KILDUFF

UNDERGROUND ENGINEERING ,INC.

1 Globe Court
Red Bank, NJ 07701

535 16th Street, Ste. 620
Denver, CO 80202

www.kilduffunderground.com

About KUE

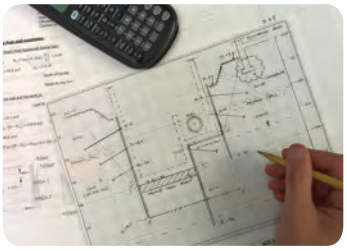
Kilduff Underground Engineering (KUE) was established in 2014 by Todd Kilduff, PE, to support contractors, A/E firms and owners nationwide. The firm specializes in underground design with a specific focus in the design, inspection and rehabilitation of tunnels with sizes ranging from 12-inches up to 60-feet in diameter. KUE is capable of designing tunnels utilizing all available technologies to excavate and support the proposed opening. Additionally, the firm provides standard geotechnical design services, deep excavation support designs (SOE), claims support, construction management services, as well as designs, installs and monitors geotechnical instrumentation.

KUE's strength lies in it's ability to be equally familiar with both the design and construction aspects of underground projects. Our staffs' intimate understanding of both sides of the industry allows for clean and consistent deliverables that are vetted through an extensive QA/QC review. With over 150 years of combined experience among it's senior staff, KUE is able to offer a complete service to its clients that is unmatched in the industry.

With offices in Denver, CO and Red Bank, NJ, KUE consists of a technical staff of five PE's, one PG, three EIT's, a PLS and an ILS (Intern Land Surveyor). The firm is currently licensed in CO, TX, OR, ID, WY, MT, UT, MI, VA, WV, NY, NJ, PA, DE, FL and MA, is MBE/DBE and SBE certified and provides services throughout North America.

SBE CERTIFIED

MBE CERTIFIED



DESIGN SERVICES

FIELD SERVICES

COST & MANAGEMENT

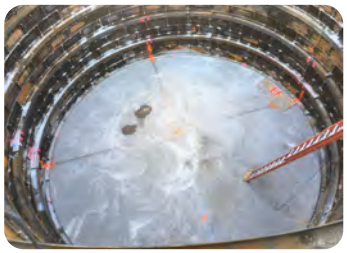
CLAIMS ANALYSIS

Support of Excavation

KUE has extensive experience in regard to the construction and design of excavation support systems. Each project requires its own type of support structure, and the firm's senior staff have decades of on-the-project experience that lends itself to a complete understanding of the excavation utilizations and structural properties of each available system. The firm specializes in a number of methods that have been in practice for decades, as well as new technologies.

Edison Pump Station, NJ

SAWS W-6 Upper Segment C, TX



56th & Picadilly, CO

Conduit 16, CO

DESIGN SERVICES

- Design Calculations
- Numerical Modeling
- Shop Drawings
- Instrumentation & Monitoring
- Load Testing
- Construction Oversight

EXCAVATION SUPPORT METHODS

- Soldier Piles & Lagging
- Sheeted Excavations
- Braced Excavations
- Secant / Tangent Pile Excavations
- Jet Grout Shafts
- MSE Walls
- Tie Back Walls
- Diaphram Walls

KEY PROJECTS

'20 SAWS W-6 Upper Segment C - Houston, TX
Design of 8 Soldier Pile SOE Systems

'19 Conduit 16 Highway 58 Shafts - Golden, CO
Design of multiple 40' x 16' shafts, 30' to 55' deep

'16 Edison Pump Station Upgrades - Edison, NJ
55' Deep Excavation w/ Sheeting and Tie-Backs

'13 7-Line Extension - New York, NY
Design of 40' x 40' Shaft - 100' deep

'19 9th Avenue Storm & Sewer - Brooklyn, NY
Design of 3 shafts for installation of a 42" RCP Sanitary Sewer

'18 20th Avenue - Queens, NY
Design of Soldier Pile SOE w. Steel Bulkhead

'16 NYCDEP Gowanus Facility Upgrades - Brooklyn, NY
Design of 30' OD MTBM Launch Shaft

'19 56th & Picadilly - Denver, CO
Design of two Rib and Liner Plate SOE Systems

'17 WTP Canal - El Paso, TX
Design of 35' x 29' Liner Plate SOE System

'15 Tarrytown Force Main - Tarrytown, NY
Design of Trench Excavation Support

Large Tunnels

KUE senior staff have over 130 years of combined experience in the design and construction of large diameter tunnels. Our staff are active members of the Underground Construction Association (UCA), the Society of Mining Engineers (SME) and are also members of the International Society of Explosive Engineers (ISEE). KUE staff have authored several publications on the topic of large diameter tunnel construction and the geological mapping of rock throughout North America.

On the Construction side, KUE senior staff have experience working for contractors specializing in tunnel construction and have managed tunneling contracts ranging in diameter from 8 to 58-feet with contract values from $5M to $65M. Our senior staff have extensive experience constructing various means and methods of tunnel excavation and tunnel support systems.

On the design side, KUE has extensive experience in ground characterization and predicting ground behavior with the performance of proposed tunneling methodologies in mind. The firm has designed tunnel support systems utilizing rock bolts, shotcrete, steel sets and cast-in-place concrete linings.

