We er forget who

continued from page 1

Children enjoyed creating work models of the upcoming sediment project.

Middle school students challenge an elementary student to net all the fsh within the allotted time.

The other two hands-on activity stations were developed by the Lockheed Martin team and showed the excavation and the creek restoration that will follow. Elementary students were eager to participate. Their parents said they had read in Lockheed Martin's newsletters about the upcoming work, and that the STEAM activities really helped explain the process they would see.

"We appreciate the middle school students' creativity and enthusiasm," said Tom Blackman, Middle River project manager. "We were pleased to see how the STEAM activities helped children and parents understand our cleanup project. We want to ensure the safety of our neighbors as we get this

a clean, healthy creek and environment. Then it will be up to all of us to keep the creek protected for the future."

Similar activity stations, including posters, will be presented on April 28th between 3:30 pm and 4:30 pm at a Family Field Day at Hawthorne Elementary School. More information is available on page 1.

After a winter of intensive work, dredging of Dark Head Cove and the lower portion of Cow Pen Creek to remove sediments contaminated with polychlorinated biphenyls

The work was planned to be complete by February 14, the

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During this past winter's dredging, approximately 36,000 cubic yards of sediment were removed and shipped in

York, PA. Before being moved the sediment was drained and dried in specially constructed bins located in the materials-handling area. The approximately 160,000 gallons of water that drained off the sediments were treated and discharged under permit to the Baltimore County sewer system. The drained water was tested following treatment and the quantity of contaminants in the water was within permit requirements.

This past winter's work included replacement of the shore-retention bulkhead on the north side of Dark Head Cove. Marine-grade sheet-metal pilings were driven on the water side of the old corroded sections by a vibrating pile-driver mounted on a barge. Storm drains passing through the new bulkhead were extended or repaired as needed. In one area, Lockheed Martin's contractors encountered softer material in the cove bottom. Although bulkhead installation was completed in this area, additional measures to ensure the

Restoration will also include replanting banks and disrupted upland areas with native plants or trees and placing submerged structures such as root wads to

spawning. Subaquatic vegetation

protected, and its return monitored

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primarily targets metals contamination. It is anticipated that over 12,600 cubic yards (about 630 truckloads) of sediment will be removed from the creek.

Lockheed Martin has applied for a National Pollutant Discharge Elimination System (NPDES) permit from the MDE to discharge treated-sediment drain water and rain water from the dammed work areas back to the creek and cove below the work areas. The treatment system for this water will be the same as the one used successfully during Season 1. The MDE has published a public notice of Lockheed Martin's application, and will follow this notice with a notice of a draft permit. The public may comment on the application and draft permit once MDE releases

After sediment removal, Cow Pen Creek will be restored to a natural condition. The upper section of the stream bed will be restored with an organic mixture capable of withstanding erosion and supporting vegetation. A channel resembling the original course of the stream will be recreated. In the lower sections of the creek, where the streambed is more of a mud

been removed.

The mild winter of 2016-2017 helped Lockheed Martin

Groundwater Treatment Facility. The majority of the

December 2016. The treatment system's large tanks (10 feet in diameter and 12 feet tall) were then moved into place in January, along with the largest pieces of water treatment equipment. Once the large equipment was in the building, the pre-fabricated concrete wall panels were lifted into place. The main work on the wall panels

Roof panels were installed in early March, followed

remainder of the month. The building should be declared watertight by the end of April.

Installation of the treatment system piping has already

work will ramp up. This will include installation of the rest of the treatment piping, conduits and wiring for the electrical and control system, electrical and control

connections to the groundwater extraction wells,

protection system, and

such as the control and electrical rooms,

space. Exterior work such as road paving, storm water controls and landscaping should be complete by the end of May.

