



USACE FY20 Water Quality Data

20 Louisville District Reservoirs

Relevant Services

Planning, Permitting and Compliance
Surface Water Sampling
Quality Control
GIS Mapping

Challenges

Expedited field activities
Rugged terrain and sampling conditions
Daily field reporting
Weather and Facility Closure Limitations
COVID Impacted scheduling

Contract Number

W912QR20P0026

OVERVIEW

NovelE conducted surface water sampling to support the Water Quality Team objectives of the Louisville District Water Quality Program. NovelE was contracted by the U.S. Army Corps of Engineers (USACE), Louisville District, to complete work activities consisting of four major components including scheduling, aquatic physical/chemical/biological data and sample collection, quality control, and reporting at 20 District reservoirs spanning from Ohio to Kentucky to Indiana. This was a competitive Small Business Award to NovelE as Prime Contractor.

Sample collection included 71,540 data readings across 84,360 acres of reservoirs along with 2,626 samples collected for laboratory analysis and habitat assessment on all 20 reservoirs. At reservoir sampling locations, NovelE measured water temperature, pH, specific conductivity, DO, turbidity, and ORP at one-foot increments beginning at the surface (0') to reservoir bottoms of up to 90 feet. The water chemistry sample depth selection process was determined by characteristics of the thermocline. The thermocline is the portion of the water column through which water temperature changes greater

than or equal to (\geq) 1.7 degrees Celsius ($^{\circ}\text{C}$) over a 5 foot depth or $\geq 0.34^{\circ}\text{C}$ over a 1 foot depth. The ability to identify the presence and extent of the thermocline throughout the water column was imperative to proper sample collection. Water chemistry samples at reservoir stations were collected at three depths: one above the thermocline (AT), one within the thermocline (MT), and one below the thermocline (BT).

This project was awarded in March 2020 during an emerging pandemic making reservoir access, equipment procurement and shipping of samples challenging. Even so, the Louisville District called this an “excellent sampling season!”



Kentucky reservoirs were our favorite!