

STATEMENT OF QUALIFICATIONS



PREPARED
FOR:



COUNTY OF RUSSELL, VIRGINIA

Landfill Development Feasibility— Technical and Environmental Consulting Services



OFFICES
IN:

CHARLESTON

7012 MacCorkle Avenue, SE
Charleston, WV 25304
(304) 342-1400

MORGANTOWN

125 Lakeview Drive
Morgantown, WV 26508
(304) 225-2245

WINCHESTER

15 South Braddock Street
Winchester, VA 22601
(540) 450-0180

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EXECUTIVE SUMMARY



Potesta & Associates, Inc. (POTESTA) is pleased to present our Statement of Qualifications to the County of Russell, Virginia to provide support for the Russell County's Landfill Feasibility Project. A contract will be awarded for landfill technical and environmental consulting services to assist the Board of Supervisors of Russell County in determining the feasibility of a substantial landfill project. POTESTA understands the County of Russell's solid waste is collected through manned and unmanned solid waste convenience stations located throughout the County and exported through the Russell County Transfer Station. POTESTA has the technical knowledge and experience to evaluate the practicality of a new landfill and provide advice on regulatory compliance issues to assure long-term protection of all environmental concerns.

POTESTA can evaluate the technical, economic, environmental, socioeconomic and regulatory/permitting feasibility of design and permitting of a new landfill for waste disposal. The evaluation will include planning level information that will be useful for the County of Russell's decision makers. The following evaluation factors could be included, based on the County's preference:

- **Site Location**
- **Land Use**
- **Geology and Hydrogeology**
- **Landfill Design**
- **Landfill Liner, Cover, and Leachate Collection Requirements**
- **Landfill Operations**
- **Geotechnical Assessment**
- **Leachate Management**
- **Wastewater Treatment Plant**
- **Wetlands**
- **Permitting**
- **Environmental Justice**



Mr. David K. Paylor, MS, Vice President of Environmental, will serve as **Project Manager** and be an invaluable asset for the Russell County's Landfill Feasibility Project. His past public service, career, and contributions as the former Director of Virginia Department of Environmental Quality (DEQ) will provide effective environmental resource management. During his tenure, he oversaw the management of the storage, treatment, and disposal of solid waste, including regulatory standards for the siting, operation, and monitoring of landfills. Mr. Paylor established the DEQ Office of Environmental Justice to ensure the involvement of all people into the development, implementation, and enforcement of environmental laws, regulations, and policies across all the DEQ programs. He understands the importance of community members, stakeholders, local, state, and federal government, industry partners, and regulatory agencies with respect to environmental laws, regulations, and policies.

POTESTA would welcome an opportunity to meet with the County of Russell to provide additional details on our capabilities and discuss the current landfill project. We focus on each project with pride to provide the client with every reason to return. We are ready to begin work on this contract as soon as a notice of award is issued.

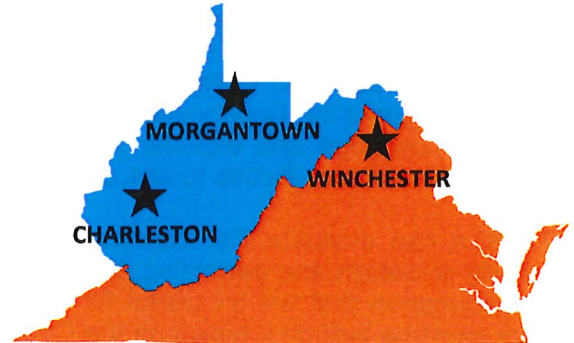
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OVERVIEW OF FIRM



HISTORY

POTESTA was founded in 1997 in Charleston, West Virginia by Mr. Ronald Potesta. Since the inception of the firm, POTESTA has been providing quality engineering and environmental consulting services throughout the Mid-Atlantic region. Maintaining a diverse staff of 74 experienced engineers, scientists, and support personnel with branch offices in Winchester, Virginia and Morgantown, West Virginia. Our clients include local, state and federal agencies, mining, manufacturing and chemical companies, utility companies, waste management companies, land developers, attorneys, financial institutions, insurance companies, K-12 schools/colleges/universities, construction companies, and architects.



PROFESSIONAL SERVICES

- 404 Permit Preparation & Negotiation
- Acid Mine Drainage Control
- Asbestos Inspection
- Benthic and Biological Studies
- CADD Services
- Chemical Engineering
- Civil Engineering
- Clean Air Act Compliance
- Construction Monitoring
- Corporate Environmental Management
- Design of Slurry Impoundments & Refuse Disposal Sites
- Dewatering Plans
- Environmental Impact Studies
- Environmental Site Assessments
- Environmental Audits
- Environmental Engineering
- Erosion & Sedimentation Control Plans
- Expert Witness & Litigation Support
- Feasibility Studies
- Foundation Design
- Geological Services
- Geotechnical Engineering
- Ground & Surface Water Sampling
- Groundwater Investigation & Remediation
- Groundwater Protection Plans
- Hazardous Waste Management
- Hydrologic & Hydraulic Evaluations
- In-Situ / Ex-Situ Bio Stimulation & Bioaugmentation
- Landfill Design / Land Use & Natural Resource Planning
- Landfill Closure Plans
- Land Use & Natural Resource Planning
- Mining Engineering
- Multimedia Sampling (Air, Fly Ash, Rock, Soil, Water)
- Pollution Prevention & Waste Minimization Planning
- Permitting
- Post Reclamation Land Uses
- Pre-Blast & Pre-Subsidence Surveys
- Preparation of Construction Documents
- Reclamation Design & Planning
- Reclamation Liability Assessments
- Regulatory Liaison Services
- Risk-Based Environmental Assessment
- SARA Title III, TIER II / Form R Inventory & Reporting
- Sewer Line Design
- Site Characterization & Remediation Planning
- Site Design & Planning
- Soil Science & Agronomy
- Spill Prevention Control & Countermeasure Plans
- Stabilization & Closure of Waste Impoundments
- Stormwater Management & Permitting
- Stream Benthic Macro-Invertebrate Surveys & Toxicity Evaluations
- Stream & Water Restoration
- Subsidence Studies
- Subsurface Explorations
- Surface & Groundwater Monitoring, Statistical Analysis & Reporting
- Surveying (Traditional & Global Positioning System)
- UST Closure & Site Remediation
- UST Installation Monitoring
- Waste Facility Permitting & Design
- Waste Disposal Design
- Water Line Design
- Wastewater Treatment Design
- Wetland Investigation / Delineation Mitigation Design & Monitoring

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OVERVIEW OF FIRM



LEADERSHIP

Ronald R. Potesta, President, has served as the Director and Deputy Director of West Virginia's Department of Natural Resources (WVDNR) which, during his tenure, housed all of the environmental regulatory programs, wildlife management, and law enforcement. Mr. Potesta's principal area of specialization is federal and environmental regulatory, statutory schemes, and environmental guidance, including agency interaction and review of regulatory requirements and recommendations.

Dana L. Burns, PE, PS, Vice President, has more than 43 years' experience with the management of civil, geotechnical, mining and environmental engineering projects. Mr. Burns, PE, PS, has extensive experience in siting, design, and permitting of industrial and municipal waste disposal sites, reclamation of abandoned mine lands, and development of stormwater management plans. He has managed over 20 sanitary and industrial waste landfill projects.

David K. Paylor, MS, Vice President of Environmental, has over 45 years of public service protecting natural resources in the Commonwealth of Virginia. His most recent role for the past 16 years was Director of the Virginia DEQ appointed by Governor Tim Kaine, Governor Bob McDonnell, Governor Terry McAuliffe, and Governor Ralph Northam. Mr. Paylor's expertise includes waste management, water quality and quantity measurement, air quality management and climate control, pollution prevention, and environmental justice.

The public service and experience of our management has provided POTESA with personal relationships with many of the regulatory staff members and in-depth program knowledge of Virginia, West Virginia and surrounding states regulatory programs. POTESA builds our contact base, stays informed on current issues, and strengthens relationships with the regulatory community by serving on various boards and commissions.

TOTAL STAFF: 74

14	Civil Engineers	1	GIS Specialist
10	Construction Technicians	1	Environmental Scientist
4	Geotechnical Engineers	1	Horticulturalist
1	Geologist	1	Toxicologist
8	CADD Operators/Draftsmen	1	Economist
6	Surveyors	1	Aqua Culturalist
1	Mechanical Engineer	1	Information Technologist
2	Aquatic Ecologists	1	Chemical Engineers
5	Biologists	1	Environmental Engineer
11	Administrative Personnel	2	Energy Land Management
1	Fish & Wildlife Specialist		

POTESA's professional staff consists of scientists and engineers with advanced degrees (Masters and Ph.D. level), as well as certifications including professional engineers and surveyors.

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STAFF QUALIFICATIONS

PROJECT TEAM ORGANIZATIONAL CHART



PRINCIPALS-IN-CHARGE
 Ronald Potesta—40 Yrs.
 Dana Burns, PE, PS—43 Yrs.

PROJECT MANAGER
 David K. Paylor, MS—45 Yrs.

ENGINEERING

ENVIRONMENTAL

CIVIL/SITE DESIGN
 Mark Kiser, PE, LRS—39 Yrs.
 Mark Sankoff, PE, PS—39 Yrs.
 Joe Knechtel, PE—32 Yrs.
 Terence Moran, PE—35 Yrs.
 Jarrett Smith, PE—20 Yrs.
 Tim Rice, EIT—40 Yrs.
 Everett Mulkeen, PE—10 Yrs.
 Kyle Stollings, PE, PS—42 Yrs.
 Robert Ammirato, PE—19 Yrs.

MAPPING / CADD
 Charles Mosholder—42 Yrs.
 Scott Bolyard—31 Yrs.
 Michael Sankoff—32 Yrs.
 Brian Leedy—21 Yrs.
 Russ Lester—32 Yrs.
 Joe Martin—28 Yrs.
 Megan Adams—1 Yr.

WATER
 Lisa Burgess, MS—32 Yrs.
 Christina Parsons, MS—23 Yrs.
 Douglas Bowe—34 Yrs.
 Beth Burdette, MS—20 Yrs.
 Dan Miller, PhD—44 Yrs.
 Leah Creathers, MS—16 Yrs.

WETLANDS
 Jessica Yeager, MS—27 Yrs.
 Timothy Ferguson, MS—15 Yrs.

CONSTRUCTION MONITORING
 Robert Lamm—21 Yrs.
 Paul Kinzer—24 Yrs.
 Charles Shaffer—20 Yrs.
 Russ Harper—14 Yrs.
 Chuck Bird—29 Yrs.
 Matt Kinzer—2 Yrs.
 Jarrod Smith—5 Yrs.

SURVEYING
 Victor Dawson, PS—39 Yrs.
 Rusty Hunter—40 Yrs.
 Ryan Bennett, PS—8 Yrs.
 Tyler Aboytes—7 Yrs.
 Will Potesta—2 Yrs.
 Daniel Henline—1 Yr.

GEOTECHNICAL
 Chris Grose, LRS—31 Yrs.
 David Sharp, PE—27 Yrs.
 Peter Potesta—10 Yrs.
 Jeremi Stawovy, EIT—11 Yrs.

AIR
 Patrick Ward, PE—30 Yrs.
 Matt Myers—5 Yrs.

SITE CHARACTERIZATION/ REMEDIATION
 David Corsaro, LRS—23 Yrs.
 Dennis Litwinowicz, LRS—39 Yrs.
 Andrew Kirsch—17 Yrs.

GIS
 Chip Haden—12 Yrs.

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STAFF QUALIFICATIONS



KEY SENIOR PERSONNEL

POTESTA has committed the following key senior personnel to the needs of the project:

Mr. Ronald R. Potesta, President and Principal-in-Charge, was the former Director of the WVDNR from 1985 through 1988. As Director, Mr. Potesta was responsible for environmental regulatory programs in West Virginia including air, water, and waste. Mr. Potesta often serves as a regulatory liaison at all levels of government to assist clients through the permitting process. His technical expertise includes compliance with air quality regulations, discharge of pollutants into surface water, and proper disposal and/or use of waste products. Mr. Potesta will serve as a technical guidance to this project as needed.

Mr. Potesta serves on multiple boards that emphasize conservation and protection of natural resources:

- **Current Chairman of the Ohio River Valley Water Sanitation Commission**
- **Immediate Past Chairman, Board of Trustees for the West Virginia Nature Conservancy**
- **Currently Member of the Board of Directors, Land and Mineral Owners Association**

Mr. Dana L. Burns, PE, PS, Vice President and Principal-in-Charge, has over 43 years of experience in a wide variety of civil, geotechnical and environmental projects. He has managed hundreds of projects requiring the preparation of construction drawings and technical specifications and participation in pre-bid and pre-construction conferences. Mr. Burns has worked on numerous landfill projects from feasibility studies through preparation of construction documents. His experience includes multiple solid waste landfill and industrial waste facility projects, which includes landfills located on surface and above deep mines.

Mr. Burns has served as the Principal-in-Charge on two open-end contracts with the West Virginia Department Environmental Protection–Landfill Closure Assistance Program (WVDEP-AML):

- **South Charleston Landfill Closure**
- **City of Kingwood Landfill Closure**
- **Webster County Landfill Closure**
- **City of Monongalia and Morgantown Landfill Leachate Holding Tank Feasibility Study**
- **Big Bear Lake Landfill Closure**
- **Jackson County Landfill Closure Plan, Site Assessment, Final Design, and Construction Quality Assurance Monitoring**
- **Fleming Landfill Sanitary Closure Plan, Site Assessment, Final Design, Sewer Line Design, and Construction Quality Assurance Monitoring**
- **Wyoming County Landfill Evaluation of Air Space and Flood Debris Disposal, Flood Debris Disposal As-Built Survey, and Construction Quality Assurance Monitoring**
- **McDowell County Landfill Evaluation of Air Space and Flood Debris Disposal**

Mr. David K. Paylor, MS, Vice President of Environmental and Project Manager, was the former Director of the DEQ from 2006 through 2022. He was responsible for management and overseeing agency regulatory and non-regulatory programs related to air quality, water quality, water supply, renewable energy, and land protection. Mr. Paylor's technical expertise includes permitting and planning of waste, air, and water, spill response and remediation, water resources, and pollution control. His educational background emphasis was on fish physiology/toxicology, identification and control of fish disease, and marine and population biology.

Mr. D. Mark Kiser, PE, LRS, Chief Engineer, has over 39 years of experience in civil engineering, with emphasis on design and construction administration. He has served as Project Manager for multiple WVDEP -LCAP projects including evaluation, design, preparation of plans and specifications, preparation of quantity

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KEY SENIOR PERSONNEL

and cost estimates, constructability reviews, construction administration for new landfill construction, expansions at existing landfills, permitting associated with both new facilities and expansions of existing facilities, and renewal of permits for both commercial and industrial waste landfills. He has over 20 years of engineering experience on landfill facilities and has been involved in design, permitting, construction monitoring, and expert witness testimony on over 30 municipal and industrial waste disposal facilities.

Mr. Christopher A. Grose, LRS, Senior Engineering Associate, has over 31 years of geotechnical experience including geological/geotechnical explorations, surface and subsurface hydrology/hydrogeology, and foundation design. Mr. Grose's experience includes the design and evaluation of geotechnical explorations related to landfills, earth retention structures, slope stability, and engineered fill construction. He has also prepared several Part I applications for commercial solid waste facilities and permit modifications and renewal applications for industrial (Class F) landfills. Mr. Grose's expertise on geotechnical issues also includes geotechnical and foundation design for Karst void stabilization under proposed structures, expert opinions related to potential groundwater contamination, underground injection control permitting services for discharge of surface water runoff, landslide causation analysis, stability modeling, and failed slope restoration.

Mr. Terence C. Moran, PE, Senior Engineer, has over 35 years' experience in leachate collection and management of sanitary and storm water projects, as well as landfill design and acid mine drainage. He has served as Project Manager/Engineer for more than 60 private and public solid waste disposal facility projects, involving evaluation, design, permitting and construction of disposal cells, closure, and leachate management. His experience also includes annual cross sections depicting liner elevation, existing elevations, and cap elevations, estimating volume of water disposal, volume of air space remaining, evaluation and design of storm water structures, and construction observation/administration.

Mr. K. Joe Knechtel, PE, Senior Engineer and Branch Manager of the Winchester, Virginia office, has over 32 years of experience on civil and environmental engineering projects. Mr. Knechtel has experience in working with water and wastewater permitting issues associated with development of these systems. Mr. Knechtel has worked closely with clients and reviewing agencies, such as numerous local reviewing/approval departments (planning/zoning, engineering, public works, utilities, fire marshals, airport authorities, health and soil conservation districts, etc.), Environmental Protection Agency, DEQ, Virginia Department of Transportation, Virginia Department of Health, and Virginia Occupational Safety and Health Agency.

Mr. Timothy R. Ferguson, MS, Senior Scientist, has over 15 years' experience in environmental compliance and permitting serving as Project Manager for numerous projects. He specializes in stream and wetland identification and delineation, mitigation development and planning, and state and federal permitting. He is formally trained in the use of the 1987 USACE Wetland Delineation Manual from Ohio State University and utilizes the Eastern Mountains and Piedmont Regional Supplement since its issuance.

Ms. Jessica L. Yeager, M.S., Senior Scientist, is an Aquatic Biologist and Toxicologist with 27 years' experience in evaluating the effects of anthropogenic activities on aquatic communities. She routinely reviews and prepares environmental assessments, biological assessments, and other environmental impact studies and environmental permits for energy and industrial clients. She has been Project Manager for various projects including developing impact assessments, recovery plans for streams and rivers, design of benthic macroinvertebrate and fish studies, and advising clients on issues pertaining to Endangered Species Act, Clean Water Act, and the National Environmental Policy Act.

Ms. Christina C. Moore Parsons, Senior Scientist, is a Biologist with over 23 years of experience navigating the challenges with water pollution prevention and regulatory compliance. Ms. Moore completes tasks involving water permitting and compliance, development of mixing zones, social and economic evaluations, environmental assessments, and biological surveys. She has extensive experience in

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KEY SENIOR PERSONNEL

evaluations, environmental assessments, and biological surveys. She has extensive experience in completing social and economic assessments to present the potential impacts of various operations to the surrounding areas. She is also well versed in using the CORMIX mixing zone modeling software and has completed various training workshops concerning the modeling of effluent plumes.

Ms. Lisa K. Burgess, Senior Scientist, has over 32 years of water permitting and regulatory compliance experience. She has completed National Pollutant Discharge Elimination System (NPDES) permitting for a variety of clients including chemical and manufacturing facilities, municipal and publicly owned treatment works, and quarry mining facilities. In addition to permitting at these facilities, Ms. Burgess develops Storm Water Pollution Prevention Plans, Groundwater Protection Plans, and metals translator studies and development of site-specific metals translators. To establish attainable discharge limitations, Ms. Burgess will routinely conduct baseline and background water quality sampling and analysis, water chemistry studies, and mixing zone verification sampling and analysis.

Appendix A contains resumes of key senior personnel.

CAPABILITY TO MEET REQUIREMENTS

POTESTA's current workload is such that we can immediately provide management, scientists, engineers, CADD designers, survey crews, and construction technicians. Our large staff size will allow POTESTA to work on this project on an accelerated schedule, if necessary. POTESTA stands ready to commit the personnel and resources required to complete this project in a timely, technically-sound, and cost-efficient manner. We have the experience and technical expertise to provide support for the Russell County's Landfill Feasibility Project.



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TECHNICAL EXPERTISE



LANDFILLS AND SOLID WASTE MANAGEMENT

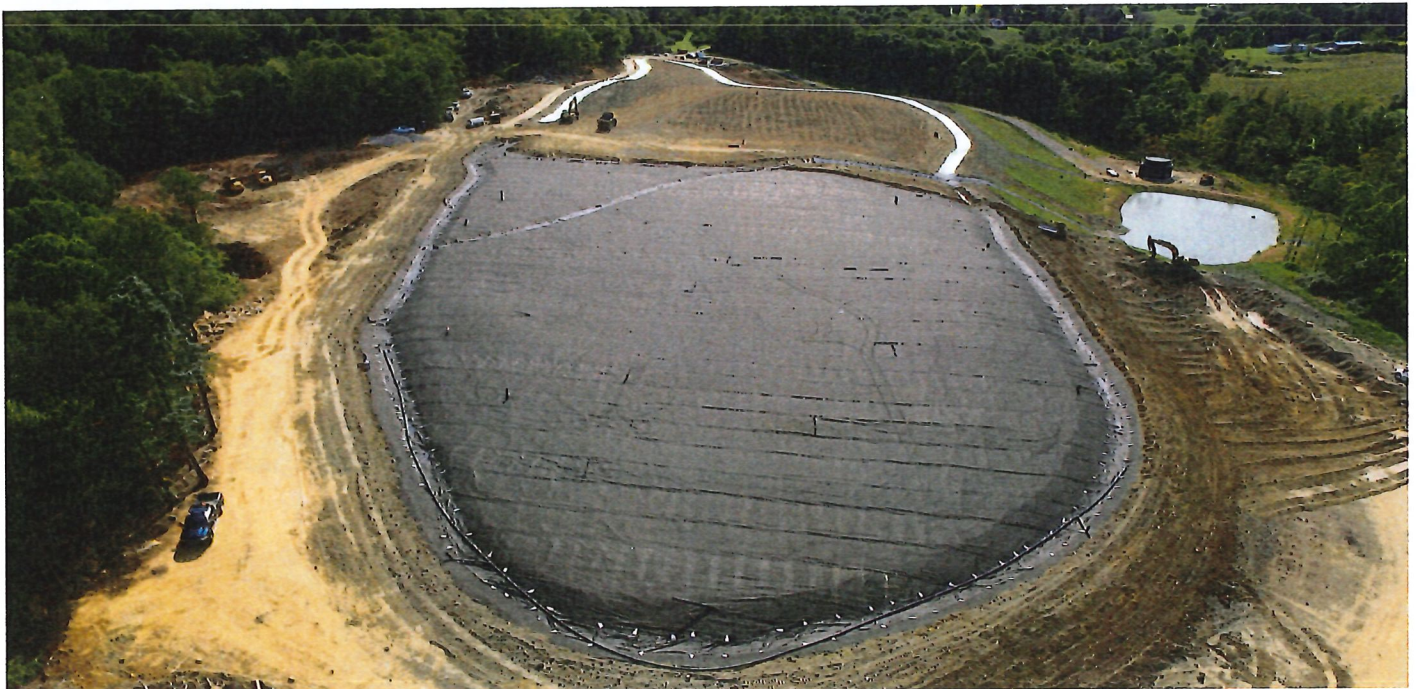
Public acceptance and available land for new landfills have decreased in recent years. This is evidenced by increased state and federal regulations requiring more public input and detailed technical investigations prior to regulatory approval for a new landfill or solid waste management facility. POTESTA is knowledgeable of these challenges and stands ready to assist the County of Russell.

POTESTA has extensive experience with the design and permitting of a wide variety of solid waste management facilities. These include municipal solid waste landfills and transfer stations, industrial waste landfills, hazardous waste landfills, transfer, disposal, and storage facilities, coal combustion by-product (e.g., fly ash) landfills, coal refuse disposal areas, and construction demolition and debris landfills. Our activities also include bioremediation, resource recovery, composting, sludge handling, and recycling facilities.

Our experienced staff will support you through the phases of planning, designing, and building new infrastructure.

INVESTIGATIVE SERVICES

- **Comprehensive Siting Studies**
- **Feasibility and Cost/Benefit Studies**
- **Geotechnical Explorations**
- **Hydrogeologic Evaluations**
- **Water Quality Evaluations**
- **Soil and Groundwater Contamination Evaluations**
- **Waste Material/Liner Compatibility Studies**
- **Remedial Investigations and Feasibility Studies (RI/FS)**
- **Waste Characterization Studies**
- **Wetlands Delineation and Mitigation**
- **Perennial Stream Determination**
- **Environmental Assessments**
- **Environmental Monitoring**
- **Groundwater Monitoring Well Installation, Sampling, and Statistical Analyses**
- **Groundwater Usage Surveys**
- **Surface Water Monitoring**
- **Methane Monitoring**



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TECHNICAL EXPERTISE



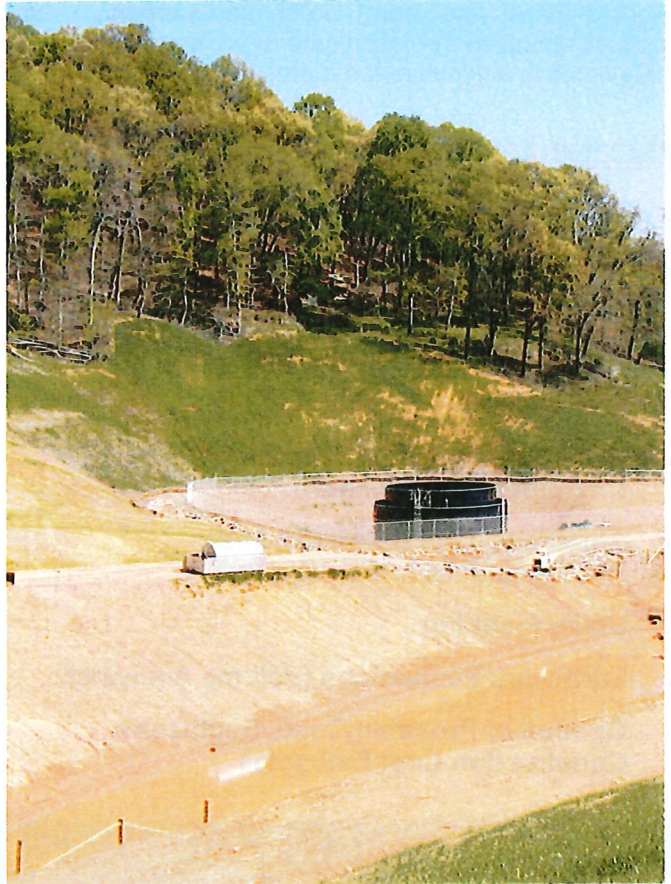
LANDFILLS AND SOLID WASTE MANAGEMENT

PERMITTING SERVICES

- Solid Waste Facilities (Municipal and Industrial)
- Hazardous Waste Facilities
- Closures
- Modifications
- NPDES
- Regulatory Liaison Assistance

DESIGN SERVICES

- Facility Design
- Erosion and Sedimentation Control
- Surface and Subsurface Drainage
- Borrow Area Determination
- Access Roads
- Liner Systems (Clay and Synthetic)
- Capping Systems
- Leachate Management/Treatment
- Gas Management
- Closure and Post-Closure
- Remedial Design
- Construction Drawings and Specifications
- QA/QC Manuals



CONSTRUCTION SERVICES

- Health and Safety Plans
- Construction Monitoring
- Hazardous Waste Management
- Implementation of Remediation Plans

OPERATIONAL CONSULTING

- Site Management
- Recycling Programs
- By-Product Utilization/Marketing Studies
- Hazardous Waste Screening Programs
- Health and Safety Programs



STATEMENT OF QUALIFICATIONS

TECHNICAL EXPERTISE



CIVIL ENGINEERING/SITE PLANNING

POTESTA's engineering staff has a broad background related to the vast field of civil engineering, including utility/infrastructure design, dam/impoundment design, water/wastewater treatment, roadway design, development of grading plans, and storm water management. Our diverse staff of engineers, geologists, and scientists are routinely involved in these types of projects and work to support the project teams assigned to these projects on a daily basis to achieve a completed project that meets the client's expectations.

