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November 23, 1990

Mr. Alan Sorsher
Toxic Substances Control Division
Department of Health Services
1405 North San Fernando Boulevard, Suite 300
Burbank, California 91504

Subject: Revisions to Work Plans Submitted on September 27, 1990
Whittaker Corporation, Bermite Division
22116 West Soledad Canyon Road
Santa Clarita, California
EPA I.D. No. CAD 064573108
Delta Project No. 40-90-038

Dear Mr. Sorsher:

Delta Environmental Consultants, Inc. (Delta), on behalf of its client Whittaker Corporation (Whittaker), Bermite Division (Bermite), is submitting revisions to work plans for the subject site originally submitted on September 27, 1990. The revisions were requested by the California Department of Health Services (DHS) in a letter to Whittaker, dated October 26, 1990, and agreed to during a meeting between DHS, Whittaker, and its consultants on November 19, 1990.

The following discussion includes the comments presented in the DHS letter, Whittaker's response to each comment, and subsequent clarification or modification agreed to by all parties during the November 19, 1990, meeting. Revisions outlined in each response are included in the enclosed work plans.

SOIL VAPOR PROBE PLAN AT 317 AREA:

1.1 BACKGROUND

Comment:

Table 1 shows data only through April 1989. Data through September 1989 have been presented previously and must be considered as well. If any measurements have been taken since September 1989, they must be presented and considered in the work plan.

Response:

Table 1 has been updated through November 9, 1989. No other data have been collected since that time.

1.2 SCOPE OF WORK

Comment:

The scope of work must include testing the influence of the vacuum extraction system on the formation, i.e., measure vacuum at various probes when the vents are under vacuum.

Response:

The influence of the vacuum extraction system on the formation will be monitored by measuring vacuum pressures in each of the vapor probes (P-1 through P-7) during operation of the vapor extraction system.

Comment:

The scope of work must include the possibility of installing additional extraction wells. See closure plan modification Rev. 4.1, page 4, items 1-4.

Response:

Based on the data obtained from the monitoring of the vapor probes, the need for additional vapor extraction wells will be evaluated. However, operating data collected from vapor probe nests, P-1 through P-7, indicate that additional vapor extraction wells are not necessary.

Comment:

The scope of work must be expanded to explain how the vapor probe monitoring will be carried out in conjunction with the operation of the vapor extraction system. The program must include periodic reporting of the amount of solvent removed and probe readings.

Response:

Vacuum data, obtained by monitoring vapor probe nests P-1 through P-7 during operation of the soil vapor extraction system, will be evaluated. Soil vapor samples collected while the soil vapor extraction system is shut down will be analyzed. Solvent removal rates will be estimated by collecting and monitoring the vapor extraction system flow and concentration data. As a comparison, by tracking the production of sodium chloride in the quench solution for the catalytic oxidizer off-gas, the quantity of hydrochloric acid neutralized in the off-gas, and thus the quantity of trichloroethylene removed, can be calculated. The monitoring program will also include quarterly reports presenting vapor probe and soil vapor extraction system monitoring results.

2.0 INITIAL VAPOR PROBE MONITORING

Comment:

The work plan must specify the sampling frequency and monitoring program duration.

Response:

Existing vapor probes in probe nests P-1 through P-7 will be monitored twice a month for a maximum duration of six months to obtain current data on the site condition. Data will be evaluated to determine the location and depth of the proposed vapor probes.

2.1 GENERAL SAMPLING METHODS

Comment:

Soil vapor monitoring at the same time that the extraction system is operating may give erroneously low vapor concentration readings due to the dilution effect of clean air being drawn through the contaminated zone. However, vacuum readings at the probes may be useful in determining the influence of the vacuum at various depths and distances. This would be useful data if a more extensive extraction system is required.

Response:

Prior to collecting vapor samples from the vapor probes, vacuum will be measured at each probe while the soil vapor extraction system is operating. Vacuum measurements at the vapor probes will be recorded along with operational data at the vapor extraction system. Soil vapor flow through the vapor extraction system will be measured and a vapor sample will be collected from the vapor stream for analysis. The vapor extraction system will be sampled by filling a Tedlar bag from a sample tap located at the effluent side of the vacuum pump. Once the bag is full, the bag will then be connected to a portable organic vapor meter (OVA) for total organic and halogenated organic compound concentration analysis. The vapor extraction system will then be shut down while vapor probe sampling is conducted. Samples will be collected from a selected test probe at 2 and 4 hours after shutdown, and the data will be evaluated to determine the time required to reach equilibrium after shutdown. Subsequent sampling will be conducted on all vapor probes after sufficient time has elapsed to reach equilibrium.

