



CTL ENGINEERING HAS BECOME A LEADER IN PROVIDING DEVELOPMENT, PERMITTING, REGULATORY COMPLIANCE, GEOTECHNICAL, AND CONSTRUCTION SERVICES TO THE RAPIDLY EXPANDING NATURAL GAS EXTRACTION INDUSTRY

CTL is involved in over 150,000 acres of new gas field development which include hundreds of new extraction wells, gathering lines and compressor stations.

Most of CTL's involvement has been with development of the Marcellus and Utica Shale Formations in West Virginia, Ohio and Pennsylvania. Marcellus and Utica Shales are sedimentary rock formations that contain hydrocarbons including natural gas in fractures and the pore spaces between individual mineral grains. These hydrocarbons are chemically absorbed into organic matter within the shale. New developments in drilling technology, along with higher wellhead prices, have made these formations an important natural gas resource. Critical environmental impact questions have been raised however, and because of this many of the Appalachian states have been cautious and stringent about granting permits.

CTL recognizes that the oil and gas industry is extremely competitive. CTL's top priority is the security and total confidentiality of each and every client. This confidentiality allows CTL to provide professional services for multiple producers at the same time. We have a good working relationship with state and local regulatory agencies and we understand their regulations and requirements.

UPSTREAM AND MIDSTREAM SERVICES:

- Wetland Delineations
- Environmental Site Assessments (Phase I and II)
- Environmental Impact Statements
- Bathymetric Studies
- Bat and Endangered Species Studies
- Civil Site Design
 - Well Pad Sites, Access Roads, Soil and Erosion Control Plans, Stormwater Management, Surface Water Intake Structures, Compressor Station Sites, Gathering Line Site and Cross-Sections
- GIS
 - Regional Infrastructure and Total Project Coordination and Integration
- Survey
 - Property Surveying, Site Mapping, Layout and Construction Controls

PERMITTING:

- Horizontal and Vertical Well Permits
- Pipeline Permits
- Impoundments
- All Nationwide 12 Permits
- Agency Consultations USFWS, SHPO, Land and Stream, DNR/DEP
- DOH Permits
- Site Control and Disposal Plan
- General Water Pollution Permits
- SPPC Plans
- ESCGP-1 Erosion and Sedimentation Control General Permit
- USACE/PADEP Water Construction and Encroachment Permits
- Hydrostatic Testing Permits
- Water Management Plan
- River Basin Commissions - Delaware and Susquehanna
- Water Extraction Permits - Surface Water

GEOTECHNICAL:

- Site Development Explorations and Evaluations
- Post Development Failure/Slip Evaluations, Repair Recommendations, and Design
- Access Roads Subgrade Evaluation and Stabilization Design
- Foundation Recommendations and Design

CONSTRUCTION SERVICES:

- Inspection and Testing
- SandE Compliance to Design Specifications