

CURRENT POSITION: Director of Pennsylvania's Abandoned Mine Reclamation Program

SUMMARY: Thirty (30) years of experience managing the development, design and construction of environmental restoration projects to eliminate hazards and restore abandoned mine lands, including over 27 years of management experience with special skills in:

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| * Engineering design management | * Technical report preparation |
| * Technical instruction | * Alternative design analysis |
| * Technical specification preparation | * Environmental compliance |
| * Permitting and mitigation analysis | * Environmental Assessment (EA) preparation |
| * Cost estimation | * Interpretation and application of |
| * Treatment of acid mine drainage (AMD) | federal and state regulations |
| * Geologic/hydrologic assessments | * Wetland delineation/mitigation |
| * Construction contracting | * Public presentations |
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**PROFESSIONAL
EXPERIENCE:**

**Commonwealth of Pennsylvania, Department of Environmental Resources/Protection, Bureau of
Abandoned Mine Reclamation (04/1985 to Present)**

01/2012 to Present

Bureau Director, Bureau of Abandoned Mine Reclamation, Harrisburg

Direct the activities of the Bureau of Abandoned Mine Reclamation (BAMR) in the Department of Environmental Protection. BAMR administers and oversees the Abandoned Mine Reclamation Program in Pennsylvania with an average annual budget of approximately \$50 million. The bureau is responsible for resolving problems such as mine fires, mine subsidence, dangerous highwalls, open shafts and portals, mining-impacted water supplies and other hazards which have resulted from past coal mining (pre-1977) practices in accordance with requirements established by the federal Office of Surface Mining (OSM) under authority of the Surface Mining Control and Reclamation Act including responding to emergency situations involving abandoned mines.

Direct, through subordinate managers, the activities of professional and technical staff engaged in a variety of duties involving the reclamation of the Commonwealth's abandoned mine lands. Establish goals, objectives, and priorities for the AML program designed to effectively and efficiently reclaim abandoned mine sites throughout Pennsylvania including: developing and implementing policies, procedures, standards and guidelines to manage program activities; reviewing proposed legislation for possible impact on the program; and preparing budgetary requests and federal grant applications. Coordinate program activities with the public, OSM, the National Association of Abandoned Mine Land Programs (NAAML), the Interstate Mining Compact Commission (IMCC), NGOs, the mining industry, and state and local officials.

01/2010 to 01/2012

Environmental Program Manager (District Engineer), BAMR Cambria Office

Manager of the BAMR Cambria Office which included 78 multi-disciplined staff that investigate, develop, design, permit, and construct all types of abandoned mine land (AML) projects in the 32 counties comprising the Cambria District. The office also operated six active mine drainage treatment facilities. Routinely interacted with the public, elected officials, and other governmental officials (both orally and in writing). Conducted public meetings and developed and completed numerous public presentations.

Provided managerial leadership for the completion of over 600 abandoned mine site investigations per year and for the implementation of approximately 277 federally funded AML projects with an annual construction cost of approximately \$20 million.

05/2008 to 01/2010

Acting Chief, Division of Acid Mine Drainage Abatement, BAMR, Harrisburg

Managed a staff of 11 civil engineers and civil engineer managers responsible for the development and design of abandoned mine reclamation projects including bond forfeiture projects. Provided managerial leadership for the completion of the design of 10 federally funded abandoned mined land projects with an estimated reclamation cost of \$6.0 million.

PROFESSIONAL EXPERIENCE: (continued)

09/1987 to 05/2008

Engineering Supervisor/Manager, BAMR Cambria Office

Managed civil and mining engineers, geologists, draftsman designers, responsible for the investigation and development (1987 to 1993) or design (1993 to 2008) of environmental restoration projects with particular emphasis on surface mine reclamation, mine fire extinguishment, subsidence control, backfilling/sealing entries and shafts, mine drainage abatement/treatment, erosion and sedimentation controls, re-mining and reprocessing analysis, revegetation/wildlife habitat creation, public water supply projects, wetland mitigation, passive/active mine drainage treatment, and NEPA compliance.

