

MARYLAND DEPARTMENT OF THE ENVIRONMENT

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Land and Materials Administration • Oil Control Program

Environmental Investigation and Drinking Water Well Impact
Harnes Store
12487 Wolfsville Road
Wolfsville, Maryland
Frederick County, Maryland
Case No. 1991-1914-FR

The Maryland Department of the Environment (MDE) Oil Control Program (OCP) in conjunction with the Frederick County Health Department (FCHD) continues to evaluate petroleum impacts at Harnes' Store which is currently an active convenience store. Since 1991 there has been no petroleum retail activities and no registered underground storage tank systems (USTs) at this site. Depth to groundwater ranges between 1.32 and 11.4 ft. The property and surrounding area are served by private wells.

In December 1986, Solliday Oil Company registered UST systems on site. Prior to 1992, Mr. Milton W. Harne and Ms. Catherine Harne were the owners of the property. Both Mr. George C. Harne and Ms. Judith Harne purchased the property in April 1992.

The MDE-OCP first became aware of petroleum contamination at Harnes Store during the removal of two (2) UST systems in April 1991. The 1000-gallon and 550-gallon, steel tanks were presumably installed in the early 1970s. Perforations and liquid phase hydrocarbons (LPH or free product) were observed during the removal of the 550-gallon UST. In response, the MDE-OCP issued a *Notice of Violation NV-91-152* to the Solliday Oil Company and required the installation of a groundwater monitoring well in the former tank field. In 1991, the property owner installed a granular activated carbon (GAC) treatment system on the drinking water supply well, in lieu of the required monitoring well.

In January 1999, sampling of the store's drinking water well by the Frederick County Health Department detected methyl tertiary-butyl ether (MTBE) at 464 parts per billion (ppb). In February 1999, MDE-OCP required the property owner to properly maintain the GAC system for the on-site supply well. Subsequent sampling of the store's drinking water supply well by the Department in November 2000 and February 2001 showed the continued presence of methyl tertiary butyl ether (MTBE) at 4,724.8 parts per billion (ppb), and 5,594 ppb respectively. In March 2001 the MDE-OCP required the off-site sampling of all nearby private wells. The off-site sampling of two homes, completed in January 2002, did not reveal any petroleum impacts.

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 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. Benzene is a major constituent of gasoline. The MCL for benzene is 5 ppb.

In September 2006, the Department identified the need to re-sample the store's drinking water supply well. Sampling conducted on October 2006 detected MTBE at 1,916 ppb and benzene at 17.1 ppb and breakthrough in the GAC treatment system. In January 2007, the store was temporarily closed by the Frederick County Health Department (FCHD) based on the sampling results and the ineffectiveness of the treatment system. Subsequently the carbon tanks in the GAC system was replaced and upgraded which allowed for the store to reopen for business.

Based on the elevated levels of petroleum contaminants and pursuant to Section 4-411.2 of the Environment Article, Annotated Code of Maryland, on June 5, 2007, the MDE provided written notification to area resident of the Wolfsville community, regarding the on-going groundwater investigation and petroleum impacts.

In February 2008, in coordination with the Frederick County Health Department, the drinking water well supplying the Harnes' Store was disconnected and is currently used as a groundwater monitoring point. Currently the Store obtains potable water from another drilled drinking water well (FR-02-1916) located at 12509 Stottlemeyer Road. In February and March 2008, expanded off-site sampling of nearby private drinking water wells revealed the presence of MTBE at concentrations above 20 ppb. In response the MDE required Solliday Oil Company to install GAC treatment systems on four (4) off-site private drinking water wells.

Eleven (11) private drinking water wells (excluding the old supply well for Harnes Store) in the Wolfsville community have been sampled to date.

- 7 private wells No detectable levels of MTBE
- 4 private wells MTBE detected at or above 20 ppb. GAC filtration systems have been installed.
(Reported below are pre-treatment sampling results for the highest concentrations reported to date.)
 - 12408 Stottlemeyer Rd MTBE at 6,900 ppb (first detected 03/13/08 sampling event)
(pre-filter sampling event 12/17/08– MTBE -at 6160 ppb)
 - 12412 Stottlemeyer Rd MTBE at 21.1 ppb (first detected 03/06/08 sampling event)
(pre-filter sampling event 07/22/08– MTBE at 63.9 ppb)
 - 12415 Stottlemeyer Rd MTBE at 148 ppb (first detected 02/18/08)
(pre-filter sampling event– MTBE at 337 ppb)
 - 12416 Stottlemeyer Rd MTBE at 51.8 ppb (first detected 03/07/08)
(pre-filter sampling event 12/17/08– MTBE at 72 ppb)

Chronology:

- April 5, 1991. MDE-OCP site visit to observe the removal of two steel gasoline USTs (1,000-gallon and 550-gallon tanks).
 - Owner of the USTs is the Soliday Oil Company
 - Perforations observed in the 550-gallon tank
 - Both soil and groundwater samples collected form the excavation
- April 24, 1991. MDE-OCP issued *Notice of Violation (NV-91-152)* to the Solliday Oil Company (UST owner) and required the installation of a monitoring well.
- July 10, 1991. MDE-OCP received letter from the private laboratory regarding soil analyses collected from a submerged section of pipe from a hand pump.
 - Based on a qualitative comparison with chromatographs for gasoline, kerosene, diesel and fuel, the sample was determined not to be impacted with any petroleum constituents.
- February 9, 1999. MDE-OCP received, via facsimile, drinking water sampling results from the Harnes's Market collected on 01/06/99 by the FCHD.
- February 22, 1999. MDE-OCP site visit. Based on an interview with the property owner's representative the following was determined:
 - GAC system installed in 1991, has not been properly maintained.
 - GAC system was installed in lieu of monitoring well installation.
 - Property owner will reinstall GAC treatment system
- February 26, 1999. MDE-OCP received, via facsimile, a copy of the Frederick County Health Department letter to Harne's Market property owner regarding the 12/01/98, 01/04/99, and the 01/06/99 sampling results of the store's supply well.
 - PW (store's supply well untreated 01/06/99) MTBE at 464.3 ppb
 - Required to install a GAC filtration
- December 7, 2000. MDE-OCP received drinking water sample results collected from the store's supply well on 11/27/00.



- PW (store's supply well untreated) – MTBE at 4724.8 ppb
- February 1, 2001. MDE-OCP collected a water sample from the store's supply well (*See Table*).
- March 8, 2001. MDE-OCP letter to Harne's Store property owner referencing sample collected on 02/01/01.
 - Install or replace the GAC system
 - Sample nearby drinking water wells and submit a copy of all analytical results to the MDE-OCP
- April 9, 2001. MDE-OCP received a letter from the Harne's Store property owner in response to the MDE 03/08/01 directive letter.
 - Granular activated carbon tanks have been replaced
 - References large oil spill at Wolfsville Elementary
 - Suggest there are additional USTs in the community of Wolfsville and other potential spills
 - Indicates there are no known complaints from the owners or tenants of neighboring properties
 - Property owner requests waiver of the directive for sampling off-site select private wells
- April 5, 2001. MDE-OCP visited the facility to confirm if the carbon tanks had been changed out.
 - Carbon in tank not badly spent.
 - Faint odor from water.
 - Residents buy bottled water for consumptive purposes.
- May 17, 2001. MDE-OCP received sampling results collected from the store's supply well on 04/10/01 (*See Table*).
- September 21, 2001. MDE-OCP letter to Harne's Store property owner regarding responsibility for future sampling
 - Store's supply well and the well on the property adjacent to the store (i.e. 12509 Wolfsville Rd. also owned by Harne's) must be sampled.
 - Drinking water wells on other adjacent properties must also be sampled
- January 1, 2002. MDE-OCP memo to file documenting telephone call to the property owner's representative to enquire about the status of off-site sampling of adjacent private wells. Subsequent conversations regarding this issue occurred on January 9 and 10, 2002.
- March 6, 2002. MDE-OCP received faxed copies of off-site sampling results collected on 01/24/02: Note sampling limited to MTBE.
 - 12509 Wolfsville Rd. – non-detect for MTBE
 - 12477 Wolfsville Rd. – non-detect for MTBE
- October 26, 2006. MDE-OCP site visit to collect water samples from the Harne's Stores drinking water well.
- November 21, 2006. MDE-OCP received sampling results collected on 10/26/06. FCHD was also notified of the sampling results which indicated that breakthrough had occur in the GAC system:
 - Sampling event on the store's supply well on 10/26/06 (*see table*).
- December 18, 2006. MDE-OCP on-site discussion with the Harne's Store property owner regarding the 10/26/06 sampling event and required the following:
 - Carbon tanks must be replaced followed by sampling of the well water, pre-, mid- and post-filtration.
- January 23, 2007. MDE-OCP received notification via telephone from the Harne's Store property owner, that the Harnes store was closed by the FCHD due to petroleum impacts in the post-filtration water sample.
 - Recommended replacement of the carbon tanks as necessary.
 - Re-sample the drinking water supply pre-, mid- and post-filtration.



