GRIFFIN INTERNATIONAL INC

December 22, 1993

Ms. Persis Worrall
380 Maple Street
Burlington, Vermont 05401

RE: Screening of Petroleum Vapors in the Basements of Ms. Persis Worrall and Mrs. Claire Mullen, Maple Street, Burlington, Vermont (VT DEC Site #93-1482)

Dear Ms. Worrall:

This letter summarizes the screening of petroleum vapors in the basements at the above referenced locations. This screening was conducted at your request in response to a request from the Vermont Department of Environmental Conservation (DEC) as contained in their letter dated October 29, 1993 to you.

Basement PID Screening

On Thursday, December 9, 1993, Griffin personnel screened the basement of 380 Maple Street and that of the neighboring house downgradient to the south. The two residences were screened with a properly calibrated HNu PI-101 photoionization device (PID) for volatile organic compounds (VOCs). As the basements were being screened, special attention was paid to possible routes of entry such as pipes leading into the buildings, electrical outlets, and cracks in the foundation walls. Sample locations and results are indicated on sketches of the basement floor plans attached at the end of this letter.

The PID results from the 380 Maple Street basement indicated a VOC concentration of 10 parts per million (ppm) for one location in a crack in the south wall of the basement. Most of the crack had been patched closed with the exception of one section approximately three inches long by ¼ inch wide at 1½ feet up from the floor. Screening of all other sample locations in the basement resulted in readings from 0.2 ppm to 0.5 ppm. The source of the background concentrations is most likely from materials stored in the basement such as a lawn mower, gas and oil for the mower, camp stove fuel, paint and thinner, and lamp oil. These VOC concentration levels are normal for a typical residence basement. One other crack was observed on the north wall. This

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crack had been patched and did not result in any elevated PID readings. Screening of the garage at the Worrall residence resulted in PID readings of 0.0 ppm.

The screening of the neighbor's basement to the south revealed a background VOC concentration of between 0.0 ppm and 0.5 ppm. Some of the items stored in the main basement room are a 250 gallon heating oil tank, charcoal lighter fluid, and sealants. These materials may have contributed to the background VOC levels on the PID in the basement. Screening located in holes on the cover for the sump located in the southwest corner of the main room resulted in PID readings between 2.3 ppm and 3.9 ppm. Upon opening the sump cover, no sheens were observed on the water nor petroleum odors detected. Cracks present in the floor of the main basement room were screened and found to result in PID readings equal to the background levels.

Conclusions

The presence of volatile organic vapors in the basements of the Worrall and Mullen residences appear to be typical of residential buildings. The crack located in the south wall of the basement of the house at the Worrall residence may be a source of VOC vapors entering the basement. These vapor levels are relatively low and do not appear to be contributing significantly to the concentration of hydrocarbon vapors throughout the rest of the basement.

The Mullen residence may contain a minor source of residual contamination in the sump. It appears that the majority of the flooding that occurred in the basement during the release incident of February, 1993 drained into this area. Therefore, any contamination that may still be present in the water would most likely be left in the sump area in the basement. The levels of hydrocarbon vapors detected in the sump by the PID during the December, 1993 visit were very low and not likely a cause for concern. Cracks observed in the floor of the basement are not likely a source of contaminant infiltration based on PID screening.

Recommendations

Based on the observations that took place at the Worrall and Mullen residences on December 9, 1993, Griffin recommends the following:

1) The crack located on the south wall of the Worrall residence should be patched with an impermeable substance to reduce the possible infiltration of hydrocarbon vapors into the building.

2) No further action relative to the fuel oil spill is recommended for the Mullen residence.

Griffin is pleased to be conducting this work for you. Please call if you have any questions.