By the end of June the building and treatment system should be complete. Once the Maryland Aviation Administration has

Roof panels were placed after the concrete walls were raised. The building should be watertight by the end of April.

issued an occupancy permit, operational testing will begin. The system will be tested initially using clean water from the water main. This phase of testing will check for leaks and make sure that pumps and control systems operate as designed. Following successful completion of these tests, groundwater will be drawn from the extraction wells and testing of groundwater treatment will begin. The treated water will be tested to make sure the system has removed all the contaminants and the treated water is ready for discharge to Frog Mortar Creek. Until then, all the treated water will be stored in large tanks onsite. Once the treated water is shown to meet the Maryland Department of the Environment's discharge limits, the treatment plant will begin continuous, around-the-clock operation and the treated water will be discharged through the outfall marked by the yellow buoys near the shore of Frog Mortar Creek. Continuous operation should begin by late summer.

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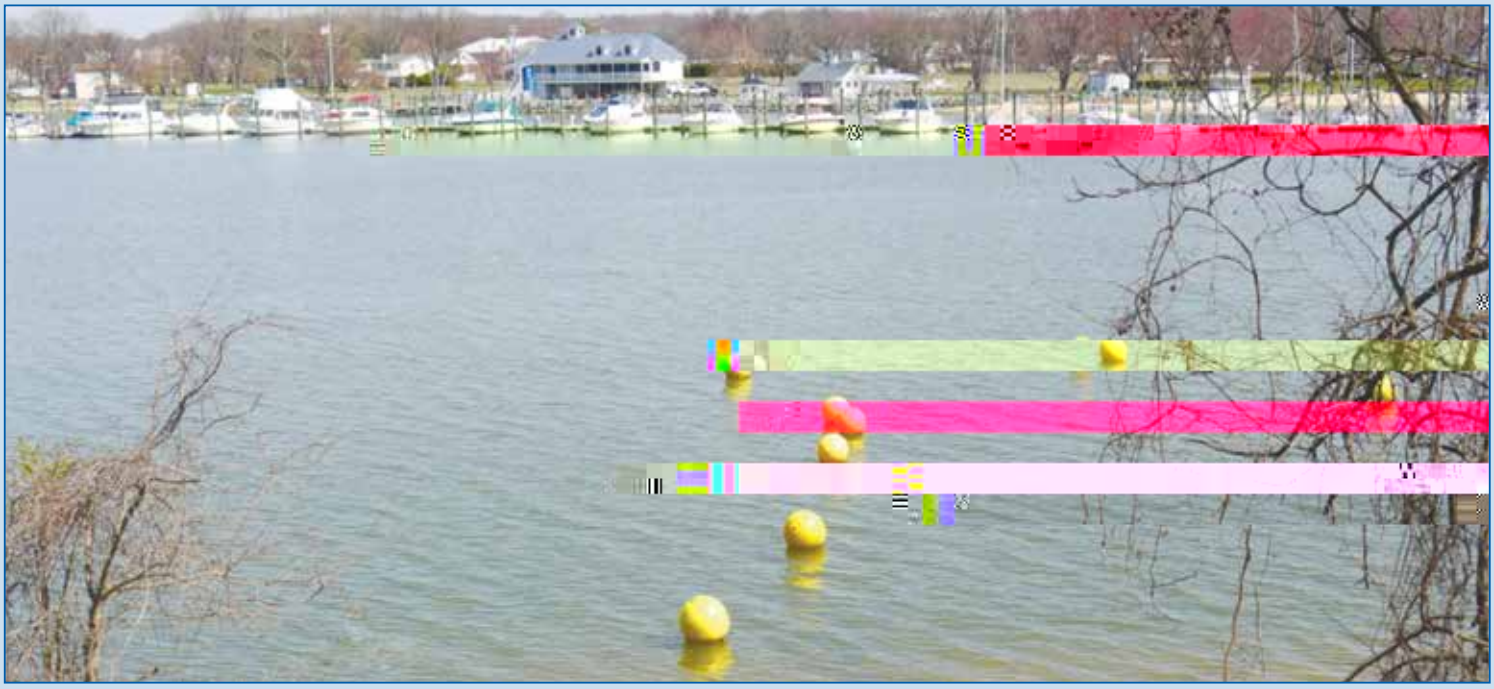

Yellow cautionary buoys mark the area of the treatment facility outfall pipe in Frog Mortar Creek

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The operation of the treatment system will be monitored frequently by operators who will routinely staff and maintain the plant. Reports documenting system performance will be submitted to MDE on a quarterly basis.

