

State of Wisconsin
Department of Natural Resources

# MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☒ Other ☐ _____

| Facility/Project Name | County Name | Well Name |
|---|---|---|
| Koppers Inc. | Douglas | W-40A |

| Facility License, Permit or Monitoring Number | County Code | Wis. Unique Well Number | DNR Well ID Number |
|---|---|---|---|
| | 16 | _____ | ___ |

1. Can this well be purged dry? ☒ Yes ☐ No

2. Well development method

| | |
|---|---|
| surged with bailer and bailed | ☒ 41 |
| surged with bailer and pumped | ☐ 61 |
| surged with block and bailed | ☐ 42 |
| surged with block and pumped | ☐ 62 |
| surged with block, bailed and pumped | ☐ 70 |
| compressed air | ☐ 20 |
| bailed only | ☐ 10 |
| pumped only | ☐ 51 |
| pumped slowly | ☐ 50 |
| Other _____ | ☐ |

3. Time spent developing well 20 min.

4. Depth of well (from top of well casisng) 16.2 ft.

5. Inside diameter of well 2.0 in.

6. Volume of water in filter pack and well casing ___.__ gal.

7. Volume of water removed from well 2.5 gal.

8. Volume of water added (if any) ___.__ gal.

9. Source of water added _____

10. Analysis performed on water added? ☐ Yes ☐ No
(If yes, attach results)

| | Before Development | After Development |
|---|---|---|
| 11. Depth to Water (from top of well casing) | a. 11.50 ft. | DRY. ___ ft. |
| Date | b. 11/22/2006 (m m d d y y y y) | 11/22/2006 (m m d d y y y y) |
| Time | c. 10:00 ☒ a.m. ☐ p.m. | 10:20 ☒ a.m. ☐ p.m. |
| 12. Sediment in well bottom | ___.__ inches | ___.__ inches |
| 13. Water clarity | Clear ☐ 10 Turbid ☒ 15 (Describe) | Clear ☐ 20 Turbid ☒ 25 (Describe) |
| 14. Total suspended solids | ____.__ mg/l | ____.__ mg/l |
| 15. COD | ____.__ mg/l | ____.__ mg/l |

Fill in if drilling fluids were used and well is at solid waste facility:

16. Well developed by: Name (first, last) and Firm
First Name: David Last Name: Bessinpas
Firm: ARCADIS BBL

17. Additional comments on development:

Name and Address of Facility Contact /Owner/Responsible Party
First Name: _____ Last Name: _____
Facility/Firm: _____
Street: _____
City/State/Zip: _____

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: Dat Bessinpas
Print Name: David Bessinpas
Firm: ARCADIS BBL

NOTE: See instructions for more information including a list of county codes and well type codes.

State of Wisconsin
Department of Natural Resources

# GROUNDWATER MONITORING WELL INFORMATION FORM

Chapter 281 and 289, Wis. Stats.
Form 4400-89

Rev. 7-98

| Facility Name | Facility ID Number | License, Permit or Monitoring No. | Date | Completed By (Name and Firm) |
|---|---|---|---|---|
| Koppers Inc. | 816009310 | | 8/15/07 | David Bessinpas ARCADIS BBL |

| WI Unique Well No | Well Name | DNR Well ID Number | Well Location | Dir. N/E | Dir. S/W | Date Established | Well Casing Diam. | Well Casing Type | Elevations Top of Well Casing | Elevations Ground Surface | Reference MSL (Y) | Reference Site Datum (Y) | Depths Screen Top | Depths Initial Groundwater | Depths Well Depth | Screen Length | Well Type | Well Status | Enf. Stds. | Grad-ient | Distance to Waste |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | W-35A | | 547309.8 | N | | 10/11/06 | 2 | P | 675.30 | 672.53 | X | | 5.77 | 14.09 | 15.77 | 10 | 11/mw | A | | S | 0 |
| | | | 1999487 | E | | | | | | | | | | | | | | | | | |
| | W-36A | | 544791.7 | N | | 10/11/06 | 2 | P | 678.59 | 676.15 | X | | 5.44 | 4.55 | 15.44 | 10 | 11/mw | A | | S | 0 |
| | | | 1999021 | E | | | | | | | | | | | | | | | | | |
| | W-37A | | 544961.4 | N | | 10/11/06 | 2 | P | 676.67 | 674.25 | X | | 5.42 | 12.91 | 15.42 | 10 | 11/mw | A | | S | 0 |
| | | | 1998910 | E | | | | | | | | | | | | | | | | | |
| | W-38A | | 544232.1 | N | | 10/11/06 | 2 | P | 676.90 | 674.47 | X | | 5.43 | 9.50 | 15.43 | 10 | 11/mw | A | | S | 0 |
| | | | 1998767 | E | | | | | | | | | | | | | | | | | |
| | W-39A | | 543900.4 | N | | 10/12/06 | 2 | P | 678.53 | 675.77 | X | | 5.76 | 8.60 | 15.76 | 10 | 11/mw | A | | S | 0 |
| | | | 1998849 | E | | | | | | | | | | | | | | | | | |
| | W-40A | | 543911.6 | N | | 10/12/06 | 2 | P | 676.99 | 674.33 | X | | 5.61 | 11.50 | 15.61 | 10 | 11/mw | A | | S | 0 |
| | | | 1999027 | E | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
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Location Coordinates Are:
- [X] State Plane Coordinate
  - [X] Northern
  - [ ] Central
  - [ ] Southern
- [ ] Local Grid System

Grid Origin Location: (Check if estimated: ☐ )

Lat. ____ ° ____ ' ____ " Long. ____ ° ____ ' ____ " or

St. Plane ____ ft. N. ____ ft. E. S/C/N Zone

Remarks:

Completion of this form is mandatory under s. NR 507.14 and NR 110.25 Wis. Adm. Code. Failure to file this form may result in forfeiture of not less than $10 nor more than $5,000 for each day of violation. Personally identifiable information provided is intended to be used by the Department for the purposes related to the waste management program.

ARCADIS BBL

**Attachment 3**

Laboratory Analytical Data Sheets

ARCADIS BBL

VOCs and SVOCs

TriMatrix
Laboratories, Inc.

April 06, 2007

Beazer East, Inc.
Attn: Ms. Angie Gatchie c/o FTS
200 Third Avenue
Carnegie, PA 15106

**Project: Superior GW - WI Cert. #999472650**

Dear Ms. Angie Gatchie c/o FTS,

Enclosed is a copy of the laboratory report, comprised of the following work order(s), for test samples received by TriMatrix Laboratories:

| Work Order | Received | Description |
|---|---|---|
| 0610522 | 10/27/2006 | Laboratory Services |
| 0610523 | 10/25/2006 | Laboratory Services |

This report relates only to the sample(s), as received. Test results are in compliance with the requirements of the National Environmental Laboratory Accreditation Conference (NELAC); any qualifications of results, including sample acceptance requirements, are explained in the Statement of Data Qualifications.

Estimates of analytical uncertainties for the test results contained within this report are available upon request.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Gary L. Wood
Project Chemist

Enclosures(s)

The total number of pages in this report, including this page, is 16.

TriMatrix Laboratories, Inc.

## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0610522** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | Laboratory Services |
| Client Sample ID: | **W-39A** | Sampled: | 10/25/06 10:00 |
| Lab Sample ID: | **0610522-03** | Sampled By: | F&T |
| Matrix: | Water | Received: | 10/27/06 08:45 |
| Unit: | ug/L | Prepared: | 10/30/06 By: ASC |
| Dilution Factor: | 1 | Date Analyzed: | 11/02/06 By: DMC |
| QC Batch: | 0612628 | Analytical Batch: | 6110265 |

### Semivolatile Organic Compounds by EPA Method 8270C

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 83-32-9 | Acenaphthene | NDU | 0.070 | 0.021 |
| 208-96-8 | Acenaphthylene | NDU | 0.13 | 0.038 |
| 120-12-7 | Anthracene | NDU | 0.099 | 0.030 |
| 56-55-3 | Benzo(a)anthracene | NDU | 0.19 | 0.058 |
| 50-32-8 | Benzo(a)pyrene | NDU | 0.10 | 0.031 |
| 205-99-2 | Benzo(b)fluoranthene | NDU | 0.12 | 0.038 |
| 207-08-9 | Benzo(k)fluoranthene | NDU | 0.16 | 0.048 |
| 191-24-2 | Benzo(g,h,i)perylene | NDU | 0.099 | 0.030 |
| 59-50-7 | 4-Chloro-3-methylphenol | NDU | 0.081 | 0.024 |
| 95-57-8 | 2-Chlorophenol | NDU | 0.094 | 0.028 |
| 218-01-9 | Chrysene | NDU | 0.099 | 0.030 |
| 53-70-3 | Dibenz(a,h)anthracene | NDU | 0.062 | 0.019 |
| 120-83-2 | 2,4-Dichlorophenol | NDU | 0.074 | 0.022 |
| 105-67-9 | 2,4-Dimethylphenol | NDU | 1.8 | 0.54 |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | NDU | 0.79 | 0.24 |
| 51-28-5 | 2,4-Dinitrophenol | NDU | 0.69 | 0.21 |
| 206-44-0 | Fluoranthene | NDU | 0.11 | 0.033 |
| 86-73-7 | Fluorene | NDU | 0.089 | 0.027 |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | NDU | 0.069 | 0.021 |
| 91-57-6 | 2-Methylnaphthalene | NDU | 0.074 | 0.022 |
| 90-12-0 | 1-Methylnaphthalene | NDU | 0.092 | 0.028 |
| 95-48-7 | 2-Methylphenol | NDU | 1.5 | 0.45 |
| 106-44-5 | 4-Methylphenol | NDU | 1.3 | 0.38 |
| 91-20-3 | Naphthalene | NDU | 0.073 | 0.022 |
| 100-02-7 | 4-Nitrophenol | NDU | 1.5 | 0.44 |
| 88-75-5 | 2-Nitrophenol | NDU | 0.12 | 0.038 |
| 87-86-5 | Pentachlorophenol | NDU | 0.20 | 0.061 |
| 85-01-8 | Phenanthrene | NDU | 0.11 | 0.033 |
| 108-95-2 | Phenol | NDU | 0.18 | 0.055 |
| 129-00-0 | Pyrene | NDU | 0.14 | 0.044 |
| 58-90-2 | 2,3,4,6-Tetrachlorophenol | NDU | 0.15 | 0.047 |

Continued on next page




5560 Corporate Exchange Court SE • Grand Rapids, MI 49512 • (616) 975-4500 • Fax (616) 942-7463

TriMatrix Laboratories, Inc.

## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0610522** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | Laboratory Services |
| Client Sample ID: | **W-39A** | Sampled: | 10/25/06 10:00 |
| Lab Sample ID: | **0610522-03** | Sampled By: | F&T |
| Matrix: | Water | Received: | 10/27/06 08:45 |
| Unit: | ug/L | Prepared: | 10/30/06 By: ASC |
| Dilution Factor: | 1 | Date Analyzed: | 11/02/06 By: DMC |
| QC Batch: | 0612628 | Analytical Batch: | 6110265 |

### Semivolatile Organic Compounds by EPA Method 8270C (Continued)

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 935-95-5 | 2,3,5,6-Tetrachlorophenol | ND U | 1.7 | 0.50 |
| 88-06-2 | 2,4,6-Trichlorophenol | ND U | 0.083 | 0.025 |
| 95-95-4 | 2,4,5-Trichlorophenol | ND U | 0.100 | 0.030 |

| **Surrogates** | ***% Recovery*** | ***Control Limits*** |
|---|---|---|
| *2-Fluorophenol* | 43 | *16-82* |
| *Phenol-d6* | 27 | *11-69* |
| *Nitrobenzene-d5* | 66 | *26-116* |
| *Nitrobenzene-d5* | 66 | *26-116* |
| *2-Fluorobiphenyl* | 52 | *37-123* |
| *2-Fluorobiphenyl* | 52 | *37-123* |
| *2,4,6-Tribromophenol* | 75 | *32-127* |
| *o-Terphenyl* | 69 | *30-119* |
| *o-Terphenyl* | 69 | *30-119* |




5560 Corporate Exchange Court SE • Grand Rapids, MI 49512 • (616) 975-4500 • Fax (616) 942-7463

TriMatrix Laboratories, Inc.

## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0610522** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | Laboratory Services |
| Client Sample ID: | **W-38A** | Sampled: | 10/25/06 09:00 |
| Lab Sample ID: | **0610522-04** | Sampled By: | F&T |
| Matrix: | Water | Received: | 10/27/06 08:45 |
| Unit: | ug/L | Prepared: | 10/30/06 By: ASC |
| Dilution Factor: | 1 | Date Analyzed: | 11/02/06 By: DMC |
| QC Batch: | 0612628 | Analytical Batch: | 6110265 |

### Semivolatile Organic Compounds by EPA Method 8270C

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 83-32-9 | Acenaphthene | ND U | 0.070 | 0.021 |
| 208-96-8 | Acenaphthylene | ND U | 0.13 | 0.038 |
| 120-12-7 | Anthracene | **0.054 J** | 0.099 | 0.030 |
| 56-55-3 | Benzo(a)anthracene | ND U | 0.19 | 0.058 |
| 50-32-8 | Benzo(a)pyrene | **0.073 J** | 0.10 | 0.031 |
| 205-99-2 | Benzo(b)fluoranthene | **0.21** | 0.12 | 0.038 |
| 207-08-9 | Benzo(k)fluoranthene | **0.055 J** | 0.16 | 0.048 |
| 191-24-2 | Benzo(g,h,i)perylene | ND U | 0.099 | 0.030 |
| 59-50-7 | 4-Chloro-3-methylphenol | ND U | 0.081 | 0.024 |
| 95-57-8 | 2-Chlorophenol | ND U | 0.094 | 0.028 |
| 218-01-9 | Chrysene | **0.080 J** | 0.099 | 0.030 |
| 53-70-3 | Dibenz(a,h)anthracene | ND U | 0.062 | 0.019 |
| 120-83-2 | 2,4-Dichlorophenol | ND U | 0.074 | 0.022 |
| 105-67-9 | 2,4-Dimethylphenol | ND U | 1.8 | 0.54 |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | ND U | 0.79 | 0.24 |
| 51-28-5 | 2,4-Dinitrophenol | ND U | 0.69 | 0.21 |
| 206-44-0 | Fluoranthene | **0.079 J** | 0.11 | 0.033 |
| 86-73-7 | Fluorene | ND U | 0.089 | 0.027 |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | **0.038 J** | 0.069 | 0.021 |
| 91-57-6 | 2-Methylnaphthalene | ND U | 0.074 | 0.022 |
| 90-12-0 | 1-Methylnaphthalene | ND U | 0.092 | 0.028 |
| 95-48-7 | 2-Methylphenol | ND U | 1.5 | 0.45 |
| 106-44-5 | 4-Methylphenol | ND U | 1.3 | 0.38 |
| 91-20-3 | Naphthalene | ND U | 0.073 | 0.022 |
| 100-02-7 | 4-Nitrophenol | ND U | 1.5 | 0.44 |
| 88-75-5 | 2-Nitrophenol | ND U | 0.12 | 0.038 |
| 87-86-5 | Pentachlorophenol | ND U | 0.20 | 0.061 |
| 85-01-8 | Phenanthrene | ND U | 0.11 | 0.033 |
| 108-95-2 | Phenol | **0.068 J** | 0.18 | 0.055 |
| 129-00-0 | Pyrene | **0.11 J** | 0.14 | 0.044 |
| 58-90-2 | 2,3,4,6-Tetrachlorophenol | ND U | 0.15 | 0.047 |

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TriMatrix Laboratories, Inc.

## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0610522** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | Laboratory Services |
| Client Sample ID: | **W-38A** | Sampled: | 10/25/06 09:00 |
| Lab Sample ID: | **0610522-04** | Sampled By: | F&T |
| Matrix: | Water | Received: | 10/27/06 08:45 |
| Unit: | ug/L | Prepared: | 10/30/06 By: ASC |
| Dilution Factor: | 1 | Date Analyzed: | 11/02/06 By: DMC |
| QC Batch: | 0612628 | Analytical Batch: | 6110265 |

### Semivolatile Organic Compounds by EPA Method 8270C (Continued)

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 935-95-5 | 2,3,5,6-Tetrachlorophenol | ND U | 1.7 | 0.50 |
| 88-06-2 | 2,4,6-Trichlorophenol | ND U | 0.083 | 0.025 |
| 95-95-4 | 2,4,5-Trichlorophenol | ND U | 0.100 | 0.030 |

| **Surrogates** | ***% Recovery*** | ***Control Limits*** |
|---|---|---|
| *2-Fluorophenol* | 36 | *16-82* |
| *Phenol-d6* | 26 | *11-69* |
| *Nitrobenzene-d5* | 66 | *26-116* |
| *Nitrobenzene-d5* | 66 | *26-116* |
| *2-Fluorobiphenyl* | 52 | *37-123* |
| *2-Fluorobiphenyl* | 52 | *37-123* |
| *2,4,6-Tribromophenol* | 78 | *32-127* |
| *o-Terphenyl* | 70 | *30-119* |
| *o-Terphenyl* | 70 | *30-119* |




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## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0610523** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | Laboratory Services |
| Client Sample ID: | **W-14A** | Sampled: | 10/23/06 14:30 |
| Lab Sample ID: | **0610523-09** | Sampled By: | Dave Hreha |
| Matrix: | Water | Received: | 10/25/06 08:30 |
| Unit: | ug/L | Prepared: | 10/30/06 By: ASC |
| Dilution Factor: | 1 | Date Analyzed: | 11/01/06 By: DMC |
| QC Batch: | 0612628 | Analytical Batch: | 6110146 |

### Semivolatile Organic Compounds by EPA Method 8270C

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 83-32-9 | Acenaphthene | **0.025J** | 0.070 | 0.021 |
| 208-96-8 | Acenaphthylene | ND U | 0.13 | 0.038 |
| 120-12-7 | Anthracene | **0.26** | 0.099 | 0.030 |
| 56-55-3 | Benzo(a)anthracene | ND U | 0.19 | 0.058 |
| 50-32-8 | Benzo(a)pyrene | ND U | 0.10 | 0.031 |
| 205-99-2 | Benzo(b)fluoranthene | ND U | 0.12 | 0.038 |
| 207-08-9 | Benzo(k)fluoranthene | ND U | 0.16 | 0.048 |
| 191-24-2 | Benzo(g,h,i)perylene | ND U | 0.099 | 0.030 |
| 59-50-7 | 4-Chloro-3-methylphenol | ND U | 0.081 | 0.024 |
| 95-57-8 | 2-Chlorophenol | ND U | 0.094 | 0.028 |
| 218-01-9 | Chrysene | ND U | 0.099 | 0.030 |
| 53-70-3 | Dibenz(a,h)anthracene | ND U | 0.062 | 0.019 |
| 120-83-2 | 2,4-Dichlorophenol | **0.29** | 0.074 | 0.022 |
| 105-67-9 | 2,4-Dimethylphenol | ND U | 1.8 | 0.54 |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | ND U | 0.79 | 0.24 |
| 51-28-5 | 2,4-Dinitrophenol | ND U | 0.69 | 0.21 |
| 206-44-0 | Fluoranthene | **0.23** | 0.11 | 0.033 |
| 86-73-7 | Fluorene | ND U | 0.089 | 0.027 |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | ND U | 0.069 | 0.021 |
| 91-57-6 | 2-Methylnaphthalene | ND U | 0.074 | 0.022 |
| 90-12-0 | 1-Methylnaphthalene | ND U | 0.092 | 0.028 |
| 95-48-7 | 2-Methylphenol | ND U | 1.5 | 0.45 |
| 106-44-5 | 4-Methylphenol | ND U | 1.3 | 0.38 |
| 91-20-3 | Naphthalene | ND U | 0.073 | 0.022 |
| 100-02-7 | 4-Nitrophenol | ND U | 1.5 | 0.44 |
| 88-75-5 | 2-Nitrophenol | ND U | 0.12 | 0.038 |
| 87-86-5 | Pentachlorophenol | **0.66** | 0.20 | 0.061 |
| 85-01-8 | Phenanthrene | **0.047J** | 0.11 | 0.033 |
| 108-95-2 | Phenol | **0.081J** | 0.18 | 0.055 |
| 129-00-0 | Pyrene | **0.28** | 0.14 | 0.044 |
| 58-90-2 | 2,3,4,6-Tetrachlorophenol | **0.13J** | 0.15 | 0.047 |

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## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0610523** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | Laboratory Services |
| Client Sample ID: | **W-14A** | Sampled: | 10/23/06 14:30 |
| Lab Sample ID: | **0610523-09** | Sampled By: | Dave Hreha |
| Matrix: | Water | Received: | 10/25/06 08:30 |
| Unit: | ug/L | Prepared: | 10/30/06 By: ASC |
| Dilution Factor: | 1 | Date Analyzed: | 11/01/06 By: DMC |
| QC Batch: | 0612628 | Analytical Batch: | 6110146 |

### Semivolatile Organic Compounds by EPA Method 8270C (Continued)

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 935-95-5 | 2,3,5,6-Tetrachlorophenol | ND U | 1.7 | 0.50 |
| 88-06-2 | 2,4,6-Trichlorophenol | ND U | 0.083 | 0.025 |
| 95-95-4 | 2,4,5-Trichlorophenol | **0.032 J** | 0.100 | 0.030 |

| **Surrogates** | ***% Recovery*** | ***Control Limits*** |
|---|---|---|
| *2-Fluorophenol* | 43 | *16-82* |
| *Phenol-d6* | 28 | *11-69* |
| *Nitrobenzene-d5* | 74 | *26-116* |
| *Nitrobenzene-d5* | 74 | *26-116* |
| *2-Fluorobiphenyl* | 73 | *37-123* |
| *2-Fluorobiphenyl* | 73 | *37-123* |
| *2,4,6-Tribromophenol* | 71 | *32-127* |
| *o-Terphenyl* | 78 | *30-119* |
| *o-Terphenyl* | 78 | *30-119* |




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## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0610523** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | Laboratory Services |
| Client Sample ID: | **W-16A** | Sampled: | 10/23/06 15:50 |
| Lab Sample ID: | **0610523-10** | Sampled By: | Dave Hreha |
| Matrix: | Water | Received: | 10/25/06 08:30 |
| Unit: | ug/L | Prepared: | 11/06/06 By: LEW |
| Dilution Factor: | 2 | Date Analyzed: | 11/06/06 By: LEW |
| QC Batch: | 0613051 | Analytical Batch: | 6110649 |

### Halogenated and Aromatic Volatiles by EPA Method 8021B

| CAS Number | Analyte | | Analytical Result | LOQ | LOD |
|---|---|---|---|---|---|
| 71-43-2 | Benzene | | **110** | 0.41 | 0.12 |
| **Surrogates** | | ***% Recovery*** | ***Control Limits*** | | |
| *aaa-Trifluorotoluene* | | 102 | *90-113* | | |




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## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0610523** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | Laboratory Services |
| Client Sample ID: | **W-17A** | Sampled: | 10/24/06 09:20 |
| Lab Sample ID: | **0610523-11** | Sampled By: | Dave Hreha |
| Matrix: | Water | Received: | 10/25/06 08:30 |
| Unit: | ug/L | Prepared: | 10/30/06 By: ASC |
| Dilution Factor: | 20 | Date Analyzed: | 10/31/06 By: DMC |
| QC Batch: | 0612628 | Analytical Batch: | 6103146 |

