

Drinking Water Sampling and Environmental Investigation
BP Amoco Service Station #3033
14243 Jarrettsville Pike, Jacksonville, Baltimore County
Facility I.D. No. 7079
MDE Case No. 2005-0326-BA2 (open)

The Maryland Department of the Environment (MDE), Oil Control Program (OCP) is evaluating the impact of methyl-butyl ether (MTBE) at the BP Amoco Service Station. MTBE is a fuel additive commonly used to reduce carbon monoxide and ozone levels caused by auto emissions. The Department currently has an active case related to petroleum impact at the BP Amoco Service Station in the Four Corners area.

In September 2004, the MDE-OCP re-opened the Four Corners-Jacksonville Groundwater Investigation case under Case No. 2005-0326-BA2 in response to elevated MTBE levels in on-site monitoring wells at the Amoco service station and three newly impact off-site drinking water wells. The highest concentrations of MTBE detected at the site are in the four tank field monitoring pipes (TF-01 – TF-04). In addition, petroleum contamination has been detected in the on-site service station and adjacent Veterinarian Hospital (14240 Jarrettsville Pike) potable wells. BP Amoco currently maintains granular activated carbon (GAC) filtration systems on both potable wells. A soil vapor extraction (SVE) treatment system is currently in operation at the service station.

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.

The Department currently has three additional active cases related to petroleum impacts in the Four Corners area. In July 2004, the MDE-OCP opened its groundwater investigation under Case No. 2005-0045-BA2 in response to elevated MTBE levels (512 ppb) at 3410 Sweet Air Road (former location of Jacksonville Veterinary Hospital). Following the completion of a compliance inspection at the Jacksonville Citgo station, another case was opened under 2005-0856-BA2. In February 2006, the ExxonMobil service station located at 14258 Jarrettsville Pike had a release of approximately 25,000 gallons of gasoline in the subsurface and Case No. 2006-0303-BA2 was opened. Drinking water wells within a half-mile radius of this location were sampled and are currently being monitored. Groundwater remediation systems are in operation at the station, northeast of the station, and southwest of the station.

Jacksonville is a mixed-use commercial and residential community that is reliant on groundwater as a drinking water source. This community is located near a drainage divide along a topographical ridge between two surface streams. The area is underlain by weathered bedrock (sapolite), approximately 40 to 60 feet thick, and the Loch Raven Schist of the Wissahickon Group. Groundwater flow is primarily controlled by a major fracture set trending northeast to southwest. Bedrock is highly metamorphosed.

History:

On May 21, 1981, the Baltimore County Health Department (BCHD), precursor to the Baltimore County Department of Environmental Protection and Resource Management (BADEPRM), received a call from a resident [14220 Jarrettsville Pike, located adjacent to the former Exxon station (14222 Jarrettsville Pike)], complaining of petroleum odors and taste in the domestic well water. Subsequently, a domestic well sampling effort was coordinated between BCHD and the Department of Natural Resources - Water Resources Administration (DNR-WRA), precursor to the Maryland Department of the Environment - Oil Control Program (MDE-OCP), for properties with non-community supply wells and domestic wells located on the west side of Jarrettsville Pike and south of Paper Mill Road. Six drinking water wells in the 1400 block of Jarrettsville Pike were impacted by elevated levels of benzene. Between March and June 1981, three gasoline service stations at the Four Corners intersection were targeted to perform tank tightness tests on their gasoline underground storage tank (UST) systems to determine if they were leaking. These stations included the former Exxon station (14222 Jarrettsville

Pike—currently a vacant lot); the former Chevron/Gulf station (14226 Jarrettsville Pike—currently the Jacksonville Citgo station); and the Amoco Station (14243 Jarrettsville Pike).

Between 1981 and 1984, Amoco, Chevron/Gulf, and Exxon independently attempted to characterize the groundwater contamination in the Jacksonville area. These attempts generated a large volume of local hydrogeologic data to better define the groundwater contaminant plume. During this timeframe, a private lawsuit was filed against all three oil companies by impacted homeowners, Ascot Estates (developer), and several businesses along Jarrettsville Pike. As a result of the lawsuit, the plaintiffs were compensated for the loss of use incurred of their private drinking well water supply. In October 1984, the U.S. Environmental Protection Agency (EPA), Region III, entered into an Administrative Consent Order with the three responsible parties to implement a groundwater treatment system. The primary objective of the treatment system was to contain and reduce the dissolved benzene concentrations in the two plumes (north and south) at or below 20 parts per billion (ppb) to achieve asymptotic levels (i.e. static concentrations) and/or to operate the system for 10 years and then re-evaluate cleanup objectives.

