

Sediment Cleanup Middle River Complex, 2016-17

Season 1
Project Photo Tour
Updated November 15, 2016



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LOCKHEED MARTIN 

Sediment Cleanup - Season 1

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- **Lockheed Martin is continuing its cleanup work to remove metals and chemicals from legacy manufacturing from Dark Head Cove to protect human health and the environment.**
- **Contaminated sediments in Dark Head Cove (or Martin's Lagoon) and the lower portion of Cow Pen Creek will be dredged during Season 1 between October 17, 2016 and February 14, 2017.**
- **Working during this time will conclude prior to fish spawning season.**
- **Cleanup will also include an excavation of Cow Pen Creek, restoration of the creek and banks, placement of a clean sand layer, and adding protective carbon granules onto certain areas in the remaining sediment of Dark Head Cove.**
- **Lockheed Martin is using special dredging equipment and methods approved by the Maryland Department of the Environment and the U.S. Environmental Protection Agency.**
- **Lockheed Martin will provide photo tours throughout the cleanup process to keep residents updated on our progress.**

Work began on land, protecting against erosion and sediment release by installing fabric on chain-link fencing, creating “super silt fencing.”



Other methods used to protect work areas included installing temporary asphalt berms, filter logs, and plastic sheeting anchored with rocks to protect rainwater outlets.



In concrete work areas, silt fencing and filter logs prevent sediments from moving outside the area.



Preparation for work included construction of an entrance for construction vehicles and installation of a mobile water treatment system.



Sediment mixing bins were constructed using Jersey barriers and multiple layers of plastic sheeting.



A base-layer of gravel is spread over the plastic sheeting for protection.



The construction area haul road is constructed of protective plastic sheeting covered by gravel. All of this will be removed at project completion.



A push-boat delivered the dredge barge, and the barge was anchored in place.



After delivery of dredging equipment, barges and cranes, a silt curtain was installed across the width of Dark Head Creek.



Equipment is moved around the Cove using a 500 HP push-boat. Sediments are dredged using an “environmental bucket” that closes before lifting, limiting sediment release into the waterway. The bucket has straight closure surfaces that allow water to drain while retaining sediment.



Sediment dredging began at the lower portion of Cow Pen Creek; sediments are loaded onto a barge, where sediments are stored, for transport to the offloading area.



The environmental bucket is draining water but retaining sediment.

The push-boat moves the barge into position for offloading sediments.



Using an apron to contain spillage, dredged sediments are offloaded from the barge. Haul trucks are positioned for sediment transfer at the spill apron.



Dredged sediments are removed from the barge with a clam shell bucket and transferred to a haul truck.



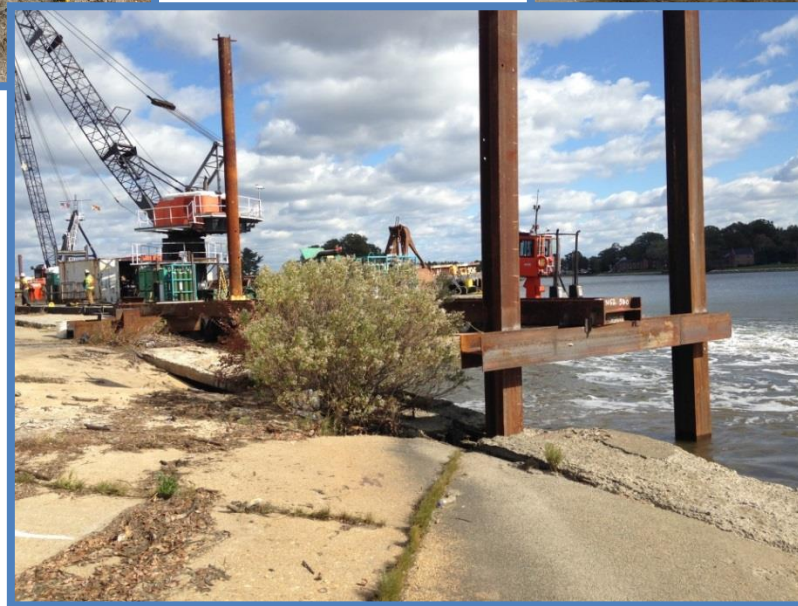
Sediments are then transferred into the mixing bins where materials like Calciment are added to dry the sediment to meet disposal requirements.



Once the sediments meet disposal requirements, they are transferred to lined trucks and hauled off-site for disposal at licensed facilities.



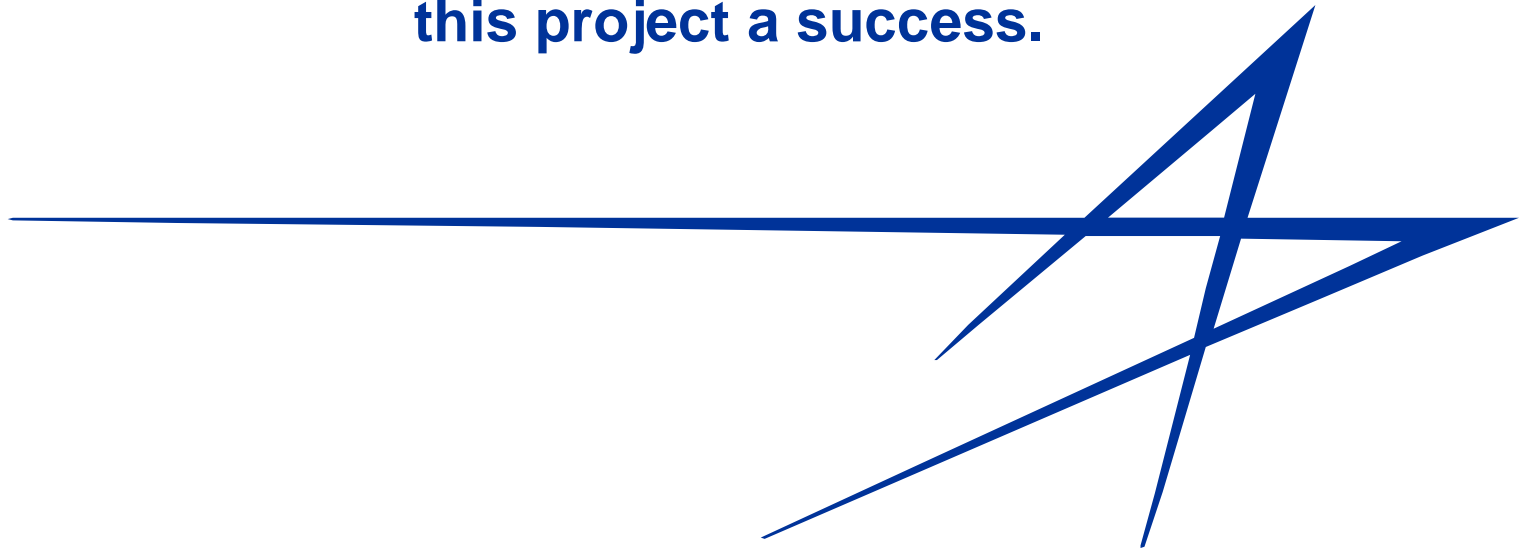
Another aspect of the project is the upgrading of the bulkhead with new sheet piles. Sheet piles are shown on the barge. Other pictures show a temporary structure supporting construction of the sheet pile wall.



A crane positioned the sheet piles, and a vibrating hammer drove them to depth.



Lockheed Martin wishes to thank the contractors, the regulators and permitting authorities, and the community for its cooperation in helping make this project a success.



**For questions, comments or concerns please contact:
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