### Semivolatile Organic Compounds by EPA Method 8270C

| | CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|---|
| | 83-32-9 | Acenaphthene | **91** | 1.4 | 0.43 |
| | 208-96-8 | Acenaphthylene | NDU | 2.5 | 0.76 |
| | 120-12-7 | Anthracene | **7.0** | 2.0 | 0.60 |
| | 56-55-3 | Benzo(a)anthracene | NDU | 3.8 | 1.2 |
| | 50-32-8 | Benzo(a)pyrene | NDU | 2.0 | 0.62 |
| | 205-99-2 | Benzo(b)fluoranthene | NDU | 2.5 | 0.75 |
| | 207-08-9 | Benzo(k)fluoranthene | NDU | 3.2 | 0.96 |
| | 191-24-2 | Benzo(g,h,i)perylene | NDU | 2.0 | 0.60 |
| | 59-50-7 | 4-Chloro-3-methylphenol | NDU | 1.6 | 0.49 |
| | 95-57-8 | 2-Chlorophenol | NDU | 1.9 | 0.57 |
| | 218-01-9 | Chrysene | NDU | 2.0 | 0.60 |
| | 53-70-3 | Dibenz(a,h)anthracene | NDU | 1.2 | 0.38 |
| | 120-83-2 | 2,4-Dichlorophenol | NDU | 1.5 | 0.45 |
| | 105-67-9 | 2,4-Dimethylphenol | **34J** | 36 | 11 |
| | 534-52-1 | 4,6-Dinitro-2-methylphenol | NDU | 16 | 4.8 |
| | 51-28-5 | 2,4-Dinitrophenol | NDU | 14 | 4.2 |
| | 206-44-0 | Fluoranthene | **7.6** | 2.2 | 0.66 |
| | 86-73-7 | Fluorene | **38** | 1.8 | 0.54 |
| | 193-39-5 | Indeno(1,2,3-cd)pyrene | NDU | 1.4 | 0.42 |
| | 91-57-6 | 2-Methylnaphthalene | **0.67J** | 1.5 | 0.45 |
| | 90-12-0 | 1-Methylnaphthalene | **41** | 1.8 | 0.56 |
| | 95-48-7 | 2-Methylphenol | **120** | 30 | 9.0 |
| * | 106-44-5 | 4-Methylphenol | **190** | 25 | 7.6 |
| | 91-20-3 | Naphthalene | **79** | 1.5 | 0.44 |
| | 100-02-7 | 4-Nitrophenol | NDU | 29 | 8.8 |
| | 88-75-5 | 2-Nitrophenol | NDU | 2.5 | 0.75 |
| | 87-86-5 | Pentachlorophenol | NDU | 4.0 | 1.2 |
| | 85-01-8 | Phenanthrene | **27** | 2.2 | 0.65 |
| | 108-95-2 | Phenol | **170** | 3.6 | 1.1 |
| | 129-00-0 | Pyrene | **3.4** | 2.9 | 0.88 |
| | 58-90-2 | 2,3,4,6-Tetrachlorophenol | NDU | 3.1 | 0.93 |

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## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0610523** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | Laboratory Services |
| Client Sample ID: | **W-26A** | Sampled: | 10/24/06 11:30 |
| Lab Sample ID: | **0610523-12** | Sampled By: | Dave Hreha |
| Matrix: | Water | Received: | 10/25/06 08:30 |
| Unit: | ug/L | Prepared: | 10/30/06 By: ASC |
| Dilution Factor: | 1 | Date Analyzed: | 11/01/06 By: DMC |
| QC Batch: | 0612628 | Analytical Batch: | 6110146 |

### Semivolatile Organic Compounds by EPA Method 8270C

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 83-32-9 | Acenaphthene | NDU | 0.070 | 0.021 |
| 208-96-8 | Acenaphthylene | NDU | 0.13 | 0.038 |
| 120-12-7 | Anthracene | NDU | 0.099 | 0.030 |
| 56-55-3 | Benzo(a)anthracene | NDU | 0.19 | 0.058 |
| 50-32-8 | Benzo(a)pyrene | NDU | 0.10 | 0.031 |
| 205-99-2 | Benzo(b)fluoranthene | NDU | 0.12 | 0.038 |
| 207-08-9 | Benzo(k)fluoranthene | NDU | 0.16 | 0.048 |
| 191-24-2 | Benzo(g,h,i)perylene | NDU | 0.099 | 0.030 |
| 59-50-7 | 4-Chloro-3-methylphenol | NDU | 0.081 | 0.024 |
| 95-57-8 | 2-Chlorophenol | NDU | 0.094 | 0.028 |
| 218-01-9 | Chrysene | NDU | 0.099 | 0.030 |
| 53-70-3 | Dibenz(a,h)anthracene | NDU | 0.062 | 0.019 |
| 120-83-2 | 2,4-Dichlorophenol | NDU | 0.074 | 0.022 |
| 105-67-9 | 2,4-Dimethylphenol | NDU | 1.8 | 0.54 |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | NDU | 0.79 | 0.24 |
| 51-28-5 | 2,4-Dinitrophenol | NDU | 0.69 | 0.21 |
| 206-44-0 | Fluoranthene | NDU | 0.11 | 0.033 |
| 86-73-7 | Fluorene | NDU | 0.089 | 0.027 |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | NDU | 0.069 | 0.021 |
| 91-57-6 | 2-Methylnaphthalene | NDU | 0.074 | 0.022 |
| 90-12-0 | 1-Methylnaphthalene | NDU | 0.092 | 0.028 |
| 95-48-7 | 2-Methylphenol | NDU | 1.5 | 0.45 |
| 106-44-5 | 4-Methylphenol | NDU | 1.3 | 0.38 |
| 91-20-3 | Naphthalene | NDU | 0.073 | 0.022 |
| 100-02-7 | 4-Nitrophenol | NDU | 1.5 | 0.44 |
| 88-75-5 | 2-Nitrophenol | NDU | 0.12 | 0.038 |
| 87-86-5 | Pentachlorophenol | NDU | 0.20 | 0.061 |
| 85-01-8 | Phenanthrene | NDU | 0.11 | 0.033 |
| 108-95-2 | Phenol | NDU | 0.18 | 0.055 |

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## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0610523** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | Laboratory Services |
| Client Sample ID: | **W-26A** | Sampled: | 10/24/06 11:30 |
| Lab Sample ID: | **0610523-12** | Sampled By: | Dave Hreha |
| Matrix: | Water | Received: | 10/25/06 08:30 |
| Unit: | ug/L | Prepared: | 10/30/06 By: ASC |
| Dilution Factor: | 1 | Date Analyzed: | 11/01/06 By: DMC |
| QC Batch: | 0612628 | Analytical Batch: | 6110146 |

### Semivolatile Organic Compounds by EPA Method 8270C (Continued)

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 129-00-0 | Pyrene | NDU | 0.14 | 0.044 |
| 58-90-2 | 2,3,4,6-Tetrachlorophenol | NDU | 0.15 | 0.047 |
| 935-95-5 | 2,3,5,6-Tetrachlorophenol | NDU | 1.7 | 0.50 |
| 88-06-2 | 2,4,6-Trichlorophenol | NDU | 0.083 | 0.025 |
| 95-95-4 | 2,4,5-Trichlorophenol | NDU | 0.100 | 0.030 |

| **Surrogates** | ***% Recovery*** | ***Control Limits*** |
|---|---|---|
| *2-Fluorophenol* | 41 | *16-82* |
| *Phenol-d6* | 27 | *11-69* |
| *Nitrobenzene-d5* | 63 | *26-116* |
| *Nitrobenzene-d5* | 63 | *26-116* |
| *2-Fluorobiphenyl* | 58 | *37-123* |
| *2-Fluorobiphenyl* | 58 | *37-123* |
| *2,4,6-Tribromophenol* | 75 | *32-127* |
| *o-Terphenyl* | 75 | *30-119* |
| *o-Terphenyl* | 75 | *30-119* |




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## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0610523** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | Laboratory Services |
| Client Sample ID: | **W-36A** | Sampled: | 10/24/06 13:45 |
| Lab Sample ID: | **0610523-13** | Sampled By: | Dave Hreha |
| Matrix: | Water | Received: | 10/25/06 08:30 |
| Unit: | ug/L | Prepared: | 10/31/06 By: ASC |
| Dilution Factor: | 2 | Date Analyzed: | 11/01/06 By: DMC |
| QC Batch: | 0612709 | Analytical Batch: | 6110146 |

### Semivolatile Organic Compounds by EPA Method 8270C

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 83-32-9 | Acenaphthene | **2.2** | 0.14 | 0.043 |
| 208-96-8 | Acenaphthylene | **0.16 J** | 0.25 | 0.076 |
| 120-12-7 | Anthracene | **0.93** | 0.20 | 0.060 |
| 56-55-3 | Benzo(a)anthracene | ND U | 0.38 | 0.12 |
| 50-32-8 | Benzo(a)pyrene | ND U | 0.20 | 0.062 |
| 205-99-2 | Benzo(b)fluoranthene | **0.16 J** | 0.25 | 0.075 |
| 207-08-9 | Benzo(k)fluoranthene | ND U | 0.32 | 0.096 |
| 191-24-2 | Benzo(g,h,i)perylene | ND U | 0.20 | 0.060 |
| 59-50-7 | 4-Chloro-3-methylphenol | **0.059 J** | 0.16 | 0.049 |
| 95-57-8 | 2-Chlorophenol | **0.23** | 0.19 | 0.057 |
| 218-01-9 | Chrysene | **0.19 J** | 0.20 | 0.060 |
| 53-70-3 | Dibenz(a,h)anthracene | ND U | 0.12 | 0.038 |
| 120-83-2 | 2,4-Dichlorophenol | **1.3** | 0.15 | 0.045 |
| 105-67-9 | 2,4-Dimethylphenol | ND U | 3.6 | 1.1 |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | ND U | 1.6 | 0.48 |
| 51-28-5 | 2,4-Dinitrophenol | ND U | 1.4 | 0.42 |
| 206-44-0 | Fluoranthene | **1.0** | 0.22 | 0.066 |
| 86-73-7 | Fluorene | **1.2** | 0.18 | 0.054 |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | ND U | 0.14 | 0.042 |
| 91-57-6 | 2-Methylnaphthalene | **1.4** | 0.15 | 0.045 |
| 90-12-0 | 1-Methylnaphthalene | **2.4** | 0.18 | 0.056 |
| 95-48-7 | 2-Methylphenol | ND U | 3.0 | 0.90 |
| 106-44-5 | 4-Methylphenol | ND U | 2.5 | 0.76 |
| 91-20-3 | Naphthalene | **0.56** | 0.15 | 0.044 |
| 100-02-7 | 4-Nitrophenol | ND U | 2.9 | 0.88 |
| 88-75-5 | 2-Nitrophenol | **0.084 J** | 0.25 | 0.075 |
| * 87-86-5 | Pentachlorophenol | **31** | 0.40 | 0.12 |
| 85-01-8 | Phenanthrene | **0.49** | 0.22 | 0.065 |
| 108-95-2 | Phenol | **0.13 J** | 0.36 | 0.11 |
| 129-00-0 | Pyrene | **0.94** | 0.29 | 0.088 |
| 58-90-2 | 2,3,4,6-Tetrachlorophenol | **3.4** | 0.31 | 0.093 |

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# ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0610523** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | Laboratory Services |
| Client Sample ID: | **W-36A** | Sampled: | 10/24/06 13:45 |
| Lab Sample ID: | **0610523-13** | Sampled By: | Dave Hreha |
| Matrix: | Water | Received: | 10/25/06 08:30 |
| Unit: | ug/L | Prepared: | 10/31/06 By: ASC |
| Dilution Factor: | 2 | Date Analyzed: | 11/01/06 By: DMC |
| QC Batch: | 0612709 | Analytical Batch: | 6110146 |

## Semivolatile Organic Compounds by EPA Method 8270C (Continued)

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 935-95-5 | 2,3,5,6-Tetrachlorophenol | ND U | 3.3 | 1.0 |
| 88-06-2 | 2,4,6-Trichlorophenol | **0.28** | 0.17 | 0.050 |
| 95-95-4 | 2,4,5-Trichlorophenol | **0.24** | 0.20 | 0.061 |

| **Surrogates** | ***% Recovery*** | ***Control Limits*** |
|---|---|---|
| *2-Fluorophenol* | 36 | *16-82* |
| *Phenol-d6* | 25 | *11-69* |
| *Nitrobenzene-d5* | 60 | *26-116* |
| *Nitrobenzene-d5* | 60 | *26-116* |
| *2-Fluorobiphenyl* | 39 | *37-123* |
| *2-Fluorobiphenyl* | 39 | *37-123* |
| *2,4,6-Tribromophenol* | 58 | *32-127* |
| *o-Terphenyl* | 52 | *30-119* |
| *o-Terphenyl* | 52 | *30-119* |




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TriMatrix Laboratories, Inc.

## STATEMENT OF DATA QUALIFICATIONS

### Semivolatile Organic Compounds by EPA Method 8270C

**Qualification:** The MS or MSD recovery, but not both, was outside the control limit. The RPD is within the control limit. The unspiked sample result is not qualified.

Analysis: USEPA-8270C

Sample/Analyte: 0610523-13 W-36A Pentachlorophenol

**Qualification:** 3-Methylphenol cannot be resolved from 4-Methylphenol due to chromatographic limitations. The reported result could be 3-Methylphenol, 4-Methylphenol, or a combination of both isomers.

Analysis: USEPA-8270C

Sample/Analyte: 0610523-11 W-17A 4-Methylphenol




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TriMatrix Laboratories, Inc.

April 30, 2007

Beazer East, Inc.
Attn: Ms. Angie Gatchie c/o FTS
200 Third Avenue
Carnegie, PA 15106

**Project: Superior GW - WI Cert. #999472650**

Dear Ms. Angie Gatchie c/o FTS,

Enclosed is a copy of the laboratory report, comprised of the following work order(s), for test samples received by TriMatrix Laboratories:

| Work Order | Received | Description |
|---|---|---|
| 0704333 | 04/17/2007 | 2007-Annual New Wells |
| 0704334 | 04/18/2007 | 2007-Annual New Wells |

This report relates only to the sample(s), as received. Test results are in compliance with the requirements of the National Environmental Laboratory Accreditation Conference (NELAC); any qualifications of results, including sample acceptance requirements, are explained in the Statement of Data Qualifications.

Estimates of analytical uncertainties for the test results contained within this report are available upon request.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Gary L. Wood
Project Chemist

Enclosures(s)

The total number of pages in this report, including this page, is 41.


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## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0704333** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | 2007-Annual New Wells |
| Client Sample ID: | **W-26A** | Sampled: | 04/16/07 09:50 |
| Lab Sample ID: | **0704333-01** | Sampled By: | Dave Hreha |
| Matrix: | Water | Received: | 04/17/07 09:00 |
| Unit: | ug/L | Prepared: | 04/20/07 By: LEW |
| Dilution Factor: | 1 | Date Analyzed: | 04/20/07 By: LEW |
| QC Batch: | 0704254 | Analytical Batch: | 7042338 |

### Halogenated and Aromatic Volatiles by EPA Method 8021B

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 71-43-2 | Benzene | ND U | 0.73 | 0.22 |

| Surrogates | % Recovery | Control Limits |
|---|---|---|
| *aaa-Trifluorotoluene* | 101 | *90-113* |




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## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0704333** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | 2007-Annual New Wells |
| Client Sample ID: | **W-26A** | Sampled: | 04/16/07 09:50 |
| Lab Sample ID: | **0704333-01** | Sampled By: | Dave Hreha |
| Matrix: | Water | Received: | 04/17/07 09:00 |
| Unit: | ug/L | Prepared: | 04/20/07 By: RRH |
| Dilution Factor: | 1 | Date Analyzed: | 04/23/07 By: JMK |
| QC Batch: | 0704161 | Analytical Batch: | 7042347 |

### Semivolatile Organic Compounds by EPA Method 8270C

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 83-32-9 | Acenaphthene | NDU | 0.042 | 0.013 |
| 208-96-8 | Acenaphthylene | NDU | 0.040 | 0.012 |
| 120-12-7 | Anthracene | **0.030J** | 0.045 | 0.014 |
| 56-55-3 | Benzo(a)anthracene | NDU | 0.12 | 0.037 |
| 50-32-8 | Benzo(a)pyrene | NDU | 0.077 | 0.023 |
| 205-99-2 | Benzo(b)fluoranthene | NDU | 0.13 | 0.040 |
| 207-08-9 | Benzo(k)fluoranthene | NDU | 0.12 | 0.036 |
| 191-24-2 | Benzo(g,h,i)perylene | NDU | 0.072 | 0.022 |
| 59-50-7 | 4-Chloro-3-methylphenol | NDU | 0.071 | 0.021 |
| 95-57-8 | 2-Chlorophenol | NDU | 0.053 | 0.016 |
| 218-01-9 | Chrysene | NDU | 0.067 | 0.020 |
| 53-70-3 | Dibenz(a,h)anthracene | NDU | 0.086 | 0.026 |
| 120-83-2 | 2,4-Dichlorophenol | NDU | 0.050 | 0.015 |
| 105-67-9 | 2,4-Dimethylphenol | NDU | 1.1 | 0.33 |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | NDU | 0.41 | 0.12 |
| 51-28-5 | 2,4-Dinitrophenol | NDU | 4.8 | 1.5 |
| 206-44-0 | Fluoranthene | NDU | 0.052 | 0.016 |
| 86-73-7 | Fluorene | NDU | 0.035 | 0.011 |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | NDU | 0.046 | 0.014 |
| 91-57-6 | 2-Methylnaphthalene | NDU | 0.050 | 0.015 |
| 95-48-7 | 2-Methylphenol | NDU | 0.48 | 0.14 |
| 106-44-5 | 4-Methylphenol | NDU | 0.52 | 0.16 |
| 91-20-3 | Naphthalene | NDU | 0.075 | 0.023 |
| 100-02-7 | 4-Nitrophenol | NDU | 4.2 | 1.3 |
| 88-75-5 | 2-Nitrophenol | NDU | 0.087 | 0.026 |
| 87-86-5 | Pentachlorophenol | NDU | 0.30 | 0.091 |
| 85-01-8 | Phenanthrene | NDU | 0.050 | 0.015 |
| 108-95-2 | Phenol | NDU | 0.091 | 0.028 |
| 129-00-0 | Pyrene | NDU | 0.16 | 0.047 |

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## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0704333** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | 2007-Annual New Wells |
| Client Sample ID: | **W-26A** | Sampled: | 04/16/07 09:50 |
| Lab Sample ID: | **0704333-01** | Sampled By: | Dave Hreha |
| Matrix: | Water | Received: | 04/17/07 09:00 |
| Unit: | ug/L | Prepared: | 04/20/07 By: RRH |
| Dilution Factor: | 1 | Date Analyzed: | 04/23/07 By: JMK |
| QC Batch: | 0704161 | Analytical Batch: | 7042347 |

### Semivolatile Organic Compounds by EPA Method 8270C (Continued)

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 58-90-2 | 2,3,4,6-Tetrachlorophenol | ND U | 0.54 | 0.16 |
| 935-95-5 | 2,3,5,6-Tetrachlorophenol | ND U | 1.5 | 0.44 |
| 88-06-2 | 2,4,6-Trichlorophenol | ND U | 0.088 | 0.027 |
| 95-95-4 | 2,4,5-Trichlorophenol | ND U | 0.36 | 0.11 |

| **Surrogates** | *% Recovery* | *Control Limits* |
|---|---|---|
| *2-Fluorophenol* | 45 | *16-69* |
| *Phenol-d6* | 28 | *11-49* |
| *Nitrobenzene-d5* | 72 | *26-116* |
| *2-Fluorobiphenyl* | 59 | *37-123* |
| *2,4,6-Tribromophenol* | 71 | *32-127* |
| *o-Terphenyl* | 79 | *30-119* |




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## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0704333** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | 2007-Annual New Wells |
| Client Sample ID: | **W-39A** | Sampled: | 04/16/07 13:05 |
| Lab Sample ID: | **0704333-02** | Sampled By: | Dave Hreha |
| Matrix: | Water | Received: | 04/17/07 09:00 |
| Unit: | ug/L | Prepared: | 04/20/07 By: RRH |
| Dilution Factor: | 1 | Date Analyzed: | 04/23/07 By: JMK |
| QC Batch: | 0704161 | Analytical Batch: | 7042347 |

### Semivolatile Organic Compounds by EPA Method 8270C

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 83-32-9 | Acenaphthene | **0.019 J** | 0.042 | 0.013 |
| 208-96-8 | Acenaphthylene | ND U | 0.040 | 0.012 |
| 120-12-7 | Anthracene | ND U | 0.045 | 0.014 |
| 56-55-3 | Benzo(a)anthracene | ND U | 0.12 | 0.037 |
| 50-32-8 | Benzo(a)pyrene | ND U | 0.077 | 0.023 |
| 205-99-2 | Benzo(b)fluoranthene | ND U | 0.13 | 0.040 |
| 207-08-9 | Benzo(k)fluoranthene | ND U | 0.12 | 0.036 |
| 191-24-2 | Benzo(g,h,i)perylene | ND U | 0.072 | 0.022 |
| 59-50-7 | 4-Chloro-3-methylphenol | ND U | 0.071 | 0.021 |
| 95-57-8 | 2-Chlorophenol | ND U | 0.053 | 0.016 |
| 218-01-9 | Chrysene | ND U | 0.067 | 0.020 |
| 53-70-3 | Dibenz(a,h)anthracene | ND U | 0.086 | 0.026 |
| 120-83-2 | 2,4-Dichlorophenol | ND U | 0.050 | 0.015 |
| 105-67-9 | 2,4-Dimethylphenol | ND U | 1.1 | 0.33 |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | ND U | 0.41 | 0.12 |
| 51-28-5 | 2,4-Dinitrophenol | ND U | 4.8 | 1.5 |
| 206-44-0 | Fluoranthene | **0.019 J** | 0.052 | 0.016 |
| 86-73-7 | Fluorene | **0.019 J** | 0.035 | 0.011 |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | ND U | 0.046 | 0.014 |
| 91-57-6 | 2-Methylnaphthalene | ND U | 0.050 | 0.015 |
| 95-48-7 | 2-Methylphenol | ND U | 0.48 | 0.14 |
| 106-44-5 | 4-Methylphenol | ND U | 0.52 | 0.16 |
| 91-20-3 | Naphthalene | **0.029 J** | 0.075 | 0.023 |
| 100-02-7 | 4-Nitrophenol | ND U | 4.2 | 1.3 |
| 88-75-5 | 2-Nitrophenol | ND U | 0.087 | 0.026 |
| 87-86-5 | Pentachlorophenol | ND U | 0.30 | 0.091 |
| 85-01-8 | Phenanthrene | **0.029 J** | 0.050 | 0.015 |
| 108-95-2 | Phenol | ND U | 0.091 | 0.028 |
| 129-00-0 | Pyrene | ND U | 0.16 | 0.047 |
| 58-90-2 | 2,3,4,6-Tetrachlorophenol | ND U | 0.54 | 0.16 |
| 935-95-5 | 2,3,5,6-Tetrachlorophenol | ND U | 1.5 | 0.44 |

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## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0704333** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | 2007-Annual New Wells |
| Client Sample ID: | **W-39A** | Sampled: | 04/16/07 13:05 |
| Lab Sample ID: | **0704333-02** | Sampled By: | Dave Hreha |
| Matrix: | Water | Received: | 04/17/07 09:00 |
| Unit: | ug/L | Prepared: | 04/20/07 By: RRH |
| Dilution Factor: | 1 | Date Analyzed: | 04/23/07 By: JMK |
| QC Batch: | 0704161 | Analytical Batch: | 7042347 |

### Semivolatile Organic Compounds by EPA Method 8270C (Continued)

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 88-06-2 | 2,4,6-Trichlorophenol | ND U | 0.088 | 0.027 |
| 95-95-4 | 2,4,5-Trichlorophenol | ND U | 0.36 | 0.11 |

| **Surrogates** | *% Recovery* | *Control Limits* |
|---|---|---|
| *2-Fluorophenol* | 47 | *16-69* |
| *Phenol-d6* | 27 | *11-49* |
| *Nitrobenzene-d5* | 71 | *26-116* |
| *2-Fluorobiphenyl* | 58 | *37-123* |
| *2,4,6-Tribromophenol* | 71 | *32-127* |
| *o-Terphenyl* | 77 | *30-119* |




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## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0704333** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | 2007-Annual New Wells |
| Client Sample ID: | **W-14A** | Sampled: | 04/16/07 14:25 |
| Lab Sample ID: | **0704333-03** | Sampled By: | Dave Hreha |
| Matrix: | Water | Received: | 04/17/07 09:00 |
| Unit: | ug/L | Prepared: | 04/20/07 By: RRH |
| Dilution Factor: | 1 | Date Analyzed: | 04/23/07 By: JMK |
| QC Batch: | 0704161 | Analytical Batch: | 7042347 |

