DW-8J

May 4, 2004

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

Re: Historical Data Usage
Vernay Laboratories, Inc.
Yellow Springs, Ohio
OHD 004 243 002

Dear Mr. Fisher:

This is in response to the March 18, 2004, submittal titled *Technical Memorandum No.4, Soil Confirmation* and it discussed the soil data confirmation process used to demonstrate the relevancy of historical soil data. Vernay Laboratories, Inc.(Vernay) requested that the United States Environmental Protection Agency (U. S. EPA) complete a Quality Assurance Project Plan (QAPP) review of past site investigation data collected by The Payne Firm, Inc. (Payne Firm). The data was collected from 1998 to 2001 during a voluntary investigation conducted by Vernay following the Ohio Environmental Protection Agency (OEPA) Voluntary Action Program (VAP) rules. This data was submitted in a report following the guidelines in the U.S. EPA's, May 8, 1998, *Region 5 Policy and Guidance Regarding Historical Data Usage in the RCRA Facility Investigation.*

In a previous review of historical data (*Technical Memorandum No. 2*), Vernay was found to have made a good faith effort reviewing the relevancy of their VAP groundwater, surface water, and sediment data to the RFI and relying on the guidance supplied by the Region's 1998 RCRA QA Policy. The review centered on determining whether or not Vernay had sufficiently demonstrated they had validated their VAP data. At that time, there was no attempt to re-validate the VAP data. We accepted the use of historical data to establish trend analyses in groundwater, sediments, and surface water. At that time, we did not accept the use of historical data to establish trend analyses for soil, but requested the soil data collection to be completed and confirmation demonstrated. This latest *Technical Memorandum No. 4, Soil Confirmation* submittal from Vernay provided soil data confirmation for historical soil data collected from

1998 to 2001.

The *Technical Memorandum No. 4, Soil Confirmation* was discussed during a conference call on April 15, 2004. There are several concerns with the submittal, and the most significant was discussed during the April 15th conference call. At that time, it was explained why we could not accept past soil VOCs data as quantified, accurate data sufficient risk analysis calculations. This is because the past soil VOCs data described in your report was collected using non-conservative sampling and analytical strategies that are known to produce low bias results. This issue has also been discussed during previous conference calls held on January 22, 2004, and December 10, 2002, regarding historical data and QAPP issues. We discussed that soil VOCs data not generated using appropriate procedures such as SW-846 method 5035 or 5035A would not be accepted.

Furthermore, because Vernay is supposed to be adhering to terms of its 3008(h) Order which refers to the Region 5 QA Policy as the guide for Quality Assurance matters, Norm Niedergang's December 22, 1997, 'Determination of Volatiles in Soil - Directive for Change,' an Appendix to the Region 5 QA Policy, should have been followed. In the 'Directive For Change' it is stated that "Starting January 1, 1998, all RCRA corrective action... activities will determine volatiles in soil using sample collection procedures consistent with Methods 5021 or 5035 of Update III to SW-846..." The reason for why U.S. EPA decided to replace the sampling and analysis method formerly used for soil VOCs with the Update III strategy is because it has been demonstrated through scientific studies that up to 90% of volatile constituents can typically be lost from a sampled matrix when relying on non-conservative methods. Significantly less fugitive emissions resulted, however, when conservative methods such as those described in SW-846 method 5035 were meticulously employed.

Thus, we would naturally view your 2004 confirmation data generated in accordance with Update III as more accurate than former 1998 data sets which relied on Update II methods and therefore which must be less accurate due to low sample bias. This is our tentative position even though *Technical Memorandum No. 4, Soil Confirmation* did not divulge information concerning overall quality of Vernay's 2004 soil confirmation data. In order for U.S. EPA to make *final* determinations concerning *Technical Memorandum No.4, Soil Confirmation*, Vernay should incorporate laboratory case narrative reports, and provide findings from a third party independent validation of the 2004 confirmatory data.

As stated during our April 15, 2004 conference call, the historical data may be used instead for other qualitative purposes or even incorporated into environmental indicator determinations, which are viewed as shorter term programmatic goals. The past 1998 soil VOCs data may also provide rationale for sampling design, or indicate where hot spot zones of contamination exist. However, because of the low results bias, the U.S. EPA cannot accept any of this data for use in quantitative site risk assessments.

We are aware that in certain cases past data had higher VOC readings when compared to its recent confirmation, which seems counterintuitive given that the 1998 data had lower bias than the more accurate 2004 data. Also, Vernay took care to reproduce conditions and variables of the first sampling event, as described in *Technical Memorandum No.4. Soil Confirmation*. We

can only speculate why this pattern emerged, although as you mentioned on p. 6 of your report, some of the analytical disparity could be a consequence of progressive contaminant biodegradation in the soil environment. Further, appropriate monitoring data could prove or falsify this notion.

Therefore, U.S. EPA will not accept historical soil VOCs as 'equivalent' for supplementing the more accurate (as well as current) 2004 confirmatory soil VOCs data. And before the confirmation data can be fully accepted, we request a written synopsis of its quality (i.e. validation reports).

We didn't have sufficient time to discuss three other matters pertaining to *Technical Memorandum No. 4, Soil Confirmation* during our April 15th conference call. First, Table 4 PAHs data has a relatively high proportion of "0's" compared to other data, and an index ratio significantly less than our recommended 80% value. So, *Technical Memorandum No.4, Soil Confirmation* should propose how non-detected data would be incorporated into risk assessment calculations. Secondly, could the next-to-last bullet appearing on p. 5 of *Technical Memorandum No. 4, Soil Confirmation* be clarified? And finally, it would be instructive if the 1,492 compared data points mentioned on p. 6 could be re-itemized discretely in terms of SVOCs, PAHs and metals data.

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

cc: A. Debus, (w/enclosure)
J. Morris, ORC (w/enclosure)
D. Contant, The Payne Firm (w/enclosure)