The Payne Firm, Inc.
Environmental Consultants

11231 Cornell Park Drive
Cincinnati, Ohio 45242
513-489-2255 Fax: 513-489-2533

VIA FEDERAL EXPRESS
AM Priority

January 13, 2006

United States Environmental Protection Agency
Region 5
Corrective Action Section, DW-8J
77 West Jackson
Chicago, Illinois 60604

Attention: Ms. Patricia J. Polston, Project Manager
Waste Management Branch

Reference: Quarterly Progress Report (Fourth Quarter 2005)
Administrative Order on Consent
Vernay Laboratories, Inc.
Yellow Springs, Ohio
Project No. 0292.11.26

Dear Ms. Polston:

The Payne Firm, Inc. (Payne Firm) is pleased to submit, on behalf of Vernay Laboratories, Inc. (Vernay), the attached Progress Report for the Fourth Quarter 2005, as required by the Administrative Order on Consent (AOC) journalized by the United States Environmental Protection Agency (U.S. EPA) on September 27, 2002.

We understand that the U.S. EPA may provide this quarterly progress report on the U.S. EPA's website at www.epa.gov/region5/sites/vernay. The electronic version of this quarterly progress report is also included on a CD-Rom in Appendix I.

Should you have any questions regarding the enclosed document, please contact either of us at (513) 489-2255 or via e-mail at dcc@paynefirm.com or ddw@paynefirm.com.

Sincerely,

The Payne Firm, Inc.

David C. Contant, L.G.
Project Manager

Daniel D. Weed, C.P.G.
Principal

cc: Mr. Doug Fisher – Vernay Laboratories, Inc.
Mr. Joseph Lonardo – Vorys, Sater, Seymour and Pease
Mr. Phil Hawkey – Village of Yellow Springs
Ms. Connie Collett – Yellow Springs Community Library

FOURTH QUARTER
2005 PROGRESS REPORT

VERNAY LABORATORIES, INC.
PLANT 2/3 FACILITY
Yellow Springs, Ohio

Project No. 0292.11.26

January 13, 2006

Prepared For

VERNAY LABORATORIES, INC.
875 Dayton Street
Yellow Springs, Ohio 45387

Prepared By

THE PAYNE FIRM, INC.
11231 Cornell Park Drive
Cincinnati, Ohio 45242
513-489-2255 Fax: 513-489-2533

PROGRESS REPORT – FOURTH QUARTER 2005
Vernay Laboratories, Inc. RCRA Corrective Action
Yellow Springs, Ohio

A. IDENTIFICATION OF FACILITY AND ACTIVITY

Vernay Laboratories, Inc. (Vernay) agreed to an Administrative Order on Consent (AOC), journalized September 27, 2002, to complete a United States Environmental Protection Agency (U.S. EPA) Resource Conservation and Recovery Act (RCRA) Corrective Action for the Vernay Facility located at 875 Dayton Street in Yellow Springs, Ohio.

B. STATUS OF WORK AT THE FACILITY AND PROGRESS DURING THE QUARTER

The status of the work at the Facility and a summary of the progress made during the quarter are presented below.

1. Technology Screening for Treatability/Pilot Study Evaluation

Vernay continued to evaluate potential pilot-scale treatability studies. The Payne Firm evaluated the rationale and prioritization of potential pilot-scale treatability studies in support of the corrective measures evaluation at the Vernay Laboratories, Inc. Plant 2/3 Facility (Facility) in Yellow Springs, Ohio. The need for potential pilot-scale treatability studies was previously evaluated for Vernay by the Payne Firm. Vernay is currently reviewing these evaluations for consideration of potential pilot-scale treatability studies in 2006.

2. U.S. EPA Approval with Comments on RFI Phase II Report (Revision 1)

Based on Vernay's responses to the U.S. EPA preliminary draft comments to the December 20, 2004 "U.S. EPA RCRA Corrective Action Facility Investigation, Phase II Report" (RFI Phase II Report), the U.S. EPA requested Vernay to submit a "clean" revised RFI Phase II Report. As requested, Vernay prepared the RFI Phase II Report (Revision 1) dated October 13, 2005 and submitted the revision to U.S. EPA, the Village of Yellow Springs and the Yellow Springs Community Library. The U.S. EPA also updated its web site with portions of the revised document.