### Semivolatile Organic Compounds by EPA Method 8270C

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 83-32-9 | Acenaphthene | **0.019 J** | 0.042 | 0.013 |
| 208-96-8 | Acenaphthylene | **0.029 J** | 0.040 | 0.012 |
| 120-12-7 | Anthracene | **0.39** | 0.045 | 0.014 |
| 56-55-3 | Benzo(a)anthracene | **0.049 J** | 0.12 | 0.037 |
| 50-32-8 | Benzo(a)pyrene | ND U | 0.077 | 0.023 |
| 205-99-2 | Benzo(b)fluoranthene | ND U | 0.13 | 0.040 |
| 207-08-9 | Benzo(k)fluoranthene | ND U | 0.12 | 0.036 |
| 191-24-2 | Benzo(g,h,i)perylene | **0.039 J** | 0.072 | 0.022 |
| 59-50-7 | 4-Chloro-3-methylphenol | ND U | 0.071 | 0.021 |
| 95-57-8 | 2-Chlorophenol | ND U | 0.053 | 0.016 |
| 218-01-9 | Chrysene | ND U | 0.067 | 0.020 |
| 53-70-3 | Dibenz(a,h)anthracene | ND U | 0.086 | 0.026 |
| 120-83-2 | 2,4-Dichlorophenol | **0.19** | 0.050 | 0.015 |
| 105-67-9 | 2,4-Dimethylphenol | ND U | 1.1 | 0.33 |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | ND U | 0.41 | 0.12 |
| 51-28-5 | 2,4-Dinitrophenol | ND U | 4.8 | 1.5 |
| 206-44-0 | Fluoranthene | **0.11** | 0.052 | 0.016 |
| 86-73-7 | Fluorene | **0.019 J** | 0.035 | 0.011 |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | **0.029 J** | 0.046 | 0.014 |
| 91-57-6 | 2-Methylnaphthalene | **0.019 J** | 0.050 | 0.015 |
| 95-48-7 | 2-Methylphenol | ND U | 0.48 | 0.14 |
| 106-44-5 | 4-Methylphenol | ND U | 0.52 | 0.16 |
| 91-20-3 | Naphthalene | ND U | 0.075 | 0.023 |
| 100-02-7 | 4-Nitrophenol | ND U | 4.2 | 1.3 |
| 88-75-5 | 2-Nitrophenol | ND U | 0.087 | 0.026 |
| 87-86-5 | Pentachlorophenol | **1.9** | 0.30 | 0.091 |
| 85-01-8 | Phenanthrene | **0.019 J** | 0.050 | 0.015 |
| 108-95-2 | Phenol | ND U | 0.091 | 0.028 |
| 129-00-0 | Pyrene | **0.17** | 0.16 | 0.047 |
| 58-90-2 | 2,3,4,6-Tetrachlorophenol | **0.56** | 0.54 | 0.16 |
| 935-95-5 | 2,3,5,6-Tetrachlorophenol | **0.82 J** | 1.5 | 0.44 |

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## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0704333** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | 2007-Annual New Wells |
| Client Sample ID: | **W-14A** | Sampled: | 04/16/07 14:25 |
| Lab Sample ID: | **0704333-03** | Sampled By: | Dave Hreha |
| Matrix: | Water | Received: | 04/17/07 09:00 |
| Unit: | ug/L | Prepared: | 04/20/07 By: RRH |
| Dilution Factor: | 1 | Date Analyzed: | 04/23/07 By: JMK |
| QC Batch: | 0704161 | Analytical Batch: | 7042347 |

### Semivolatile Organic Compounds by EPA Method 8270C (Continued)

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 88-06-2 | 2,4,6-Trichlorophenol | ND U | 0.088 | 0.027 |
| 95-95-4 | 2,4,5-Trichlorophenol | ND U | 0.36 | 0.11 |

| Surrogates | % Recovery | Control Limits |
|---|---|---|
| *2-Fluorophenol* | 45 | *16-69* |
| *Phenol-d6* | 28 | *11-49* |
| *Nitrobenzene-d5* | 67 | *26-116* |
| *2-Fluorobiphenyl* | 53 | *37-123* |
| *2,4,6-Tribromophenol* | 71 | *32-127* |
| *o-Terphenyl* | 68 | *30-119* |




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## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0704333** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | 2007-Annual New Wells |
| Client Sample ID: | **W-38A** | Sampled: | 04/16/07 15:45 |
| Lab Sample ID: | **0704333-04** | Sampled By: | Dave Hreha |
| Matrix: | Water | Received: | 04/17/07 09:00 |
| Unit: | ug/L | Prepared: | 04/20/07 By: RRH |
| Dilution Factor: | 1 | Date Analyzed: | 04/23/07 By: JMK |
| QC Batch: | 0704161 | Analytical Batch: | 7042347 |

### Semivolatile Organic Compounds by EPA Method 8270C

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 83-32-9 | Acenaphthene | ND U | 0.042 | 0.013 |
| 208-96-8 | Acenaphthylene | **0.019 J** | 0.040 | 0.012 |
| 120-12-7 | Anthracene | **0.097** | 0.045 | 0.014 |
| 56-55-3 | Benzo(a)anthracene | **0.14** | 0.12 | 0.037 |
| 50-32-8 | Benzo(a)pyrene | **0.17** | 0.077 | 0.023 |
| 205-99-2 | Benzo(b)fluoranthene | **0.51** | 0.13 | 0.040 |
| 207-08-9 | Benzo(k)fluoranthene | **0.17** | 0.12 | 0.036 |
| 191-24-2 | Benzo(g,h,i)perylene | **0.16** | 0.072 | 0.022 |
| 59-50-7 | 4-Chloro-3-methylphenol | ND U | 0.071 | 0.021 |
| 95-57-8 | 2-Chlorophenol | ND U | 0.053 | 0.016 |
| 218-01-9 | Chrysene | **0.12** | 0.067 | 0.020 |
| 53-70-3 | Dibenz(a,h)anthracene | **0.039 J** | 0.086 | 0.026 |
| 120-83-2 | 2,4-Dichlorophenol | ND U | 0.050 | 0.015 |
| 105-67-9 | 2,4-Dimethylphenol | ND U | 1.1 | 0.33 |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | ND U | 0.41 | 0.12 |
| 51-28-5 | 2,4-Dinitrophenol | ND U | 4.8 | 1.5 |
| 206-44-0 | Fluoranthene | **0.17** | 0.052 | 0.016 |
| 86-73-7 | Fluorene | ND U | 0.035 | 0.011 |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | **0.17** | 0.046 | 0.014 |
| 91-57-6 | 2-Methylnaphthalene | ND U | 0.050 | 0.015 |
| 95-48-7 | 2-Methylphenol | ND U | 0.48 | 0.14 |
| 106-44-5 | 4-Methylphenol | ND U | 0.52 | 0.16 |
| 91-20-3 | Naphthalene | ND U | 0.075 | 0.023 |
| 100-02-7 | 4-Nitrophenol | ND U | 4.2 | 1.3 |
| 88-75-5 | 2-Nitrophenol | ND U | 0.087 | 0.026 |
| 87-86-5 | Pentachlorophenol | ND U | 0.30 | 0.091 |
| 85-01-8 | Phenanthrene | **0.049 J** | 0.050 | 0.015 |
| 108-95-2 | Phenol | ND U | 0.091 | 0.028 |
| 129-00-0 | Pyrene | **0.23** | 0.16 | 0.047 |
| 58-90-2 | 2,3,4,6-Tetrachlorophenol | ND U | 0.54 | 0.16 |
| 935-95-5 | 2,3,5,6-Tetrachlorophenol | ND U | 1.5 | 0.44 |

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## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0704333** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | 2007-Annual New Wells |
| Client Sample ID: | **W-38A** | Sampled: | 04/16/07 15:45 |
| Lab Sample ID: | **0704333-04** | Sampled By: | Dave Hreha |
| Matrix: | Water | Received: | 04/17/07 09:00 |
| Unit: | ug/L | Prepared: | 04/20/07 By: RRH |
| Dilution Factor: | 1 | Date Analyzed: | 04/23/07 By: JMK |
| QC Batch: | 0704161 | Analytical Batch: | 7042347 |

### Semivolatile Organic Compounds by EPA Method 8270C (Continued)

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 88-06-2 | 2,4,6-Trichlorophenol | ND U | 0.088 | 0.027 |
| 95-95-4 | 2,4,5-Trichlorophenol | ND U | 0.36 | 0.11 |

| **Surrogates** | *% Recovery* | *Control Limits* |
|---|---|---|
| *2-Fluorophenol* | 37 | *16-69* |
| *Phenol-d6* | 24 | *11-49* |
| *Nitrobenzene-d5* | 60 | *26-116* |
| *2-Fluorobiphenyl* | 51 | *37-123* |
| *2,4,6-Tribromophenol* | 56 | *32-127* |
| *o-Terphenyl* | 57 | *30-119* |




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## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0704333** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | 2007-Annual New Wells |
| Client Sample ID: | **FB001-041607** | Sampled: | 04/16/07 14:45 |
| Lab Sample ID: | **0704333-05** | Sampled By: | Dave Hreha |
| Matrix: | Water | Received: | 04/17/07 09:00 |
| Unit: | ug/L | Prepared: | 04/20/07 By: LEW |
| Dilution Factor: | 1 | Date Analyzed: | 04/20/07 By: LEW |
| QC Batch: | 0704254 | Analytical Batch: | 7042338 |

### Halogenated and Aromatic Volatiles by EPA Method 8021B

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 71-43-2 | Benzene | ND U | 0.73 | 0.22 |

| Surrogates | % Recovery | Control Limits |
|---|---|---|
| *aaa-Trifluorotoluene* | 102 | *90-113* |




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## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0704333** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | 2007-Annual New Wells |
| Client Sample ID: | **FB001-041607** | Sampled: | 04/16/07 14:45 |
| Lab Sample ID: | **0704333-05** | Sampled By: | Dave Hreha |
| Matrix: | Water | Received: | 04/17/07 09:00 |
| Unit: | ug/L | Prepared: | 04/20/07 By: RRH |
| Dilution Factor: | 1 | Date Analyzed: | 04/23/07 By: JMK |
| QC Batch: | 0704161 | Analytical Batch: | 7042347 |

### Semivolatile Organic Compounds by EPA Method 8270C

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 83-32-9 | Acenaphthene | NDU | 0.042 | 0.013 |
| 208-96-8 | Acenaphthylene | NDU | 0.040 | 0.012 |
| 120-12-7 | Anthracene | NDU | 0.045 | 0.014 |
| 56-55-3 | Benzo(a)anthracene | NDU | 0.12 | 0.037 |
| 50-32-8 | Benzo(a)pyrene | NDU | 0.077 | 0.023 |
| 205-99-2 | Benzo(b)fluoranthene | NDU | 0.13 | 0.040 |
| 207-08-9 | Benzo(k)fluoranthene | NDU | 0.12 | 0.036 |
| 191-24-2 | Benzo(g,h,i)perylene | NDU | 0.072 | 0.022 |
| 59-50-7 | 4-Chloro-3-methylphenol | NDU | 0.071 | 0.021 |
| 95-57-8 | 2-Chlorophenol | NDU | 0.053 | 0.016 |
| 218-01-9 | Chrysene | NDU | 0.067 | 0.020 |
| 53-70-3 | Dibenz(a,h)anthracene | NDU | 0.086 | 0.026 |
| 120-83-2 | 2,4-Dichlorophenol | NDU | 0.050 | 0.015 |
| 105-67-9 | 2,4-Dimethylphenol | NDU | 1.1 | 0.33 |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | NDU | 0.41 | 0.12 |
| 51-28-5 | 2,4-Dinitrophenol | NDU | 4.8 | 1.5 |
| 206-44-0 | Fluoranthene | NDU | 0.052 | 0.016 |
| 86-73-7 | Fluorene | NDU | 0.035 | 0.011 |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | NDU | 0.046 | 0.014 |
| 91-57-6 | 2-Methylnaphthalene | NDU | 0.050 | 0.015 |
| 95-48-7 | 2-Methylphenol | NDU | 0.48 | 0.14 |
| 106-44-5 | 4-Methylphenol | NDU | 0.52 | 0.16 |
| 91-20-3 | Naphthalene | NDU | 0.075 | 0.023 |
| 100-02-7 | 4-Nitrophenol | NDU | 4.2 | 1.3 |
| 88-75-5 | 2-Nitrophenol | NDU | 0.087 | 0.026 |
| 87-86-5 | Pentachlorophenol | NDU | 0.30 | 0.091 |
| 85-01-8 | Phenanthrene | NDU | 0.050 | 0.015 |
| 108-95-2 | Phenol | NDU | 0.091 | 0.028 |
| 129-00-0 | Pyrene | NDU | 0.16 | 0.047 |

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## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0704333** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | 2007-Annual New Wells |
| Client Sample ID: | **FB001-041607** | Sampled: | 04/16/07 14:45 |
| Lab Sample ID: | **0704333-05** | Sampled By: | Dave Hreha |
| Matrix: | Water | Received: | 04/17/07 09:00 |
| Unit: | ug/L | Prepared: | 04/20/07 By: RRH |
| Dilution Factor: | 1 | Date Analyzed: | 04/23/07 By: JMK |
| QC Batch: | 0704161 | Analytical Batch: | 7042347 |

### Semivolatile Organic Compounds by EPA Method 8270C (Continued)

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 58-90-2 | 2,3,4,6-Tetrachlorophenol | ND U | 0.54 | 0.16 |
| 935-95-5 | 2,3,5,6-Tetrachlorophenol | ND U | 1.5 | 0.44 |
| 88-06-2 | 2,4,6-Trichlorophenol | ND U | 0.088 | 0.027 |
| 95-95-4 | 2,4,5-Trichlorophenol | ND U | 0.36 | 0.11 |

| **Surrogates** | *% Recovery* | *Control Limits* |
|---|---|---|
| *2-Fluorophenol* | 45 | *16-69* |
| *Phenol-d6* | 27 | *11-49* |
| *Nitrobenzene-d5* | 73 | *26-116* |
| *2-Fluorobiphenyl* | 56 | *37-123* |
| *2,4,6-Tribromophenol* | 68 | *32-127* |
| *o-Terphenyl* | 74 | *30-119* |




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## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0704333** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | 2007-Annual New Wells |
| Client Sample ID: | **Trip Blank TM1383** | Sampled: | 04/16/07 00:00 |
| Lab Sample ID: | **0704333-06** | Sampled By: | |
| Matrix: | Water | Received: | 04/17/07 09:00 |
| Unit: | ug/L | Prepared: | 04/20/07 By: LEW |
| Dilution Factor: | 1 | Date Analyzed: | 04/20/07 By: LEW |
| QC Batch: | 0704254 | Analytical Batch: | 7042338 |

### Halogenated and Aromatic Volatiles by EPA Method 8021B

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 71-43-2 | Benzene | ND U | 0.73 | 0.22 |

| Surrogates | % Recovery | Control Limits |
|---|---|---|
| *aaa-Trifluorotoluene* | 102 | *90-113* |




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## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0704334** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | 2007-Annual New Wells |
| Client Sample ID: | **W-36A** | Sampled: | 04/17/07 09:55 |
| Lab Sample ID: | **0704334-01** | Sampled By: | Dave Hreha |
| Matrix: | Water | Received: | 04/18/07 08:55 |
| Unit: | ug/L | Prepared: | 04/24/07 By: ASC |
| Dilution Factor: | 10 | Date Analyzed: | 04/24/07 By: JMK |
| QC Batch: | 0704263 | Analytical Batch: | 7042557 |

### Semivolatile Organic Compounds by EPA Method 8270C

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 83-32-9 | Acenaphthene | **1.5** | 0.42 | 0.13 |
| 208-96-8 | Acenaphthylene | ND U | 0.40 | 0.12 |
| 120-12-7 | Anthracene | **0.20 J** | 0.45 | 0.14 |
| 56-55-3 | Benzo(a)anthracene | ND U | 1.2 | 0.37 |
| 50-32-8 | Benzo(a)pyrene | ND U | 0.77 | 0.23 |
| 205-99-2 | Benzo(b)fluoranthene | ND U | 1.3 | 0.40 |
| 207-08-9 | Benzo(k)fluoranthene | ND U | 1.2 | 0.36 |
| 191-24-2 | Benzo(g,h,i)perylene | ND U | 0.72 | 0.22 |
| 59-50-7 | 4-Chloro-3-methylphenol | ND U | 0.71 | 0.21 |
| 95-57-8 | 2-Chlorophenol | ND U | 0.53 | 0.16 |
| 218-01-9 | Chrysene | ND U | 0.67 | 0.20 |
| 53-70-3 | Dibenz(a,h)anthracene | ND U | 0.86 | 0.26 |
| 120-83-2 | 2,4-Dichlorophenol | ND U | 0.50 | 0.15 |
| 105-67-9 | 2,4-Dimethylphenol | ND U | 11 | 3.3 |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | ND U | 4.1 | 1.2 |
| 51-28-5 | 2,4-Dinitrophenol | ND U | 48 | 15 |
| 206-44-0 | Fluoranthene | **0.20 J** | 0.52 | 0.16 |
| 86-73-7 | Fluorene | ND U | 0.35 | 0.11 |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | ND U | 0.46 | 0.14 |
| 91-57-6 | 2-Methylnaphthalene | ND U | 0.50 | 0.15 |
| 95-48-7 | 2-Methylphenol | ND U | 4.8 | 1.4 |
| 106-44-5 | 4-Methylphenol | ND U | 5.2 | 1.6 |
| 91-20-3 | Naphthalene | ND U | 0.75 | 0.23 |
| 100-02-7 | 4-Nitrophenol | ND U | 42 | 13 |
| 88-75-5 | 2-Nitrophenol | ND U | 0.87 | 0.26 |
| 87-86-5 | Pentachlorophenol | **190** | 3.0 | 0.91 |
| 85-01-8 | Phenanthrene | ND U | 0.50 | 0.15 |
| 108-95-2 | Phenol | ND U | 0.91 | 0.28 |
| 129-00-0 | Pyrene | ND U | 1.6 | 0.47 |
| 58-90-2 | 2,3,4,6-Tetrachlorophenol | **22** | 5.4 | 1.6 |
| 935-95-5 | 2,3,5,6-Tetrachlorophenol | **4.7 J** | 15 | 4.4 |

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## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0704334** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | 2007-Annual New Wells |
| Client Sample ID: | **W-36A** | Sampled: | 04/17/07 09:55 |
| Lab Sample ID: | **0704334-01** | Sampled By: | Dave Hreha |
| Matrix: | Water | Received: | 04/18/07 08:55 |
| Unit: | ug/L | Prepared: | 04/24/07 By: ASC |
| Dilution Factor: | 10 | Date Analyzed: | 04/24/07 By: JMK |
| QC Batch: | 0704263 | Analytical Batch: | 7042557 |

### Semivolatile Organic Compounds by EPA Method 8270C (Continued)

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 88-06-2 | 2,4,6-Trichlorophenol | **1.1** | 0.88 | 0.27 |
| 95-95-4 | 2,4,5-Trichlorophenol | ND U | 3.6 | 1.1 |

| **Surrogates** | *% Recovery* | *Control Limits* |
|---|---|---|
| *2-Fluorophenol* | 27 | *16-69* |
| *Phenol-d6* | 22 | *11-49* |
| *Nitrobenzene-d5* | 44 | *26-116* |
| *2-Fluorobiphenyl* | 41 | *37-123* |
| *2,4,6-Tribromophenol* | 37 | *32-127* |
| *o-Terphenyl* | 52 | *30-119* |




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## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0704334** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | 2007-Annual New Wells |
| Client Sample ID: | **W-37A** | Sampled: | 04/17/07 11:00 |
| Lab Sample ID: | **0704334-02** | Sampled By: | Dave Hreha |
| Matrix: | Water | Received: | 04/18/07 08:55 |
| Unit: | ug/L | Prepared: | 04/24/07 By: ASC |
| Dilution Factor: | 1 | Date Analyzed: | 04/24/07 By: JMK |
| QC Batch: | 0704263 | Analytical Batch: | 7042540 |

### Semivolatile Organic Compounds by EPA Method 8270C

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 83-32-9 | Acenaphthene | ND U | 0.042 | 0.013 |
| 208-96-8 | Acenaphthylene | ND U | 0.040 | 0.012 |
| 120-12-7 | Anthracene | **0.020 J** | 0.045 | 0.014 |
| 56-55-3 | Benzo(a)anthracene | ND U | 0.12 | 0.037 |
| 50-32-8 | Benzo(a)pyrene | ND U | 0.077 | 0.023 |
| 205-99-2 | Benzo(b)fluoranthene | ND U | 0.13 | 0.040 |
| 207-08-9 | Benzo(k)fluoranthene | ND U | 0.12 | 0.036 |
| 191-24-2 | Benzo(g,h,i)perylene | ND U | 0.072 | 0.022 |
| 59-50-7 | 4-Chloro-3-methylphenol | ND U | 0.071 | 0.021 |
| 95-57-8 | 2-Chlorophenol | ND U | 0.053 | 0.016 |
| 218-01-9 | Chrysene | ND U | 0.067 | 0.020 |
| 53-70-3 | Dibenz(a,h)anthracene | ND U | 0.086 | 0.026 |
| 120-83-2 | 2,4-Dichlorophenol | ND U | 0.050 | 0.015 |
| 105-67-9 | 2,4-Dimethylphenol | ND U | 1.1 | 0.33 |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | ND U | 0.41 | 0.12 |
| 51-28-5 | 2,4-Dinitrophenol | ND U | 4.8 | 1.5 |
| 206-44-0 | Fluoranthene | ND U | 0.052 | 0.016 |
| 86-73-7 | Fluorene | ND U | 0.035 | 0.011 |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | ND U | 0.046 | 0.014 |
| 91-57-6 | 2-Methylnaphthalene | ND U | 0.050 | 0.015 |
| 95-48-7 | 2-Methylphenol | ND U | 0.48 | 0.14 |
| 106-44-5 | 4-Methylphenol | ND U | 0.52 | 0.16 |
| 91-20-3 | Naphthalene | ND U | 0.075 | 0.023 |
| 100-02-7 | 4-Nitrophenol | ND U | 4.2 | 1.3 |
| 88-75-5 | 2-Nitrophenol | ND U | 0.087 | 0.026 |
| 87-86-5 | Pentachlorophenol | **0.93** | 0.30 | 0.091 |
| 85-01-8 | Phenanthrene | ND U | 0.050 | 0.015 |
| 108-95-2 | Phenol | ND U | 0.091 | 0.028 |
| 129-00-0 | Pyrene | ND U | 0.16 | 0.047 |
| 58-90-2 | 2,3,4,6-Tetrachlorophenol | ND U | 0.54 | 0.16 |
| 935-95-5 | 2,3,5,6-Tetrachlorophenol | ND U | 1.5 | 0.44 |

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## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0704334** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | 2007-Annual New Wells |
| Client Sample ID: | **W-37A** | Sampled: | 04/17/07 11:00 |
| Lab Sample ID: | **0704334-02** | Sampled By: | Dave Hreha |
| Matrix: | Water | Received: | 04/18/07 08:55 |
| Unit: | ug/L | Prepared: | 04/24/07 By: ASC |
| Dilution Factor: | 1 | Date Analyzed: | 04/24/07 By: JMK |
| QC Batch: | 0704263 | Analytical Batch: | 7042540 |

### Semivolatile Organic Compounds by EPA Method 8270C (Continued)

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 88-06-2 | 2,4,6-Trichlorophenol | ND U | 0.088 | 0.027 |
| 95-95-4 | 2,4,5-Trichlorophenol | ND U | 0.36 | 0.11 |

| **Surrogates** | *% Recovery* | *Control Limits* |
|---|---|---|
| *2-Fluorophenol* | 43 | *16-69* |
| *Phenol-d6* | 27 | *11-49* |
| *Nitrobenzene-d5* | 69 | *26-116* |
| *2-Fluorobiphenyl* | 58 | *37-123* |
| *2,4,6-Tribromophenol* | 69 | *32-127* |
| *o-Terphenyl* | 76 | *30-119* |




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## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0704334** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | 2007-Annual New Wells |
| Client Sample ID: | **W-16A** | Sampled: | 04/17/07 11:25 |
| Lab Sample ID: | **0704334-03** | Sampled By: | Dave Hreha |
| Matrix: | Water | Received: | 04/18/07 08:55 |
| Unit: | ug/L | Prepared: | 04/25/07 By: LEW |
| Dilution Factor: | 2 | Date Analyzed: | 04/26/07 By: LEW |
| QC Batch: | 0704255 | Analytical Batch: | 7042640 |

### Halogenated and Aromatic Volatiles by EPA Method 8021B

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 71-43-2 | Benzene | **82** | 1.5 | 0.44 |

| Surrogates | % Recovery | Control Limits |
|---|---|---|
| *aaa-Trifluorotoluene* | 103 | *90-113* |




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## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0704334** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | 2007-Annual New Wells |
| Client Sample ID: | **W-40A** | Sampled: | 04/17/07 12:10 |
| Lab Sample ID: | **0704334-04** | Sampled By: | Dave Hreha |
| Matrix: | Water | Received: | 04/18/07 08:55 |
| Unit: | ug/L | Prepared: | 04/24/07 By: ASC |
| Dilution Factor: | 1 | Date Analyzed: | 04/24/07 By: JMK |
| QC Batch: | 0704263 | Analytical Batch: | 7042540 |

