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April 14, 2005

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 (First 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 First 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. Rob Hillard – Village of Yellow Springs
Ms. Connie Collett – Yellow Springs Community Library

PROGRESS REPORT – FIRST 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

In February, 2005 the Payne Firm completed an analysis of the potential need for treatability data for the purpose of evaluating technologies for corrective measures at the Facility.

The analysis consisted of the following:

- Consideration of site-specific soil and ground water conditions;
- Consideration of affected areas and distribution at the Facility;
- Preliminary screening of technologies for soil and ground water;
- Consideration of processes, which would need site-specific data for further consideration; and
- Consideration of potential delivery mechanisms, which would need site-specific data for further consideration.

Based on the analysis described above, the Payne Firm recommended to Vernay the following steps:

1. Implement periodic ground water monitoring for parameters to identify oxidizing/reducing conditions and the potential for injection to enhance biological or chemical degradation.
2. Potentially collect ground water samples from impacted areas for bacteria plate counts to identify the microbial populations present and whether the populations may be associated with biodegradation processes that may be stimulated or augmented.
3. Collect soil samples for batch testing to determine the soil oxidant demand and specific oxidant effectiveness under various dosing strategies.
4. Evaluate data from Steps 1 through 3 in conjunction with corrective measures objectives (CMOs) and preliminary remediation goals (PRGs).
5. Conduct a pilot study in one or more impacted areas, if warranted, to evaluate the effectiveness of in situ chemical oxidation, in situ chemical reduction, biostimulation, and/or bioaugmentation, with or without potential enhancements.

2. Post-RFI Semi-Annual Ground Water Monitoring Event

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 first quarter of 2005, in compliance with AOC Section VI.18.E. The monitoring event was conducted between March 7, 2005 and March 11, 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 action is 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, 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.

The RFI monitoring well network and semi-annual sampling locations are shown on Figure 1 along with detections of VOCs (tetrachloroethene, trichloroethene, and vinyl chloride). Concentrations of all VOCs from on- and off-Facility monitoring wells in the Cedarville Aquifer and the surface water outfall are summarized on Tables 1 and 2, respectively. Detected concentrations of VOCs from aqueous QA/QC samples are also summarized on Table 4. 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 5.

3. Monthly Operation and Maintenance Activities

Data associated with the existing ground water interim measure were collected monthly during the first 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 6. Potentiometric contour maps generated for the Cedarville Aquifer during the first 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 8 and 9, respectively. Electronic copies of the laboratory analytical reports are included on a CD-Rom in Appendix I.

4. Water Well Survey Follow Up and Sampling

In order to support the conclusions of the CA725 and the risk assessment, Vernay began to plan to follow-up with known water well owners within a defined survey area. The purpose of this

follow-up is to confirm whether or not any change in well use had occurred since the last survey conducted in late 2003/early 2004. Vernay will also determine the property transactions that occurred within the well survey area, and follow up with these new owners (if any) 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?). Vernay expects this follow-up to occur in the second quarter 2005.

In addition, Vernay re-sampled those water wells that were identified during the 2003/2004 survey as currently being used for potable or non-potable purposes within the defined survey area downgradient from the Facility.

Water wells identified during the 2003/2004 survey as currently being used downgradient from the Facility are located at the following properties:

- 860 Dayton Street
- 850 Dayton Street
- 780 Dayton Street
- 545 Dayton Street
- 690 Wright Street

All identified properties were sampled during the March 2005 semi-annual sampling event with the exception of 850 Dayton Street, where access was not obtained; rescheduling access is currently in-progress. The water well sampling locations and the current use of all identified water wells are shown on Figure 2. Results of all VOCs from water wells sampled in March 2005 are summarized on Table 3. A description of the field collection methods and procedures used by the Payne Firm to obtain water well samples was included with Statement of Work No. 19.

Detected concentrations of VOCs from aqueous QA/QC samples are also summarized on Table 4. 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 5.

During the first quarter 2005, Vernay received the permits from the Greene County Combined Health District (GCCHD) to abandon the residential water wells located at 825 and 775 Dayton Street in addition to the existing permit for 401 Suncrest Drive/550 Green Street. Vernay voluntarily disconnected these water wells in 2004 and connected the property to the Village of Yellow Springs public water system. In discussions with the GCCHD in January 2005, Vernay was granted the option to abandon the unused water wells until the late spring or early summer in order to reduce impacts to the properties during wet conditions. The well abandonment permits are valid for one year.

5. Monitoring Well Sampling for the Evaluation of Potential Treatability Studies

As a result of the technology screening (see Section B1 above) and in order to evaluate certain remedial treatment options for the development of proposed corrective measures at the Facility, a suite of ground water monitoring data was obtained from 20 wells during the first quarter 2005 semi-annual ground water monitoring event. The main objective is to generate sufficient data to evaluate current Cedarville Aquifer ground water and sewer backfill water conditions at the Facility and vicinity, so that effective remedial technologies can be evaluated to address VOC concentrations in these media. The results of the parameters that were monitored are included on

Table 7 and are being used to characterize conditions on and off the Facility and identify where oxidizing or reducing conditions predominate, and there associated effects.

6. Evaluation of Corrective Measures Objectives and Preliminary Remediation Goals

Vernay began the process of determining corrective measures objectives (CMOs) consisting of goals for protecting human health or the environment. The CMOs will be as specific as possible but not so specific that the range of alternatives that can be developed is unduly limited. CMOs for protecting human health will express both a contaminant level (e.g., PRG) and an exposure route, rather than contaminant levels alone, because protectiveness may be achieved by reducing exposures as well as by reducing contaminant levels. Evaluation of CMO parameters will include, but not be limited to, exposure area and exposure points(s), receptor population, exposure route, exposure medium, potential exposure scenario, potential significance under current and future conditions and general response actions for each CMO.

C. PROBLEMS ENCOUNTERED DURING THE QUARTER

No difficulties were encountered during this 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 RFI Phase II report and the requirements of the AOC, the following activities are planned for next quarter (Q2-2005).

- Collect soil samples for batch testing to determine the soil oxidant demand and specific oxidant effectiveness under various dosing strategies.
- Continue corrective measures evaluation and, if needed, commencement of potential treatability studies.
- Follow up with 850 Dayton Street and resample the water well, if accessible.
- Determine the property transactions that occurred within the well survey area, and follow up with these new owners (if any) to document any changes that may have occurred with respect to the original well survey response that was obtained in 2003/2004 (i.e., was a water well installed by the new owner?).
- Continue monthly monitoring of existing interim measures and quarterly water level measurements.
- Continue the determination of preliminary remediation goals and corrective measures objectives for the Facility.

Future SOWs will be based on the project schedule presented on Table 10 and on potential U.S. EPA comments to the RFI Phase II report.

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