



WASTE MANAGEMENT
DIVISION

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February 18, 1998

Ms. Elizabeth Boyle
Technology Park Partners
30 Community Drive, Suite 4
South Burlington, VT 05403

RE: Site Investigation Report for the Former Digital Building, 115 Kimball Ave, South Burlington, VT, VTDEC Site #97-2219

Dear Ms. Boyle:

This report provides a review and summary of the tasks completed for a Phase I/Phase II (Phase I/II Environmental Site Assessment (ESA) and subsequent update to the Phase I/II ESA, attached. The Phase I/II tasks were performed by The Johnson Company of Montpelier, VT. This review of the ESA and the ESA update has been performed to determine the degree and extent of suspected subsurface contamination associated with a 1,000-gallon underground storage tank (UST) that was closed in July 1997 at the above referenced facility (see Site Location Map in Appendix A of the attached Phase I/II report). Based on the data obtained from the Phase I/II and the Phase I/II update, it has been determined that the Phase I/II data can be used in lieu of a site investigation to document the degree and extent of suspected petroleum contamination at the site. This work has been performed at the request of Mr. Chuck Schwer of the VTDEC in a letter dated October 28, 1997. Verbal approval to use this approach was provided by Elizabeth Boyle of Technology Park Partners and Mr. Schwer on January 6, 1998.

Site History

Three groundwater monitoring wells were installed by Tri-State Drilling and Boring (Tri-State) of West Burke, VT, under the supervision of a Con-Test geologist, in September of 1992. These wells were installed to monitor the groundwater in the vicinity of two, 15,000-gallon fuel oil USTs on the east side of the main building on-site. According to Appendix A of the Phase I/II, three additional wells were installed in March of 1993 by Tri-State. It is likely that the six wells were installed to serve as leak detection wells for the two 15,000-gallon USTs, though this is not documented in the Phase I/II. Five of these wells were located during a site walkover on March

30, 1995, (See Appendix A of the Phase I/II) by Johnson Company, Inc., personnel. Well logs and construction diagrams are included in Appendix A of the Phase I/II. Maps indicating the locations of five of the six monitoring wells are included in pages 3 and 17 and Appendices A and B of the Phase I/II. The source of the map on page 3 is cited as Wehran, 1993. The map on page 17 was adapted by Johnson Company, Inc., from a base map developed by Con-Test in September 1992. The map in Appendix A is a copy of the original Con-Test map developed in September 1992. The map in Appendix B is a hand-drawn sketch map by Johnson Company, Inc., personnel dated March 30, 1995.

On July 28, 1997, Griffin inspected the permanent closure of one, 1,000-gallon underground storage tank (UST) at Technology Park (former Digital building) that was used to store diesel fuel for an on-site emergency generator. Subsurface petroleum contamination was suspected at this site as a result free product observed in the UST excavation at the time of removal. During the excavation, a thin layer of free product was found to be present on top of the water table, encountered at a depth of approximately 5.5 feet below grade. The total volume of this product was estimated to be no more than one to two cups. Historically there is no record of a loss of product at the site. It is believed that a hole discovered in the UST at the time of removal was blocked by the dense clays found at the site, and that the tank began leaking only when it was disturbed during removal. Most of the product was recovered and disposed of through the use of a vacuum truck. Details of the UST removal and inspection are included in the UST Permanent Closure report, submitted by Griffin on August 1, 1997.

Three of the on-site monitoring wells were sampled on February 16, 1995, and four were sampled on November 10, 1997.

Site Description

Details of the site setting, geology, soils, and physiography are included in the body and appendices of the Phase I/II. In summary, soils in the vicinity of USTs consist of brown, silty, fine to coarse sand from grade to approximately 3 feet (6 feet at MW-3), brown silt, grading down to clay, from approximately 3 feet to approximately 13 feet, and clay and silt with fine to coarse sand and local gravel from approximately 13 feet to approximately 20 feet. Groundwater was encountered at a depth of 5.5 feet during the UST removal in July 1997. Based on the data recorded in the Phase I/II, the soil samples collected during the two phases of drilling were not screened for volatile organic compounds (VOCs) by headspace analysis.

