Responses to U.S. EPA's Comments

Environmental Indicator Report for Human Health CA 725
Vernay Laboratories, Inc.
Yellow Springs, Ohio

EPA ID: OHD 004 243 002

1. At the Vernay facility, two consolidated bedrock aquifers are used by some private well users for potable and non-potable purposes in the Yellow Springs area. It would seem that a discussion of both aquifers is relevant to this CA725 determination, yet the statement is made on page 6 that "a discussion is not pertinent of the lowermost aquifer (and aquitards) since the nature and extent of contamination has been defined to risk-based levels in the uppermost aquifer." There has been no decision on whether or not to proceed with the Phase II of the RCRA Facility Investigation (RFI) which would include the lowermost aquifer. That is to be decided after completion of the Cedarville aquifer and storm sewer investigation and submittal of the Phase I RFI Report. Please clarify this statement and provide a provision to review and/or modify the EI Report for Human Health depending on the decision whether or not to pursue the Phase II investigation of the lowermost aquifer.

Response 1

The CA725 states that the two consolidated bedrock aquifers are used by some private well users for potable and non-potable purposes in the Yellow Springs area. However, based on the results of the water well survey presented in the RFI Phase I Report, the lowermost aquifer is not used by any private well users within the Vernay water well survey area. Further, based on the results of the RFI Phase I investigation, Vernay has concluded that investigation of the lowermost aquifer is not warranted. Therefore, even if a Brassfield Aquifer investigation is conducted, there is not a complete pathway for human exposure to the lowermost aquifer within the identified survey area.

2. It is stated that "seasonal grass mowing" takes place at AOI-1 as a routine facility activity. Although this exposure pathway is mentioned throughout this CA725 document, it isn't specifically described in the routine worker comment section of the site conceptual model in Table 1-1. Is the "inhalation of particulates in air from surface soil" exposure pathway based on the exposure of a worker mowing the grass or the exposure of a worker simply walking in the unpaved areas? Please include statements in the site conceptual model to clarify these routine worker activities and identify whether this exposure pathway was covered by the existing screening procedures and risk calculations.

Response 2

Table 1-1 has been modified to include a reference to seasonal grass mowing. The inhalation of particulates in air from surface soil during seasonal grass mowing was considered as an exposure

pathway in the existing screening procedures and risk calculations as follows. The screening criteria and risk calculations used to evaluate potential exposures to routine workers in AOI-1 are the USEPA Region IX Preliminary Remediation Goals (PRGs), which in addition to incidental ingestion and dermal contact, include inhalation of soil vapors and particulates. The PRGs assume an exposure frequency of 250 days/year and a concentration of respirable soil particulates (10 µm or smaller, i.e., PM_{10}) of 0.008 mg/m^3, which is based on 50% bare soil. Vernay estimates that seasonal grass mowing occurs approximately ten times per year, which is considerably less than the 250 days/year exposure frequency assumed for the PRGs. Further, as the lawn in the undeveloped portions of the site is well established, exposure to PM_{10} concentrations is expected to be minimal and, therefore, is reasonably estimated by the concentration of 0.008 mg/m^3 assumed in the PRGs. Therefore, exposures to workers during seasonal grass mowing is conservatively estimated by the screening criteria and risk calculations.

3. Bolded statements in this document refer to work that was being done at the time that this document was submitted to EPA. These statements are in regards to whether current human exposures to off-site groundwater contamination were under control. For example:

- page ES-1: "To be verified for off-Facility Cedarville Aquifer ground water."
- page 10: "Abandonment of wells and connection to the public water supply will be performed for certain residences by Vernay." "Potable water well sampling results are currently being evaluated to verify that VOC concentrations are below the drinking water standards." "Non-potable use water well sampling results are currently being evaluated to verify that VOC concentrations are below acceptable risk-based levels."

The next draft of this CA725 document should include an update on the status of these potential off-site exposures. Further, this document cannot be approved in order to make the CA725 determination until it is shown that these exposures are under control.

Response 3

The CA 725 document has been updated to reflect the current status of off-site exposures, which are as follows. Based on the results of the water well survey and private water well sampling conducted by Vernay, VOC concentrations are below the drinking water standards in each of the potable water wells sampled and below the conservative non-potable "kiddie pool" criteria in each of the non-potable water wells sampled.