Between 1987 and 1996, a remediation system was operated at the Four Corners intersection to address the petroleum groundwater contaminant plume. This hydraulic containment system was selected to prevent further migration of the petroleum contaminant plume to off-site drinking water receptors including future residential developments (e.g. Ascot Estate). Other remedial strategies were evaluated (e.g. soil venting, bioremediation) but the pump-and-treat system was determined to be the most effective cleanup strategy at that time.

The remediation was divided into a southern (Chevron/Gulf and Exxon) and northern (Amoco) plume and responsible parties were designated. A pump-and-treat system was the selected remedial action, based on three 72-hour pump tests, fracture trace analyses, and monitoring well development data.

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Amoco was named the responsible party for the northern plume. This plume encompassed the area adjacent to the Amoco Station, located at the southeast corner of the intersection of Jarrettsville Pike and Sweet Air/Paper Mill Road and extended to the west/southwest. A groundwater pump-and-treat system was installed in 1987. The system was designed with an iron removal system to prevent clogging of the infiltration galleries that were utilized to promote flushing of the contaminant zone. The pump-and-treat system ran continuously until 1992. On March 5, 1992, the EPA determined that Amoco could discontinue pumping of MW-24 since benzene concentrations had reached asymptotic levels that met the criteria of the Consent Order and required post-monitoring of eight (8) wells on a quarterly basis for two years beginning April 1992 to April 1994. A two-year, post-monitoring period was performed prior to case closure in 1996.

- November 3, 1995. MDE-OCP conducted a site visit to address a complaint regarding a reported dispenser release.
- July 31, 1996. MDE-OCP issued approval for the abandonment of certain wells and recommended the sampling of certain wells for petroleum constituents.
- November 18, 1996. MDE-OCP issued Notice of Compliance to Amoco. Case No. 1989-0588 closed.
- November 20, 1996. MDE-OCP issued Notice of Compliance to Amoco. MDE approved the abandonment of monitoring wells associated with long-term remediation.

BP/Amoco Site Chronology:

At the time of the citizen complaint in May 1981, Amoco operated 6 USTs at the facility. The tanks were reportedly installed in 1945. As a result of the gasoline investigation in the Jacksonville area an investigation was initiated into the Amoco station. Amoco installed eleven (11) monitoring wells. Sampling performed at the Amoco station on April 21, 1986 of the on-site wells showed the highest concentration of petroleum contaminants in MW-24 (benzene at 1,880 ppb, toluene at 1.695 ppb, and xylene at 2,333 ppb).

- June 8, 1981. Tank testing of the three gasoline USTs (bare steel) was conducted by Amoco's contractor, Petro Supply Inc. All three tanks tested tight.
 - One 2,000-gallon, registered as installed in January 1949 (bare steel);
 - One 4,000-gallon, not registered, reportedly installed in 1976 (bare steel); and
 - One 6,000-gallon, not registered, reportedly installed in 1976 (bare steel).