Sincerely,

Erik C. Sandblom
Environmental Engineer

Attachments

cc: Chuck Schwer, Vermont ANR/DEC

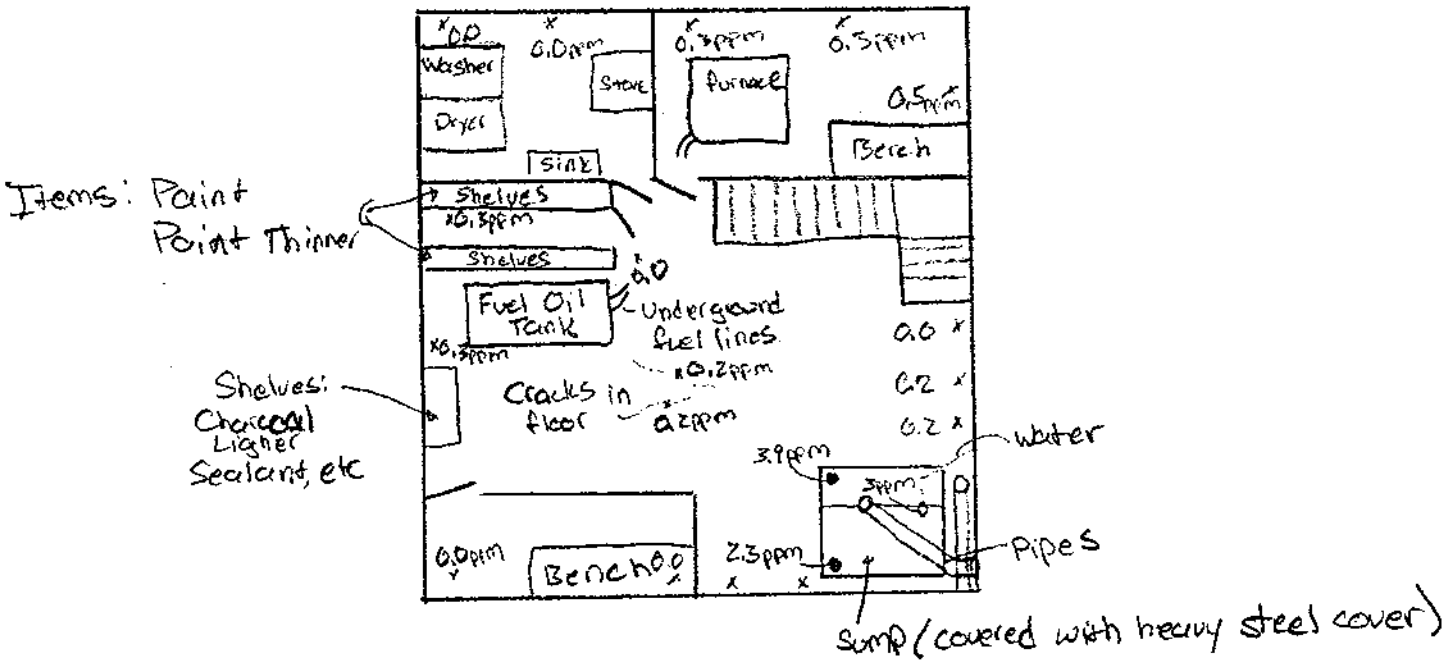
REF: Worrall.ltr

2/9/93
0845 - 0930

BASEMENT SCREENING

CLAIRE MULLEN
NEXT DOOR TO WEST OF
PERSIS WORRALL
380 MAPLE, BURLINGTON

← 2 —



Basement appeared and smelled recently painted (Completed after the cleanup, Spring '93?)

PID readings through holes in sump cover were 2.3-3.9ppm
All other sample locations ranged 0-0.5ppm (some sample loc. on map)