### Semivolatile Organic Compounds by EPA Method 8270C

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 83-32-9 | Acenaphthene | NDU | 0.042 | 0.013 |
| 208-96-8 | Acenaphthylene | NDU | 0.040 | 0.012 |
| 120-12-7 | Anthracene | NDU | 0.045 | 0.014 |
| 56-55-3 | Benzo(a)anthracene | NDU | 0.12 | 0.037 |
| 50-32-8 | Benzo(a)pyrene | NDU | 0.077 | 0.023 |
| 205-99-2 | Benzo(b)fluoranthene | NDU | 0.13 | 0.040 |
| 207-08-9 | Benzo(k)fluoranthene | NDU | 0.12 | 0.036 |
| 191-24-2 | Benzo(g,h,i)perylene | NDU | 0.072 | 0.022 |
| 59-50-7 | 4-Chloro-3-methylphenol | NDU | 0.071 | 0.021 |
| 95-57-8 | 2-Chlorophenol | NDU | 0.053 | 0.016 |
| 218-01-9 | Chrysene | NDU | 0.067 | 0.020 |
| 53-70-3 | Dibenz(a,h)anthracene | NDU | 0.086 | 0.026 |
| 120-83-2 | 2,4-Dichlorophenol | NDU | 0.050 | 0.015 |
| 105-67-9 | 2,4-Dimethylphenol | NDU | 1.1 | 0.33 |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | NDU | 0.41 | 0.12 |
| 51-28-5 | 2,4-Dinitrophenol | NDU | 4.8 | 1.5 |
| 206-44-0 | Fluoranthene | NDU | 0.052 | 0.016 |
| 86-73-7 | Fluorene | NDU | 0.035 | 0.011 |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | NDU | 0.046 | 0.014 |
| 91-57-6 | 2-Methylnaphthalene | NDU | 0.050 | 0.015 |
| 95-48-7 | 2-Methylphenol | NDU | 0.48 | 0.14 |
| 106-44-5 | 4-Methylphenol | NDU | 0.52 | 0.16 |
| 91-20-3 | Naphthalene | NDU | 0.075 | 0.023 |
| 100-02-7 | 4-Nitrophenol | NDU | 4.2 | 1.3 |
| 88-75-5 | 2-Nitrophenol | NDU | 0.087 | 0.026 |
| 87-86-5 | Pentachlorophenol | NDU | 0.30 | 0.091 |
| 85-01-8 | Phenanthrene | NDU | 0.050 | 0.015 |
| 108-95-2 | Phenol | NDU | 0.091 | 0.028 |
| 129-00-0 | Pyrene | NDU | 0.16 | 0.047 |
| 58-90-2 | 2,3,4,6-Tetrachlorophenol | NDU | 0.54 | 0.16 |
| 935-95-5 | 2,3,5,6-Tetrachlorophenol | NDU | 1.5 | 0.44 |

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## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0704334** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | 2007-Annual New Wells |
| Client Sample ID: | **W-40A** | Sampled: | 04/17/07 12:10 |
| Lab Sample ID: | **0704334-04** | Sampled By: | Dave Hreha |
| Matrix: | Water | Received: | 04/18/07 08:55 |
| Unit: | ug/L | Prepared: | 04/24/07 By: ASC |
| Dilution Factor: | 1 | Date Analyzed: | 04/24/07 By: JMK |
| QC Batch: | 0704263 | Analytical Batch: | 7042540 |

### Semivolatile Organic Compounds by EPA Method 8270C (Continued)

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 88-06-2 | 2,4,6-Trichlorophenol | ND U | 0.088 | 0.027 |
| 95-95-4 | 2,4,5-Trichlorophenol | ND U | 0.36 | 0.11 |

| **Surrogates** | *% Recovery* | *Control Limits* |
|---|---|---|
| *2-Fluorophenol* | 43 | *16-69* |
| *Phenol-d6* | 25 | *11-49* |
| *Nitrobenzene-d5* | 67 | *26-116* |
| *2-Fluorobiphenyl* | 55 | *37-123* |
| *2,4,6-Tribromophenol* | 66 | *32-127* |
| *o-Terphenyl* | 74 | *30-119* |




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## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0704334** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | 2007-Annual New Wells |
| Client Sample ID: | **W-35A** | Sampled: | 04/17/07 12:35 |
| Lab Sample ID: | **0704334-05** | Sampled By: | Dave Hreha |
| Matrix: | Water | Received: | 04/18/07 08:55 |
| Unit: | ug/L | Prepared: | 04/25/07 By: LEW |
| Dilution Factor: | 1 | Date Analyzed: | 04/26/07 By: LEW |
| QC Batch: | 0704255 | Analytical Batch: | 7042640 |

### Halogenated and Aromatic Volatiles by EPA Method 8021B

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 71-43-2 | Benzene | ND U | 0.73 | 0.22 |

| Surrogates | % Recovery | Control Limits |
|---|---|---|
| *aaa-Trifluorotoluene* | 109 | *90-113* |




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## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0704334** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | 2007-Annual New Wells |
| Client Sample ID: | **W-35A** | Sampled: | 04/17/07 12:35 |
| Lab Sample ID: | **0704334-05** | Sampled By: | Dave Hreha |
| Matrix: | Water | Received: | 04/18/07 08:55 |
| Unit: | ug/L | Prepared: | 04/24/07 By: ASC |
| Dilution Factor: | 1 | Date Analyzed: | 04/24/07 By: JMK |
| QC Batch: | 0704263 | Analytical Batch: | 7042540 |

### Semivolatile Organic Compounds by EPA Method 8270C

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 83-32-9 | Acenaphthene | NDU | 0.042 | 0.013 |
| 208-96-8 | Acenaphthylene | NDU | 0.040 | 0.012 |
| 120-12-7 | Anthracene | **0.019J** | 0.045 | 0.014 |
| 56-55-3 | Benzo(a)anthracene | NDU | 0.12 | 0.037 |
| 50-32-8 | Benzo(a)pyrene | NDU | 0.077 | 0.023 |
| 205-99-2 | Benzo(b)fluoranthene | NDU | 0.13 | 0.040 |
| 207-08-9 | Benzo(k)fluoranthene | NDU | 0.12 | 0.036 |
| 191-24-2 | Benzo(g,h,i)perylene | NDU | 0.072 | 0.022 |
| 59-50-7 | 4-Chloro-3-methylphenol | NDU | 0.071 | 0.021 |
| 95-57-8 | 2-Chlorophenol | NDU | 0.053 | 0.016 |
| 218-01-9 | Chrysene | NDU | 0.067 | 0.020 |
| 53-70-3 | Dibenz(a,h)anthracene | NDU | 0.086 | 0.026 |
| 120-83-2 | 2,4-Dichlorophenol | NDU | 0.050 | 0.015 |
| 105-67-9 | 2,4-Dimethylphenol | NDU | 1.1 | 0.33 |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | NDU | 0.41 | 0.12 |
| 51-28-5 | 2,4-Dinitrophenol | NDU | 4.8 | 1.5 |
| 206-44-0 | Fluoranthene | **0.039J** | 0.052 | 0.016 |
| 86-73-7 | Fluorene | NDU | 0.035 | 0.011 |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | NDU | 0.046 | 0.014 |
| 91-57-6 | 2-Methylnaphthalene | NDU | 0.050 | 0.015 |
| 95-48-7 | 2-Methylphenol | NDU | 0.48 | 0.14 |
| 106-44-5 | 4-Methylphenol | NDU | 0.52 | 0.16 |
| 91-20-3 | Naphthalene | NDU | 0.075 | 0.023 |
| 100-02-7 | 4-Nitrophenol | NDU | 4.2 | 1.3 |
| 88-75-5 | 2-Nitrophenol | NDU | 0.087 | 0.026 |
| 87-86-5 | Pentachlorophenol | NDU | 0.30 | 0.091 |
| 85-01-8 | Phenanthrene | **0.019J** | 0.050 | 0.015 |
| 108-95-2 | Phenol | NDU | 0.091 | 0.028 |
| 129-00-0 | Pyrene | NDU | 0.16 | 0.047 |

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## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0704334** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | 2007-Annual New Wells |
| Client Sample ID: | **W-35A** | Sampled: | 04/17/07 12:35 |
| Lab Sample ID: | **0704334-05** | Sampled By: | Dave Hreha |
| Matrix: | Water | Received: | 04/18/07 08:55 |
| Unit: | ug/L | Prepared: | 04/24/07 By: ASC |
| Dilution Factor: | 1 | Date Analyzed: | 04/24/07 By: JMK |
| QC Batch: | 0704263 | Analytical Batch: | 7042540 |

### Semivolatile Organic Compounds by EPA Method 8270C (Continued)

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 58-90-2 | 2,3,4,6-Tetrachlorophenol | ND U | 0.54 | 0.16 |
| 935-95-5 | 2,3,5,6-Tetrachlorophenol | ND U | 1.5 | 0.44 |
| 88-06-2 | 2,4,6-Trichlorophenol | ND U | 0.088 | 0.027 |
| 95-95-4 | 2,4,5-Trichlorophenol | ND U | 0.36 | 0.11 |

| **Surrogates** | ***% Recovery*** | ***Control Limits*** |
|---|---|---|
| *2-Fluorophenol* | 42 | *16-69* |
| *Phenol-d6* | 25 | *11-49* |
| *Nitrobenzene-d5* | 68 | *26-116* |
| *2-Fluorobiphenyl* | 54 | *37-123* |
| *2,4,6-Tribromophenol* | 68 | *32-127* |
| *o-Terphenyl* | 74 | *30-119* |




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## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0704334** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | 2007-Annual New Wells |
| Client Sample ID: | **W-17A** | Sampled: | 04/17/07 14:00 |
| Lab Sample ID: | **0704334-06** | Sampled By: | Dave Hreha |
| Matrix: | Water | Received: | 04/18/07 08:55 |
| Unit: | ug/L | Prepared: | 04/24/07 By: ASC |
| Dilution Factor: | 5 | Date Analyzed: | 04/25/07 By: JMK |
| QC Batch: | 0704263 | Analytical Batch: | 7042645 |

### Semivolatile Organic Compounds by EPA Method 8270C

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 83-32-9 | Acenaphthene | **130** | 0.21 | 0.064 |
| 208-96-8 | Acenaphthylene | **2.3** | 0.20 | 0.060 |
| 120-12-7 | Anthracene | **7.2** | 0.22 | 0.068 |
| 56-55-3 | Benzo(a)anthracene | **2.0** | 0.62 | 0.19 |
| 50-32-8 | Benzo(a)pyrene | **0.72** | 0.39 | 0.12 |
| 205-99-2 | Benzo(b)fluoranthene | **0.98** | 0.65 | 0.20 |
| 207-08-9 | Benzo(k)fluoranthene | **0.52 J** | 0.60 | 0.18 |
| 191-24-2 | Benzo(g,h,i)perylene | **0.15 J** | 0.36 | 0.11 |
| 59-50-7 | 4-Chloro-3-methylphenol | ND U | 0.35 | 0.11 |
| 95-57-8 | 2-Chlorophenol | ND U | 0.27 | 0.080 |
| 218-01-9 | Chrysene | **2.0** | 0.34 | 0.10 |
| 53-70-3 | Dibenz(a,h)anthracene | ND U | 0.43 | 0.13 |
| 120-83-2 | 2,4-Dichlorophenol | ND U | 0.25 | 0.075 |
| 105-67-9 | 2,4-Dimethylphenol | **8.9** | 5.4 | 1.6 |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | ND U | 2.0 | 0.62 |
| 51-28-5 | 2,4-Dinitrophenol | ND U | 24 | 7.3 |
| 206-44-0 | Fluoranthene | **21** | 0.26 | 0.080 |
| 86-73-7 | Fluorene | **40** | 0.18 | 0.054 |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | **0.15 J** | 0.23 | 0.069 |
| 91-57-6 | 2-Methylnaphthalene | **0.88** | 0.25 | 0.076 |
| 95-48-7 | 2-Methylphenol | **14** | 2.4 | 0.72 |
| 106-44-5 | 4-Methylphenol | **5.7** | 2.6 | 0.78 |
| 91-20-3 | Naphthalene | **7.3** | 0.37 | 0.11 |
| 100-02-7 | 4-Nitrophenol | ND U | 21 | 6.4 |
| 88-75-5 | 2-Nitrophenol | ND U | 0.43 | 0.13 |
| 87-86-5 | Pentachlorophenol | ND U | 1.5 | 0.46 |
| 85-01-8 | Phenanthrene | **15** | 0.25 | 0.076 |
| 108-95-2 | Phenol | **2.0** | 0.46 | 0.14 |
| 129-00-0 | Pyrene | **15** | 0.78 | 0.24 |
| 58-90-2 | 2,3,4,6-Tetrachlorophenol | ND U | 2.7 | 0.82 |
| 935-95-5 | 2,3,5,6-Tetrachlorophenol | ND U | 7.3 | 2.2 |

Continued on next page




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## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0704334** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | 2007-Annual New Wells |
| Client Sample ID: | **W-17A** | Sampled: | 04/17/07 14:00 |
| Lab Sample ID: | **0704334-06** | Sampled By: | Dave Hreha |
| Matrix: | Water | Received: | 04/18/07 08:55 |
| Unit: | ug/L | Prepared: | 04/24/07 By: ASC |
| Dilution Factor: | 5 | Date Analyzed: | 04/25/07 By: JMK |
| QC Batch: | 0704263 | Analytical Batch: | 7042645 |

### Semivolatile Organic Compounds by EPA Method 8270C (Continued)

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 88-06-2 | 2,4,6-Trichlorophenol | ND U | 0.44 | 0.13 |
| 95-95-4 | 2,4,5-Trichlorophenol | ND U | 1.8 | 0.54 |

| Surrogates | % Recovery | Control Limits |
|---|---|---|
| *2-Fluorophenol* | 42 | *16-69* |
| *Phenol-d6* | 25 | *11-49* |
| *Nitrobenzene-d5* | 54 | *26-116* |
| *2-Fluorobiphenyl* | 51 | *37-123* |
| *2,4,6-Tribromophenol* | 69 | *32-127* |
| *o-Terphenyl* | 65 | *30-119* |




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## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0704334** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | 2007-Annual New Wells |
| Client Sample ID: | **Duplicate 002** | Sampled: | 04/17/07 00:00 |
| Lab Sample ID: | **0704334-07** | Sampled By: | Dave Hreha |
| Matrix: | Water | Received: | 04/18/07 08:55 |
| Unit: | ug/L | Prepared: | 04/24/07 By: ASC |
| Dilution Factor: | 10 | Date Analyzed: | 04/25/07 By: JMK |
| QC Batch: | 0704263 | Analytical Batch: | 7042645 |

### Semivolatile Organic Compounds by EPA Method 8270C

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 83-32-9 | Acenaphthene | **1.2** | 0.42 | 0.13 |
| 208-96-8 | Acenaphthylene | ND U | 0.40 | 0.12 |
| 120-12-7 | Anthracene | **0.29 J** | 0.45 | 0.14 |
| 56-55-3 | Benzo(a)anthracene | ND U | 1.2 | 0.37 |
| 50-32-8 | Benzo(a)pyrene | ND U | 0.77 | 0.23 |
| 205-99-2 | Benzo(b)fluoranthene | ND U | 1.3 | 0.40 |
| 207-08-9 | Benzo(k)fluoranthene | ND U | 1.2 | 0.36 |
| 191-24-2 | Benzo(g,h,i)perylene | ND U | 0.72 | 0.22 |
| 59-50-7 | 4-Chloro-3-methylphenol | ND U | 0.71 | 0.21 |
| 95-57-8 | 2-Chlorophenol | ND U | 0.53 | 0.16 |
| 218-01-9 | Chrysene | ND U | 0.67 | 0.20 |
| 53-70-3 | Dibenz(a,h)anthracene | ND U | 0.86 | 0.26 |
| 120-83-2 | 2,4-Dichlorophenol | ND U | 0.50 | 0.15 |
| 105-67-9 | 2,4-Dimethylphenol | ND U | 11 | 3.3 |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | ND U | 4.1 | 1.2 |
| 51-28-5 | 2,4-Dinitrophenol | ND U | 48 | 15 |
| 206-44-0 | Fluoranthene | **0.29 J** | 0.52 | 0.16 |
| 86-73-7 | Fluorene | ND U | 0.35 | 0.11 |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | ND U | 0.46 | 0.14 |
| 91-57-6 | 2-Methylnaphthalene | ND U | 0.50 | 0.15 |
| 95-48-7 | 2-Methylphenol | ND U | 4.8 | 1.4 |
| 106-44-5 | 4-Methylphenol | ND U | 5.2 | 1.6 |
| 91-20-3 | Naphthalene | ND U | 0.75 | 0.23 |
| 100-02-7 | 4-Nitrophenol | ND U | 42 | 13 |
| 88-75-5 | 2-Nitrophenol | ND U | 0.87 | 0.26 |
| 87-86-5 | Pentachlorophenol | **240** | 3.0 | 0.91 |
| 85-01-8 | Phenanthrene | ND U | 0.50 | 0.15 |
| 108-95-2 | Phenol | ND U | 0.91 | 0.28 |
| 129-00-0 | Pyrene | ND U | 1.6 | 0.47 |
| 58-90-2 | 2,3,4,6-Tetrachlorophenol | **34** | 5.4 | 1.6 |
| 935-95-5 | 2,3,5,6-Tetrachlorophenol | **5.1 J** | 15 | 4.4 |

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## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0704334** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | 2007-Annual New Wells |
| Client Sample ID: | **Duplicate 002** | Sampled: | 04/17/07 00:00 |
| Lab Sample ID: | **0704334-07** | Sampled By: | Dave Hreha |
| Matrix: | Water | Received: | 04/18/07 08:55 |
| Unit: | ug/L | Prepared: | 04/24/07 By: ASC |
| Dilution Factor: | 10 | Date Analyzed: | 04/25/07 By: JMK |
| QC Batch: | 0704263 | Analytical Batch: | 7042645 |

### Semivolatile Organic Compounds by EPA Method 8270C (Continued)

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 88-06-2 | 2,4,6-Trichlorophenol | **1.5** | 0.88 | 0.27 |
| 95-95-4 | 2,4,5-Trichlorophenol | **2.2J** | 3.6 | 1.1 |

| **Surrogates** | *% Recovery* | *Control Limits* |
|---|---|---|
| *2-Fluorophenol* | 40 | *16-69* |
| *Phenol-d6* | 20 | *11-49* |
| *Nitrobenzene-d5* | 65 | *26-116* |
| *2-Fluorobiphenyl* | 55 | *37-123* |
| *2,4,6-Tribromophenol* | 60 | *32-127* |
| *o-Terphenyl* | 66 | *30-119* |




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## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0704334** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | 2007-Annual New Wells |
| Client Sample ID: | **FB002-041707** | Sampled: | 04/17/07 14:30 |
| Lab Sample ID: | **0704334-08** | Sampled By: | Dave Hreha |
| Matrix: | Water | Received: | 04/18/07 08:55 |
| Unit: | ug/L | Prepared: | 04/25/07 By: LEW |
| Dilution Factor: | 1 | Date Analyzed: | 04/25/07 By: LEW |
| QC Batch: | 0704255 | Analytical Batch: | 7042640 |

### Halogenated and Aromatic Volatiles by EPA Method 8021B

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 71-43-2 | Benzene | ND U | 0.73 | 0.22 |

| Surrogates | % Recovery | Control Limits |
|---|---|---|
| *aaa-Trifluorotoluene* | 104 | *90-113* |




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## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0704334** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | 2007-Annual New Wells |
| Client Sample ID: | **FB002-041707** | Sampled: | 04/17/07 14:30 |
| Lab Sample ID: | **0704334-08** | Sampled By: | Dave Hreha |
| Matrix: | Water | Received: | 04/18/07 08:55 |
| Unit: | ug/L | Prepared: | 04/24/07 By: ASC |
| Dilution Factor: | 1 | Date Analyzed: | 04/24/07 By: JMK |
| QC Batch: | 0704263 | Analytical Batch: | 7042557 |

### Semivolatile Organic Compounds by EPA Method 8270C

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 83-32-9 | Acenaphthene | NDU | 0.042 | 0.013 |
| 208-96-8 | Acenaphthylene | NDU | 0.040 | 0.012 |
| 120-12-7 | Anthracene | NDU | 0.045 | 0.014 |
| 56-55-3 | Benzo(a)anthracene | NDU | 0.12 | 0.037 |
| 50-32-8 | Benzo(a)pyrene | NDU | 0.077 | 0.023 |
| 205-99-2 | Benzo(b)fluoranthene | NDU | 0.13 | 0.040 |
| 207-08-9 | Benzo(k)fluoranthene | NDU | 0.12 | 0.036 |
| 191-24-2 | Benzo(g,h,i)perylene | NDU | 0.072 | 0.022 |
| 59-50-7 | 4-Chloro-3-methylphenol | NDU | 0.071 | 0.021 |
| 95-57-8 | 2-Chlorophenol | NDU | 0.053 | 0.016 |
| 218-01-9 | Chrysene | NDU | 0.067 | 0.020 |
| 53-70-3 | Dibenz(a,h)anthracene | NDU | 0.086 | 0.026 |
| 120-83-2 | 2,4-Dichlorophenol | NDU | 0.050 | 0.015 |
| 105-67-9 | 2,4-Dimethylphenol | NDU | 1.1 | 0.33 |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | NDU | 0.41 | 0.12 |
| 51-28-5 | 2,4-Dinitrophenol | NDU | 4.8 | 1.5 |
| 206-44-0 | Fluoranthene | NDU | 0.052 | 0.016 |
| 86-73-7 | Fluorene | NDU | 0.035 | 0.011 |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | NDU | 0.046 | 0.014 |
| 91-57-6 | 2-Methylnaphthalene | NDU | 0.050 | 0.015 |
| 95-48-7 | 2-Methylphenol | NDU | 0.48 | 0.14 |
| 106-44-5 | 4-Methylphenol | NDU | 0.52 | 0.16 |
| 91-20-3 | Naphthalene | NDU | 0.075 | 0.023 |
| 100-02-7 | 4-Nitrophenol | NDU | 4.2 | 1.3 |
| 88-75-5 | 2-Nitrophenol | NDU | 0.087 | 0.026 |
| 87-86-5 | Pentachlorophenol | NDU | 0.30 | 0.091 |
| 85-01-8 | Phenanthrene | NDU | 0.050 | 0.015 |
| 108-95-2 | Phenol | NDU | 0.091 | 0.028 |
| 129-00-0 | Pyrene | NDU | 0.16 | 0.047 |

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## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0704334** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | 2007-Annual New Wells |
| Client Sample ID: | **FB002-041707** | Sampled: | 04/17/07 14:30 |
| Lab Sample ID: | **0704334-08** | Sampled By: | Dave Hreha |
| Matrix: | Water | Received: | 04/18/07 08:55 |
| Unit: | ug/L | Prepared: | 04/24/07 By: ASC |
| Dilution Factor: | 1 | Date Analyzed: | 04/24/07 By: JMK |
| QC Batch: | 0704263 | Analytical Batch: | 7042557 |

### Semivolatile Organic Compounds by EPA Method 8270C (Continued)

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 58-90-2 | 2,3,4,6-Tetrachlorophenol | ND U | 0.54 | 0.16 |
| 935-95-5 | 2,3,5,6-Tetrachlorophenol | ND U | 1.5 | 0.44 |
| 88-06-2 | 2,4,6-Trichlorophenol | ND U | 0.088 | 0.027 |
| 95-95-4 | 2,4,5-Trichlorophenol | ND U | 0.36 | 0.11 |

| **Surrogates** | *% Recovery* | *Control Limits* |
|---|---|---|
| *2-Fluorophenol* | 43 | *16-69* |
| *Phenol-d6* | 29 | *11-49* |
| *Nitrobenzene-d5* | 73 | *26-116* |
| *2-Fluorobiphenyl* | 58 | *37-123* |
| *2,4,6-Tribromophenol* | 65 | *32-127* |
| *o-Terphenyl* | 75 | *30-119* |




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## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0704334** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | 2007-Annual New Wells |
| Client Sample ID: | **Trip Blank 002** | Sampled: | 04/17/07 08:00 |
| Lab Sample ID: | **0704334-09** | Sampled By: | Dave Hreha |
| Matrix: | Water | Received: | 04/18/07 08:55 |
| Unit: | ug/L | Prepared: | 04/25/07 By: LEW |
| Dilution Factor: | 1 | Date Analyzed: | 04/26/07 By: LEW |
| QC Batch: | 0704255 | Analytical Batch: | 7042640 |

### Halogenated and Aromatic Volatiles by EPA Method 8021B

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 71-43-2 | Benzene | ND U | 0.73 | 0.22 |

| Surrogates | % Recovery | Control Limits |
|---|---|---|
| *aaa-Trifluorotoluene* | 106 | *90-113* |




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**STATEMENT OF DATA QUALIFICATIONS**

All analyses have been validated and comply with our Quality Control Program. No Qualifications required.




