

MARYLAND DEPARTMENT OF THE ENVIRONMENT

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Land Management Administration • Oil Control Program

Environmental Investigation
John F. Kennedy Memorial Highway Maintenance II - MTA
568 Bouchell Road, Elkton
Cecil County, Maryland
Case No. 2008-0199CE

The Maryland Department of the Environment (MDE) Oil Control Program (OCP) in coordination with Cecil County Health Department (CCHD) is currently evaluating the impacts of an underground storage tank (UST) failure at the Maryland Transportation Authority (MTA) – JFK Maintenance II Facility. Operations at this State facility include a repair shop and dispensing of motor fuel. The first generation steel USTs were replaced by three fiberglass reinforced plastic tanks with fiberglass reinforced plastic piping in 1988.

The MTA – JFK II Shop is an active maintenance and storage facility. In July 2007, the MDE-OCP received a tank tightness test failure notification for the 2,000-gallon gasoline UST. In 2007, MDE oversaw the removal of a 6,000-gallon fiberglass-reinforced plastic diesel UST and a 2,000-gallon fiberglass-reinforced plastic gasoline UST. The gasoline tank was found to have a split through the tank wall several feet long. Currently, an active 6,000-gallon fiberglass-reinforced plastic heating oil UST remains at this location. An aboveground storage tank system has been placed on-site for dispensing biodiesel and gasoline.

The facility is located in a mixed use commercial/residential area, where all properties are served by private drinking water wells. Shallow groundwater flow at the site is to the northeast.

Chronology

- June 19, 2007. MDE received *Third Party Compliance Inspection Report – June 19, 2007* several deficiencies noted:
 - Tank top inspection failed.
 - Vent pipe inspection failed.
 - Heating oil, diesel and gasoline systems failed spill prevention
 - Stage I Vapor Recovery failed.
 - Gasoline system failed piping construction and corrosion protection.
 - Inventory control requested.
 - Release detection and tightness test failed.
- The 6,000-gallon diesel and 2,000-gallon gasoline UST failed tank tightness testing and inventory control. Spill catchment basins had not been tested and failed inspection.
- July 12, 2007. MDE received *Initial Report of Incident – July 12, 2007*, documenting a tank test failure.
- July 16, 2007. MDE site visit to investigate the tank test failure.
 - Product present in a gasoline UST monitoring pipe.
 - Gasoline tank pumped out previously, now contained four inches of petroleum/water mixture.
 - MDE required:
 - Sample the on-site supply well.
 - Submit a full detailed report of incident.
 - Perform a ½ mile well survey.
 - Submit a detailed Work Plan.
 - Submit and maintain a product recovery log.
- August 22, 2007. MDE received *Release Investigation, MdTA JFK Maintenance II Facility – August 22, 2007*, including:

- Two vacuum recovery events conducted on 7/12/07 and 7/24/07 removed approximately 6,275 gallons of product/water.
 - Onsite supply well sampled on July 16, 2007 (*see Table*).
 - Results of a ½ mile well survey included nineteen potable wells within a ½ mile radius.
 - A UST removal and site investigation work plan.
- October 4, 2007. MDE site visit to observe the current condition of the UST systems, the worksite and surrounding topography.
 - November 1, 2007. MDE received an email from environmental consultant, pertaining to the start date of UST removal.
 - November 2, 2007. MDE site visit to observe the status of USTs including the heating oil tank system.
 - November 5, 2007. MDE email to environmental consultant requesting a detailed site map for Work Plan approval.
 - November 6, 2007. MDE received amendments to the *Work Plan* pertaining to the subsurface investigation and a detailed site map with boring locations.
 - November 8, 2007. MDE letter approving *Work Plan*:
 - Interim Corrective Action Measures to be implemented.
 - Installation of eight borings.
 - November 9, 2007. MDE sent an email to the involved parties and faxed a copy of November 8, 2007 work plan approval letter to the environmental consultant.
 - November 15, 2007. MDE received MTA letter addressing the Departments 11/08/07 approval letter.
 - Gauging tank field pipes and USTs data table.
 - Schematic of drinking water system.
 - MTA response letter to MDE letter dated November 8, 2007.
 - November 20, 2007. MTA response to MDE Work Plan Approval.
 - November 26, 2007. MDE received *Tank System Testing Documents – November 20, 2007*.
 - Tank tightness test for the 6,000-gallon heating oil UST – passed 07/24/07.
 - Hydrostatic sump test – passed 07/27/07.
 - November 28, 2007. MDE site visit to gauge UST monitoring pipes.
 - November 29, 2007. MDE compliance site visit to oversee the removal of the 6,000-gallon diesel and 2,000-gallon gasoline USTs.
 - No perforations observed in 6,000-gallon diesel tank.
 - A split several feet long observed in the 2,000-gallon gasoline tank.
 - MDE required the following actions:
 - Submit a complete UST closure report.
 - Properly abandon piping.
 - Complete an environmental assessment including any additional results and disposal receipts.
 - December 5, 2007. MDE site visit to oversee post excavation soil sampling activities.
 - Six bottom samples and four sidewall samples.
 - February 11, 2008. MDE received *Underground Storage Tank Closure Report – February 8, 2008*.
 - MTA requested and case closure.
 - UST removal activities and waste manifests for tanks, wastewater, and soils.
 - Soil sampling analysis for disposal soils.
 - Post excavation soil sample results below regulatory levels.
 - The facility's drinking water supply was sampled 07/19/07 and 12/12/07 (see table).