- January 23, 2007. MDE-OCP letter (follow up to site visit on 12/18/06) to the Harnes' Store property owners regarding the analytical results of the October 2006 sampling event and requiring completion of the following:
 - Immediate replacement of the GAC treatment system
 - Monthly sampling of the drinking water supply well; pre-, mid- and post-filtration
 - Submittal of analytical results to MDE-OCP and Frederick County Health Department
- January 26, 2007. MDE-OCP received a telephone phone call from Harnes' Store property owners regarding the current status of the facility:
 - An additional carbon tank (3 total) has been added to the GAC treatment system.
 - Carbon was re-bedded in the two original carbon tanks. Required sampling being scheduled.
- January 30, 2007. MDE-OCP received, via fax drinking water sample results collected from the Harnes' Store on 01/25/07. (*see table*)
- February 6, 2007. MDE-OCP issued a *Notice of Violation NV-91-152 Addendum* to Solliday Oil Company requiring the following:
 - Conduct further site investigation since this task was not completed after the removal of the two USTs.
 - Submit a *Subsurface Investigation Work Plan*
 - Sampling of select off-site drinking water wells
 - 12477 Wolfsville Rd.
 - 12486 Wolfsville Rd.
 - 12504 Wolfsville Rd.
 - 12509 Wolfsville Rd.
- February 12, 2007. MDE-OCP fax to private laboratory regarding the EPA Method required for analysis of the samples collected from the drinking water well
- March 5 and 10, 2007. MDE-OCP received draft proposal of off-site sampling access letter from Solliday Oil Co.'s consultant. The Department issued a letter to Solliday Oil Co. commenting on revisions to this access letter.
- March 13, 2007. MDE-OCP received analytical results for samples collected from the on-site supply well 02/16/07. (*see table for results*)
- March 27, 2007. MDE-OCP received a *Site Characterization Work Plan –March 2007*
 - Off-site sampling to be completed at 12477, 12486, 12504 and 12509 Wolfsville Road
 - Literature review of geologic and hydrogeologic information for the area.
 - Review well completion reports in the area.
 - Installation of at least eight (8) borings and their conversion to 1 inch temporary piezometers;
 - Collecting soils and groundwater samples from six (6) of eight (8) borings.
- April 10, 2007. MDE-OCP approval letter to Solliday Oil Co. of the revised off-site sampling access letter.
- April 17, 2007. MDE-OCP telephone conversation with Solliday Oil Co. concerning the 03/2007 sampling results for the store's supply well. (*see table for results*)
 - Break-through occurred in the mid-filter sample and the Department instructed the property owner to change out carbon units prior to the next sampling event.
- April 18, 2007. MDE-OCP received via fax, the Harnes' Store supply well sampling results collected on 03/14/07 (*see table*)



- May 7, 2007. MDE-OCP letter to Solliday Oil Co. approving the *Site Characterization Work Plan –March 2007* contingent upon several modifications:
 - Draw-down tests on the store’s supply well is premature. Defer this activity until the site is fully characterized.
 - Convert all eight (8) proposed boring points to monitoring wells at least two (2) inches in diameter
 - Relocate one (1) of the borings away from the septic field.
 - Collect soil and groundwater samples from all borings installed.
 - Sample the store’s supply well on a quarterly basis.
 - Properly abandon the shallow hand-dug well formerly utilized as supply well.
 - Submit an *Environmental Assessment Report* no later than August 1, 2007.

- May 29, 2007. MDE-OCP received *Revised Site Characterization Work Plan (undated)*
 - Off-site sampling to be completed at 12477, 12486, 12504 and 12509 Wolfsville Road
 - Literature review of geologic and hydrogeologic information for the area.
 - Review well completion reports in the area.
 - Installation of four (4) borings and their conversion to 2 inch diameter monitoring wells
 - A groundwater sample is to be initially collected from each newly installed monitoring well
 - Four-hour drawdown test to be conducted using three of the wells of the newly installed monitoring wells.
 - Abandonment of a hand dug well adjacent to the Harnes’ store

- May 31, 2007. MDE-OCP received letter report, dated 05/29/07 of drinking water sample results of select off-site properties satisfying a requirement of the March 2007 directive letter. (*see table*)

- June 1, 2007. MDE-OCP received *May 2007 Drinking Water Sampling and Test Results*. Samples are now being collected by the consultant for the Solliday Oil Company. (*see table*)

- June 5, 2007. MDE-OCP notification letter mailed to over 45 property owners in the Wolfsville community concerning the on-going groundwater investigation at the Harnes’ Store.

- August 29, 2007. MDE-OCP received *August 2007 Drinking Water Sampling and Test Results*. (*see table*)

- October 2007, MDE-OCP received *Report of Petroleum Hydrocarbon Contamination Site Characterization Report-September 2007*.
 - Nine (9) borings installed on-site in August 2007
 - Four (4) permanent groundwater monitoring wells installed on-site in August 2007-well completion reports received
 - Treated groundwater discharged under General Permit MDG917256, 2007-OGR-27256
 - Groundwater sampling completed on 08/20/07 (*see table for results*)
 - Store drinking water well being sampled on a quarterly basis (*see table for results*)
 - Reverse extended dipole-dipole array resistivity survey completed
 - Store formerly used hand dug well properly abandoned by a Maryland licensed well driller on 09/06/07
 - No underground utilities located in close proximity to the site.