- December 12, 1983. Based on tank tightness tests conducted by Amoco's contractor, a report of a possible gasoline tank leak was reported to the DNR-WRA.
- December 13, 1983. DNR-WRA telephone conversation with Amoco's tank tester concerning 0.15-leak rate amongst the 4 manifolded tanks. Tanks to be re-tested.
- December 16, 1983. DNR-WRA issued Site Complaint (SC-0-84-304) to Amoco Oil for the gasoline release. DNR-WRA required that leaking tanks and lines be replaced/repared and that a plan be submitted for review.
- January 10 and 12, 1984. DNR-WRA conducted a site visit in preparation of line tests and tank tests.
 - Lines were uncovered; and
 - Gasoline was observed to be dripping from the vent line union of one of the four tanks.
- January 19, 1984. DNR-WRA conducted a site visit to observe tank tightness test. One tank was determined to have leaked. A precision test of all tanks was required.
- February 20, 1984. Amoco's letter concerning retesting of the USTs:
 - All 4 tanks tested tight; and
 - Original cause of the leak was determined to be a vent pipe that was not tight.
- March 1, 1984. DNR-WRA conducted a site visit to observe tank removal. Negotiations in progress between property owner and Amoco to install new tanks.
- March and April 1986. Five (5) USTs registered to Amoco Oil:
 - Three 10,000-gallon gasoline, registered as installed in 1982 (single-walled, fiberglass reinforced plastic w/single walled piping of similar material);
 - One 550-gallon used oil tank with galvanized steel piping, reported installed 1949; and
 - One 55-gallon hydraulic oil tank with galvanized steel piping.
- February 10, 1987. Amoco letter to BCHD concerning the construction schedule of the pump-and-treat system.
- February 24, 1987. MDE-OCP opened Case 1987-1660-BA related to a used oil tank.
- March 9, 1987. MDE-OCP closed Case 1987-1660-BA.
- March 7, 1988. An Administrative Consent Order was finalized with EPA Region III, Exxon, Chevron (successor to Gulf Oil Products), and Amoco. A work plan was submitted to address the petroleum contaminant groundwater plume.
 - A pump-and-treat system to be operated drawn from six groundwater monitoring wells located throughout the Four Corners investigation area (MW2, MW14, MW45, MW46, MW48, and MW52), in conjunction with an air stripper.
 - Groundwater samples from any observation well should not show benzene concentrations greater than 20 ppb for over four consecutive quarters.
 - Concentrations of benzene should achieve asymptotic levels for benzene greater than 20 ppb. Both Chevron and Exxon must provide proof of this leveling off effect using appropriate statistical methods.
 - If 10 years has elapsed and the recovery system is insufficient according to MDE's determination, MDE may recommend changes to the remediation system to the responsible parties.
 - The air stripper must be operated and maintained to achieve minimal removal efficiency for benzene.
 - Quarterly sampling and water level measurements of MW2, MW14, MW45, MW46, MW48, and MW52. The BCHD must be notified 48 hours prior to sample collection. During first quarter, analyze for tetraethyl lead, ethylene dichloride, and ethylene dibromide.
 - Annual sampling of perimeter wells (MW1, MW3, MW29, MW35, MW38, MW43, MW47, MW63, and MW72).
 - Results to be reported to MDE and BCHD within 30 days of receipt of results. Certified laboratory to be utilized for sample analyses. Duplicate/split samples to be collected at the discretion of MDE.
 - The remediation was divided into a southern (Chevron/Gulf and Exxon) and northern (Amoco) plume and responsible parties were designated. A pump-and-treat system was the selected remedial action based on three 72-hour pump tests (06/85 performed); fracture trace analyses and monitoring well development data.

- March 10, 1988. Adjacent domestic well (21131 Jarrettsville Pike) was sampled pre- and post-carbon treatment system:
 - Pre-treatment: MTBE unreported; benzene - 967 ppb; toluene - 229 ppb; ethylbenzene - 80 ppb; xylene - 340 ppb;
 - Post-treatment: MTBE - 2 ppb; non-detect for other petroleum constituents.
- March 5, 1992. The EPA determined that Amoco could discontinue pumping of MW24 (included as part of the Four Corners GW Investigation) since benzene concentrations reached asymptotic levels that met the criteria of the Consent Order and required post-monitoring of eight (8) wells on a quarterly basis for two years beginning April 1992 and ending in April 1994.
- November 3, 1995. MDE-OCP conducted a visit in order to address a site complaint regarding a dispenser release.
- July 31, 1996. MDE-OCP approved the abandonment of specified wells and recommended the sampling of other specified wells for petroleum constituents in order to address the dissolved hydrocarbons detected during post remedial monitoring at the site.
- November 18, 1996. MDE-OCP issued Notice of Compliance to Amoco. *Case No. 1989-0588* closed.
- November 20, 1996. MDE-OCP issued Notice of Compliance to Amoco. MDE approved the abandonment of monitoring wells associated with long-term remediation.
- September 1997. Amended UST registration lists three USTs commercially insured, installed in May 1984:
 - Three 10,000-gallon gasoline (fiberglass reinforced plastic, single-walled, with single-walled piping of similar material).
- December 13, 2001. *Subsurface Investigation Hydrocarbon Impact – December 11, 2001* report submitted by Amoco to MDE-OCP. Sampling limited to BTEX, MTBE, naphthalene, and TPH-DRO/GRO. Investigation completed for real estate purposes. Depth to groundwater 27 to 38 feet.
 - 5 soil borings (27 to 38 feet deep): traces of TPH-DRO 11.5 – 71.2 ppm
 - 5 groundwater samples:

SB1	MTBE at 4.6 ppb, non-detect for other petroleum constituents;
SB3	MTBE at 2,190 ppb, non-detect for other petroleum constituents;
SB4	MTBE at 4.5 ppb, non-detect for other petroleum constituents;
SB5	MTBE at 28.2 ppb, toluene at 3.4 ppb, non-detect for other petroleum constituents; and
Potable well	Non-detect for petroleum constituents
- January 10, 2002. MDE-OCP issued Site Status Letter to Amoco stating that no further action required based on the *Subsurface Investigation Hydrocarbon Impact – December 11, 2001* report.
- July 7, 2004. MDE-OCP received *Phase I Environmental Assessment conducted - 3308 Sweet Air Road and 3410 Paper Mill Road*. The Phase I ESA was performed as part of a property transaction and was submitted to the MDE due to concerns regarding contaminated drinking water at the sites. The property addressed as 3308 is currently undeveloped and heavily overgrown with vegetation while the property located at 3410 Paper Mill Road is currently occupied by a veterinary facility. The veterinary facility does not use the potable well for drinking water. Both sites are planned for future development and the report recommends including the BCDEPRM in plans to maintain or upgrade carbon filtration systems on potable wells at the sites.

A new case opened - Case No. 2005-0326-BA2

- September 1, 2004. MDE-OCP reopened the case for the Groundwater Investigation at the Four Corners area involving stations that currently participate in gasoline retail activities. *Case No. 2005-0326-BA2*.
- September 1, 2004. *Site Status Letter - September 1, 2004* prepared by Amoco and faxed to MDE-OCP concerning groundwater monitoring. Note that petroleum compounds were selectively analyzed for certain constituents in monitoring wells using EPA Method 8260 and OXY7 for oxygenates. Potable well sampled using EPA Method 524.2 full-suite including fuel oxygenates.
 - August 11, 2004 sampling event for the Amoco station, 14243 Jarrettsville Pike:

- MWA 33 ft. deep MTBE at 55.2 ppb
 - MWB 34 ft. deep MTBE at 12,800 ppb, TBA at 2,660 ppb, DIPE at 23 ppb, TAME at 92 ppb;
 - TF1 20 ft. deep dry;
 - Station's supply well (PW) (Two GAC system currently in place)
Pre-treatment: MTBE at 0.52 ppb, non-detect for other petroleum constituents;
Post-treatment: Styrene at 0.13 ppb; non detect for all petroleum constituents.
- September 9, 2004. BADEPRM issued letters to property owners regarding the following drinking water sample results collected on August 6, 2004:
 - Bradford Bank, 14301 Jarrettsville Pike: MTBE at 47 ppb and TAME at 6.88 ppb (recommended bottled water until a treatment system is installed on the water supply);
 - Dry Cleaners/14242 Jarrettsville Pike: MTBE at 67.9 ppb, ETBE at 9.39 ppb, 1,2-DCA at 0.93 ppb (recommended continued maintenance of a GAC system and to test post-treatment sample);
 - Mercantile Bank, 14231 Jarrettsville Pike: MTBE at 1.2 ppb; no action required;
 - Dogwood Tack, 14232 Jarrettsville Pike: MTBE at 3.07 ppb; no action required;
 - 14228 Jarrettsville Pike: Non-detect for petroleum compounds (ND), no action required;
 - Haynes Construction, 14307 Jarrettsville Pike: ND, no action required;
 - Blockbuster, 3420 Sweet Air Road: ND, no action required;
 - Coldwell Bank/Schapiro Property, 14237 J.Pike: MTBE at 4.23 ppb, no action required;
 - Szyuka Properties: 3419 Sweet Air Road: MTBE at 1.83 ppb, no action required; and
 - 3413, 3415, and 3417 Sweet Air Road: ND, no action required.
 - Mid-October 2004. The UST systems at the Amoco station were upgraded to a double-walled piping system. Three 10,000-gallon gasoline (fiberglass reinforced plastic single-walled with double-walled piping of similar material).
 - October 13, 2004. MDE-OCP received *Potable Well and Tank field Sampling Report – October 11, 2004* for the Exxon Service Station located at 14258 Jarrettsville Pike. Note petroleum compounds were selectively analyzed for BTEX, MTBE, and TBA using EPA Method 8260 for tank field wells. The potable well sampled for full-suite VOCs.
 - August 11, 2004 sampling event for the Exxon Station at 14258 Jarrettsville Pike:
 - TF1 (15.46 ft. deep) easterly tank field well; non detect for BTEX, MTBE and TBA
 - TF2 (16.5 ft. deep) dry westerly tank field well;
 - Potable well Pre-treatment: MTBE at 0.72 ppb, non detect for other petroleum constituents;
Post-treatment: no sample collected
 - October 13, 2004. As a precautionary measure, two drinking water supply wells at Jacksonville Elementary School were also sampled. A full suite VOC analysis was performed. No petroleum constituents were detected in either well. Historically the school has not shown any detection of petroleum constituents (sampling events 1996, 1997 and 1999).
 - October 13, 2004. MDE-OCP letter to Amoco station (14243 Jarrettsville Pike) requesting a *Work Plan* to investigate the extent of petroleum contamination.
 - October 15, 2004. MDE-OCP letter to Amoco station (14243 Jarrettsville Pike) regarding a telephone conversation in which BP Amoco indicated that the UST systems would be upgraded:
 - Double walled piping of Stage II and vent pipes; and
 - Proper sloping of piping to containment sumps
 - October 28, 2004. MDE received *Work Plan – October 27, 2004 proposing to complete the following:*
 - Subsurface investigation to delineate the extent of petroleum impact on-site. To include the installation of monitoring wells, sampling of MWs, conducting a new site survey, and preparation of a site assessment report.
 - November 8, 2004. MDE-OCP approved Amoco's *Site Assessment Work Plan – 10/27/04* contingent upon modifications.
 - December 2004. Amoco completed field activities per the approved *Work Plan*.
 - 2 vacuum extraction events conducted on-site; due to low recovery levels, the events were discontinued

