

From: Miller.Scott@epamail.epa.gov
To: [John Mousa](mailto:John.Mousa)
Cc: [Murry, Fredrick J.; "pcline@ufl.edu"](mailto:Murry.Fredrick.J.;pcline@ufl.edu); [Pearson, Stewart E.](mailto:Pearson.Stewart.E)
Subject: RE: Transmittal of September 2010 Off-Site Data
Date: Thursday, January 06, 2011 1:26:50 PM

John,
Will do.
Thanks,
Scott Miller
Remedial Project Manager
Superfund Division
Superfund Remedial Branch
Section C
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From: John Mousa <jjm@alachuacounty.us>
To: Scott Miller/R4/USEPA/US@EPA
Cc: "Murry, Fredrick J." <murryfj@cityofgainesville.org>, "Pearson, Stewart E." <pearsonse@cityofgainesville.org>, "pcline@ufl.edu" <pcline@ufl.edu>
Date: 01/06/2011 01:25 PM
Subject: RE: Transmittal of September 2010 Off-Site Data

Scott,

ACEPD would like to request that USEPA or Beazer as appropriate provide a complete laboratory data set with all laboratory QC and back-up for the arsenic, PAH and dioxin data generated from the offsite soil samples in the neighborhood to the west of Koppers, the north south east samples offsite and the pilot background industrial/ commercial right of way samples reported by the Beazer from the September sampling. This package should also include the tabulation of data and maps.

This data was sent out in pieces and some of the laboratory information data was not sent to ACEPD and is not available to the public but apparently was only sent to FDEP and FDOH in hard copy format.

ACEPD would appreciate USEPA making the consolidated data package available to us local citizens.

Thanks for your attention to this request.

John Mousa

-----Original Message-----

From: Miller.Scott@epamail.epa.gov [<mailto:Miller.Scott@epamail.epa.gov>]
Sent: Wednesday, January 05, 2011 3:06 PM
To: John Mousa; Rick Hutton; Helton, Kelsey; Robin Hallbourg; Murry, Fredrick J.; Randy_Merchant@doh.state.fl.us;
Anthony_Dennis@doh.state.fl.us; Nancy.Murchison@dep.state.fl.us
Subject: Fw: Transmittal of September 2010 Off-Site Data

Data received.

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----- Forwarded by Scott Miller/R4/USEPA/US on 01/05/2011 03:04 PM -----

From: "Anderson, Paul" <Paul.Anderson@arcadis-us.com>

To: Scott Miller/R4/USEPA/US@EPA

Cc: "Brouman, Mitch (Pittsburgh) NA" <Mitch.Brouman@hanson.biz>, "McChesney, Charles E. (Pittsburgh) NA" <Charles.McChesney@hanson.biz>, "Wolfson, Timothy C." <twolfson@bccz.com>, "Council, Greg" <Greg.Council@geotransinc.com>, "Robb, Joe" <joe.robb@amec.com>

Date: 12/28/2010 05:44 PM

Subject: Transmittal of September 2010 Off-Site Data

Dear Mr. Miller:

Attached please find three Excel files with spreadsheets containing all of the validated results and four PDF files of figures summarizing the results of the off-Site soil sampling program Beazer conducted during September 2010. The September 2010 off-Site sampling program had three elements.

- Fifty-two additional surface and fifty-two subsurface soil samples were collected to the west of the Cabot Carbon/Koppers Superfund Site in Gainesville, Florida (Site) to delineate dioxin and furan concentrations to the either default SCTLs or background concentrations. This email refers to these as the "Off-Site West Samples."
- An initial round of 10 surface soil samples were collected from rights of way (ROWs) to the north, east and south

of the Site (referred to as the "Near-Site North, East and South Samples"). These samples were within 100 to 400 feet of the Site, depending upon the locations of the ROW and were analyzed for arsenic, polynuclear aromatic hydrocarbons (PAHs) and dioxin and furans.

