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September 23, 2002

Mr. Terry Morris
Emerald Development
103 Morse Street
Watertown, MA 02172

Re: IES Project No. 702-238
Subsurface Exploration Program
343-349 Summer Street
Somerville, MA

Dear Mr. Morris:

As requested, and in accordance with the Terms of our Contract, this Subsurface Exploration Program was performed at the above referenced site. The purpose of this investigation was to determine if a release occurred at the site from the potential on-site and off-site sources of contamination previously identified in a "Preliminary Site Assessment" (PSA) performed at the site by IES in April of 2002 (Project No. 702-238). Additional information regarding the site's historical use, as well as the on-site and off-site sources of contamination are included in the aforementioned PSA.

A. Introduction

According to the USGS Boston North, MA Quadrangle Map, the site is situated approximately 26 feet (8 meters) above mean sea level, as shown in Figure 1, Attachment "A" of this Report. The site is also identified on the City of Somerville Assessor's Map #25, as Lots #33, #34 and #35, as shown in Figure 2, Attachment "A".

The site consists of three, contiguous, irregularly shaped parcels of land, located at 343, 345 and 349 Summer Street, in Somerville, MA. The site comprises a total area of 16,799 square feet of land, and is currently occupied by a small concrete foundation capped with a steel grate, which is used as an MBTA underground venting system (see Photograph #1 in Attachment "A"). It should be noted that the MBTA Red Line subway train currently runs underneath the subject site.

In the late 1800's and early 1900's, the site was occupied by a "milk lab" and a "wagon shed". In 1917, a 40-car repair garage was constructed at the site (at 349 Summer Street), with an addition to the garage in the 1920's (at 345 Summer Street). Two residences were

also constructed in the 1920's on the southwestern portion of the site, near Summer Street. These structures remained at the site until 1979, when they were razed for construction of the Red Line subway system located underneath the site.

The site is abutted to the northeast by Summer Street, and the area further to the northeast is occupied by residential dwellings located along Summer Street and Elison Street. The area to the northeast of the site has been occupied by residential dwellings since the area was developed in the early 1900's.

The site is abutted to the southeast by Summer Street, and the area further to the southeast is also occupied by residential dwellings located along Summer Street (see Photograph #2 in Attachment "A"). The area to the southeast of the site has been occupied by residential dwellings since the area was developed in the early 1900's.

The site is abutted to the south by a social club and associated parking lot (Veterans of Foreign Wars) at 355 Summer Street. The area further to the south of the site is occupied by a bank (Winter Hill Bank) (see Photograph #3 in Attachment "A"). The area abutting the site to the south has been occupied by the VFW since at least the 1960's, and the area further to the south has been occupied by a bank since the early 1900's.

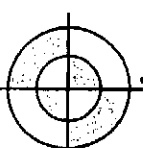
The site is abutted to the northwest by residential properties located along Summer Street and Hawthorne Street (see Photograph #4 in Attachment "A"), and the area further to the northwest is also occupied by residential dwellings. The area to the northwest of the site has been occupied by residential dwellings since the area was developed in the early 1900's.

The remaining properties further to the northeast and beyond the abutting residence are occupied by residential properties, and these properties have occupied this area since at least the early 1900's.

B. Potential Sources of Contamination

Potential on-site sources of contamination identified in the April of 2002 PSA included that fact that the site was occupied by a 40-car repair garage from approximately 1917 until 1979. In addition, a permit was issued for the site in 1979 for the removal of a 4,000-gallon gasoline UST. No additional information was available regarding the removal of the tank, such as confirmatory analytical work indicating the absence of contamination from the tank. According to records on file at the City Clerks office, a permit was issued to Mr. Edward Kendall for a 500-gallon UST. The permit was renewed every year until 1978, one year prior to when the buildings at the site were razed. Automotive related fluids were most likely used during the site's use as an automotive repair facility from approximately the 1920's until 1979. Finally, permits issued for the site revealed that fuel oil was stored in 275-gallon above ground tanks located in the basements of the residential dwellings at the site.