4. Please be sure to specify when adjustments have been made to screening levels. For instance, on page 14, the statement is made that "As discussed above, the screening criteria used to identify "contamination" in this evaluation are based on the EPA Region 9 preliminary remediation goals (PRGs) for soil at industrial and residential sites." The assumption is that the PRGs have been adjusted to a TCRL of 10^{-5}, but this fact is not included in the statement above. Also, see page 19 and page 24, where the same correction needs to be made.

Response 4

The CA 725 document has been modified to indicate when adjustments have been made to screening levels.

5. The activities of the maintenance worker need to be better defined, either in the site conceptual model or in some other appropriate section within the document, in order for EPA to understand the 5 day/year exposure frequency.

Response 5

The site conceptual site model (Table 1-1) has been modified to include activities of the maintenance worker. According to information provided by Vernay, quarterly maintenance inspections of the utility tunnel are performed (duration of approximately 15-20 minutes per inspection) and the sump pump situated in the utility tunnel is occasionally repaired (repair takes one day or less) as needed. In addition, Vernay's records indicate that in the past approximately 15 years the following four excavations were performed at the site, each limited to a duration of approximately 5 days or less:

- UST removal
- Replacement of power line to Fire suppression system pump
- Dentist office septic tank removal
- Excavation in Maintenance department for bridge crane base

Therefore, the exposure frequency of 5 days per year assumed for the excavation/maintenance worker is conservative.

6. On page 19, a discussion of Table 2-12 includes the statement "For inorganics, such ratios are highlighted to facilitate identification of AOIs where sediment is considered to meet the definition of "contaminated". Table 2-12 doesn't list inorganics. Is it possible that part of the table is missing?

Response 6

The inclusion of the "For inorganics" portion of the statement is a typographical error and has been deleted from the CA 725 document. Sampling for inorganics in sediment was not performed.

7. On page 28, "off-Facility recreators" are discussed under Section 2.4.3, Surface Waters/Sediments. This receptor population was not included in the site conceptual model in Table 1-1. In fact, it appears that this is the first mention of this particular scenario. More detail needs to be provided on this scenario and it should be included in Table 1-1.

Response 7

The off-Facility recreator scenario has been added to Table 1-1. The evaluation of potential exposures to surface water and sediment in the Unnamed Creek of an off-Facility recreator is described in detail in Appendix F.

8. Trespassers are included as a receptor population in Table 1-1, but don't appear to be discussed throughout the document. This scenario must be addressed in the CA725 document.

Response 8

A discussion regarding trespassers has been added to the CA725 document. However, exposures to trespassers would be than less than routine workers. Potential trespasser exposures are not evaluated separately, however, potential routine worker exposures discussed in the CA 725 can be assumed to represent a highly conservative estimate of potential trespasser exposures.

9. The last column of Table 2-1 is labeled "Ratio of Maximum Detect to Industrial Screening Criteria." This column label is a misnomer for calculations involving metals because the maximum concentration is not the actual number that is being used in the numerator. For metals, the listed site-specific background is subtracted from the maximum concentration in the specific AOI and the difference is used as the numerator in the ratio. The problem with this methodology is that, in the August 7, 2003 meeting between GM, Environ, and EPA, there was an agreement that background concentrations of metals could be subtracted from site-specific concentrations prior to risk-based screening on the condition that two types of information are provided: 1) a table that shows all metals concentrations in background samples and; 2) a table accounting for HI and cancer risks on a constituent-by-constituent basis for each metal due to background for each GM facility. Although a table listing cancer risks and hazard quotients for background metals in surface soil is provided (Table B-2), it is impossible to incorporate those values into Question 2 because risk calculations aren't performed until Question 4. The result is that AOI's may be eliminated from further consideration in Question 2 as a result of screening, when these AOI's should have been carried forward until Question 4. Therefore, the agreed upon resolution of providing tables with background values doesn't appear to be functional in the CA725 document.

EPA would like to know which AOI's were eliminated in Question 2 from further consideration in Question 3 and Question 4 based upon the subtraction of background concentrations for metals from site-specific maximum concentrations for metals and the subsequent lower numerator that results in a lower ratio.

Response 9

Regarding Table 2-1, a footnote will be added to clarify that "Ratios of metal concentrations to the screening criteria include only site-related contributions."

