MARYLAND DEPARTMENT OF THE ENVIRONMENT

1800 Washington Boulevard ● Baltimore Maryland 21230-1719
1-800-633-6101 ● http:/www.mde.state.md.us

Environmental Investigation
High's Store No. 16
42 Beauchamp Road, Elkton
Cecil County, Maryland
MDE Case No. 2004-1852-CE

The Maryland Department of the Environment (MDE), Oil Control Program (OCP), is evaluating the impact of methyl tertiary-butyl ether (MTBE) at High's No. 16. In August 2005, MDE-OCP became aware of environmental problems at the High's facility upon receiving groundwater sampling from the three newly installed monitoring wells. MTBE was detected in one monitoring well at 50 parts per billion (ppb). In June 2005, sampling of the station's drinking water supply well detected MTBE at 1.2 ppb. The highest level of MTBE detected in the supply well was in June 2006, when samples indicated MTBE at 1.4 ppb, well below the State's action level of 20 ppb. Since July 2007, samples have been non-detect for petroleum constituents.

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 of 20 to 40 parts ppb, based on taste and odor. Although the EPA has not established a regulated Maximum Contaminant Level (MCL) for MTBE, the MDE has adopted an action level of 20 ppb.

The Beauchamp High's store, operated by High's of Baltimore, Inc., has been an active store and service station since May 1990 when five USTs were installed. The UST systems comprise double-walled composite steel with fiberglass-reinforced plastic and the piping is fiberglass reinforced plastic. These USTs include, three 8,000-gallon gasoline, a 10,000-gallon diesel, and a 2,000-gallon kerosene tanks. Three monitoring wells, two tank field observation pipes, and a transient non-community drinking water supply well are located on-site. At this time, the MDE-OCP does not anticipate conducting any off-site sampling effort beyond sampling needed to ensure community safety. Groundwater flow at the site is to the southeast with depth to groundwater between three and five feet.

Chronology

- September 28, 2005. MDE-OCP received electronic notification from High's consultant's of preliminary groundwater sampling data collected at 18 facilities operated by High's of Baltimore. The preliminary data included sampling results for the on-site drinking water well and monitoring well network located at High's #16.
  - June 2005 sampling event.
    - PW (on-site drinking water supply well) MTBE at 1.2 parts per billion (ppb)
  - In July 2005 monitoring wells installed pursuant to the new MTBE emergency regulations.
    - August 2005 Sampling event:
    - MW-1 MTBE at 3 ppb
    - MW-2 MTBE at 50 ppb
    - MW-3 MTBE at 4 ppb

- November 3, 2005. *Monitoring Well Installation and Sampling Report - November 3, 2005.*

- November 30, 2005. MDE-OCP issued directive letter to High's requiring the following:
  - Response to the compliance assistance inspection conducted 9/21/05;
  - Perform a helium test to check vapor leaks in the gasoline UST system;
  - Test all spill catchment basins and containment sumps;
  - Conduct a self-audit of UST system;
  - Conduct semi-annual (every 6 months) sampling of all monitoring wells and tank field monitoring pipes;
  - Conduct semi-annual sampling of the transient non-community drinking water supply well on-site;
  - Submittal of the well log for the on-site drinking water supply well;

- Identify the drinking water supply well on a site map; and
- Perform a half-mile well survey.

- January 13, 2006. *Monitoring Well Sampling Report - January 13, 2006*.

- February 3, 2006. MDE-OCP received the well receptor survey. The well log for the site drinking water well was included.

- March 13, 2006. MDE-OCP site visit to observe testing of the leak detector and product lines. Liquid blockage testing, pressure decay testing, and helium testing had also been completed.
  - UST system testing results:
    - Catchment basins: passed 8/25/05
    - Helium test: failed 9/21/05

- March 15, 2006. MDE-OCP received the storage system test results.
  - UST system testing results:
    - Product line test: passed 2/22/06
    - Leak detectors: passed 3/13/06
    - Stage II Pressure Decay: passed 2/22/06
    - Air to Liquid Ratio Test: passed 2/22/06

- August 3, 2006. MDE-OCP received *Semi-Annual Monitoring Well and Domestic Well Sampling Report – July 14, 2006*.
  - Depth to groundwater 4.55 to 5.6 ft.
  - Groundwater flow direction presumably to the southeast.
  - June 2006 sampling event *(See Table for sampling results)*.

