Frog Mortar Creek Surface Water Conditions

Frog Mortar Creek Swimming Advisory

Surface water monitoring occurs six times each year, normally 40 samples are collected, which was increased to 44 samples in July 2015. In that sampling effort, and in the Area of Advisory (see graphic to the right), chemical contaminants were higher than usual-four times higher for trichloroethene and seven times higher for cis-1,2- dichloroethene and vinyl chloride compared to average values for June, August and September 2015.

While higher than usual, these levels did not warrant prohibiting swimming in Frog Mortar Creek. Instead the Maryland Department of the Environment (MDE) continues to suggest that swimming in these waters be for no more than 4 hours a day, 70 days a year in the swimming advisory available on its website. MDE posted signs in the waters off of Frog Mortar Creek in the area of concern marked on the accompanying map providing advice to limit swimming in this area.

What caused the July 2015 increase? Lockheed Martin and their consultants suspect that the record high rainfalls in June in the Baltimore area may have pushed the contaminants in the groundwater plume through the ground faster, increasing the amount of contamination discharging to Frog Mortar Creek. By early August when samples were collected again, concentrations were back to what can be considered normal for the area and remained lower in September. Surface water samples are collected annually in March, June, July, August, September and December.

What are these contaminants? Trichloroethene (TCE) is a commonly used solvent used for cleaning parts and machinery. It can break down over time into cis-1,2-dichloroethene and vinyl chloride.

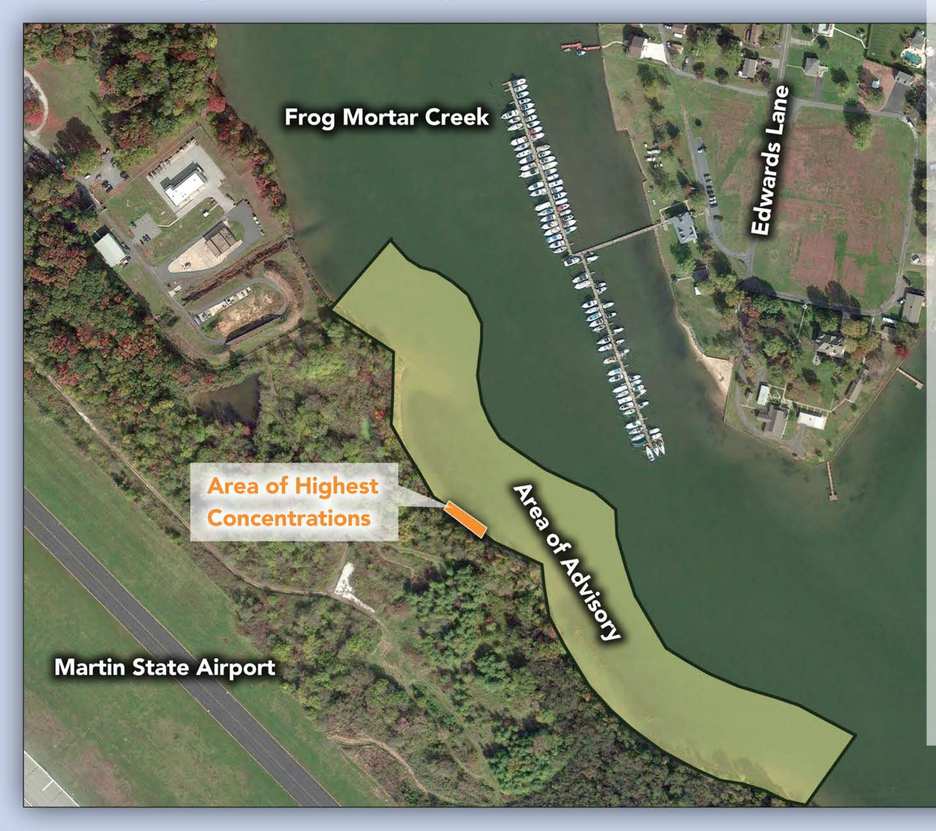
Where do the contaminants come from? Solvents and degreasers are known to have been used in factory operations at the Glenn L. Martin Company, a Lockheed Martin heritage company that was located in Middle River, and have been found in the Dump Road Area on Martin State Airport, in Frog Mortar Creek and in an underground plume of contaminated groundwater originating in the Dump Road Area and moving towards Frog Mortar Creek. Martin State Airport originally belonged to the Glenn L. Martin Company. Lockheed Martin has been investigating the source and extent of these contaminants since they were first found in 1991 and has now begun construction of a groundwater treatment system.

What are the potential health impacts of these chemicals? Studies have shown that prolonged exposure to high concentrations of these chemicals may increase your risk of cancer. People can be exposed to these chemicals while swimming by accidentally swallowing water or by skin contact.

Is there a ban on swimming in this area? No. According to the Maryland Department of the Environment the contaminants in this area are not high enough to pose an acute (short-term) health risk.

Where were the concentrations found? Higher than normal concentrations were found in the area marked in orange on the map, which is within the swimming advisory area. Samples taken throughout the summer on the east side of the creek near Edwards Lane were below levels of concern.

Area of Advisory



Advisory Area Average Concentrations in July 2015, compared to other Summer 2015 monthly averages, which are more typical:

Screening criteria used by MDE:

- Trichloroethene was 4.4 parts per billion and typically averages 1.1 parts per billion — Screening criteria: 10 parts per billion
- cis-1,2- dichloroethene was 7.2 parts per billion and typically averages 1 part per billion — Screening criteria: 300 parts per billion
- Vinyl chloride was 5.3 parts per billion and typically averages .7 parts per billion — Screening criteria: .7 parts per billion
- These compounds were at concentrations below their screening levels on the eastern side of Frog Mortar Creek near Edwards Lane for all four summer months, including the month of July.

What's being done about this problem? Following detailed investigation, planning and permitting, construction has begun on a groundwater treatment system that will capture and treat the contaminated groundwater before it reaches Frog Mortar Creek. A series of wells will be drilled within the Dump Road Area parallel to Frog Mortar Creek that will intercept and extract the groundwater and send it to a plant for treatment. The groundwater treatment plant will be located between Frog Mortar Creek and Taxiway Tango at Martin State Airport.

For further information about the health risks associated with swimming in Frog Mortar Creek you are encouraged to read the Frog Mortar Creek Water Contact Advisory found on the Maryland Department of the Environment website at: http://www.mde.maryland.gov/programs/land/marylandbrownfieldvcp/errp_superfund/pages/frogmortarcreekwatercontactadvisory.aspx

For further information about Lockheed Martin's remediation project at Martin State Airport you are encouraged to visit the Lockheed Martin website www.lockheedmartin.com/martinstate

Feel free to contact Gary Cambre, Senior Manager of Communications for Lockheed Martin at 800-449-4486 or by email at gary.cambre@lmco.com if you have questions or concerns.