PRELIMINARY EVALUATIONS AND ANALYSES

- Phase I Environmental Site Assessments
- Floodplain Determination
- Geotechnical Explorations (Soil, Bedrock, and Groundwater Characterization)
- Foundation Recommendations
- Monitoring Well Systems and Site Characterization Plans
- Boundary, Topographical, and Photogrammetric Surveys
- Utility Planning
- Earthwork Evaluations (Volume Analysis)
- Opinion of Probable Costs/Engineer's Construction Cost Estimates

DESIGN SERVICES

- Erosion and Sediment Control Plans
- Earth Retaining Structures Design
- Geometric Site Layout
- Grading and Drainage Plans (Excavation and Fill Optimization)
- Access Road Design
- Hydraulic Structure Design
- Water and Sewer Design
- Slope Stability Analysis
- Subsurface Drainage System Design
- Construction Drawings, Specifications, and Contract Document Preparation



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TECHNICAL EXPERTISE



GROUNDWATER

Regulatory actions place much of the responsibility on industry to prevent groundwater impact, remediate groundwater problems, and develop methods to prevent negative impacts to the groundwater regime. POTE STA geologists, engineers, and environmental specialists are knowledgeable of existing legislation and regulatory requirements for groundwater activities to meet the needs of both the general public and industry.

SITE EVALUATIONS

A thorough understanding of the groundwater system associated with a site is required to effectively and efficiently complete a site evaluation. POTE STA will complete a background evaluation prior to on-site activities. Such research allows a more efficient and detailed evaluation to result. A site evaluation may include methods such as borehole drilling, Geoprobe™ push soils sampling, test pit excavation, geophysical testing of surface and subsurface materials, monitoring well installation, groundwater sampling and chemical analysis, and soil geotechnical exploration.

GROUNDWATER EVALUATIONS

An understanding of the physical and chemical character of groundwater is required to properly evaluate and correct existing groundwater problems. Geologists and hydrogeologists at POTE STA can effectively evaluate and offer remedial actions to mitigate groundwater problems. These specialists also maintain appropriate knowledge of regulatory requirements needed to aid in prevention of impacts to groundwater, as well as aid with maintaining appropriate industrial groundwater plans and reports. POTE STA can complete groundwater evaluations and characterizations for residential water supply impacts, mine facilities, industrial groundwater impact sites, waste disposal sites, hazardous waste site, leaking underground storage tank sites, and contaminant source investigations.

GROUNDWATER MONITORING ACTIVITIES

The primary method to define and evaluate the degree of groundwater impact at a site is through proper groundwater monitoring. The appropriate design and determination of proper sample protocol of a groundwater monitoring system is a must to effectively meet the requirements established by most regulatory actions. POTE STA's professional staff have accumulated many years of design experience in varying environmental conditions that will meet both industry and public monitoring requirements including industrial and municipal solid waste sites, leaking underground storage tank sites, surface impoundments, and mine sites.

HYDROGEOLOGICAL SITE EVALUATIONS

Projects such as mine sites, solid waste landfills, and large manufacturing facilities are required to evaluate both the surface and subsurface conditions related to water flow and chemistry. Such evaluations often dictate the design and location of surface facilities, stormwater flow, and surface impoundments. Various study methods include the installation of temporary piezometers or permanent groundwater monitoring points, use of surface and subsurface geophysical evaluation tools, soil evaluation pits and boreholes, core borings for bedrock evaluation, and geological background evaluation.

REMEDIAL ACTION DESIGN AND IMPLEMENTATION

POTE STA have the expertise to design and implement remedial plans and actions to correct environmental impacts to soil and groundwater including aquifer restoration, leachate control and treatment, remediation design and installation, groundwater modeling, and waste evaluation and disposal.

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TECHNICAL EXPERTISE



WETLANDS

POTESTA has a qualified staff of scientists and engineers who are trained and experienced in the identification and permitting of wetlands, the mitigation of displaced wetlands and the design of constructed wetlands. Wetlands unique habitats can present problems regarding the development of properties, which are protected by the Clean Water Act.

INVESTIGATION AND DELINEATION

Wetland investigations and delineations are conducted by POTESTA's scientists as part of pre-development site investigation and environmental impact assessments. During a wetland investigation, the site is examined for the presence of wetland indicators, including specific hydrology, soils and vegetation. Any wetlands discovered are delineated in accordance with the U.S. Army Corps of Engineers Wetlands Delineation Manual (1987) and appropriate regional supplement manual(s).

PERMITTING

Once wetlands have been identified and delineated, POTESTA can prepare application packages for permits to fill and/or dredge these areas for further development. The U.S. Army Corps of Engineers (COE) is the agency responsible for granting wetland permits under Section 404 of the Clean Water Act. In addition to the COE permit, individual states must approve each permit granted, certifying that it meets the state's water quality standards.

Our employees have established working relationships with both the federal and state agencies in this region. We are very familiar with the data required and can work with the agencies to obtain timely review and issuance of permits.

MITIGATION AND DESIGN

Wetland mitigation and design come into play when wetlands being displaced or filled are large enough to require mitigation under state and federal standards. In some cases, wetland mitigation can be achieved solely through the payment of a fee to a mitigation bank or fund established for the creation, protection or enhancement of other wetland areas. In this case, POTESTA can prepare an appropriate mitigation offer and negotiate with state and federal authorities for its approval.

Depending upon the availability of suitable sites, wetland mitigation can also consist of the actual design and construction of new wetlands, or the enhancement of existing wetlands. Our staff includes qualified engineers experienced in the design of created wetlands. Working as a team with staff biologists, we can produce a cost-effective functional design for presentation to state and federal authorities. Once approved, we can provide construction monitoring of the new wetlands.



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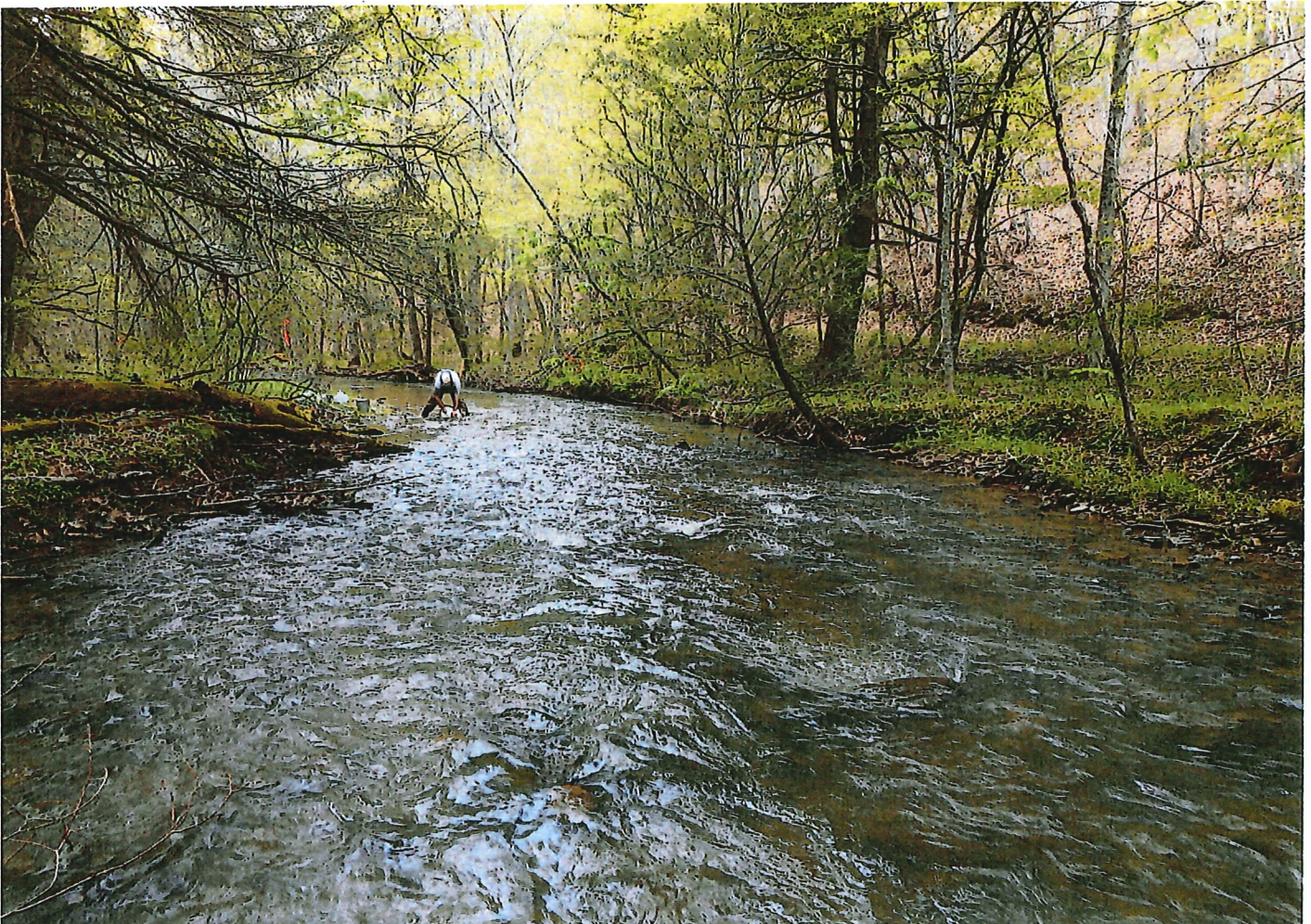
WATER QUALITY

Water quality studies are being used more frequently to provide site-specific information used to establish attainable discharge limitations in NPDES permits. In many cases, site-specific water studies can be used to demonstrate that discharges are not harming the aquatic environment.

POTESTA employs scientists with backgrounds in aquatic ecology, fisheries, botany, wildlife science, and hydrology who have extensive experience conducting in-stream studies and is dedicated to appropriate data collection and analysis to meet the needs of our client in a correct, affordable and timely manner. Our senior staff members have long-term working relationships with regulatory agency personnel and are familiar with the particular requirements of the various types of studies conducted.

POTESTA offers a full range of water quality study services to meet our clients' needs including:

- **Baseline Water Quality Sampling and Analysis**
- **Background Water Quality Sampling and Analysis**
- **Metals Translator Sampling and Analysis**
- **Water Chemistry Studies**
- **Mixing Zone Verification Sampling and Analysis**



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TECHNICAL EXPERTISE



BIOLOGICAL AND TOXICOLOGICAL

Biological assessments and surveys are increasingly being used in both terrestrial and aquatic systems to develop regulations, monitor compliance, and indicate the effectiveness of environmental programs. Toxicological testing and biological monitoring are often included as permit requirements or used during negotiations. In many cases, biological assessments can be used to negotiate alternatives to permitting requirements or to satisfy regulatory agencies that no environmental damage is occurring. Biological and toxicological assessments may be used to demonstrate the success of endpoints in remediation, recovery, and restoration projects. POTESTA scientists' diverse backgrounds complement our engineering team to develop projects to meet our clients' individual needs.

POTESTA offers a full range of biological and toxicological services including:

- **Biological Surveys and Rapid Bioassessments**
- **Variance Negotiations**
- **Industrial Site Remediation**
- **Toxicity Identification Evaluations**
- **Toxicity Reduction Evaluations**
- **Wetland Delineation and Remediation**
- **Stream Remediation and Restoration**
- **Endangered Species Surveys**
- **Environmental Risk Assessments**
- **Human Risk Assessments**
- **Natural Resource Damage Assessments**
- **Statistical Analysis and Database Management**
- **Pilot-Scale Testing and Treatability Studies**
- **Exotic Species Control/Management**

Biological and toxicological assessments will be conducted using both traditional and innovative methodologies. We generate high-quality data that meets our clients' needs in a cost-effective manner. The tools used to collect data during our evaluations include:

- **Water Chemistry Analysis**
- **Water Column, Sediment, and Soil Toxicity Testing**
- **In-Situ and System-Specific Testing and Monitoring**
- **Habitat Assessments**
- **Biological Surveys and Rapid Bioassessments**
- **Surface Water Modeling**
- **Bioaccumulation and Biomonitoring Analysis**
- **Global Positioning Surveys**



STATEMENT OF QUALIFICATIONS

TECHNICAL EXPERTISE



STORM WATER PERMITTING

The Clean Water Act regulates the discharge of pollutants into surface water through the NPDES. POTESTA offers its clients exceptional expertise and experience when it comes to storm water discharge, including NPDES permitting projects. Our personnel are familiar with both state and federal permitting strategies and can provide capable guidance for appropriate and applicable permits for a project. One of the most important aspects of the permitting process is determining the approach most beneficial to the client.

Our professional staff is dedicated to providing quality engineering and environmental services for various types of stormwater permitting in West Virginia, Virginia, Ohio, Pennsylvania and other states including:

- **Construction Storm Water General Permits—Notice of Intent and Site Registration**
- **Oil and Gas Construction Storm Water General Permits—Notice of Intent and Site Registration**
- **Individual Construction Storm Water Permits**
- **Multi-Sector Storm Water General Permits**
- **Municipal Separate Storm Sewer Systems Permits**



The following is a list of some of the services POTESTA performs associated with storm water permitting:

- **Permit Application Preparation for New Facilities**
- **Modification Application Preparation for Existing Facilities**
- **Reissuance Application Preparation for Existing Facilities**
- **Stormwater Pollution Prevention Plan (SWPPP) Preparation and Modification**
- **Ground Water Protection Plan (GPP) Preparation and Modification**
- **Spill Prevention, Control, and Countermeasure (SPCC) Plan Preparation and Modification**
- **Erosion and Sediment Control Plan (ESCP) Preparation**
- **Stormwater Discharge Water Quality Sampling and Training**
- **Preparation of Discharge Monitoring Reports and Annual Certifications**
- **Agency Negotiation and Liaison Services**
- **Permit Compliance Services**
- **Construction and ESCP Related Inspection Services**

STATEMENT OF QUALIFICATIONS

TECHNICAL EXPERTISE



GEOTECHNICAL ENGINEERING

POTESTA can provide field engineers and geologists who are knowledgeable using the latest technologies subsurface explorations, monitoring well and piezometer installations, foundation design recommendations, slope stability analysis, retaining walls, and remedial designs as they relate to construction, mining, waste disposal, environmental remediation, and other projects. Our knowledge of the proper procedures and familiarity with local conditions allows office and field personnel to adjust the exploration plan if unanticipated field conditions are found.

POTESTA's vast experience in our region has resulted in innovative approaches to the various challenges that the topography and geology present.



SUBSURFACE EXPLORATIONS

- Attend an initial meeting with the client.
- Conduct preliminary site reconnaissance.
- Develop a recommended exploration program.

SLOPE STABILITY ANALYSIS AND REMEDIAL DESIGN

- Utilize various methods to predict slope stability.
- Analysis of existing or proposed soil embankments, rock fills, dam analysis and design, landfill design and operation, assessing the causation of slope failure, and designing remedial measures.
- Analyses—circular or sliding block methods, interface friction angles, and estimate of the strength parameters of the soil or rock.
- Develop preventive measures during initial project design or recommendations for to repair slope failures.
- Consider various remedial measure—regarding the site to obtain more suitable conditions, management of groundwater, and design of retaining structures.
- Familiar with wide variety of retaining structures—gabion baskets, soldier beam and lagging walls, sheet piles, reinforced concrete and reinforced earth slopes.

FOUNDATION DESIGN RECOMMENDATIONS

- Experience with various types of foundations and will recommend the appropriate type of foundation given the anticipated application and site conditions.
- Foundations—spread and strip footings, steel piles, auger-cast concrete piles, drilled piers, and reinforced mats.
- Preliminary foundation design recommendations and cost analyses.
- Preliminary alternatives for final recommendation.
- Construction documents.
- Final recommendation—construction drawings, technical specifications, recommendations for allowable bearing capacity, engineer's construction cost estimate, and contractor's bid sheet.

STATEMENT OF QUALIFICATIONS

TECHNICAL EXPERTISE



SURVEYING

POTESTA proposes to utilize our own survey crews for work on this project. POTESTA will perform all of the surveying required for this project using in-house personnel. We have three survey crews and the capability to add a fourth crew, if necessary. Our surveyors have worked on numerous site development, roadway and bridge construction, utility construction, and landfill development projects. POTESTA's surveyors use state-of-the-art equipment such as total station instruments, Trimble R-8 Glonass, RTK GPS Systems, AutoCAD, Autodesk Land Desktop and Autodesk Civil 3D design software, computer hardware for data management, and a Hewlett Packard color ink jet plotter.



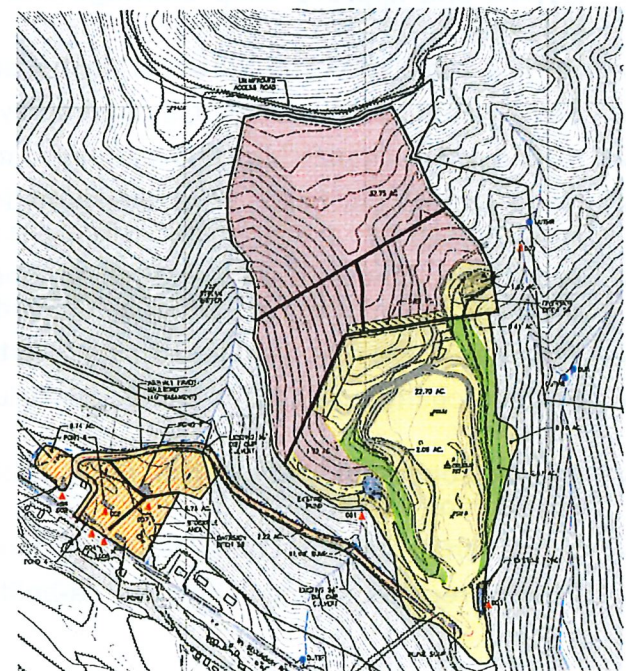
POTESTA is equipped with modern surveying instruments allowing efficient data processing and accurate gathering of field information. Total station instruments equipped with data collectors are utilized for complete field to office automation allowing for high levels of productivity in the field. The latest versions of software are then used to process survey data and create drawings or required end products.

Small topographic mapping projects can be completed in-house using the aforementioned process. Larger projects are better suited for mapping using aerial photography. If necessary, POTESTA will provide the necessary surveying required for establishing ground control for aerial mapping in conjunction with our aerial mapping subcontractor. As a quality control measure, aerial mapping is field checked for accuracy by surveying cross sections or random points.

Surveys and mapping are completed to the standards as outlined by the National Map Standards as well as other applicable quality standards.

CADD

The CADD department utilizes the latest drafting/design software and computer hardware to maintain productivity at the high levels that clients demand and expect. We utilize Autodesk Civil 3D design software to prepare, revise, and manipulate drawings and engineering data efficiently. POTESTA's experienced and trained professionals allow clients' projects and assignments to be completed rapidly and at a reasonable cost.



- **Surveying data manipulation**—including development of topographic mapping; cross sections; profiles; isopach drawings; etc.
- **Site design**—including grading plans; drainage plans; utilities plans; right-of-way plans, etc.
- **Roadway design**
- **Water; sanitary; sewer; electric; natural gas; and telecommunications design**
- **Permit drawings; maps; and exhibits**
- **Earthwork and planimetric quantity development**
- **Two and three dimensional graphics**

STATEMENT OF QUALIFICATIONS

TECHNICAL EXPERTISE



CONSTRUCTION MONITORING/ADMINISTRATION

POTESTA provides construction monitoring and construction administration services to assist clients in achieving regulatory and contractual compliance, documentation that contractor activities are in compliance with design requirements, and to serve as an extension of clients' staff. Regulatory compliance is often best documented by providing full-time construction monitoring services for a construction project. POTESTA's construction observation and administration personnel are experienced with varying types of construction, geotechnical, and environmental projects, including adherence to specifications, sampling/testing, pay quantity verification, and dispute resolution.



CONSTRUCTION CONTRACT ADMINISTRATION SERVICES

- **Review contract documents**—particularly items that were not prepared by POTESTA, such as the agreement, general conditions, supplementary conditions, specification special conditions, and engineering specifications.
- **Review, meet, comment on and accept contractor's preliminary (and subsequent adjustments)**—progress schedule, preliminary schedule of shop drawing and sample submittals, and preliminary schedule of values (for progress payments).
- **Attend pre-construction conference.**
- **Review underground facilities not shown on contract documents**—to determine potential changes to contract documents.
- **Attend progress meetings and as needed meetings.**
- **Review and approve shop drawings and samples (if required)**—including review of revised shop drawings if necessary.
- **Review substitutes and "or equal" items, and issue written acceptance/denials.**
- **Review contractor work plan, if required by specification special conditions.**
- **Attend progress meetings and as needed meetings.**
- **Issue written clarifications or interpretations of the requirements of the contract documents**—including issuance of additional specifications and drawings.
- **Provide a full-time representative to observe construction for compliance with the contract documents, and observe testing by the contractor and record results on appropriate forms.**
- **Prepare weekly reports summarizing construction activities.**
- **Prepare change orders for the work**—including issuance of additional specifications and drawings, if necessary.
- **Review contractor invoices (i.e., Applications for Payment) and issue written recommendations for payment or denial.**
- **Issue Certificate of Substantial Completion, as typically required by the contract documents.**
- **Provide record drawings showing "as-built" features.**

REPRESENTATIVE PROJECTS



WEBSTER COUNTY LANDFILL

*West Virginia Department of Environmental Protection
Webster County, West Virginia*

The Webster County Landfill is located approximately 3.5 miles southwest of Webster Springs, West Virginia. The landfill reportedly consists of approximately 2.0 acres of waste disposal area according to the West Virginia Department of Environmental Protection, Landfill Closure Assistance Program (WVDEP, LCAP). Issues at the landfill include leachate seeps discharging to surface water drainways, improper slopes across a portion of the landfill, lack of proper surface water management devices, the existing cell, cap, and impoundment liners were inadequately installed, etc.



Potesta & Associates, Inc.'s (POTESTA) scope of services for this project was to evaluate the site to develop a closure plan, prepare bidding and contract documents, prepare and submit applications for required permits related to the project and perform construction quality assurance and quality control services.

POTESTA developed construction drawings and technical specifications for the regrading of the current landfill to reduce the existing extreme slopes that currently exist at the site, a new leachate surface impoundment and loadout/control facility to comply with solid waste regulations, a sediment pond, run-on and run-off control channels, leachate collection underdrains, access roads, and final cap and cover over the regraded landfill.



REPRESENTATIVE PROJECTS



CITY OF KINGWOOD LANDFILL

*West Virginia Department of Environmental Protection
Landfill Closure Assistance Program
Kingwood, Preston County, West Virginia*

Potesta & Associates, Inc. (POTESTA) has been retained by the West Virginia Department of Environmental Protection (WVDEP) through the Landfill Closure Assistance Program (LCAP) to provide services relative to the closure of the former City of Kingwood solid waste landfill located north of Kingwood, Preston County, West Virginia. Services include surveying, subsurface exploration (soil boring, rock coring, piezometer installation, and test pit excavations), leachate and surface water sampling, site reconnaissance, and development of conceptual site plans for potential closure actions. Given the historic



use of the site had been a surface mine prior to its use as a landfill and based on the results of POTESTA's field portion of services, POTESTA prepared conceptual level plans to a level of detail needed to compare two alternatives, both involving excavation of material within the encountered limits of waste to a depth necessary to collect and convey leachate, with the following further steps:



- Cap the existing landfill by raising the existing delineated landfill to support the required engineered cap thickness and the hauling of the generated leachate to the local WWTP.
- Placement of solid waste material within the limits of existing landfill and the creation of a new landfill on-site, complete with applicable liner and cap, and conveying the leachate system to the local WWTP through a sewer line extension including multiple lift stations.

Based on the anticipated quantities of solid waste excavation and the remote location of the site, it was determined by LCAP that the most effective landfill closure plan would be to cap the existing landfill and haul the generated leachate. POTESTA was hired to complete a construction drawing and technical specification package for the capping of the existing 8-acre landfill. The design also includes a leachate collection system consisting of a leachate storage tank and truck loadout facility.

REPRESENTATIVE PROJECTS



FORT MARTIN CCB LANDFILL PERMIT APPLICATION/CONSTRUCTION INSPECTION

*Allegheny Energy Supply Company, LLC
Monongalia County, West Virginia*

Potesta & Associates, Inc. (POTESTA) was retained by Allegheny Energy Supply Company, LLC to develop a permit renewal application associated with a coal combustion by-product (CCB) landfill expansion. The project is located near Madsville, West Virginia. POTESTA developed a West Virginia/NPDES permit renewal application related to the existing portion of the Class F Industrial Landfill, as well as encompassing the expansion area of just under 100 acres.

POTESTA prepared a solid waste/NPDES water pollution control permit including supplemental evaluation of candidate sites for the expansion area; field exploration involving collection of soil, geological, and hydrological data; wetland and stream impact delineation; detailed design; and preparation of construction/bid documents for the landfill expansion. In conjunction, the project included two large leachate storage ponds and a composite landfill liner system. The capacity of the expansion area is approximately 8.7 million cubic yards of CCB.