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TriMatrix Laboratories, Inc.

June 25, 2007

Beazer East, Inc.
Attn: Ms. Angie Gatchie c/o FTS
200 Third Avenue
Carnegie, PA 15106

**Project: Superior GW - WI Cert. #999472650**

Dear Ms. Angie Gatchie c/o FTS,

Enclosed is a copy of the laboratory report, comprised of the following work order(s), for test samples received by TriMatrix Laboratories:

| Work Order | Received | Description |
|---|---|---|
| 0706301 | 06/14/2007 | Laboratory Services |

This report relates only to the sample(s), as received. Test results are in compliance with the requirements of the National Environmental Laboratory Accreditation Conference (NELAC); any qualifications of results, including sample acceptance requirements, are explained in the Statement of Data Qualifications.

Estimates of analytical uncertainties for the test results contained within this report are available upon request.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Gary L. Wood
Project Chemist

Enclosures(s)

The total number of pages in this report, including this page, is 24.

## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0706301** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | Laboratory Services |
| Client Sample ID: | **W-37A** | Sampled: | 06/13/07 08:30 |
| Lab Sample ID: | **0706301-01** | Sampled By: | David Griffin |
| Matrix: | Water | Received: | 06/14/07 09:15 |
| Unit: | ug/L | Prepared: | 06/18/07 By: BJH |
| Dilution Factor: | 1 | Date Analyzed: | 06/22/07 By: JMK |
| QC Batch: | 0706667 | Analytical Batch: | 7062253 |

### Semivolatile Organic Compounds by EPA Method 8270C

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 83-32-9 | Acenaphthene | NDU | 0.042 | 0.013 |
| 208-96-8 | Acenaphthylene | NDU | 0.040 | 0.012 |
| 120-12-7 | Anthracene | **0.019J** | 0.045 | 0.014 |
| 56-55-3 | Benzo(a)anthracene | NDU | 0.12 | 0.037 |
| 50-32-8 | Benzo(a)pyrene | NDU | 0.077 | 0.023 |
| 205-99-2 | Benzo(b)fluoranthene | NDU | 0.13 | 0.040 |
| 207-08-9 | Benzo(k)fluoranthene | NDU | 0.12 | 0.036 |
| 191-24-2 | Benzo(g,h,i)perylene | NDU | 0.072 | 0.022 |
| 59-50-7 | 4-Chloro-3-methylphenol | NDU | 0.071 | 0.021 |
| 95-57-8 | 2-Chlorophenol | NDU | 0.053 | 0.016 |
| 218-01-9 | Chrysene | NDU | 0.067 | 0.020 |
| 53-70-3 | Dibenz(a,h)anthracene | NDU | 0.086 | 0.026 |
| 120-83-2 | 2,4-Dichlorophenol | NDU | 0.050 | 0.015 |
| 105-67-9 | 2,4-Dimethylphenol | NDU | 1.1 | 0.33 |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | NDU | 0.41 | 0.12 |
| 51-28-5 | 2,4-Dinitrophenol | NDU | 4.8 | 1.5 |
| 206-44-0 | Fluoranthene | **0.019J** | 0.052 | 0.016 |
| 86-73-7 | Fluorene | NDU | 0.035 | 0.011 |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | **0.019J** | 0.046 | 0.014 |
| 91-57-6 | 2-Methylnaphthalene | NDU | 0.050 | 0.015 |
| 95-48-7 | 2-Methylphenol | NDU | 0.48 | 0.14 |
| 106-44-5 | 4-Methylphenol | NDU | 0.52 | 0.16 |
| 91-20-3 | Naphthalene | NDU | 0.075 | 0.023 |
| 100-02-7 | 4-Nitrophenol | NDU | 4.2 | 1.3 |
| 88-75-5 | 2-Nitrophenol | NDU | 0.087 | 0.026 |
| 87-86-5 | Pentachlorophenol | NDU | 0.30 | 0.091 |
| 85-01-8 | Phenanthrene | **0.019J** | 0.050 | 0.015 |
| 108-95-2 | Phenol | NDU | 0.091 | 0.028 |
| 129-00-0 | Pyrene | NDU | 0.16 | 0.047 |
| 58-90-2 | 2,3,4,6-Tetrachlorophenol | NDU | 0.54 | 0.16 |
| 935-95-5 | 2,3,5,6-Tetrachlorophenol | NDU | 1.5 | 0.44 |

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## ANALYTICAL REPORT

| | | | | | |
|---|---|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0706301** | | |
| Project: | Superior GW - WI Cert. #999472650 | Description: | Laboratory Services | | |
| Client Sample ID: | **W-37A** | Sampled: | 06/13/07 08:30 | | |
| Lab Sample ID: | **0706301-01** | Sampled By: | David Griffin | | |
| Matrix: | Water | Received: | 06/14/07 09:15 | | |
| Unit: | ug/L | Prepared: | 06/18/07 | By: | BJH |
| Dilution Factor: | 1 | Date Analyzed: | 06/22/07 | By: | JMK |
| QC Batch: | 0706667 | Analytical Batch: | 7062253 | | |

### Semivolatile Organic Compounds by EPA Method 8270C (Continued)

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 88-06-2 | 2,4,6-Trichlorophenol | ND U | 0.088 | 0.027 |
| 95-95-4 | 2,4,5-Trichlorophenol | ND U | 0.36 | 0.11 |

| **Surrogates** | *% Recovery* | *Control Limits* |
|---|---|---|
| *2-Fluorophenol* | 45 | *16-69* |
| *Phenol-d6* | 31 | *11-49* |
| *Nitrobenzene-d5* | 84 | *26-116* |
| *2-Fluorobiphenyl* | 79 | *37-123* |
| *2,4,6-Tribromophenol* | 80 | *32-127* |
| *o-Terphenyl* | 89 | *30-119* |




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## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0706301** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | Laboratory Services |
| Client Sample ID: | **W-35A** | Sampled: | 06/13/07 09:40 |
| Lab Sample ID: | **0706301-02** | Sampled By: | David Griffin |
| Matrix: | Water | Received: | 06/14/07 09:15 |
| Unit: | ug/L | Prepared: | 06/19/07 By: LEW |
| Dilution Factor: | 1 | Date Analyzed: | 06/20/07 By: LEW |
| QC Batch: | 0706835 | Analytical Batch: | 7062159 |

### Halogenated and Aromatic Volatiles by EPA Method 8021B

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 71-43-2 | Benzene | ND U | 0.73 | 0.22 |

| Surrogates | % Recovery | Control Limits |
|---|---|---|
| *aaa-Trifluorotoluene* | 108 | *90-113* |




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## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0706301** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | Laboratory Services |
| Client Sample ID: | **W-35A** | Sampled: | 06/13/07 09:40 |
| Lab Sample ID: | **0706301-02** | Sampled By: | David Griffin |
| Matrix: | Water | Received: | 06/14/07 09:15 |
| Unit: | ug/L | Prepared: | 06/18/07 By: BJH |
| Dilution Factor: | 1 | Date Analyzed: | 06/22/07 By: JMK |
| QC Batch: | 0706667 | Analytical Batch: | 7062253 |

### Semivolatile Organic Compounds by EPA Method 8270C

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 83-32-9 | Acenaphthene | ND U | 0.045 | 0.014 |
| 208-96-8 | Acenaphthylene | ND U | 0.043 | 0.013 |
| 120-12-7 | Anthracene | ND U | 0.048 | 0.015 |
| 56-55-3 | Benzo(a)anthracene | ND U | 0.13 | 0.040 |
| 50-32-8 | Benzo(a)pyrene | ND U | 0.083 | 0.025 |
| 205-99-2 | Benzo(b)fluoranthene | ND U | 0.14 | 0.043 |
| 207-08-9 | Benzo(k)fluoranthene | ND U | 0.13 | 0.039 |
| 191-24-2 | Benzo(g,h,i)perylene | ND U | 0.078 | 0.024 |
| 59-50-7 | 4-Chloro-3-methylphenol | ND U | 0.076 | 0.023 |
| 95-57-8 | 2-Chlorophenol | ND U | 0.057 | 0.017 |
| 218-01-9 | Chrysene | ND U | 0.072 | 0.022 |
| 53-70-3 | Dibenz(a,h)anthracene | ND U | 0.093 | 0.028 |
| 120-83-2 | 2,4-Dichlorophenol | ND U | 0.053 | 0.016 |
| 105-67-9 | 2,4-Dimethylphenol | ND U | 1.2 | 0.35 |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | ND U | 0.44 | 0.13 |
| 51-28-5 | 2,4-Dinitrophenol | ND U | 5.2 | 1.6 |
| 206-44-0 | Fluoranthene | **0.022 J** | 0.056 | 0.017 |
| 86-73-7 | Fluorene | ND U | 0.038 | 0.012 |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | ND U | 0.049 | 0.015 |
| 91-57-6 | 2-Methylnaphthalene | ND U | 0.054 | 0.016 |
| 95-48-7 | 2-Methylphenol | ND U | 0.51 | 0.15 |
| 106-44-5 | 4-Methylphenol | ND U | 0.56 | 0.17 |
| 91-20-3 | Naphthalene | ND U | 0.081 | 0.024 |
| 100-02-7 | 4-Nitrophenol | ND U | 4.5 | 1.4 |
| 88-75-5 | 2-Nitrophenol | ND U | 0.093 | 0.028 |
| 87-86-5 | Pentachlorophenol | ND U | 0.32 | 0.098 |
| 85-01-8 | Phenanthrene | ND U | 0.054 | 0.016 |
| 108-95-2 | Phenol | ND U | 0.098 | 0.030 |
| 129-00-0 | Pyrene | ND U | 0.17 | 0.051 |

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## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0706301** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | Laboratory Services |
| Client Sample ID: | **W-35A** | Sampled: | 06/13/07 09:40 |
| Lab Sample ID: | **0706301-02** | Sampled By: | David Griffin |
| Matrix: | Water | Received: | 06/14/07 09:15 |
| Unit: | ug/L | Prepared: | 06/18/07 By: BJH |
| Dilution Factor: | 1 | Date Analyzed: | 06/22/07 By: JMK |
| QC Batch: | 0706667 | Analytical Batch: | 7062253 |

### Semivolatile Organic Compounds by EPA Method 8270C (Continued)

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 58-90-2 | 2,3,4,6-Tetrachlorophenol | ND U | 0.58 | 0.18 |
| 935-95-5 | 2,3,5,6-Tetrachlorophenol | ND U | 1.6 | 0.48 |
| 88-06-2 | 2,4,6-Trichlorophenol | ND U | 0.095 | 0.029 |
| 95-95-4 | 2,4,5-Trichlorophenol | ND U | 0.39 | 0.12 |

| **Surrogates** | *% Recovery* | *Control Limits* |
|---|---|---|
| *2-Fluorophenol* | 47 | *16-69* |
| *Phenol-d6* | 33 | *11-49* |
| *Nitrobenzene-d5* | 84 | *26-116* |
| *2-Fluorobiphenyl* | 78 | *37-123* |
| *2,4,6-Tribromophenol* | 82 | *32-127* |
| *o-Terphenyl* | 89 | *30-119* |




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## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0706301** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | Laboratory Services |
| Client Sample ID: | **W-40A** | Sampled: | 06/13/07 11:05 |
| Lab Sample ID: | **0706301-03** | Sampled By: | David Griffin |
| Matrix: | Water | Received: | 06/14/07 09:15 |
| Unit: | ug/L | Prepared: | 06/18/07 By: BJH |
| Dilution Factor: | 1 | Date Analyzed: | 06/21/07 By: JMK |
| QC Batch: | 0706667 | Analytical Batch: | 7062248 |

### Semivolatile Organic Compounds by EPA Method 8270C

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 83-32-9 | Acenaphthene | ND U | 0.042 | 0.013 |
| 208-96-8 | Acenaphthylene | ND U | 0.040 | 0.012 |
| 120-12-7 | Anthracene | ND U | 0.045 | 0.014 |
| 56-55-3 | Benzo(a)anthracene | ND U | 0.12 | 0.037 |
| 50-32-8 | Benzo(a)pyrene | ND U | 0.077 | 0.023 |
| 205-99-2 | Benzo(b)fluoranthene | ND U | 0.13 | 0.040 |
| 207-08-9 | Benzo(k)fluoranthene | ND U | 0.12 | 0.036 |
| 191-24-2 | Benzo(g,h,i)perylene | **0.042 J** | 0.072 | 0.022 |
| 59-50-7 | 4-Chloro-3-methylphenol | ND U | 0.071 | 0.021 |
| 95-57-8 | 2-Chlorophenol | ND U | 0.053 | 0.016 |
| 218-01-9 | Chrysene | **0.021 J** | 0.067 | 0.020 |
| 53-70-3 | Dibenz(a,h)anthracene | **0.031 J** | 0.086 | 0.026 |
| 120-83-2 | 2,4-Dichlorophenol | ND U | 0.050 | 0.015 |
| 105-67-9 | 2,4-Dimethylphenol | ND U | 1.1 | 0.33 |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | ND U | 0.41 | 0.12 |
| 51-28-5 | 2,4-Dinitrophenol | ND U | 4.8 | 1.5 |
| 206-44-0 | Fluoranthene | ND U | 0.052 | 0.016 |
| 86-73-7 | Fluorene | ND U | 0.035 | 0.011 |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | **0.031 J** | 0.046 | 0.014 |
| 91-57-6 | 2-Methylnaphthalene | ND U | 0.050 | 0.015 |
| 95-48-7 | 2-Methylphenol | ND U | 0.48 | 0.14 |
| 106-44-5 | 4-Methylphenol | ND U | 0.52 | 0.16 |
| 91-20-3 | Naphthalene | ND U | 0.075 | 0.023 |
| 100-02-7 | 4-Nitrophenol | ND U | 4.2 | 1.3 |
| 88-75-5 | 2-Nitrophenol | ND U | 0.087 | 0.026 |
| 87-86-5 | Pentachlorophenol | **0.44** | 0.30 | 0.091 |
| 85-01-8 | Phenanthrene | ND U | 0.050 | 0.015 |
| 108-95-2 | Phenol | ND U | 0.091 | 0.028 |
| 129-00-0 | Pyrene | ND U | 0.16 | 0.047 |
| 58-90-2 | 2,3,4,6-Tetrachlorophenol | ND U | 0.54 | 0.16 |
| 935-95-5 | 2,3,5,6-Tetrachlorophenol | ND U | 1.5 | 0.44 |

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## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0706301** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | Laboratory Services |
| Client Sample ID: | **W-40A** | Sampled: | 06/13/07 11:05 |
| Lab Sample ID: | **0706301-03** | Sampled By: | David Griffin |
| Matrix: | Water | Received: | 06/14/07 09:15 |
| Unit: | ug/L | Prepared: | 06/18/07 By: BJH |
| Dilution Factor: | 1 | Date Analyzed: | 06/21/07 By: JMK |
| QC Batch: | 0706667 | Analytical Batch: | 7062248 |

### Semivolatile Organic Compounds by EPA Method 8270C (Continued)

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 88-06-2 | 2,4,6-Trichlorophenol | ND U | 0.088 | 0.027 |
| 95-95-4 | 2,4,5-Trichlorophenol | ND U | 0.36 | 0.11 |

| **Surrogates** | *% Recovery* | *Control Limits* |
|---|---|---|
| *2-Fluorophenol* | 44 | *16-69* |
| *Phenol-d6* | 31 | *11-49* |
| *Nitrobenzene-d5* | 84 | *26-116* |
| *2-Fluorobiphenyl* | 71 | *37-123* |
| *2,4,6-Tribromophenol* | 76 | *32-127* |
| *o-Terphenyl* | 84 | *30-119* |




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## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0706301** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | Laboratory Services |
| Client Sample ID: | **DUP01** | Sampled: | 06/13/07 00:00 |
| Lab Sample ID: | **0706301-04** | Sampled By: | David Griffin |
| Matrix: | Water | Received: | 06/14/07 09:15 |
| Unit: | ug/L | Prepared: | 06/19/07 By: LEW |
| Dilution Factor: | 1 | Date Analyzed: | 06/20/07 By: LEW |
| QC Batch: | 0706835 | Analytical Batch: | 7062159 |

### Halogenated and Aromatic Volatiles by EPA Method 8021B

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 71-43-2 | Benzene | ND U | 0.73 | 0.22 |

| Surrogates | % Recovery | Control Limits |
|---|---|---|
| *aaa-Trifluorotoluene* | 107 | *90-113* |




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## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0706301** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | Laboratory Services |
| Client Sample ID: | **DUP01** | Sampled: | 06/13/07 00:00 |
| Lab Sample ID: | **0706301-04** | Sampled By: | David Griffin |
| Matrix: | Water | Received: | 06/14/07 09:15 |
| Unit: | ug/L | Prepared: | 06/18/07 By: BJH |
| Dilution Factor: | 1 | Date Analyzed: | 06/21/07 By: JMK |
| QC Batch: | 0706667 | Analytical Batch: | 7062248 |

### Semivolatile Organic Compounds by EPA Method 8270C

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 83-32-9 | Acenaphthene | ND U | 0.042 | 0.013 |
| 208-96-8 | Acenaphthylene | ND U | 0.040 | 0.012 |
| 120-12-7 | Anthracene | ND U | 0.045 | 0.014 |
| 56-55-3 | Benzo(a)anthracene | ND U | 0.12 | 0.037 |
| 50-32-8 | Benzo(a)pyrene | ND U | 0.077 | 0.023 |
| 205-99-2 | Benzo(b)fluoranthene | ND U | 0.13 | 0.040 |
| 207-08-9 | Benzo(k)fluoranthene | ND U | 0.12 | 0.036 |
| 191-24-2 | Benzo(g,h,i)perylene | ND U | 0.072 | 0.022 |
| 59-50-7 | 4-Chloro-3-methylphenol | ND U | 0.071 | 0.021 |
| 95-57-8 | 2-Chlorophenol | ND U | 0.053 | 0.016 |
| 218-01-9 | Chrysene | ND U | 0.067 | 0.020 |
| 53-70-3 | Dibenz(a,h)anthracene | ND U | 0.086 | 0.026 |
| 120-83-2 | 2,4-Dichlorophenol | ND U | 0.050 | 0.015 |
| 105-67-9 | 2,4-Dimethylphenol | ND U | 1.1 | 0.33 |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | ND U | 0.41 | 0.12 |
| 51-28-5 | 2,4-Dinitrophenol | ND U | 4.8 | 1.5 |
| 206-44-0 | Fluoranthene | ND U | 0.052 | 0.016 |
| 86-73-7 | Fluorene | ND U | 0.035 | 0.011 |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | ND U | 0.046 | 0.014 |
| 91-57-6 | 2-Methylnaphthalene | ND U | 0.050 | 0.015 |
| 95-48-7 | 2-Methylphenol | ND U | 0.48 | 0.14 |
| 106-44-5 | 4-Methylphenol | ND U | 0.52 | 0.16 |
| 91-20-3 | Naphthalene | ND U | 0.075 | 0.023 |
| 100-02-7 | 4-Nitrophenol | ND U | 4.2 | 1.3 |
| 88-75-5 | 2-Nitrophenol | ND U | 0.087 | 0.026 |
| 87-86-5 | Pentachlorophenol | ND U | 0.30 | 0.091 |
| 85-01-8 | Phenanthrene | **0.021 J** | 0.050 | 0.015 |
| 108-95-2 | Phenol | ND U | 0.091 | 0.028 |
| 129-00-0 | Pyrene | ND U | 0.16 | 0.047 |

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## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0706301** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | Laboratory Services |
| Client Sample ID: | **Field Blank** | Sampled: | 06/13/07 14:00 |
| Lab Sample ID: | **0706301-06** | Sampled By: | David Griffin |
| Matrix: | Water | Received: | 06/14/07 09:15 |
| Unit: | ug/L | Prepared: | 06/18/07 By: BJH |
| Dilution Factor: | 1 | Date Analyzed: | 06/21/07 By: JMK |
| QC Batch: | 0706667 | Analytical Batch: | 7062248 |

### Semivolatile Organic Compounds by EPA Method 8270C

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 83-32-9 | Acenaphthene | NDU | 0.042 | 0.013 |
| 208-96-8 | Acenaphthylene | NDU | 0.040 | 0.012 |
| 120-12-7 | Anthracene | NDU | 0.045 | 0.014 |
| 56-55-3 | Benzo(a)anthracene | NDU | 0.12 | 0.037 |
| 50-32-8 | Benzo(a)pyrene | NDU | 0.077 | 0.023 |
| 205-99-2 | Benzo(b)fluoranthene | NDU | 0.13 | 0.040 |
| 207-08-9 | Benzo(k)fluoranthene | NDU | 0.12 | 0.036 |
| 191-24-2 | Benzo(g,h,i)perylene | NDU | 0.072 | 0.022 |
| 59-50-7 | 4-Chloro-3-methylphenol | NDU | 0.071 | 0.021 |
| 95-57-8 | 2-Chlorophenol | NDU | 0.053 | 0.016 |
| 218-01-9 | Chrysene | NDU | 0.067 | 0.020 |
| 53-70-3 | Dibenz(a,h)anthracene | NDU | 0.086 | 0.026 |
| 120-83-2 | 2,4-Dichlorophenol | NDU | 0.050 | 0.015 |
| 105-67-9 | 2,4-Dimethylphenol | NDU | 1.1 | 0.33 |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | NDU | 0.41 | 0.12 |
| 51-28-5 | 2,4-Dinitrophenol | NDU | 4.8 | 1.5 |
| 206-44-0 | Fluoranthene | NDU | 0.052 | 0.016 |
| 86-73-7 | Fluorene | NDU | 0.035 | 0.011 |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | NDU | 0.046 | 0.014 |
| 91-57-6 | 2-Methylnaphthalene | NDU | 0.050 | 0.015 |
| 95-48-7 | 2-Methylphenol | NDU | 0.48 | 0.14 |
| 106-44-5 | 4-Methylphenol | NDU | 0.52 | 0.16 |
| 91-20-3 | Naphthalene | NDU | 0.075 | 0.023 |
| 100-02-7 | 4-Nitrophenol | NDU | 4.2 | 1.3 |
| 88-75-5 | 2-Nitrophenol | NDU | 0.087 | 0.026 |
| 87-86-5 | Pentachlorophenol | NDU | 0.30 | 0.091 |
| 85-01-8 | Phenanthrene | NDU | 0.050 | 0.015 |
| 108-95-2 | Phenol | NDU | 0.091 | 0.028 |
| 129-00-0 | Pyrene | NDU | 0.16 | 0.047 |
| 58-90-2 | 2,3,4,6-Tetrachlorophenol | NDU | 0.54 | 0.16 |
| 935-95-5 | 2,3,5,6-Tetrachlorophenol | NDU | 1.5 | 0.44 |

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## ANALYTICAL REPORT

| | | | | | |
|---|---|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0706301** | | |
| Project: | Superior GW - WI Cert. #999472650 | Description: | Laboratory Services | | |
| Client Sample ID: | **Field Blank** | Sampled: | 06/13/07 14:00 | | |
| Lab Sample ID: | **0706301-06** | Sampled By: | David Griffin | | |
| Matrix: | Water | Received: | 06/14/07 09:15 | | |
| Unit: | ug/L | Prepared: | 06/18/07 | By: | BJH |
| Dilution Factor: | 1 | Date Analyzed: | 06/21/07 | By: | JMK |
| QC Batch: | 0706667 | Analytical Batch: | 7062248 | | |

### Semivolatile Organic Compounds by EPA Method 8270C (Continued)

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 88-06-2 | 2,4,6-Trichlorophenol | ND U | 0.088 | 0.027 |
| 95-95-4 | 2,4,5-Trichlorophenol | ND U | 0.36 | 0.11 |

| **Surrogates** | *% Recovery* | *Control Limits* |
|---|---|---|
| *2-Fluorophenol* | 52 | *16-69* |
| *Phenol-d6* | 36 | *11-49* |
| *Nitrobenzene-d5* | 86 | *26-116* |
| *2-Fluorobiphenyl* | 82 | *37-123* |
| *2,4,6-Tribromophenol* | 87 | *32-127* |
| *o-Terphenyl* | 93 | *30-119* |




5560 Corporate Exchange Court SE • Grand Rapids, MI 49512 • (616) 975 -4500 • Fax (616) 942-7463

## ANALYTICAL REPORT

| | | | |
|---|---|---|---|
| Client: | **Beazer East, Inc.** | Work Order: | **0706301** |
| Project: | Superior GW - WI Cert. #999472650 | Description: | Laboratory Services |
| Client Sample ID: | **Trip Blank TM1704** | Sampled: | 06/13/07 00:00 |
| Lab Sample ID: | **0706301-07** | Sampled By: | |
| Matrix: | Water | Received: | 06/14/07 09:15 |
| Unit: | ug/L | Prepared: | 06/19/07 By: LEW |
| Dilution Factor: | 1 | Date Analyzed: | 06/20/07 By: LEW |
| QC Batch: | 0706835 | Analytical Batch: | 7062159 |

### Halogenated and Aromatic Volatiles by EPA Method 8021B

| CAS Number | Analyte | Analytical Result | LOQ | LOD |
|---|---|---|---|---|
| 71-43-2 | Benzene | ND U | 0.73 | 0.22 |

| Surrogates | % Recovery | Control Limits |
|---|---|---|
| *aaa-Trifluorotoluene* | 107 | *90-113* |




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**STATEMENT OF DATA QUALIFICATIONS**

All analyses have been validated and comply with our Quality Control Program. No Qualifications required.