- December 18, 2007. MDE-OCP received *November 2007 Drinking Water Sampling and Test Results*. (*see table*)

- December 21, 2007. MDE-OCP letter to Solliday Oil Company approving, the *Remediation Assessment Work Plan-September 2007* contingent upon several modifications:
 - Sample for petroleum constituents from the private supply wells
 - 12406 Stottlemeyer Road
 - 12415 Stottlemeyer Road
 - Quarterly gauging/sampling of the monitoring wells
 - Quarterly sampling of the store’s drinking water well



- January 18, 2008. MDE telephone conversations with the Harnes' Store property owner and their consultant.
 - Recommended switching to coconut based carbon.
 - MDE required off-site sampling of select private wells as outlined in the 12/21/07 approval letter. Based on this information the Dept. may require a vapor intrusion study and additional wells.

- January 18, 2008. MDE telephone conversation with FCHD regarding the 11/2007 sampling results which showed high concentrations in the post-filter sampling of the Harnes' Store supply well. .

- January 23, 2008. MDE-OCP received *December 2007 Drinking Water Sampling and Testing Results (see table)*

- February 28, 2008 MDE-OCP memorandum to file documenting telephone conversations with the owner of the Harnes' Store and the environmental consultant regarding the Departments approval letter for dated 12/21/07.
 - The Department clarified that the 12/21/07 approval letter did not approve the entire scope of the investigative activities proposed in the *Report of Petroleum Hydrocarbon Contamination Site Characterization Report-September 2007*.
 - In the Department's approval of proposed field activities, modifications were made to include off-site sampling of the private drinking water wells at 12406 and 12415 Stottlemeyer Road; and continued quarterly sampling of the monitoring wells (MW1 through MW4) and the Harnes' Store drinking water well.

- February 27, 2008. MDE-OCP received e-mail notification that approved off-site sampling of the private drinking water well at 12415 Stottlemeyer Road revealed a MTBE impact greater than 20 ppb.
 - MDE-OCP personnel met with Solliday Oil Co.'s environmental consultant at 12415 Stottlemeyer Road
 - Confirmatory sample collected from this off-site private drinking water well which is approximately 115 ft deep
 - Residence has an aboveground storage tank for heating oil.

- March 4, 2008. MDE-OCP email to Solliday Oil Co.'s environmental consultant requesting the installation of a GAC system on the private drinking water well at 12415 Stottlemeyer Road.

- March 19, 2008. MDE-OCP email to Solliday Oil Co.'s environmental consultant regarding post GAC installation sampling at 12415 Stottlemeyer Road..

- March 20, 2008. MDE-OCP received *February 2008 Quarterly Groundwater Monitoring Report-March 14, 2008*.
 - Groundwater monitoring completed on 02/26/08 (*see table for results*)
 - MDE-OCP report of observations regarding site visit to 12415 Stottlemeyer Road to document GAC system installation.

- March 21, 2008. MDE-OCP received, via facsimile, private drinking water sampling results at 12412 and 12416 Stottlemeyer Road on 03/07/08 (*see table*)

- March 27, 2008. MDE-OCP received, via email, private drinking water sample results for 12408 Stottlemeyer Road collected on 03/013/08 (*see table*)

- March 27, 2008. MDE-OCP on-site to collect water confirmatory water samples from the off-site private drinking water wells at 12412 and 12416 Stottlemeyer Road.
 - Property owner at 12408 Stottlemeyer Road requested that sampling be completed on 03/28/08
 - Received letter from property owner explaining that the drinking water well serving the Harne's Store (12487 Wolfsville Road) has been disconnected.
 - The store now receives drinking water from the well (FR-02-1916) located at 12509 Wolfsville Road.
 - A sample collected from the on-site drinking water well FR-02-1916 on 01/11/08 (*see table*)

- March 31, 2008. MDE internal e-mail concerning sampling results collected from Wolfsville Elementary School (12520 Wolfsville Road).
 - Last sampling event non-detect for petroleum constituents.



