UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VII
901 NORTH 5TH STREET
KANSAS CITY, KANSAS 66101

FEB 07 2011

The Honorable Timothy Woerther
Mayor of Wildwood
183 Plaza Drive
Wildwood, Missouri 63040

Dear Mayor Woerther:

The Environmental Protection Agency (EPA) has completed a review of the Phase II Environmental Site Assessment (ESA) report prepared by Mundell & Associates (Mundell Report) and the draft Human Health Risk Assessment (HHRA) prepared by Environmental Stewardship Concepts and Henshel Envirocomm (ESC/HE) for the proposed Strecker Forest residential development. The EPA commends the city of Wildwood for its continuing efforts to characterize conditions in the area of the proposed development and to protect present and future residents from potential health risks. EPA appreciates the opportunity to work with the city and community to help characterize conditions at the site of the proposed development and to participate in future actions to address concerns regarding this parcel and other properties in the area.

EPA has prepared detailed comments regarding the Mundell Report, draft HHRA, and other relevant reports, which have been provided to ESC/HE. Overall, EPA found that site conditions and associated risk levels are not properly characterized in the Mundell Report and the draft HHRA. In addition to review of these documents, EPA performed a screening level assessment which compared data presented in the Mundell Report to existing EPA screening criteria and to criteria that were derived to evaluate potential vapor intrusion. The EPA screening level assessment concluded that reported conditions at the proposed development site are generally not above a level of concern for residential use. A copy of the detailed EPA comments is enclosed with this letter.

Based on review of soil and groundwater data presented in the Phase II ESA, EPA does not believe that source removal or access restrictions are warranted for the investigated areas at this time. EPA recognizes, however, that concerns exist about the suitability of the property for residential development and potential risks to neighboring residents. EPA is prepared to work with the city, community members, and other interested parties to develop a course of action that will address these concerns, and assure that conditions are protective of human health for current and future residents. EPA proposes to assist with further investigation to provide a comprehensive characterization of conditions across the property that can be used to assess potential risk levels. The EPA would work with the city, local community and other interested parties in the development of the study design to help ensure that these efforts address existing concerns. The proposed EPA investigation would be intended to complement the work that has been commissioned by the city, and the ongoing state investigation at the adjacent Bliss property to provide data and/or identify additional actions that are necessary to assure protection of human

health in the area of the proposed development. EPA will coordinate with the city and community as preparations are made to provide this assistance. A discussion of the key findings from the EPA review is provided below.

EPA recognizes that the scope and approach of the Mundell Report is consistent with a Phase II ESA, but this level of investigation does not provide sufficient characterization of conditions at the site of the proposed development to support a valid human health risk assessment. There are also a number of inaccurate assumptions regarding site history that affect the validity of the conceptual site model used for the Mundell investigation and the draft HHRA. For example, the Mundell Report linked suspected dioxin contamination to buried metal that was detected during the geophysical survey. Dioxin contamination which historically impacted the adjacent Bliss and contiguous properties resulted from spraying of contaminated waste oil to control dust and is not associated with drummed wastes. The association of dioxin contamination with buried metal led to a mischaracterization of past waste handling activities on the property. The presence of trace contaminant levels in soil or groundwater is not evidence of past waste dumping activities or source areas that could affect neighboring properties.

The assessment of soil and groundwater data presented in the Mundell Report and HHRA is in many cases misleading. Both reports compare analytical results from current and past investigations to outdated or inappropriate soil and groundwater criteria. Screening level criteria were often presented as action levels or cleanup goals instead of using site-specific conditions to determine acceptable levels at the proposed development site. For example, in some instances the reports compare contaminant levels detected in shallow groundwater to drinking water standards, when there is no evidence that the shallow groundwater represents a potential potable water source. Also, Federal Preliminary Remediation Goals (PRGs) cited in the reports are misapplied and outdated. PRGs are used by EPA as a starting point to derive site-specific cleanup goals once a determination has been made that cleanup is required due to unacceptable health risks. EPA has developed Regional Screening Levels (RSLs) for determining if conditions warrant further assessment or investigation. The EPA RSL table was referenced at one point in the draft HHRA, but the associated RSL values were not utilized in the ESC/HE assessment.

Of critical concern in the assessment of health risks presented in the HHRA are mathematical errors which apparently occurred in the conversion of units from parts per trillion (ppt) to parts per billion (ppb). These and other errant factors resulted in overestimation of risk levels associated with reported dioxin concentrations by more than three orders of magnitude. Correction of the conversion errors in the HHRA risk calculations would lower the estimates of cancer risks and non-cancer health effects associated with reported dioxin concentrations in soil to acceptable levels.

The quality of the underlying analytical data that forms the basis for the draft HHRA is highly suspect due to data qualifiers attached to analytical results presented in the Mundell Report. These data qualifiers indicate a number of data quality concerns that limit reliability. These concerns include the presence of contaminants detected in blank samples and instrument calibration problems. Much of the reported data are presented as estimated values due to quality concerns. A proper data validation study was not conducted to evaluate the quality of the underlying data in either the Mundell Report or the draft HHRA. Due to the identified errors in

the draft HHRA associated with incorrect risk calculations, data quality issues, and other considerations presented in EPA's detailed comments, the ESC/HE findings and recommendations presented in the draft HHRA cannot be relied upon for risk characterization or remedial decision-making.