On December 16, 2005, Vernay received the December 13, 2005 U.S. EPA review of the RFI Phase II Report (Revision 1) stating that U.S. EPA approved the revised RFI Phase II Report with comments. The approval letter is included with U.S. EPA correspondence provided in Appendix III.

3. Post-RFI Semi-Annual/Fourth Quarter 2005 Monitoring Event

<u>Semi-Annual 2005 Monitoring</u>

As presented in the approved RFI Phase II Report, the main objective of the post-RFI monitoring program is to collect the sufficient data needed in order to demonstrate plume stability for the Environmental Indicators, monitor the effectiveness of the existing ground water interim measure, and to support the calibration of the contaminant fate and transport ground water model and the risk assessment. Vernay completed a post-RFI semi-annual ground water monitoring event during the fourth quarter conducted between October 3, 2005 and October 6, 2005. In order to meet the post-RFI ground water monitoring data needs, ground water monitoring events

will occur on a semi-annual basis until the final corrective measures are determined by the U.S. EPA. The number of monitoring wells sampled during each semi-annual monitoring event may be reevaluated.

In order to demonstrate plume stability for the CA750, a sufficient number of monitoring wells located near the fringe of the contaminated ground water area were sampled. These monitoring wells include MW01-01, MW01-07, MW01-03, MW01-03CD, MW01-04SE, MW02-14, MW02-14CD, MW02-04, MW02-04CD, MW02-10, MW02-10CD, MW02-15, MW02-15CD, MW02-17, and MW02-17CD. In order to monitor the effectiveness of the existing ground water interim measure, the following monitoring wells and extraction wells were sampled: CW01-01, CW01-02, MW01-04, MW01-04CD, MW02-11, MW02-08, MW02-08CD, MW02-03, and MW02-03CD. The monitoring wells sampled are also sufficient to support the calibration of the contaminant fate and transport ground water model and the risk assessment. Therefore, a total of 24 wells and one surface water location at the outfall to the unnamed creek were sampled during this semi-annual monitoring event.

Fourth Quarter 2005 Monitoring

Based on the U.S. EPA approval with comments to the revised RFI Phase II Report, the U.S. EPA included an enclosure with a list of monitoring wells to be sampled quarterly in addition to the semi-annual monitoring plan outlined in Section 7 of the revised RFI Phase II Report (see Appendix III). The U.S. EPA stated these wells were selected with time-dependency and area coverage in mind which include MW01-02, MW01-04, MW01-04CD, MW01-10, MW01-13, RW01-05, MW02-03, MW02-03CD, MW02-03SE, MW02-06, MW02-06CD, MW02-08, MW02-08CD, MW02-08SE, MW02-09, MW02-10, MW02-11, MW02-11SE, and MW02-13. These additional quarterly wells were also sampled in October 2005, if not already sampled for the semi-annual sampling event. The U.S. EPA also requested that hydrogeologic cross-sections be prepared quarterly utilizing the analytical results from each quarterly monitoring event. Further correspondence between the Payne Firm and U.S. EPA clarifying the requested cross-sections is provided in Appendix III. The completed cross-sections are provided in Appendix IV.

The RFI monitoring well network and fourth quarter sampling locations are shown on Figure 1 along with detections of VOCs which may be detected above an MCL off-Facility (tetrachloroethene, trichloroethene, and vinyl chloride). Concentrations of all VOCs from on- and off-Facility monitoring wells in the Cedarville Aquifer, sewer backfill and the surface water outfall are summarized on Table 1. Detected concentrations of VOCs from aqueous QA/QC samples are also summarized on Table 2. Electronic copies of the laboratory analytical reports, data validation memoranda and ground water sampling forms are included on a CD-Rom in Appendix I. A list of data validation qualifiers assigned by the laboratory and/or the Payne Firm is included on Table 3.

4. Monthly Operation and Maintenance Activities

Data associated with the existing ground water interim measure were collected monthly during the fourth quarter. These data include water samples analyzed for VOCs from the ground water treatment systems of the capture zone and the utility tunnel sump operating on the Facility. Water level measurements from the entire RFI monitoring well network are collected on a quarterly basis during the post-RFI. Quarterly water level elevations are summarized in Table 4. Potentiometric contour maps generated for the Cedarville Aquifer during the fourth quarter are presented in Appendix II.

