



Gerard J. Enigk

Current Position

Principal Engineer

Profession

Environmental Science
Mining Engineering

Years' Experience

40+

Education

MS – Environmental Science,
Marshall University, WV
BS – Mining Engineering, The
Pennsylvania State University,
PA

Professional Registrations

PE – WV

Mine Foreman Certification,
WV

OSHA 40-Hour Health &
Safety Training

MSHA Qualified Impoundment
Inspector

West Virginia Department of
Environmental Protection
(WVDEP) Approved Person for
Surface Coal Mine and Quarry
Permits

Summary of Experience

Mr. Enigk is responsible for mine planning, design engineering, and feasibility studies of mine properties both domestically and abroad. He conducts geotechnical evaluations of mining conditions and evaluates mine subsidence associated with mine sites. In addition, he conducts environmental site assessments and evaluates post-closure obligations for mining properties.

He has:

- > Completed feasibility studies for coal and non-coal mining ventures, including equipment selection and financial modelling
- > Performed operational and environmental due diligence for mining property ownership changes
- > Evaluated and conducted computer simulation of mine ventilation systems
- > Investigated hundreds of underground coal mine roof failures
- > Managed industrial demolition and site reclamation of coal preparation and base metals processing plants
- > Designed, prepared permits, and conducted feasibility studies for reprocessing and reclamation of coarse and fine coal refuse areas
- > Conducted weekly impoundment monitoring and prepared annual impoundment reports as required by Mine Safety and Health Administration (MSHA)
- > Provided expert witness and technical support services for litigation and adjustment of industrial insurance claims

Specific Projects

- > **Zulia State, Venezuela:** Designed open-cut mine and surface facilities for coal concession
- > **Shanxi Province, China:** Designed facilities and ventilation system for operating longwall coal mine and managed engineering staff
- > **Maras Province, Turkey:** Designed open-cut lignite mine and surface facilities for 260 megawatt (MW) mine-mouth power generation station
- > **Norte de Santander Department, Columbia:** Designed multiple underground coal mines and surface facilities for conversion from traditional mining methods to mechanized mining methods
- > **La Libertad Department, Peru:** Completed site reconnaissance and prepared preliminary mine design for near-vertical underground coal mine resource in remote region
- > **Western Australia:** Designed open-cut, highwall, and underground mine and production systems, and prepared financial evaluations for coal resources



Professional History

2017 – Present

Principal Engineer

Marshall Miller & Associates, Inc.

1994 – 2016

Principal / Manager of Engineering – Mining Advisory Services

Cardno, Inc. (former Marshall Miller & Associates, Inc.)

Coordinate mine design and planning for surface and underground mineral properties and technical evaluations of mining equipment, mining property valuations, reserve assessments, and other mining engineering activities. Evaluate mine reclamation liabilities and estimate associated costs. Complete feasibility studies for coal and non-coal mining ventures, including equipment selection and financial modeling. Perform operational and environmental due diligence for mining property ownership changes. Evaluate mine refuse disposal facilities. Provide expert witness and technical support services for litigation and adjustment of industrial insurance claims. Complete evaluations of underground mining conditions and ground control methods. Prepare geotechnical evaluations and designs for underground mine shafts, slopes, and infrastructure. Conduct operation analysis and evaluations and recommend production cost improvements at operating mines. Design remedial measures, including grouting programs for adverse ground conditions. Evaluate mine subsidence potential. Analyze mine ventilation system performance using computer applications. Supervise and mentor junior members of engineering staff. International assignments include projects in China, Venezuela, Turkey, Peru, Colombia, Australia, and Mexico.

1991 – 1994

President

Metbar, Inc.

Coordinated purchase of existing business from previous owner. Responsible for all supervisory and administrative activities, including purchasing and sales, for post-consumer material recycling facility. Supervised industrial demolition and environmental remediation activities of field crews at industrial sites.

1987 – 1991

Chief Engineer

WVTCOal Sales, Inc.

Responsible for coordinating and/or preparing all mining plans and environmental permits for start-up of coal mining operations for a company operating two deep mines and one surface mining operation. Evaluated the feasibility for coal production from three separate fine coal impoundments. Completed surveying, mapping, and environmental permit revisions for elimination of impoundments and for final reclamation for four coal refuse disposal areas. Supervised impoundment breaching, regrading, and revegetation work. Conducted weekly impoundment inspections. Prepared annual impoundment reports required by MSHA. Developed contract mining agreements and evaluated prospective contract mining companies



1976 – 1987

Mining Engineer/Assistant Mine Foreman

U.S. Steel Mining Company, Inc.

Principal duties included mine planning and design including production, ventilation, haulage, ground control and service systems. Supervised mine ventilation system changes. Completed several hundred time study analyses of underground mining equipment. Coordinated projects such as facility construction and evaluation of new equipment. Investigated over 200 mine roof failures. Supervised design and preparation of underground opening, NPDES, and mine environmental permits.