"This has been a very exciting time for our project," Lockheed Martin's project manager, Paul Calligan, said. "All the pieces have come together well, and we look forward to a successful test run, culminating in the moment we begin releasing treated groundwater into Frog Mortar Creek."

A hardener and sealant were applied to finish concrete floors and containment walls.

Fencing surrounds the site, including extraction wells, and includes a locked gate allowing access to the outfall pipe on Frog Mortar Creek.

Lockheed Martin samples and tests the quality of surface water in Frog Mortar Creek adjacent to Martin State Airport six times a year, including the summer months of June, July, August, and September. In the summer of 2016 the average concentration of one chemical, vinyl chloride, was higher than usual compared to the same time during

natural bacteria in soil breaks down chlorinated solvents such as trichloroethylene (TCE), a cleaning solvent.

Typically, the vinyl chloride summer average for the area in Frog Mortar Creek near the Martin State Airport shoreline is 0.7 parts per billion (ppb), which is also the threshold level above which the Maryland Department of the Environment (MDE) issues a water contact advisory. The average measurement for vinyl chloride this past summer was 1.4 ppb. Sampling results typically vary because of such things

into the creek. Another factor contributing to the higher average this past summer was that

targeting Frog Mortar Creek shoreline locations where higher concentrations have been found in the past. These additional samples help develop a more complete picture of the extent of contamination along the creek bank, which will improve Lockheed Martin's ability to determine the effectiveness of the new groundwater treatment facility now under construction.

A photo tour of the groundwater treatment facility construction is available at www.lockheedmartin.com/martinstate ***and will be updated as constructte***

continued from page 9 (Frog Mortar Creek Water Sampling Update)

The Maryland Department of the Environment (MDE) continues to recommend that people limit their swimming in the water close to the airport shoreline to no more than four hours a day, for a total of 70 days a year. MDE has not found that the sample results warrant a prohibition of swimming in Frog Mortar Creek. Additional swimming precautions can be found on MDE's website: (http://www.mde.state.md.us/programs/Land/

FrogMortarCreekWaterContactAdvisory.aspx).

Lockheed Martin has conducted surface water and sediment investigations in Frog Mortar Creek since 2004.

in July 2010, which resulted in MDE issuing the water contact advisory for the 2,000-foot long stretch of shoreline next to Martin State Airport.

Since the advisory went into effect, Lockheed Martin has sampled six times a year, focusing on the summer swimming months (June-September), plus two off-season

continued from page 9 (Groundwater Plume Expansion)

Tom Blackman, Lockheed Martin's Middle River project manager, reported that the Maryland Department of the Environment (MDE) has approved the reports documenting successful soil cleanup of Tax Blocks D, D Panhandle, F, G and H (shown in graphic below). "The state is now drafting 'No Further Action' letters for these sites," Blackman said, "which means that no more cleanup is necessary. This is a success for the project team and for the community. The team has been working for many years to get to this point and appreciates the community's support in achieving this goal."

The next step for MDE is to develop the environmental covenants for these blocks, which will place binding restrictions on the property, primarily to prohibit the use of groundwater. The covenant will also prevent residential use of the property unless additional work is completed that will ensure that more conservative cleanup standards have been achieved. The environmental covenants will note that Blocks D, F, G and H have been cleaned up to industrial standards, and that D Panhandle has been cleaned up to a recreational standard. The documents will be recorded in Baltimore County land records.

Soil cleanup for these blocks was completed in the spring of 2016. Completion of work on Block G took the longest, while Lockheed Martin followed up on reports from former employees that transformers might still be buried there. While no intact transformers were found, a few highly corroded items that may have been transformers were found.