- April 3, 2008. MDE-OCP received confirmatory samples results collected from the off-site private drinking water well at 12415 Stottlemeyer Road on 02/27/08 (*see table*)
- April 9, 2008. MDE-OCP site visit documenting installation of GAC systems at 12408 and 12416 Stottlemeyer Road.
- April 9, 2008. MDE-OCP letter Solliday Oil Company requiring:
 - Installation and proper maintenance of GAC systems required for impacted private drinking water wells at 12408, 12412, and 12416 Stottlemeyer Road. (GAC installation at 12412 Stottlemeyer delayed, pending confirmatory sampling of this well)
 - Submittal of a revised *Site Characterization Work Plan*
- April 11, 2008. MDE-OCP received confirmatory sample results collected from the private drinking water wells at 12412 Stottlemeyer Road and a routine sample at 12511 Wolfsville Road on 03/27/08. (*see table*)
- April 21, 2008. MDE-OCP received confirmatory sample results collected from the private drinking water well at 12416 Stottlemeyer Road on 03/27/08. (*see table*)
- April 23, 2008. MDE-OCP received the *Drinking Water Laboratory Test Results Report-April 22, 2008*.
 - Summary of off-site sampling in the vicinity of the Harnes Store (*see table*)
- April 24, 2008. MDE-OCP correspondence to property owner at 12511 Wolfsville Road regarding result of sample collected from the private drinking water well (FR-94-4889) on 03/28/08. (*see table*)
- May 15, 2008. MDE-OCP met with representatives of Solliday Oil Company and their consultant to discuss additional site investigation activities.
- May 20 and 22, 2008. MDE-OCP letters to property owners of 12412 and 12416 Stottlemeyer Road regarding the results water samples collected in March 2008.
- June 10, 2008. MDE-OCP received e-mail notification, that Solliday Oil installed a GAC treatment system on the private drinking water supply at 12412 Stottlemeyer Road
- July 7, 2008. MDE-OCP received *Report of Petroleum Hydrocarbon Contamination Site Characterization Addendum-July 2, 2008*.
 - 0.41 acre property is located within the Blue Ridge Physiographic province and underlain by the Late Pre-Cambrian Age Metabasalt formation.
 - Property is located in close proximity to unnamed tributary that flow along the southeastern edge of the property
 - Stream discharges to Middle Creek located 450 ft northeast of the subject property.
 - Activities proposed by consultant;
 - Continue quarterly sampling of GAC systems (12408, 12412, 12415, 12416 Stottlemeyer Rd)
 - Conduct limited direct-push investigation in vicinity of MW1
 - Install five (5) deep monitoring wells (in excess of 100 ft)
 - Install two (2) shallow monitoring wells
- July 25, 2008. MDE-OCP issued *Notice to Inspect* to Solliday Oil Co. because they had not de-registered their historic USTs.
- August 1, 2008. MDE-OCP received *May 2008 Quarterly Groundwater Monitoring Report-July 1, 2008*.
 - Sampling event 05/2008 (*see table*)
- August 6, 2008. MDE-OCP received Solliday Oil Co. amended tank registration form to de-register the historic UST system.



- August 15, 2008. MDE-OCP letter to Solliday Oil approving *Work Plan* contingent upon several modifications.
 - Evaluate property at 12408 Stottlemeyer Road for installation of a new well
 - Complete the direct push investigation near MW1
 - Complete the investigation in a phased approach
 - Quarterly sampling of the monitoring well network (MW1-MW4 and DW1)
 - Quarterly sampling of the GAC treatment systems
 - Quarterly sampling of drinking water well FR-02-1916

- August 29, 2008. MDE-OCP received *August 2008 Quarterly Groundwater Monitoring Report-August 27, 2008*.
 - Sampling event 08/2008 (*see table*)

- August 27, 2008. MDE-OCP received via e-mail, notification that an attorney representing impacted property owners (12406 Stottlemeyer Road, 12416 Stottlemeyer Road, and 12408 Stottlemeyer Road) had filed a claim against the State's Treasury Office. Letter from the attorney to The State's Treasury Office dated 07/19/08.

- September 9, 2008. MDE-OCP received, via email, the analytical results of the samples collected from the off-site private drinking water well/GAC treatment systems during April 2008 through July 2008. (*see table*)
 - August 2008 sampling data for GAC systems pending.

- September 10, 2008. MDE-OCP received, via fax, the well completion reports for several off-site private drinking water wells. Well construction information not available for 12408 Stottlemeyer Road

- September 19, 2008. MDE-OCP Report of Observations regarding on-site visit at 12408 Stottlemeyer Road for the purpose of delivering sample results per earlier conversation with Mrs. Lenhart. Consultant for Solliday Oil Company on-site collecting water samples from GAC treatment systems.

- October 7, 2008. MDE-OCP received, via email, the results of samples collected at 12408 and 12416 Stottlemeyer Road on 09/19/08 and 09/23/08 respectively. (*see table for results*)

- October 17, 2008. MDE-OCP meeting with Mr. Gary Grove and his consultant regarding the pending investigation/remedial activities at the site.
 - Site visit to Wolfsville completed to observe the community layout and location of drinking water wells

- November 18, 2008. MDE-OCP letter to the Solliday Oil Company regarding the next phase of the investigation.
 - Install the a new drinking water well at 12408 Stottlemeyer Road
 - Conduct further investigation of the groundwater conditions including completion of the direct push investigation
 - Continue quarterly sampling of the monitoring wells and private drinking water wells that have GAC treatment systems installed

- December 8, 2008. MDE-OCP received correspondence from the Solliday Oil Company indicating that compliance with the November 18, 2008 directive would be completed.

- December 11, 2008. MDE-OCP received the *November 2008 Quarterly Groundwater Monitoring Report-December 8, 2008*.
 - Sampling of the groundwater monitoring wells (MW1 through MW4, DW1) continues on a quarterly basis (*see table for results*)

- January 2, 2009-January 7, 2009. MDE-OCP on-site at 12408 Stottlemeyer Road to observe the installation of the new drinking water well. Well completed to 120 feet below ground surface (bgs) with casing to 113 feet bgs. Bedrock at 90 ft bgs with grout completed from 95 ft bgs to 4 ft bgs.
 - Approximate ¼-inch of petroleum product noted on the surface of the groundwater in the open borehole.