POTESTA also performed construction observation/construction administration for the landfill project. Services provided by POTESTA included soil density testing, concrete testing, nondestructive and destructive testing for the liner system. POTESTA provided between one and four construction technicians to observe the contractor's construction activities, document construction activities and construction quality assurance testing, preparation of daily field activity logs, preparation of records of quality assurance testing, take photographs of the construction, and attend weekly progress meetings. POTESTA also prepared a summary of construction report for final approval of the construction by the West Virginia Department of Environmental Protection and prepared certifications of construction for each layer of the landfill liner system.

REPRESENTATIVE PROJECTS



POCAHONTAS COUNTY LANDFILL CELL 3-A EXPANSION

*Pocahontas County Solid Waste Authority
Dunmore, West Virginia*

Potesta & Associates, Inc. (POTESTA) was retained by the Pocahontas County Solid Waste Authority (PCSWA) to prepare construction documents and provide construction monitoring for construction of a new 1.25-acre solid waste cell at the PCSWA's landfill near Dunmore, West Virginia. To complete this project, POTESTA designed the landfill expansion for Cell 3-A, including:



- Design of subgrade elevations of the liner system to balance available airspace versus excavation to obtain the required base slope and berms along the edges of the liner.
- Design of leachate detection and collection pipes and aggregate bedding.
- Design of the leachate collection system utilizing geosynthetic layers where possible to result in savings.



POTESTA also prepared construction/bid documents and assisted PCSWA in the bidding, bid evaluation, and contract award/administration. POTESTA prepared instructions to bidders, construction drawings, specifications, and contractor's bid form. POTESTA attended the mandatory on-site pre-bid meeting and provided an overview of the project and responded to questions raised by the bidders.

POTESTA evaluated bids and made recommendations to PCSWA on execution of a construction contract. POTESTA provided full-time construction observation during earthwork and construction of the subbase, leak detection zone, 24-inch clay liner, 60-mil HDPE geomembrane, leachate collection system, and protective cover layers. POTESTA prepared certifications for each layer required by the West Virginia Department of Environmental Protection.

REPRESENTATIVE PROJECTS



NICHOLAS COUNTY LANDFILL VARIOUS PROJECTS

*Nicholas County Solid Waste Authority
Nicholas County, West Virginia*

Potesta & Associates, Inc. (POTESTA) was retained by the Nicholas County Solid Waste Authority (NCSWA) to perform a cost/benefit analysis of leachate storage alternatives. POTESTA analyzed composite lined ponds and welded steel and bolted steel tanks. Based on the results of the analysis, POTESTA was retained for the design of a 145,000-gallon bolted steel leachate storage tank inside a geomembrane lined secondary containment berm. POTESTA also designed a leachate transmission line and a connection to the facility's existing pump station.



POTESTA also conducted a hazardous waste screening training program for the landfill employees. This was a requirement of their new permit. Issues covered included hazardous waste characteristics, safety issues, proper monitoring, reporting and case histories.

POTESTA was also retained for the design of a new sediment pond for the facility. Due to a narrow valley and access constraints, the pond was designed as two interconnected cells which allowed access across the pond to the proposed tank and existing pump station while still providing required sediment storage. In addition, only one spillway system was necessary.

POTESTA also helped the landfill with regulatory and operating issues. This included attendance at semiannual inspections, waste lift and compaction improvements, repair of leachate seeps, seasonal waste placement and staging, and gas vent installation. POTESTA also performed semiannual surveying and volume utilization calculations at the facility and assisted the facility with preparing annual reports.

REPRESENTATIVE PROJECTS



WYOMING COUNTY LANDFILL LEACHATE FORCE MAIN DESIGN

*West Virginia Department of Environmental Protection
Pineville, West Virginia*

Potesta & Associates, Inc. (POTESTA) was retained by the West Virginia Department of Environmental Protection's (WVDEP) Landfill Closure Assistance Program (LCAP) to design a new leachate pump station and line to replace the existing system from the existing leachate tank to the Centerville Public Service District. The existing pump system was a multi-stage turbine pump that experienced frequent clogging and metals dropping out in the line as a result of the metals in the leachate. These conditions forced LCAP to frequently replace the pump blades and flush the line. POTESTA also reviewed contractor submittals for materials, quality control tests, and payment applications.

The project included the design and construction of a dry well pump station, located below the existing leachate tank; construction of approximately 2,200 feet of force main and approximately 1,600 feet of gravity main; and tie into an existing manhole. The construction was completed while the

existing system was in operation; and after completion, the existing system remained operational and could be utilized as a backup system. The new pump station utilized the existing pump controls. A clamp on style magnetic flow meter was added to the pump station for the monitoring of the pumped leachate. The line (force main and gravity) consisted of a continuous run of high density polyethylene (HDPE) pipe, by utilizing HDPE manholes and HDPE cleanouts.



REPRESENTATIVE PROJECTS



WYOMING COUNTY LANDFILL CLOSURE CONSTRUCTION QUALITY ASSURANCE MONITORING

*West Virginia Department of Environmental Protection
Pineville, West Virginia*

Potesta & Associates, Inc. (POTESTA) was retained by the West Virginia Department of Environmental Protection to provide construction quality assurance monitoring for the Wyoming County Landfill Closure Project. POTESTA provided a technician to monitor construction on a full-time basis. POTESTA also reviewed contractor submittals for materials, quality control tests, and payment applications.

The project included regrading of the site; construction of a new sediment pond with principal and emergency spillways; construction of a 219,000-gallon, glass-coated, bolted steel leachate storage tank with a secondary containment tank; construction of a leachate wet well, pump station, 3-inch force main, and gravity sewer line; construction of grout-filled fabric-lined ditches (over 2 miles in length); construction of leachate collection underdrains and construction of a Subtitle D cap.

POTESTA prepared a final summary report and certification of construction.



REPRESENTATIVE PROJECTS



DRY RUN LANDFILL PROJECTS

E. I. DuPont de Nemours & Company Parkersburg, West Virginia

Potesta & Associates, Inc. (POTESTA) was retained by E. I. DuPont de Nemours & Company (DuPont) to provide engineering services for the two construction projects at the Dry Run Landfill.

For the first project, POTESTA prepared a detailed design of the synthetic liner, soil cover, leachate pond, drainage ditches and pond abandonment. Regrading of the site, abandonment of two ponds, construction of a leachate collection pond, installation of a leachate collection system, and installation of drainage channels were part of the plan. POTESTA prepared construction drawings, technical specifications, engineer's construction cost estimate and bid form.

The project included the abandonment of two leachate collection ponds, construction of an HDPE lined leachate collection pond, construction of a leachate seep collection system, construction of an anchor trench, installation of an HDPE liner system, installation of a leachate drainage system, construction of a soil cover and installation of drainage ditches.



For the second project, POTESTA prepared a detailed design of an expansion to the landfill disposal area, including synthetic liner, soil cover and drainage ditches. Regrading of the site, a liner system, a leachate collection system and drainage channels were planned. POTESTA prepared construction drawings, technical specifications, engineer's construction cost estimate and bid form.

The project included the construction of a leachate collection system, regrading of the site, installation of a 4.5-acre synthetic liner system, installation of a 4.5-acre protective soil cover, installation of a leachate seep collection system, and installation of drainage ditches.

POTESTA provided construction quality assurance monitoring for both projects. It also provided a technician to monitor construction on a full-time basis. POTESTA also reviewed contractor submittals for materials, quality control tests and payment applications.

REPRESENTATIVE PROJECTS



JACKSON COUNTY SANITARY LANDFILL SITE CHARACTERIZATION

*West Virginia Department of Environmental Protection
Jackson County, West Virginia*

Potesta & Associates, Inc. (POTESTA) was retained by the West Virginia Division of Environmental Protection (WVDEP) to complete a site characterization for the Jackson County Landfill. The site characterization included surveying, development of topographic mapping, subsurface exploration including auger and rock core borings, leachate and surface water sampling, groundwater user survey including sampling of water wells, review of historical records, site reconnaissance, assessment of the site's compliance with the Solid Waste Management Rules, and development of a conceptual closure plan.



POTESTA provided surveying to establish ground control for aerial mapping, and to locate test pits, borings, leachate seeps, and existing features. POTESTA also located property boundaries since some problem areas were in close proximity to the property line. POTESTA developed topographic mapping from aerial photography for approximately 110 acres.

Water sampling included surface water samples to evaluate the landfill's impact on the receiving stream. POTESTA also obtained and analyzed samples of leachate in order to evaluate leachate treatment options and requirements.

POTESTA completed a groundwater user survey for residents utilizing private water supplies within 1-mile of the landfill. POTESTA selected ten representative residents to include in the survey, conducted interviews with these ten residents, sampled wells/springs, analyzed results, and prepared a report to assess impacts of the landfill on the private water supplies.

POTESTA excavated test pits on and around the landfill to determine soil cover thickness, to locate the edge of solid waste, and to evaluate potential soil borrow areas. Soil borrow area samples were tested for Standard Proctor, Atterberg limits, grain size, permeability, pH, and nutrients. POTESTA also completed a subsurface exploration including auger borings and rock coring to evaluate subsurface conditions at the landfill.

POTESTA developed a conceptual closure plan for the site, including upgrades of the existing sediment ponds, run-on and run-off control channels, leachate collection underdrains, proposed leachate storage tank, access roads, final cap and cover, and a sewer line to convey leachate to the Ripley wastewater treatment system.

REPRESENTATIVE PROJECTS



JACKSON COUNTY SANITARY LANDFILL CLOSURE PLAN

*West Virginia Department of Environmental Protection
Jackson County, West Virginia*



Potesta & Associates, Inc. (POTESTA) was retained by the West Virginia Department of Environmental Protection to develop bid and construction documents for the Jackson County Sanitary Landfill closure project. POTESTA developed technical specifications, drawings, and related documents for the closure of the 21-acre municipal solid waste landfill.

POTESTA prepared the closure plan for the landfill including a bolted stainless steel leachate storage tank (primary and secondary tanks); leachate pump station and related high density polyethylene piping and valves; leachate flow metering station with controls and data recorder; leachate collection underdrains; an enlarged sediment pond with principal and emergency spillways; access roadways; regrading of the existing landfill surface to result in the required maximum and minimum slopes; closure of an existing leachate collection pond; construction of a geosynthetic cap system including gas management geocomposite, 40-mil LLDPE geomembrane, drainage geocomposite, and a 2-foot protective soil cover; passive gas venting system; and run-on/runoff control channels.

POTESTA also prepared plans and specifications for a sewer line to convey flow from the landfill to the City of Ripley's sanitary sewer system.

POTESTA prepared the necessary permit applications to allow the project to proceed, and prepared an engineer's construction cost estimate for the project.

REPRESENTATIVE PROJECTS



RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) CORRECTIVE ACTION

Solutia, Inc.
Nitro, West Virginia

Potesta & Associates, Inc. (POTESTA) was retained by Solutia, Inc., former Flexsys Chemical Manufacturing Facility, to provide environmental and engineering consulting services to develop and implement corrective measures on a 118-acre property located in Nitro, West Virginia along the east bank of the Kanawha River. Approximately 72 acres of the property exists south of Interstate 64, while 46 acres lies just north of the interstate highway. This project included areas impacted by manufacturing, waste disposal, and wastewater treatment.

POTESTA has completed numerous tasks addressing remedial measures for the property over the past two decades including, but not limited to:

- 2,500 linear feet of riverbank regraded and covered by a riprap armoring blanket placed over an engineering geotextile.
- 8,000 linear feet of soil-bentonite slurry wall to create a groundwater containment barrier surrounding four areas totaling approximately 22 acres. The slurry wall was 60 feet deep and 3 feet wide.
- 22 acres of impervious final cap including geotextile, 40 mil HDPE geomembrane, drainage layer composite, and 18 inches of clean soil cover.
- 24 acres of low permeability cap including geotextile, 40 mil HDPE geomembrane, and 18 inches of clean soil cover.
- 63 acres of permanent permeable cap including a geotextile marker layer and 18 inches of clean soil cover.
- Surface water run-off control system.
- Groundwater pump and treat system including nine wells, three pre-treatment units, and one final groundwater treatment plant.



REPRESENTATIVE PROJECTS



BIG BEAR LAKE CAMPGROUND LANDFILL

*West Virginia Department of Environmental Protection
Landfill Closure Assistance Program
Hazelton, Preston County, West Virginia*



Potesta & Associates, Inc. (POTESTA) was retained by the West Virginia Department of Environmental Protection (WVDEP) through the Landfill Closure Assistance Program (LCAP) to provide services relative to the closure of a solid waste landfill located at the Big Bear Lake Campground near Hazelton, Preston County, West Virginia. Services included preparing existing conditions mapping, field sampling program to approximate horizontal and vertical limits of waste, and construction drawings and technical

specifications for construction activities associated with the closure. Based on the relative horizontal and vertical dimensions determined via POTESTA's field program, the closure program for the site involved the excavation of waste material from within the limits of the 0.8-acre landfill, separation of suitable site material from the solid waste, and the haulage of solid waste from the project site to an approved solid waste landfill, which was the Meadowfill Landfill in Clarksburg, West Virginia. Upon removal of encountered waste material, the site was graded to promote positive drainage to an existing culvert and pond located downstream of the existing landfill. In addition to the removal of waste, five existing monitoring wells were abandoned in accordance with WVDEP regulations. Construction relative to the project was completed and POTESTA's services were provided under its anticipated budget.



REPRESENTATIVE PROJECTS



FLEMING SANITARY LANDFILL CLOSURE PLAN

*West Virginia Department of Environmental Protection
Landfill Closure Assistance Program
Pocatalico, West Virginia*



Construction of the cap system was completed in phases. A buttress was constructed over the face of the landfill to flatten slopes to 4 horizontal to 1 vertical to improve stability of the cap.

related valves; a new sediment pond including principal and emergency spillways; access roads; regrading of the landfill surface and construction of a landfill toe buttress to improve slope stability of the cap; closure of an existing leachate collection pond; construction of a geosynthetic cap system including gas management geocomposite, 40-mil LLDPE geomembrane, drainage geocomposite, and 2-foot protective soil cover; passive gas venting system; and runoff/run-on control channels and culverts.

POTESTA also prepared a conceptual plan with cost estimates and analysis of pay-back period for construction of a sewer system to convey leachate from the Fleming Sanitary Landfill to the Charleston Sanitary Board's sewer system.

POTESTA completed permit applications to allow construction of the project to proceed.

Potesta & Associates, Inc. (POTESTA) was retained by the West Virginia Department of Environmental Protection (WVDEP) to develop bid and construction documents for the Fleming Sanitary Landfill closure project located in Pocatalico, West Virginia. POTESTA developed technical specifications, drawings, and related documents for the closure of the 19-acre municipal solid waste landfill.

POTESTA prepared the closure plan for the landfill including construction of a glass-lined, bolted steel leachate storage tank (primary and secondary tanks); leachate flow metering station; leachate collection drains, piping, and



The project included construction of a 19-acre geosynthetic cap system.

REPRESENTATIVE PROJECTS



FLEMING LANDFILL NPDES MODIFICATION

*West Virginia Department of Environmental Protection
Landfill Closure Assistance Program
Kanawha County, West Virginia*

Potesta & Associates, Inc. (POTESTA) provided consulting services to the Landfill Closure Assistance Program (LCAP) to facilitate the collection, storage and treatment of leachate from the Fleming Sanitary Landfill. This leachate system included perforated pipe, underdrains and cutoff drains, a 235,000-gallon storage tank with secondary containment and related valves and piping. Initially this leachate was transported via truck to the Charleston Sanitary Board (CSB) wastewater treatment plant. The required pretreatment application was completed by POTESTA and submitted to the CSB for review. The application was approved; allowing up to 60,000 gallons per day of leachate to be discharged to the wastewater treatment plant.



Subsequently, Sissonville Public Service District (SPSD) became interested in accepting leachate from the landfill for treatment. POTESTA prepared a request for minor modification of the SPSD's NPDES permit, covering their wastewater treatment plant. The permit modification allowed for 25,000 gallons of leachate per day to be accepted for treatment at the plant. The permit was approved by the West Virginia Department of Environmental Protection (WVDEP) and included limits specific to certain metals in order to meet the SPSD's effluent discharge limits from the main outfall system and for land application of bio-solids from the wastewater treatment plant. This permit modification approves the trucking of the leachate and treatment, as well as a proposed sanitary sewer line extension serving the landfill.

RONALD R. POTESTA

President



EDUCATION

- M.S. Economics, concentration in Mineral Economics, Econometrics, and Microeconomics
West Virginia University
- B.S. Business Administration
West Virginia University

SERVICE ON BOARDS AND COMMISSIONS

- Past Chairman and current Commissioner, Ohio River Valley Water Sanitation Commission
- Past Chairman and current Member, Board of Trustees, The West Virginia Nature Conservancy
- Member of the West Virginia Land & Mineral Owners Board of Directors
- Past Chairman, The Greater Kanawha Valley Foundation

ADMINISTRATIVE EXPERIENCE

President of Potesta & Associates, Inc., a full-service engineering, design, and environmental consulting company with offices in Charleston and Morgantown, West Virginia, and Winchester, Virginia. In this position, he guides the professional staff of skilled engineers and scientists with his knowledge of federal and environmental regulatory and statutory schemes.

PROFESSIONAL EXPERIENCE

Prior to forming Potesta & Associates, Inc.

1989-1997 – President of an environmental and engineering consulting company, which he formed in 1989. Under his guidance, the company grew into a full-service environmental consulting, design, and construction company with a staff of over 50 professional and support personnel.

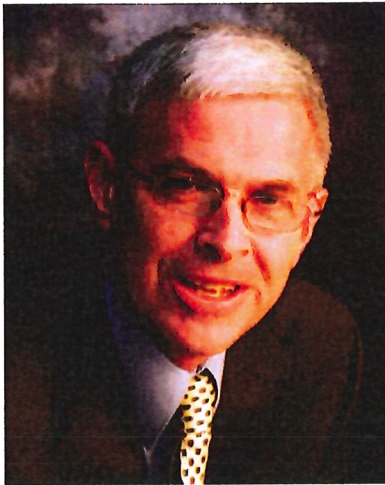
1985-1988 – Director of the West Virginia Department of Natural Resources, an agency with an annual budget of \$23 million and 700 full-time employees. The office of Director included supervision of Water Resource and Waste Management Division, Land and Real Estate Office, Office of Regulatory Affairs, Conservation, Education, and Litter Control, Public Information Office, and Wonderful West Virginia Magazine. He also served as Chairman on the State Emergency Response Commission and the Title III organization mandated by the federal Superfund Amendments and Reauthorization Act.

1984-1985 – Deputy Director of the West Virginia Department of Natural Resources, responsible for overseeing environmental regulatory programs described under Director's position and for the supervision of programs associated with the West Virginia Surface Coal Mining and Reclamation Act.

1981-1984 – Marketing Director of the West Virginia Coal Development Authority, responsible for promotion of West Virginia coal in both domestic and export markets requiring expertise in coal reserves, coal quality, transportation networks, and market demands.

DANA L. BURNS, P.E., P.S.

Vice President



EDUCATION

M.S. Civil Engineering, 1979
West Virginia University

B.S. Civil Engineering, 1978
West Virginia University

EMPLOYMENT HISTORY

1997-Present Potesta & Associates, Inc.
1994-1997 Terradon
1979-1994 GAI Consultants, Inc.
1978-1979 West Virginia University
1976-1977 West Virginia Department of Highways
(summers)

PROFESSIONAL REGISTRATIONS

- Professional Engineer – West Virginia, Illinois
- Professional Surveyor – West Virginia

PROFESSIONAL CERTIFICATIONS

40-Hour Health and Safety Training

SERVICE ON BOARDS AND COMMISSIONS

- Environmental/Technical Committee member – West Virginia Coal Association
- Environmental Committee member – Kentucky Coal Association

- Past Board of Directors member and current Waste Team Chairman on the Environmental Safety and Health Committee – West Virginia Manufacturers Association
- Environmental and Safety Committee member – Independent Oil and Gas Association of West Virginia
- Environmental Committee member – West Virginia Oil and Natural Gas Association
- Past President – West Virginia Society of Professional Engineers, Professional Engineers in Private Practice
- Past President and past Board of Directors member – American Council of Engineering Companies West Virginia Chapter
- Past Chairman of Transportation Committee – American Council of Engineering Companies West Virginia Chapter
- Past Board of Directors member – Society of American Military Engineers Huntington Post
- Member Committee D-18 on Soil and Rock – American Society for Testing and Materials (ASTM)

PROFESSIONAL AFFILIATIONS

- American Society of Civil Engineers
- National Society of Professional Engineers
- WV Society of Professional Surveyors

AREAS OF SPECIALIZATION

Management of design and permitting of civil, environmental, geotechnical, and mining engineering projects. Siting, design, and permitting of industrial and municipal waste disposal sites; reclamation of abandoned mine lands; and development of stormwater management plans and groundwater sampling programs. Environmental/reclamation liability assessments. Development of site plans for commercial and industrial facilities including hydrologic and hydraulic analyses. Expert witness testimony. Directs engineering division including day-to-day operation of headquarters and three branch offices concerning staffing, coordination, training, business development, and overall management of technical and support staff.

PROFESSIONAL EXPERIENCE

Landfills/Solid Waste/Waste Disposal

Design and permitting of new landfills and development of cell closure plans:

Municipal Landfills –

- West Virginia Solid Waste Management Board/Monongalia County Sanitary Landfill – Morgantown, WV
- North Folk Landfill – Wheeling, West Virginia
- Disposal Service, Inc. Landfill – Hurricane, WV
- Sycamore Landfill, Inc. – Hurricane, WV
- City of Charleston Landfill – Charleston, WV
- Mingo County Landfill – Mingo County, WV
- Omar Landfill – Omar, WV
- Pocahontas County Landfill – Marlinton, WV
- HAM Sanitary Landfill – Peterstown, WV
- Kanawha- Western Landfill – Cross Lanes, WV
- S&S Landfill – West Milford, WV
- Brooke County Landfill – Brooke County, WV
- Wetzel County Landfill – Wetzel County, WV
- WVDEP's Landfill Closure Assistance Program
 - Montgomery Sanitary Landfill – Montgomery, WV
 - Wyoming County Sanitary Landfill – Pineville, WV
 - Jackson County Sanitary Landfill – Ripley, WV
 - City of Moundsville Landfill – Charleston, WV

Industrial Solid Waste (Fly Ash, Bottom Ash, Scrubber Sludge) –

- Mobay Hazardous Waste Landfill – Natrium, WV
- American Cyanamid (4 projects) – Willow Island, WV
- Client confidential – Parkersburg, WV
- Monsanto Company (multiple projects) – Nitro, WV
- Harrison Power Station – Haywood, WV
- Fort Martin Power Station – Morgantown, WV
- Mount Storm Power Station – Mount Storm, WV
- Keystone Power Station – Elderton, PA
- New Castle Power Station – New Castle, PA
- Conemaugh Power Station – New Florence, PA
- Alcoa Corporation – Newsburg, IN
- Portsmouth Power Station – Portsmouth, VA
- F.B. Culley Power Station – Newburgh, IN
- Hatfield Power Station – Masontown, PA
- Armstrong Power Station – Armstrong County, PA
- Cheswick Power Station – Springdale, PA

Design, permitting, economic analyses, and preparation of construction bid documents for coal ash/refuse sites including HDPE and PVC liner systems:

- Virginia Electric and Power Company
 - Portsmouth Power Station ash pond to dry fill conversion project
 - Mount Storm Interim Ash Site
- Pennsylvania Electric Company
 - Keystone Coal Ash/Coal Refuse Site
- Allegheny Power Station
 - Hatfield Ash Site

WVDEP Office of Waste Management – Development of construction drawings, technical specifications, contractor's bid sheet and engineer's cost estimate for closure of Montgomery Sanitary Landfill. Work included leachate collection system, cap and double walled leachate tank.

WVDEP Office of Waste Management – Development of construction drawings, technical specifications, contractor's bid sheet, and engineer's cost estimate for final closure of the Wyoming County Landfill. Work included site assessment, double walled leachate tank, pump station, and connection of leachate line to Center Public Service District sanitary sewer.

WVDEP Office of Waste Management – Development of interim closure plans including leachate collection system, adequacy of groundwater monitoring wells and soil cover for the Jackson County Landfill and the City of Moundsville Landfill.

WV Solid Waste Management Board's Monongalia County Sanitary Landfill – Management of three liner expansions, borrow area determination, minor permit modifications, 1.6 MG double-lined leachate pond design, construction monitoring, and investigation of future alternatives.

Disposal Services, Inc. – Evaluation of landfill expansion and leachate minimization. Preparation of permit application for Phase I Cell 3 and Phase II including drawings, specifications, and CQA manual. Preparation of construction drawings for Phase I Cell 3 Stage I and management of construction monitoring. Preparation of erosion and sedimentation control plan, soldier beam and lagging retaining wall, gabion basket retaining wall, and assistance on FERC permit to relocate gas line in Hurricane, West Virginia.

S&S Landfill – Preparation of Landfill Expansion Revisions, permit revisions, and permit negotiation. Detailed review of hydrogeology and groundwater flow regime. Management of QA/QC for landfill expansion including clay/synthetic liner system, double walled leachate tank, sedimentation pond, drainage channels, and associated facilities in Harrison County, West Virginia.

Pocahontas County Solid Waste Authority – Management of miscellaneous services including preliminary closure plan, evaluation of leachate treatment alternatives, repair of tear in synthetic liner, preparation of annual reports, and surveying for Pocahontas County Landfill in Marlinton, West Virginia.

Kanawha County Solid Waste Authority – Investigation of potential landfill fire at Kanawha Western Landfill. Detailed geologic and hydrologic studies, monitoring well installation, and preparation of associated sections of landfill permits.

- North Fork Landfill – Wheeling, WV
- Sycamore Landfill – Hurricane, WV

Rhone-Poulenc Ag Company – Management of non-hazardous industrial landfill design project involving design report, technical specifications, construction drawings, QA/QC manual, operation manual, permit application, and environmental assessment. Included meetings with EPA Region 3 and WV Division of Natural Resources. Also, three site selection studies. Complete geologic and hydrogeologic investigations including installation of monitoring wells.

Tennessee Valley Authority – Economic analyses of wet versus dry disposal processes, including conveyor belts, trucks, and sluicing by pipe for fly ash and bottom ash.