The wells drilled in September of 1992 were all installed to a depth of 19.5 feet below grade and completed with a 10-foot screen from 19.5 feet to 9.5 feet below grade. The wells drilled in March of 1993 were all installed to a depth of 20 feet and completed with an 18-foot screen from 20 feet to 2 feet. Based on the data presented in the Phase I/II and the UST removal performed by Griffin, the second phase wells were installed within 3 feet of the wells installed in September of 1992.

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Based on a communication between Gregory Johnson of The Johnson Company and Elizabeth Boyle of Technology Park Partners on December 2, 1997, the monitoring well locations are designated as follows: MW-1 is the most westward monitoring well north of the cooling towers. The wells are then numbered MW-2 through MW-4 from north to south in a semicircle, with MW-4 located next to the concrete slab in the loading dock area (See the map of Groundwater Elevations on 2/16/95). This is the convention used for the purposes of tracking the results of the samples collected on November 10, 1997. The naming of these samples is not consistent between the sampling designations and the well designations on the Site Plan prepared by Con-Test in September 1992 (Appendix A of the Phase I/II). This Site Plan was used by The Johnson Company for the base map of the map of Groundwater Elevations on 2/16/95.

Determination of Groundwater Flow Direction and Gradient

The four wells were located in azimuth and elevation on February 16, 1995, by Johnson Company, Inc., personnel and are included on the Site Map presented in Appendix A. The top of PVC casing in MW1 was assigned an arbitrary elevation of 100.00 feet. The locations of the former Digital building and other prominent site features were approximated for inclusion on this Site Map.

On February 16, 1995, three of the five monitoring wells were gauged by Johnson Company, Inc., personnel for depths to water. The results are posted on the map of Groundwater Elevations on 2/16/95, page 17 of the Phase I/II. For each well, the measured depth to water was subtracted from the surveyed elevation of the measurement reference point (i.e., top of PVC casing) to determine the water table elevation. Groundwater flow is directed generally toward the east in the vicinity of the former UST pit. An approximate flow gradient of 0.7% was calculated for the February 16, 1995, data by Johnson Company, Inc., personnel. Under this flow regime, MW1 and MW2 are each located downgradient of the former 1,000-gallon UST location. MW3 and MW-4 would be located cross-gradient of the former 1,000-gallon UST pit.

Groundwater Sampling and Analyses

A groundwater sample was collected from three of the existing monitoring wells in the vicinity of the 1,000-gallon diesel UST, using dedicated polyethylene bailers on February 16, 1995, by Johnson Company, Inc., personnel. Groundwater samples were analyzed by EPA Method 8260 by Scitest Laboratory Services of Randolph, VT, for dissolved VOCs which includes benzene, toluene, ethylbenzene, xylenes (BTEX), and methyl tertiary butyl ether (MTBE). A trip blank and replicate sample were also collected. Analytical results of the samples and trip blank are included in Appendix A of the Phase I/II and update. Analytical results of the trip blank and replicate samples are not provided in the Phase I/II report.

No BTEX compounds or MTBE were detected in the samples collected from MW-1 or MW-2 on February 16, 1995. Benzene and toluene were detected at concentrations well below the Vermont Groundwater Enforcement Standards (VGES) in MW-3 on February 16, 1995. MW-3

only 3 wells noted on tract map - no MW-4

eastward?

is located across the local groundwater gradient from the former 1,000-gallon UST (which was still in place at that time) and these results are not likely to be indicative of the groundwater quality downgradient from the former 1,000-gallon UST.

A groundwater sample was collected from four of the existing monitoring wells, using disposable bailers, on November 10, 1997. Groundwater samples were analyzed by EPA Method 8260 by Eastern Analytical, Inc., laboratory of Concord, New Hampshire, for dissolved VOCs which includes BTEX and MTBE. A trip blank was also collected. Analytical results of the samples and trip blank are included in Appendix B of the Phase I/II and update. Analytical results of the QC samples indicate that adequate Quality Assurance/ Quality Control was maintained throughout sample collection and analyses.

No VOCs were detected in any of the monitoring wells sampled on November 10, 1997.