· A pilot study of the background concentrations of arsenic, PAHs and dioxins and furans in Gainesville surface soils was conducted. Background surface soils were collected from two types of land uses. Three samples were collected from ROWs in a commercial/industrial area (referred to as the "Industrial Background Samples"). Five samples were collected from residential and mixed use areas along busy streets ("referred to as the "Residential Busy Street Background Samples"). With the concurrence of EPA and FDEP, all pilot background sample locations were located more than a mile from the Site, to ensure that none of the reported results could be attributed to the former Koppers wood-treating plant.

Beazer is providing the validated results from the September 2010 field effort to EPA in advance of delivering a formal data summary report. The goal of this preliminary data submittal is to provide EPA the validated results as soon as practically possible following receipt of those results by Beazer, as well as to provide an initial summary of the results of this latest phase of sampling. This email also describes the anticipated content of the final data summary report that will be submitted to EPA in mid-January 2011, including the types of data analyses that will be included therein.

Overall Findings

The detected concentrations of 2,3,7,8-tetrachlorodibenzo-p-dioxin toxic equivalents (TCDD-TEQ) in all soil samples collected to the west of the Site were below EPA's current residential PRG of 1000 ng/kg (parts per trillion, ppt). Though EPA's proposed interim PRG of 72 ng/kg for TCDD-TEQ has not been adopted by the agency, all concentrations to the west of the Site were less than this proposed PRG as well. All TCDD-TEQ concentrations were also less than the Site-specific residential Soil Cleanup Target Level (SCTL) of 95 ng/kg (ARCADIS 2010) which is based on Florida's statutory allowable risk level of one in one million (1×10^{-6}). These results continue to suggest that TCDD-TEQ concentrations measured in soils collected from 100 feet and further to the west of the Site do not pose an unacceptable risk to residents. In addition, as described in one of the bullets below, comparison of the Residential Busy Street background data to data collected 100' to the west of the Site in the Stephen Foster neighborhood, suggests that, given the assumptions of the default FDEP SCTLs, residents potentially exposed to concentrations of constituents measured 100 feet from the Site have a lower potential cancer risk than do Gainesville residents living near busy streets who are exposed to those same constituents well above default SCTLs associated with non-Site-related sources.

The TCDD-TEQ concentrations in all subsurface soil samples analyzed from west of the Site were less than the above mentioned benchmarks as well as the Florida Department of Environmental Protection (FDEP) default residential SCTL of 7 ng/kg. When comparing results to Florida's default SCTLs, it is important to keep in mind that the very conservative default SCTLs assume a stringent allowable risk level and are derived using: deterministic calculations; overestimates of likely bioavailability; a combination of conservative exposure parameters that overestimate exposure for most people; and, in the case of TCDD-TEQ, a

cancer slope factor that substantially overestimates potential risk and is subject to considerable scientific criticism. In other words, exceedance of a FDEP default SCTL does not, by itself, indicate a potentially unacceptable human health risk exists. Keeping those critical considerations in mind, the concentrations of TCDD-TEQ in 13 of 52 September 2010 surface soil sampling locations were equal to or below the FDEP default SCTL. Further, slightly more than a quarter of the 89 surface soils samples analyzed to date to the west of the Site were below the FDEP default SCTL. Furthermore, some of the detected concentrations that are higher than the default SCTL appear to be due to another (non-Site-related) dioxin/furan source along NW 6th Street, potentially associated with an electronic repair shop or other industrial/commercial activity in that area.

The concentration of arsenic in all Near-Site (north, east and south) samples was less than the default FDEP industrial SCTL. Most samples also had concentrations less than the default residential SCTL. The concentration of PAHs (expressed as benzo(a)pyrene toxic equivalents, BaP-TE) was less than the default FDEP industrial SCTL at most Near-Site locations but was greater than the default residential SCTL in the three Near-Site sampling locations to the south of the Site, one of which was located near the Genesis Preparatory School. TCDD-TEQ concentrations in all Near-Site samples were less than EPA's current residential and commercial/industrial PRGs and also less than EPA's proposed interim residential and commercial/industrial PRGs. All Near-Site TCDD-TEQ concentrations were also less than the Site-specific residential PRG of 95 ng/kg. Comparison of Near-Site samples collected to the north and east of the Site must take into consideration that the current land use in those areas is commercial/industrial. Most Near-Site samples have TCDD-TEQ concentrations below FDEP's default commercial/industrial SCTL of 30 ng/kg. TCDD-TEQ concentrations in Near-Site sample locations to the south of the Site, including the sample located near the Genesis Preparatory School, exceed the FDEP's default residential SCTL. However, as described in more detail below, the overall potential cancer risk combined from arsenic, PAHs and dioxins and furans associated with Near-Site samples to the south is consistent with or less than that found in other areas of Gainesville with comparable land use.