Provided managerial leadership for the completion of over 500 AML site investigations per year and for the development of approximately 150 federally funded AML projects from 1987 to 1993. Served as the Design Section Chief and provided managerial leadership for the coordination of all design activities for abandoned mine restoration projects designed by the Cambria Office from 1993 to 2008.

04/1985 to 09/1987

Mining Engineer, Department of Environmental Resources, BAMR Ebensburg District Office

Investigated and developed environmental restoration projects with emphasis on subsidence control, reclamation of surface mines, exploratory drilling, underground and refuse fires. Duties included fieldwork, surveying, design and capacity calculations, watershed analysis, specification writing, cost estimation, preparation of drawings and the completion of technical reports.

04/1984 to 09/1985

Design/Mining Engineer, CEDCO Engineering, Luthersburg, PA

Assisted in the design of two deep mine complexes, completed deep and surface coal mine permit applications, prepared technical reports such as reserve analyses and feasibility studies, prepared erosion and sedimentation control plans, designed water treatment facilities and completed property and site surveys as required.

Selected Professional Accomplishments:

- * Currently serving as the President of the National Association of Abandoned Mine Land Programs for 2014-15. Served as Vice President for 2013-14 and as Secretary-Treasurer for 2012-13.
- * Currently serving as the Chairman of the Abandoned Mine Land Committee for 2015 for the Interstate Mining Compact Commission. Served as Vice Chairman of the Abandoned Mine Land Committee for 2014.
- * Served on PA-DEP internal work group to establish an evaluation and approval process for the use of abandoned mine drainage for industrial uses including natural gas extraction (2010-2012).
- * Managed the transfer of the Federal Office of Surface Mining's AML Emergency Program to Pennsylvania's Accelerated response Program for the Cambria District (2010-2011)
- * Developed program implementation guidelines for the Bureau of Abandoned Mine Reclamation's Acid Mine Drainage Set-Aside Program (2007-2009).
- * Provided managerial oversight of the 2013 OSM National Reclamation Award project, the Newtown South II-2 Surface Mine Reclamation Project, Reilly Township, Schuylkill County, Pennsylvania.
- * Provided managerial oversight of the 2012 OSM National Reclamation Award project, the Dents Run AML/AMD Ecosystem Restoration Project, Benezette Township, Elk County, Pennsylvania.
- * Provided managerial oversight of the 2010 OSM Appalachian Regional Reclamation Award project, the Barnes-Watkins Refuse Pile Reclamation Project in Barr Township, Cambria County, Pennsylvania.
- * Provided managerial oversight of the 2008 OSM Appalachian Regional Reclamation Award project, the Fishing Run and Maud Mine Restoration Project in South Fayette Township, Allegheny County, Pennsylvania.

PROFESSIONAL EXPERIENCE: (continued)

- * Provided oversight of the design/construction of the 2007 OSM Appalachian Regional Reclamation Award project, the Kalp and Melcroft Mine Drainage Abatement Project in Saltlick Township, Fayette County, Pennsylvania.
- * Provided oversight of the design of the 2006 OSM Appalachian Regional Reclamation Award project, the Monongahela South No. 1, Dangerous Highwall Reclamation Project in the City of Monongahela, Washington County, Pennsylvania.
- * Developed procedures and guidelines for implementation of the self-permitting program for erosion and sedimentation control permits and water/wetland encroachment permits in the Cambria District Office.
- * Managed the Ebensburg District Office as Acting District Engineer from October 1999 to September 2000.
- * Managed the design of over 250 abandoned mine restoration projects with a total construction cost of over \$240 million between 1993 and 2008 as the Cambria Office Design Section Chief.
- * Served as Chairman of the Department of Environmental Protection's Coordinating Committee on Professional Practices (CCPP) during 2002 and 2003, and as Vice Chairman during 2004, 2007 to present. The CCPP is an advisory committee to the Secretary of the Department concerning the professional practice of engineering, surveying and geology.
- * Served as a technical instructor for the Federal Office of Surface Mining's National Technical Training Program from 1994 to present. Instruct Acid-Forming Materials Workshops; AML Design Workshops for dangerous highwalls, dangerous openings, mine subsidence, and mine fires; and Passive Mine Drainage Treatment Design Workshop.
- * Received an employee recognition award for chairing a committee responsible to develop a consolidated Geographic Information System (GIS) for all Bureaus and programs within the Mineral Resources Deputate of the DEP under the RECLAIM PA initiative.
- * Developed training programs for planning/design engineers in the area of wastewater (mine drainage) monitoring, characterization and treatment including the design of passive treatment systems.
- * Managed the transition to completely computer aided drafting and design of the Cambria District Office design unit.
- * Developed guidelines and format of site investigation reports including development of several standard report forms.
- * Developed training programs for engineers in the area of NEPA Compliance and Environmental Assessment preparation.
- * Developed standardized format and procedures for completing jurisdictional wetland delineations on AML sites.

