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January 10, 2005

Ms. Susan Bull
Oil Control Program
Maryland Department of the Environment
1800 Washington Boulevard, Suite 620
Baltimore, Maryland 21230

Re: Well Sampling Report
Fallston Service Center
602 Fallston Road
Fallston, Maryland 21047
MDE Case Number: 9-0816-HA
ATC Project Number: 09.22869.0007

Dear Ms. Bull:

On behalf of Miles and Stockbridge P.C. (Miles and Stockbridge), ATC Associates Inc. (ATC) has prepared the following report in an effort to summarize the well sampling activities conducted at the above-referenced site (site). All sampling activities were completed in accordance with the Environmental Work Plan submitted to the Maryland Department of the Environment (MDE), on November 5, 2004 and the MDE's subsequent comments received by ATC (via facsimile) on November 16, 2004.

BACKGROUND

Notice of Violation (NOV) number NV-2005-0007 was issued on August 10, 2004 for the Fallston Service Center by the MDE, in response to a file review that was conducted on MDE Case # 9-0816-HA. Pursuant to the NOV, ATC submitted an Environmental Work Plan to the MDE on November 5, 2004, which proposed well redevelopment and groundwater sampling from two on-site monitoring pipes.

SCOPE OF WORK

ATC submitted an Environmental Work Plan to the MDE on November 5, 2004, which proposed well redevelopment and the collection of groundwater samples from two on-site monitoring pipes. ATC received a response from the MDE (via facsimile) on November 16, 2004, requiring groundwater samples be collected from monitoring pipes MP-1 and MP-2 or MP-3. The MDE also requested that a sample be collected from the on-site potable well which services the on-site building, but not for drinking water purposes.

SITE ACTIVITIES

Well Redevelopment

On December 2, 2004, ATC mobilized to the site to redevelop two of the on-site monitoring pipes. ATC observed that monitoring pipe MP-2 was filled to the surface with silt; therefore, ATC redeveloped monitoring pipes MP-1 and MP-3. The locations of the monitoring pipes are illustrated on **Figure 1**, attached.

Prior to redevelopment, ATC gauged the depth to water and total depth of each monitoring pipe utilizing an oil/water interface probe. Liquid phase hydrocarbons (LPH) were not detected in the monitoring pipes. Well gauging results are presented in Table 1, below.

Table 1
Well Gauging Results
Fallston Service Center
Fallston, Maryland
Data collected: December 2, 2004

Monitoring Pipe	Depth to Water (feet below TOC)	Total Depth (feet below TOC)
MP-1	6.83	7.65
MP-3	1.20	5.60

TOC – top of casing

In an attempt to redevelop monitoring pipes MP-1 and MP-3, ATC utilized intermittent surging and pumping techniques. ATC removed approximately three times the well volume of groundwater from each pipe utilizing this technique. All groundwater removed from the monitoring pipes was treated utilizing a portable granular activated carbon (GAC) filter prior to discharge on-site in accordance with the protocol established in the Maryland Environmental Assessment Technology (MEAT) for Leaking Underground Storage Tanks (LUSTs).

Groundwater Sampling

Upon completion of redevelopment activities, ATC allowed the monitoring pipes to stabilize for approximately two weeks prior to sampling. On December 16, 2004, ATC collected groundwater samples from MP-1 and MP-3. Prior to sample collection, three well volumes of groundwater were purged from each of the monitoring pipes utilizing a small pump and dedicated tubing. The generated purge water was treated utilizing a portable GAC filter prior to discharge on-site. The samples were collected utilizing a dedicated disposable bailer. The samples were placed in clean, laboratory-approved glassware, labeled, and packaged in a cooler with ice.

Well Sampling

In addition to the two groundwater samples, a water sample was collected from the on-site well which services the building. ATC understands that water supplied to the building is not currently being utilized for purposes of supplying drinking water. Based on a conversation with the tenant and on-site MDE representative, ATC noted that the only available sample port is a spigot, located in the mechanic's bay. While the housekeeping in the garage was noted to be acceptable for its intended use, ATC noted that the spigot was covered with a film of dust and oil. In an attempt to clean the spigot, ATC initially allowed the spigot to flush for 15 minutes. Once the initial flush was complete, the spigot was washed with a detergent and napkin. In an attempt to avoid cross contamination of the potable water sample, the spigot was then rinsed of all detergents by flushing for approximately two additional minutes. A sample was then carefully filled, ensuring that no air bubbles were present in the sample container upon completion. The samples were collected by a certified Maryland Potable Water Sampler, identification number 9866RN.