Dioxin concentrations in soil reported in the Mundell Report and further assessed in the draft HHRA are not indicative of conditions that pose a concern for protection of human health. All surface and subsurface dioxin levels in soil in the area of the proposed development were below the current EPA interim PRG of 1,000 ppt for dioxin in residential soils, and also less than the potential revised PRG level of 72 ppt that has been proposed by EPA for residential soils. The Phase II ESA reported maximum dioxin concentrations in the area of the proposed development of 6.96 ppt in surface soils and 23.32 ppt in subsurface soils. The detected dioxin levels reported in the area of proposed development were based in large part on qualified data for dioxin species that differed from the type of dioxin identified and addressed at the adjacent Bliss and Contiguous Properties. Dioxin species associated with the adjacent Bliss and Contiguous properties were reported in subsurface soils in the northeast portion of the parcel at levels exceeding the current or proposed PRG levels, but these isolated subsurface dioxin levels do not represent a direct contact threat, and the methods used to collect these samples are not consistent with EPA procedures for assessing dioxin health risks. Dioxin soil levels reported in the proposed development area represented species and levels that are considered ubiquitous in developed areas, and are not indicative of hazardous waste activities. Dioxin data presented in the Mundell Report indicates some level of impact from the adjacent properties in the northeast portion of the parcel, but additional characterization beyond the scope of the Mundell investigation would be required to properly assess risk levels in this isolated area.

EPA performed a comparison of all non-dioxin soil data presented in the Mundell Report to applicable EPA RSLs for soil and groundwater. In addition to their own data, the Mundell Report presents data collected during past investigations of both the area proposed for residential development and the northeast portion of the parcel. EPA RSLs for residential soils were exceeded for seven compounds. Six of these RSL exceedances were in samples collected in the northeast portion of the parcel in an area that is not included in the planned residential development. The single exceedances of a soil RSL in the area proposed for development was from a subsurface sample collected in 2004 by Brucker Engineering. Arochlor 1254 was detected in this sample at a concentration of 1.1 parts per million (ppm) near the western pond area, which marginally exceeded the corresponding soil RSL of 0.22 ppm. This compound was not detected in any of the eight surface or subsurface samples collected in this area by Mundell. On the basis of this assessment, EPA determined that the detected soil concentrations, including the RSL exceedances, do not exceed a level of concern for residential soils.

Contaminant levels in shallow groundwater reported in the Mundell Report were conservatively compared to the most current screening levels for drinking water, although these screening levels are not directly applicable to the shallow groundwater at the site. Drinking water RSLs were exceeded for six compounds, five of which were confined to samples located in the northeast portion of the parcel. The single RSL exceedances in the proposed development area was for bis(2-ethylhexyl)phthalate (DEHP) collected from soil boring B-33 in the western pond area. DEHP is commonly used as a plasticizer, and its presence is often related to materials used in sampling and analysis. EPA does not consider the single RSL exceedances for DEHP in

the proposed development area to be significant or an indicator of source material or drinking water concerns since shallow groundwater is not useable as a drinking water source. Currently, EPA RSLs are not available for screening groundwater for potential vapor intrusion. EPA therefore derived screening level criteria for potential vapor intrusion using conservative attenuation factors applied to volatile compounds detected in groundwater. This EPA vapor intrusion screening level assessment indicated that the detected volatile compounds from all monitoring wells and soil borings do not represent a vapor intrusion concern for existing or proposed residences constructed in the area. EPA's screening level assessment of shallow groundwater is presented in the EPA detailed comments and concludes that the reported compounds do not represent a concern for residential development.

The draft HHRA identified conditions near the western pond area as a primary concern affecting the proposed residential development, and also posing a potential risk to nearby residents. The draft HHRA identified the western pond area as a known source of dioxin and non-dioxin contaminants, but provided no basis for this assertion. Contaminant levels reported from analysis of soil and groundwater samples in this area are generally below EPA RSLs for residential use (with the two exceptions noted above). Anecdotal information gathered by EPA subsequent to release of the draft HHRA indicates that buried metal detected in the western pond area is most likely associated with the use of 5-gallon buckets by a former resident to water and protect fruit trees as part of a small orchard operation. The pond served as a water source for the fruit trees and was reportedly drained by a subsequent property owner to eliminate potential liability associated with the physical hazard posed to trespassers swimming in the pond. EPA could not discover any accounts of historic waste handling activities near the western pond area, and the soil and groundwater data presented in the Mundell Report do not indicate a potential source of contamination that could affect surrounding areas.

Please contact Robert Feild of my staff at (913) 551-7697 to arrange for an opportunity to discuss the next steps in developing an approach for further investigation of environmental conditions in the area of the proposed development. Thank you very much for your continued interest and participation in this very important matter.

Sincerely,

Gene Gunn
Chief
Special Emphasis Remedial Branch

Enclosure

cc: Robert Stout, MDNR
Dennis Stinson
Cherri Baysinger