Comment:

The qualifications and experience of the person operating the Photovac unit must be specified.

Response:

Based on recommendations by DHS, the Photovac will not be used to collect and analyze the vapor samples. Vapor samples will be analyzed using an OVA only.

3.1 DEEP VAPOR PROBE CLUSTER

Comment:

To confirm that the bottom of the contamination has been found, more than one deep cluster may be needed. The cluster plan (317 Work Plan for Soils Investigation and Removal at the 317 Area, October 9, 1987, Rev. 1.1, pages 2-3) calls for three probes at the bottom of the trench to verify the vertical extent of contamination. It also calls for at least five additional probes to investigate the surrounding area (lateral extent). Bermite's report "Soil Characterization at the 317 Area, Progress Report No. 2," proposed six verification probes.

Response:

The closure plan (317 Work Plan for Soils Investigation and Removal at the 317 Area, October 9, 1987) calls for three vapor probes within the excavation area. A total of three vapor probe nests were installed in March 1989 within the excavation by Wenck Associates, Inc. (Wenck). The vapor probe screens were set at 20-foot intervals, from approximately 20 to 120 feet below ground surface. By May 1989, four additional vapor probe nests were also installed by Wenck to assist in determining the lateral extent of contamination. The work proposed in the two reports mentioned above were performed by Wenck. However, based on the data available, the lateral and vertical extent has not been defined by the existing vapor probe nests. The deep vapor probe cluster and additional vapor probe clusters proposed in this work plan are designed to assist in delineating the lateral and vertical extent of volatile organic compound (VOC) contamination. To account for any deviation of the hole during drilling, we have assumed a maximum deviation of 5 degrees from vertical for each vapor probe. With this assumption, vapor probes should be drilled a minimum of 20 feet from each other.

We propose to only install one deep vapor probe cluster. Once the deep vapor probe cluster has been installed, each vapor probe within the vapor probe cluster will be initially monitored for the presence of VOCs using an OVA. Sampling and analysis will be conducted as previously stated in Section 2.0 of the work plan (Work Plan: Vapor Probe Monitoring and Installation at Area 317, September 27, 1990).

Sampling of the deep vapor probe cluster will be conducted twice a month with an OVA and will continue for a sufficient period of time to determine whether the vertical extent of contamination has been defined. If the deepest probe within the deep vapor probe cluster indicates that contamination is present, additional deep vapor probes will be installed within the cluster until vertical extent of contamination is defined.

Comment:

The choice of drilling technique must be carefully made and justified. Cable tool along with overdrilling the hole and hole casing may be preferable. This should also be able to support split-spoon sampling. Telescoping casing is another possibility. Air rotary drilling may push the contamination deeper and/or sideways, and make OVA readings during drilling operations questionable.

Response:

Air rotary with no drilling water or foaming agent is proposed as the preferred drilling method for the installation of these vapor probe clusters. Air rotary was chosen based on previous reports by Wenck stating that auger, mud rotary, and air rotary with water created cave-in problems. Air rotary was used during the installation of vapor probes P1 through P3. No caving of the borehole occurred during the construction of these three vapor probes. Air rotary drilling techniques provide a clean borehole space which will facilitate the proper sealing of the vacuum probe. In order to insure accurate depth-specific vapor contaminant measurements and measurements of vacuum during system operation, small, single completion probes installed by air rotary are proposed. It is our opinion that the use of air rotary drilling techniques will not cause migration of vapor-phase contaminants beyond the influence of the vapor sampling and extraction system.

OVA readings from drill cuttings or split-spoon sampling may be questionable and, therefore, will not be used as a tool for determining final depth of the vapor probes. Each vapor probe cluster will consist of up to six probes spaced at 40-foot intervals. The first screened interval within the deep vapor probe cluster will be placed 40 feet below the deepest screened interval of the existing vapor probes on site (approximate elevation of 1,340 feet). The final vapor probe within the deep vapor probe cluster will be placed at the elevation required to define the vertical extent of the VOC contamination.