- 7 monitoring wells installed on-site (MW01R, MW02R, and MW03-MW07)
- January 18, 2005. MDE received *BP Amoco System Upgrade and Environmental Activities Report – January 14, 2005*. Site upgrade included replacement of the dispenser island and UST concrete pads.
 - Installation of new containment basins under each Multi-Product Dispenser (MPD) and Submersible Turbine Pump (STP) sump.
 - Installation of a new double-walled FRP product piping system, and replacement of the existing fuel monitoring system, were conducted in 08 – 10/2004.
 - Four (4) tank field monitoring pipes installed at the corners of the UST field in order to maintain compliance with new COMAR regulations.
 - The following conditions were noted during upgrade activities:
 - No LPH encountered during excavations;
 - Soils exposed during excavations were screened, petroleum impacted soils removed and stockpiled on-site for later disposal;
 - Groundwater encountered at approximately 30 feet bgs;
 - Groundwater not encountered during excavation activities
 - Confirmatory soil samples collected beneath four dispensers and the joints of the product piping detected all petroleum constituents below the non-residential cleanup standards (MTBE - 214 ppb; TPH-DRO – 141 ppm)
- February 17, 2005. MDE received the *BP Amoco Site Characterization Report*
- May 31, 2005. MDE issued a letter requiring a detailed Work Plan to install an interim abatement system in the tank field area of the site to address high dissolved levels of MTBE. In addition, the letter required that monthly gauging and quarterly sampling of on-site monitoring wells and potable be continued.
- June 22, 2005. MDE received a *Work Plan – June 20, 2005*. The Work Plan proposed to conduct HEAT events on MW-02R to attempt to mitigate the high levels of MTBE detected in the well. The plan proposed that the events occur weekly until they prove to be ineffective.
- June 30, 2005. MDE received *Work Plan – June 24, 2005*. The Work Plan proposed to install a vapor recovery/treatment system at the subject property after the completion of a pilot study at the site. In addition, the plan proposed to manifold together the four tank field monitoring pipes and MW-02R to be connected to the SVE system.
- July 20, 2005. MDE issued a letter providing approval for the Work Plan submitted on behalf of BP Products North America, Inc. with the following exception: MW-02R may not be used as part of the SVE network since it is needed for use as a monitoring well on-site.
- September 21, 2005. MDE received *BP Amoco Pilot Test Summary Report – September 20, 2005*. The pilot test was conducted on 08/24/05. The purpose of the pilot test was to collect data in order to design an effective interim remedial measure for this site, as per MDE request.
- September 27, 2005. MDE issued a letter to the Greater Jacksonville Association regarding drinking water impacts from MTBE in the Four Corner's/Jacksonville area.
- October 17, 2005. MDE received *Work Plan for Service Station #03033 – October 14, 2005*. The Work Plan proposed to connect four on-site tank field monitoring wells to a vapor recovery/treatment system. The proposal stated that MW-01R and MW-02R would not be incorporated into the system.
- October 27, 2005. MDE conducted a site visit and approved the Work Plan as outlined in the October 14, 2005 letter. In addition, MDE issued a letter requiring the following:
 - Installation of a granular activated carbon (GAC) filtration system on the supply well at the Bradford Bank property.
 - Sample this GAC system pre-, mid-, and post- filtrations on a monthly basis until sufficient data was present to establish carbon replacement frequency.
 - Samples to be analyzed for full-suite VOCs including fuel oxygenates.
- November 1, 2005. MDE received *BP Service Station #3033 Quarterly Status Report – July through September 2005*.

- 7 monitoring wells on-site were gauged, no LPH was present in any of the wells;
 - Highest MTBE levels detected in MW-02R at 8,700 ppb;
 - On-site station's supply well:
 - Pre-treatment MTBE at 24.6 ppb
 - Mid- treatment MTBE at 1 ppb
 - Post- treatment MTBE at 1 ppb
- February 3, 2006. MDE received *BP Service Station #3033 Quarterly Status Report – October through December 2005*.
- All 7 on-site monitoring wells gauged; Highest MTBE levels detected in MW-02R at 3,530 ppb;
 - SVE piping installed during the last two weeks of 12/2005. SVE piping connected to the four tank field monitoring pipes and MW-02R located on-site.
 - On-site station's supply well: The station's well was re-sampled with similar results. System was retrofitted with a larger GAC
 - Pre-treatment MTBE at 867 ppb
 - Mid-treatment MTBE at 883 ppb
 - Post-treatment MTBE at 895 ppb
 - A GAC system was installed at the Bradford Bank property (14301 Jarrettsville Pike) on 11/19/05 and sampled.
 - Pre-treatment Benzene at 41 ppb, toluene at 20 ppb, MTBE at 16.8 ppb
 - Mid- treatment non-detect for all petroleum constituents (ND)
 - Post- treatment ND
- February 7, 2006. BP Amoco sampled the Coldwell Banker property (14237 Jarrettsville Pike) located adjacent to the service station:
- Active potable well Pre-treatment - MTBE at 2.5 ppb; Post-treatment - MTBE at 3.1 ppb
 - Inactive potable well Untreated - MTBE at 0.4 ppb
- March 8, 2006. MDE received *Site Status Letter – March 7, 2006*. Groundwater samples collected from the 7 on-site monitoring wells on February 23, 2006. The highest concentration of MTBE detected was 2,040 ppb in MW-3
- March 29, 2006. MDE received *Potable Well Analytical Results – March 28, 2006*.
- BP/Amoco's station's supply well
 - Pre-treatment MTBE at 28.1 ppb
 - Mid-treatment ND
 - Post-treatment ND
- April 7, 2006 – present. BP Amoco contracted a company to conduct weekly sampling of the drinking water supply well servicing the Veterinarian Hospital located at 14240 Jarrettsville Pike, adjacent to the BP Service Station, in response to requirements issued by the Department.
- April 26, 2006. MDE received *Quarterly Status Report – April 26, 2006*.
- Installation of the SVE system at the site completed 02/06/06.
 - During the quarter, the adjacent Exxon gasoline station reported a subsurface release of 25,000-gallons of gasoline.
 - 7 on-site monitoring wells gauged to determine the presence of any product related to the spill. No product observed.
 - In addition to monthly well gauging, two additional well gauging events occurred at the site on February 22 and 23, 2006 in response to the spill at the Exxon station.
 - Carbon tanks changed out on the supply well servicing the Veterinarian Hospital property on 03/23/06.
 - MDE required that BP install a GAC system on the supply well servicing the Bradford Bank property (14301 Jarrettsville Pike). Installation completed 11/19/05.
 - Supply well at Bradford Bank sampled in 01/2006
 - Pre-treatment - MTBE 0.14 ppb; mid-treatment – ND; Post-treatment – ND
 - Supply wells at Bradford Bank sampled 02/2006, a significant increase in petroleum constituents detected
 - Pre-treatment - MTBE 427,000 ppb.
 - The increase was attributed to the Exxon spill. BP was no longer required to maintain the GAC system on the Bradford Bank property.
 - BPAmoco's SVE system connects MW-02R, and 4 tank field monitoring pipes (TF-02 – TF-05).