Pennsylvania Electric Company – Evaluation of natural and synthetic liner systems for coal ash/coal refuse sites. Preparation of permit applications for the New Castle ash site and Mitchell scrubber sludge disposal site:

- Pennsylvania Power Company
- Allegheny Power System

Coordinator of the compilation of data for a RCRA Part B permit application for a hazardous waste transfer facility in Parkersburg, West Virginia including SPCC plan.

Sludge sampling programs at the Institute, West Virginia plant of Union Carbide Corporation and the Tri-State Terminal of Ashland Petroleum Company.

Siting studies, including environmental impacts and economic analyses, for industrial waste and coal ash/refuse sites:

- Peabody Coal Company – slurry impoundment
- Rhone Poulenc Ag Company – 3 sites for industrial landfill
- Virginia Electric and Power Company – Mt. Storm Power Station
- Southern Indiana Gas and Electric Company – 4 sites at F.B. Culley Station
- Alocia Generating Corporation – 7 sites at Warrick Station

American Cyanamid Company – Management of QA/QC monitoring program for the first RCRA industrial waste impoundment in EPA Region 3. Composite liner system consisted of 3-foot soil-bentonite liner and two 60-mil HDPE synthetic liners separated by HDPE drainage net. Provided on-site testing laboratory. Daily and weekly project reports were provided. Prepared summary report and necessary “certifications” for submittal to WV Division of Natural Resources and EPA in Willow Island, West Virginia.

American Cyanamid Company – Management of QA/QC monitoring program for a stormwater retention basin consisting of 3’ soil bentonite liner with concrete overlay. Daily, weekly, and project summary reports were prepared in Willow Island, West Virginia.

American Cyanamid Company – Preparation of plans, specifications, and permit application for the closure of an industrial waste disposal site. The capping system included geogrid to assist in supporting the overlying HDPE liner and soil cap in Willow Island, West Virginia.

Electric Power Research Institute – Preparation of the Coal Ash Disposal Manual and various manuals for the High Volume/Low Technology Fly Ash Utilization Program.

Electric Power Research Institute – Development of a computer program that provides a detailed cost estimate for a coal ash disposal area.

Rhone Poulenc Ag Company – Evaluation of settling characteristics for an emergency fly ash disposal pond and

design of associated modifications at a plant in Institute, West Virginia.

American Cyanamid Company – Management of QA/QC monitoring for a closure of a 3-acre hazardous waste disposal area with sludge stabilization and an HDPE cap. Provided an on-site testing laboratory, daily and weekly project reports, a summary report, and agency required certifications in Willow Island, West Virginia.

American Cyanamid Company – Management of QA/QC monitoring for the stabilization and capping of 10-acre hazardous waste equalization basin in Willow Island, West Virginia.

Rhone Poulenc Ag Company – Sampling/sounding of two basins containing sludge from secondary biological treatment of industrial wastewater and subsequent determination of sludge quantities.

Development of alternative truck transportation cost schemes:

- Industrial and Hazardous Waste Management Study – Allegheny County, PA
- Holcomb, KA Power Station – Sunflower Electric Cooperative
- Portsmouth Station remote ash structural fill – Virginia Electric and Power Company

Civil/Site Design

Utility extension, site grading plans, stormwater management, roadway design, and permitting for site development:

- Residential subdivisions
- Commercial developments

University of Charleston – Principal-in-Charge for the following projects:

- Development of topographic mapping of campus
- Evaluation of storm sewer system
- Civil site services – UC Pharmacy School, New Hall, Middle Hall, and Brotherton Hall
- Design of new campus entrance roadway

Marshall University – Principal-in-Charge for the following projects:

- 400 bed housing project
- Biotechnology Center
- Fifth Avenue parking and 6th Avenue parking facility
- Jomie Jazz Center
- Childcare Center
- Mid-Ohio Valley Center
- Campus landscape master use plan
- Campus improvements project
- MU Graduate College South Charleston campus
- Student Center and Henderson Center
- Bookstore addition
- University Heights

Glenville State University – Principal-in-Charge for the following projects:

- Student Residence Hall
- Athletic Convocation Center and Forestry/Survey Class Center

West Virginia University – Principal-in-Charge for a sidewalk repair project located near Allen Hall on the Evansdale Campus in Morgantown, West Virginia.

The Villages at Coolfont – Principal-in-Charge to provide environmental and engineering consulting services for the redevelopment of the Coolfont Recreation property in Morgan County, West Virginia to create a second home community with high-end amenities:

- Phase I Environmental Site Assessment
- American Land Title Association (ALTA) boundary and property survey of 997 acres
- Completed an assessment of the facility’s sanitary sewer wastewater treatment plant to facilitate acquisition of the property.
- Participated in weeklong planning charette with client, land planners, and other design consultants to assess characteristics of property, identify opportunities and constraints, obtain input from residents and businesses, and develop design guidelines.
- Land use plan including 1,300 homes, a village center, spa, expansion of an existing lake, a proposed second lake, walking/hiking/biking trails, and the necessary infrastructure.
- Civil engineering design for potable water and wastewater treatment facilities.
- Selected source well locations, drilled 3 source test wells, and completed field testing and permitting.

- Designed 300 gallon per minute potable water treatment plant.
- Designed 2- 316,000-gallon water storage tanks and 75,000 LF of distribution system.
- Completed the design and permitting for a 448,000-gallon per day membrane bioreactor wastewater treatment plant, including the design of a 70,000 LF collection system.
- Assisted with permitting required for the development of the new lake and upgrades/expansion of the existing lake (included were Section 404 individual permit and Section 401 water quality certification).
- Prepared roadway and stormwater management plans, including typical pavement sections, road profiles, geometric layout plan, culvert and drop inlet sizing, drainage conveyance pipe and channel profiles, and miscellaneous stormwater management details.

City of Charleston – Inspection and preparation of rehabilitation design for Parking Garage No. 1.

Tucker County Industrial Park – Principal-in-Charge for the design which included water and sewer lines, stormwater management design, roadway design, pavement design, site grading plan, master plan, and geotechnical exploration/foundation recommendations. Principal-in-Charge for site grading plans, stormwater management system, site surveying, roadway/parking lot design, wetland delineation/mitigation, and construction monitoring for the 400,000-square foot Coldwater Creek distribution center in Parkersburg, West Virginia.

Principal-in-Charge for the civil/site design for the new Sissonville Middle School in Kanawha County, West Virginia. Project included site grading plan with more than 230,000 cubic yards of earthwork to obtain 20 acres of level ground for a 74,000-square foot school, football field, soccer field, baseball field, access roadways, and parking areas. Project included utility designs for water service and sanitary and sewer. Stormwater collection systems and erosion and sediment control plan/permit completed.

Principal-in-Charge for civil/site design for new Riverview High School and Bradshaw Elementary School in McDowell County, West Virginia. Project included 2,500 linear feet of relocated WV Route 80, relocation of 1,200 feet of Oozley Branch, and site work (grading, stormwater drainage, geotechnical recommendations,

sanitary sewer, water, and electrical services) to serve the two schools. Project design included site survey, geotechnical exploration, foundation recommendations, design of excavation slopes, layout of schools, parking areas and athletic fields, utility design, roadway relocations plans, and stream relocations plans. Responsible for the design and preparation of contract bid documents (specifications and drawings) for civil/site work. POTESTA served as a subconsultant to ZMM on this project.

Principal-in-Charge for civil/site design and permitting associated with the construction of three synthetic fuel pellet plants in McDowell County, Nicholas County, and Kanawha County, West Virginia. Project included developing synthetic fuel manufacturing facilities on inactive surface mining sites. Services included subsurface exploration, foundation recommendations, grading plans, stormwater management plans, preparation of permit applications, and construction monitoring for site grading and foundation construction. The McDowell County site included a water source study to identify and select water sources for the manufacturing process. The three plants had a construction cost of \$25 million. Project was a design/build arrangement with POTESTA working directly for the owner.

Carmeuse Lime & Stone – Principal-in-Charge of engineering and environmental services for the expansion of current quarry operations at Winchester quarry in Winchester, Virginia. The expansion includes the addition of two new vertical lime kilns and associated equipment, increasing their current aggregate crushing operation, and expanding their rail system to allow for increased shipping of product.

- Design included grading, stormwater management, and an access road crossing for a rail loop encircling the lime kilns and aggregate crushing areas with rail spurs for loading and unloading of product to connect to two mainline rail carriers.
- The total project track length consists of approximately 29,000 linear feet of rail.
- The design of the rail expansion includes trackside ditches, culverts, stormwater management systems, gas line relocations and crossings, rail crossings, and internal plant roadways, as well as grading for the expanded aggregate plant and lime kilns.
- Additional designs included civil/site services for a new office building and design of the sanitary water treatment system for this building.

- Acquired the necessary approvals to construct this project, such as approvals from local planning and zoning, inspections, health departments, and state governments such as Virginia Department of Transportation, Department of Environmental Quality (DEQ) and Department of Mining and Mineral Extraction (DMME).
- Conducted wetland delineations, developed reports, and completed applications to the Norfolk District (Northern Virginia field office) of the United States Army Corps of Engineers (USACE).

Development of specifications for a sand mound treatment system in the U.S. Air Training Center near Pittsburgh, Pennsylvania.

Geotechnical

Subsurface exploration, evaluation, and design of remedial measure for landslides:

- Soldier beam and lagging retaining walls
- Gabion walls
- Grade/drain/compact in-place
- Geo-grid reinforcement with grade/drain/compact in-place

Plasma Processing Corporation – Management of subsurface exploration and preparation of soils report near Ravenswood, West Virginia.

West Virginia University – Principal-in-Charge for the following projects:

- WVU Intermodal Parking Garage on the Medical Center Campus – geotechnical and civil engineering
- WVU Engineering Building – geotechnical evaluation

Principal-in-Charge for Williamson Landslide Project involving an abandoned mine land site. Geotechnical exploration and design of 480-foot-long soldier beam and lagging retaining wall with tiebacks to support loose mine spoil backfill along the edge of a previously mined area with steep terrain. Project was required to protect an existing 125-bed nursing home facility.

Roadway Design

Principal-in-Charge for design of new entrance roadway to the University of Charleston and the utility extension,

surveying, and general civil engineering for a 440-bed dormitory. Project was a design/build.

West Virginia Divisions of Highways – Inspection of bridge and highway construction.

Managed numerous industrial access roads. Roadways were designed for the private sector. Design was coordinated with and approved by the West Virginia Division of Highways and roadways were accepted into the state transportation system.

- ZMM Architects – Relocation of State Route 80 for construction of new elementary and high schools at Bradshaw in McDowell County, WV
- Jackson County Development Authority and Double C Enterprises – Industrial Park access road and County Route upgrade in Kenna, WV
- Roane County Economic Development Authority – National Industrial Lumber access road in Amma, WV
- Tucker County Development Authority – Tucker County Industrial Park access road in Davis, WV
- Wood County Development Authority – Luigino’s access road in Parkersburg, WV
- University of Charleston – Design of new entrance road to University of Charleston and redesign of MacCorkle Avenue (State Route 61) intersection/turn lanes in Charleston, WV
- N-Visions Architects – Entrance Road, bus loop, and emergency exit roadway for new Sissonville Middle School in Sissonville, WV
- Entrance road and bus loop for Trap Hill Middle School in Raleigh County, WV

WV Division of Highways – Managed environmental permitting, surveying, and design of four-lane 1.25-mile North Bridgeport Connector Road from Interstate 79 Jerry Dove Interchange to Benedum Airport in Bridgeport, West Virginia.

WV Division of Highways under open-end agreements for:

- Landslides and slope stability projects
- Surveying
- Asbestos services

WV Division of Highways – Managed geotechnical, environmental, right-of-way, and survey work performed as a subconsultant for various projects:

- King Coal Highway (section near Pineville, WV)
- Sharon Heights Connector
- Eldora and Enterprise Connector
- Dundon Bridge
- Martha Truss Bridge
- Martha Concrete Girder Bridge
- Upgrade of three bridges on Interstate 81
- Corridor H (section near Kerns, WV)
- Corridor D (section near Washington, WV)

Mining

Peabody Coal Company – Evaluation of potential stream flow attributed to long-wall deep mining subsidence in minimal overburden areas in southern West Virginia. Responsibilities included the review of mine maps, stream reconnaissance studies, and the establishment of three in-stream V-notch weirs. The weirs were monitored and maintained during a seasonal study period to generate direct flow measurements. The WVDEP also prepared a study for the site that was reviewed, and comments prepared for the results.

Principal-in-Charge on numerous Independent Third-Party Audits at sites for various coal producers. Independent Third-Party Reviews of mines/complexes were undertaken with a thorough review to assess compliance of the operation to various federal statutes and equivalent to state laws. Specific areas of review included are generally determined by the needs of the client or the requirements of governmental agencies and have included an assessment of the client’s compliance with the following:

- Clean Air Act
- Clean Water Act
- Resource Conservation and Recovery Act
- Safe Drinking Water Act
- Toxic Substance Control Act
- Comprehensive Environmental Response, Compensation and Liability Act
- Emergency Planning and Community Right to Know Act
- Federal Insecticide, Fungicide and Rodenticide Act
- Oil Pollution Act
- Mine Safety and Health Administration
- Surface Mining and Reclamation Act
- National Pollution Discharge Elimination System
- Others as required

Development of reclamation plans for over 70 projects including landslides, mine fires, acid mine drainage, mine subsidence, refuse piles, water supply systems, and asbestos abatement. Projects were completed for West Virginia Division of Energy, West Virginia Division of Environmental Protection, Virginia Abandoned Mine Lands, and Ohio Department of Natural Resources and include the following:

- Duncan Hill Subsidence
- Beckley Subsidence
- Jonben (Haga) Subsidence
- Holden (Padgett) Subsidence
- Gray and Iaquina Subsidence
- St. John’s Road Subsidence
- Route 19/28 Subsidence
- Mt. Hope Subsidence
- Huffman Street Subsidence
- Morgantown Airport Drainage/Subsidence
- Fairmont East Subsidence
- Fairmont IV Subsidence
- Cheyenne Sales Company Reclamation
- Little Whitestick Refuse
- Crany Mine Dump
- Morgan Mine Fire
- MacArthur Phase 2 Subsidence
- Lake Lynn Complex
- MacArthur Mine Subsidence
- East Lynn II
- Flipping Hollow Complex
- Sundial (Hatfield) Refuse Piles
- Mill Creek Refuse Pile
- John’s Branch Coal Refuse Dam
- Jessop Highway #10
- Lando (Edwards) Drainage
- Taylorville (Cantrell) Drainage
- Borderland (Matney) Portals
- Peach Ridge Complex
- Measle Fork Refuse
- Georges Creek Portals
- Putney Impoundment
- Kopperston (John’s Branch) Refuse Emergency
- Marmet (Wells Drive) Landslide Emergency
- Marmet (Clark) Drainage
- Pringle Run #2
- Mountain Run Refuse and Portals
- Fairmont East Mine Drainage
- May Portal (Virginia Abandoned Mine Lands)
- Williamson (Hatfield) Landslide
- Georges Creek (Lucas) Rockslide
- Rachel Refuse

- Grass Run Refuse
 - Allen Sheridan Hazardous Facility (asbestos)
 - Elk City- Century- Volga Phase I/II Water Study
 - Camp Mohonegan Regrade
 - Comfort Run Coal Company (asbestos)
 - Allen AMD
 - Cora Mine Drainage No. II
 - Covey Creek Mine Fire
 - Vivian Refuse Pile
 - Summerlee Refuse Pile (won 1996 southern reclamation award)
 - Kimball Refuse Pile (won 1995 southern reclamation award)
 - Hampden (Smith) Landslide
 - Bear Run Refuse (won 1994 Ducks Unlimited award)
 - Charleston (Ratcliffe) Landslide
 - Garrison Complex
 - Mulberry Fork (Stover) Landslide
 - Courtright Highwall
 - Belle Landslide
 - Minden Drilling
 - Kitchen/Gibson Landslide
 - High Coal Tipple
 - Omar Refuse Pile (won reclamation of the year award)
 - Logan Drainage
 - Switzer Adams/Robinson Drainage
 - Follansbee Drainage
 - Hawkins AMD
 - Vargo Drainage
 - Duck Creek Landslide
 - Kistler Mine Fire
 - Turner Douglas Complex
 - Buffalo Creek No. 5 Refuse
 - Dawmont Mine Facility
 - Helen (Lewis) Refuse
 - Upshur 10/15 Drainage
 - Webster County Water Studies
 - Jaeger Water Feasibility Study
 - Burnwell, Standard, and Collinsdale Water Line Extension
 - Clay-Roane PSD Water Feasibility Study
 - Burnsville PSD Water Feasibility Study
 - Brandonville/Pisgah Water Feasibility Study
 - Cuzzart/4-H Water Feasibility Study
 - Hudson/Mt. Nebo Water Feasibility Study
 - Phase I Water Studies Brooke and Fayette Counties
 - Gauley River PSD – Belva
 - Hammond PSD – Wellburg
 - New Haven Chamber of Commerce – Hico
 - Mill Creek Regional Water Project Phase II Water Study (Boone, Lincoln, and Logan Counties)
 - Godby Branch Phase II Water Study
 - Madison Street Portals/Fairview Route 218 Portals
 - Putnam County Phase I Water Studies
 - Heizer Creek
 - Manila Creek
 - Boone County Phase I Water Studies
 - Jeffrey Area – Jeffery, Hewett Creek, Seacoal
 - Ottawa Area – Ottawa, Greenview, Missouri Fork, Meadow Fork, Aleshire Branch, Dent Fork, Mike's Fork
 - Phase II Water Feasibility Studies
 - Logan County – Cow Creek, Crooked Creek, Upper Rum Creek
 - Phase I Water Studies for Logan County
 - Pecks Mill – Godby Heights Communities
 - Cow Creek – Sarah Ann – Crystal Blocks Communities
 - Upper Rum Creek Community
 - Clothier Community
 - Crooked Creek Community
 - Godby Branch
 - Whitman Creek – Holden Project
 - Beaver Creek Waterline Extension: Phase II Water Project
 - Cassity Fork Water Supply Extension: Phase II Water Project
- Subsurface explorations, subsidence monitoring, review of a coal reserve analysis, site plans, preblast/presubsidence surveys, hydrologic analyses, preparation of mining permits, and design and permitting of coal slurry impoundments for coal mining companies in West Virginia, Virginia, Kentucky, Ohio, and Maryland.
- Peabody Coal Company
 - Eastern Associated Coal Company
 - Southern Ohio Coal Company
 - Island Creek Corporation
 - Massey Coal Services
 - Appalachian Mining, Inc.
 - Oneida Coal Company
 - Old Ben Coal Company
 - Mettiki Coal Company
 - Shafer Brothers Coal Co.
 - LP Minerals
- Management of fly ash utilization permits for various coal companies:
- Rawl Sales, Inc.
 - Elk Run Coal Company
 - Appalachian Mining, Inc.

▪ Peerless Eagle Coal Company

Managed subsurface investigation, foundation design, and development of mine stabilization program for NASA's Independent Verification and Validation Center in Fairmont, West Virginia.

Monongahela Power Company – Development of fly ash flowable fill specification for submittal to WV Division of Highways in Fairmont, West Virginia.

Computer modeling of groundwater movement of contaminants resulting from underground coal gasification.

NPDES Industrial/Municipal Permitting

Completed National Pollutant Discharge Elimination System (NPDES) renewal permitting and associated agency negotiations for several facilities.

Plasma Processing Corporation – Management of numerous projects in Ravenswood, West Virginia including:

- Subsurface exploration and preparation of soils report
- NPDES Permit
- Development of sampling program for Plasma to follow in obtaining samples for NPDES Stormwater Analyses
- Development of hazardous waste operations manual
- Acquisition of WV Air Pollution Commission permits
- Environmental audit of facility operations

Hydrology and Hydraulics

City of Charleston – Hydrologic and hydraulic analyses of South Ruffner Watershed. Project analyzed various storm events and presented conceptual recommendations to reduce effects of these storms.

U.S. Army Corps of Engineers, Jacksonville District – Determination of watershed areas along the Suwannee River Basin.

Groundwater

Dilley's Mill – Principal-in-Charge for review of regional groundwater information for a summer Boy Scout camp facility to locate and construct a replacement drinking

water well for the facility. Responsibilities included the development and review of existing facility usage, determination of the location and depth of the proposed water well and design of the well to meet with the requirements of the State of West Virginia Department of Health standards. Design of sewage collection system and synthetic lined sewage treatment lagoon including permitting.

Groundwater sampling programs:

- Herr's Island – Urban Redevelopment Authority of Pittsburgh
- Robertshaw Controls in New Stanton, PA
- New Castle Power Station
- Pennsylvania Power Company
- Portsmouth Power Station
- Virginia Electric and Power Company
- Rhone Poulenc Ag Company – Institute, WV

Management of pump tests:

- Peabody Coal Company – Bim, WV
- Southern Ohio Coal Company – Meigs County, OH
- Rhone-Poulenc Ag Company – Institute, WV

Rhone Poulenc Ag Company – Development of specification manual for conducting soil and groundwater sampling programs. Manual detailed decontamination methods and proper handling/disposal methods in Institute, West Virginia.

Environmental Assessments/Impact Statements

Management of numerous environmental assessments for property transactions:

- Arch Coal – Multiple WV Tracts ESA (60,500 acres)
- Massey Coal Services – Red Cedar Surface Mine (850 acres)
- Duke Energy – Chicopee Environmental Audit (6,000 acres)
- Pittston Coal Management Group – Phase I ESA (6,000 acres)
- Massey Coal Co. – Hampton Site, Spruce Laurel (130 acres)
- Eastern Associated/Peabody Coal – Phase I ESA (1,035 acres)
- Eastern Associated Coal – Environmental Due Diligence for Active and Closed Operations in KY and WV (100,000 acres)

- Peabody Coal – Multi-state Environmental Audit in WY, CO, NM, AZ, Western KY, IN, IL (250,000+ acres)
- Peabody Coal – Environmental Due Diligence for Properties in IL and IN (150,000+ acres)
- AMVEST Mineral Services – Phase I ESA (8,000 acres)
- Peabody Energy Corp. – Phase I ESA on Putnam Property (1,036 acres)
- Arch Coal – Environmental Compliance Audit in KY, WV, and VA (150,000+ acres)
- Massey – Consolidated Coal Co. Holden Complex (5,500 acres)
- Massey – Environmental/Reclamation Liability Assessment for Northland Resources (150 acres)
- Peabody Coal – Phase I ESA for Imperial Coal and Turner Properties (5,400 acres)
- Peabody Group – Environmental/Reclamation Liabilities for Kanawha Eagle, LLC Permits in Boone and Kanawha Counties, WV (350 acres)

Principal-in-charge for the Coalfields Industrial Site Survey performed for the West Virginia Development Office. Study identified and evaluated more than 1,000 former and current mining sites for use as industrial sites. McDowell County was one of six included in the study. The study considered accessibility, utility status and distance of required extensions, topography, site size, etc.

West Virginia Division of Highways – Coordination of Environmental Impact Statement for Route 19 upgrade from Summersville to Interstate 79 in Braxton County and New River Parkway from Sandstone Falls on I-64 to near Athens on I-77.

DAVID K. PAYLOR, M.S.

Vice President of Environmental

EDUCATION

- M.S. Fisheries Science, 1980
Oregon State University
- B.S. Zoology, 1975
Duke University

EMPLOYMENT HISTORY

- 2022-Present Potesta & Associates, Inc.
- 2006-2022 Virginia Department of Environmental Quality- Director
- 2002-2006 Secretary of Natural Resources- Deputy Secretary
- 1998-2002 Virginia Department of Environmental Quality – Director of Program Coordination
- 1994-1998 Virginia Department of Environmental Quality – Regional Permits Director
- 1992-1994 Virginia Department of Environmental Quality, Spills Response & Remediation – Office Director
- 1987-1992 Virginia Water Control Board – Water Resources Manager
- 1984-1987 Virginia Water Control Board – Water Resources Ecologist
- 1977-1984 Virginia Water Control Board – Pollution Control Specialist A
- 1973-1977 Virginia Water Control Board – Pollution Control Technician

PROFESSIONAL AFFILIATIONS

- Environmental Council of the States, Environmental Research Institute of the States – President
- Board of Regents - Multi-State Working Group Policy Academy
- Commonwealth Management Association – Virginia Executive Institute

PROFESSIONAL CERTIFICATIONS

- 1977 U.S. Fish and Wildlife Service Certification – Identification and Control of Fish Diseases
Eastern Fish Disease Laboratory

TRAINING/RELEVANT COURSE WORK

- 1999 Virginia Executive Institute
- 1988 Commonwealth Management Institute

AWARDS

- 2016 Al Passeler Award
- 2015 Gerald P. McCarthy Award for Leadership in Environmental Conflict Resolution
- 2004 Outstanding Environmental Leader – State Government, Environment Virginia

ABSTRACTS, PRESENTATIONS, AND MANUSCRIPTS

Masters Thesis: The effect of intermittent and continuous copper exposure on the susceptibility of steelhead trout (*Salmo gairdneri*) to *Vibrio anguillarum*.

Paylor, D.K.; Ayers, R.W., Bell, J.R. 1986. "Use of field and laboratory biological techniques to evaluate the toxic impact of a combined industrial and municipal discharge." Boardman, G.D. (ed) Toxic and Hazardous Wastes: Proceedings of the Eighteenth Mid-Atlantic Industrial Waste Conference.

AREAS OF SPECIALIZATION

Effective environmental resource management and technical and policy expertise including water quality and quantity management, air quality management and climate control, waste management, pollution prevention and environmental excellence, environmental education, administration, and environmental justice. Comprehensive knowledge of State and Federal mandates for multiple environmental programs.