- January 8, 2009. MDE-OCP received, via email, the results of samples collected from the private drinking water well at 12416 Stottlemeyer Road in December 2008. *(see table for results)*
 - Results received for samples collected of several known shallow groundwater locations *(see table for results)*
- January 27, 2009. MDE-OCP received, via email, the results of samples collected from the private drinking water well at 12416 Stottlemeyer Road in January 2009. *(see table for results)*
- February 6, 2009. MDE-OCP letters to the respective property owners requesting permission to sample the drinking water wells at the following addresses:
 - 12477, 12478, 12486, 12504, 12511, 12517, 12521 Wolfsville Road
 - 12406 Stottlemeyer Road
 - 12432 Pleasant Walk Road
 - 12507 Brandenburg Hollow Road
- February 5, 2009. MDE-OCP received the results of samples collected from the new well (not in use) at 12408 Stottlemeyer Road on 01/21/09. *(see table for results)*
 - The well was purged prior to the collection of samples
- March 11, 2009. MDE-OCP received the results of samples collected from private off-site drinking water wells in February 2009. *(see table for results)*

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, Oil Control Program 410-537-3442
- Frederick County Health Department 301-600-1715

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 Results collected in the vicinity of Harne's Store located at
12487 Wolfsville Road, Wolfsville, Frederick County**

Monitoring Wells	Sampling Date Depth to water	Benzene MCL – 5 ppb	MTBE Action Level – 20	Other Constituents of Concern <i>Tertiary butyl Alcohol (TBA) - unregulated</i> <i>Tert-Amyl Methyl Ether (TAME) – unregulated</i> <i>Toluene – MCL 1000 ppb</i> <i>Naphthalene- Action level 10 ppb</i>
Off-site Monitoring Wells				
MW 1 (FR-95-0586) Located at 12509 Wolfsville Rd (Installed 08/2007) 2 inch diameter well Well screen 3 to 28 ft Total Depth – 28 ft	08/22/07- 11.96 ft	174	ND	Toluene – 1600 ppb
	02/26/08- 9.25 ft	511	0.2	Toluene – 4720 ppb; naphthalene – 326 ppb
	05/29/08- 8.88 ft	1090	ND	Toluene – 12000 ppb; naphthalene – 731 ppb
	08/11/08- 11.4 ft	600	0.36	Toluene – 6760 ppb; naphthalene – 828 ppb
	11/11/08- 11.78 ft	189	ND	Toluene – 2380 ppb; naphthalene – 350 ppb
On-site Monitoring Wells located at Harne's Store				
MW 2 <i>Well Tag No. FR-95-0587)</i> (Installed 08/2007) 2 inch diameter well Well screen 3 to 18 ft Total Depth – 18ft	08/22/07- 2.9 ft	0.35	73	---
	02/26/08- 2.92 ft	0.36	44.3	---
	05/29/08- 2.52 ft	ND	43	---
	08/11/08- 1.32 ft	0.17	10.8	---
	11/11/08- 2.59 ft	ND	13.1	---
MW 3 <i>Well Tag No FR-95-0588</i> (Installed 08/2007) 2 inch diameter well Well screen 3 to 28 ft Total Depth – 28 ft	08/22/07- 3.45 ft	131	7.6	---
	02/26/08- 3.04 ft	ND	4.38	---
	05/29/08- 1.37 ft	ND	5.12	---
	08/11/08- 2.82 ft	ND	3.44	---
	11/11/08- 2.41 ft	ND	2.31	ND
MW 4 <i>Well Tag No FR-95-0589</i> (Installed 08/2007) 2 inch diameter well Well screen 2 to 23 ft Total Depth – 23 ft	08/22/07- 3.24 ft	452	ND	---
	02/26/08- 2.88 ft	ND	ND	---
	05/29/08- 2.62 ft	ND	ND	---
	08/11/08- 2.94 ft	ND	ND	---
	11/11/08- 3.35 ft	ND	ND	---
DW1 Former drinking water well for store	05/29/08- 7.98 ft	1.54	196	---
	08/11/08- 9.42 ft	1.45	218	---
	11/11/08- 9.74 ft	1.45	177	---



