Alachua County
Environmental Protection Department

Chris Bird, *Director*

October 24, 2006

MEMORANDUM

To: Chris Bird

From: John Mousa

Subject: Summary of Key Issues and Discussions -- October 4, 2006 USEPA Region 4 Meeting Regarding Soil Clean-up Standards and Proposed Risk Assessment for Koppers Superfund Site

A meeting was held at United States Environmental Protection (USEPA) Region 4 Headquarters in Atlanta on October 4, 2006 to discuss proposed soil risk assessment, supplemental soil sampling and soil clean-up goals for the surface soils and soils above the water table at the Koppers Superfund site. The meeting was attended by USEPA project management and technical staff, representatives of Beazer and Beazer consultants AMEC and GeoTrans, Florida Department of Environmental Protection (FDEP) staff and me representing Alachua County Environmental Protection Department (ACEPD). The meeting focused on developing additional data and discussing risk assessment approaches for the soil media (source and non-source areas) at the Koppers site taking into consideration direct contact threats to workers and the public, airborne dust risks and potential leaching to groundwater from contaminated soils. This meeting did not focus directly on the Floridan and Hawthorn Aquifer groundwater contamination at the site and any potential remedy or actions to address this issue.

Beazer presented a historical overview of previous risk assessments and soil clean-up remedies proposed by USEPA and Beazer for the Koppers Site. Beazer also presented their proposed approach to collect supplemental soil samples from the site and, using this new data and historical soil sampling data, perform a new risk assessment for the soils at the Koppers site. There were recommendations made by ACEPD, USEPA and FDEP to modify and enhance the proposed soil sampling locations. USEPA and FDEP also made recommendations regarding the risk assessment assumptions to be used by Beazer's consultants in conducting the risk assessment for soils.

Risk assessment factors discussed at the meeting included what exposure pathways for the chemicals of concern should be considered in the risk assessment (e.g. direct human contact with on-site surface soils, exposure from airborne dust, human contact with subsurface soils and leaching to groundwater from soils above the water table at the site). In addition there was discussion about what carcinogenic risk factors should be used in the calculations (e.g. whether 1 in 10,000 (1×10^{-4}) or 1 in 100,000 (1×10^{-5}) or 1 in 1,000,000 (1×10^{-6})) for chemicals which have been determined to have carcinogenic potential, and whether residential or industrial land use should be assumed for the property in determining the clean-up standards.

Significant issues and discussions from this meeting include the following:

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1. Significant differences in proposed soil clean-up goals (CUGs) for the Koppers site exist between those in the USEPA proposed 2001 Record of Decision (ROD), the first USEPA 1990 ROD and those developed by Beazer in 1999-2001. The original risk assessment for 1990 ROD was completed in the late 1980's. The differences in CUGs are primarily due to 1) different modeling assumptions about the groundwater leaching from soils to groundwater, 2) whether consistent risk pathways were considered, 3) the use of different carcinogenic risk factors for chemicals of concern, 4) whether residential or industrial direct contact exposure assumptions were used in the calculation, and 5) the changing toxicity assumptions and risk assessment procedures that have been developed by the federal government over the last 20 years. Beazer is proposing a new risk assessment because additional data have recently been obtained from the site and because they want to include a broader representation of contamination levels at the site.

2. Both residential direct contact exposure factors and groundwater leaching factors were used by USEPA to calculate CUGs for Koppers surface soils (within 2ft of surface) in the 1990 EPA ROD and the proposed 2001 EPA ROD. Only industrial direct contact exposure factors were used by Beazer in 1999 to calculate proposed alternate CUGs for surface soils at the site. USEPA now considers the use of industrial direct contact exposure factors as appropriate for calculating the risks for most of the surface soils at the site, since the current property owner, Koppers, has indicated that the site will remain commercial/industrial. If industrial and not residential direct contact exposure criteria are used in the risk assessment and soil leaching to groundwater is not considered, then there will be less volume of soil addressed for clean-up and the final remedy selected will be only protective for direct contact industrial uses. (If soil leaching to groundwater is considered, then the soil leaching factors may have more influence on the final remedy selected than whether industrial or residential direct contact factors are used.) Use of industrial direct exposure standards or engineering controls (e.g. capping. subsurface barriers, etc.) will require restrictions on the future use of the site through institutional controls (restrictive covenants). These considerations may be of interest to the City of Gainesville since they concern future land use.

