



# PIPELINE ENGINEERING

## WHY ATWELL?

- Local expertise, national reach
- Industry knowledge
- Dedicated experts and teams
- Full-service resources
- Aggressive, passionate professionals
- Nimble, flexible structure

## CAPABILITIES

- Hydraulic Analysis
- Class studies, HCA/EFRD Analysis
- Pipeline/Pump/Compressor Specifications
- Feasibility, Routing & Mapping
- Alignment Sheets & Mechanical Details
- Pipeline Engineering & Design
- HDDs & Bore Design
- Launchers, Receivers, Valves, M&R Stations & Gate Stations
- Pressure Testing & Commissioning Procedures
- Permitting Assistance
- Structural Engineering
- Bare Steel & Cast Iron Replacement
- 3D Modeling & Design

## MAKING CONNECTIONS WITH CONFIDENCE

Atwell connects the oil and gas market segments through expertise in the engineering, design, operations and maintenance of short and long-range pipeline networks, transmission and distribution systems and gathering systems.

With a specialized office in Pittsburgh leading the firm's national capabilities, the pipeline engineering team can deliver design services to tackle new construction, replacement, relocation and rehab projects in the most demanding of physical and political environments. Designing to DOT 49CFR192, 195 and ASME B31.8 specifications, project expertise includes steel, cast iron and plastic pipelines for oil, gas and liquids such as NGLs, ethane and condensates.

## SOLUTIONS THAT SURPASS

### Consulting Through Complex Crossings

Atwell's Pipeline Engineering team was challenged to secure preliminary desktop routing and propose a right-of-way in support of an 8", 30 mile ethane pipeline, expandable to 20 inches, in Northwest Pennsylvania. The team tested several designs to find land positions that would support the current and future needs. Once procured, HDD design for an 8" diameter, half-inch wall liquid ethane line was prepared to accommodate a river crossing, two active railroads, several state roads and streams. Adequate depths had to be maintained during the drilling phase of this \$70 million project to prevent an inadvertent release.

### Pipeline Planning for Precision & Protection

The engineering team was hired to design a Horizontal Directional Drill incorporating a 20" High Pressure Line, 20" Low Pressure Line, a 12" NGL Line and a 10" Condensate Line in Northeast Ohio. Project constraints included an interstate crossing, nearby environmentally protected areas and land owner limitations. The design called for a drill length of 4,400 linear feet, and four large-diameter pipes drilled within a narrow 75' right-of-way, while still accommodating room for future pipe installations. To prevent the drilled pipes coming into contact with each other, the team staggered the drill profiles next to each other to gain additional clearances, and designed a custom pull-back procedure safely accommodating the design of this \$30 million project.