Additional vapor probe clusters will be placed based on OVA readings collected two times a month from the existing vapor probe clusters. The data which will be used to determine the need and location will be collected from existing vapor probe nests (P1 through P7) and the new deep vapor probe cluster (P8). Data will be collected for a sufficient period of time to determine placement and depth of additional vapor probe clusters to delineate the lateral extent of VOC contamination.

Comment:

The work plan does not specify how OVA readings will be taken during the drilling.

Response:

OVA readings will be collected for health and safety reasons only. No split-spoon sampling will be conducted during drilling of the vapor probe clusters due to predetermined screen depths. Headspace readings obtained from split-spoon samples collected during the installation of vapor probe nests P1 and P2 did not indicate a correlation to the actual contaminant levels found in the completed vapor probes during the monitoring program conducted by Wenck. The proposed deep vapor probe cluster will be installed at the depths described above and then monitored with an OVA twice a month after installation. Only after monitoring these probes for a period of time will we be able to determine which screened zone is clean.

Comment:

The work plan does not state the criteria used to determine when to stop drilling or to install a probe.

Response:

Drilling will be stopped at an elevation required to define the vertical extent of the VOC contamination for the deepest probe within the deep vapor probe cluster. The deep vapor probe cluster will be placed from an elevation of 1,340 feet, with 40-foot intervals between each of the screened zones. These are predetermined screen depths based on the deepest existing vapor probe within the trench.

The depths and locations of the additional vapor probe clusters will be determined after sufficient data have been collected from the existing vapor probe nests and the new deep vapor probe cluster. The additional vapor probe clusters will also be placed on 40-foot intervals; however, the depth of the last probe within the cluster cannot be determined without additional data.

Comment:

The boring must be logged by or under the direction of a registered geologist or certified engineering geologist.

Response:

Each boring will be logged by or under the direction of a registered geologist or certified engineering geologist.

Comment:

In order to support other hydrogeologic work, the boring(s) may be extended down to the aquiclude, with appropriate sampling.

Response:

The boring program proposed for this phase of work does not include drilling down to the aquiclude. We do not want to proceed with drilling to the aquiclude prior to determining the vertical extent of VOC contamination. Drilling down to the aquiclude in the area of known contamination increases the potential for contaminants to migrate down during drilling operations. The borehole will also act as a conduit for contaminates to travel downward over time if the borehole caves in and/or is not properly abandoned.

3.2 PROBE CONSTRUCTION

Comment:

The plan must anticipate construction of deeper probes than have been constructed in the past and alternative methods may be required for placement of sandpack, fine sand seal, and bentonite seal. A bentonite grout may have to be pumped. Please clarify the borehole diameter in Figure 6.

Response:

Each vapor probe will be placed in a 4.5-inch-diameter borehole. Sandpack and the fine sand seal will be pumped through a tremie pipe. A Baroid bentonite seal aqua grout (Benseal) will be used to seal the annulus between the borehole and the vapor probe. The grout seal will be placed by pressure grouting through a tremie pipe until the grout returns to the surface.

3.3 DEEP VAPOR PROBE MONITORING PROGRAM

Comment:

The plan must specify how long the deep probe(s) will be monitored before determining the placement and depth of the additional probes.

Response:

The deep vapor probe cluster and the existing vapor probe nests will be monitored with an OVA twice a month for a maximum of 6 months.

3.4 ADDITIONAL VAPOR PROBE INSTALLATION

Comment:

Bermite must recognize that the installation of additional vapor probes may be an iterative process in order to define the lateral extent of contamination and define the size and scope of the extraction well system.

Response:

Bermite recognizes that the installation of additional vapor probes may be required to define the lateral and vertical extent of contamination and to define the size and scope of an extraction well system, if required.

WORK PLAN FOR MISCELLANEOUS RELEASES: COUNT 14

1.0 INTRODUCTION AND SCOPE OF WORK:

1. Old Lead Azide Building and Sump:

Comment:

Regarding the Old Lead Azide Building and Sump, the discussion in the response on this item has merely repeated information previously submitted, and has not addressed areas of concern:

a. According to information gathered during the visual site inspection (July 16, 1987), the wastewater sump used at the old lead azide building had concrete sides, but a dirt bottom. The sump was cleaned and backfilled and the soil sampled and tested for lead.

b. Based on past performance, there may not have been adequate soil sampling and analysis at this area. For example, soil sampling at the 317 impoundment area in May 1983 found "no contamination." Four years later, extensive contamination was detected at the same area.