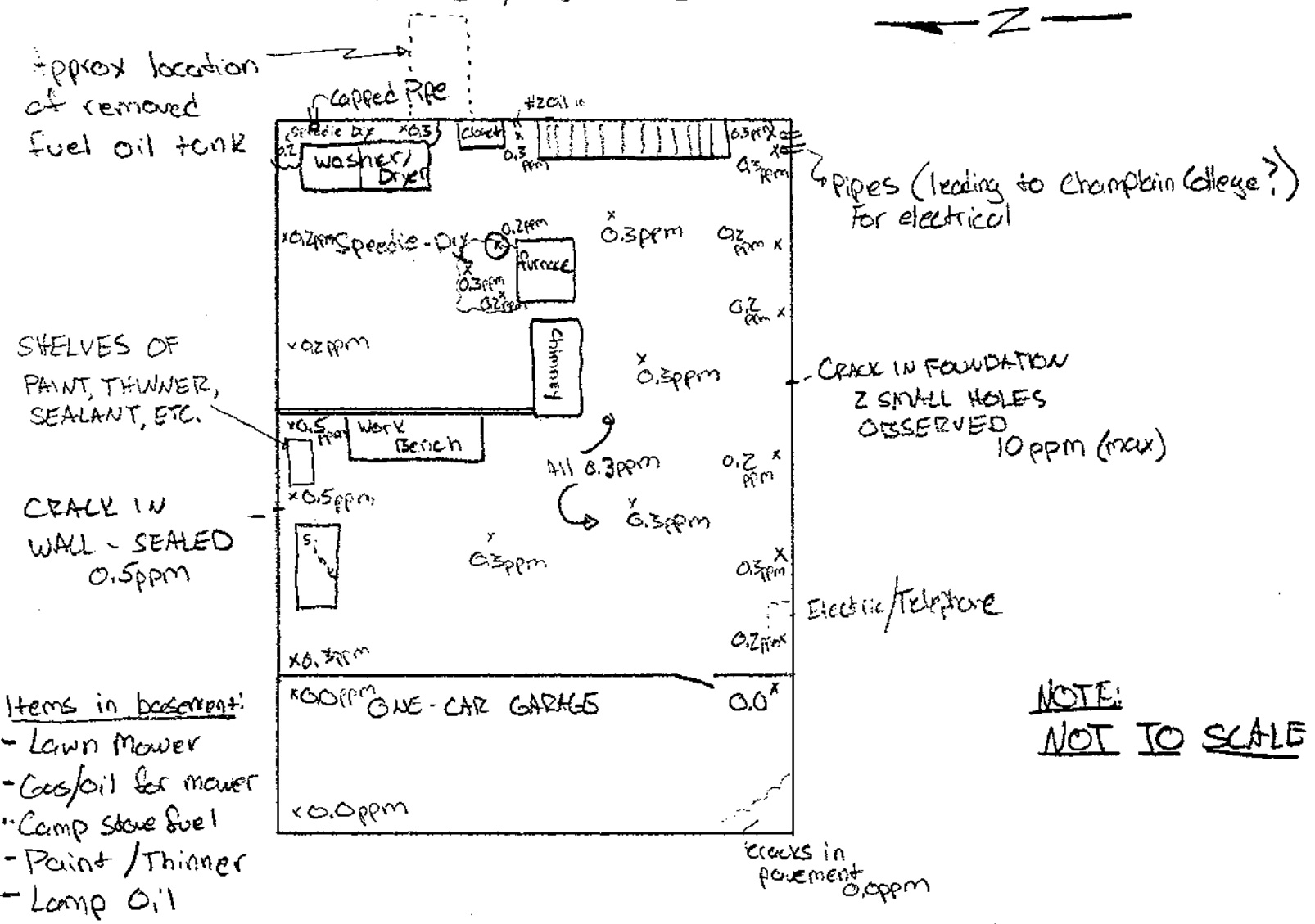
No apparent cracks in foundation wall.

Note: All measurements are of total volatile organic compounds (VOC) in parts per million (ppm)

12/9/93
0800 - 0845

BASEMENT SCREENING

PERSIS WORRALL
380 MAPLE ST, BURLINGTON



Items in basement:
- Lawn Mower
- Gas/oil for mower
- Camp stove fuel
- Paint / Thinner
- Lamp Oil

NOTE:
NOT TO SCALE

PID (HNu PI-101 #1) Screening of basement resulted one reading of 10ppm (maximum) from a crack in the south wall.
All other sample locations (some shown on map) were 0.2 - 0.5ppm
All garage sample locations at 0.0 ppm

Note: All measurements are of total Volatile Organic Compounds (VOC) in parts per million (ppm)