- May 2, 2006. MDE received *Potable Well Analytical Results – May 1, 2006.*
 - BPAmoco’s station’s supply well
 - Pre-treatment MTBE at 21.1 ppb
 - Mid-treatment ND
 - Post-treatment ND

- May 30, 2006. MDE received *Potable Well Analytical Results – May 30, 2006.*
 - BPAmoco’s station’s supply well
 - Pre-treatment MTBE at 15.1 ppb
 - Mid-treatment ND
 - Post-treatment ND

- July 6, 2006. MDE received *Potable Well Analytical Results – July 5, 2006.*
 - BPAmoco’s station’s supply well
 - Pre-treatment MTBE at 4.6 ppb
 - Mid-treatment ND
 - Post-treatment ND

- July 7, 2006. MDE received *Potable Water Treatment System Samples – July 6, 2006.*
 - Supply well at the Veterinarian Hospital (14240 Jarrettsville Pike) .
 - Post-treatment MTBE at 74.6 ppb.
 - A larger capacity GAC system was installed on this supply well.
 - The well is frequently sampled (weekly basis).

- July 26, 2006. MDE received *Potable Well Analytical Results – July 25, 2006.*
 - BPAmoco’s station’s supply well
 - Pre-treatment MTBE at 5.5 ppb
 - Mid-treatment ND
 - Post-treatment ND

- July 26, 2006. MDE received *Quarterly Status Report – July 25, 2006.*
 - SVE system started operating on the four tank field wells on 05/30/06.
 - System removed a total of approximately 0.23 pounds of MTBE, 2.0 pounds of BTEX, and 15 pounds of TPH.
 - The highest concentration of MTBE was detected in MW-03 at 1,540 ppb.

- September 13, 2006. MDE received *Potable Well Analytical Results – September 12, 2006.*
 - BPAmoco’s station’s supply well
 - Pre-treatment MTBE at 5.1 ppb
 - Mid-treatment ND
 - Post-treatment ND

- October 5, 2006. MDE received *Potable Water Treatment System Samples - October 3, 2006.*
 - BPAmoco’s station’s supply well
 - Pre-treatment MTBE at 4.2 ppb
 - Mid-treatment ND
 - Post-treatment ND
 - Veterinarian Hospital property supply well sampled on 09/18/06
 - Pre-treatment MTBE at 311 ppb
 - Mid-treatment ND
 - Post-treatment ND

- November 15, 2006. MDE received *Potable Water Treatment System Samples – November 11, 2006.*
 - Veterinarian Hospital property supply well (14240 Jarrettsville Pike) sampled in 09/25/06
 - Pre-treatment MTBE at 36.2 ppb
 - Mid-treatment MTBE at 0.29 ppb
 - Post-treatment ND