PROFESSIONAL EXPERIENCE

Regulatory Support

Responsible for management and supervision agency regulatory and non-regulatory programs as Director of Virginia Department of Environmental Quality:

- Clean Water Act and State Water Control Law permitting and compliance
- Water Quality Monitoring

- Water Supply Planning and Permitting
- Construction Financial Assistance Programs
- Chesapeake Bay Restoration
- Wetlands Protection and Restoration
- Groundwater Protection
- Clean Air Act and State Air Pollution Control Law permitting and compliance
- Air Quality Planning and Modeling
- Air Quality Monitoring
- Carbon Cap and Trade Regulation, RGGI
- Hazardous Waste Remediation Program (RCRA, CERCLA, BRAC)
- Management of Hazardous Waste
- Virginia Waste Management Act solid waste permitting and compliance
- Underground and Aboveground Petroleum Storage Tank Programs
- Solid Waste and Petroleum Financial Assurance Programs
- Coastal Resources Programs
- Waste Tire Cleanup Program
- Environmental Impact Review
- Pollution Prevention and Environmental Excellence
- Environmental Education
- Litter Prevention and Recycling
- Environmental Justice
- Administration Procurement
- Direct agency legislative affairs and external relations

Accomplishments during his tenure serving the Commonwealth of Virginia:

- Air pollution in Virginia decreased by more than 50%
- Water quality improved in 400 waterways, 29 square miles of estuaries, and nearly 2,000 miles of streams
- 30,000 leaking petroleum tank sites and 4,000 acres of contaminated lands remediated
- Redesign and streamline wetlands permitting to cut processing time by 50%
- Renegotiated delegation from U.S. Army Corps of Engineers so that 85% of proposed wetlands projects require a single permit from the Virginia Department of Environmental Quality
- Redeveloped and streamlined Solid Waste Management Regulations with significant stakeholder input to provide simplified rules that were outcome driven
- Supported state recycling programs that achieved an overall state recycling rate of greater than 38%
- Completed statewide water supply planning process with 100% of localities developing approved plans
- Expanded Brownfields/Land Renewal Program
- Established the Environmental Justice Office

D. MARK KISER, P.E., L.R.S.

Chief Engineer



EDUCATION

B.S. Civil Engineering, 1984
West Virginia University

EMPLOYMENT HISTORY

1997-Present Potesta & Associates, Inc.
1995-1997 Terradon Corporation
1984-1995 GAI Consultants

PROFESSIONAL REGISTRATIONS

- Professional Engineer – West Virginia
- Licensed Remediation Specialist – West Virginia

PROFESSIONAL CERTIFICATIONS

- Hazardous Waste Site Operations and Superfund
- Worker Protection Training, 40-Hour Training
- Supervisory Training and Annual Refreshers
- Troxler Nuclear Densometer Certification

SERVICE ON BOARDS AND COMMISSIONS

Commissioner – Sissonville Public Service District

AREAS OF SPECIALIZATION

Environmental assessments, environmental sampling and remedial programs, conceptual and final designs for chemical, utility, and municipal solid waste disposal sites, including liner systems, leachate management systems,

stormwater management systems, operational plans and capping/closure systems, abandoned mine land reclamation projects, sludge stabilization and basin/pond closure projects, environmental permitting, hydrologic and hydraulic analyses, quality assurance/quality control monitoring.

PROFESSIONAL EXPERIENCE

Landfills/Solid Waste/Waste Disposal

DuPont Washington Works – Project Manager responsible for design, preparation of construction documents, and construction documents, and construction quality assurance monitoring for a 6.2-acre expansion of a piggyback of a leachate collection system at an industrial waste landfill.

Eastern Environmental Services, Inc. – Project engineer/project manager for finalizing a permit application for the S&S Landfill near Clarksburg, West Virginia. Components of the plan included a detailed staging and closure plan to comply with sediment control and leachate storage requirements. Successfully represented the landfill in a permit appeal hearing before the Water Resources Board. Prepared two construction/bid packages for constructing the initial 10 acres of the landfill.

Cytec Industries – Quality assurance/quality control monitoring for closure of a 10-acre SWMU containing biological treatment sludge. The contents of the basin were stabilized by mechanical mixing. Activities included supervision of testing, data evaluation, and a revised interim grading and drainage plan. Report and certification provided for WVDEP-OWM.

Cytec Industries – Closure plan and permit application for closure of a 5-acre industrial waste landfill. Steep slopes over a portion of the landfill necessitated the design of an innovative cap system and leachate collection system. Project also included closure and capping of a small pit containing tar residue.

Responsible for detailed hydrogeologic investigation and preparation of a major portion of the WVDEP Part A Solid Waste Disposal Permit Application for the Northfork Landfill near Wheeling, West Virginia. Project included field reconnaissance and mapping of existing site conditions, rock corings, test pits, laboratory analysis

of soils for potential construction materials, installation of four monitoring wells, and the corresponding analysis and evaluation of data for completing the Part A Application.

Responsible for hydrogeologic investigation and preparation of the WVDEP Part A Solid Waste Disposal Permit Application for the Sycamore Scenic Landfill in Putnam County, West Virginia. Work included coring, test pit, and laboratory analysis of soils; review of existing groundwater data; and analysis and evaluation of data for completing the Part A Application.

Project Manager responsible for construction quality assurance monitoring for three landfill expansions at Brooke County Sanitary Landfill, including 6.5 acres of composite liner.

Project Manager responsible for construction quality assurance monitoring for 0.8-acre composite liner expansion at Wetzel County Landfill.

Project Manager/Project Engineer for design of composite liner system expansion, design and construction quality assurance for a 2-acre final landfill cap, and design of a new access road serving Pocahontas County Landfill.

Chambers Development Company – Preparation of solid waste disposal permit applications for the Monroeville Landfill, Monroeville, Pennsylvania, and the Southern Alleghenies Landfill, Cambria County, Pennsylvania, both of which include a double synthetic liner system combined with a drainage net leak detection system to conform to Pennsylvania DER regulations.

Project manager/engineer for the West Virginia Division of Environmental Protection's landfill closure assistance program for 1997 through 2002. Responsible for conceptual design, field investigation, construction drawings, specifications, permit applications, etc., for the following projects:

- Wyoming County Landfill
- Jackson County Landfill
- Kanawha Western Landfill
- Monongalia County Sanitary Landfill
- Fayette County Landfill
- Fleming Sanitary Landfill

QA/QC monitoring oversight for a municipal waste

landfill in Tazwell County, Virginia.

Design; preparation of drawings, technical specifications, and contract/bid documents; construction monitoring; air monitoring; sludge sampling and analysis; review and approval of a detailed health and safety plan; permitting; and other miscellaneous engineering services for the stabilization and closure of a 3-acre sludge basin and a 1-acre sludge pond. The project included management of a pilot-scale demonstration, procurement of stabilization reagents from multiple providers, and development of an adjacent soil borrow area.

Design; preparation of drawings, technical specifications, contractor's bid sheet, engineer's cost estimate, contract, and cap acceptability evaluation; evaluation of contractor bids, and construction monitoring associated with the capping and closure of a 2.5-acre cell of an industrial waste landfill facility. Cap included a multi-layer geocomposite system to minimize infiltration and the production and leachate to improve the areas groundwater quality.

Final design and preparation of construction drawings, detailed technical specifications, and engineer's construction cost estimate for the construction of a 1.9-million-gallon double-lined pond and 5 acres of a landfill liner system. This project included development of an ultimate facility layout plan, a two-year detailed development plan, and construction monitoring. Project also included negotiations with regulatory agency to obtain approval of the permit.

Response to regulatory agency review comments and redesign of a pond liner system and piggyback landfill liner system for a 20-acre landfill in West Virginia.

DuPont Environmental Remediation Services – Consulting regarding the design of a final cover/cap for an industrial waste landfill located in West Virginia.

West Virginia Public Service Commission – Site reconnaissance, development of alternative capping/closure systems, and preparation of engineer's cost estimates for the closure of two West Virginia municipal waste landfills in support of rate making testimony and hearings.

American Cyanamid Company – Project manager/engineer for independent quality assurance/quality control monitoring associated with

closure of a three-acre SWMU consisting of a waste impoundment. Project included construction of an earthen buttress to improve slope stability, in-place waste stabilization using fly ash and kiln dust, and construction of a RCRA cap. Responsible for field design revisions to overcome problems, conformance testing, and preparation of certifications and a summary report. Project included sampling and analysis of raw and stabilized sludge.

American Cyanamid Company – Coordination of field activities associated with construction monitoring and laboratory testing for RCRA hazardous waste impoundment (the first permitted and constructed in EPA Region III) in Willow Island, West Virginia, including earth moving, construction of a soil-bentonite liner, monitoring of three, sealed double-ring infiltrometers, and construction of an HDPE double-lined impoundment.

Pennsylvania Electric Company – Field (construction) monitoring for development of a residual waste landfill including compaction testing for heavy earth moving, synthetic (PVC) liner installation, concrete testing, and other miscellaneous testing.

Virginia Power Company – Consultant for site development and construction of a fly ash disposal facility including a review of site operations, developing a maintenance program, compaction testing and review, and problem shooting.

Rhone-Poulenc Ag Company – Design and permitting for a proposed industrial solid waste landfill. Project included complete hydrogeologic evaluation including several borings and installation of seven monitoring wells; documentation of soils, geology, water quality and hydrogeology; detailed site design of leachate ponds, liner system, storm water collection system, access road, and capping/closure system. Multi-volume permit application prepared including Operations Manual, Quality Assurance/Quality Control Plan, Technical Specifications, Permit Application, and Design Drawings.

Rhone-Poulenc Ag Company – Leachate Minimization Study for a RCRA Hazardous Waste Landfill. Project included assessment of existing landfill operation and recommendations to reduce quantity of contaminated runoff from over 8 million gallons per year (MGY) to between 2 and 3 MGY. Detailed staging and operating plan, storm water management plan, and cost estimates

prepared.

American Cyanamid Company – Closure plan and permit application for closure of a three-acre surface impoundment containing sludge and tar. Stability concerns for an existing embankment containing the waste lead to the development of a lightweight cap. Subsurface investigation and field surveying completed. Closure application as required by the West Virginia Division of Environmental Protection provided.

Soundings and sampling of three basins containing sludge. Two basins contained sludge from secondary biological treatment of industrial wastewater. One basin contained petroleum product sludges. Sludge quantities determined from soundings and cross sections prepared.

Samples obtained for laboratory analysis to characterize wastes.

- Rhone-Poulenc Ag Company
- Ashland Petroleum Company

Monongalia County Sanitary Landfill – Engineer responsible for expansions, planning, and upgrades for the Monongalia County Sanitary Landfill from 1990 through 1992. Activities included:

- Three expansions (seven acres total) of the landfill liner and leachate collection system, including grading, groundwater collection drains, landfill liner system and leachate drains, protective cover, and surface drainage control
- Construction monitoring
- Certification of landfill expansions
- Construction of a 1.6-million-gallon leachate storage basin, including clay liner, double synthetic liner, synthetic drainage layer, protective cover, and drainage control devices
- Annual landfill volume reports, including surveyed cross sections
- Two borrow area investigations to identify clay liner sources
- Feasibility study for expansion and continued operation of the facility
- Final closure plan for the facility including a multi-layered cap and drainage control plan

Rhone-Poulenc AG Company – Evaluation of an emergency fly ash pond for a chemical plant in Institute, West Virginia. Recommendations, including conceptual

design drawings and an engineer's cost estimate, to increase the settling efficiency of the pond. Special design elements, including a polymer feed system, submerged manifold pipe, splitter dike, and an overflow weir.

Hampton-Clarke, Inc. – Project Manager for Independent Quality Assurance Testing (IQAT) services for removal of contaminated soils and placing clean soil backfill at the site of a former cullet pile disposal area.

Civil/Site Design

Ridgeline, Inc./Cabela's – Retained by developer and Cabela's to provide civil engineering design services for a new Cabela's store in Charleston, West Virginia.

- ALTA survey
- Subsurface exploration
- Grading plan including balanced cut and fill for the building pad, parking fields, and access roads.
- Stormwater collection system design including curb inlets, catch basins, and culverts.
- Pavement design.
- Utility extension designs including sanitary sewer, potable water, fire service, natural gas, underground electric, underground telephone, and underground cable television.
- Permitting services
- Support for local approvals including approval from Charleston Municipal Planning Commission as a Development of Significant Impact and building permit to allow construction to begin.
- MM-109 permit to allow for connection of the store's new roadway with the existing public roadway.

Fieldcrest Subdivision – Project manager/engineer for development of a nine-lot subdivision in Charleston, West Virginia. Design and permitting/regulatory approvals for infrastructure, including new street, sanitary sewer main, water main, stormwater, electric, telephone, cable, and natural gas. Preparation of drawings/specifications for necessary governmental agency approvals and for solicitation of bids. Inspection and certification of completed sanitary sewer system.

Connell Pointe Subdivision – Project manager/engineer for development of an eleven-lot subdivision in Charleston, West Virginia. Design and

permitting/regulatory approvals for infrastructure, including new street, sanitary sewer main, water main, natural gas service, stormwater, electric, telephone, and cable. Preparation of drawings/specifications for governmental agency approvals and for solicitation of bids. Inspection and certification for completed sanitary sewer systems.

Conner Drive Townhouses – Project manager/engineer for development of 13 townhouse lots just outside of Charleston, West Virginia. Planning, surveying, design, and regulatory approvals for infrastructure, including new street, stormwater management system, sanitary sewer main, water main, electric, natural gas, telephone, and cable.

Gettysburg Subdivision – Project manager/engineer for an 18-lot subdivision located in Kanawha County, West Virginia. Design, surveying, and regulatory approvals for infrastructure, including new street, sanitary sewer main, water main, stormwater management system, electric, natural gas, telephone, and cable. Preparation of drawings/specifications for solicitation of bids. Inspection and certification of the sanitary sewer collection system and pump station.

Yorktowne Subdivision – Project engineer for development and construction phase services for a 50-lot subdivision in Charleston, West Virginia. Design of streets, lots, stormwater management systems, sanitary sewer mains and pump stations, water mains, underground electric, natural gas, telephone, and cable.

City of Charleston – Feasibility study for the replacement of the CSX Ramp in Charleston, West Virginia.

Villages at Coolfont – Project manager for project in Morgan County, West Virginia, which included planning, engineering, and permitting associated with developing a second home community on 1,000 acres near Berkeley Springs, West Virginia. Project included:

- Potable water supply source (wells), treatment plant, storage, and distribution system
- 0.44 MGD MBR wastewater treatment plant and sanitary sewer collection system
- Community roadways and storm sewer systems
- Detailed plans for the water and wastewater treatment plants and the distribution allocation system serving the first 124 homes
- Permits were obtained for the water and wastewater

plants

Project engineer for development of Suncrest Subdivision in Charleston, West Virginia. Project included engineering and permitting for a new residential subdivision including roadway, underground electric, telephone, cable, water, sanitary sewer, and storm water. Sanitary sewer system was designed, constructed, and monitored under the terms of an alternate mainline extension agreement with the Charleston Sanitary Board.

Business and Industrial Development Corporation – Preparation of Utility Extension and Roadway Paving Plans for Southridge Centre - Phase 2 area. Project included preparation of bidding/construction drawings to provide natural gas, water, sanitary sewer, telephone, and cable television serving four commercial lots and a 50-lot proposed subdivision. All utilities were underground. The length of the project was approximately ½ mile. The project also included roadway paving and stormwater drainage.

Development of a conceptual development plan for a mixed-use industrial park. The evaluation included developing preliminary alignments for two access roadways including earthwork requirements, drainage, subbase, and paving with preliminary cost estimates. Total length of road was over 5 miles. The evaluation also included preliminary layout of water and sewer service for a proposed 400-acre development.

Plasma Processing Corporation – Preparation of permit to construct and site development plan for a secondary aluminum processing facility startup in Jackson County, West Virginia.

Utility relocation plans required for site development, waterline, and sewer construction projects. Projects included determination of utility locations by records review, utility contacts, and surveying. Designs were prepared including locations, details, and pavement replacement. Design also included obtaining approvals from West Virginia Division of Highways and the owners of the utilities.

Stormwater

Expert witness for plaintiff damaged as a result of flooding caused by lack of maintenance at a culvert system in Westmoreland, Wayne County, West

Virginia.

Stormwater drainage plans for site development projects including pre- and post- development discharges, design of sediment control devices, preparation of stormwater general permit application, and consulting for numerous construction projects in West Virginia.

Evaluation of stormwater drainage system (culverts and channels) to alleviate flooding problems for a church in Kanawha County, West Virginia. Project included computer modeling to identify culvert capacities and to identify repair options.

Expert retained to support a property owner damaged as a result of flooding caused by downstream obstructions. Reviewed regulatory agency files, conducted site inspections, evaluated possible remedial measures, and provided support in anticipation of litigation.

Expert witness for plaintiff damaged as a result of flooding from upstream construction. Visited site to observe problem areas, reviewed construction practices/procedures, reviewed regulatory permits, and provided testimony as to the cause of flooding.

Developed stormwater management plans, including calculation of peak runoff rates, storm volumes, and design of stormwater management devices including culverts, ditches, sumps, ponds, principal pipe spillways, and emergency spillways for the following projects:

- Site development projects including commercial, retail, and industrial sites ranging from ¼ acre to more than 100 acres
- Abandoned mine lands reclamation projects including landslides, refuse piles, slurry ponds, and subsidence control projects
- Commercial and industrial waste landfill projects.
- Road design projects
- Other projects involving the disturbance of the ground surface

Abandoned Mine Lands

West Virginia Division of Environmental Protection Abandoned Mine Lands (WVDEP AML) Reclamation – Project engineer/project manager for open-end contract from 1988 through 1995. Continued after 1995 with AML projects for WVDEP AML including reclamation designs,

preparation of plans, specifications, bid documents, and permitting.

WVDEP-AML – Detailed design and preparation of construction drawings, specifications, contractor's bid sheet, and engineer's cost estimate for a half-mile water line extension to serve Beaver Creek near Junior in Randolph County.

Subsurface investigation, surveying coal refuse reprocessing evaluation and report, and design of reclamation plan to stabilize and approximately 15-acre refuse pile at Buffalo Creek No. 5 in Marion County, West Virginia. Developed plans, specifications, cost estimate, and calculations brief for drainage control and regrading plan.

WVDEP-AML – Management of four Phase II water studies and five Phase I water studies to determine if water supplies had been affected by coal mining. Work included resident interviews, mine map searches, area reconnaissance, obtaining water samples, reviewing water analysis data, preparing conceptual designs and associated costs and preparation of summary report.

Subsurface investigation, surveying, and design for reclamation of three coal refuse piles and six mine entries. Design included replacement of a water well and related supply piping for the Town of Kimball. Completed preparation of plans, specifications, cost estimate, coal refuse report, West Virginia Department of Health permit for new well, and other supporting documents for reclaiming this large site with over ½ million cubic yards of regrading.

Subsurface investigation, surveying, coal refuse reprocessing evaluation, water quality monitoring, and design of a reclamation plan for a coal refuse pile, unreclaimed highwalls, and slurry and water treatment ponds in Lewis County, West Virginia. Plans, specifications, cost estimates, and calculations brief were completed for the project.

Environmental Impact Statements

Rhone-Poulenc AG Company – Management and oversight of environmental assessment to identify any liabilities or soil/water degradation for a proposed industrial solid waste landfill. Investigation included drilling, sampling, monitoring well sampling, site reconnaissance, and historic records research to establish

baseline soils and groundwater conditions. Results presented in a report.

West Virginia Division of Highways – Environmental Assessment for a 1.25-mile proposed four-lane divided highway in Bridgeport, West Virginia.

West Virginia Division of Highways – Environmental Impact Statement (EIS) for proposed Route 19 upgrade from Summersville, West Virginia to Interstate 79 in Braxton County, West Virginia. Project included evaluation of three alternatives over approximately 25-mile length. Responsibilities included hazardous waste section collection of general data used by other scientists, field reviews, and public meeting participation.

Assessment of environmental and reclamation liabilities associated with over 40 surface mine permits in western Virginia. Evaluation included PCB concerns, reclamation costs, underground and aboveground storage tanks, and acid mine drainage.

Massey Coal Service, Inc. – Assessment of environmental liabilities associated with a large tract of property including over 25 permitted mines and a coal preparation plant. Investigation included a review of permits and requirements, past environmental compliance record, walkover of each site, and development of estimated reclamation costs for each site. Report prepared to document results of the liability assessment.

Completion of environmental assessments and a preliminary design report for two inactive commercial solid waste disposal landfills located in Kanawha and Wyoming County, West Virginia. The environmental assessment included completion of a groundwater user's survey for residents located within ½ mile of each facility, drilling shallow groundwater monitoring wells to monitor flow along the soil/bedrock interface

downgradient of each landfill, an extensive geotechnical soils/rock investigation, assessment of each facilities compliance with the solid waste management rules and developing recommendations for a preliminary closure plan.

CHRISTOPHER A. GROSE, L.R.S.

Senior Engineering Associate



EDUCATION

- M.S. Geological Engineering, 1990
University of Missouri-Rolla
- B.S. Civil Engineering, 1988
West Virginia Institute of Technology

EMPLOYMENT HISTORY

- 1997-Present Potesta & Associates, Inc.
1994-1997 Terradon Corporation
1990-1994 GAI Consultants, Inc.
1989-1990 University of Missouri-Rolla
1989 Triad Engineering Consultants
(summer)
1988 West Virginia Institute of Technology
1983-1988 Clint Bryan & Associates Architects
(summers)

PROFESSIONAL REGISTRATIONS

Licensed Remediation Specialist – West Virginia

PROFESSIONAL CERTIFICATIONS

- Hazardous Waste Site Operations and Superfund Worker Protection Training
- American Red Cross Standard First Aid and CPR
- Troxler Moisture-Density Gauge

PROFESSIONAL AFFILIATIONS

- American Society of Civil Engineers
- Association of Engineering Geologists
- Society of America Military Engineers

AREAS OF SPECIALIZATION

Geological/Geotechnical engineering related to subsurface exploration studies, soil and rock slope design, landslide causation studies, foundation system design, surface/subsurface hydrogeology, ground subsidence, contaminant transport and groundwater flow modeling. Planning, design, and permitting of natural gas production well pads and access roads. Geological study of hazardous waste remediation sites, CERCLA/SARA, RI, and FS report compilation, geological and geotechnical aspects of siting and design of municipal and industrial waste landfills.

PROFESSIONAL EXPERIENCE

Landfills/Solid Waste/Waste Disposal

WVDEP Closure Assistance Program – Design of final landfill closure for abandoned solid waste facility. Design included diversion and collection channels, cap design, leachate collection system, and 150,000-gallon leachate storage tank in Montgomery, West Virginia.

American Cyanamid – Engineering design for the closure of a chemical waste landfill in Parkersburg, West Virginia. Completion of a settlement analysis to determine the expected consolidation of waste during dewatering. Cover design incorporated a composite liner system with synthetic drains. The cap utilized synthetic reinforcement to minimize consolidation-induced stresses on the synthetic liner.

West Virginia Department of Environmental Protection – Responsible for the development and design of several interim or maintenance related items associated with drainage at the Monongalia County Landfill in Morgantown, West Virginia. Included the design and upgrade of both new and existing channels, diversions to berms to minimize surface water infiltration and minimizing the amount of leachate generation.

American Cyanamid – Permit completion for closure of a chemical sludge impoundment near Parkersburg, West

Virginia. Analysis of existing monitoring well configuration.

Design, management, and project oversight during construction for the closure of a 7-acre biological sludge pond in Nitro, West Virginia. Preliminary design studies included the completion of batch tests to evaluate stabilization materials. Also handled the development and submittal of several permits associated with the project including erosion and sediment control plan, Army Corps of Engineers permit, and a wetlands investigation and nationwide 404 permit.

Development of closure design for a 14-acre inactive waste water treatment pond in Nitro, West Virginia. Responsibilities included evaluation of sludge stabilization technologies, types of reagent and mixing ratios to achieve the required in-place strengths. Conducted contractor interviews with the owner, as well as providing assistance to the owner during preparation of the construction contract. During construction, conducted weekly safety meetings on-site with the contractor. This project was also expanded to provide stabilization of a 1.5-acre digester basin adjacent to 14-acre pond. The original contract was extended to cover stabilization of this pond. Stabilization efforts included submittal of an Army Corps of Engineers' nationwide permit to stabilize the bank of the Kanawha River and application of a West Virginia NPDES General Stormwater Construction Permit.

North Fork Landfill – Permit completion for a new municipal landfill, including design and construction of monitoring wells to monitor several aquifers in Wheeling, West Virginia.

Sycamore Landfill – Part I permit completion, design, and implementation of a drilling program, including evaluation of an existing monitoring well configuration. Testing of existing site soils for sources of suitable liner material.

Rhone Poulenc Ag Company – Completion of several Part I Solid Waste Facility permits including the design and implementation of drilling programs, formal geological studies, hydrogeological analysis of proposed sites, and locations and development of upgradient and downgradient groundwater monitoring wells. Design, construction, and development of seven monitoring wells for a proposed 13-acre industrial waste disposal facility near Institute, West Virginia.

Geotechnical

Completion of numerous subsurface exploration studies for active soil slope landslide failures associated with the development of natural gas production well pads and access roads. Work included the layout, surveying, and logging of subsurface borings to determine the depth and extent of the slope failures. Following collection of soil/rock samples, materials were tested for characteristic and strength properties. Following testing efforts, the failed slopes were modeled using computer-based slope stability design models to determine a stable configuration including the addition of rock buttresses, toe keys, underdrains, mid-slope keys, etc. Final stabilization plans were then prepared for the client allowing bidding and selection of a repair and stabilization contractor to perform the work.

- Stone Energy Corporation
 - Mills-Wetzel No. 2 well pad landslide repair
 - Potoczny well pad landslide repair
 - Mills-Wetzel access road landslide repair
 - Pribble Tank landslide repair
 - Haines Branch pipeline landslide repair
- Columbia Pipeline Group (TransCanada Pipeline)
 - SM8 pipeline landslide repair
 - SM80 Loop pipeline landslide repair
- Chesapeake Energy Corporation – R. Baker well pad landslide causation study
- TransEnergy Corporation – Dewhurst well pad landslide repair
- Reserve Oil & Gas – Reed No. 1 well pad access road landslide repair

West Virginia Division of Highways – Geotechnical engineer on geotechnical/landslide master services agreement for on-call services for a three-year period.

Forensic study, expert testimony, and legal support related to the failure of numerous soil/rock slopes throughout West Virginia. This work included extensive review of relevant project case documents, site reconnaissance visits, interviews with project personnel, and deposition testimony.

Lynn Elementary School – Technical insight and recommendations to attorneys representing an adjacent property owner related to the contributing factors related to the formation and continued failure of an excavated soil slope. The toe of the slope was excavated during the site development of the proposed elementary school site in Lynn, West Virginia.