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Field & Technical Services, LLC

Client Sample ID: W-26A

Trace Level Organic Compounds

**Lot-Sample #...:** G6J250266-004 **Work Order #...:** JG74G1AA **Matrix.....:** WATER
**Date Sampled...:** 10/24/06 **Date Received..:** 10/25/06
**Prep Date.....:** 11/09/06 **Analysis Date..:** 11/12/06
**Prep Batch #...:** 6314281
**Dilution Factor:** 1

| PARAMETER | RESULT | DETECTION LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| 2,3,7,8-TCDD | ND | 2.0 | pg/L | SW846 8290 |
| Total TCDD | ND | 2.0 | pg/L | SW846 8290 |
| 1,2,3,7,8-PeCDD | ND | 4.7 | pg/L | SW846 8290 |
| Total PeCDD | ND | 13 | pg/L | SW846 8290 |
| 1,2,3,4,7,8-HxCDD | ND | 2.8 | pg/L | SW846 8290 |
| **1,2,3,6,7,8-HxCDD** | **4.8 J,B** | | **pg/L** | **SW846 8290** |
| 1,2,3,7,8,9-HxCDD | ND | 3.2 | pg/L | SW846 8290 |
| **Total HxCDD** | **4.8** | | **pg/L** | **SW846 8290** |
| **1,2,3,4,6,7,8-HpCDD** | **170 B** | | **pg/L** | **SW846 8290** |
| **Total HpCDD** | **310** | | **pg/L** | **SW846 8290** |
| **OCDD** | **2100** | | **pg/L** | **SW846 8290** |
| 2,3,7,8-TCDF | ND | 1.7 | pg/L | SW846 8290 |
| Total TCDF | ND | 1.7 | pg/L | SW846 8290 |
| 1,2,3,7,8-PeCDF | ND | 2.1 | pg/L | SW846 8290 |
| 2,3,4,7,8-PeCDF | ND | 2.1 | pg/L | SW846 8290 |
| Total PeCDF | ND | 3.0 | pg/L | SW846 8290 |
| 1,2,3,4,7,8-HxCDF | ND | 4.2 | pg/L | SW846 8290 |
| 1,2,3,6,7,8-HxCDF | ND | 2.2 | pg/L | SW846 8290 |
| 2,3,4,6,7,8-HxCDF | ND | 2.5 | pg/L | SW846 8290 |
| 1,2,3,7,8,9-HxCDF | ND | 2.8 | pg/L | SW846 8290 |
| **Total HxCDF** | **22** | | **pg/L** | **SW846 8290** |
| **1,2,3,4,6,7,8-HpCDF** | **40 J,B** | | **pg/L** | **SW846 8290** |
| 1,2,3,4,7,8,9-HpCDF | ND | 4.3 | pg/L | SW846 8290 |
| **Total HpCDF** | **140** | | **pg/L** | **SW846 8290** |
| **OCDF** | **150 B** | | **pg/L** | **SW846 8290** |

| INTERNAL STANDARDS | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 13C-2,3,7,8-TCDD | 84 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDD | 89 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDD | 83 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDD | 97 | (40 - 135) |
| 13C-OCDD | 92 | (40 - 135) |
| 13C-2,3,7,8-TCDF | 88 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDF | 85 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDF | 76 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDF | 93 | (40 - 135) |

**NOTE(S):**

J Estimated result. Result is less than the reporting limit.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Field & Technical Services, LLC

Client Sample ID: DUPLICATE 002

Trace Level Organic Compounds

Lot-Sample #...: G6J250266-005 Work Order #...: JG74J2AA Matrix.....: WATER
Date Sampled...: 10/24/06 Date Received..: 10/25/06
Prep Date.....: 11/21/06 Analysis Date..: 11/24/06
Prep Batch #...: 6326561
Dilution Factor: 1

| PARAMETER | RESULT | DETECTION LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| 2,3,7,8-TCDD | ND | 3.3 | pg/L | SW846 8290 |
| Total TCDD | ND | 3.3 | pg/L | SW846 8290 |
| 1,2,3,7,8-PeCDD | ND | 17 | pg/L | SW846 8290 |
| Total PeCDD | ND | 17 | pg/L | SW846 8290 |
| 1,2,3,4,7,8-HxCDD | 55 | | pg/L | SW846 8290 |
| 1,2,3,6,7,8-HxCDD | 550 | | pg/L | SW846 8290 |
| 1,2,3,7,8,9-HxCDD | 160 | | pg/L | SW846 8290 |
| Total HxCDD | 1300 | | pg/L | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDD | 10000 | | pg/L | SW846 8290 |
| Total HpCDD | 15000 | | pg/L | SW846 8290 |
| OCDD | 64000 E | | pg/L | SW846 8290 |
| 2,3,7,8-TCDF | ND CON | 5.5 | pg/L | SW846 8290 |
| Total TCDF | 19 | | pg/L | SW846 8290 |
| 1,2,3,7,8-PeCDF | 63 | | pg/L | SW846 8290 |
| 2,3,4,7,8-PeCDF | 39 J | | pg/L | SW846 8290 |
| Total PeCDF | 350 | | pg/L | SW846 8290 |
| 1,2,3,4,7,8-HxCDF | 310 | | pg/L | SW846 8290 |
| 1,2,3,6,7,8-HxCDF | 160 | | pg/L | SW846 8290 |
| 2,3,4,6,7,8-HxCDF | 100 | | pg/L | SW846 8290 |
| 1,2,3,7,8,9-HxCDF | 36 J | | pg/L | SW846 8290 |
| Total HxCDF | 5300 | | pg/L | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDF | 3800 | | pg/L | SW846 8290 |
| 1,2,3,4,7,8,9-HpCDF | 520 | | pg/L | SW846 8290 |
| Total HpCDF | 15000 | | pg/L | SW846 8290 |
| OCDF | 6900 | | pg/L | SW846 8290 |

| INTERNAL STANDARDS | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 13C-2,3,7,8-TCDD | 90 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDD | 87 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDD | 67 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDD | 76 | (40 - 135) |
| 13C-OCDD | 86 | (40 - 135) |
| 13C-2,3,7,8-TCDF | 90 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDF | 90 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDF | 71 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDF | 71 | (40 - 135) |

NOTE(S):

E Estimated result. Result concentration exceeds the calibration range.

CON Confirmation analysis.

J Estimated result. Result is less than the reporting limit.

Field & Technical Services, LLC

Client Sample ID: W-36A

Trace Level Organic Compounds

**Lot-Sample #...:** G6J250266-006 **Work Order #...:** JG74K1AA **Matrix.....:** WATER
**Date Sampled...:** 10/24/06 **Date Received..:** 10/25/06
**Prep Date.....:** 11/09/06 **Analysis Date..:** 11/12/06
**Prep Batch #...:** 6314281
**Dilution Factor:** 1

| PARAMETER | RESULT | DETECTION LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| 2,3,7,8-TCDD | ND | 1.6 | pg/L | SW846 8290 |
| Total TCDD | ND | 1.6 | pg/L | SW846 8290 |
| 1,2,3,7,8-PeCDD | ND | 3.5 | pg/L | SW846 8290 |
| Total PeCDD | ND | 9.8 | pg/L | SW846 8290 |
| 1,2,3,4,7,8-HxCDD | ND | 2.6 | pg/L | SW846 8290 |
| **1,2,3,6,7,8-HxCDD** | **27 J,B** | | **pg/L** | **SW846 8290** |
| **1,2,3,7,8,9-HxCDD** | **7.1 J** | | **pg/L** | **SW846 8290** |
| **Total HxCDD** | **95** | | **pg/L** | **SW846 8290** |
| **1,2,3,4,6,7,8-HpCDD** | **860 B** | | **pg/L** | **SW846 8290** |
| **Total HpCDD** | **1600** | | **pg/L** | **SW846 8290** |
| **OCDD** | **8800** | | **pg/L** | **SW846 8290** |
| 2,3,7,8-TCDF | ND | 1.5 | pg/L | SW846 8290 |
| Total TCDF | ND | 1.5 | pg/L | SW846 8290 |
| 1,2,3,7,8-PeCDF | ND | 2.1 | pg/L | SW846 8290 |
| 2,3,4,7,8-PeCDF | ND | 2.1 | pg/L | SW846 8290 |
| Total PeCDF | ND | 2.9 | pg/L | SW846 8290 |
| 1,2,3,4,7,8-HxCDF | ND | 3.8 | pg/L | SW846 8290 |
| 1,2,3,6,7,8-HxCDF | ND | 2.3 | pg/L | SW846 8290 |
| 2,3,4,6,7,8-HxCDF | ND | 2.5 | pg/L | SW846 8290 |
| 1,2,3,7,8,9-HxCDF | ND | 2.8 | pg/L | SW846 8290 |
| **Total HxCDF** | **81** | | **pg/L** | **SW846 8290** |
| **1,2,3,4,6,7,8-HpCDF** | **130 B** | | **pg/L** | **SW846 8290** |
| 1,2,3,4,7,8,9-HpCDF | ND | 7.8 | pg/L | SW846 8290 |
| **Total HpCDF** | **700** | | **pg/L** | **SW846 8290** |
| **OCDF** | **860 B** | | **pg/L** | **SW846 8290** |

| INTERNAL STANDARDS | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 13C-2,3,7,8-TCDD | 92 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDD | 91 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDD | 81 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDD | 102 | (40 - 135) |
| 13C-OCDD | 100 | (40 - 135) |
| 13C-2,3,7,8-TCDF | 91 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDF | 87 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDF | 82 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDF | 90 | (40 - 135) |

**NOTE(S):**

J Estimated result. Result is less than the reporting limit.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Field & Technical Services, LLC

Client Sample ID: FB102406

Trace Level Organic Compounds

**Lot-Sample #...:** G6J250266-007 **Work Order #...:** JG75L1AA **Matrix.....:** WATER
**Date Sampled...:** 10/24/06 **Date Received..:** 10/25/06
**Prep Date.....:** 11/09/06 **Analysis Date..:** 11/12/06
**Prep Batch #...:** 6314281
**Dilution Factor:** 1

| PARAMETER | RESULT | DETECTION LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| 2,3,7,8-TCDD | ND | 1.6 | pg/L | SW846 8290 |
| Total TCDD | ND | 1.6 | pg/L | SW846 8290 |
| 1,2,3,7,8-PeCDD | ND | 3.5 | pg/L | SW846 8290 |
| Total PeCDD | ND | 6.3 | pg/L | SW846 8290 |
| 1,2,3,4,7,8-HxCDD | ND | 2.3 | pg/L | SW846 8290 |
| 1,2,3,6,7,8-HxCDD | ND | 2.2 | pg/L | SW846 8290 |
| 1,2,3,7,8,9-HxCDD | ND | 2.2 | pg/L | SW846 8290 |
| Total HxCDD | ND | 2.3 | pg/L | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDD | ND | 3.3 | pg/L | SW846 8290 |
| Total HpCDD | ND | 3.3 | pg/L | SW846 8290 |
| **OCDD** | **22 J** | | **pg/L** | **SW846 8290** |
| 2,3,7,8-TCDF | ND | 1.2 | pg/L | SW846 8290 |
| Total TCDF | ND | 1.2 | pg/L | SW846 8290 |
| 1,2,3,7,8-PeCDF | ND | 1.9 | pg/L | SW846 8290 |
| 2,3,4,7,8-PeCDF | ND | 1.9 | pg/L | SW846 8290 |
| Total PeCDF | ND | 2.6 | pg/L | SW846 8290 |
| 1,2,3,4,7,8-HxCDF | ND | 1.8 | pg/L | SW846 8290 |
| 1,2,3,6,7,8-HxCDF | ND | 1.7 | pg/L | SW846 8290 |
| 2,3,4,6,7,8-HxCDF | ND | 1.9 | pg/L | SW846 8290 |
| 1,2,3,7,8,9-HxCDF | ND | 2.1 | pg/L | SW846 8290 |
| Total HxCDF | ND | 2.1 | pg/L | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDF | ND | 2.2 | pg/L | SW846 8290 |
| **1,2,3,4,7,8,9-HpCDF** | **1.8 J** | | **pg/L** | **SW846 8290** |
| **Total HpCDF** | **1.8** | | **pg/L** | **SW846 8290** |
| OCDF | ND | 3.6 | pg/L | SW846 8290 |

| INTERNAL STANDARDS | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 13C-2,3,7,8-TCDD | 88 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDD | 86 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDD | 81 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDD | 96 | (40 - 135) |
| 13C-OCDD | 89 | (40 - 135) |
| 13C-2,3,7,8-TCDF | 88 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDF | 82 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDF | 81 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDF | 89 | (40 - 135) |

**NOTE(S):**

J Estimated result. Result is less than the reporting limit.

**STL Sacramento**
880 Riverside Parkway
West Sacramento, CA 95605

Tel: 916 373 5600
Fax: 916 372 1059
www.stl-inc.com

November 28, 2006

**STL SACRAMENTO PROJECT NUMBER: G6J260255**
PO/CONTRACT: 00556-6101

Angie Gatchie
Field & Technical Services, LL
200 Third Avenue
Carnegie, PA 15106

Dear Ms. Gatchie,

This report contains the analytical results for the sample received under chain of custody by STL Sacramento on October 26, 2006. This sample is associated with your Beazer - Superior GW Sampling project.

The test results in this report meet all NELAC requirements for parameters that accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The case narrative is an integral part of this report.

If you have any questions, please feel free to call me at (916) 374-4384.

Sincerely,

Karen Dahl
Project Manager

## CASE NARRATIVE

## STL SACRAMENTO PROJECT NUMBER G6J260255

**WATER, 8290, Dioxins/Furans**

Per Wisconsin requirements, samples and quality control samples have been written up to levels that fall below the lower calibration limits. The method blank contains many positive results that fall below the lower calibration limit. Any results for these analytes in the associated samples have been flagged with 'B' qualifiers. No corrective action was performed since the levels in the method blank were below the lower calibration limit.

The laboratory control sample showed a high recovery for 1,2,3,6,7,8-HxCDD. Since the associated sample results were 'ND' for this analyte, no corrective action was performed.

There were no other anomalies associated with this project.

# Sample Summary
# G6J260255

| WO# | Sample # | Client Sample ID | Sampling Date | Received Date |
|---|---|---|---|---|
| JHCDC | 1 | W-39A | 10/25/2006 10:00 AM | 10/26/2006 09:10 AM |

Notes(s):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity, pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight

Field & Technical Services, LLC

Client Sample ID: W-39A

Trace Level Organic Compounds

**Lot-Sample #...:** G6J260255-001 **Work Order #...:** JHCDC1AA **Matrix.....:** WATER
**Date Sampled...:** 10/25/06 **Date Received..:** 10/26/06
**Prep Date.....:** 11/09/06 **Analysis Date..:** 11/12/06
**Prep Batch #...:** 6314281
**Dilution Factor:** 1

| PARAMETER | RESULT | DETECTION LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| 2,3,7,8-TCDD | ND | 1.6 | pg/L | SW846 8290 |
| Total TCDD | ND | 1.8 | pg/L | SW846 8290 |
| 1,2,3,7,8-PeCDD | ND | 3.7 | pg/L | SW846 8290 |
| Total PeCDD | ND | 12 | pg/L | SW846 8290 |
| 1,2,3,4,7,8-HxCDD | ND | 2.8 | pg/L | SW846 8290 |
| 1,2,3,6,7,8-HxCDD | ND | 2.7 | pg/L | SW846 8290 |
| 1,2,3,7,8,9-HxCDD | ND | 2.6 | pg/L | SW846 8290 |
| Total HxCDD | ND | 2.8 | pg/L | SW846 8290 |
| **1,2,3,4,6,7,8-HpCDD** | **20 J,B** | | **pg/L** | **SW846 8290** |
| **Total HpCDD** | **44** | | **pg/L** | **SW846 8290** |
| **OCDD** | **210** | | **pg/L** | **SW846 8290** |
| 2,3,7,8-TCDF | ND | 1.6 | pg/L | SW846 8290 |
| Total TCDF | ND | 1.6 | pg/L | SW846 8290 |
| 1,2,3,7,8-PeCDF | ND | 2.1 | pg/L | SW846 8290 |
| 2,3,4,7,8-PeCDF | ND | 2.0 | pg/L | SW846 8290 |
| Total PeCDF | ND | 3.8 | pg/L | SW846 8290 |
| 1,2,3,4,7,8-HxCDF | ND | 1.9 | pg/L | SW846 8290 |
| 1,2,3,6,7,8-HxCDF | ND | 1.8 | pg/L | SW846 8290 |
| 2,3,4,6,7,8-HxCDF | ND | 2.0 | pg/L | SW846 8290 |
| 1,2,3,7,8,9-HxCDF | ND | 2.2 | pg/L | SW846 8290 |
| Total HxCDF | ND | 2.2 | pg/L | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDF | ND | 5.6 | pg/L | SW846 8290 |
| 1,2,3,4,7,8,9-HpCDF | ND | 1.9 | pg/L | SW846 8290 |
| **Total HpCDF** | **12** | | **pg/L** | **SW846 8290** |
| **OCDF** | **19 J,B** | | **pg/L** | **SW846 8290** |

| INTERNAL STANDARDS | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 13C-2,3,7,8-TCDD | 90 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDD | 90 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDD | 84 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDD | 99 | (40 - 135) |
| 13C-OCDD | 88 | (40 - 135) |
| 13C-2,3,7,8-TCDF | 93 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDF | 86 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDF | 84 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDF | 94 | (40 - 135) |

NOTE(S):

J Estimated result. Result is less than the reporting limit.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

STL

**STL Sacramento**
880 Riverside Parkway
West Sacramento, CA 95605

Tel: 916 373 5600
Fax: 916 372 1059
www.stl-inc.com

May 3, 2007

**STL SACRAMENTO PROJECT NUMBER: G7D190255**
PO/CONTRACT: pending

Angie Gatchie
Field & Technical Services, LL
200 Third Avenue
Carnegie, PA 15106

Dear Ms. Gatchie,

This report contains the analytical results for the samples received under chain of custody by STL Sacramento on April 18th & 19th, 2007. These samples are associated with your Beazer - Superior Supplemental project.

The test results in this report meet all NELAC requirements for parameters that accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The case narrative is an integral part of this report.

If you have any questions, please feel free to call me at (916) 374-4384.

Sincerely,

Karen Dahl
Project Manager

## CASE NARRATIVE

## STL SACRAMENTO PROJECT NUMBER G7D190255

**General Comments**
The samples were received at 1 degrees C.

**WATER, 8290, Dioxins/Furans**
Sample(s): 1, 2, 3, 3MS, 3MSD, 4, 5, 6, Method Blank, Laboratory Control Sample
The ending continuing calibration verification showed a high %D for OCDF (-21%). An average relative response factor (calculated from beginning and ending standards) was used to quantitate any positive results for this analyte in the associated samples.

Sample(s): 1
The 1,2,3,7,8-PeCDD, 1,2,3,4,7,8-HxCDD, & 2,3,7,8-TCDF results for this sample have been flagged with 'JA' qualifiers since their ion ratios did not meet acceptance criteria. These results have been reported as 'estimated maximum possible concentrations' since their quantitation was based on theoretical ion ratios.

Sample(s): 3
The 1,2,3,4,7,8-HxCDD result for this sample has been flagged with a 'JA' qualifier since its ion ratio did not meet acceptance criteria. This result has been reported as an 'estimated maximum possible concentration' since its quantitation was based on a theoretical ion ratio.

Sample(s): 5
The OCDF result for this sample has been flagged with a 'JA' qualifier since its ion ratio did not meet acceptance criteria. This result has been reported as an 'estimated maximum possible concentration' since its quantitation was based on a theoretical ion ratio.

Sample(s): 1, 2, 3, 4, 5, 6
The matrix spikes, which were performed on sample 3, showed several recoveries outside control limits due to possible matrix interferences. Since the laboratory control sample showed acceptable recoveries, no corrective action was performed.

There were no other anomalies associated with this project.

# Sample Summary
# G7D190255

| WO# | Sample # | Client Sample ID | Sampling Date | Received Date |
|---|---|---|---|---|
| JT8XR | 1 | W-25A | 4/17/2007 08:50 AM | 4/18/2007 09:20 AM |
| JT8XW | 2 | W-36A | 4/17/2007 09:55 AM | 4/18/2007 09:20 AM |
| JT8X0 | 3 | W-16A | 4/17/2007 11:25 AM | 4/18/2007 09:20 AM |
| JT8X2 | 4 | W-35A | 4/17/2007 12:35 PM | 4/19/2007 09:05 AM |
| JT8X5 | 5 | FB002-041707 | 4/17/2007 02:30 PM | 4/19/2007 09:05 AM |
| JT8X7 | 6 | DUPLICATE 002 | 4/17/2007 | 4/18/2007 09:20 AM |

Notes(s):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity, pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight

Field & Technical Services, LLC

Client Sample ID: W-25A

Trace Level Organic Compounds

Lot-Sample #...: G7D190255-001 Work Order #...: JT8XR1AA Matrix.....: WATER
Date Sampled...: 04/17/07 Date Received..: 04/18/07
Prep Date.....: 04/25/07 Analysis Date..: 04/27/07
Prep Batch #...: 7116503
Dilution Factor: 1

| PARAMETER | RESULT | DETECTION LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| 2,3,7,8-TCDD | ND | 2.7 | pg/L | SW846 8290 |
| Total TCDD | ND | 2.7 | pg/L | SW846 8290 |
| 1,2,3,7,8-PeCDD | 6.7 J,JA | | pg/L | SW846 8290 |
| Total PeCDD | 6.7 | | pg/L | SW846 8290 |
| 1,2,3,4,7,8-HxCDD | 19 J,JA | | pg/L | SW846 8290 |
| 1,2,3,6,7,8-HxCDD | 220 | | pg/L | SW846 8290 |
| 1,2,3,7,8,9-HxCDD | 42 J | | pg/L | SW846 8290 |
| Total HxCDD | 510 | | pg/L | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDD | 4100 | | pg/L | SW846 8290 |
| Total HpCDD | 6200 | | pg/L | SW846 8290 |
| OCDD | 25000 B | | pg/L | SW846 8290 |
| 2,3,7,8-TCDF | 3.3 J,JA | | pg/L | SW846 8290 |
| Total TCDF | 7.6 | | pg/L | SW846 8290 |
| 1,2,3,7,8-PeCDF | 25 J | | pg/L | SW846 8290 |
| 2,3,4,7,8-PeCDF | 14 J | | pg/L | SW846 8290 |
| Total PeCDF | 120 | | pg/L | SW846 8290 |
| 1,2,3,4,7,8-HxCDF | 170 | | pg/L | SW846 8290 |
| 1,2,3,6,7,8-HxCDF | 57 | | pg/L | SW846 8290 |
| 2,3,4,6,7,8-HxCDF | 33 J | | pg/L | SW846 8290 |
| 1,2,3,7,8,9-HxCDF | 15 J | | pg/L | SW846 8290 |
| Total HxCDF | 2000 | | pg/L | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDF | 1400 | | pg/L | SW846 8290 |
| 1,2,3,4,7,8,9-HpCDF | 180 | | pg/L | SW846 8290 |
| Total HpCDF | 5200 | | pg/L | SW846 8290 |
| OCDF | 3000 | | pg/L | SW846 8290 |

| INTERNAL STANDARDS | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 13C-2,3,7,8-TCDD | 92 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDD | 102 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDD | 90 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDD | 97 | (40 - 135) |
| 13C-OCDD | 120 | (40 - 135) |
| 13C-2,3,7,8-TCDF | 81 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDF | 94 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDF | 89 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDF | 84 | (40 - 135) |

NOTE(S):

J Estimated result. Result is less than the reporting limit.

