Eastport Maine Case Study

Eastport, Maine is in Washington County and consists entirely of islands. The total area is 12.1 square miles of which 3.7 is land and the remainder of 8.4 is water. The largest island, Moose Island, is surrounded by Cobscook and Passamaquoddy Bays. The island connects to the mainland by a causeway at the end of a peninsular south of Perry, Maine. The year round ice free harbor established a fishing community as early as 1600 and in later years sardine fishing and canning were the leading business until the early 1930. During the Embargo Act period of 1807-1809 it was a smuggling center and was occupied by the British during the war of 1814-1818. The city was incorporated in 1798. Today Eastport is a tourist destination. Campobello Island, Canada famous for Franklin Roosevelt’s retreat can be viewed across the bay.

Eastport’s Wastewater Treatment Plant

The Wastewater Treatment Plant processes approximately 122 million (122,000,000) gallons of wastewater and 172 thousand (172,000) gallons of septic waste. The wastewater treatment process generates approximately 2 million two-hundred-thousand (2,200,000) gallons of bio-solids that are composted into approximately one-thousand two-hundred (1,200) yards of compost which are either sold or given away. The plant serves approximately 900 users.

Project Highlight

The city has an aging infrastructure and declining population which creates a challenging situation for the residents to keep up with the increased regulatory requirements placed on the primary wastewater treatment plant which was build in 1991. In 2009 the Environmental Protection Agency required the wastewater plant to meet a daily maximum Biochemical Oxygen Demand of 203 mg/L in the new wastewater discharge permit. The plant exceeded the limit from May until September. The City of Eastport was issued a Notice of Violation (NOV) with the Department of Environmental Protection in September for failure to meet this requirement during 2009.
RCAP assisted the city in evaluating the process and implement corrective actions that would eliminate the ongoing violations. The evaluation had to consider the use of chemical addition as an option. RCAP Solutions contacted the DEP and outlined an action plan for the polymer addition project. RCAP assisted in the selection of the polymer day tank and pump on the left. A float system on the right was placed in the where the influent enters the plant and the flow splits before entering the clarifiers. This location provided the best mixing for the polymer application and the efficient use of chemical.

This picture shows the polymer tank and pump and the place of application of polymer into the system. The float (on the right) allows the polymer pump to operate only when the plant has flow.

RCAP identified additional reporting errors and process issues while evaluating the entire plants operations. One primary concern was the solid concentration in the chlorination contact basins RCAP recommended more frequent cleaning of the chlorine tanks to reduce the demand from the solids in each tank. The picture below shows the right side has been cleaned, the left sides shows the high solids concentration in the tank which resulted in high chlorine use.
By increasing the frequency of cleaning of the chlorination contact basins Eastport will save money on chlorination and have improved fecal coliform testing results. This cost saving will help offset the new treatment expense of polymer addition.

Technical assistance from RCAP included:

- Coordinating a sampling event for wet testing and analytical chemistry for required compliance.
- Reviewing the sampling events data with staff and assisted with filing of the report results to the Department of Environmental Protection.
- Recommending increased cleaning and maintenance of the chlorine contact basins to reduce chemical use and coliform violations.
- Assisting with the filing of past mercury testing results for required compliance.
- Providing technical support on fecal coliform laboratory testing procedures.

**Significant Beneficial Impact(s)**

The community will be able to meet the new permit requirements and will gain a cost savings on the chlorine for disinfection by implementing a sound basic a maintenance program. Provided the staff maintain a current sampling and reporting program the community won’t incur any unnecessary sampling and testing expense.

**Quotes:**

Eastport City Manager: Jonathan Southern:

“The City of Eastport would like to take this opportunity to express our thanks and support for the services provided to us by RCAP Solutions. RCAP Solutions Community Development Specialist evaluated the process and implemented corrective actions that eliminate the ongoing violations. With the help of your Community Development Specialist, the City waste water treatment plant will now meet the licensing requirements of the BOD daily concentration of 203 mg/L.”