Crichton & Crichton – Landslide formed along a wooded hillside below a residential driveway on Pleasant Lane in Wood County, West Virginia. The slope failure was noted during a substantial leak in an existing water main. The work included a review of case documents, interviews with various residents (plaintiffs in the case) and the development of supporting causation theory for the formation of the landslide. The work also includes the development of repair alternatives and associated construction estimates to be considered during the dispute hearing between the plaintiff and defendants.

Chesapeake Appalachia/Law Office of Jeffrey Mahal (R. Baker Natural Gas Production) – Provided technical study and file review of case documents related to the grading contractor's construction work efforts to prepare a well pad for the installation of a series of horizontal gas production wells in Marshall County, West Virginia. The work included the removal of soil and rock from an existing hilltop. The resulting material was placed or wasted in series of three side hill fills along the edges of the resulting well pad. All three of these fills experienced progressive and ongoing failures following the construction effort. Reviewed design documents, construction records, and details related to several repair attempts to result in the development of a professional opinion related to the various factors contributing to the multiple slope failures.

Nationwide Trial Division/Khan & Wheeler (Ross v. WVAW Landslide Case) – Provided professional opinion related to the formation of a slope failure along the Elk River immediately behind several commercial and residential homes near the Town of Elkview, West Virginia. The initial landslide occurred immediately following a main waterline break along the front of the structures. The regressive and prolonged failure continued over several weeks and ultimately damaged a gravity sanitary line as well as several of the structures. Work included an extensive review of several years of case records provided for the case including a review of existing utility maintenance records, historic climatologic data, river stage information and depositional testimony from many of the affected parties. A summary of professional opinion report was prepared describing a number of factors including lack of maintenance storm culverts in the area as well as an increase of saturation along the slope from the failed water main as the cause of the slide. It was determined that several of the structures were supported on previously placed fill material which was placed along the river bank in the early 1900's in

conjunction with the initial roadway construction. This coupled with the lack of maintenance and presence of deteriorated drainage culverts likely contributed to the slope failure. The initial installation of this fill material was determined through an extensive study of the historic topographic mapping of the area.

Responsible for development of geotechnical and geological recommendations as well as development of stabilization designs for many failed soil/rock slopes in West Virginia. This work included initial site reconnaissance visits, development of a subsurface exploration study and materials testing program, evaluation of stabilization alternatives, and construction plan preparation.

Travelers Insurance/City of Charleston – Project included a subsurface exploration study, engineering design, and global stability evaluation of a failed soil slope in a residential neighborhood on Bona Vista Drive for the City of Charleston, West Virginia. The slide was caused by a water main break along an existing residential neighborhood paved roadway. The recommended slope stabilization method was to install a soldier beam and lagging retaining wall along an existing paved roadway (supporting the buried utilities) with the remainder of the failed slope below being removed and replaced with compacted soil backfill.

Stone Energy Pribble Tank – Work included the exploration and study of a failed soil/weathered rock slope which was loaded through the placement of fill near the top of the slope to provide adequate area for the construction of 2- 2,400,000-gallon water storage tanks in New Martinsville, West Virginia. Shortly following the installation of the tanks, a large section of the hillside failed leaving one of the tank foundation partially unsupported. Following the subsurface exploration and drilling work, a stabilization plan was developed which included the removal of the failed soil mass (>50,000 CY) followed by the replacement of compacted soil material behind a large toe key and buttress. The repair also included surface diversion drainage ditches and numerous bond benches along the underlying rock line which were fitted with under drains to collect subsurface seepage.

NiSource/Columbia Gas Pipeline Group SM-80 Loop Gas Transmission Line – Development of a subsurface exploration and drilling plan to determine the extent and depth of a soil and weathered rock slope failure which threatened the performance and stability of a 30-inch high pressure natural gas transmission line in Kanawha

County, West Virginia. The slide location was remote and situated along a steep hillside. The stabilization plan recommended the use of soil nail technology due to the remote location and rather inaccessible nature of the location. This repair and stabilization technique allowed for the in-situ repair of the failed slope without extensive excavation and backfill which was deemed difficult and would have required more land disturbance resulting in additional slope stability concerns.

EQT Rockport #7244 Natural Gas Storage Well Pad – Project involved the assessment and repair recommendations for a section of failed fill slope immediately below existing and active natural gas storage well near the community of Rockport in Jackson County, West Virginia. The failed slope was caused by improper surface drainage control along the pad and access road. The stabilization plan included the excavation and removal of the failed slope following “shut-in” of the storage well. The upper failure scarp was situated immediately adjacent the well head which was protected during the stabilization work. Following installation of a rock toe buttress and key way, the failed soil material was amended using lime to reduce the moisture content which was required to achieve the recommended in place density during placement and compaction. Following the regrading effort, the slope was trimmed and seeded followed by the grading a several diversion and collection ditched to control runoff from the upper portion of the hillside below the well pad.

City of Charleston – Geotechnical assessment and development of regrading construction plans for the repair of a failed soil slope below Grandview Drive for the City of Charleston, West Virginia. The slope failure occurred between two adjacent residential structures and encompassed a sanitary sewer main as well as a storm drainage pipe receiving storm drainage from Grandview Drive. The stabilization plan involved the removal of the failed mass beginning at the toe of the slope and then working progressively upslope to result in a stabilized and regraded slope surface. The work required the removal of all failed material to the underlying rock surface and included the installation of a shot rock toe buttress which was installed along a natural topographic bench near the toe. Following completion of the work the affected utilities were installed either below the fill material or outside the regraded slide area.

Greer Industries Cheat River Quarry Haulroad – Project included the development of stabilization and repair

recommendations for a failed soil slope which impacted a critical haulroad utilized by the quarry operator to move raw shot rock material from the quarry to the crusher at the aggregate plant in Rowlesburg, West Virginia. The landslide occurred because of the failure of a cross drainage culvert in the haulroad. The failed soil mass was removed to the underlying bedrock and following installation of a stone toe buttress and toe key, the material was blended with aggregate material from the plant and placed in compacted lifts. The underlying rock surface was excavated to result in a series of “bond benches” allowing for the installation of underdrains below the compacted fill to collect groundwater and seepage from the underlying rock. This prevented saturation of the fill material.

Responsible for the design, management, and inspection of a geotechnical investigation of a proposed five-mile rail extension located in Nicholas County, West Virginia. Investigation included study and design of planned rock cuts, and track foundation materials.

General Services Administration – Site evaluation, including continuous HNU scanning of collected soil samples and installation of piezometers for two proposed sites near Charleston, West Virginia.

West Virginia Department of Environmental Protection – Foundation design for a proposed 1,000,000-gallon potable water storage tank and valve pit near Cassidy, West Virginia.

Rhone Poulenc Ag Company – Subsurface sample collection, resistivity measurements, explosivity measurements, and decontamination procedures for an organic contamination study at Institute, West Virginia.

Preparation of foundation investigations for several large structures including a parking garage and student housing complex at Marshall University in Huntington, West Virginia. Tasks included development of subsurface exploration program, soils/rock sampling, testing program, and preparation of a final geotechnical report.

Roadway Design

Geotechnical engineer for various bridge and highway projects including:

- North Bridgeport Bypass
- McDowell County Schools

- Corridor H
- Dundon Bridge
- Sulphur Springs Bridge Replacement
- Smith Creek Bridge
- Martha Truss Bridge
- Martha Concrete Girder Bridge Replacement
- Dry Run Interchange
- I-81 Upgrade
- Platinum Drive
- Kenna Ridge Business Industrial Park/Access Road

Hardy County Rural Development Authority – Engineering services for the study, design, and preparation of construction contract plans, related documents, and construction oversight services for an industrial access road for the Baker Business Park District.

Roane County Development Authority – Site development construction documents for National Industrial Wholesale Lumber located in Roane County's industrial park.

ZMM – Site design and engineering for a new elementary school and new high school in Bradshaw, West Virginia on the site of an existing elementary school.

West Virginia Department of Highways – Evaluation of subsurface conditions including both soil and rock to provide geotechnical recommendations related to potential bridge abutment foundation systems near Martinsburg, West Virginia. Alternatives included both shallow and deep foundations. Deep foundations were required at several abutments due to voids encountered in limestone bedrock.

Abandoned Mine Lands

WVDEP Abandoned Mine Lands and Reclamation – Preparation of Phase I and II water studies throughout the state of West Virginia. Work items included interview of area residents to determine major quality and quantity problems, field and records research to determine the location of known pre-law mining activity (which could potentially affect groundwater quality), collection of groundwater samples, and design of water distribution facilities.

WVDEP Abandoned Mine Lands and Reclamation – Subsurface investigation to determine the extent of a landslide for Courtright Highwall AML Project in

Bridgeport, West Virginia. Field surveying was completed to establish topographic mapping and control, and subsequent design of landslide repair alternatives. Design ultimately selected included a reinforced slope using stabilizing grid. Landslide contained 400,000 cubic yards of material.

WVDEP Abandoned Mine Lands and Reclamation – Subsurface investigation, surveying, and design for reclamation of a large coal refuse pile and two mine entries for Vivian Refuse Pile AML Project in Vivian, West Virginia. Plans, specifications, cost estimate, coal refuse reprocessing evaluation, and supporting documents for regrading over 150,000 cubic yards of refuse, surface water control, mine seals, and riprap toe protection were completed.

WVDEP Abandoned Mine Lands and Reclamation – Subsurface investigation, surveying, and design for reclamation of three coal refuse piles and six mine entries for Kimball Refuse Pile AML Project in Kimball, West Virginia. Design included replacement of a water well and related supply piping for the Town of Kimball. Completed preparation of plans, specifications, cost estimate, coal refuse reprocessing report, permit for new well, and other supporting documents for reclaiming this large site with over ½ million cubic yards of regrading.

WVDEP Abandoned Mine Lands and Reclamation – Project Engineer for the Mulberry (Stover) AML Landslide Project in Fayette County, West Virginia. Work included a difficult subsurface investigation, design of a remediation of landslide associated with abandoned mines, and preparation of plans and specifications for a reclamation project.

WVDEP Abandoned Mine Lands and Reclamation – Project Engineer for assessment of the Covey Creek Mine Fire AML Project Boone County, West Virginia. Work included subsurface investigation and temperature assessments inside an abandoned burning deep mine.

Mining

West Virginia Division of Environmental Protection – Engineering evaluations, including collection and analysis of core samples, for possible subsidence-related fracturing of several areas potentially affected by mining subsidence.

Peabody Coal Company – Subsidence evaluation and slope monitoring, using extensometers and tilt plates located on the slope face, of a 60-foot road cut experiencing subsidence-induced fracturing near Kopperston, West Virginia.

Mingo Logan Coal Company – Completion of formal subsidence control plan for a proposed 14,000-acre long-wall mining operation at the Mountaineer Mine in Wharncliff, West Virginia.

Peabody Coal Company – Evaluation of potential stream flow attributed to long-wall deep mining subsidence in minimal overburden areas in southern West Virginia. Responsibilities included the review of mine maps, stream reconnaissance studies, and the establishment of three in-stream V-notch weirs. The weirs were monitored and maintained during a seasonal study period to generate direct flow measurements. The WVDEP also prepared a study for the site that was reviewed, and comments prepared for the results.

Evaluation of numerous failed soil fill slopes to determine probable failure mechanisms in order to develop remediation alternatives. Responsible for the development of regrading plans which included subsurface drains, benching schemes, and toe buttresses.

Completion of several environmental assessments for coal properties. Work included emphasis on both environmental and reclamation liabilities associated with pre-and post SMCRA sites on the properties.

- Massey Coal Services, Inc.
- Eastern Associated Coal Corporation

West Virginia Department of Environmental Protection – Engineering design of several wetland habitat areas relating to the effective remediation of a coal refuse disposal site in Glenville, West Virginia.

Preparation of several Article 3 surface mining permit applications for various West Virginia coal companies:

- Eastern Associated Coal Corporation – Proposed deep mine using longwall mining techniques in Boone County, WV, located in the Eagle coal seam.
- Hobet Mining, Inc. – Deep mine using conventional mining techniques near Madison in Boone County, WV. Located in the No. 2 Gas (Campbell's Creek) coal seam.

- Rum Creek Coal Sales – Deep mine using conventional mining techniques near Logan in Logan County, WV. Located in the Alma coal seam.
- Eastern Associated Coal Corporation – Surface mine mountain top removal techniques near Twilight in Boone County, WV. Located in the Coalburg and Lower Kittanning seams.

Groundwater

Operation and maintenance of several groundwater remediation systems including pump and treat and sparge systems for a large chemical manufacturer in Nitro, West Virginia. The pump and treat technology is designed to recover kerosene in one instance and TCE in another. Both systems are safety oriented and are fully automatic. The sparge system is a study/field test to determine the impact that oxygen injection will have on the degradation of phenolic compounds existing in the groundwater.

Columbia Gas Transmission Corporation – Evaluation of numerous groundwater monitoring wells to determine the direction of migration and the feasibility of utilizing them in a planned pump and treat recovery system. The site was an active compressor facility located in Eastern Kentucky.

Design and completion of several geological and hydrologic investigations to determine nature and direction of groundwater flow associated with proposed limestone quarry sites in Nitro, West Virginia. The sites were all associated with Karst terrain and dual permeability systems and primarily fractured flow regimes. Studies included the deployment of drilling equipment to install groundwater monitoring wells.

Measurement of stratified in-site permeability of rock strata in NX boreholes in Hurricane, West Virginia. The permeability measurements were reviewed and evaluated to develop groundwater monitoring systems associated with both existing and proposed municipal landfill disposal facilities.

Rhone Poulenc Ag Company – Analysis and study of elevated levels of organic constituents and elevated pH values in existing monitoring wells. Study to determine if well construction techniques or development procedures contributed to the presence of these constituents.

Dilley's Mill – Review of regional groundwater information for a summer Boy Scout camp facility to locate and construct a replacement drinking water well for the facility. Responsibilities included the development and review of existing facility usage, determination of the location and depth of the proposed water well and design of the well to meet with the requirements of the State of West Virginia Department of Health standards.

Union Carbide Corporation – Design and completion of several monitoring wells to monitor an abandoned fly ash disposal area. Included hydrologic analysis of site geology to determine major aquifers present in the area.

Completion of several groundwater contamination studies in West Virginia. Contaminants included diesel fuel, gasoline, chlorobenzene and benzene. Studies included field exploration utilizing various methods including air and mud rotary drilling. Responsible for the setup, calibration, and analysis of groundwater computer models to lend insight into the flow regimes and dispersion characteristics of the potentially affected areas.

Preparation of Phase I, II, and III water studies throughout the state of West Virginia for the West Virginia Division of Environmental Protection, AML section. Work items included interview of area residents to determine major quality and quantity problems, field and records research to determine the location of known pre-law mining activity, which could potentially affect groundwater quality, collection of groundwater samples, and design of water distribution facilities.

TERENCE C. MORAN, P.E.

Senior Engineer



EDUCATION

- M.S. Civil Engineering, 1989
West Virginia University
- B.S. Civil Engineering, 1987
West Virginia University

EMPLOYMENT HISTORY

- 1999-Present Potesta & Associates, Inc.
1989-1999 GAI Consultants
1987-1989 West Virginia University
1985-1987 West Virginia Division of Highways
(summers)

PROFESSIONAL REGISTRATION

Professional Engineer – West Virginia, Virginia

PROFESSIONAL CERTIFICATION

- Troxler Moisture-Density Gauge
- American Red Cross Standard First Aid and CPR
- OSHA 40-Hour Hazardous Waste Worker Training

AREAS OF SPECIALIZATION

Water and wastewater engineering and permitting; preparation of studies, design calculations, drawings, technical specifications, and cost estimates; bidding phase services; and construction phase services, including construction administration.

PROFESSIONAL EXPERIENCE

Landfills/Solid Waste/Waste Disposal

Project Manager/Engineer for more than 60 private and public solid waste disposal facility projects involving evaluation, design, permitting and construction of disposal cells, closures, and leachate management facilities. Tasks included:

- Client/contract management
- Mapping and development
- Hydrology evaluation and hydraulic design of stormwater structures
- Geotechnical investigations
- Preparation of drawings, specifications, and cost estimates
- Preparation of solid waste and NPDES permit applications
- Construction observation/administration tasks such as full-time observation of construction, review of contractor submittals, review of contractor pay requests, and preparation of record drawings

Project Manager/Project Engineer for study, design, bidding, and construction phase services for 10+ solid waste disposal projects, including lined cell development and closures.

S&S Grading, Inc.:

- Renegotiation of a municipal waste water treatment plant NPDES permit at Grant Union Public Service District, including preparation of corrective action plan for facility, to allow for acceptance of more landfill leachate.
- Project Engineer for preparation of revised Part 2 permit application for S&S Landfill in Harrison County, West Virginia. Work included design of landfill facilities including storm water structures, drawings, permit application text, NPDES permit application, and negotiations with the WVDEP until permit issuance.
- Project Manager for preparation of construction documents for Phase 1, 2, 2B and 3 expansions of the S&S Landfill in Harrison County, West Virginia. Work included design of liner system and storm water drainage structures, drawings, specifications, quantities, assistance in bidding and contractor selection.

- Project Manager for construction monitoring of the Phase 1, 2, 2B and 3 expansions of S&S Landfill in Harrison County, West Virginia. Work included regular meetings with contractor, preparation of weekly progress reports, preparation of liner system certifications, and submittal to the WVDEP of final certification. Included was construction monitoring of storm water drainage structures.
- Project Manager for preparation of drawings and specification for closure of the old S&S Landfill in Harrison County, West Virginia. Work also included designing proposed grade, storm water structures, landfill cap features, and preparation of quantities.
- Design of a landfill leachate pump station, force main, and primary and secondary containment tanks, including preparation of drawings, technical specifications, quantities, and a cost estimate.
- Renegotiation of a municipal waste water treatment plant NPDES permit, including preparation of corrective action plan for facility, to allow for acceptance of more landfill leachate.
- Project manager for design of valve vault for leachate handling facilities at the S&S Landfill in Harrison County, West Virginia.
- Project manager for construction of additional sedimentation pond at the S&S Landfill in Harrison County, West Virginia.
- Project engineer for permit modifications to allow alternate landfill liner systems at the S&S Landfill in Harrison County, West Virginia.

West Virginia Solid Waste Management Board – Technical review of proposed batch treatment plant/sludge handling equipment for treating landfill leachate.

Feasibility study for future disposal options of residual wet waste from steam plants at a chemical plant in West Virginia.

West Virginia Division of Environmental Protection, LCAP – Assistance with QA/QC review for construction drawings and specifications for the Central Landfill project in Braxton County, West Virginia and the Mingo County Landfill project in Mingo County, West Virginia.

West Virginia Division of Environmental Protection, LCAP – Preparation of construction drawings and specifications for the leachate collection and storage facilities for the closure of the Fleming Landfill in Kanawha County, West Virginia.

West Virginia Solid Waste Management Board – Preparation of an NPDES permit application for a municipal solid waste landfill near Morgantown, West Virginia.

Project manager for preparation of annual cross sections depicting liner elevations, existing elevations, and cap elevations for S&S Landfill in Harrison County, West Virginia and the Carolina Grading, Inc. landfill in South Carolina from 1995 to 1999. Work also included estimating volume of waste disposed, and volume of air space remaining.

- S&S Grading, Inc.
- Carolina Grading, Inc.

Carolina Grading, Inc. – Project manager for redesign of landfill subbase elevations to allow increased airspace at Carolina Grading landfill in South Carolina.

Eastern Environmental Services, Inc. – Project manager for estimation of remaining airspace volume at the Bayside of Marion Landfill in Florida and at a landfill in Maryland.

West Virginia Solid Waste Management Board – Project engineer for study evaluating seven alternatives for future operation of the Monongalia County Landfill.

Water Lines, Water Storage Tanks, and Water Treatment Plants

Project Manager/Project Engineer for more than 70 water supply projects involving design and, permitting of water treatment facilities, water line extensions, water storage tanks, booster stations, chlorine boosters, pressure reducing valve stations, service connections and providing fire flow demands. Tasks include client/contract management; mapping development; hydraulic design; geotechnical investigations; preparation of drawings, specifications, and cost estimates; and preparation of Bureau of Public Health, Public Lands Corporation, United States Army Corps of Engineers, West Virginia Division of Highways, and NPDES permit applications.

- Projects funded by federal, state and private funding including small cities block grant, United States Department of Agriculture, Rural Economic Development Agency, Drinking Water Treatment Revolving Fund (DWTRF), West Virginia

Infrastructure and Job Development Council, Congressional Supplemental Appropriations (SAP), Abandoned Mine lands, United States Army Corps of Engineers, Governor's office funding, county commissions and private funding.

West Virginia Bureau for Public Health (Region III and Region VI Planning and Redevelopment Councils) – Project Manager for 5 contracts for source water protection:

- Source water reports for 133 public water systems
- Preparation and presentation of state-wide source water awareness symposiums
- Source water assessment and protection plan reports for 68 public water systems
- Engineering study for contingency planning for public water systems

Town of Ceredo – Project Manager for 20,000 feet of water line replacement, water tanks, telemetry, and booster stations.

Boone County Public Service District – Project Manager for 15+ water supply extension projects in Boone County District from 2004 to present. Included were Preliminary Engineering Reports (PER), and design bidding and construction phase tasks.

Project Manager for Mill Creek Regional Water Supply Extension Project. Design included 34 miles of waterline, booster stations, tanks, and a water treatment plant. Included design of storm water ditches and culverts, and crossings of a railroad. Approval was obtained from CSX Transportation, WVDOH, PLC, USCOE, and West Virginia Bureau for Public Health. Deliverables included drawings, specifications, and cost estimates.

- West Virginia Division of Environmental Protection
- Logan County Public Service District

West Virginia American Water – Project Manager for construction administration/monitoring for the Poca River Road Waterline Extension Project; Cabell County Waterline Extension Project, Contract No. 7; Spite Road Waterline Extension Project; and Fisher Ridge Waterline Extension Project. Work included construction monitoring, preparation of weekly reports, review of contractor submittals, review of contractor invoices, and preparation of record drawings for 100,000+ linear feet of waterline extensions.

City of Philippi – Project Manager for municipal water system upgrade project. Work included design of two replacement booster stations, two new water storage tanks, new pumps for an existing booster station, a 1,500-foot waterline extension, and telemetry systems. Drawings, specifications, and a cost estimate were prepared.

West Virginia American Water – Design of main line pressure reducing valve and vault for the Glenwood Avenue Extension of the Cabell County Waterline Extension Project, Contract No. 6. Work included hydraulic sizing and preparation of drawing.

West Virginia American Water – Design, permitting, bidding and contract documents, and construction phase services for residuals handling facility at largest water treatment plant in West Virginia, including 1,000,000-gallon gravity thickener, sludge pumping stations, two belt filter presses, and a plate settler.

West Virginia Department of Environmental Protection – Project Manager/Project Engineer for design of multiple waterline extension in West Virginia. Included was design of six water storage tanks, five booster stations, pressure reducing valves, master meters, and telemetry systems. Work included surveying, subsurface explorations, hydraulic design, preparation of drawings, specifications, cost estimates, and permit applications, and assistance with bidding. Representative projects included:

- 10-Mile-South Putnam Water Supply Extension Project in Lincoln and Putnam Counties;
- 5-Mile-Cline Hollow, Younger Drive, Left Hand Fork of Lens Creek, and Emmons-Grippe Water Supply Extension project in Kanawha County;
- 2.5-Mile Godby Branch Water Supply Extension Project in Logan County;
- 20-Mile Cow Creek-Sarah Ann Water Supply Extension project in Logan County;
- 8-Mile Cassity Fork Water Supply Extension project in Randolph County; and
- 10-Mile Olive/Marshville/Catfish Hollow Water Supply Extension project in Harrison County

Tucker County Development Authority – Project Engineer for design of approximately 10,000 feet of water line and sewer line to serve an industrial park, including a lift station. Drawings, specifications, and a cost estimate

were prepared. Also performed construction administration services.

West Virginia Division of Environmental Protection - Project Engineer for preparation of conceptual design and cost estimate for the Mill Creek - Isom Community (Logan County Public Service District) Water Supply Extension Project.

West Virginia American Water - Evaluation of water treatment plant and water distribution system, including observation of system during site visit, records review, discussions with regulatory officials, and issuance of findings in a report for the Town of Pineville.

West Virginia Division of Environmental Protection - Project Manager for technical review of the Gauley River Area Waterline Extension proposed by the Gauley River Public Service District and the Heizer/Manilla Creek Waterline Extension proposed by West Virginia American Water. Included hydraulic analysis, evaluation of line size, review of drawings and specifications, and reporting on the evaluation in letter format.

City of Philippi - Relocation of waterlines due to proposed roadway. Relocation included approximately 4,000 feet of 1-inch to 12-inch diameter pipe, fire hydrants, meters, and valves. Prepared construction drawings, specifications, and quantities.

Short Line Public Service District/Harrison County Planning Commission - Project Manager for feasibility/rates analysis study for the proposed Reynoldsville, Wallace, and Clarksburg Water Supply Extension Project. Included evaluation of six options at multiple loan/grant funding scenarios.

West Virginia American Water - Hydraulic analysis for water supply extensions (total of 23 miles) in Cabell County, West Virginia, including line sizing and design of booster station and PRVs.

West Virginia Division of Environmental Protection - Project Manager/Project Engineer for numerous conceptual waterline designs for 20 unserved areas (between 1991 and 2007) in coal mining areas in West Virginia. Included hydraulic evaluation, booster station, and water storage tanks sizing, waterline sizing, and estimation of construction cost. Work completed in Barbour, Boone, Brooke, Fayette, Harrison, Lincoln, Logan, McDowell, Putnam, and Randolph Counties.

West Virginia Division of Environmental Protection - Project Manager for design of booster station upgrade for the Clinton Water Association's Ringgold pump station, including preparation of drawings, specifications, and cost estimate.

West Virginia Department of Energy - Groundwater contamination study for drinking water wells near Cassity, Randolph County, West Virginia, including water supply inventory of over 50 residents, collecting and analyzing well and surface water samples, and researching records to determine the percentage of homes whose water supply had been degraded by acid mine drainage.