Because of the above reasons, the Report of Violation requested more details on the prior lead sampling. If it cannot be shown that adequate sampling and analysis was performed, then confirmation sampling must be done and properly documented.

Response:

The sump at the old lead azide area was cleaned and backfilled in 1978. Soil samples were collected during April 1986 in the sump area and drainage area below the sump. The results from an EP toxicity test indicated that lead concentrations were below 0.05 milligrams per liter (mg/l). However, the laboratory data sheets as well as sample collection information are no longer available. Therefore, to verify these results, additional soil samples will be collected and analyzed.

Two soil borings will be advanced adjacent and into the backfilled sump and one in the drainage area. Soil samples will be collected from each boring at depths of 6 to 12 inches below the native soil and 3 to 4 feet into the native material. The samples will be shipped to a state-certified laboratory for analysis of total lead.

2. Transfer Sump for Building 342:

Comment:

According to the submittal, "Response to Information Needs" prepared by Wenck Associates, November 4, 1987, page 22, describes the sump as "a small subsurface concrete basin." The current proposed work plan gives dimensions as 6 feet by 3 feet by 6 feet deep. Since high chloride concentrations would have attacked the concrete, and there is no indication of a chemically resistant liner in the sump, an additional soil sample from the area beneath the former sump must be tested as well.

The proposed sample from the 342 area must be taken at a depth which will ensure that the native soil is sampled, not the subsequent backfilling.

Response:

A soil boring will be advanced through the former location of the sump and a soil sample collected from 6 feet below the native soil. The depth for sample collection at the 342 area will be determined in the field by a Delta geologist based on subjective analysis of the material encountered in the soil borings. It is expected that native soil will be encountered at 12 feet below the ground surface at the former 342 pond area. The soil samples will be analyzed for chloride at a state-certified laboratory.

3. Ravine Above the Phosphorus Stabilizing Area:

Comment:

There is no explanation of where on the 25- by 50-foot area the three boring locations will be nor was there any rationale as to how they were chosen.

Judgmental soil samples must be taken at any areas showing evidence of contamination (stains, stressed vegetation, etc.). The entire area must be checked for VOC hot spots by using a grid system. Shallow (1 to 3 feet deep) holes must be punched with a rod or piece of pipe and checked for vapors using a field instrument such as an OVA. Take core samples at any hot spots found, in addition to random locations. If no hot spots are found, then core samples must be taken at locations determined randomly using a random number generator or table of random numbers.

The samples must be extracted in a manner which yields total concentrations, and not only soluble portions.

Response:

A visual inspection will be made of the area where drums were observed on August 17, 1982, according to a Bermite memorandum, dated August 26, 1982. A soil sample will be collected at a depth of 1 foot below the ground surface in any area showing signs of contamination. Next, a grid will be established across the area and will consist of 5-foot by 5-foot cells. Each cell will be checked for VOCs by pushing a rod into the ground to a depth of 1 to 3 feet below the ground surface. The rod will be removed, and the hole covered with plastic for 15 minutes. After 15 minutes, the tip of an OVA will be placed into the hole, and a measurement will be recorded.. A soil sample will be collected from 3 feet below the ground surface at any location where a volatile organic aromatics measurement exceeds background concentrations. Finally, a random numbers generator will be used to select cells where three soil borings will be advanced. Two soil samples will be collected from each of the three soil borings at depths of 5 and 10 feet below the ground surface.

The soil samples will be shipped to a state-certified laboratory and analyzed for purgeable organic compounds by EPA Method 8260, semivolatile priority pollutants by EPA Method 8270, and total concentrations of the California Assessment Manual Metals specified in California Administrative Code, Title 22, Chapter 30, Article 11.

4. Hula Bowl I and II:

Comment:

DHS has indeed read the August 25, 1988 report which discusses these units. The "discussion" was very brief and in the form of a table. Two maps showing sampling grids were provided but no description of the sampling or analytical results were provided. Based on the fact that only sketchy information was provided along with the disturbing description of the area in the 1982 Bermite memorandum, DHS feels that a careful assessment of this area is certainly warranted. Sampling and analysis similar to that described for the above-mentioned ravine area must be done.

