

**MARYLAND DEPARTMENT OF THE ENVIRONMENT**  
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**Land Management Administration ● Oil Control Program**

**Groundwater Investigation**  
**Cecil County Roads**  
**758 Old Philadelphia, Elkton**  
**Case No. 1999-2296-CE**

The Maryland Department of the Environment (MDE), Oil Control Program (OCP), in coordination with the Cecil County Health Department, has an open case on the evaluation of petroleum impacts related to the use of underground storage tanks (USTs) at the Cecil County Roads facility located at the Central Landfill property. Methyl Tert Butyl Ether (MTBE) has been found in one fueling facility monitoring well at 210 parts per billion. In addition to landfill transfer and storage, operations at this County facility include dispensing of motor fuel for county vehicles. The UST system was installed in 1989 and includes a 10,000-gallon gasoline and a 10,000-gallon diesel USTs. The UST system is comprised of double-walled fiberglass reinforced plastic tanks with Stage II fiberglass-reinforced plastic piping.

Currently there are four (4) tank field monitoring pipes; three (3) UST monitoring wells; a network of six (6) landfill monitoring wells, and a supply well located on-site. Depth to groundwater is approximately 2.5 to 8 feet below the ground surface. The supply well is located upgradient of the UST field. The UST groundwater monitoring wells are scheduled for semi-annual sampling events.

MTBE is a fuel additive commonly used to reduce carbon monoxide and ozone levels caused by auto emissions. There is no national regulatory standard for MTBE in drinking water. In 1997, the U.S. Environmental Protection Agency (EPA) issued an advisory for MTBE based on taste and odor of 20 to 40 ppb. Although the EPA has not established a regulated Maximum Contaminant Level (MCL) for MTBE, the Department has adopted an action level of 20 ppb.

The Department understands that the on-site supply well has not been utilized for consumptive purposes since approximately 1990. At this time, the MDE-OCP does not anticipate expanding the off-site sampling effort beyond sampling needed to ensure community safety.

### **Chronology**

- March 6, 1998. MDE letter to Cecil County Government identifying the UST systems as noncompliant.
  - A 10,000-gallon gasoline UST installed in January 1989.
  - A 10,000-gallon diesel UST installed in January 1989.
  - Both tanks required corrections to spill protection, overflow protection, and corrosion protection.
- March 18, 1999. MDE compliance inspection.
  - Catchment basins were present on fills.
- March 22, 2004. MDE compliance inspection/meeting.
  - MDE provided the following information: a list of tank testers; testing requirements; and release detection methods.
  - Cecil County submitted a list of all County-owned USTs and test dates.
- April 27, 2004. MDE routine site inspection identified the following:
  - Fuel staining adjacent to dispensers.
  - Spill catchment basins observed. Diesel basin contained liquid. Gasoline basin had debris.
  - Fills not properly marked.
  - MDE requested UST testing, release detection, and the removal of oil contaminated stone/soil.
- June 4, 2004. MDE received spill report for 25 gallons of diesel fuel that leaked from a truck next to the scale house located at 788 East Old Philadelphia Road.

- April 27, 2006. MDE received a *Report of Gasoline and Diesel Tank Upgrade – April 22, 2006*.
  - Pipe riser installed on gasoline tank.
  - New spill basins installed on gasoline and diesel tank fills.
  - UST fills were API color-coded.
  - Gasoline and diesel lines passed precision tightness testing.
  - Gasoline and diesel tanks passed precision tightness testing.
  
- October 3, 2006. MDE compliance inspection required the following:
  - Submit release detection for October 2006.
  - Submit the most recent line leak detector, leak and liquid blockage test results.
  - Submit inventory records.
  - Label, lock, and gauge monitoring pipes and submit report.
  - Submit spill catch basin test results and verify that fills are properly marked.
  - Comply with high-risk use area regulations and sample the on-site supply well for VOCs.
  
- November 27, 2006. MDE received correspondences from Cecil County Government outlining completion of MDE directives with the exception of the high-risk groundwater use area requirements.
  
- January 26, 2007. MDE received request for a waiver of the *High Risk Area Requirements – January 24, 2007* based on the following rationale:
  - Cecil County Roads USTs are located on the property of the Cecil County Central Landfill.
  - Central Landfill has a network of six monitoring wells that are tested semi-annually due to the requirements set by the Refuse Disposal Permit.
  - On-site supply well has not been used as a drinking water source since approximately 1990 due to the elevated levels of several metals.
  - On-site supply well, known as PW-1, is sampled on a semi-annual basis along with landfill monitoring wells.
  - Supply well is used for non-potable purposes (i.e., vehicle washing).
  - Landfill map has several areas labeled homeowner area.
  - Semi-annual testing results from October 2002 to April 2006 (See table).
  