Public Utility General - Project Manager for construction administration including preconstruction meetings, shop drawing review, coordination with construction technician team(s), contractor pay application review, public record drawings, and public interface for 15+ water and wastewater utility and/or infrastructure projects including utility line extension and upgrades, construction and modifications of treatment facilities. Clients include municipalities, public service districts, industry, county development authorities and private utilities. Construction included water and sewer lines, booster stations, tanks, lift stations, vacuum sewer stations, treatment basins, dewatering equipment, clarifiers, chemical feed systems, buildings associated with treatment systems, outfall modifications, and diffusers.

Mingo Logan Coal Company - Project Manager for design, building, and permitting services for potable water system at the new Mountain Laurel Mine in Logan County, West Virginia. Project includes booster station, water storage tank, and 10,000 feet of HDPE pipe.

Sewer Lines and WWTPs

Project Manager for more than 30 wastewater projects, including municipal sanitary sewer treatment systems, industrial pretreatment systems, modification of sewer treatment plants, outfall modifications including diffuser installation, and upgrades to municipal collection systems. Also included were completions of studies mandated by the West Virginia Public Service Commission.

- Projects funded by State Revolving Fund (SRF), West Virginia Infrastructure and Jobs Development Council, United States Economic Development Agency and Private Funding sources.

Boone County Public Service District – Preliminary engineering, funding application, and final design for WWTP upgrade. Funding proposed through the Clean Water State Revolving Fund (SRF).

- Mechanical bar screen replacement
- Grit removal system replacement
- Mechanical aerator replacement
- Addition of third clarifier
- RAS pump addition
- UV unit replacement
- Belt filter press replacement
- Wash water system upgrade
- Other upgrades

Town of Ceredo – Perform design, bidding, and construction phase services for upgrade of existing sanitary sewer collection system, including upgrades to gravity and force main lines, and a lift station. Funding was thru the Clean Water State Revolving Fund (SRF).

Town of Ceredo – Evaluation of remaining capacity of grinder pump system.

Salt Rock Sewer Public Service District Master Service Agreement:

- Specification for WWTP wash line
- Preparation of NPDES modification for sludge disposal from a publicly owned treatment works
- Preparation of odor control study mandated by the West Virginia Public Service Commission (WVPSA)
- Preparation of cost estimates for requests for service
- Evaluation of lift station overflows

Town of Moorefield – Study on costs of \$30,000,000 sanitary sewer system (plant and collection system).

South Putnam Public Service District – Project Engineer for review of sewage disposal options for large county-wide sanitary sewer provider. Work included interviews with various publicly-owned treatment works (POTWs), interviews with regulatory agencies, review of regulatory agency files, development of costs, and preparation of a report summarizing findings, including recommendations for future treatment of sewage in West Virginia.

West Virginia American Water – Assessment of City of Oak Hill and City of White Sulphur Springs publicly owned treatment works (POTW) to recommend improvements in operation and maintenance.

Town of Bradshaw – Design of collection system for two new schools, and design, permitting, bidding, and certain construction phase services for equalization basin/lift station, and upgrades to vacuum station and buffer tanks.

Tucker County Development Authority – Design, permitting, bidding, and construction phase services for gravity collection system, force main, and lift station for industrial park.

Boone County Public Service District – Preliminary engineering report for collection system and sequencing bench reactor (SBR) wastewater treatment plant for the Town of Nellus.

MDG Homes – Preparation of hydraulic calculations and record drawings for variable grade effluent sewer system at large development in eastern panhandle.

Client Confidential – Coordination of treatability study for industrial treatment plant.

Design of numerous sanitary sewer extensions associated with private developers, including design of gravity and force main lines and lift stations, including approvals by local public utilities such as Jefferson Utilities, and approvals by West Virginia Department of Environmental Protection.

Pocahontas County Public Service District/Wastewater Management – Study on replacement of Hawthorn Loop Sanitary Sewer System.

Steptoe & Johnson/York Bronze Company – Design of batch chemical pretreatment system for bronze facility in northern West Virginia. Included were sizing of units and building to house treatment system, and preparation of drawings, specifications, and cost estimate.

Columbia Gas Transmission Corporation:

- Design of sump/pump and storage tank to allow treatment and storing of waste water; and negotiation with hauler and POTW to allow disposal of waste water at Files Creek Compressor Station.
- Design of an oil/water separator, sump/pump, and storage tank to allow treatment and storing of waste water; and negotiation with hauler and POTW to allow disposal of waste water at Cleveland Compressor Station.

- Design of a waste water treatment plant for compliance with a compressor station's NPDES permit. Included was preparation of facilities preliminary and final engineering plans, selection of treatment (chemical precipitation, activated carbon and filtration), and detailed drawings and specifications.
- Evaluation of effectiveness of existing ozonator/activated carbon wastewater treatment system at a natural gas compressor station. Evaluation included 30-day composite sampling plan of wastewater, compilation of results, comparison with treatment system capacity, and issuance of findings in a report. Also included was issuance of a report summarizing technical feasibility and costs for alternate treatment options.
- Project Manager for conceptual design of oil/water separator at the Crawford Compressor Station in Ohio.

Tetra Technology – Preparation of operation and maintenance manual for a waste water treatment plant at the Yak Tunnel Superfund site in Leadville, Colorado.

Project Engineer for design and permitting of sanitary waste water treatment system for coal mines in Logan and Raleigh Counties, West Virginia. Included was preparation of drawings and specifications.

- Eastern Associated Coal Corp.
- Rum Creek Coal Sales

West Virginia Department of Environmental Protection, LCAP – Design of 1.2 miles of pressure and gravity sewer line at the Jackson County Landfill to convey landfill leachate to an existing sanitary collection system. Included were provisions for servicing residences along the pathway, hydraulic sizing, and preparation of drawings, specifications and a cost estimate.

West Virginia University – Research assistant for developing an interactive optimal sewer design program SODES.

Evaluation of options for future treatment of wastewater at a chemical industrial facility along the Ohio River in West Virginia. Included were evaluation of options, estimation of capital and O&M costs, and preparation of a report to a law firm in West Virginia.

Mining

Estimation of AMD treatability and treatment costs at multiple mining sites in West Virginia as part of preacquisition site assessments, including records review of 303(d) TMDL list.

Eastern Associated Coal Corporation – Project Manager for oversight of water supply inventory of structures over a 3200-acre SMCRA permit expansion (during 1994-1995) of the Federal No. 2 longwall deep mine in Monongalia County, West Virginia. Included were negotiations with the West Virginia Division of Environmental Protection (WVDEP) of the locations of permanent surface and groundwater monitoring points.

Eastern Associated Coal Corporation – Project Manager for design of Guyses Run AMD facility. Design included a 3,000,000-gallon pond, 180 feet of relocated stream, and stream crossings. Included was regulatory approval from USCOE, PLC, and WVDEP. Deliverables included drawings, specifications, and a cost estimate.

Old Ben Coal Company – Project Engineer for preparation of PHC statement for SMCRA permit application for the Nile Stone Slurry Impoundment in Mingo County, West Virginia.

Pre-mining, pre-blast surveys, including field investigations and report preparation, for various coal companies in Ohio, Virginia and West Virginia.

- Elk Run Coal Company
- Island Creek Coal Corporation
- Oneida Coal Company
- Southern Ohio Coal Company

Eastern Associated Coal Corporation – Project Manager for preparation for SMCRA Incidental Boundary Revision and NPDES permit modification applications for addition of 3.7-million-gallon mine drainage treatment pond at Martinka Coal Company's Guyses Run AMD facility.

Southern Ohio Coal Company – Project Manager for water supply interviews with occupants of 70 structures in Gallia, Meigs, and Vinton Counties, Ohio.

Project Engineer for grouting project to abate acid mine drainage at the Omega Mine Complex project in Monongalia County, West Virginia. Project involved

collaboration of private/public agencies to provide resources for approximate \$2,500,000 project.

Meadow River Coal Company – Project Manager for water supply inventory of 37 structures over a deep mine in Fayette County, West Virginia, and preparation of subsequent SMCRA permit revision to incorporate water supply inventory to existing permit.

Eastern Associated Coal Corporation – Project Engineer for identification of permanent groundwater and surface water monitoring points including negotiation of locations with the West Virginia Division of Environmental Protection (WVDEP) for 1,750-acre and 3,200-acre SMCRA permit expansions of the Federal No. 2 longwall deep mine in Monongalia County, West Virginia.

Rum Creek Coal Sales, Inc. – Project Engineer for preparation of probable hydrologic consequences (PHC) statement for SMCRA permit application for below drainage deep mine in Logan County, West Virginia.

Eastern Associated Coal Corporation – Project Engineer for preparation of probable hydrologic consequences (PHC) statement for SMCRA permit application for 5000+ acre Montcoal Eagle longwall deep mine, including establishment of permanent surface and ground water monitoring points.

Ranger Fuel Corporation – Project Manager for SMCRA Incidental Boundary Revision (IBR) for new face-up and portal at the Clinton No. 4 mine in Boone County, West Virginia.

Southern Ohio Coal Company – Completion of drawdown field tests and estimation of well yields for over 12 wells.

West Virginia Division of Environmental Protection – Project Manager for evaluation and design of passive AMD treatment system at the Owings Mine Complex site in Harrison County, West Virginia. Included were detailed sampling plan, issuance of pre-construction water quality report, and preparation of construction drawings, specifications, and cost estimate.

West Virginia Division of Environmental Protection – Project Manager for Harris AMD reclamation project. Design included 400 feet of ditch, one culvert, manholes, 500 feet of subsurface drains, and sealing of mine portals.

Deliverables included drawings, specifications, and a cost estimate.

Southern Ohio Coal Company – Project Manager for preparation of SMCRA permit application for the remaining life of the Meigs No. 2 and No. 31 mines in Ohio, including inventory of water supplies of over 200 residents.

Abandoned Mine Lands

Project Manager/Project Engineer for the design and development of reclamation plans and feasibility studies for more than 60 abandoned mine land projects for the WVDEP, Office of Abandoned Mine Lands and Reclamation, and the Commonwealth of Virginia, Abandoned Mine Lands Program. Tasks included:

- Client/contract management
- Mapping development
- Hydrologic evaluations
- Reclamation design
- Subsidence evaluation and abatement
- AMD evaluation and abatement
- Hydraulic design
- Geotechnical investigations
- Preparation of drawings, specifications, and cost estimates
- Preparation of Public Lands Corporation, U.S. Army Corps of Engineers, West Virginia Division of Highways, and NPDES permit applications.

West Virginia Division of Environmental Protection – Project Manager for Left Hand Fork reclamation project. Design included 1,600 feet of storm water ditch, 1,900 feet of riprap toe protection, culverts, relocation of a road, and regrading of refuse. Regulatory approval was obtained. Deliverables included drawings, specifications, and a cost estimate

West Virginia Division of Environmental Protection – Project Manager for reclamation design for the Owings Mine Complex site in Harrison County, West Virginia. Design included 8,300 feet of storm water ditch (including relocation of stream), 1,000 feet of culvert/subsurface drains, manholes, and a box culvert in addition to reclamation of refuse piles and sealing of mine portals. Deliverables included drawings, specifications, and a cost estimate. Included was interaction with the WVDOH, and obtainment of USCOE approval for relocation of a stream.

West Virginia Division of Environmental Protection – Project Manager for the Majesty Mine Complex project. Design included storm water ditches, stream relocations, culverts, and regrading of refuse piles and sealing of mine portals. Regulatory approval from the WVDOH and USCOE were obtained. Deliverables included drawings, specifications, and a cost estimate.

West Virginia Department of Energy, Abandoned Mine Lands – Stabilization program for mine subsidence at the Doug Gray Site in Fairmont, West Virginia, including a subsurface investigation, development of an injection plan, preparation of construction quantities, and a pre-bid meeting.

West Virginia Division of Environmental Protection – Project Manager for stabilization program for mine subsidence at the Glen Morgan (Lilly) site in Raleigh County, West Virginia, and the Mainella Site in Marion County, West Virginia. Included were development of injection plan, construction drawings and specifications, and cost estimate.

Assisted on St. John's Road Subsidence Project, Brooke County, West Virginia. Subsurface investigation and development of specifications and construction drawings for remedial work on mine subsidence affecting 30 acres and 50 homes were conducted.

Project Engineer for Holden (Padgett) Subsidence Project, Whitman Junction, West Virginia. The project included subsurface investigation to determine extent of mine workings, development of stabilization plan, including drainage channels/pipes and mine seals. Construction documents were prepared, and participation in pre-bid and pre-construction meetings was completed.

Assisted on Jonben (Haga) Subsidence Project, Jonben, West Virginia. Subsidence control on an emergency basis including sinkhole backfilling and drainage control. Project included drilling to determine the extent of mining and subsidence, field surveying to develop topographic mapping and development of a backfilling and drainage plan.

West Virginia Division of Environmental Protection – Project Manager for 380 residence water supply inventory (including sampling) as part of the Phase II Water feasibility study for the New Haven Study Area in Fayette County, West Virginia.

West Virginia Division of Environmental Protection – Project Manager for 600 residence water supply inventory (including sampling) as part of the Phase II Water feasibility study for the Mill Creek Study Area in Boone, Lincoln, and Logan Counties, West Virginia.

West Virginia Division of Environmental Protection – Project Manager for 200+ residence water supply inventory as part of the Phase II water feasibility study for the Gauley River Study Area in Fayette and Nicholas Counties, West Virginia.

West Virginia Department of Energy – Abandoned Mine Lands – Project Manager for Phase II groundwater contamination study for drinking water wells in the Crooked Creek, Cow Creek, and Upper Rum Creek communities in Logan County, West Virginia. Work included water supply inventories of 250+ residences, collection and analyzing surface and well water samples, researching water quality records, designing and costing remedial measures, and calculating the percent of wells that had been degraded by mining activity.

Environmental Assessments/Impact Statements

Environmental site assessments, including record searches and field investigations, for numerous sites in West Virginia, Virginia, Ohio, and North Carolina. Specialization in large acre tracts, typically ranging from 1,000 acres to 65,000 acres, including coal properties:

- Dominion Resources
- Goldman Associates
- DiMucci Development
- FDIC
- Rhone-Poulenc Ag Company
- GSA
- General Electric
- West Virginia University
- Peabody Coal Company
- Massey Coal Services
- Kanawha County Solid Waste Authority
- Capel, Incorporated
- Plasma Processing Corporation
- Sun Bank South Florida
- Vaughan Railroad Company
- Foodland
- Jackson & Kelly
- Spilman, Thomas and Battle

University of North Carolina – Preparation of an Environmental Assessment showing no significant environmental impact for a proposed 1,400-foot television tower near Chapel Hill, North Carolina.

West Virginia Division of Highways – Project Engineer for completion of hazardous waste portion of environmental assessment for 22 miles of proposed upgrade to US 19, north of Summersville, West Virginia. Included site reconnaissance, interviews, and records search to identify potential hazardous waste sites along path of proposed upgrade.

Hazardous Waste/RCRA/Corrective Action

Project Engineer for PCB sampling at numerous mine sites in McDowell, Nicholas, Raleigh, and Wyoming Counties, West Virginia.

Project Engineer for excavation and off-site disposal of a diesel fuel spill on a slurry impoundment in Kentucky.

Regional Solid Waste Disposal Company – Project Engineer for guidance of contamination assessment and remediation activities with a fuel spill at a waste transfer facility in South Carolina.

Island Creek Corporation – Contamination assessment for petroleum products, battery acid, and PCBs at a coal preparation plant in Kentucky.

Feasibility study for future disposal options of residual wet waste from steam plants at a chemical plant in West Virginia.

NPDES Industrial/Municipal Permitting

Project Manager for the acquisition of NPDES permits for construction activities for multiple civil engineering projects, including sanitary sewer collection systems and water supply extensions.

Project Manager for compilation of storm water sampling plans/kits for NPDES permit applications:

- Columbia Gas Transmission Corporation
- Plasma Processing Corporation

Preparation of Stormwater Pollution Prevention Plans (SWPPs) required by NPDES permits for natural gas compressor stations and secondary aluminum facilities:

- Columbia Gas Transmission Corporation
- Plasma Processing Corporation

Preparations of NPDES permit applications for industrial sites, and regulatory liaison associated with the applications:

- Municipal and industrial waste landfills – West Virginia Solid Waste Management Board, S & S Grading, Inc., and Rhone Poulenc, AG
- Water treatment plant – West Virginia Department of Environmental Protection/Logan County Public Service District, and West Virginia-American Water Company
- Secondary aluminum facility – Plasma Processing Corporation

Design of outfall modifications, including diffuser systems on outfalls. Included were hydraulic sizing and preparation of drawings, specifications and cost estimates. Some projects included bidding and construction phase services.

- City of South Charleston WWTP
- Allegheny Energy Services
- Cytec Industries Inc.
- Consol Energy, Inc.
- Akzo Nobel Chemicals
- Kureha, Inc.
- CNX Gas
- Patriot Coal
- Bayer Crop Science
- Momentive, LLC
- First Energy, Inc.

Served on West Virginia Manufacturer's Association Committee to prepare guidance document for preparing Groundwater Protection Plans (GPP's) for facilities regulated by NPDES permits.

Columbia Gas Transmission Corporation:

- Project Manager for preparation of template Groundwater Protection Plan to cover 50+ natural gas industry facilities in West Virginia. Included was preparation of hard copy and digital format version for use by facility personnel.
- Preparation of comments on draft NPDES permits including negotiations on revising permit conditions for multiple natural gas compressor stations in West Virginia.

- Preparation of report evaluating and recommending disposal options for water at Crawford Compressor Station in Ohio, including subsequent negotiations for direct discharge of water without NPDES permit.
- Project Manager for preparation of State of New York SPDES permit application for the Greenwood Storage Field.
- Preparation of default mixing zone model to allow for proposed increase in iron NPDES limits at the Cobb Compressor Station in Kanawha County, West Virginia.

K. JOE KNECHTEL, P.E.

Branch Manager/Senior Engineer

EDUCATION

B.S. Civil Engineering, 1991
Pennsylvania State University

EMPLOYMENT HISTORY

2004- Present Potesta & Associates, Inc.
1993-2004 Advanced Asphalt Technologies, L.P.
1991-1993 Pennsylvania Transportation Institute
Pennsylvania State University
1990 Pennsylvania Department of
Transportation

PROFESSIONAL REGISTRATION

Professional Engineer – West Virginia and Virginia

ABSTRACTS, PRESENTATIONS, AND MANUSCRIPTS

Anderson, D.A., Antle, C.E., Knechtel, K., Lui, Y., Marasteanu, M., "Factors Affecting the Precision of the Dynamic Shear Rheometer and Bending Beam Rheometer," Mechanical Tests for Bituminous Materials, Di Benedetto & Francken (eds) 1997

Knechtel, K., Aurilio, V., Harrigan, E., Chollar, B., "Rheological Analysis of Recovered Binders from the FHWA ALF Rutting Experiment," Petersen Asphalt Research Conference, Thirty-Fourth Annual Meeting.

AREAS OF SPECIALIZATION

Project leadership with an emphasis on design, water supply, sewer, permitting of civil and environmental projects. Experience in land development, storm water management, and regulatory issues with industrial, commercial, and residential projects.

PROFESSIONAL EXPERIENCE

Civil/Site Design

Project Manager/Engineer for numerous commercial site development projects in City of Winchester, Frederick County, Towns of Front Royal and Woodstock, Virginia:

- Develop site and parking layout, grading and geometry to meet county or city planning codes, International Building Codes (IBC), and American Disabilities Act (ADA) requirements, as well as develop landscaping and site lighting plans.
- Design turn lanes and entrances and roadway drainage to meet the Virginia Department of Transportation (VDOT) commercial entrance requirements.
- Designed stormwater management systems, including underground stormwater detention tanks and storm sewers.
- Designed Erosion and Sediment controls and plans and permitting through the Virginia Stormwater Management Program (VSMP).
- Design of water and sanitary sewer mains, force mains and laterals as well as sizing of grinder pumps.

Project Manager/Engineer for residential subdivision site development projects in Culpeper County, Virginia:

- Design subdivision layout, grading of site and design subdivision road, entrance and turn lanes and its drainage to meet VDOT requirements.
- Assist in drain field design for local health department approval.
- Develop stormwater management and erosion and sediment controls and plans and acquire permitting through the Virginia Stormwater Management Program (VSMP).

Project Manager for clients rezoning properties in Frederick and Warren County, Virginia:

- Developed conceptual plans and rezoning applications
- Development of environmental and traffic impact studies.
- Attended and represented clients at public hearings.

Project Manager and Engineering Designer of multiple commercial site developments plans in Morgan County, West Virginia:

- Plans developed for approval through the Commercial and Industrial Location Permitting Ordinance, Stormwater Management ordinance and Public Hearing as well as West Virginia Department of Environmental Protection (WVDEP), West

Virginia Department of Highways (WVDOH) and local Soil and Water Conservation Districts.

- Plans included sites planning and layout, development of water and sewer laterals, stormwater management structures, and commercial entrances.

Project Manager for residential subdivision site development plan in Morgan County, West Virginia:

- Project included development sanitary sewer force main and collector system development of erosion and sediment controls and approval of Soil and Water Conservation Districts, WVDEP and NPDES permitting, stormwater management facility and controls, WVDOH highway entrance design and permitting.
- Attended and represented client at public hearings for approval through the Morgan County Subdivision ordinance.

Water Lines, Water Storage Tanks, and Water Treatment Plants

Carmeuse Lime & Stone – Project Manager providing permitting, design, and construction oversight services design, construction oversight and permitting waterworks system for a new administration and lime kiln equipment/operations buildings at Carmeuse’s Winchester Quarry in Clearbrook, Frederick County, Virginia.

- Acquired permitting and developed bid and specification documents for development of a 400-foot deep Class II-B groundwater well.
- Designed a water treatment system that included three sediment filters, one iron/manganese treatment unit with backwash capability, two 1,500 gpd reverse osmosis units with anti-sealant system, calcite filtration to reintroduce hardness and two 750-gallon storage tanks.
- Design was submitted to the Virginia Department of Health and a waterworks construction permit was acquired.
- Provided daily construction oversight of the waterworks construction, acquired certified operator to operate and maintain (daily) the system and aided in waterworks permitting.

Sewer Lines and WWTPs

Project Manager providing engineering design and permitting services with a local onsite soils evaluator,

(OSE) to design several AOSS for residential dwellings in Loudoun County and Clarke County, Virginia (Purcellville, Leesburg, Bluemont, and Berryville). Projects included new development and repair systems of failed conventional systems. Design of repaired AOSS consisted of:

- Sizing trash and pump tanks.
- Incorporating 450-600 gpd multi-flow treatment systems.
- Design of force main and return line to drip irrigation fields.
- Design of shallow-placed, forward flushing drip dispersal fields which consisted of alternating two to four zones.
- Acquired the proper permits through the Loudoun County and Clarke County offices of the Virginia Department of Health (VDH) for these systems and provided construction oversight for construction of system.
- Worked with OSE to develop completion statements with as-built drawings and operation and maintenance manual for final permitting.

Carmeuse Lime & Stone – Project Manager providing permitting, design, and construction oversight services for a maximum 900 gpd AOSS for a new administration and lime kiln equipment/operations buildings at Carmeuse’s Winchester Quarry in Clearbrook, Frederick County, Virginia.

- Teamed with an OSE to locate drain field and determined that a drip irrigation system was required for this onsite sewage system.
- Designed the wastewater treatment system to include 2,000-gallon primary tank, a 1,500-gallon recirculation tank, three Advantex AX-20 treatment units, and a 1,500-gallon drain field dosing tank.
- Designed 1,475-foot force main and return line to drain field.
- Designed an alternating three-zone, shallow-placed, forward flushing drip dispersal field.
- Worked with the OSE in acquiring the proper permits for this design, and then developed bid and specification documents, assisted in pre-bid and pre-construction meetings and provided construction oversight for construction of this system.
- Developed the operation and maintenance manual and as-built drawings for final permitting through the Frederick County office of the Virginia Department

of Health (VDH) Frederick County Department of Health.

Designed sanitary collection systems, lift stations and service laterals for multiple commercial and residential site development projects in Virginia and West Virginia. All projects were designed to meet local and state requirements. Coordinated designs, submittals and permitting with client and agencies.

Stormwater Management

Designed multiple stormwater systems for residential, commercial, and Industrial projects including

- Storm sewers and culverts, detention ponds, bio-retention Ponds (rain gardens), pervious pavement systems, water quality swales, level spreaders, etc.
- These Stormwater systems, detention and water quality system in Virginia and west Virginia to meet the states National Pollution Discharge Elimination System (NPDES) permitting requirements (VPDES n Virginia).
- Developed Stormwater Pollution Prevention Plans (SWPPP) and Groundwater Pollution Prevention Plans (GPP) for numerous construction sites in West Virginia for WVDEP and National Pollution Discharge Elimination System (NPDES) permitting.
- Also developed Stormwater Pollution Prevention Plans (SWPPP) for various industrial sites in Virginia.

ESAs (Phase I and II)

Performed Phase I Environmental Site Assessments, field reconnaissance and reporting on properties in West Virginia and Virginia.

Spill Prevention, Control & Countermeasure Plans

Developed and assisted in development of Spill Prevention Control and Countermeasure Plans (SPCC) for industrial sites, and quarries in Maryland and Virginia. Also conducted evaluations and certifications of secondary containment for aboveground petroleum storage tanks.

Geotechnical

Numerous commercial and residential site development and environmental projects with karst geologic issues within the Northern Shenandoah Valley and Eastern Panhandle of West Virginia. Multiple projects requiring determination and remediation, if necessary, of sinkholes.

Jefferson County Commission - Providing engineering and permitting services for remediating a large sinkhole and developing a drainage plan to direct stormwater away from the remediated sinkhole on a parcel within their Bardane Industrial Park in Jefferson County, West Virginia:

Town of Woodstock Virginia, Virginia DEQ, and commercial client – Developing a commercial site design for a development proposed to be situated next to a large and sensitive sinkhole. Services involved:

- Geotechnical services in determining the sinkhole
- Developed plans in protecting this sinkhole from land disturbance activities
- Stormwater drainage designs to protect the sinkhole from water quantity and water quality issues.
- Acquired permitting through the EPA, Virginia DEQ, and the Town of Woodstock.



