

# NEW-INDY CATAWBA BATHYMETRIC SURVEY

New-Indy Catawba conducted multiple bathymetric surveys on its Aerated Stabilization Basin (ASB) recently and the results are conveyed in question-and-answer form below. The surveys allow New-Indy to measure the depth of water in the ASB as well as the underwater features of the basin while the mill continues its ongoing solids removal activity.

**1. What is a bathymetric survey?**

A bathymetric survey is the measurement of the depths of water bodies and mapping of the underwater features of a body of water from the water surface.

**2. What method was used to conduct two recent surveys at New-Indy Catawba?**

Historically, surveyors traveled across the Aerated Stabilization Basin (ASB) by boat in rows using a rod to measure depth at multiple locations. Data points were logged and overlaid into mapping software that provided depth modeling of the basin. The ASB bathymetric survey is conducted with a sonar instrument mounted on a small, manned boat that is navigated along rows throughout the basin. The sonar data is recorded on a data collector and overlaid in CAD software to create a surface contour of the underwater features. From those contours, estimates of accumulated solids are determined.

**3. When were bathymetric surveys conducted at New-Indy Catawba?**

Bathymetric surveys were completed in the ASB in December 2021 using a manned boat outfitted with sonar, and another one was completed in August of 2022.

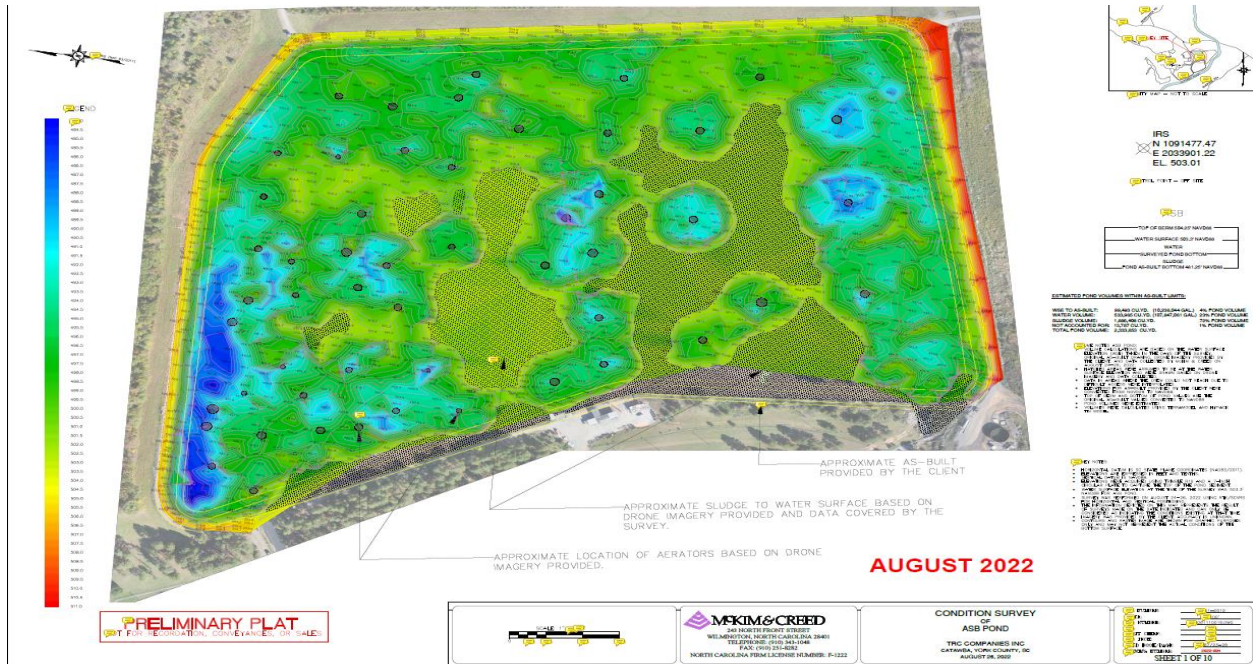
**4. What did the results of the ASB bathymetric survey say?**

The difference in bathymetric data from the December 2021 study to the August 2022 study indicated that sludge accumulation in the ASB was reduced by approximately 96,207 cubic yards.

**5. What is the current average depth of the ASB and where is that relative to regulatory standards?**

As of August 2022, the average depth of water in the ASB in open water areas is 6 feet. When considering the entire surface area of the ASB, including the vegetative islands, the overall average depth of water as of August 2022 was 4.8 ft. There are no regulatory standards for the depth of an ASB, but New-Indy is complying with the South Carolina's Department of Health & Environmental Control's [S.C. DHEC] request to reach 6 feet of freeboard across the basin by 2026. Wastewater treatment systems are designed by taking many factors into account to determine the appropriate volume needed in an ASB. Safety factors are then applied to account for potential variations in real life conditions. The final design and construction volume takes modeling parameters and potential variations into account to produce a system that will provide sufficient treatment under a variety of conditions.

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**The volume of water in the ASB increased by 18 million gallons between December 2021-August 2022.**

- 6. How much sludge has been removed from the ASB to date?**  
 From September 2021 through 2022, approximately 96,820 net dry tons of sludge was removed. The net sludge removed from the ASB in 2022 was 35,942 dry tons.
- 7. How much water volume was gained because of the solids removal and why is that important?**  
 As of August 2022, the volume of water in the ASB increased by approximately 18 million gallons since the December 2021 bathymetric survey was conducted. Increasing the volume of water is important because it directly increases the time for retaining the wastewater in the basin. Increased retention time in the ASB allows for more complete digestion of the organics in the wastewater, thus reducing the biological oxygen demand (BOD) in the ASB effluent. This lowered BOD concentration reduces the potential for hydrogen sulfide generation in the #1 Holding Pond as there will be less organics for the bacteria to feed on in this pond.
- 8. Why wasn't a bathymetric survey conducted on the other lagoons on the property?**  
 Bathymetric surveys were performed on the No. 1 Holding Pond and No. 1 Sludge Pond in 2019. Solids are currently being removed from the equalization stabilization (EQ) basin and a final survey of the EQ basin will be conducted via a drone survey utilizing LiDAR in 2023.
- 9. How much more sludge needs to be removed from the ASB to achieve DHEC's requested water depth across the entire lagoon?**  
 As of the August 2022 bathymetric survey, the estimated remaining sludge removal needed to achieve 6 feet of freeboard across the entire ASB was 384,695 cubic yards.
- 10. What is the target date of completion for the additional sludge removal?**  
 S.C. DHEC has ordered New-Indy to complete this activity by 2026, and New-Indy estimates that it will do so without any difficulty, assuming conditions remain consistent with current situation.