Evaluation of Potentially Sensitive Receptors

The subject property and the immediately surrounding area were inspected on July 28, 1997, by Griffin to identify potentially sensitive receptors to subsurface contamination. Identified potentially sensitive receptors include soil and groundwater. Soils and groundwater have apparently been only nominally impacted by petroleum contamination detected at the site in association with the 1,000-gallon UST. The former Digital building is built on a concrete slab and has no basement. The area surrounding the site is primarily commercial. As the area is served by municipal water, there is limited risk of impact to local drinking water. The nearest surface water is the Muddy Brook located approximately 800 feet to the east of the site.

Conclusions

1. There is no evidence that the soil/groundwater contamination detected during the July 28, 1997, tank closure has migrated out of the former tank pit area, which is located off the east side of the main building. Based on the available data, the tank began leaking only when it was disturbed during removal. Most of the product was recovered and disposed of through the use of a vacuum truck.

2. Six shallow monitoring wells were installed in the vicinity of the former 1,000-gallon diesel UST in September of 1992 and March of 1993. Two of those wells are downgradient of the former 1,000-gallon UST.

3. Water table elevation data collected on February 16, 1995, by Johnson Company, Inc., personnel indicate that groundwater in the overburden aquifer beneath the site flows to the east toward the Muddy Brook, at an approximate gradient of 0.7%. Groundwater elevation data indicate that MW1 and MW-2 are downgradient of the former 1,000-gallon UST location.

no map
w/ all
wells

4. Risks posed to potentially sensitive receptors in the vicinity of the former UST pit on the former Digital Building property appear minimal, based on currently available.

Recommendations

Based upon the above conclusions, Griffin recommends that the former Digital site be considered for closure and be removed from the VTDEC Active Hazardous Waste Sites List. This recommendation is offered based upon achievement of the following closure criteria, as per the VTDEC Site Management Activity Completed (SMAC) Checklist:

- 1) The source, nature, and extent of petroleum contamination at the site has been adequately defined.

The source of petroleum contamination detected in soils at the former Digital Building site was likely to be from a potential release of diesel oil from an on-site UST due to spills/overfills. A very small amount released during the UST removal and subsequently removed. No fuel oil contaminants have been detected outside of the former UST pit.

- 2) Source(s) has been removed, remediated, or adequately contained.

The 1,000-gallon diesel oil UST was removed from the site and permanently closed in accordance with VTDEC regulations. Free product noted in the former 1,000-gallon UST excavation on July 28, 1997, was recovered and disposed of through the use of a vacuum truck. No other significant sources of subsurface petroleum contamination are known to exist on the subject property.

- 3) Levels of contaminants in soil and groundwater shall be stable, falling, or non-detectable.

Results of indicate that no dissolved VOCs have been detected in groundwater downgradient from the former 1,000-gallon diesel UST.

- 4) Groundwater enforcement standards are met on entire property.

The November 10, 1997, groundwater analytical results indicate that contaminant concentrations are currently below detection within the property boundary.

- 5) Soil guideline levels are met. If not, engineering or institutional controls are in place.

The residual contaminated soils at the site are buried by clean fill and are inaccessible to workers conducting normal activities at the site. Based on the groundwater quality data obtained to date from the downgradient monitoring wells, there is no evidence to suggest that any residual soil contamination at the site is a threat to groundwater.

- 6) No unacceptable threat to human health or the environment exists on site.

Residual subsurface petroleum contamination in groundwater and soils at the subject property does not pose an unreasonable risk to human health and safety or the environment for the following reasons:

- ♦ concentrations of petroleum constituents in groundwater downgradient from the former UST excavation are nondetectable;
- ♦ the subject property and properties immediately surrounding the site are serviced by municipal water supply and not on-site groundwater sources.
- ♦ subsurface petroleum contamination detected during the tank removal does not appear to have migrated out of the immediate vicinity of the tank pit.
- ♦ The residual contaminated soils at the site are buried by clean fill and are inaccessible to workers conducting normal activities at the site.

- 7) Site meets RCRA requirements.

The subject property is not known to be in violation of the Resource Conservation and Recovery Act (RCRA) as defined in 40 CFR 264.

- 8) Site meets CERCLA requirements.

The subject property is not known to be in violation of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as defined in 40 CFR 300.

Sincerely,



Timothy J. Kelly, PG
Senior Staff Geologist

Attachment

cc: Chuck Schwer, VTDEC
GI #79741062