The background contribution to metal concentrations in soil was addressed in the EI CA725 Report consistent with the agreements from the August 7, 2003 meeting, and with the format that USEPA Region 5 has found acceptable for other RFI and EI reports that ENVIRON submitted after the meeting. The format of Table B-2 is designed to allow USEPA to see the cancer and noncancer risk estimates associated with the background metals concentrations, and to consider their magnitude relative to the site-related cancer and noncancer risk estimates for each AOI. Specifically, the results on Table B-2 show that the estimates of background cancer and noncancer risks are 9×10^{-6} and 0.06, respectively. If it desires, USEPA can compare these estimates (and even add them) to the estimates for all the AOIs evaluated in the EI CA725 Report, which are summarized on Table 2-16a.

As other contaminants were identified in each AOI, none of the AOIs were eliminated in Question 2 from further consideration in Question 3 and Question 4 based upon the subtraction of background concentrations for metals from site-specific maximum concentrations for metals.

10. Appendix E, Vernay Health & Safety Policy for On-Facility Excavations, was not included in the draft EI Report for Human Health. This policy is referenced in the Section 2.4, Significance of Potential Exposures, and used in making the decision that contamination "does not pose an unacceptable risk to potential on-Facility receptors under current conditions". This statement cannot be approved without review of the Appendix E policy. Please submit the Health & Safety Policy for On-Facility Excavations for review.

Response 10

Appendix E has been included in the revised CA725 document.

Recommendations:

The Region 5 RCRA program has conducted additional discussion with a number of Region 5 state agencies on acceptable approaches for risk-based screening of indoor air contaminant concentrations within on-site industrial buildings. As a result of these discussions, the Region 5 RCRA program is adopting the following policy for addressing the risk-based screening of indoor air contaminant concentrations within on-site industrial buildings:

A) For Environmental Indicator determinations (i.e., CA 725 - Current Human Exposures Under Control and CA 750 - Migration of Contaminated Groundwater Under Control), the Region 5 RCRA program will recognize the use of OSHA-PEL values as appropriate health based screening levels for indoor air within on-site industrial buildings under the direct control of the Responsible Party (RP). This recognition is based on a policy adopted by the Office of Solid Waste at EPA Headquarters. If the site also contains a building(s) which is not obviously industrial (e.g., cafeteria, day-care center, commercial space) or not obviously under the control of the RP, then Region 5 may request the RP to provide evidence that the building(s) is regulated under OSHA for the contaminants of concern.

B) For site remedial decisions beyond the EI determinations (e.g., RFI determinations; CMS requirements; Statement of Basis), OSHA-PEL values will not be recognized as the appropriate health based screening levels for indoor air within on-site industrial buildings. EPA's risk-based screening levels for exposure to air contaminants will be applied according to the document titled: "DRAFT GUIDANCE FOR EVALUATING THE VAPOR INTRUSION TO INDOOR AIR PATHWAY FROM GROUNDWATER AND SOILS" (http://www.epa.gov/correctiveaction/eis/vapor/complete.pdf). The RP may apply this guidance to demonstrate that vapor intrusion to indoor air is not a complete exposure pathway for an on-site building(s). If vapor intrusion of all applicable contaminants cannot be eliminated as a pathway of concern by the screening procedures recommended in the guidance, then additional work to address the pathway will be required. The additional work could include vapor migration modeling using site-specific parameters, soil gas sampling, sub-slab sampling, indoor air sampling, or a combination of these approaches.

Response to Recommendations:

A) The site does not contain a building that is not obviously industrial or not obviously under the control of the RP. Therefore, the CA 725 is based on the use of OSHA-PEL values as appropriate health based screening levels for indoor air within the on-site industrial buildings

B) This recommendation does not explain EPA's rationale for accepting the use of OSHA PELs for EI determinations and then not accepting their use in determining when corrective measures are warranted. Vernay is also not aware of any written EPA policy that explains the rationale for this position. In principle, Vernay believes that the use of OSHA PELs should be evaluated in the same manner as other aspects of future land use in decisions about the need for corrective measures. The evaluation would be analogous to the evaluation of whether an assumption of future industrial land use rather than residential land use is appropriate in making remedial decisions at a particular site. Just as the assumption of future industrial land use is not rejected automatically in RCRA corrective action decisions, the assumption of OSHA applicability also should not be rejected automatically.