The concentration of arsenic exceeded the default FDEP commercial/industrial SCTL in one of three Industrial background samples while the concentration of BaP-TE exceeded its FDEP default commercial/industrial SCTL at two of three Industrial background locations, TCDD-TEQ concentrations exceeded the FDEP default industrial SCTL at one of three Industrial background locations but were less than EPA's current and proposed interim commercial/industrial PRGs.

The arsenic concentration at all Residential Busy Street background locations was less than the default FDEP residential SCTL. However, the concentration of BaP-TE was greater than the default FDEP residential SCTL at all Residential Busy Street background locations. In addition, TCDD-TEQ concentrations exceeded the default FDEP residential SCTL at 40% of Residential Busy Street background locations, though TCDD-TEQ concentrations were less than EPA's current and proposed interim PRGs. When Residential Busy Street background concentrations are compared to FDEP default residential SCTLs, the average background potential excess lifetime cancer risk of a resident living near a busy street is about 14 times higher than FDEP's allowable risk limit of 1×10^{-6} using FDEP exposure and toxicity assumptions for arsenic, TCDD-TEQ and BaP-TE.

Summary of Findings

The bullets below present an expanded summary of the key findings of the 2010 off-Site soil sampling program.

Industrial Background. Three surface soil samples were collected from a commercial/industrial area approximately 1.5 miles to the east of the Site. The samples were analyzed for arsenic, PAHs and dioxins and furans.

Arsenic exceeded its default FDEP commercial/industrial SCTL at 1 of 3 sample locations. The arithmetic average concentration of arsenic was below its default commercial/industrial SCTL.

BaP-TE exceeded its default FDEP commercial/industrial SCTL at all 3 sample locations. The arithmetic average concentration of BaP-TE was nearly two times higher than its default commercial/industrial SCTL. These data suggest Site-specific industrial background concentrations and not default FDEP SCTLs may be appropriate delineation criteria for BaP-TE.

TCDD-TEQ exceeded its default FDEP commercial/industrial SCTL at 1 of 3 sample locations. The arithmetic average concentration of TCDD-TEQ was below the commercial/industrial SCTL.

Residential Busy Street Background. Five surface soil samples were collected from a residential and mixed use area approximately one and one half miles to the south of the Site just off of East University Avenue.

Arsenic was below its default FDEP residential SCTL at all locations. Thus, the arithmetic average concentration of arsenic was also below its default residential SCTL.

BaP-TE exceeded its default FDEP residential SCTL at all 5 sample locations. The arithmetic average concentration of BaP-TE was approximately 13 times higher than its default residential SCTL. These data suggest that for samples collected near busy streets, Site-specific residential background concentrations, and not default FDEP SCTLs, may be appropriate delineation criteria for BaP-TE.

TCDD-TEQ exceeded its default FDEP residential SCTL at 2 of 5 sample locations. The arithmetic average concentration of TCDD-TEQ is about 75% of the default residential SCTL.

These data suggest that for some samples collected near busy streets, Site-specific residential background concentrations and not default FDEP SCTLs may be appropriate delineation criteria for TCDD-TEQ.