- March 11, 2008. MDE issued directive letter to MTA requiring:
 - Implement the previously approved direct push subsurface investigation.
 - Based on the direct push investigation the final number and location of wells will be determined.
 - The Department will collect split samples from the on-site drinking water well.
- April 30, 2008. MDE site visit to observe subsurface investigation.
 - Eight direct push subsurface sampling locations selected.
- May 1, 2008. MDE site visit to observe subsurface investigation.
 - Sample cores were field screened with a photoionization detector (PID)
 - Groundwater and soil samples collected for laboratory analysis.
- May 30, 2008. MDE received *Site Investigation Report – May 30, 2008*.
 - A total of eight soil samples were collected from direct push cores.
 - TPH-GRO detected at 690 ppm in GP-3.
 - TPH-DRO detected at 2,400 ppm in GP-1.
 - Five groundwater samples were collected from temporary wells (See table).
 - The facility's drinking water supply was sampled 05/01/08 (See table).
- July 2, 2008. MDE received *On-Site Drinking Water Supply Sampling and Analysis Report – June 23, 2008 (See table)*.
- July 16, 2008. MDE issued *Request for Monitoring Well Installation* to install a minimum of three (4-inch diameter) monitoring wells.
- August 18 & 19, 2008. MDE site visit to observe the installation of the three required monitoring wells.
- October 1, 2008. MDE received *Notification of Monitoring Well Installation – September 29, 2008*.
 - Well completion reports for monitoring wells (See table).
- November 17, 2008. MDE site visit to gauge monitoring wells.
 - MW-3: Depth to water = 14.04'
 - MW-2: Depth to water = 7.21'
 - MW-1: Depth to water = 6.60'
- December 15, 2008. MDE received *4th Quarter 2008 Groundwater Sampling Results – December 11, 2008*.
 - Groundwater sampling event 11/04/08 (See table).
- March 20, 2009. MDE received *1st Quarter 2009 Groundwater Sampling Results – March 18, 2009*.
 - Groundwater sampling event 02/02/2009 (See table).
- March 23, 2009. MDE site visit to gauge monitoring wells.
 - MW-3: Depth to water = 13.05'
 - MW-2: Depth to water = 6.31'
 - MW-1: Depth to water = 5.85'
 - TP-E (TP-4): Depth to water = 5.86'

Future Updates:

- Future updates on this case investigation will be posted at www.mde.state.md.us [at the MDE home page, (select) Land, (select) Program, (select) Oil Control, (select) Remediation Sites].

Contacts:

- Maryland Department of the Environment (MDE) – Oil Control Program – 410-537-3443
- Cecil County Health Department (CCHD) at 410-996-5160

Disclaimer

The intent of this fact sheet is to provide the reader a summary of site events as they are contained within documents available to MDE. To fully understand the site and surrounding environmental conditions, MDE recommends that the reader review the case file that is available at MDE through the Public Information Act. The inclusion of a person or company's name within this fact sheet is for informational purposes only and should not be considered a conclusion by MDE on liability, involvement in a wrongful act or contribution to environmental damage.

Drinking Water Sampling Results at the JFK Maintenance II facility

Transient Non-community Supply well	Sample Dates and Location	Benzene (MCL -5 ppb)	MTBE (Action Level - 20 ppb)	Other petroleum constituents of concern <i>Ethylbenzene – MCL at 700 ppb</i> <i>Toluene – MCL at 1000 ppb</i> <i>Xylene – MCL at 10,000 ppb</i>
JFK Maintenance II Facility Industrial Use Supply well # CE-94-0462 568 Bouchelle Road Casing Depth 100 ft Well Depth 400 ft	07/16/07	ND	ND	----
	12/12/07	ND	ND	----
	<i>Pre-treatment</i>	ND	ND	----
	<i>Water supply treatment room</i>	ND	ND	----
	<i>Post-treatment</i>	ND	ND	----
	<i>Water supply treatment room</i>	ND	ND	----
	<i>Post-treatment</i>	ND	ND	----
	<i>Bathroom sink in maintenance building Sink - 2</i>	ND	ND	----
	<i>Post-treatment</i>	ND	ND	----
	<i>Sink – 1 Location unidentified</i>	ND	ND	----
	<i>Post-treatment</i>	ND	ND	----
	<i>Sink – 1A Location unidentified</i>	ND	ND	----
	05/01/08	ND	ND	----
Sink in main break room by I-95 NE corner	ND	ND	----	
05/30/08	ND	ND	----	
<i>Pre-treatment</i>	ND	ND	----	
<i>Post-treatment</i>	ND	ND	----	
<i>Kitchen sink</i>	ND	ND	----	
<i>Kitchen sink</i>	ND	ND	----	
<i>Bathroom sink</i>	ND	ND	----	
SNK-2 unidentified	ND	ND	----	

ND = Non Detect

Groundwater Sampling Results at the JFK Maintenance II facility

Groundwater samples collected from Monitoring Wells	Sample Date	Benzene MCL at 5 ppb	Toluene MCL at 1,000 ppb	Ethylbenzene MCL at 700 ppb	Naphthalene State Regulatory level at 10 ppb	MTBE State's Action Level at 20 ppb
MW1 Installed 09/18/08 Well # CE-95-2612 4 in. diameter well Borehole depth 25 ft. Screen depth 4 to 25 ft. Casing depth 0-4 ft.	11/04/08	1,100	7,400	1,500	330	ND
	02/02/09	960	6,800	2,100	260	ND
MW2 Installed 09/19/08 Well # CE-95-2611 4 in. diameter well Borehole depth 25 ft. Screen depth 4 to 25 ft. Casing depth 0-4 ft.	11/04/08	ND	ND	ND	ND	7
	02/02/09	ND	ND	ND	ND	10
MW3 Installed 09/19/08 Well # CE-95-2610 2 in. diameter well Borehole depth 20 ft. Screen depth 3 to 20 ft. Casing depth 0-3 ft.	11/04/08	ND	1	ND	ND	ND
	02/02/09	ND	ND	ND	ND	ND