Potential off-site sources of contamination identified in the April of 2002 PSA included the spill at 371 Summer Street (N85-0866), which is located approximately 150 feet to the



northwest of the site. This spill involved the release of 200-300 gallons of #2 fuel oil on November 13, 1985. No additional information was available at the DEP regarding this spill at that time, and therefore, due to the proximity and unknown nature of this release, it was considered to pose a potential threat of contamination to the subject site. In addition, due to the proximity and presence of gasoline contamination in the groundwater at the property located at 201-203 Elm Street (RTN 3-0149), which is located approximately 400 feet to the northwest of the site, it was also considered to pose a potential threat of contamination to the subject site. Finally, due to the proximity of the USTs located at 355, 371, and 377-379 Summer Street, as well as 187 Elm Street, they were considered to pose a potential threat of contamination to the subject site.

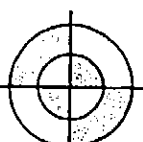
Additional information regarding the subject site and nearby properties is contained in the aforementioned PSA report.

C. Subsurface Investigation

In order to determine if a release has occurred the site, a subsurface soil and groundwater sampling and analysis program was conducted at the site by IES, Inc. on September 9, 2002. This program consisted of the advancement of four test borings (B-1 through B-4), and the installation of three monitoring wells in borings MW-1 through MW-3. Boring B-1 was advanced on the northern portion of the site, to the north of the MBTA vent shaft; Boring B-2 was advanced on the northwestern portion of the site, south of the residential dwelling abutting the site to the west; Boring B-3 was advanced on the southwestern portion of the site, to the southwest of the vent shaft; and Boring B-4 was advanced on the western portion of the site, to the south of the residential dwelling abutting the site to the west. Due to the location of the vent shaft and the subway located beneath the site, the available areas for boring advancement were limited, however, the borings were advanced at various locations in order to determine if the site has been impacted by a release. In addition, due to the fact that the site was developed with the subway system and vent shaft located beneath the site, a substantial amount of soil was removed from the eastern and southeastern portions of the property. Therefore, the presence of contamination in those areas is considered unlikely. The locations of the test borings and monitoring wells at the site are shown in Figure 3 in Attachment "A".

The test-boring contractor (Carr-Dee Corp., of Medford, MA) was contracted separately by the client, and IES was present to observe the testing program and to collect necessary soil and groundwater samples from the three newly installed monitoring wells. The borings were advanced utilizing a 4.25-inch diameter hollow-stem auger. A split spoon sampler was utilized to collect samples at five-foot depths, and all sampling equipment was then decontaminated with clean water and detergent prior to the collection of the next sample. Each sample removed from the split-spoon sampler was placed into pre-cleaned 8 oz. jars for headspace screening.

The soil samples obtained from the site were screened with a Thermo Environmental Model 580B Organic Vapor Meter (OVM) to detect the presence of Volatile Organic Compounds



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(VOC's) in the soil headspace. The results of the soil sample screening did not reveal the presence of VOC's above background (1 ppm). As a result, no soil samples were submitted for laboratory analysis.

The results of the soil sample screening program performed by IES are summarized in the following Table 1, and test boring logs are included in Attachment "B" of this report.

Table 1
Soil Sample Screening Results

BORING	SAMPLE ID	DEPTH (ft)	RESULTS (ppm)
B-1	S-1	0-2	0
	S-2	5-7	0
	S-3	10-12	0
	S-4	15-17	0
B-2	S-1	0-2	0
	S-2	5-7	0
	S-3	10-12	0
	S-4	15-17	0
B-3	S-1	0-2	0
	S-2	5-7	0
	S-3	10-12	0
	S-4	15-17	0
B-4	S-1	0-2	0
	S-2	5-7	0

Notes:

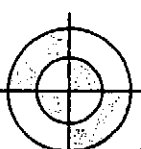
Parameters for Soil Sample Screening

1. Thermo Environmental Organic Vapor Meter (Model 580B)
2. Utilizing 10.2 Electron Volt PID Lamp
3. Span Calibrated for Benzene (as required by the DEP)
4. Background at 1 ppm

For notification purposes the soil samples obtained from the site are classified as RCS-1 since they satisfy one or more of the following criteria: the samples were collected from within 500 feet of 1. a residential dwelling, residentially zoned property, school, playground, recreational area, or park; or 2. within the geographic boundaries of a groundwater resource area categorized as RCGW-1 [310 CMR 40.0362(1)(a)].