Once all sampling activities were completed, the samples were immediately transported under strict chain-of-custody to Maryland Spectral Services located in Baltimore, Maryland. The groundwater samples collected from MP-1 and MP-3 were submitted for volatile organic compounds (VOC) analysis via Environmental Protection Agency (EPA) Method 8260 and the water sample was submitted for VOC analysis via EPA Method 524.2. The sample results are summarized below.

SAMPLE RESULTS

Two groundwater samples and one water sample were submitted for laboratory analysis. The laboratory analytical results for the samples collected during this investigation were compared to the MDE Non-Residential Cleanup Standards for Type I/II Aquifers. See **Table 2** below for a summary of laboratory results.

Table 2
Sample Results
Fallston Service Center
Fallston, Maryland
All results in µg/L

Sample ID	TAME	TBA	DIPE	MTBE
MP-1	<200	25,900	<200	119j
MP-3	7.3j	1,430	5.1j	266
Bay Sink	18	369	3.8	846
MDE Cleanup Standards	N/A	N/A	N/A	20

Notes: µg/L = micrograms per liter or parts per billion
 N/A = Not yet assigned
 "j" = estimated value
 bold type indicates concentrations are above the MDE Cleanup Standards.

Concentrations of t-amyl methyl ether (TAME), tert-butyl-alcohol (TBA), isopropyl ether (DIPE), and MTBE were detected in MP-1 and MP-3. Currently there are no regulatory standard for TAME, TBA, or DIPE. MTBE was detected in the groundwater samples above the MDE Clean-up Standards for Type I/II Aquifers, at concentrations of 119 ppb in MP-1 and 266 ppb in MP-3. TAME was detected at a concentration of 7.3 ppb in MP-3. Concentrations of TBA were detected at 1,430 ppb in MP-3 and 25,900 ppb in MP-1. DIPE was detected at a concentration of 5.1 ppb in MP-3. Laboratory Analytical Results are included as **Appendix A**.

In addition to the two groundwater samples, TAME, TBA, DIPE, and MTBE were also detected in the water sample collected from the spigot located in the mechanic's bay. MTBE was detected at a concentration of 846 ppb, which is above the corresponding regulatory standard. However, the spigot is not utilized as a drinking water source. TAME was detected at a concentration of 18 ppb, TBA was detected at a concentration of 369 ppb, and DIPE was detected at a concentration of 3.8 ppb. There are no regulatory standards for TAME, TBA, or DIPE at this time.

CONCLUSIONS AND RECOMMENDATIONS

MTBE was detected above the corresponding regulatory standard. Concentrations of MTBE were detected ranging from 199 ppb to 266 ppb, which are significantly lower than the June of 1999 sample results, which ranged from 34,000 ppb to 64,200 ppb. Additionally, although benzene was previously detected in the on-site groundwater ranging from 34 to 63 ppb, no benzene was detected in this sampling event. Concentrations of TAME, TBA, and DIPE were detected above the laboratory detection limits in the groundwater samples collected from MP-1 and MP-3. No previous sampling results for TAME, TBA, or DIPE were available for MP-1 and MP-3. Currently there are no regulatory standards for TAME, TBA, and DIPE. ATC notes that TBA is a breakdown product of MTBE and the significantly reduced concentrations of MTBE along with the elevated concentrations of TBA may indicate rapid natural attenuation of the previously identified impact.

Concentrations of TAME, TBA, DIPE, and MTBE were also detected in the water sample collected from the spigot located in the mechanic's bay of the on-site building. MTBE was detected above the corresponding regulatory standard. However, this water is not utilized as a drinking water source.

Based on the general condition of the sampling port and the potential for cross contamination, ATC recommends conducting an additional sampling event utilizing an alternative outlet than from the on-site potable well. This may require the addition of a spigot to an area outside of the mechanic's bay.

If there are any questions, please feel free to contact the undersigned at (410) 381-0232. Thank you for your assistance in the completion of the project.

Sincerely,

ATC ASSOCIATES INC.

Roberta J. Niemietz
Staff Geologist

Shawn A. Seaman
Senior Project Manager

Figures

Appendix A
Laboratory Analytical Results