- February 2, 2007. MDE-OCP received *Semi-Annual Monitoring Well and Domestic Well Sampling Report – January 26, 2007*.
  - Groundwater flow direction presumably to the southeast.
  - January 2007 sampling event *(See Table for sampling results)*

- August 21, 2007. MDE-OCP received *Semi-Annual Monitoring Well and Domestic Well Sampling Report – August 8, 2007*.
  - July 13, 2007 sampling event *(See Table).*

- September 7, 2007. MDE-OCP received the results of spill basin testing, performed 8/31/07. All spill basins passed except for the mid-grade spill basin, which was scheduled to be replaced.

- December 24, 2007. MDE received the results of catchment basin testing for the mid-grade UST. Testing conducted on 12/11/07 indicated passing results.

- February 13, 2008. MDE-OCP email request to provide helium test data for 2006 and 2007.

- February 19, 2008. MDE-OCP received well logs for the monitoring wells and drinking water supply well via email.

- February 19, 2008. MDE-OCP received the results of the January 15, 2008 sampling event via email (*see Table*).

- March 10, 2008. MDE-OCP received *Semi-Annual Monitoring Wells and Domestic Well Sampling – March 6, 2007*.
  - January 15, 2008 sampling event (*see Table*).

- March 17, 2008. MDE-OCP received the completed *High Risk Groundwater Use Area* form.
  - UST system testing results:
    - Helium test: passed 1/10/08
    - Sump test: passed 12/11/07
    - Catch basin test: passed 8/31/07

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

Other Related Cases

- High's # 16 – 42 Beauchamp Road, MDE Case No. 90-0803CE (closed)

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 guilt, involvement in a wrongful act or contribution to environmental damage.

Groundwater Sampling Results for Beauchamp High's

Well Information	Sample Dates	Benzene (MCL –5 ppb)	MTBE (Action Level – 20 ppb)	Other petroleum constituents of concern *Ethylbenzene – MCL at 700 ppb Toluene – MCL at 1000 ppb Xylene – MCL at 10,000 ppb*
Monitoring Wells				
MW-1 *CE-95-1006* 2 in. diameter well; borehole depth 14 ft. Screen depth 2 to 14 ft; casing depth 0 – 2 ft.	7/27/05	Non-detect (ND)	3	---
	12/27/05	ND	2	---
	6/19/06	ND	2	---
	1/17/07	ND	2	---
	7/13/07	ND	ND	ND
	1/15/08	ND	ND	---
MW-2 *CE-95-1007* 2 in. diameter well; borehole depth 14 ft. Screen depth 2 to 14 ft; casing depth 0 – 2 ft.	7/27/05	ND	50	---
	12/27/05	ND	4	---
	6/19/06	ND	4	---
	1/17/07	ND	ND	---
	7/13/07	ND	ND	ND
	1/15/08	ND	2	---
MW-3 *CE-95-1008* 2 in. diameter well; borehole depth 14 ft. Screen depth 2 to 14 ft; casing depth 0 – 2 ft.	7/26/05	ND	4	---
	12/27/05	ND	91	---
	6/19/06	ND	110	---
	1/17/07	ND	50	---
	7/13/07	ND	46	ND
	1/15/08	ND	40	ND
Tank field Monitoring Pipes				
TF-1 (unknown depth)	1/17/07	ND	ND	---
	7/13/07	ND	ND	ND
	1/15/08	ND	ND	---
TF-2 (unknown depth)	1/17/07	ND	ND	---
	7/13/07	ND	ND	ND
	1/15/08	ND	ND	ND
Transient Non-community Supply well				
High's Station's Supply Well (380 ft.)	6/23/05	ND	1.2	---
	6/19/06	ND	1.4	---
	1/17/07	ND	1.2	---
	7/13/07	ND	ND	ND
	1/15/08	ND	ND	ND