PATH Cross-Passage, NJ

CDOT Twin Tunnels, CO

NYCT 7-Line Extension, NYC

North Temple Square Tunnel, UT

DESIGN SERVICES

- Pre-Bid Planning
- Blast Plans & Vibrations
- Initial Support Systems
- Ground Behavior Prediction
- Settlement Analysis
- Schedule & Costing

KEY PROJECTS

White Sands Tunnel 7 Extension and Portal Structure - Alamogordo, NM **'21**
Mapleton Trail Lateral Canal Trail Phase 3 - Spanish Fork, UT **'21**
Port Authority Trans-Hudson, PATH Crosspassage Tunnel - Jersey City, NJ **'21**
San Antonio Water Systems, W-6 Upper Segment - San Antonio, TX **'21**
Church of Jesus Christ of Latter-day Saints, Temple Square Tunnel Renovations - Salt Lake City, UT **'21**
Undisclosed Owner, Lady Washington Mine Rehabilitation - Tuolumne, CA **'20**
SFPUC, Hetch Hetchy Mountain Tunnel Inspection & Rehabilitation - Moccasin, CA **'19**
Colorado Springs Utilities, Stanley Canyon Tunnel Rehabilitation - Colorado Springs, CO **'16**
CDOT Twin Tunnels East & Westbound - Idaho Springs, CO **'14**

Trenchless Technologies

As a trenchless design firm, KUE has vast experience designing, estimating and managing Trenchless Projects all over the world. Our Microtunneling expert, Paul Wilkinson, was the former General Manager of EURO Iseki and has over 35 years experience managing microtunnel projects and has personally overseen more than 100 KM of Trenchless Tunnel Construction in over 35 countries with installation diameters ranging from 250 mm up to 3000 mm. With the support of Mr. Wilkinson overseeing all Microtunneling operations, KUE stands alone as an industry leader in Microtunneling in the North American market.

As a team, KUE has been involved in the design and/or direct construction of over 300 trenchless projects utilizing varying methodologies. The firm has also been involved in over a dozen claims providing analysis and expert testimony. KUE senior staff are current members of NASTT, and have authored several papers on various topics within Trenchless Design & Construction.

Trampas Dam, CA

40th & Blake, CO

30th Street Rock Tunnel, NYC

Catskill Aqueduct, NY

Tree Farm Hammer Bore, CO

Geotechnical Instrumentation & Monitoring

KUE's Instrumentation department has vast experience in the planning, installation, implementation, interpretation and reporting of instrumentation programs for underground projects. Our firm utilizes various types of instruments including observation wells, vibrating wire piezometers, inclinometers, extensometers, convergence, geophone vibration sensors and survey prisms measured by traditional surveying methods and/or with an automated mechanical total station (AMTS). With an in-house PLS, KUE has over 70 years of combined experience managing instrumentation programs for trenchless construction and the firm is capable of providing a turnkey service from design to implementation for geotechnical instrumentation programs.

KEY PROJECTS

- **'21** White Sands Tunnel 7 Extension and Portal Structure - Alamogordo, NM
- **'21** PATH Crosspassage Tunnel - Jersey City, NJ
- **'21** Thornton WP1 - Adams County to Weld County, CO
- **'21** Cherry Creek Interceptor - Denver, CO
- **'20** 39th Ave Greenway - Park Hill Phase VI - Denver, CO
- **'20** Central 70 - Denver, CO
- **'18** Globeville 3 Outfall Project - Denver, CO
- **'18** Canal Interceptor Project - El Paso, TX
- **'18** Conduit 16 Raw Water Pipeline - Golden-Lakewood, CO
- **'18** Little Dry Creek - Westminster, CO

SERVICES PROVIDED

- Instrumentation Plans
- Installation
- Measurement & Reporting
- Settlement
- Lateral Deformation
- Convergence
- Vibration Monitoring

Geotechnical Drilling

Vibration Monitoring

Geotechnical Instrumentation

Construction Monitoring

Geotechnical Engineering

It all starts with the identification and interpretation of ground conditions. KUE senior staff are some of the industry's leading experts in organizing and executing geotechnical explorations and interpreting the data obtained from the field and from the laboratory for both soil and rock. Our engineers are very familiar with drafting Geotechnical Data Reports (GDR), Geotechnical Baseline Reports (GBR) and Geotechnical Design Reports.

Our Staff are familiar with geologic rock mapping and interpreting the geology for initial support systems. We have overseen multiple tunnel projects where we have provided this service along with specification of appropriate initial support and anchor pull testing.

KUE also provides Dewatering Design Services and is experienced in the planning, design and implementation of well point and/or deep well dewatering systems. We have been very successful identifying the ground conditions and implementing appropriately sized systems to achieve target drawdowns and evaluations of implementing dewatering systems.

KEY PROJECTS

- **'21** Westy Extension - Westminster, CO
- **'20** East River Pump Station - Crested Butte, CO
- **'19** Weld County Road 13/34 Intersection Improvements - Mead, CO
- **'18** Adobe Creek Dam - Pueblo, CO
- **'18** Bellvue WTP - Greeley, CO
- **'18** Conduit 16 Replacement Pipeline, Denver Water - Golden, CO

Westy Extension, CO

Weld County Rd 13/34, CO