Drinking Water Sampling Summary

Sample location	Sample dates	Sample sources	Petroleum Constituents of Concern (ppb)	
			MTBE (20 ppb – action level)	Tertiary amyl methyl ether (TAME) - unregulated Tertiary butyl alcohol (TBA) is an unregulated comp Di-isopropyl ether (DIPE) is an unregulated comp. MCL for Benzene is 5 ppb MCL for 1,2-Dichloroethane (1,2 DCA) is 5 ppb
Transient Non-Community Supply Well				
Harnes Store 12487 Wolfsville Road	01/06/99	untreated	464.3	ND
	11/27/00	untreated	4724.8	ND
	02/01/01	untreated	5594	1,2-Dichloroethane 5.3 ppb
	04/10/01	pre-filter	3183.8	TAME 4.2, benzene 67.8 ppb
		mid-filter	11.2	ND
		post-filter	1.8	ND
		sink	5.7	ND
	10/26/06	pre-filter	1916 (est)	TAME 2.56, benzene 17.1 ppb
		mid-filter	1139 (est)	TAME 2.91 ppb
		post-filter	856 (est)	TAME 2.79 ppb
	01/25/07	pre-filter	3300	benzene 12 ppb
		mid-filter	3.1	ND
		post-filter	ND	ND
	02/16/07	pre-filter	5860	benzene - 44.6; 1,2 DCA – 14.3; TBA –1090; DIPE- 389
		mid-filter	832	TBA –1090; DIPE- 2.2 ppb
		post-filter	ND	TBA –113 ppb
	03/14/07	pre-filter	3990	benzene 19; 1,2 DCA – 13.1; DIPE – 286; TBA - 1080
		mid-filter	2300	DIPE –4.7; TBA – 789 ppb
		post-filter	ND	TBA – 809 ppb
	05/03/07	pre-filter	1840 e	Benzene - 47.9, DIPE- 343, TBA- 569; 1,2 DCA – 19.9 e
		mid-filter	218	TBA- 68.1 ppb
		post-filter	7.52	ND
	08/01/07	pre-filter	1080	DIPE – 140 ppb, TBA – 169 ppb
		mid-filter	31.6	----
		post-filter	ND	---
	11/06/07	pre-filter	3950	Benzene – 116 ppb, 1-2 DCA- 16.7, DIPE – 195 ppb, TBA – 2760ppb
		mid-filter	10000	TBA-2190 ppb
		post-filter	12000	TBA-2190 ppb
	11/12/07	pre-filter	Not analyzed (NA)	---
		mid-filter	NA	---
		post-filter	NA	---
	11/28/07	pre-filter	3830	Not analyzed
mid-filter		9800	Not analyzed	
post-filter		11300	Not analyzed	
12/26/07	pre-filter	1350	---	
	mid-filter	429	---	
	post-filter	718	---	
Old supply well converted to a monitoring point. Referred to as DW1 on the previous sampling table Property connected to a new supply well - Well Tag No. FR-02-1916 located at 12509 Wolfsville Road Harne's property served by this new well since 02/2008.				
FR-02-1916- 12509 Wolfsville Road	11/18/08	untreated	ND	ND
Off-site Private Drinking Water Wells				
12477 Wolfsville Road (church parsonage)	01/24/02	untreated	ND	ND
	04/19/07	untreated	ND	ND
	02/19/09	untreated	ND	ND
12486 Wolfsville Road	05/11/07	untreated	ND	ND
12504 Wolfsville Road	05/01/07	untreated	ND	ND
12509 Wolfsville Road Well Tag No. FR-02-1916 Also supplies 12487 as of 02/2008	01/24/02	untreated	ND	ND
	04/19/07	untreated	ND	ND
	01/11/08	untreated	ND	ND
12511 Wolfsville Road	03/28/08-MDE	untreated	ND	ND



Sample location	Sample dates	Sample sources	MTBE (20 ppb – action level)	Other Petroleum Constituents of Concern (ppb)
12520 Wolfsville Road (Wolfsville Elementary School)	01/22/91	untreated	NA	ND
	05/18/93	untreated	NA	ND
	07/20/93	untreated	NA	ND
	01/31/96	untreated	ND	ND
	04/17/97	untreated	ND	ND
	05/29/98	untreated	ND	ND
	09/18/04	untreated	ND	ND
	05/22/07	untreated	ND	ND
12432 Pleasant Walk Road	02/19/09	untreated	ND	ND



Drinking Water Sampling Summary (cont.)