Comparison of Residential Busy Street Background Concentrations to 100 foot Near-Site West Sample Concentrations. Both the recent residential busy street samples and the samples collected 100 feet to the west of the Site during the first phase of off-Site sampling were analyzed for arsenic, PAHs and dioxins and furans. Knowing that the default FDEP residential SCTLs are based upon an allowable excess lifetime cancer risk of 1×10^{-6} , comparison of the concentrations of each of the constituents to their respective SCTL allows estimation of the potential risk associated with those three constituents in each soil sample (using conservative, FDEP assumptions). For example, if BaP-TE exceeds its SCTL by a factor of two in a sample, the associated potential cancer risk, based on the default SCTL assumptions is calculated as two times one in one million or 2×10^{-6} . The potential risks associated with residential busy street samples can then be compared to the potential risks associated with concentrations in near-Site (100') soil samples. However, note that for the reasons described above,

given their very conservative nature of the default SCTLs, any potential risks potentially experienced by residents are likely to be much lower than predicted using the default SCTLs. Nevertheless when such a comparison is conducted, the average background potential excess lifetime cancer risk of a resident living near a busy street is about 14 times higher than FDEP's allowable risk limit of 1×10^{-6} and is about 4 times higher than the average potential excess lifetime cancer risk associated with samples 100' from the Site. These results suggest residents living near the Site have a lower potential risk from arsenic, PAHs and dioxins and furans than residents living in other areas of Gainesville not affected by the Site.

Off-Site West. During the most recent phase of off-Site sampling, 52 surface (0-6" depth) and 52 subsurface (6-24" depth) samples were collected west of the Site. All surface soil samples were analyzed for dioxins and furans. Five subsurface samples close to the Site were also analyzed for dioxins and furans.

TCDD-TEQ concentrations in all surface and subsurface samples were less than the current EPA residential PRG of 1000 ng/kg.

TCDD-TEQ concentrations in all surface and subsurface samples were less than the EPA interim proposed residential PRG of 72 ng/kg.

TCDD-TEQ concentrations in all surface and subsurface samples were less than the Site-specific residential SCTL of 95 ng/kg.

TCDD-TEQ concentrations in all subsurface samples were substantially (on average by about 15-fold) lower than the surface soil sample taken at the same location. All subsurface samples were also less than the FDEP's default residential SCTL. These results indicate that analysis of additional subsurface samples collected to the west of the Site is not necessary.

TCDD-TEQ concentrations in 13 of 52 surface soil samples were equal to or less than the FDEP default residential SCTL of 7 ng/kg. The TCDD-TEQ concentrations were above the SCTL in 39 samples. Several of the higher TCDD-TEQ concentrations occur on properties along NW 6th Street, where there may be an alternative source. The current land use of some of those properties is not residential.

TCDD-TEQ concentrations of several such samples were below FDEP's default commercial/industrial SCTL of 30 ng/kg.

While we are still evaluating the data, some of the relatively high concentration results near NW 6th Street strongly suggest the presence of another source of dioxins/furans. We will elaborate on this preliminary conclusion in the forthcoming Data Summary Report.

Near-Site, North and East. Seven surface soil samples were collected from commercial/industrial areas 100 to 400 feet from the Site. Five of the samples were on ROWs and two were collected from the Gainesville Public works property. All samples were analyzed for arsenic, PAHs and dioxin and furans.

Arsenic was below its default FDEP commercial/industrial SCTL at all locations.

BaP-TE was below its default FDEP commercial/industrial SCTL at 6 of 7 sample locations. The arithmetic average concentration of BaP-TE was approximately 40% higher than its default commercial/industrial SCTL and was driven up by the results from a single sample location (SS310) on NE 1st Boulevard near the intersection with NW 23rd Avenue. The

arithmetic average BaP-TE concentration was less than the arithmetic average found for Industrial Background samples in the pilot background study (see bullets above). These results suggest Near-Site concentrations of BaP-TE to the north and east of the Site may be consistent with or less than concentrations found in areas of Gainesville with comparable land use.

TCDD-TEQ concentrations at all locations were less than the current EPA commercial/industrial PRG of 5000 to 20,000 ng/kg.

TCDD-TEQ concentrations at all locations were less than the EPA interim proposed commercial/industrial PRG of 950 ng/kg.

TCDD-TEQ concentrations were less than the default FDEP commercial/industrial SCTL at 5 of 7 sample locations.