Water samples collected from the Ground Water Capture Treatment System (GWCTS) included: 1) a sample at each wellhead (CW01-01 and CW01-02); 2) a sample after the first carbon vessel; and 3) a system effluent sample after treatment. Likewise, samples collected from the Utility Tunnel Sump Treatment System (UTSTS) included: 1) a pre-treatment sample; 2) a sample after the first carbon drum; and 3) a sample after the second carbon drum. The VOC data collected from the two treatment systems are summarized on Tables 5 and 6, respectively. Electronic copies of the laboratory analytical reports are included on a CD-Rom in Appendix I.

5. Water Well Survey Follow-Up, Sampling, and Abandonment

During the fourth quarter, Vernay completed its follow-up with known water well owners within a defined survey area beyond the Facility. Vernay also determined the property transactions that occurred within the well survey area, and followed-up with these new owners to document any changes that may have occurred with respect to the original well survey response that was obtained (i.e. was a water well installed by the new owner?). The conclusions of the 2005 water well survey included the following:

- The 2005 change-in-use water well survey generated a response rate of 79 percent (11 of 14 identified properties responded).
- Water wells located at 825 and 775 Dayton Street and 401 Suncrest Drive were abandoned by Vernay.
- No property owners responding to the survey reported a change-in-use for their water wells in 2005.
- The well survey, sampling, and closure activities completed in 2005 verified the conclusions of the approved CA725 EI. All current human exposures to ground water contamination are under control.

Vernay documented the methodology and results of the annual well survey, sampling and abandonment in the December 31, 2005 "RCRA Corrective Action Annual Water Well Survey Report" which is provided in Appendix V.

6. Evaluation of Corrective Measures Objectives and Preliminary Remediation Goals

Vernay continued the process of determining corrective measures objectives (CMOs) consisting of goals for protecting human health or the environment.

C. PROBLEMS ENCOUNTERED DURING THE QUARTER

No problems were encountered during the quarter.

D. ACTIONS TAKEN TO RECTIFY PROBLEMS

No actions to rectify problems were required this quarter.

E. PROJECT SCHEDULE

Based on the information presented in the revised RFI Phase II Report and the requirements of the AOC, the following activities are planned for next quarter (Q1-2006).

- Continue monthly monitoring of existing interim measures and quarterly water level measurements.
- Perform the 2006 First Quarter sampling event.

- Continue the determination of preliminary remediation goals and corrective measures objectives for the Facility.
- Continue corrective measures evaluation and, if needed, commencement of potential treatability studies.
- Submit the draft Environmental Indicator Report for ground water (CA750).

Future SOWs will be based on the project schedule presented on Table 7 and on potential U.S. EPA comments to the draft CA750.

F. TABLE OF CONTENTS

List of Figures

1: Fourth Quarter 2005 Water Sampling Locations and Detections of PCE, TCE and Vinyl Chloride

List of Tables

1: Investigative Aqueous VOC Analytical Data (Q4-2005)
2: Aqueous QA/QC VOC Analytical Data (Q4-2005)
3: List of Data Qualifiers
4: Quarterly Water Level Measurements (Q4-2005)
5: Ground Water Capture Treatment System (GWCTS) Sampling Results – Detected VOCs
6: Utility Tunnel Sump Water Treatment System (UTSWTS) Sampling Results – Detected VOCs
7: RCRA Corrective Action Project Schedule

List of Appendices

I: CD-Rom Containing Adobe Acrobat® Documents:
A. Fourth Quarter 2005 Progress Report (excluding laboratory analytical reports)
B. Fourth Quarter 2005 Laboratory Analytical Reports
C. Fourth Quarter 2005 Data Validation Memoranda
D. Fourth Quarter 2005 Ground Water Sampling Forms

II: Fourth Quarter 2005 Potentiometric Contour Maps for the Cedarville Aquifer

III: U.S. EPA Correspondence re: RFI Phase II Report Approval

IV: Fourth Quarter 2005 Hydrogeologic Cross-Sections with Contaminant-Concentration Contours

V: 2005 RCRA Corrective Action Annual Water Well Survey Report