- May 1, 2007. MDE received a *Response Report – April 27, 2007 and November 19, 2007 letter* from Cecil County Department of Public Works responding to MDE requirements with the following.
  - Passing tank and line test results – 04/20/06
  - Passing stage II vapor recovery test – 11/29/06.
  - Inventory records submitted for April to September 2006.
  - Proper anchoring of shear valves corrected 02/12/07.
  - Piping material identified as single walled fiberglass from the tank field to the pumps.
  - New anodes installed on the metal flex lines of each dispenser to protect from corrosion.
  - Sampling of on-site wells and tank field monitoring wells (See table).
  - Four new manway covers were installed on existing tank field monitoring wells.
  - Tank field monitoring pipes were gauged 11/15/2006, no LPH identified.
  - Spill buckets cleaned out and tested using a hydrostatic water test.
  - A drop tube identified at the gasoline and diesel tanks.
  - Tanks not fitted with containment sumps.
  - Tanks have manway openings that go to tank tops.
  
- June 4, 2008. MDE site visit to identify on-site conditions relative to high-risk area requirements.
  - On-site supply well tag number CE-73-2691.
  
- June 12, 2008. MDE field reconnaissance for sensitive off-site receptors.
  - Private drinking water wells were identified along Route 7 (Old Philadelphia Road) approximately 2,251 feet from the UST field.
  
- July 22, 2008. MDE issued *Exemption of High-Risk Groundwater Use Regulations Denied Monitoring Wells & Sampling For The Emergency Regulations* to Cecil County Department of Public Works.
  - Correct UST compliance issues.
  - Conduct a ½ mile well survey.

- Submit a Work Plan for the installation of three (3) monitoring wells.
  - Future groundwater sampling to be conducted semi-annually (every six months).
- November 18, 2008. MDE received *Work Plan-Underground Storage Tank System – November 14, 2008*.
    - Work Plan proposing the installation of three (3) monitoring wells, well survey, and future groundwater sampling.
  - December 17, 2008. MDE issued Work Plan Approval letter to Cecil County Government.
    - Approval of *Work Plan – November 2008* including the following:
      - installation of three monitoring wells
      - completion of a well survey
      - future groundwater sampling
  - January 22, 2009. MDE site visit to observe the installation of three (3) monitoring wells.
    - MDE gauged UST tankfield observation pipes.
      - TP-1: depth to water (DTW) = 3.15 ft.
      - TP-2: DTW = 3.41 ft.
      - TP-3: DTW = 3.83 ft.
      - TP-4: DTW = 3.41 ft.
  - January 23, 2009. MDE site visit to observe the installation of three (3) monitoring wells.
    - MDE documented and notified Cecil County Public Works regarding the presence of petroleum staining by the diesel dispenser.
  - March 4, 2009. MDE received *Well Installation & Initial Sampling Event Report and Well Survey Report – March 3, 2009*.
    - 68 private drinking water wells were identified within 100 feet to a ½ mile of the UST system.
    - Regional groundwater flow projections have been toward the northeast.
    - The newly installed monitoring wells were sampled on February 9, 2009 (*see table*).

**Future Updates:**

- Future updates on this case investigation will be posted at [www.mde.state.md.us](http://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.