Response:

Sampling and analyses similar to that requested for the ravine above the phosphorus stabilizing area has been performed and is included in the document entitled *Landfill Investigation and Assessment at Bermite Division of Whittaker Corporation, Santa Clarita, California*, prepared by Wenck Associates, Inc., dated July 1, 1987. This report is presented in the document entitled *Response to Count 14, Item 3 (b) Notice of Violation,* dated July 31, and September 20, 1990.

5. Paint Storage Area of Building 228:

Comments:

Bermite contends that sampling is not warranted at the Building 228 area because "one paint spill (estimated to be much less than one gallon) can be seen on the asphalt surface."

The Bermite memorandum of August 26, 1982, states in part, "4. The paint storage area of Building 228 needs housekeeping. Numerous spills were noted on the driveway and curbing." Since there seems to have been sloppy housekeeping of paints, we feel that the area in question should be properly sampled, and this is what we asked for in Count 14. Sampling and analysis similar to that described for the above-mentioned ravine area must be done.

Response:

An appropriate grid will be established across the former paint storage area of Building 228 and will consist of 10-foot by 10-foot cells. Each cell will be checked for VOCs by pushing a rod into the ground to a depth of 1 to 3 feet below the ground surface. The rod will be removed, and the hole covered with plastic for 15 minutes. After 15 minutes, the tip of an OVA will be placed over the hole, and a measurement will be recorded. A soil sample will be collected from 3 feet below the ground surface at any location were an OVA measurement exceeds background concentrations. Next, a random numbers generator will be used to select cells where two soil borings will be advanced. Two soil samples will be collected from each of the two soil borings at depths of 5 and 10 feet below the ground surface.

The soil samples will be shipped to a state-certified laboratory and analyzed for purgeable organic compounds by EPA Method 8260, semivolatile priority pollutants by EPA Method 8270, and total concentrations of the California Assessment Manual Metals specified in California Administrative Code, Title 22, Chapter 30, Article 11.

2.0 SAMPLE COLLECTION AND HANDLING PROCEDURES

Comment:

As discussed in another document, the scope of sampling work must include the Old Lead Azide Area, the Building 228 Paint Storage Area, and the Hula Bowl Areas. Sampling plans similar to that discussed above must be developed and implemented.

Response:

The document entitled *Work Plan in Response to Count 14, Items 2 and 3A, Report of Alleged Violations and Schedule for Compliance, EPA Identification No. CAD 064573108*, dated September 27, 1990, has been revised to include sampling of the Old Lead Azide Area and the Building 228 Paint Storage Area, as described above. Sampling of the Hula Bowl Areas has been performed and is included in the document entitled *Landfill Investigation and Assessment at Bermite Division of Whittaker Corporation, Santa Clarita, California*, prepared by Wenck Associates, Inc., and dated July 1, 1987. This report is presented in the document entitled *Response to Count 14, Item 3 (b) Notice of Violation*, dated July 31, and September 20, 1990.

Comment:

The first paragraph mentions that analytical parameters will be specified in a subsequent paragraph, but they are not so specified.

Response:

The analytical parameters were specified in a <u>previous</u> paragraph.

Finally, in addition to the review of the work plan comments included herein, during the meeting between DHS, Whittaker, and its consultants on November 19, 1990, DHS advised the meeting participants that a DHS response to the balance of the responses submitted by Whittaker and its consultants to the alleged "notice of violation," dated July 31, 1990, will be provided to Whittaker and its consultants by December 7, 1990. If it is not possible for DHS to meet this deadline, Mr. Alan Sorsher of DHS has agreed to provide a letter to Mr. Edward Muller, Esq., Chief Administrative Officer, Whittaker, stating that the December 7, 1990, deadline will not be met, and indicating the date by which DHS will respond.

If you have any questions regarding this letter, please contact me at (916) 638-2085.

Sincerely,

DELTA ENVIRONMENTAL CONSULTANTS, INC.

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Enclosures

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Mr. Tom Kelly, U.S. Environmental Protection Agency
Mr. Anastacio Medina, Los Angeles County Hazardous Waste Program
Mr. Andrew Hollbrook, California Regional Water Quality Control Board, Los Angeles Region
Mr. David W. Hogan, City of Santa Clarita
Mr. Brian Lewis, California Department of Health Services