DW-8J

February 17, 2004

Douglas L. Fisher
Environmental Affairs and Safety Manager
Vernay Laboratories, Inc.
120 E. South College
Yellow Springs, Ohio 45387-1623

Re: Technical Memorandum No. 3
Groundwater Monitoring
Vernay Laboratories, Inc.
Yellow Springs, Ohio
OHD 004 243 002

Dear Mr. Fisher:

This is in response to the December 22, 2003, submittal titled *Technical Memorandum No.3, Groundwater Monitoring*. The report included the results of the quarterly groundwater monitoring events, an evaluation of the efficacy of the interim measures, well construction documentation, and groundwater potentiometric surface depictions completed as part of the RCRA Facility Investigation (RFI) as outlined in the Section 3008(h) Order on Consent. This report was submitted as a component of the Phase I of the RFI. Phase I of the RFI will include the completed Cedarville Aquifer and the storm sewer investigation. Based on the results from the completed Phase I RFI, it will be used to determine if the investigation of the Brassfield aquifer is necessary, or if other hydro geologic characterization of the Facility is necessary, then a Phase II investigation will be initiated.

The report acknowledged that the existing well network in the Cedarville aquifer was not sufficient to determine the nature and extent of contamination. The discussions regarding locations of additional wells or sampling sites occurred via conference call on Friday, February 6, 2004. In addition to the proposed work outlined in this report and in the Statement of Work # 8, we added three additional intermediate depth wells and two additional Geoprobe® sample locations. This work is scheduled for completion during February 2004.

I am enclosing more detailed comments to the *Technical Memorandum No. 3, Groundwater*

Monitoring dated December 22, 2003. If you have any questions, please do not hesitate to contact me at 312-886-8093. We could also set up a conference call to discuss any outstanding issues.

Sincerely,

Patricia J. Polston
Project Manager
Corrective Action Section
Waste, Pesticides and Toxics Division

Enclosure

cc: T. Matheson, (w/enclosure)
G. Cygan, (w/enclosure)
J. Morris, ORC (w/enclosure)
D. Contant, The Payne Firm (w/enclosure)

ENCLOSURE

U.S. EPA Response to
Technical Memorandum No. 3
Groundwater Monitoring
Dated December 22, 2003
Vernay Laboratories, Inc.
OHD 004 243 002

General:

1. Additional wells are needed to delineate the vertical component of the groundwater plumes further then those outlined in Figure 8.1 and Statement of Work No. 8. These additional wells were the main focus of our February 6, 2004, conference call. We agreed that in addition to the proposed work outlined in the report and in the Statement of Work # 8, an additional three wells and another two Geoprobe® sampling locations were included in the work to be performed in February 2004. The additional wells include three intermediate depth wells at the MW02-05, MW02-10 and MW02-16 locations. The additional Geoprobe® samples will be collected at the intersection of Barbara Street and Omar Circle and on Omar Circle at half the distance to GP02-079. This work is a component of the Phase I of the RFI. Based on the results from the completed Phase I RFI, it will be used to determine if the investigation of the Brassfield aquifer is necessary, or if other hydro geologic characterization of the Facility is necessary, then a Phase II investigation will be initiated.

2. The eastern boundary (Green and Suncrest) needs further delineation and definition. As discussed in our February 6, 2004, conference call, this area will be the subject of an investigation to be conducted during February 2004.

3. Additional source control needs to be identified or in place to show off-site stability of contamination. Source removal is a goal and must be addressed during the corrective action process. Vernay must address source issues to demonstrate long-term control and stability of off-site contamination.

4. Vernay must include the individual data points on the maps in Figures 5-2, 5-3, 5-4, 5-5 and 5-6 showing concentration distributions of chemicals of concern to further explain the contour lines. This issue was also discussed during the February 6, 2004, conference call.

5. The Agency does not strictly rely upon models to make predictions regarding the groundwater and the chemicals of concern. The potential problems with models involve the amounts of variables used. The need to validate assumptions, parameters, uncertainties and values used in models, create another avenue of review and can delay the corrective action process. The Agency advocates the use of data as the basis of decisions during the corrective action process. This was

discussed during the February 6, 2004, conference call.

6. The Agency recommends that during the well drilling and installation, Vernay should keep track of the amount of water used in drilling and remove or pump out one and one half times the volume of water used. Vernay should identify the source of the water used in the drilling process and its chemical composition. This was discussed during the February 6, 2004, conference call.

Conclusions/Summary Statements: There were nine summary statements included in the report based on the information and data collected by Vernay Laboratories, Inc. to date. We will respond to each below.

1. The sand seams maybe laterally discontinuous but on what scale? The sand seams can also present a pathway off-site and have not been characterized fully. The lateral extent for areas with higher concentrations of contaminants should be delineated.

2. There is no problem with the equivalent porous medium, but confidence in the model needs to be built. As stated previously, the Agency does not strictly use models to make predictions or decisions regarding corrective action. Work describing the limitations, uncertainties, assumptions, calibration and validation of the model would be required.

3. The use of particle tracking and capture zone analyses being used on top of a model which has not been calibrated, validated or certified is not recommended. The recommended use of a model is in conjunction with monitoring to ensure capture is as predicted. This all needs to be proven with field work and sampling. The Agency advocates using collected data as the basis for corrective action decisions.

4. No comment

5. A full year of monitoring events gives a better picture of what is happening, rather than just one season or one event. Vernay should include data from both historically wet and dry seasons to obtain more representative groundwater conditions. Laboratory reporting limits are also important in defining what chemicals of concern are present. There is value in having an established quality assurance project plan to ensure appropriate analytical methods and detection limits are utilized during investigations.

6. No comment

7. The lateral extent of sand seams and their effect or influence on the sewers needs to be addressed or are the sand seams lower than the sewers.

8. The plume stability or contraction needs to be quarterly monitored. In addition, areas down gradient with data gaps need to be addressed. There is a need to define and delineate the vertical and spacial contamination. Sampling over time will give a better picture of what is happening than just one round of sampling, aiding in temporal analysis of contamination. This was also further discussed during the February 6, 2004 conference call.

9. Additional work needed in the Cedarville aquifer to complete the Phase I of the RFI was the main focus of the February 6, 2004 conference call. The additional work requested includes three intermediate depth wells at the MW02-05, MW02-10, and MW02-16 locations. The additional Geoprobe® samples will be collected at the intersection of Barbara Street and Omar Circle and on Omar Circle half the distance to GPO02-079. This work is to be completed in conjunction with the proposed work outlined in the report and in the Statement of Work # 8 during February 2004.