

## Engineering and Design Services

CAPACCIO's highly qualified and skilled engineering professionals provide technical solutions to meet your engineering and design needs. From industrial process modifications to water/wastewater/ groundwater treatment and conservation; air pollution control system evaluation and design; and soil remediation systems, we design cost effective, environmentally sustainable solutions that work because our engineers come from industry and understand the needs and concerns of the end users.

### BENEFITS

- Cost-effective design solutions
- Improved energy efficiency resulting in overall cost savings
- Additional water conservation resulting in reduced water and sewer costs

### SERVICES

#### Air Quality and Control

CAPACCIO will work with you to create a plan that identifies the applicability of air regulations to your facility and its processes. We'll determine how well your facility is demonstrating compliance and recommend what changes, if any, should be implemented. While our approach is to assist our clients in achieving and maintaining compliance, CAPACCIO also has extensive experience working with regulators and can guide you through the process.

#### AST and UST Tank Services

CAPACCIO has inspected, evaluated compliance, provided testing and corrective actions for aboveground and underground storage tanks for numerous clients. As third party inspectors, our professional engineers work with the local and state fire officials to obtain the necessary permits and can obtain cost estimates and oversee tank removal in the event that a removal, excavation, or disposal needs to occur.

#### Computer Aided Drafting and Design

Are you in need of Computer Aided Drafting and Design (CADD) services, but do not have the resources in house? Perhaps you want to take your design plans to the next level? Our talented designers can create plans depicting accurate information modeling in a cost-effective and timely manner. Whether it is scanning and converting old hard copy plans to CADD, updating

previously archived CADD geometry, or even making or scanning multiple hard copies to Adobe for archiving, we can take on small, large, or complicated jobs.

#### Construction and Real Estate Development

Environmental regulations require specific permits to construct, expand or renovate operations. Many aspects of the facility design, construction and equipment installation require regulatory agency approval prior to construction as well. CAPACCIO's environmental engineers, scientists and regulatory specialists have extensive experience in facility and manufacturing processes and can work with you and your construction managers to ensure the site development and facility design address environmental specifications and permitting requirements from the very beginning to avoid time consuming and costly delays.

Once a facility / process is readied for start up, regulatory agencies often require written plans, training and monitoring to ensure it will operate in a responsible manner. CAPACCIO also offers environmental compliance services to ensure your facility meets these requirements.

#### Facility Commissioning / Decommissioning and Relocation

To construct a brand new facility or successfully relocate operations from an existing facility to a new one requires the integration of environmental factors as soon as the project begins. From the decommissioning of an existing facility to the site selection for a new location, CAPACCIO has the expertise to deliver critical environmental services to your project design teams. Our qualified staff provides full-service assistance by preparing the necessary environmental permits, assisting with the environmental design, and providing start-up and training services for your team.

## Greenhouse Gas (GHG)

Concern over global warming effects and the international, federal, and state movement to implement rules designed to track, curtail, and control GHG emissions, has produced a groundswell of action at corporate levels. Industry is also seeing increased pressure from customers and investors to disclose emissions and actions including reporting to the Global Reporting Initiative (GRI) and the Carbon Disclosure Project (CDP). CAPACCIO's air quality engineers understand these drivers and are well-versed in designing and implementing GHG inventories and reporting strategies. Our long history of assisting industrial and commercial clients with estimating and tracking their emissions, will ensure your systems are efficient and your company remains in compliance.

## Process Safety Management/Risk Management

Chemicals have the ability to react when exposed to other chemicals or certain physical conditions. When chemical reactions are not properly managed, they can lead to harmful, or even catastrophic consequences, such as toxic fumes, fires, and explosions. Large facilities are not the only ones at risk. Whether you have 900 pounds (lbs.) or 90,000 lbs. of ammonia, it is important that you assess risk and address any associated with the process. Our engineers can conduct a process safety management/risk management assessment to help you minimize your risk.

## LSP, Site Assessment and Remediation

Responsiveness, flexibility and innovation are what make remediation projects successful. From providing rapid response to a spill or overseeing a clean up, CAPACCIO knows that responding to your needs is the foundation of good consulting. We also know that clean up should not be limited to off-site disposal of soil or conventional groundwater treatment systems. There are many treatment technologies and ways to apply them that have become progressively successful in cleaning up sites. At CAPACCIO, we objectively review all available technologies and select what is best for our clients.

## SPCC Plans

A Spill Prevention, Control and Countermeasures (SPCC) plan must be prepared by all facilities that store greater than 1320 gallons of oil on-site. The plan is used to help prevent any discharge of oil into

navigable waters or adjoining shorelines. The main objective behind the SPCC regulation is prevention as opposed to after-the-fact reactive measures. CAPACCIO's registered Professional Engineers (PE) have vast experience creating SPCC plans for a variety of industries including providing the required inspections and testing through to final certification of the plan.

## Water and Wastewater Design

The design and operation of sustainable water and wastewater systems in today's economy is a challenge. The design process requires attention to specific needs including ease of operation, energy conservation and overall design value. A variety of challenges like space constraints and difficult-to-treat waste streams are commonly faced. CAPACCIO's engineering team understands these challenges and takes pride in developing creative, cost-effective design solutions and offering value-added alternatives to recycle water, reduce waste and improve energy efficiency. Whether we're conducting a wastewater characterization, pilot testing, system design, construction or operational optimization, our team will involve client representatives and guide them through the process.



## SERVICES

### Engineering Design

- Conceptual design
- Feasibility studies
- Preliminary design
- Pilot system testing
- Final design and specifications
- Process and instrumentation diagrams

### Engineering Evaluations

- Existing system evaluations
- Peer review
- System optimization studies
- Pipeline studies and investigations
- Existing conditions plans

### Bidding Assistance

- Invitation for bid
- Bid form preparation
- Opinion of probable cost
- Bid review
- Reference checks
- Recommendation of award

### Construction Services

- Construction scheduling
- Shop drawing review
- Construction meetings
- Project scheduling
- Regulatory agency interaction
- Start-up

### Permitting and Regulatory Assistance

- Permit application preparation
- Regulatory agency interaction
- Engineering reports
- Spill, Prevention, Control and Countermeasures plans
- Staffing plans
- System grading reports

### Operational Assistance

- Operation and maintenance manuals
- Inspection checklists
- Licensed operator assistance
- System troubleshooting
- Compliance evaluations

## Training

- MassDEP-approved Wastewater Treatment Operator TCH courses
- Oil SPCC
- Stormwater pollution prevention
- Operation and maintenance

## Tank Inspections

- Aboveground storage tank inspections
- Underground storage tank
- Third-party inspections

## QUALIFICATIONS

At CAPACCIO, we take pride in our experienced engineering staff, our work, and most importantly, relationships with our clients.

Our staff is highly trained and educated with work experience in the commercial, industrial and public sectors, which brings a broad range of engineering experience to our diverse staff and your projects. Let our team help you meet your production and compliance needs, while minimizing your environmental impacts.

Our professionals are:

- Registered Professional Engineers
- Licensed Wastewater Treatment Operators
- Licensed Drinking Water Operators
- OSHA HAZWOPER Certified
- Licensed Site Professionals
- Professional Geologists



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