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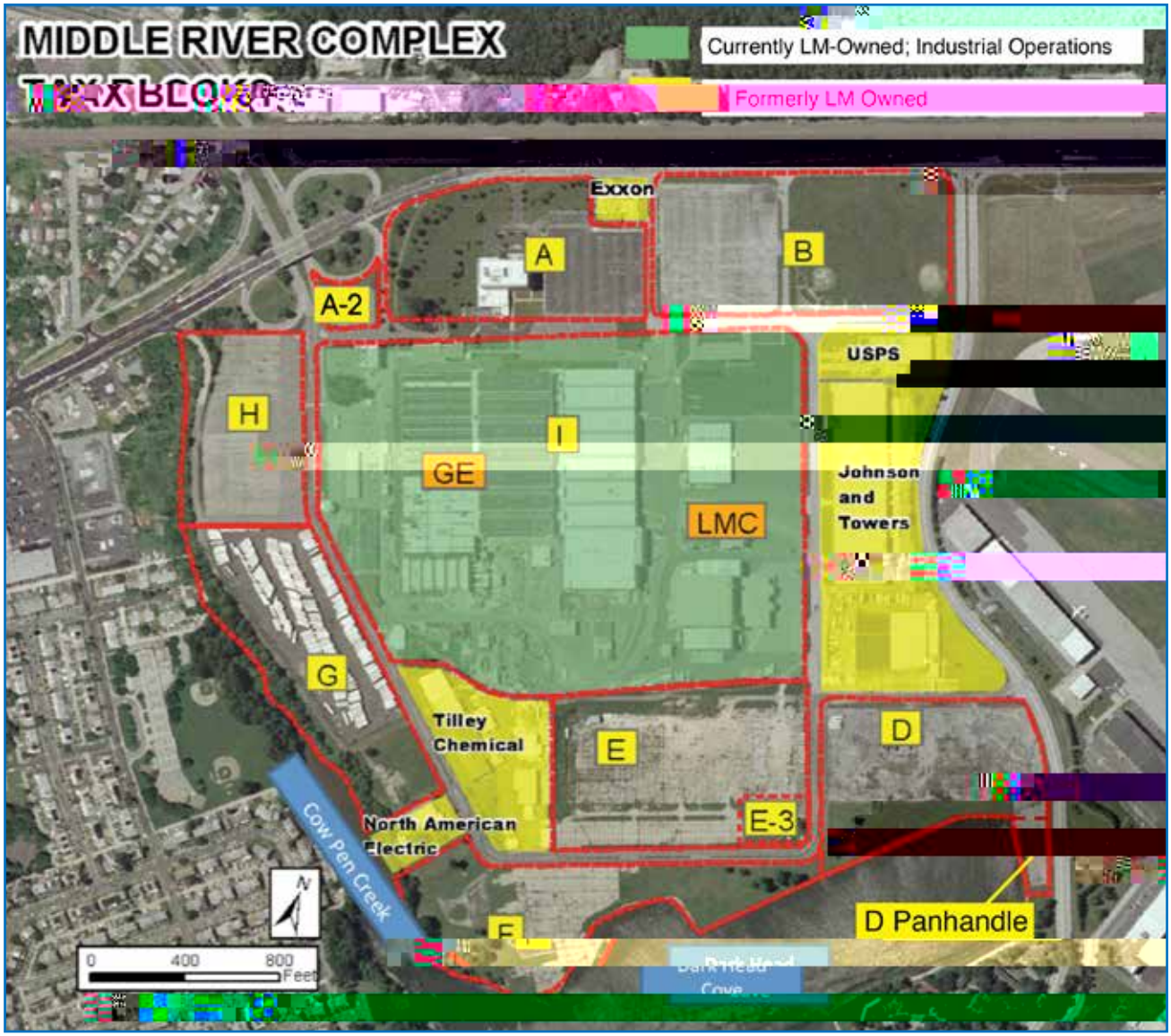

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