Environmental & Process Engineering

Optimizing performance while reducing lifecycle costs

Concurrent Technologies Corporation (CTC) is supporting the Department of War (DoW) and commercial operations in efforts to keep pace with changing business and regulatory environments and technology advances. For instance, facilities manufacturing and supplying conventional munitions, propellants and explosives have unique capabilities and are essential to national security. CTC works with these facilities to maintain their ability to meet drawdown, training and surge condition needs.

Energy and Environment

CTC partners with clients to provide the best advanced energy and environment solutions. We offer extensive Environmental & Process Engineering expertise, including, but not limited to:

- Environmental Impact Minimization
- Efficient & Effective Designs
- Technology Validation and Transition
- Process Modernization & Optimization
- Design to Production Methodology

CTC *Concurrent Technologies Corporation*

CTC's quality management systems are certified to the ISO 9001:2015 (Quality) and 14001:2015 (Environmental) standards, and to AS9100D:2016 (Quality-Aerospace-Related Products).

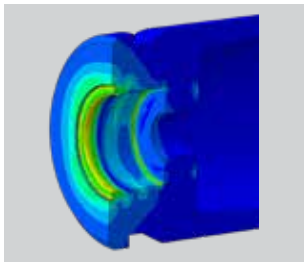
Environmental & Process Engineering

Environmental Impact Minimization

A technology prove-out resulted in removing 99% of nitrates in wastewaters being discharged into a river used for public recreation.

Developed and validated a treatment technology for a 1,000,000 gallon per day nitrate-laden industrial wastewater stream from an industrial manufacturing facility. We developed a counter-current ion exchange technology, featuring a specialized resin, for removing problematic nitrates from wastewaters. The pilot-scale achieved a nitrate removal rate of 99.6%. We worked with the customer to develop a technology transition plan for full-scale technology implementation.

Efficient & Effective Designs



To mitigate environmental issues and supply chain risks, CTC established alternative case designs for the production of small caliber ammunition.

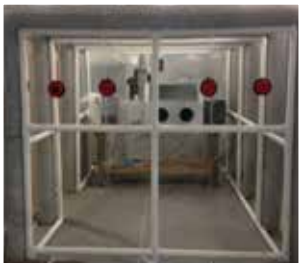
Identified and assessed alternative small caliber ammunition case designs using different manufacturing techniques. Through software modeling, CTC identified a technology that allows cases to be customized by application and performance. The technology eliminates process steps and may require less energy and resources compared to the manufacture of conventional cases. This alternative case design also reduces case weight, which lightens a Warfighter's backpack. Mechanical testing of the prototype is complete, and cost-effectiveness is being determined prior to performing field assessments.

Technology Validation and Transition

Validating technologies to advance maturation and transition

Identified and validated a non-chromium alternative to the sodium dichromate anodizing sealer used by the Air Force for corrosion and wear protection during maintenance, repair and overhaul applications. Our evaluation provided performance, cost and environmental impact data to support the Air Force's technology transition process.

Process Modernization & Optimization



Providing technologies to reduce environmental impacts and improve worker safety

Optimizing and implementing an ammonia vapor test, that replaces dangerous mercurous nitrate testing, to evaluate the susceptibility of stress corrosion cracking, a material failure. Ammonia vapor testing will ensure that defects in components/parts will not occur during extended storage. This particular customer produces over 1,000,000,000 components/parts per year, and deems defects and failures unacceptable. Additionally, ammonia vapor testing reduces hazardous waste costs and eliminates the use of unsafe mercury.

Core Capabilities

- CTC scientists and engineers respond to challenges by delivering high-value solutions to operational and environmental needs through modeling and simulation, reverse engineering and sustainment support.
- CTC's Design-to-Production approach examines the entire process/system life cycle, from environmental concerns to producibility, not solely the end product. This approach is deeply detailed and proven to provide faster, more effective implementation of solutions than the traditional trial-and-error approach.
  - Benefits of this disciplined approach include sustaining and improving process capabilities, manufacturing efficiencies, product performance, environmental and technology transition while reducing costs and environmental impacts. Contact us to learn more.

Contact

Scott Kenner, Technical Senior Director, 814-248-7769, env-process-eng@ctc.com

© 2026. Concurrent Technologies Corporation. All Rights Reserved.