- Veterinarian Hospital property supply well (14240 Jarrettsville Pike) sampled in 10/02/06
 - Pre-treatment MTBE at 33.1 ppb
 - Mid-treatment MTBE at 0.64 ppb
 - Post-treatment ND
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- Veterinarian Hospital property supply well (14240 Jarrettsville Pike) sampled in 10/09/06
 - Pre-treatment MTBE at 22.4 ppb
 - Mid-treatment MTBE at 2.4 ppb
 - Post-treatment ND
- Veterinarian Hospital property supply well (14240 Jarrettsville Pike) sampled in 10/16/06
 - Pre-treatment MTBE at 32.8 ppb
 - Mid-treatment ND
 - Post-treatment ND
- Veterinarian Hospital property supply well (14240 Jarrettsville Pike) sampled in 10/23/06
 - Pre-treatment MTBE at 22.2ppb
 - Mid-treatment ND
 - Post-treatment ND
- Veterinarian Hospital property supply well (14240 Jarrettsville Pike) sampled in 10/30/06
 - Pre-treatment MTBE at 29.3ppb
 - Mid-treatment ND
 - Post-treatment ND
- Veterinarian Hospital property supply well (14240 Jarrettsville Pike) sampled in 11/06/06
 - Pre-treatment MTBE at 42.3 ppb
 - Mid-treatment ND
 - Post-treatment ND

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

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- Baltimore County Department of Environmental Protection Resource & Management: 410-887-2762

OTHER CLOSED OCP CASES OF INTEREST IN THE FOUR CORNER'S AREA

■ **14017 Jarrettsville Pike (Ken-Gorrel Merex)**

- October 23, 1993. Fuel oil release reported in the basement. MDE opened *Case No. 94-1291-BA3*.
- March 19, 1996. MDE closed *Case No. 94-1291-BA3*.

■ **14320 Jarrettsville Pike (U.S. Postal Service/Phoenix Post office)**

- July 15, 1992. MDE opened *Case No. 93-0105-BA3* based on a heating oil release reported at the facility.
- August 10, 1992. MDE-OCP on-site to observe the removal of a 1,000-gallon bare steel heating oil tank. Soils were excavated and field screened with a PID (150 units). Soils used as backfill. No soil samples collected. MDE closed *Case No. 93-0105-BA3*.

■ **14231 Jarrettsville Pike (Sparks Bank)**

- October 21, 1992. MDE opened *Case No. 93-0771-BA3*.
- October 26, 1992. A 550-gallon heating oil tank registered to Sparks Bank was abandoned under the oversight of MDE-OCP. Four (4) soil borings were required and analyses for TPH and naphthalene.
- February 12, 1996. Sampling results submitted for review. Two (2) grab soil samples non-detect for TPH-DRO and naphthalene.
- July 19, 1996. MDE opened *Case No. 93-0771-BA3*.

■ **14346 Jarrettsville Pike (TR & C Electric Company)**

- December 2, 1994. MDE opened *Case No. 95-1341-BA2*.
- December 2, 1994. MDE-OCP on-site to observe the removal of a 550-gallon heating Oil UST (approximately 30 years old) registered to Chestnut Grove Presbyterian Church. No perforations observed in tank, soils field screened and used as backfill. No soil samples collected.
- December 2, 1994. MDE closed *Case No. 93-0105-BA3*.

■ **3701 Sweet Air Road (Chestnut Grove Presbyterian Church) property owned by TR&C Electrical Company**

- November 16, 1994. MDE opened *Case No. 95-1284-BA3*.
- September 21 and November 13, 1995. MDE-OCP letter to Chestnut Grove Presbyterian Church requesting that an amended tank registration be submitted.
- September 11, 1997. MDE-OCP conducted follow-up site inspection to ensure that the tank was not removed from this location to another owned by the church. MDE-OCP verified that tank was removed and properly disposed.
- September 19, 1997. MDE closed *Case No. 95-1284-BA3*.
- April 24, 1998. MDE-OCP issued a Notice of Violation (NV 98-691) to the Chestnut Grove Presbyterian Church for failure to amend the tank registration form.
- May 1998. MDE-OCP received amended tank registration form.

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.