Exceedances at the other two locations were slight, by about 17% and 26%. The arithmetic average concentration of TCDD-TEQ was below the FDEP default commercial/industrial SCTL. These results suggest that, on average, Near-Site concentrations of TCDD-TEQ to the north and east of the Site meet Florida's allowable risk limit.

· Near-Site, South. Three surface soil samples were collected from south of NW 23rd Avenue in ROWs situated in residential and mixed use areas. All samples were analyzed for arsenic, PAHs and dioxin and furans. Because both residential and commercial/industrial benchmarks may be applicable, comparisons to both types of benchmarks are discussed.

Arsenic was below its default FDEP commercial/industrial SCTL at all sampling locations and was below its default FDEP residential SCTL at 2 of 3 locations. The arithmetic average concentration of arsenic was below the FDEP default residential SCTL. In addition, the single exceedance of the default SCTL was slight (by about 50%). A substantially greater exceedance was reported in the original residential background study conducted in 2009. These results suggest that the average Near-Site concentrations of arsenic to the south of the Site meet the Florida allowable risk limit and are consistent with background concentrations.

BaP-TE was below its default FDEP commercial/industrial SCTL at 2 of 3 sample locations but exceeded the default FDEP residential SCTL at all locations. The arithmetic average concentration of BaP-TE was higher than the FDEP default commercial/industrial and residential SCTLs and was also almost two times higher than the average of Residential Busy Street background samples. The arithmetic average is driven by a single sample location (SS307) collected from a landscaped area in front of small shopping center on NW 23rd Avenue. The BaP-TE concentration at this location is almost 90 times greater than the FDEP default residential SCTL and is inconsistent with any other off-Site BaP-TE

concentration. Based upon its location, it seems possible that this sample may have been influenced by runoff from the small shopping center parking area. BaP-TE concentrations in the other two samples to the south of the Site are consistent with the low end of concentrations measured in the Residential Busy Street background samples, suggesting Near-Site concentrations of BaP-TE to the south of the Site at most sampling locations may be consistent with or less than concentrations found in areas of Gainesville with comparable land use.

TCDD-TEQ concentrations at all locations were less than the

current EPA residential and commercial/industrial PRGs. TCDD-TEQ concentrations at all locations were less than the EPA interim proposed residential and commercial/industrial PRGs.

TCDD-TEQ concentrations at all locations were less than the Site-specific residential SCTL.

TCDD-TEQ concentrations at all locations were less than the default FDEP commercial/industrial SCTL.

TCDD-TEQ concentrations at all locations were greater than the default FDEP residential SCTL. Given the very conservative nature of the FDEP default SCTLs, and the finding that off-Site concentrations to the south of the Site are substantially below all other residential TCDD-TEQ benchmarks, these results suggest Near-Site concentrations of TCDD-TEQ to the south of the Site do not pose an unacceptable risk.

Finally, note that the potential excess lifetime cancer risks (estimated by comparing measured constituent concentrations to their respective FDEP default residential SCTLs) associated with the two samples (SS308 and SS309) not located in front of the small shopping mall are lower than the average potential excess lifetime cancer risk associated with Residential Busy Street background samples. This comparison suggests that the overall potential cancer risk associated with these samples is consistent with or less than that found in other areas of Gainesville with comparable land use.

Forthcoming Data Summary Report

The full data summary report, anticipated to be submitted to EPA in mid-January 2011 will include a more detailed statistical summary of the off-Site and pilot background data as well as a comparison of all near-Site data to recently collected pilot background data. The data summary report will also present quantitative statistical analyses designed to determine whether the dioxins and furans and PAHs detected in off-Site soil samples appear consistent with a potential on-Site origin or whether other, non-Site-related, sources are contributing to, or potentially dominating, the concentration detected in off-Site samples. Finally, based on the statistical analyses presented in the data summary report, it will recommend whether or not to conduct additional off-Site sampling. If any additional sampling is recommended, the report will also present the proposed number and locations of additional off-Site sampling locations.

We hope that you find this quick introduction to the results of the most recent off-Site sampling program to be helpful. Please call me or Mitchell Brouman at your convenience if you have any questions about this data submittal or wish to discuss the content of the forthcoming data summary report.

Best Regards,

Paul Anderson

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