EDUCATION:

Bachelor of Science, Mining Engineering, The Pennsylvania State University, University Park, PA, December 1983

Master of Engineering, Environmental Engineering, The Pennsylvania State University, University Park, PA, August 1995

Selected Company Sponsored Training:

- * Extensive Management Training
 - * OSM Instructor Training Academy
 - * Wetland Delineation Training
 - * NEPA Compliance Training
 - * Interpersonal Communications Training
 - * Emergency Response Training
 - * Management of Meetings
 - * Surface and Groundwater Hydrology
 - * Contracting Procedures
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**LICENSURES/
CREDENTIALS:**

Professional Engineer, Commonwealth of Pennsylvania (License No. PE-038484-E)
Technical Training Instructor, Office of Surface Mining, Washington, DC

**INTERESTS/
ACTIVITIES:**

Enjoy Golfing and Traveling
American Legion Baseball Coach (1998 – 2013)

SELECTED TECHNICAL PRESENTATIONS/PUBLICATIONS:

Cavazza, Eric E., P.E., Bradley, Brian J., P.G., Klimkos, Michael J., and Snyder, Kim S., P.E.; *“Development of Geographic Information Systems (GIS) in Pennsylvania’s Mining and Abandoned Mine Reclamation Programs”*, Paper presented at the National Association of Abandoned Mine Land Programs 21st Annual Conference, Seven Springs, PA, August 22-26, 1999.

Cavazza, Eric E., P.E., Beam, Richard L., P.G.; *“The Tanoma Passive Mine Drainage Treatment Project”*, Paper presented at the National Association of Abandoned Mine Land Programs 24th Annual Conference, Park City, UT, September 15-18, 2002.

Cavazza, Eric E., P.E., Beam, Richard L., P.G., Malesky, Thomas C., P.E.; *“The Dents Run Acid Mine Drainage and Ecosystem Restoration Project”*, Paper presented at the National Association of Abandoned Mine Land Programs 25th Annual Conference, Louisville, KY, September 28 - October 1, 2003.

Cavazza, Eric E., P.E., Malesky, Thomas C., P.E., and Milavec, Pamela J.: *“The Sugar Creek Coal Refuse Pile and Mine Drainage Discharge Reclamation Project”*, Paper presented at the National Association of Abandoned Mine Land Programs 26th Annual Conference, Flagstaff, AZ, September 26 -29, 2004.

Cavazza, Eric E., P.E., Beam, Richard L., P.G., and Malesky, Thomas C., P.E.; *“The Dents Run Acid Mine Drainage and Ecosystem Restoration Project- Implementation Update”*, Paper presented at the National Association of Abandoned Mine Land Programs 26th Annual Conference, Flagstaff, AZ, September 26-29, 2004.

Cavazza, Eric E., P.E. and Trio, Eugene C., P.E.; *“Case Studies of Mine Subsidence Control Efforts in Western Pennsylvania”*, Paper presented at the National Association of Abandoned Mine Land Programs 26th Annual Conference, Flagstaff, AZ, September 26 -29, 2004.