D. Groundwater Sampling & Analysis

On September 11, 2002, the three monitoring wells at the site (MW-1 through MW-3) were purged of approximately three volumes of standing water to ensure that the samples were representative of the aquifer. At the time of the sampling, monitoring well MW-1 was dry, and therefore, no groundwater sample was collected from that well. It should be noted that groundwater was encountered during boring advancement in that well, as well as in the remaining two wells installed at the site. Therefore, it appears that the lack of groundwater



recharge to that well may be the result of incorrect construction during the completion of that well.

The groundwater samples obtained from the remaining two monitoring wells (MW-2 and MW-3) were obtained with dedicated, disposable PVC bailers, preserved according to EPA guidelines published in 40 CMR 136, and forwarded to Con-Test Analytical Laboratories, Inc. of East Longmeadow, MA. Field blanks were also submitted for analysis to provide quality control data.

The groundwater samples were tested for Extractable Petroleum Hydrocarbons (EPH), Volatile Petroleum Hydrocarbons (VPH), Volatile Organic Compounds (VOCs) via EPA Method 8260, and dissolved RCRA 8 metals, in order to detect any contamination from the historical use of the site as an automobile repair facility, and any contamination that may have migrated to the site from an off-site source.

The results of the laboratory testing revealed Chloroform at 1.8 ug/l and Methyl Tert Butyl Ether (MTBE) at 8.7 ug/l in monitoring well MW-2, which are below their respective Reporting Concentrations (RCGW-2) of 400 ug/l and 50,000 ug/l respectively. MTBE was also detected in MW-3 at 2.8 ug/l, which is also below the RCGW-2 Standard of 50,000 ug/l.

Laboratory results also revealed EPH fractions C₁₉-C₃₆ Aliphatics in monitoring well MW-3 at 442 ug/l, which is also well below the RCGW-2 Standard of 20,000 ug/l. Finally, Barium (at 0.0478) and Cadmium (at 0.0047 mg/l) were detected in MW-2, as well as Barium in monitoring well MW-3 at 0.0665 mg/l. These levels are well below their respective RCGW-2 Standards of 30,000 mg/l for Barium and 10 mg/l for Cadmium. The remaining contaminants were not detected above laboratory detection limits.

Laboratory reports and chains-of-custody are included in Attachment "C" of this report.

E. Conclusions & Recommendations

In September of 2002 IES conducted a Subsurface Exploration Program at the subject site. This program included the advancement of four test borings (B-1 through B-4) the installation of three monitoring wells in three of the four borings (MW-1 through MW-3), soil sample screening, and laboratory testing of two groundwater samples for the presence of EPH, VPH, VOCs, and dissolved RCRA 8 metals.

The results of this testing program revealed the presence of Chloroform, MTBE, Barium, and Cadmium in groundwater samples obtained from the two monitoring wells sampled at the site. However, the levels reported are well below their respective reportable concentrations. The remaining contaminants were not detected above laboratory detection limits.

Based on the contents of this report, the interpretation of the data above, and the interpretation of the remainder of the information detailed in this report, as well as the April of 2002 "Preliminary Site Assessment" report, the subject site, at this time, is considered to

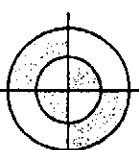


exhibit a release which is below the Department of Environmental Protection's "Reportable Concentrations", as defined in the Massachusetts Contingency Plan (310 CMR 40.0300), and therefore, DEP notification is NOT required at this time, in accordance with 310 CMR.

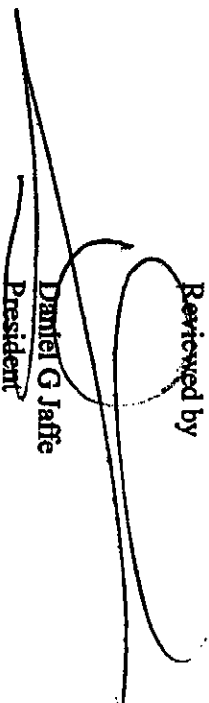
Furthermore, if additional data becomes available, or related quantitative or qualitative analysis is performed, IES should review the material to determine if the conclusions in this report should be modified.

Should have any questions regarding this report, please do not hesitate to call our office.

Respectfully submitted,

IES, Inc


David Brincheiro
Senior Hydrogeologist

Reviewed by


Daniel G Jaffe
President