JA The analyte was positively identified, but the quantitation is an estimate.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Field & Technical Services, LLC

Client Sample ID: W-36A

Trace Level Organic Compounds

**Lot-Sample #...:** G7D190255-002 **Work Order #...:** JT8XW1AA **Matrix.....:** WATER
**Date Sampled...:** 04/17/07 **Date Received..:** 04/18/07
**Prep Date.....:** 04/25/07 **Analysis Date..:** 04/27/07
**Prep Batch #...:** 7116503
**Dilution Factor:** 1

| PARAMETER | RESULT | DETECTION LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| 2,3,7,8-TCDD | ND | 3.6 | pg/L | SW846 8290 |
| Total TCDD | ND | 3.6 | pg/L | SW846 8290 |
| 1,2,3,7,8-PeCDD | ND | 7.1 | pg/L | SW846 8290 |
| Total PeCDD | ND | 7.1 | pg/L | SW846 8290 |
| 1,2,3,4,7,8-HxCDD | ND | 5.5 | pg/L | SW846 8290 |
| **1,2,3,6,7,8-HxCDD** | **22 J** | | **pg/L** | **SW846 8290** |
| 1,2,3,7,8,9-HxCDD | ND | 5.0 | pg/L | SW846 8290 |
| **Total HxCDD** | **71** | | **pg/L** | **SW846 8290** |
| **1,2,3,4,6,7,8-HpCDD** | **760** | | **pg/L** | **SW846 8290** |
| **Total HpCDD** | **1400** | | **pg/L** | **SW846 8290** |
| **OCDD** | **8300 B** | | **pg/L** | **SW846 8290** |
| 2,3,7,8-TCDF | ND | 2.6 | pg/L | SW846 8290 |
| Total TCDF | ND | 2.6 | pg/L | SW846 8290 |
| 1,2,3,7,8-PeCDF | ND | 4.4 | pg/L | SW846 8290 |
| 2,3,4,7,8-PeCDF | ND | 4.5 | pg/L | SW846 8290 |
| Total PeCDF | ND | 4.5 | pg/L | SW846 8290 |
| 1,2,3,4,7,8-HxCDF | ND | 4.1 | pg/L | SW846 8290 |
| 1,2,3,6,7,8-HxCDF | ND | 3.8 | pg/L | SW846 8290 |
| 2,3,4,6,7,8-HxCDF | ND | 4.4 | pg/L | SW846 8290 |
| 1,2,3,7,8,9-HxCDF | ND | 4.6 | pg/L | SW846 8290 |
| **Total HxCDF** | **51** | | **pg/L** | **SW846 8290** |
| **1,2,3,4,6,7,8-HpCDF** | **110** | | **pg/L** | **SW846 8290** |
| 1,2,3,4,7,8,9-HpCDF | ND | 5.7 | pg/L | SW846 8290 |
| **Total HpCDF** | **570** | | **pg/L** | **SW846 8290** |
| **OCDF** | **900** | | **pg/L** | **SW846 8290** |

| INTERNAL STANDARDS | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 13C-2,3,7,8-TCDD | 92 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDD | 100 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDD | 89 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDD | 96 | (40 - 135) |
| 13C-OCDD | 115 | (40 - 135) |
| 13C-2,3,7,8-TCDF | 83 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDF | 87 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDF | 94 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDF | 82 | (40 - 135) |

**NOTE(S):**

J Estimated result. Result is less than the reporting limit.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Field & Technical Services, LLC

Client Sample ID: W-16A

Trace Level Organic Compounds

Lot-Sample #...: G7D190255-003 Work Order #...: JT8X01AA Matrix.....: WATER
Date Sampled...: 04/17/07 Date Received..: 04/18/07
Prep Date.....: 04/25/07 Analysis Date..: 04/27/07
Prep Batch #...: 7116503
Dilution Factor: 1

| PARAMETER | RESULT | DETECTION LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| 2,3,7,8-TCDD | ND | 3.8 | pg/L | SW846 8290 |
| Total TCDD | ND | 3.8 | pg/L | SW846 8290 |
| 1,2,3,7,8-PeCDD | ND | 6.2 | pg/L | SW846 8290 |
| Total PeCDD | ND | 12 | pg/L | SW846 8290 |
| **1,2,3,4,7,8-HxCDD** | **9.1 J,JA** | | **pg/L** | **SW846 8290** |
| **1,2,3,6,7,8-HxCDD** | **61** | | **pg/L** | **SW846 8290** |
| **1,2,3,7,8,9-HxCDD** | **56** | | **pg/L** | **SW846 8290** |
| **Total HxCDD** | **780** | | **pg/L** | **SW846 8290** |
| **1,2,3,4,6,7,8-HpCDD** | **2500** | | **pg/L** | **SW846 8290** |
| **Total HpCDD** | **8500** | | **pg/L** | **SW846 8290** |
| **OCDD** | **23000 B** | | **pg/L** | **SW846 8290** |
| 2,3,7,8-TCDF | ND | 2.7 | pg/L | SW846 8290 |
| Total TCDF | ND | 2.7 | pg/L | SW846 8290 |
| 1,2,3,7,8-PeCDF | ND | 4.4 | pg/L | SW846 8290 |
| 2,3,4,7,8-PeCDF | ND | 4.5 | pg/L | SW846 8290 |
| Total PeCDF | ND | 4.5 | pg/L | SW846 8290 |
| **1,2,3,4,7,8-HxCDF** | **18 J** | | **pg/L** | **SW846 8290** |
| 1,2,3,6,7,8-HxCDF | ND | 3.6 | pg/L | SW846 8290 |
| 2,3,4,6,7,8-HxCDF | ND | 4.1 | pg/L | SW846 8290 |
| 1,2,3,7,8,9-HxCDF | ND | 4.3 | pg/L | SW846 8290 |
| **Total HxCDF** | **180** | | **pg/L** | **SW846 8290** |
| **1,2,3,4,6,7,8-HpCDF** | **200** | | **pg/L** | **SW846 8290** |
| **1,2,3,4,7,8,9-HpCDF** | **22 J** | | **pg/L** | **SW846 8290** |
| **Total HpCDF** | **870** | | **pg/L** | **SW846 8290** |
| **OCDF** | **1000** | | **pg/L** | **SW846 8290** |

| INTERNAL STANDARDS | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 13C-2,3,7,8-TCDD | 94 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDD | 114 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDD | 84 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDD | 91 | (40 - 135) |
| 13C-OCDD | 111 | (40 - 135) |
| 13C-2,3,7,8-TCDF | 84 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDF | 98 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDF | 87 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDF | 76 | (40 - 135) |

NOTE(S):

J Estimated result. Result is less than the reporting limit.

JA The analyte was positively identified, but the quantitation is an estimate.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Field & Technical Services, LLC

Client Sample ID: W-35A

Trace Level Organic Compounds

Lot-Sample #...: G7D190255-004 Work Order #...: JT8X21AA Matrix.....: WATER
Date Sampled...: 04/17/07 Date Received..: 04/19/07
Prep Date.....: 04/25/07 Analysis Date..: 04/27/07
Prep Batch #...: 7116503
Dilution Factor: 1

| PARAMETER | RESULT | DETECTION LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| 2,3,7,8-TCDD | ND | 2.8 | pg/L | SW846 8290 |
| Total TCDD | ND | 2.8 | pg/L | SW846 8290 |
| 1,2,3,7,8-PeCDD | ND | 5.7 | pg/L | SW846 8290 |
| Total PeCDD | ND | 5.7 | pg/L | SW846 8290 |
| 1,2,3,4,7,8-HxCDD | ND | 4.2 | pg/L | SW846 8290 |
| 1,2,3,6,7,8-HxCDD | ND | 4.0 | pg/L | SW846 8290 |
| 1,2,3,7,8,9-HxCDD | ND | 3.8 | pg/L | SW846 8290 |
| Total HxCDD | ND | 5.5 | pg/L | SW846 8290 |
| **1,2,3,4,6,7,8-HpCDD** | **290** | | **pg/L** | **SW846 8290** |
| **Total HpCDD** | **600** | | **pg/L** | **SW846 8290** |
| **OCDD** | **3100 B** | | **pg/L** | **SW846 8290** |
| 2,3,7,8-TCDF | ND | 2.6 | pg/L | SW846 8290 |
| Total TCDF | ND | 2.6 | pg/L | SW846 8290 |
| 1,2,3,7,8-PeCDF | ND | 3.8 | pg/L | SW846 8290 |
| 2,3,4,7,8-PeCDF | ND | 3.8 | pg/L | SW846 8290 |
| Total PeCDF | ND | 3.8 | pg/L | SW846 8290 |
| 1,2,3,4,7,8-HxCDF | ND | 3.4 | pg/L | SW846 8290 |
| 1,2,3,6,7,8-HxCDF | ND | 3.2 | pg/L | SW846 8290 |
| 2,3,4,6,7,8-HxCDF | ND | 3.6 | pg/L | SW846 8290 |
| 1,2,3,7,8,9-HxCDF | ND | 3.8 | pg/L | SW846 8290 |
| **Total HxCDF** | **30** | | **pg/L** | **SW846 8290** |
| **1,2,3,4,6,7,8-HpCDF** | **61** | | **pg/L** | **SW846 8290** |
| 1,2,3,4,7,8,9-HpCDF | ND | 4.4 | pg/L | SW846 8290 |
| **Total HpCDF** | **250** | | **pg/L** | **SW846 8290** |
| **OCDF** | **350** | | **pg/L** | **SW846 8290** |

| INTERNAL STANDARDS | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 13C-2,3,7,8-TCDD | 98 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDD | 108 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDD | 92 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDD | 91 | (40 - 135) |
| 13C-OCDD | 112 | (40 - 135) |
| 13C-2,3,7,8-TCDF | 82 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDF | 94 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDF | 90 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDF | 76 | (40 - 135) |

NOTE(S):

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Field & Technical Services, LLC

Client Sample ID: FB002-041707

Trace Level Organic Compounds

Lot-Sample #...: G7D190255-005 Work Order #...: JT8X51AA Matrix.....: WATER
Date Sampled...: 04/17/07 Date Received..: 04/19/07
Prep Date.....: 04/25/07 Analysis Date..: 04/27/07
Prep Batch #...: 7116503
Dilution Factor: 1

| PARAMETER | RESULT | DETECTION LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| 2,3,7,8-TCDD | ND | 3.8 | pg/L | SW846 8290 |
| Total TCDD | ND | 3.8 | pg/L | SW846 8290 |
| 1,2,3,7,8-PeCDD | ND | 7.9 | pg/L | SW846 8290 |
| Total PeCDD | ND | 7.9 | pg/L | SW846 8290 |
| 1,2,3,4,7,8-HxCDD | ND | 5.4 | pg/L | SW846 8290 |
| 1,2,3,6,7,8-HxCDD | ND | 5.2 | pg/L | SW846 8290 |
| 1,2,3,7,8,9-HxCDD | ND | 5.0 | pg/L | SW846 8290 |
| Total HxCDD | ND | 5.4 | pg/L | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDD | ND | 5.2 | pg/L | SW846 8290 |
| Total HpCDD | ND | 5.2 | pg/L | SW846 8290 |
| **OCDD** | **19 J,B** | | **pg/L** | **SW846 8290** |
| 2,3,7,8-TCDF | ND | 3.1 | pg/L | SW846 8290 |
| Total TCDF | ND | 3.1 | pg/L | SW846 8290 |
| 1,2,3,7,8-PeCDF | ND | 4.6 | pg/L | SW846 8290 |
| 2,3,4,7,8-PeCDF | ND | 4.7 | pg/L | SW846 8290 |
| Total PeCDF | ND | 4.7 | pg/L | SW846 8290 |
| 1,2,3,4,7,8-HxCDF | ND | 4.2 | pg/L | SW846 8290 |
| 1,2,3,6,7,8-HxCDF | ND | 3.9 | pg/L | SW846 8290 |
| 2,3,4,6,7,8-HxCDF | ND | 4.5 | pg/L | SW846 8290 |
| 1,2,3,7,8,9-HxCDF | ND | 4.7 | pg/L | SW846 8290 |
| Total HxCDF | ND | 4.7 | pg/L | SW846 8290 |
| **1,2,3,4,6,7,8-HpCDF** | **11 J** | | **pg/L** | **SW846 8290** |
| 1,2,3,4,7,8,9-HpCDF | ND | 3.9 | pg/L | SW846 8290 |
| **Total HpCDF** | **11** | | **pg/L** | **SW846 8290** |
| **OCDF** | **22 J,JA** | | **pg/L** | **SW846 8290** |

| INTERNAL STANDARDS | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 13C-2,3,7,8-TCDD | 88 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDD | 93 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDD | 89 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDD | 90 | (40 - 135) |
| 13C-OCDD | 104 | (40 - 135) |
| 13C-2,3,7,8-TCDF | 76 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDF | 80 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDF | 82 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDF | 76 | (40 - 135) |

NOTE(S):

J Estimated result. Result is less than the reporting limit.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

JA The analyte was positively identified, but the quantitation is an estimate.

Field & Technical Services, LLC

Client Sample ID: DUPLICATE 002

Trace Level Organic Compounds

Lot-Sample #...: G7D190255-006 Work Order #...: JT8X71AA Matrix.....: WATER
Date Sampled...: 04/17/07 Date Received..: 04/18/07
Prep Date.....: 04/25/07 Analysis Date..: 04/27/07
Prep Batch #...: 7116503
Dilution Factor: 1

| PARAMETER | RESULT | DETECTION LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| 2,3,7,8-TCDD | ND | 3.7 | pg/L | SW846 8290 |
| Total TCDD | ND | 3.7 | pg/L | SW846 8290 |
| 1,2,3,7,8-PeCDD | ND | 7.3 | pg/L | SW846 8290 |
| Total PeCDD | ND | 7.3 | pg/L | SW846 8290 |
| 1,2,3,4,7,8-HxCDD | ND | 6.6 | pg/L | SW846 8290 |
| **1,2,3,6,7,8-HxCDD** | **21 J** | | **pg/L** | **SW846 8290** |
| 1,2,3,7,8,9-HxCDD | ND | 6.0 | pg/L | SW846 8290 |
| **Total HxCDD** | **70** | | **pg/L** | **SW846 8290** |
| **1,2,3,4,6,7,8-HpCDD** | **750** | | **pg/L** | **SW846 8290** |
| **Total HpCDD** | **1400** | | **pg/L** | **SW846 8290** |
| **OCDD** | **8400 B** | | **pg/L** | **SW846 8290** |
| 2,3,7,8-TCDF | ND | 2.9 | pg/L | SW846 8290 |
| Total TCDF | ND | 2.9 | pg/L | SW846 8290 |
| 1,2,3,7,8-PeCDF | ND | 5.1 | pg/L | SW846 8290 |
| 2,3,4,7,8-PeCDF | ND | 5.2 | pg/L | SW846 8290 |
| Total PeCDF | ND | 5.2 | pg/L | SW846 8290 |
| 1,2,3,4,7,8-HxCDF | ND | 4.9 | pg/L | SW846 8290 |
| 1,2,3,6,7,8-HxCDF | ND | 4.5 | pg/L | SW846 8290 |
| 2,3,4,6,7,8-HxCDF | ND | 5.2 | pg/L | SW846 8290 |
| 1,2,3,7,8,9-HxCDF | ND | 5.4 | pg/L | SW846 8290 |
| **Total HxCDF** | **60** | | **pg/L** | **SW846 8290** |
| **1,2,3,4,6,7,8-HpCDF** | **110** | | **pg/L** | **SW846 8290** |
| 1,2,3,4,7,8,9-HpCDF | ND | 5.8 | pg/L | SW846 8290 |
| **Total HpCDF** | **550** | | **pg/L** | **SW846 8290** |
| **OCDF** | **860** | | **pg/L** | **SW846 8290** |

| INTERNAL STANDARDS | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 13C-2,3,7,8-TCDD | 89 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDD | 100 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDD | 88 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDD | 97 | (40 - 135) |
| 13C-OCDD | 99 | (40 - 135) |
| 13C-2,3,7,8-TCDF | 80 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDF | 81 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDF | 87 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDF | 83 | (40 - 135) |

NOTE(S):

J Estimated result. Result is less than the reporting limit.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

STL

**STL Sacramento**
880 Riverside Parkway
West Sacramento, CA 95605

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May 7, 2007

**STL SACRAMENTO PROJECT NUMBER: G7D170312**
PO/CONTRACT: pending

Angie Gatchie
Field & Technical Services, LL
200 Third Avenue
Carnegie, PA 15106

Dear Ms. Gatchie,

This report contains the analytical results for the samples received under chain of custody by STL Sacramento on April 17, 2007. These samples are associated with your Beazer - Superior Supplemental project.

The test results in this report meet all NELAC requirements for parameters that accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The case narrative is an integral part of this report.

If you have any questions, please feel free to call me at (916) 374-4384.

Sincerely,

Karen Dahl
Project Manager

## CASE NARRATIVE

## STL SACRAMENTO PROJECT NUMBER G7D170312

**General Comments**
The samples were received at -2 degrees Celsius, but did not appear to be frozen.

**WATER, 8290, Dioxins/Furans**
Sample(s): 1, 2, 3, 4, Method Blank, Laboratory Control Sample
The ending continuing calibration verification showed a high %D for 1,2,3,4,7,8-HxCDD (-22%). An average relative response factor (calculated from beginning and ending standards) was used to quantitate any positive results for this analyte in the associated samples.

Sample(s): 2
The OCDD result for this sample has been flagged with a 'JA' qualifier since its ion ratio did not meet acceptance criteria. This result has been reported as an 'estimated maximum possible concentration' since its quantitation was based on a theoretical ion ratio.

There were no other anomalies associated with this project.

# Sample Summary
# G7D170312

| WO# | Sample # | Client Sample ID | Sampling Date | Received Date |
|---|---|---|---|---|
| JT3W1 | 1 | W-26A | 4/16/2007 09:50 AM | 4/17/2007 09:10 AM |
| JT3X0 | 2 | W-39A | 4/16/2007 01:05 PM | 4/17/2007 09:10 AM |
| JT3X1 | 3 | W-14A | 4/16/2007 02:25 PM | 4/17/2007 09:10 AM |
| JT3X4 | 4 | FB001-041607 | 4/16/2007 02:55 PM | 4/17/2007 09:10 AM |

Notes(s):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity, pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight

Field & Technical Services, LLC

Client Sample ID: W-26A

Trace Level Organic Compounds

**Lot-Sample #...:** G7D170312-001 **Work Order #...:** JT3W11AA **Matrix.....:** WATER
**Date Sampled...:** 04/16/07 **Date Received..:** 04/17/07
**Prep Date.....:** 04/21/07 **Analysis Date..:** 04/29/07
**Prep Batch #...:** 7111225
**Dilution Factor:** 1

| PARAMETER | RESULT | DETECTION LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| 2,3,7,8-TCDD | ND | 4.8 | pg/L | SW846 8290 |
| Total TCDD | ND | 4.8 | pg/L | SW846 8290 |
| 1,2,3,7,8-PeCDD | ND | 19 | pg/L | SW846 8290 |
| Total PeCDD | ND | 19 | pg/L | SW846 8290 |
| 1,2,3,4,7,8-HxCDD | ND | 17 | pg/L | SW846 8290 |
| 1,2,3,6,7,8-HxCDD | ND | 16 | pg/L | SW846 8290 |
| 1,2,3,7,8,9-HxCDD | ND | 15 | pg/L | SW846 8290 |
| Total HxCDD | ND | 17 | pg/L | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDD | ND | 17 | pg/L | SW846 8290 |
| Total HpCDD | ND | 17 | pg/L | SW846 8290 |
| **OCDD** | **270** | | **pg/L** | **SW846 8290** |
| 2,3,7,8-TCDF | ND | 8.2 | pg/L | SW846 8290 |
| Total TCDF | ND | 8.2 | pg/L | SW846 8290 |
| 1,2,3,7,8-PeCDF | ND | 15 | pg/L | SW846 8290 |
| 2,3,4,7,8-PeCDF | ND | 15 | pg/L | SW846 8290 |
| Total PeCDF | ND | 15 | pg/L | SW846 8290 |
| 1,2,3,4,7,8-HxCDF | ND | 13 | pg/L | SW846 8290 |
| 1,2,3,6,7,8-HxCDF | ND | 12 | pg/L | SW846 8290 |
| 2,3,4,6,7,8-HxCDF | ND | 14 | pg/L | SW846 8290 |
| 1,2,3,7,8,9-HxCDF | ND | 14 | pg/L | SW846 8290 |
| Total HxCDF | ND | 14 | pg/L | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDF | ND | 10 | pg/L | SW846 8290 |
| 1,2,3,4,7,8,9-HpCDF | ND | 11 | pg/L | SW846 8290 |
| Total HpCDF | ND | 11 | pg/L | SW846 8290 |
| OCDF | ND | 26 | pg/L | SW846 8290 |

| INTERNAL STANDARDS | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 13C-2,3,7,8-TCDD | 90 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDD | 87 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDD | 99 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDD | 94 | (40 - 135) |
| 13C-OCDD | 96 | (40 - 135) |
| 13C-2,3,7,8-TCDF | 92 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDF | 92 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDF | 95 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDF | 103 | (40 - 135) |

Field & Technical Services, LLC

Client Sample ID: W-39A

Trace Level Organic Compounds

**Lot-Sample #...:** G7D170312-002 **Work Order #...:** JT3X01AA **Matrix.....:** WATER
**Date Sampled...:** 04/16/07 **Date Received..:** 04/17/07
**Prep Date.....:** 04/21/07 **Analysis Date..:** 04/29/07
**Prep Batch #...:** 7111225
**Dilution Factor:** 1

| PARAMETER | RESULT | DETECTION LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| 2,3,7,8-TCDD | ND | 8.7 | pg/L | SW846 8290 |
| Total TCDD | ND | 8.7 | pg/L | SW846 8290 |
| 1,2,3,7,8-PeCDD | ND | 35 | pg/L | SW846 8290 |
| Total PeCDD | ND | 35 | pg/L | SW846 8290 |
| 1,2,3,4,7,8-HxCDD | ND | 22 | pg/L | SW846 8290 |
| 1,2,3,6,7,8-HxCDD | ND | 22 | pg/L | SW846 8290 |
| 1,2,3,7,8,9-HxCDD | ND | 21 | pg/L | SW846 8290 |
| Total HxCDD | ND | 22 | pg/L | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDD | ND | 18 | pg/L | SW846 8290 |
| Total HpCDD | ND | 18 | pg/L | SW846 8290 |
| **OCDD** | **65 JA** | | **pg/L** | **SW846 8290** |
| 2,3,7,8-TCDF | ND | 4.0 | pg/L | SW846 8290 |
| Total TCDF | ND | 4.0 | pg/L | SW846 8290 |
| 1,2,3,7,8-PeCDF | ND | 21 | pg/L | SW846 8290 |
| 2,3,4,7,8-PeCDF | ND | 21 | pg/L | SW846 8290 |
| Total PeCDF | ND | 21 | pg/L | SW846 8290 |
| 1,2,3,4,7,8-HxCDF | ND | 19 | pg/L | SW846 8290 |
| 1,2,3,6,7,8-HxCDF | ND | 18 | pg/L | SW846 8290 |
| 2,3,4,6,7,8-HxCDF | ND | 20 | pg/L | SW846 8290 |
| 1,2,3,7,8,9-HxCDF | ND | 21 | pg/L | SW846 8290 |
| Total HxCDF | ND | 21 | pg/L | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDF | ND | 13 | pg/L | SW846 8290 |
| 1,2,3,4,7,8,9-HpCDF | ND | 14 | pg/L | SW846 8290 |
| Total HpCDF | ND | 14 | pg/L | SW846 8290 |
| OCDF | ND | 28 | pg/L | SW846 8290 |

| INTERNAL STANDARDS | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 13C-2,3,7,8-TCDD | 92 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDD | 84 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDD | 98 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDD | 94 | (40 - 135) |
| 13C-OCDD | 99 | (40 - 135) |
| 13C-2,3,7,8-TCDF | 87 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDF | 86 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDF | 82 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDF | 100 | (40 - 135) |

**NOTE(S):**

JA The analyte was positively identified, but the quantitation is an estimate.