Cavazza, Eric E., *“The Development of a Mine Drainage Abatement Plan for the Bennett Branch Sinnemahoning Creek - Clearfield, Elk and Cameron Counties, Pennsylvania”*, Paper presented at the National Association of Abandoned Mine Land Programs 27th Annual Conference, Bristol, VA, September 18-21, 2005.

Cavazza, Eric E., *“The Monongahela South No. 1 Dangerous Highwall Reclamation Project, City of Monongahela, Pennsylvania”*, Paper presented at the National Association of Abandoned Mine Land Programs 28th Annual Conference, Billings, MT, September 24 -27, 2006.

Cavazza, Eric E., P.E., and Beam, Richard L., P.G., *“Management and Control of Abandoned Mine Pool Discharges – Pennsylvania Case Studies Workshop”*, Paper and workshop presented at the National Association of Abandoned Mine Land Programs 29th Annual Conference, Bloomington, IN, October, 7-10, 2007.

Cavazza, Eric E., P.E., *“Panel Discussion: Passive Treatment of Acid Mine Drainage: Technology, Status and Alternatives - Abandoned Mine Drainage Treatment in Pennsylvania”*, Panel discussion conducted at the National Association of Abandoned Mine Land Programs 29th Annual Conference, Bloomington, IN, October, 7-10, 2007.

SELECTED TECHNICAL PRESENTATIONS/PUBLICATIONS: (continued)

Cavazza, Eric E., P.E., and Beam, Richard L., P.G., “*Management and Control of Abandoned Mine Pool Discharges – Pennsylvania Case Studies Workshop – Part 2*”, Paper and workshop presented at the National Association of Abandoned Mine Land Programs 30th Annual Conference, Durango, CO, October, 26-29, 2008.

Cavazza, Eric E., P.E., and Milavec, Pam, “*Implementation Guidelines for the AMD Set-aside Program In PA*”, Guidelines presented at the 11th Annual Abandoned Mine Reclamation and Coal Heritage Conference, Johnstown, PA July 13-16, 2009.

Cavazza, Eric E., P.E., and Beam, Richard L., P.G., “*Restoring the Bennett Branch Sinnemahoning Creek, Clearfield and Elk Counties, Pennsylvania*”, Paper presented at the 2010 National Meeting of the American Society of Mining and Reclamation, Pittsburgh, PA. Bridging Reclamation Science and the Community, June 5 – 11, 2010. R.I. Barnhisel (Ed.) Published by ASMR, 3134 Montavesta Rd., Lexington, KY 40502

Cavazza, Eric E., P.E., and Cavazza, Matthew D., “*An Analysis of the Use of Mine Water from Abandoned Mines for the Development of Marcellus Shale Gas Wells in Pennsylvania*”, Paper presented at the National Association of Abandoned Mine Land Programs 33rd Annual Conference, Lake Tahoe, CA, October, 10-13, 2011.

Cavazza, Eric E., P.E., and Beam, Richard L., P.G., “*Management and Control of Abandoned Mine Pool Discharges – Pennsylvania Case Studies Workshop – Part 3*”, Paper and workshop presented at the National Association of Abandoned Mine Land Programs 33rd Annual Conference, Lake Tahoe, CA, October, 10-13, 2011.

Cavazza, Eric E., P.E., Baker, Dean, P.E., Beam, Richard L., P.G., and Malesky, Thomas, P.E., “*The Dents Run AML/AMD Ecosystem Restoration Project*”, Paper and workshop presented at the National Association of Abandoned Mine Land Programs 34th Annual Conference, Des Moines, IA, September, 23-26, 2012.

Cavazza, Eric E., P.E. and Bradley, Brian J., P.G., “*An Analysis of Pennsylvania’s Accelerated Response Program – Pennsylvania’s Alternative to the Federal Office of Surface Mining’s (OSM) Emergency Program*”, Paper presented at the National Association of Abandoned Mine Land Programs 36th Annual Conference, Daniels, WV, September 22-25, 2013 and at the 16th Annual PA AMR Conference, State College, PA, June 26-27, 2014.