## Groundwater Sampling Data at the Cecil County Roads/Landfill at 758 E. Old Philadelphia Road

Groundwater Sampling Data	Sampling Event	MTBE State's Action Level at 20 ppb	Benzene MCL at 5 ppb
<b>UST Monitoring Wells</b>			
MW-1	2/9/09	210	10
MW-2	2/9/09	ND	ND
MW-3	2/9/09	ND	ND
<b>Tank field Monitoring Pipes</b>			
TF-1	12/06	4.4	ND
TF-2 (MP-2)	12/06	2.4	ND
	2/9/09	ND	ND
TF-3	12/06	31.3	ND
TF-4 (MP-4)	12/06	38.0	ND
	2/9/09	ND	ND
<b>On-site Drinking Water Well</b>			
<b>PW-1</b> Well is not used for consumption. Well tag number CE-73-2691. Well labeled in recent reports as SW-1	10/02	NT	ND
	04/03	NT	ND
	10/03	NT	ND
	04/04	NT	ND
	10/04	NT	ND
	04/05	NT	ND
	11/05	NT	ND
	04/06	NT	ND
	11/06	ND	ND
2/9/09	ND	ND	
<b>Landfill Monitoring Wells</b>			
<b>Landfill MW-1</b> 4 in. diameter well ; Borehole depth 182 ft. Screen depth 172 to 182 ft ; Casing depth 0-168 ft. Tag # CE-81-3253 Installed 2/22/88	06/99	NT	ND
	10/99	NT	ND
	03/00	NT	ND
	09/00	NT	ND
	04/01	NT	ND
	09/01	NT	ND
	06/02	NT	ND
	10/02	NT	ND
	04/03	NT	ND
	10/03	NT	ND
	04/04	NT	ND
	10/04	NT	1
	04/05	NT	3
	09/05	NT	1
	11/05	NT	2
04/06	NT	2	
<b>Landfill MW-2</b> 4 in. diameter well ; Borehole depth 115 ft. Screen depth 105 to 115 ft ; Casing depth 0-105 ft. No tag # Well log dated 10/18/88	06/99	NT	ND
	10/99	NT	ND
	03/00	NT	ND
	09/00	NT	ND
	04/01	NT	ND
	09/01	NT	ND
	06/02	NT	ND
	10/02	NT	ND
	04/03	NT	ND
	10/03	NT	ND
	04/04	NT	ND
	10/04	NT	ND
	04/05	NT	ND
	11/05	NT	ND
	04/06	NT	ND
<b>Landfill MW-3</b> 4 in. diameter well ; Borehole depth 97 ft. Screen depth 87 to 97 ft ; Casing depth 0-87 ft. No tag #, Well completed in 8/17/88	05/97	NT	ND
	11/97	NT	ND
	06/98	NT	ND
	12/98	NT	ND
	06/99	NT	ND
	10/99	NT	ND
	03/00	NT	ND
	09/00	NT	ND
	04/01	NT	ND

## Groundwater Sampling Data at the Cecil County Roads/Landfill at 758 E. Old Philadelphia Road

Groundwater Sampling Data	Sampling Event	MTBE State's Action Level at 20 ppb	Benzene MCL at 5 ppb
<b>Landfill MW-3</b> 4 in. diameter well ; Borehole depth 97 ft. Screen depth 87 to 97 ft ; Casing depth 0-87 ft. No tag #, Well completed in 8/17/88	09/01	NT	ND
	06/02	NT	ND
	10/02	NT	ND
	04/03	NT	ND
	10/03	NT	ND
	04/04	NT	ND
	10/04	NT	ND
	04/05	NT	ND
	11/05	NT	ND
	04/06	NT	ND
<b>Landfill MW-4</b> 4 in. diameter well ; Borehole depth 82 ft. Screen depth 72 to 82 ft ; Casing depth 0-72 ft. Tag # CE-81-3256 completed in 8/10/88	05/97	NT	ND
	11/97	NT	ND
	06/98	NT	ND
	12/98	NT	ND
	06/99	NT	ND
	10/99	NT	ND
	03/00	NT	ND
	09/00	NT	ND
	04/01	NT	ND
	09/01	NT	ND
	06/02	NT	ND
	10/02	NT	ND
	04/03	NT	ND
	10/03	NT	ND
	04/04	NT	ND
	10/04	NT	ND
	04/05	NT	ND
11/05	NT	ND	
04/06	NT	ND	
<b>Landfill MW-5</b> 4 in. diameter well ; Borehole depth 60 ft. Screen depth 50 to 60 ft ; Casing depth 0-50 ft. No tag #, Well completed 8/19/88	11/97	NT	ND
	06/08	NT	ND
	12/98	NT	ND
	06/99	NT	ND
	10/99	NT	ND
	03/00	NT	ND
	09/00	NT	ND
	04/01	NT	ND
	09/01	NT	ND
	06/02	NT	ND
	10/02	NT	ND
	04/03	NT	ND
	10/03	NT	ND
	04/04	NT	ND
	10/04	NT	ND
	04/05	NT	ND
	11/05	NT	ND
04/06	NT	ND	
<b>Landfill MW-6</b> 4 in. diameter well ; Borehole depth 98 ft. Screen depth 88 to 98 ft ; Casing depth 0-88 ft. Tag # CE-81-3258 completed 8/12/88	05/97	NT	ND
	11/97	NT	ND
	06/98	NT	ND
	12/98	NT	ND
	06/99	NT	ND
	10/99	NT	ND
	03/00	NT	ND
	09/00	NT	ND
	04/01	NT	ND
	09/01	NT	ND
	06/02	NT	ND
	10/02	NT	ND
	04/03	NT	ND
	10/03	NT	ND
	04/04	NT	ND
	10/04	NT	ND
	04/05	NT	ND
	11/05	NT	ND
	04/06	NT	ND

**NT= Not Tested**

**Note: well measurements are from the top of the casing, not ground datum.**