Field & Technical Services, LLC

Client Sample ID: W-14A

Trace Level Organic Compounds

Lot-Sample #...: G7D170312-003 Work Order #...: JT3X11AA Matrix.....: WATER
Date Sampled...: 04/16/07 Date Received..: 04/17/07
Prep Date.....: 04/21/07 Analysis Date..: 04/29/07
Prep Batch #...: 7111225
Dilution Factor: 1

| PARAMETER | RESULT | DETECTION LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| 2,3,7,8-TCDD | ND | 4.3 | pg/L | SW846 8290 |
| Total TCDD | ND | 4.3 | pg/L | SW846 8290 |
| 1,2,3,7,8-PeCDD | ND | 29 | pg/L | SW846 8290 |
| Total PeCDD | ND | 29 | pg/L | SW846 8290 |
| 1,2,3,4,7,8-HxCDD | ND | 19 | pg/L | SW846 8290 |
| 1,2,3,6,7,8-HxCDD | ND | 19 | pg/L | SW846 8290 |
| 1,2,3,7,8,9-HxCDD | ND | 18 | pg/L | SW846 8290 |
| Total HxCDD | ND | 19 | pg/L | SW846 8290 |
| **1,2,3,4,6,7,8-HpCDD** | **53** | | **pg/L** | **SW846 8290** |
| **Total HpCDD** | **130** | | **pg/L** | **SW846 8290** |
| **OCDD** | **610** | | **pg/L** | **SW846 8290** |
| 2,3,7,8-TCDF | ND | 9.2 | pg/L | SW846 8290 |
| Total TCDF | ND | 9.2 | pg/L | SW846 8290 |
| 1,2,3,7,8-PeCDF | ND | 17 | pg/L | SW846 8290 |
| 2,3,4,7,8-PeCDF | ND | 17 | pg/L | SW846 8290 |
| Total PeCDF | ND | 17 | pg/L | SW846 8290 |
| 1,2,3,4,7,8-HxCDF | ND | 16 | pg/L | SW846 8290 |
| 1,2,3,6,7,8-HxCDF | ND | 15 | pg/L | SW846 8290 |
| 2,3,4,6,7,8-HxCDF | ND | 17 | pg/L | SW846 8290 |
| 1,2,3,7,8,9-HxCDF | ND | 18 | pg/L | SW846 8290 |
| Total HxCDF | ND | 18 | pg/L | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDF | ND | 11 | pg/L | SW846 8290 |
| 1,2,3,4,7,8,9-HpCDF | ND | 12 | pg/L | SW846 8290 |
| Total HpCDF | ND | 12 | pg/L | SW846 8290 |
| **OCDF** | **49** | | **pg/L** | **SW846 8290** |

| INTERNAL STANDARDS | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 13C-2,3,7,8-TCDD | 94 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDD | 86 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDD | 105 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDD | 99 | (40 - 135) |
| 13C-OCDD | 102 | (40 - 135) |
| 13C-2,3,7,8-TCDF | 98 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDF | 98 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDF | 100 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDF | 119 | (40 - 135) |

Field & Technical Services, LLC

Client Sample ID: FB001-041607

Trace Level Organic Compounds

Lot-Sample #...: G7D170312-004 Work Order #...: JT3X41AA Matrix.....: WATER
Date Sampled...: 04/16/07 Date Received..: 04/17/07
Prep Date.....: 04/21/07 Analysis Date..: 04/29/07
Prep Batch #...: 7111225
Dilution Factor: 1

| PARAMETER | RESULT | DETECTION LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| 2,3,7,8-TCDD | ND | 6.8 | pg/L | SW846 8290 |
| Total TCDD | ND | 6.8 | pg/L | SW846 8290 |
| 1,2,3,7,8-PeCDD | ND | 11 | pg/L | SW846 8290 |
| Total PeCDD | ND | 11 | pg/L | SW846 8290 |
| 1,2,3,4,7,8-HxCDD | ND | 8.3 | pg/L | SW846 8290 |
| 1,2,3,6,7,8-HxCDD | ND | 8.2 | pg/L | SW846 8290 |
| 1,2,3,7,8,9-HxCDD | ND | 7.7 | pg/L | SW846 8290 |
| Total HxCDD | ND | 8.3 | pg/L | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDD | ND | 8.8 | pg/L | SW846 8290 |
| Total HpCDD | ND | 8.8 | pg/L | SW846 8290 |
| OCDD | ND | 12 | pg/L | SW846 8290 |
| 2,3,7,8-TCDF | ND | 3.7 | pg/L | SW846 8290 |
| Total TCDF | ND | 3.7 | pg/L | SW846 8290 |
| 1,2,3,7,8-PeCDF | ND | 5.7 | pg/L | SW846 8290 |
| 2,3,4,7,8-PeCDF | ND | 5.7 | pg/L | SW846 8290 |
| Total PeCDF | ND | 5.7 | pg/L | SW846 8290 |
| 1,2,3,4,7,8-HxCDF | ND | 5.9 | pg/L | SW846 8290 |
| 1,2,3,6,7,8-HxCDF | ND | 5.6 | pg/L | SW846 8290 |
| 2,3,4,6,7,8-HxCDF | ND | 6.4 | pg/L | SW846 8290 |
| 1,2,3,7,8,9-HxCDF | ND | 6.5 | pg/L | SW846 8290 |
| Total HxCDF | ND | 6.5 | pg/L | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDF | ND | 5.0 | pg/L | SW846 8290 |
| 1,2,3,4,7,8,9-HpCDF | ND | 5.7 | pg/L | SW846 8290 |
| Total HpCDF | ND | 5.7 | pg/L | SW846 8290 |
| OCDF | ND | 11 | pg/L | SW846 8290 |

| INTERNAL STANDARDS | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 13C-2,3,7,8-TCDD | 84 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDD | 85 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDD | 90 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDD | 91 | (40 - 135) |
| 13C-OCDD | 92 | (40 - 135) |
| 13C-2,3,7,8-TCDF | 90 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDF | 95 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDF | 94 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDF | 101 | (40 - 135) |

STL

**STL Sacramento**
880 Riverside Parkway
West Sacramento, CA 95605

Tel: 916 373 5600
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June 27, 2007

**STL SACRAMENTO PROJECT NUMBER: G7F140368**
PO/CONTRACT: Pending

Angie Gatchie
Field & Technical Services, LL
200 Third Avenue
Carnegie, PA 15106

Dear Ms. Gatchie,

This report contains the analytical results for the samples received under chain of custody by STL Sacramento on June 14, 2007. These samples are associated with your Beazer - Superior GW project.

The test results in this report meet all NELAC requirements for parameters that accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The case narrative is an integral part of this report.

If you have any questions, please feel free to call me at (916) 374-4384.

Sincerely,

Jill Kellmann

For
Karen Dahl
Project Manager

## CASE NARRATIVE

## STL SACRAMENTO PROJECT NUMBER G7F140368

### General Comments

The samples were received at the lab at 1 degree Celsius, with wet ice used as the cooling agent.

### WATER, 8290, Dioxins/Furans, HRGC/HRMS

Sample(s): 1, 2, 3

The laboratory control sample (LCS) associated with this extraction batch has recoveries for 2,3,4,6,7,8-HxCDF and 1,2,3,7,8,9-HxCDF above the established control limits indicating a possible high bias. As these samples are non-detect for these compounds there is no adverse impact upon the data.

There were no other anomalies associated with this project.

# Sample Summary
# G7F140368

| WO# | Sample # | Client Sample ID | Sampling Date | Received Date |
|---|---|---|---|---|
| J02T2 | 1 | W-35A | 6/13/2007 09:40 AM | 6/14/2007 09:40 AM |
| J02VA | 2 | DUP01 | 6/13/2007 | 6/14/2007 09:40 AM |
| J02VG | 3 | EQ BLANK | 6/13/2007 01:30 PM | 6/14/2007 09:40 AM |

Notes(s):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity, pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight

Field & Technical Services, LLC

Client Sample ID: W-35A

Trace Level Organic Compounds

Lot-Sample #...: G7F140368-001 Work Order #...: J02T21AA Matrix.....: WATER
Date Sampled...: 06/13/07 Date Received..: 06/14/07
Prep Date.....: 06/15/07 Analysis Date..: 06/21/07
Prep Batch #...: 7169278
Dilution Factor: 1

| PARAMETER | RESULT | DETECTION LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| 2,3,7,8-TCDD | ND | 0.47 | pg/L | SW846 8290 |
| Total TCDD | ND | 1.2 | pg/L | SW846 8290 |
| 1,2,3,7,8-PeCDD | ND | 0.64 | pg/L | SW846 8290 |
| Total PeCDD | ND | 0.96 | pg/L | SW846 8290 |
| 1,2,3,4,7,8-HxCDD | ND | 0.70 | pg/L | SW846 8290 |
| **1,2,3,6,7,8-HxCDD** | **4.2 J** | | **pg/L** | **SW846 8290** |
| 1,2,3,7,8,9-HxCDD | ND | 1.2 | pg/L | SW846 8290 |
| **Total HxCDD** | **17** | | **pg/L** | **SW846 8290** |
| **1,2,3,4,6,7,8-HpCDD** | **120** | | **pg/L** | **SW846 8290** |
| **Total HpCDD** | **270** | | **pg/L** | **SW846 8290** |
| **OCDD** | **1700** | | **pg/L** | **SW846 8290** |
| 2,3,7,8-TCDF | ND | 0.71 | pg/L | SW846 8290 |
| Total TCDF | ND | 0.71 | pg/L | SW846 8290 |
| 1,2,3,7,8-PeCDF | ND | 0.66 | pg/L | SW846 8290 |
| 2,3,4,7,8-PeCDF | ND | 0.53 | pg/L | SW846 8290 |
| Total PeCDF | ND | 0.66 | pg/L | SW846 8290 |
| **1,2,3,4,7,8-HxCDF** | **3.6 J** | | **pg/L** | **SW846 8290** |
| **1,2,3,6,7,8-HxCDF** | **1.1 J** | | **pg/L** | **SW846 8290** |
| 2,3,4,6,7,8-HxCDF | ND | 0.93 | pg/L | SW846 8290 |
| 1,2,3,7,8,9-HxCDF | ND | 0.88 | pg/L | SW846 8290 |
| **Total HxCDF** | **42** | | **pg/L** | **SW846 8290** |
| **1,2,3,4,6,7,8-HpCDF** | **33 J** | | **pg/L** | **SW846 8290** |
| **1,2,3,4,7,8,9-HpCDF** | **3.2 J** | | **pg/L** | **SW846 8290** |
| **Total HpCDF** | **140** | | **pg/L** | **SW846 8290** |
| **OCDF** | **100 J** | | **pg/L** | **SW846 8290** |

| INTERNAL STANDARDS | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 13C-2,3,7,8-TCDD | 86 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDD | 104 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDD | 87 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDD | 98 | (40 - 135) |
| 13C-OCDD | 99 | (40 - 135) |
| 13C-2,3,7,8-TCDF | 82 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDF | 90 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDF | 82 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDF | 92 | (40 - 135) |

NOTE(S):

J Estimated result. Result is less than the reporting limit.

Field & Technical Services, LLC

Client Sample ID: DUP01

Trace Level Organic Compounds

Lot-Sample #...: G7F140368-002 Work Order #...: J02VA1AA Matrix.....: WATER
Date Sampled...: 06/13/07 Date Received..: 06/14/07
Prep Date.....: 06/15/07 Analysis Date..: 06/21/07
Prep Batch #...: 7169278
Dilution Factor: 1

| PARAMETER | RESULT | DETECTION LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| 2,3,7,8-TCDD | ND | 0.44 | pg/L | SW846 8290 |
| Total TCDD | ND | 1.0 | pg/L | SW846 8290 |
| 1,2,3,7,8-PeCDD | ND | 0.68 | pg/L | SW846 8290 |
| Total PeCDD | ND | 0.83 | pg/L | SW846 8290 |
| 1,2,3,4,7,8-HxCDD | ND | 0.63 | pg/L | SW846 8290 |
| **1,2,3,6,7,8-HxCDD** | **3.3 J** | | **pg/L** | **SW846 8290** |
| **1,2,3,7,8,9-HxCDD** | **1.1 J** | | **pg/L** | **SW846 8290** |
| **Total HxCDD** | **9.6** | | **pg/L** | **SW846 8290** |
| **1,2,3,4,6,7,8-HpCDD** | **92** | | **pg/L** | **SW846 8290** |
| **Total HpCDD** | **200** | | **pg/L** | **SW846 8290** |
| **OCDD** | **1200** | | **pg/L** | **SW846 8290** |
| 2,3,7,8-TCDF | ND | 0.65 | pg/L | SW846 8290 |
| Total TCDF | ND | 0.65 | pg/L | SW846 8290 |
| **1,2,3,7,8-PeCDF** | **0.62 J** | | **pg/L** | **SW846 8290** |
| **2,3,4,7,8-PeCDF** | **0.53 J** | | **pg/L** | **SW846 8290** |
| **Total PeCDF** | **1.2** | | **pg/L** | **SW846 8290** |
| **1,2,3,4,7,8-HxCDF** | **2.8 J** | | **pg/L** | **SW846 8290** |
| 1,2,3,6,7,8-HxCDF | ND | 0.62 | pg/L | SW846 8290 |
| 2,3,4,6,7,8-HxCDF | ND | 0.69 | pg/L | SW846 8290 |
| 1,2,3,7,8,9-HxCDF | ND | 0.78 | pg/L | SW846 8290 |
| **Total HxCDF** | **28** | | **pg/L** | **SW846 8290** |
| **1,2,3,4,6,7,8-HpCDF** | **24 J** | | **pg/L** | **SW846 8290** |
| **1,2,3,4,7,8,9-HpCDF** | **2.6 J** | | **pg/L** | **SW846 8290** |
| **Total HpCDF** | **100** | | **pg/L** | **SW846 8290** |
| **OCDF** | **73 J** | | **pg/L** | **SW846 8290** |

| INTERNAL STANDARDS | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 13C-2,3,7,8-TCDD | 84 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDD | 102 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDD | 82 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDD | 93 | (40 - 135) |
| 13C-OCDD | 91 | (40 - 135) |
| 13C-2,3,7,8-TCDF | 81 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDF | 89 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDF | 78 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDF | 86 | (40 - 135) |

NOTE(S):

J Estimated result. Result is less than the reporting limit.

Field & Technical Services, LLC

Client Sample ID: EQ BLANK

Trace Level Organic Compounds

**Lot-Sample #...:** G7F140368-003 **Work Order #...:** J02VG1AA **Matrix.....:** WATER
**Date Sampled...:** 06/13/07 **Date Received..:** 06/14/07
**Prep Date.....:** 06/15/07 **Analysis Date..:** 06/21/07
**Prep Batch #...:** 7169278
**Dilution Factor:** 1

| PARAMETER | RESULT | DETECTION LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| 2,3,7,8-TCDD | ND | 0.45 | pg/L | SW846 8290 |
| Total TCDD | ND | 1.1 | pg/L | SW846 8290 |
| 1,2,3,7,8-PeCDD | ND | 0.64 | pg/L | SW846 8290 |
| Total PeCDD | ND | 0.80 | pg/L | SW846 8290 |
| 1,2,3,4,7,8-HxCDD | ND | 0.52 | pg/L | SW846 8290 |
| 1,2,3,6,7,8-HxCDD | ND | 0.48 | pg/L | SW846 8290 |
| 1,2,3,7,8,9-HxCDD | ND | 0.44 | pg/L | SW846 8290 |
| Total HxCDD | ND | 0.96 | pg/L | SW846 8290 |
| **1,2,3,4,6,7,8-HpCDD** | 2.1 J | | **pg/L** | **SW846 8290** |
| **Total HpCDD** | 2.1 | | **pg/L** | **SW846 8290** |
| **OCDD** | 15 J | | **pg/L** | **SW846 8290** |
| 2,3,7,8-TCDF | ND | 0.69 | pg/L | SW846 8290 |
| Total TCDF | ND | 0.69 | pg/L | SW846 8290 |
| 1,2,3,7,8-PeCDF | ND | 0.37 | pg/L | SW846 8290 |
| 2,3,4,7,8-PeCDF | ND | 0.37 | pg/L | SW846 8290 |
| Total PeCDF | ND | 0.37 | pg/L | SW846 8290 |
| 1,2,3,4,7,8-HxCDF | ND | 0.48 | pg/L | SW846 8290 |
| 1,2,3,6,7,8-HxCDF | ND | 0.41 | pg/L | SW846 8290 |
| 2,3,4,6,7,8-HxCDF | ND | 0.48 | pg/L | SW846 8290 |
| 1,2,3,7,8,9-HxCDF | ND | 0.56 | pg/L | SW846 8290 |
| Total HxCDF | ND | 0.56 | pg/L | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDF | ND | 0.66 | pg/L | SW846 8290 |
| 1,2,3,4,7,8,9-HpCDF | ND | 0.46 | pg/L | SW846 8290 |
| **Total HpCDF** | 0.99 | | **pg/L** | **SW846 8290** |
| OCDF | ND | 1.2 | pg/L | SW846 8290 |

| INTERNAL STANDARDS | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 13C-2,3,7,8-TCDD | 89 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDD | 107 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDD | 82 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDD | 99 | (40 - 135) |
| 13C-OCDD | 97 | (40 - 135) |
| 13C-2,3,7,8-TCDF | 86 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDF | 94 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDF | 83 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDF | 92 | (40 - 135) |

**NOTE(S):**

J Estimated result. Result is less than the reporting limit.

ARCADIS BBL

**Attachment 4**

W-14A Data Trends

**State of Wisconsin**
**Department of Natural Resources**
**Remediation and Redevelopment Program**

**Mann-Kendall Statistical Test**
**Form 4400-215 (2/2001)**

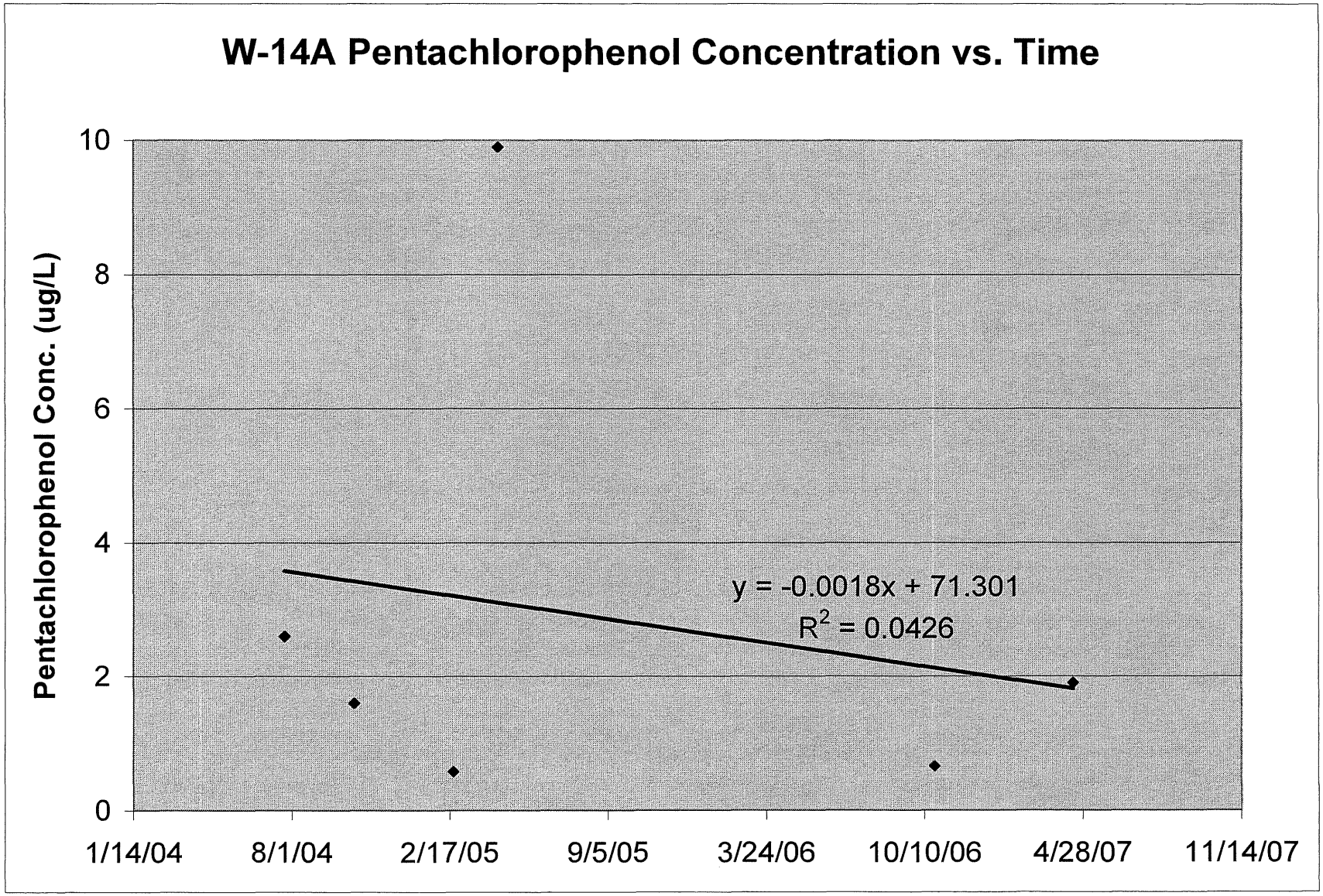
**Notice:** This form is the DNR supplied spreadsheet referenced in Appendices A of Comm 46 and NR 746, Wis. Adm. Code. It is provided to consultants as an optional tool for groundwater contaminant trend analysis to support site closure requests under s. Comm 46.07, Comm 46.08, NR 746.07, NR 746.08, Wis. Adm. Code. Use this form or a manual method when seeking case closure under those rules. Earlier versions of this form should not be used.

**Instructions:** Do not change formulas or other information in cells with a blue background, only cells with a yellow background are used for data entry. To use the spreadsheet, provide at least four rounds and not more than ten rounds of data that is not seasonally affected. Use consistent units. The spreadsheet contains several error checks, and a data entry error may cause "DATA ERR" or "DATE ERR" to be displayed. Dates that are not consecutive will show an error message and will not display the test results. The spreadsheet tests the data for both increasing and decreasing trends at both 80 percent and 90 percent confidence levels. If a declining trend is present at 80 percent but not at 90 percent, a site is still eligible for closure under Comm 46 and NR 746 provided that other conditions in those rules are met. If an increasing or decreasing trend is not present, an additional coefficient of variation test is used to test for stability, as proposed by Wiedemeier et al, 1999. For additional information, refer to the Interim Guidance on Natural Attenuation for Petroleum Releases, dated October 1999. Refer to the guidance for recommendations on data entry for non-detect values.

Site Name : Koppers Superior, WI Facility | BRRTS No. = | Well Number = W-14A

| | Compound -> | Naphthalene | Penta | | | | |
|---|---|---|---|---|---|---|---|
| Event Number | Sampling Date (most recent last) | Concentration (leave blank if no data) | Concentration (leave blank if no data) | Concentration (leave blank if no data) | Concentration (leave blank if no data) | Concentration (leave blank if no data) | Concentration (leave blank if no data) |
| 1 | 23-Jul-04 | 0.02 | 2.60 | | | | |
| 2 | 19-Oct-04 | 0.02 | 1.60 | | | | |
| 3 | 22-Feb-05 | 0.02 | 0.58 | | | | |
| 4 | 19-Apr-05 | 0.03 | 9.90 | | | | |
| 5 | 23-Oct-06 | 0.02 | 0.66 | | | | |
| 6 | 16-Apr-07 | 0.02 | 1.90 | | | | |
| 7 | | | | | | | |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | | | | | | | |
| | Mann Kendall Statistic (S) = | 1.0 | -1.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | Number of Rounds (n) = | 6 | 6 | 0 | 0 | 0 | 0 |
| | Average = | 0.02 | 2.87 | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! |
| | Standard Deviation = | 0.004 | 3.526 | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! |
| | Coefficient of Variation(CV)= | 0.188 | 1.227 | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! |
| Error Check, Blank if No Errors Detected | | | | n<4 | n<4 | n<4 | n<4 |
| Trend ≥ 80% Confidence Level | | No Trend | No Trend | n<4 | n<4 | n<4 | n<4 |
| Trend ≥ 90% Confidence Level | | No Trend | No Trend | n<4 | n<4 | n<4 | n<4 |
| Stability Test, If No Trend Exists at 80% Confidence Level | | CV <= 1 STABLE | CV > 1 NON-STABLE | n<4 n<4 | n<4 n<4 | n<4 n<4 | n<4 n<4 |

Data Entry By = D.B. | Date = 15-Jun-07 | Checked By = D.B.


W-14A Pentachlorophenol Concentration vs. Time
Pentachlorophenol Conc. (ug/L)
10
8
6
4
2
0
y = -0.0018x + 71.301
R2 = 0.0426
1/14/04
8/1/04
2/17/05
9/5/05
3/24/06
10/10/06
4/28/07
11/14/07