Sample location	Sample dates	Sample sources	Petroleum Constituents of Concern (ppb)	
			MTBE (20 ppb – action level)	Tertiary amyl methyl ether (TAME) - unregulated Tertiary butyl alcohol (TBA) is an unregulated comp Di-isopropyl ether (DIPE) is an unregulated comp. MCL for Benzene is 5 ppb MCL for 1,2-Dichloroethane (1,2 DCA) is 5 ppb
Off-site Private Drinking Water Wells (cont)				
12406 Stottlemeyer Road	02/18/08	untreated	ND	ND
	02/19/09	untreated	ND	ND
12408 Stottlemeyer Road No well construction information available (GAC installed 04/09/08)	03/13/08	untreated	6900	1,2 DCA – 17.7 ppb, DIPE – 589 ppb, TBA- 423 ppb
	03/28/08	untreated	8850	1,2 DCA – 21.4 ppb, DIPE – 721 ppb, TBA- 1670 ppb
		pre-filter	157	DIPE -20 ppb
		mid-filter	ND	ND
	05/22/08	post-filter	ND	ND
		pre-filter	7220	TBA-448; DIPE-487 ppb; 1,2 DCA-11.5 ppb
		mid-filter	ND	TBA- 12.8 ppb
	06/30/08	post-filter	ND	ND
		pre-filter	8340	1,2 DCA – 19.4 ppb
		mid-filter	ND	TBA-30.5 ppb
	09/19/08	post-filter	ND	ND
		pre-filter	8300	1,2 DCA – 14.2 ppb; TBA-1080; TAME-9.82; DIPE 647
		mid-filter	49.2	TBA-621ppb
	12/17/08	post-filter	ND	TBA- 5.43 ppb J;
pre-filter		6160	1,2 DCA – 11.1 ppb; TBA-499; TAME-8.57; DIPE 486	
mid-filter		ND	TBA-8.52ppb	
12412 Stottlemeyer Road Well Tag No. FR-94-1195 Drilled 12/11/1998 Total Well Depth 200 ft 6 inch diameter well Cased to 100 ft. Open borehole Water first encountered at 83 ft (GAC installed 06/02/08)	03/06/08	untreated	21.1	---
	03/27/08- MDE	untreated	6.56	ND
		pre-filter	40.7	---
		mid-filter	ND	ND
	07/22/08	post-filter	ND	ND
		pre-filter	63.9	---
mid-filter		ND	ND	
12415 Stottlemeyer Road Well Tag No. FR-94-2592 Drilled 10/02/2001? Total Well Depth 200 ft 6 inch diameter well Cased to 42 ft. Open borehole (Property may have had an older well installed in 07/1967. This well was 114ft deep; 6 inch diameter; yield 20-gal/min; cased to 61 ft) (GAC installed 03/19/08)	02/18/08	untreated	148	DIPE – 29.6 ppb
	02/27/08 -MDE	untreated	156	---
	04/02/08	pre-filter	282	DIPE- 50.2 ppb
		mid-filter	ND	ND
		post-filter	ND	ND
	05/07/08	pre-filter	396	---
		mid-filter	ND	ND
		post-filter	ND	ND
	06/12/08	pre-filter	343	TBA- 15.2j; DIPE 57.5 ppb
		mid-filter	ND	ND
post-filter		ND	ND	
12/17/08	pre-filter	337	TBA-10; DIPE 54.4 ppb; TAME 0.49 j; 1,2DCA- 1.77	
	mid-filter	ND	TBA-9.44	
	post-filter	ND	ND	



Sample location	Sample dates	Sample sources	Petroleum Constituents of Concern (ppb)	
			MTBE (20 ppb – action level)	Tertiary amyl methyl ether (TAME) - unregulated Tertiary butyl alcohol (TBA) is an unregulated comp Di-isopropyl ether (DIPE) is an unregulated comp. MCL for Benzene is 5 ppb MCL for 1,2-Dichloroethane (1,2 DCA) is 5 ppb
12416 Stottlemeyer Road Well Tag No. FR-94-0770 Drilled 02/03/1998 Total Well Depth 200 ft 6 inch diameter well Cased to 84 ft. Open borehole (GAC installed 04/09/08)	03/07/08	untreated	51.8	---
	03/27/08 - MDE	untreated	70.7	ND
	04/16/08	pre-filter	76.4	---
		mid-filter	ND	ND
		post-filter	ND	ND
	05/22/08	pre-filter	40.8	---
		mid-filter	ND	ND
		post-filter	ND	ND
	06/30/08	pre-filter	56.4	TBA-16.3 j –ppb;
		mid-filter	ND	TBA-8.98 ppb
		post-filter	ND	TBA-9.09 ppb
	07/31/08 GAC system repair and carbon change	pre-filter	83.8	---
		mid-filter	ND	ND
		post-filter	ND	ND
	09/23/08	pre-filter	85.7	TBA-5.45 ppb; DIPE- 9.52 ppb;
		mid-filter	ND	ND
		post-filter	ND	ND
	12/17/08	pre-filter	72	TBA-4.1 ppb; DIPE- 8.1 ppb; TAME- 0.2j; 1,2 DCA-0.19j
mid-filter		ND	TBA-4.65j	
post-filter		ND	TBA-4.11j	
01/12/09	pre-filter	65.7	TBA-4.06j ppb; DIPE- 7.83 ppb;	
	mid-filter	ND	TBA-6.06j	
	post-filter	ND	TBA-5.34j	
Shallow groundwater locations				
Hand dug well at 12415 Stottlemeyer Road. Total depth 14.6 ft. bgs Depth to water 4.2 ft bgs	12/17/08- MDE	Grab sample	ND	ND
Water at sump pump in basement of 12408 Stottlemeyer Road – approximately 5 ft bgs	12/17/08- MDE	Grab sample	ND	ND
Unused well at 12408 Stottlemeyer Road				
Depth- 114-120 ft bgs Casing depth- 113 ft bgs	01/21/09	Well purged Prior to sampling	9.3 ppb	Benzene- 11.8 ppb; naphthalene- 74.7 ppb; Toluene- 124 ppb; TPH/DRO- 18.9 ppb TPH/GRO- 26 ppb