3. Beazer representatives stated that soil to groundwater leaching from soils in the unsaturated (above the water table) zone of the surficial aquifer need not be considered in the risk assessment and in the development of CUGs for the soils. Their argument was that since the deeper Hawthorn Aquifer was now known to contain creosote source material, then leaching from the Surficial Aquifer has less significance as a source than the significant amount of source material already in the Hawthorn and, therefore, reducing the risk from the Surficial Aquifer would have minimal impact on reducing risks to the Floridan. USEPA, FDEP and ACEPD recommended that soil to groundwater leaching criteria must be evaluated in the risk assessment for the soils at the site and in the evaluation of remedial alternatives.

4. Beazer has proposed gathering supplemental soil samples from 92 sampling locations on the Koppers site to assess the concentration of chemicals of concern, including creosote components, RCRA metals (arsenic, barium, cadmium, lead, mercury, selenium, silver) and in addition chromium, copper, vanadium, pentachlorophenol and dioxin. Samples from two zones, (0 to 6 inches) and (6 inches to 2 feet), below the surface were proposed at most of the soil sampling locations. ACEPD requested that additional shallow (0 to 3 inches) soil sampling of surface soils on the western boundary of the Koppers site near the residential areas be performed by Beazer.

ACEPD also requested that airborne dust risk factors be considered in the risk assessment process. These requests were accepted by USEPA, FDEP and Beazer. Extensive soil sampling from the top 3 inches, top 6 inches and down to 2 feet below land surface will be performed in this western boundary area. ACEPD and FDEP again strongly recommended that offsite surface soil sampling in the residential areas to the west of the Koppers site must be conducted prior to selection of the final remedy for the site, but agreed to wait until the results of the new planned soil sampling are obtained before making final recommendations. FDEP recommended that additional samples be taken near the south and southeast boundary of the site. In addition ACEPD requested that additional surface soil samples be taken in the treated pole stacking areas of the site and additional deeper sediment samples be taken from the surface water ditch that traverses the site. These recommendations were accepted by USEPA.

5. Beazer requested that pre-1990 soil sampling results not be used in their risk assessment calculations due to their perceived unreliability, higher detection limits and lack of detection limit for some data. USEPA, ACEPD and FDEP were concerned that this would eliminate significant source area data that should be considered in the risk assessment. Beazer committed to providing plots of the source location of the pre- and post 1990 data so that a decision could be made as to whether this early data should be retained and to confirm whether the current scope for soil sampling was adequate.

6. FDEP staff stated that only 1×10^{-6} cancer risk level will acceptable for use in the state of Florida for risk assessment. USEPA indicated that in the past they have used a range from 1×10^{-4} to 1×10^{-6} risk levels for risk assessment and setting of clean-up goals at similar contaminated sites. Beazer has proposed allowing risks greater than 1×10^{-6}. This issue requires more discussion and decision from USEPA.

7. Significantly different surface soil CUGs for dioxin contamination exist between the preliminary USEPA remediation goals (1 ug/Kg residential, 5 to 20 ug/Kg industrial) used in past assessments at the Koppers site and the current FDEP direct contact soil target clean-up levels (.007 ug/Kg residential and .030 ug/Kg industrial). Since the FDEP target levels are now promulgated by state law, FDEP indicated that these standards should be taken into consideration in the revised risk assessment and evaluation of remedial alternatives. Low levels of dioxin related chemicals (expressed as dioxin toxicity equivalent concentrations) had previously been detected in the surface soils (down to 1 foot) at the site. Based on sampling data from the late 1990's, the average soil dioxin concentration near the western boundary of the site adjacent to the residential areas averaged less than the 1 ug/Kg USEPA residential remediation goal although there was one number that was at 1.45 ug/Kg. Certain soil locations nearer the source areas had surface (0 to 2 foot) soil dioxin concentrations (highest 21 ug/Kg) near the upper limit of the USEPA preliminary industrial remediation goals of 20 ug/Kg. The proposed supplemental soil sampling to be conducted at the Koppers site will provide additional current data to confirm concentrations detected and evaluate the on-site and offsite risks from dioxin.

8. The approach of the risk assessment will be discussed again following the results of the additional planned soil sampling.

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