EDUCATION

M.S. Environmental Science, 2010
Marshall University

B.S. Environmental Biology, 2006
Marshall University

EMPLOYMENT HISTORY

2006-Present Potesta & Associates, Inc.
2013 In-House Consultant EQT
2014 In-House Consultant Columbia Gas

PROFESSIONAL CERTIFICATIONS

- 3.3 Continuing Education Units for Wetland Delineation – Olentangy Wetland Research Park at Ohio State University
- April 2012 – Applied Fluvial Geomorphology NCTC (Rosgen)
- April 2012 – River Morphology and Applications NCTC (Rosgen)

AREAS OF SPECIALIZATION

Permitting, compliance, collection, identification and analysis of biological data for research via habitat, electrofishing surveys, water sampling, and chemistry analysis. Environmental reporting and permitting. Wetland and stream identification and delineation.

PROFESSIONAL EXPERIENCE

Stream/Wetland Delineation, Permitting, and Mitigation

Served as project manager for environmental permitting for large scale oil and gas projects including roadway improvements, pipeline maintenance and construction, well pad development and other associated projects for the industry. Leads and trains staffing in field work and preparing environmental applications.

Supervised and conducted numerous wetland identifications and delineations for private companies throughout West Virginia, Virginia, Ohio, and Pennsylvania. Work included identification, delineations, and verification process with the United States Army Corps of Engineers (USACE), wetland reporting, permitting, and mitigation.

Met on-site with USACE, West Virginia Department of Environmental Protection for wetland verifications with governmental agencies.

Completed stream and wetland delineations for the construction of Highline Transmission Projects in Pennsylvania, West Virginia, Maryland, and Virginia. Worked with contractors to limit stream and wetland impacts as much as possible.

Supervised and completed stream and wetland delineations for oil and gas companies, including pipeline right-of-way and well layout locations.

Supervised and prepared and submitted numerous USACE Section 404 Applications and WVDEP 401 Applications. Obtained numerous 401 and 404 Permits for various types of projects.

Prepared numerous stream and wetland reports pertaining to oil and gas industry.

Prepared and analyzed field data for state and federal permit applications.

Responsible for Section 7 Consultation of Endangered Species Act, Section 106 Consultation of the National Historic Preservation Act and Section 404 of the Federal Clean Water Act for numerous projects throughout West Virginia. Work includes field reconnaissance and assessment and report writing.

Experienced in consulting with USACE on Nationwide Permits and Individual Permits.

Experienced in completing the West Virginia Stream and Wetland Valuation Metric calculator for mitigation projects.

Conducted after-the-fact delineations with the U.S. Environmental Protection Agency.

Mining

Authored sections of mining permit applications and environmental information documents.

Surface Water Sampling

Conducted surface and groundwater sampling.

GIS

Analyzed longitudinal and cross-sectional data associated with stream profiles.

Acquired skills in operation of GPS equipment.

Oil and Gas

Managed environmental permitting for large scale roadway improvement project across 10 counties throughout West Virginia.

Permitted hundreds of natural gas well pads, pipelines and access road upgrades.

Biological and Sampling

Conducted electrofishing surveys with species identification.

Collected water samples and performed chemical analysis with various instruments.

Conducted benthic macroinvertebrate surveys utilizing procedures described in the USEPA's Rapid Bioassessment Protocol (RBP).

Performed habitat and stream assessments utilizing the standard EPA RBP in freshwater ecosystems.

JESSICA L. YEAGER

Senior Scientist



EDUCATION

- M.S. Biology (Emphasis in Aquatic Ecology and Toxicology)
Virginia Polytechnic Institute and State University
- B.S. Biology/Chemistry
Fairmont State College

EMPLOYMENT HISTORY

- 2000-Present Potesta & Associates, Inc.
1998-2000 Biological Monitoring, Inc.
1995-1998 Virginia Tech
1994-1995 Center for Environmental and Hazardous Materials Studies

PROFESSIONAL CERTIFICATIONS

- Certified Hydric Soil Investigator
- Certified Wetland Botanist
- Certified Wetland Delineator
- Certified Wetland Hydrologist
- State of West Virginia Office of Miners' Health, Safety & Training Class 32 Safety Sensitive Personnel

TRAINING/RELEVANT COURSE WORK

- River Morphology and Applications, Wildland Hydrology
- Applied Fluvial Geomorphology, Wildland Hydrology
- Methods for Stream Assessment and Analysis, WVU
- Introduction to Natural Stream Channel Design, WVU
- Advanced Stream Design, WVU
- Fluvial Geomorphology, WVU
- Developing Wetland Water Budgets, Swamp School

PROFESSIONAL AFFILIATIONS

- Society of Freshwater Scientist
- Society of Environmental Toxicology and Chemistry

AREAS OF SPECIALIZATION

Clean Water Act (CWA) permitting, compliance, including water pollution control permitting and regulatory compliance, stream and wetland delineation, and permitting (including mitigation), state water quality regulations, threatened and endangered species compliance, cultural and historic resource coordination, development of large scale environmental risk assessments, environmental assessments, biological assessments, environmental impact studies and other National Environmental Policy Act (NEPA) documents (noise, cumulative impacts, aesthetics), development of biological studies, toxicity evaluations, and preparation of environmental documents for non-environmental regulatory agencies, including the Public Service Commission.

PROFESSIONAL EXPERIENCE

Stream/Wetland Delineation, Permitting, and Mitigation

Served as project manager and senior scientist for multiple CWA permitting tasks covering Section 401, 402, and 404 compliances.

Prepared permit packages for stream and wetland impacts for United States Army Corps of Engineers individual and general Department of the Army authorizations, State (401) Water Quality Certification, and Public Lands Corporations.

Supervised and assisted in the preparation of mitigation plans and associated restoration plans, as well as environmental information documents for large scale surface disturbances.

Prepared large adaptive management plans that are compliant with Department of the Interior (DOI) recommendations.

Supervised and prepared projects that determine stream status (perennial, intermittent, or ephemeral) utilizing benthic and stream channel indicators (wetland and stream delineations) in West Virginia, Kentucky, Virginia, and Maryland. Projects have included the determination of jurisdictional streams and wetlands in atypical field conditions, as well as after-the-fact stream/wetland impacts utilizing site specific data as well as interpretation of historical data using ArcGIS.

Acted as an agent for applicants during negotiations with agency personnel. Typically, issues addressed are associated with impact determination and NEPA compliance (cultural resources, threatened and endangered species, land use, cumulative impacts, and aesthetics.)

Familiar with most Federal protocols utilized for the assessment of impacts to "waters of the U.S." Prepared the banking documents (prospectus, banking instrument, etc.) for the first mitigation banking program for stream and wetland credits in West Virginia.

Supervise, evaluate and report mitigation success using applicable performance standards for CWA Section 404 permitting.

Oil and Gas

Responsible for managing large scale Clean Water Act Projects associated with Marcellus Shale Production (well sites, well lines, and gathering lines) including field crew scheduling and coordination, stream/wetland delineation reporting, agency consultation, coordination of archaeological and bat/mussel surveys, and USACE 404 permitting. Responsible for managing pipeline projects where the role was environmental review or providing environmental permitting. Play role in agency interactions and litigation support.

NPDES Industrial/Municipal Permitting

Worked as part of a permitting team that prepared new, modified, and renewed (reissued) National Permit Discharge Elimination System (NPDES) permits for various clients in the energy and commercial sectors. Specific areas include water monitoring and narrative criteria applications, toxicity (standard bioassays, as well as toxic identification studies), aquatic ecosystem protection, biological studies, watershed hydrology, water quality, groundwater and surface water inventories, long-term flow studies, site specific water quality criteria and or variances, mixing zones, database management and adaptive management plans.

Responsible for managing and/or preparing State and Federal Regulatory Permits/Renewals/Modifications, including: Section 7 Threatened and Endangered Species USFWS and WVDNR Consultation, Section 106 State Historic Preservation Office Consultation, United States Army Corps of Engineers 404 Permits, West Virginia Division of Natural Resources - Office of Land and Streams Stream Activity Permits, and Individual State 401 Water Quality Certification. Work includes permitting and supporting documentation for wasteload allocation, Industrial NPDES Permit Applications/Permit Renewals, General WV/NPDES Storm Water Permit Applications/Permit Renewals, sampling plans, Groundwater Protection Plans (GPP), Storm Water Pollution Prevention Plans (SW3P), and Municipal Separate Storm Sewer System (MS4) General Permits.

Surface Water Sampling

Supervised multiple water quality monitoring programs. Projects have included oversight and management of sampling teams for pre-construction baseline, routine and special study water quality monitoring projects including non-traditional monitoring techniques such as sediment respiration. Many of the projects have included a database management and compliance component.

Mining

Worked as part of a permitting team (for various clients) that prepares new mining permits, as well as modification and renewals. Specific areas include land use, parks and historic lands information, fish and wildlife information including threatened/endangered species, water quality data, drainage information, NPDES permits, and narrative criteria applications.

Completed studies to address notice of violation (NOV) orders for accidental discharges into waters by mining companies including assessments of fish kills and the extent of black-water discharges as well as routine non-compliance issues. Act as representative for company in board hearings to address violations.

Risk Assessment

Completed large scale risk assessment in watersheds in Kentucky, West Virginia, and Virginia for associated with impacts to waters. Assessments included the use of biological monitoring (fish and benthic macroinvertebrates (including mussels)), acute and chronic toxicity testing, sediment toxicity testing, juvenile mussel toxicity testing, entrainment studies, water quality monitoring, water quality modeling, and specialized sediment sampling which included both physical and chemical characterizations. These projects have required large scale data integration, database management with an ArcGIS component.

Threatened/Endangered Species

Completed biological assessments for mussel species in the Kanawha and Gauley Rivers, as well as a document similar to a biological assessment for the Big Sandy River watershed. Completed biological assessments for bat species in West Virginia for various clients. Prepared appropriate documentation for Section 7 consultations with the United States Fish and Wildlife Service for various regulated entities.

Environmental Assessments/Impact Statements

Preparation and submittal of environmental information documents submitted to regulatory agencies for the development of the agencies environmental assessments. Topics addressed included: fish and wildlife resources; surface and groundwater, endangered species, noise, viewshed and aesthetics, traffic, floodplains, conservation, flooding, navigation, recreation, safety, environmental justice, socioeconomics, and other general environmental concerns. Development of alternative analyses including: a federal highways project which required a supplemental EIS; several large-scale mining operations whose alternatives included various mining methodologies (underground mining, highwall mining, etc.) as well as post mining land uses. Prepared and submitted environmental assessments for federal regulatory agencies as third-party contractor. Prepared,

reviewed and commented on Draft Environmental Impact Statements and for various federal agencies as third-party contractor. Completed assessments for federal agencies to determine the need for supplemental environmental documents.

Regulatory and Litigation Support

Provided testimony as both a factual witness and expert witness in federal court and before the West Virginia Environmental Quality Board. Testimony included site conditions, evaluation of reasonable potential, water quality issues, mitigation, and stream structure and function. Negotiated with state and federal agencies regarding fines for non-compliance. This includes completing large scale after-the-fact delineations and associated reporting for Section 308 and 309 Orders, negotiating mitigation, and evaluating and assessing NPDES compliance issues. Compliance issues include discharge monitoring reports, non-compliance notices, toxicity, and narrative guidance concerns.

Additional litigation work has included work performed for meeting specialized permitting requirements, like those for the Public Service Commission. This work has included testimony regarding studies for wind energy development and its impact on birds and threatened and endangered species.

Work for energy development has included applications for the Public Service Commission, completed for clients with the assistance of an attorney. Studies and documents have included: noise studies, landscape scale land use analysis, viewshed analysis, surface and groundwater studies, species consultations, delineations, coordination of contractors for consultations, and packaging of the applications.

Biological Studies and Sampling

Responsible for managing and reporting biological surveys using State and federal protocols for permitting and compliance. Responsible for the development, managing, and reporting of special studies including functional assessment studies, algal studies, vegetative studies, wetland macroinvertebrate studies, avian studies, bat studies, benthic macroinvertebrate studies, mussel surveys, fish surveys and specialized trout surveys. Responsible for managing and reporting biological toxicity evaluations using standard testing species, as well as specialized studies like those completed using juvenile mussels and larval fish for selenium deformities.

Completed an evaluation of the physical, chemical, and biological effects of acid mine drainage from abandoned mine lands in Virginia. Work included bioassays, biological monitoring, chemical monitoring, physical habitat evaluations, and functional assessments of the biological communities including algal community structure. Prepared documents for the use of acid mine drainage remediation for mitigation purposes.

Benthics

Completed benthic sampling for 18+ years. Capable of identifying most benthic macroinvertebrates at the genus level. Completed aquatic entomology coursework under Dr. R. Voschell at Virginia Tech.



EDUCATION

M.S. Environmental Science, 2005
Marshall University

B.S. Biological Science/Chemistry, 1997
University of Charleston

EMPLOYMENT HISTORY

2000-Present Potesta & Associates, Inc.
1999-2000 Commercial Testing & Engineering
(Subsidiary of the SGS Group)
1997-1999 West Virginia Division of
Environmental Protection, Office of
Water Resources
1996-1997 University of Charleston

TRAINING/RELEVANT COURSE WORK

- December 2003 – Fundamentals of Nutrient Management Training
- July 2000 – Environmental Impact Statement and Environmental Assessment Preparation Short Course

AREAS OF SPECIALIZATION

Water pollution permitting and regulatory compliance. Biological assessments, including field studies, habitat evaluation and water quality sampling. Review and preparation of environmental assessments, biological assessments and other National Environmental Policy Act (NEPA) documents. Successfully completed a variety of

environmental projects requiring significant coordination, input, and development of effective solutions to time-sensitive multi-disciplinary challenges without a lapse of performance.

PROFESSIONAL EXPERIENCE

NPDES Industrial/Municipal Permitting

Thirty+ bench scale studies at 30+ separate industrial sites, for 25+ separate clients. Included were testing of flocculants to reduce metals; filtration testing; pH adjustments; chemical addition; and retention time studies; and flocculent studies to reduce metals and control pH; and testing to allow modeling of DO sag.

Completed mixing zone delineation using the CORMIX modeling software to determine available dilution within the zone of initial dilution and the regulatory mixing zone:

- Akzo Nobel Functional Chemicals
- Consol Energy, Inc.
- Cytec Industries
- NiSource
- Bayer CropScience

DuPont Corporate Remediation Group – Implementation of the Interim Chemical/Biological Monitoring Protocols for a zinc smelter site to comply with NPDES violation order. Responsibilities include water chemistry sampling, completion of water quality discharge monitoring reports, benthic macroinvertebrate sampling, habitat assessments, and completion of quarterly reporting.

Completed tasks necessary to determine site-specific metals translator. These tasks included field sampling, data validation, statistical analysis, and the presentation of results within a NPDES permit modifications request.

- Union Carbide Corporation
- Kanawha River Terminals
- Millville Quarry
- Hillside Mining

Conducted field mixing zone studies and the associated NPDES permit modifications for several discharges into the West Fork, Kanawha and Ohio Rivers:

- Akzo Nobel Functional Chemicals

- Cytex Industries
- Clearon Corporation
- Allegheny Power
- NiSource

Constellation Power – Conducted NPDES process wastewater permitting for a power production facility.

Prepared NPDES permit application for the construction of a methane gas extraction facility.

Conducted effluent toxicity evaluations and toxicity reduction investigations relative to NPDES permit compliance.

Pilgrim's Pride Corporation – Conducted NPDES permitting and Nutrient Management Plan for the land application of materials similar to sewage sludge.

Supresta U.S. LLC – Prepared Best Management Practices (BMP) Plan as required by the NPDES permit.

Reviewed water chemistry data to evaluate compliance with NPDES permit specifications for various facilities.

Completed NPDES renewal permitting and associated agency negotiations for several facilities:

- Supresta
- Aggregate Industries
- NiSource

Environmental Assessments/Impact Statements

Prepared NEPA surveys and environmental assessments for the permitting process of communication tower construction within West Virginia and Maryland.

Prepared Social and Economic Importance Statements to permit discharge at levels at higher than afforded by the wasteload allocations.

- Evergreen Mining Company
- Brooks Run Coal Company
- Tackley Mill Development
- Legends of Sleepy Hollow Subdivision
- Berkeley Springs Development
- Consol of Kentucky, Inc.
- Hillside Mining Company
- Marfork Coal Company
- J.F. Allen Company

Prepared socioeconomic portion for the Environmental Impact Document (EID) associated with mine permitting:

- Kanawha Energy Company
- Coal River Companies
- Fola Coal Company
- Green Valley Coal Company

Prepared Alternative Analyses to determine the most cost-effective treatment technologies for sanitary and mining discharges. These determinations may also be used to justify the development of Social and Economic Importance Statement.

- Evergreen Mining Company
- Brooks Run Coal Company
- Tackley Mill Development
- Corporation of Ranson
- Legends of Sleepy Hollow Subdivision
- Berkeley Springs Development
- Consol of Kentucky, Inc.
- Hillside Mining Company
- Marfork Coal Company
- J.F. Allen Company

Prepared the biological portion of environmental impact statements for large surface mining operations pursuing U.S. Army Corps of Engineers individual permits.

Completed assessments of various watersheds for the West Virginia Division of Environmental Protection using USEPA Rapid Bioassessment Protocols. Responsibilities included water chemistry sampling, benthic macroinvertebrate sampling and analysis, habitat assessment, use attainability analysis, and regulatory compliance.

Completed assessment of a fish kill in a West Virginia river. Assessment required rapid response to assess the total number killed, as well as investigation into the source of the contamination.

Biological Studies and Sampling

Martin County Coal Corporation – Conducted spill response involving a 250-million-gallon coal mine slurry release including physical, chemical, and biological monitoring, consulting relating to remediation, and restoration, and assessment of damages.

Implementation of the Interim Chemical/Biological Monitoring Protocols for Mountaintop Mining Operations. Responsibilities include water chemistry sampling, benthic macroinvertebrate sampling, fisheries collection, habitat assessment, report preparation, and report finalization.

- Mingo Logan Coal Company
- Elk Run Coal
- Fola Coal Company

Prepared sampling and analysis plan for obtaining field measurements and water chemistry samples. These plans were used to collect data for requesting a site-specific metals translator.

- Millville Quarry
- Hobet Mining, Inc.
- City of Follansbee
- Kanawha River Terminals

Prepared sediment Sampling and Analysis Plans for use in determining sediment load in the West Fork, Tug, and Big Sandy Rivers.

Marfork Coal Company – Examined laboratory data and quality assurance/quality control practices to determine validity of the results.

Hazardous Waste/RCRA/Corrective Action

Prepared Biennial Hazardous Waste Reporting for several facilities within West Virginia:

- Spectratech International, Incorporated
- T.L. Diamond, Meadowbrook Facility

Stream/Wetland Delineation, Permitting, and Mitigation

Conducted stream delineations on several streams to determine the point of origin, intermittent and perennial reaches.

Groundwater

Marfork Coal Company – Prepared comprehensive plan for monitoring well and groundwater seep sampling, laboratory analyses, and associated quality assurance procedures.

SARA/Form R/Tier II

Prepared Tier II reporting forms for several large chemical manufacturing facilities.

Risk Assessment

Conducted large-scale risk assessment to determine the impacts of coal slurry on the aquatic environment which resulted from an impoundment failure. This project involved integration of biological surveys, toxicological testing, sediment surveys, river surveys, water chemistry monitoring, statistical analysis and report writing.

Benthics

Conducted benthic surveys using USEPA Interim Guidance Protocols to assess stream quality prior to the issuance of mining permits in several streams in southwestern West Virginia.

Prepared quality assurance/quality control plans for water chemistry and benthic macroinvertebrate sampling conducted within many mine permit areas.

Prepared data management and quality assurance/quality control plans to obtain and compile available benthic data collected within thirteen southern states into a useable database. Also, responsible for the database design, data interpretation, data validation, and statistical analyses to determine the most prevalent benthic macroinvertebrate families.

Stormwater

Development of storm water sampling manuals for a variety of organizations, including energy production facilities and members of the forestry association.

Prepared combination Storm Water Pollution Prevention Plans and Groundwater Protection Plans for chemical manufacturers, concrete block manufacturers, asphalt facilities, synthetic fuels facilities, and forestry association members.

- Ashland Chemical, Inc.
- Supresta U.S. LLC (previously Akzo Nobel Functional Chemicals)
- West Virginia Forestry Association
- RJ Recycling LLC

Prepared and reviewed Discharge Monitoring Reports (DMRs) to evaluate compliance with storm water permit specifications:

- Go Mart, Inc.
- DuPont Corporate Remediation Group
- Spectratech International, Incorporated





EDUCATION

- M.S. Aquatic Ecology, 1990
Marshall University
- B.S. Biological Sciences, 1987
West Virginia State College

EMPLOYMENT HISTORY

- 1997-Present Potesta & Associates, Inc.
1990-1997 Terradon Corporation
1990 Union Carbide Corporation
1988-1989 Marshall University

PROFESSIONAL CERTIFICATIONS

- OSHA Hazardous Waste Site Operations Supervisor Training
- OSHA 40-Hour Hazardous Waste Site Operations Workers Training

AREAS OF SPECIALIZATION

Water permitting and compliance, SARA III (EPCRA) reporting and regulatory compliance, air permitting, and environmental management system manual preparation.

PROFESSIONAL EXPERIENCE

Water Permitting and Compliance

Industrial NPDES Permitting for a variety of West Virginia facilities:

- Cytec Industries, Inc
- MPM Silicones, LLC
- Koppers Industries, Inc.
- Elementis Specialties, Inc.
- Pilgrim's Pride Corporation
- PNGI Charles Town Gaming, LLC
- Armstrong World Industries
- Akzo Nobel Chemical, Inc.
- York Bronze Company
- Creo Manufacturing America, LLC

NPDES Permitting for municipal facilities and publicly-owned treatment works:

- Salt Rock Public Service District
- Boone County Public Service District
- City of Martinsburg, West Virginia
- City of Follansbee, West Virginia

NPDES Permitting for quarry mining facilities in West Virginia:

- Southern West Virginia Asphalt, Inc.
 - Kelly Mountain Quarry – Elkins, West Virginia
 - Bowden Quarry – Elkins, West Virginia
 - Sugarlands Quarry – St. George, West Virginia
- Continental Brick Company

NPDES General Storm Water Permitting, Storm Water Pollution Prevention Plans (SWPPP) and/or Groundwater Protection Plans (GPPs) for various facilities:

- Southern West Virginia Asphalt, Inc.
 - Alta, West Virginia
 - Beaver, West Virginia
 - Elkins, West Virginia
 - Huntington, West Virginia
 - Moorefield, West Virginia
 - Princeton, West Virginia
 - Summersville, West Virginia
 - Whitman, West Virginia
- West Virginia Paving, Inc.
 - Dunbar, West Virginia
 - Poca, West Virginia
 - Ripley, West Virginia

- Camden Materials,
- Kelly Paving, Inc.
 - Ravenrock, West Virginia
 - Benwood, West Virginia
 - Weirton, West Virginia
- Al Rec, LLC
- DALB, Inc.
- Hino Motors Manufacturing
- Steve Simpson & Associates, Inc.
- Integrity Delaware, LLC
- Lowe Products Company, Inc.
- Multicoat Products, Inc.
- PC West Virginia Synthetic Fuels, LLC
 - Chelyan, West Virginia
 - Summersville, West Virginia
 - Eckman, West Virginia
- J.F. Allen Company
- Enron Global Markets, LLC
- Potomac Construction Industries, Inc.
- Poor Charlie & Company
- Riverside Technologies, Inc.
- Greer Industries, Inc.
- Parks Corporation
- Constellation Power Development
- Shelly & Sands, Inc.

Metals Translator Studies and development of site-specific metals translators for various facilities in West Virginia:

- Boone County Public Service District
- Bluewell Public Service District
- Pilgrim's Pride Corporation
- Hobet Mining
- Continental Brick Company
- Coyote Coal Company
- White Flame Energy
- Creo Manufacturing America, LLC
- City of Follansbee, West Virginia
- Greer Industries, Inc.
- CONSOL Energy

Background Water Quality, Baseline Water Quality, and/or Mixing Zone Studies for various West Virginia facilities:

- Cytec Industries, Inc.
- Koppers Industries, Inc.
- Pilgrim's Pride Corporation
- Clearon Corporation
- Boone County Public Service District
- Bluewell Public Service District

Discharge Monitoring Reporting:

- Cytec Industries, Inc.
- Al Rec, LLC
- Southern West Virginia Asphalt, Inc.

Benthic Macroinvertebrate Studies:

- Hester Industries, Inc. - South Branch of the South Fork of the Potomac River
- Union Carbide Corporation – Ward Hollow of Davis Creek

Stream/Wetland Delineation, Permitting, and Mitigation for various projects in West Virginia:

- Resource Consultants and Developers, Inc.
- Morgantown Energy Technology Center
- Capels Resources
- Proposed 560-acre site of Apple Grove Pulp and Paper
- Howe's Leather

SARA III (EPCRA) Reporting and Compliance

Form R Toxic Chemical Release Inventory (TRI) evaluation and/or reporting for various facilities throughout West Virginia:

- DALB, Inc.
- UGM Addcar, Inc.
- LP Minerals, LLC
- Arch Coal, Inc.
- International Coal Group
- Greer Industries, Inc.
- Hester Industries, Inc.
- Sheidow Bronze Company
- AC&S, Inc.
- Creo Manufacturing America, LLC

Tier II Hazardous Chemical Inventory reporting for various facilities throughout West Virginia:

- Hester Industries, Inc.
- Walker Machinery Company
- AC&S, Inc.
- Creo Manufacturing America, LLC
- Greer Industries, Inc.
- Pfaff & Smith, Inc.

Section 304 Initial Notifications and Material Safety Data Sheet (MSDS) reporting for facilities in West Virginia:

- Patriot Mining Company, Inc.
- Greer Industries, Inc.

USEPA SARA III compliance audits for facilities in West Virginia:

- Hester Industries, Inc.
- Sheidow Bronze Company
- Patriot Mining Company, Inc.

Air Permitting and Compliance

Regulation 13 Permitting for various West Virginia facilities:

- Hester Industries, Inc
- Parks Corporation
- Greenbrier Limestone Corporation
- Century Limestone, Inc
- Meadows Stone & Paving, Inc
- Pfaff & Smith, Inc.
- Arrow Concrete Company
- Southern West Virginia Asphalt, Inc
 - Elkins, West Virginia
 - Whitman, West Virginia
 - Beaver, West Virginia
- West Virginia Paving, Inc.
 - Poca, West Virginia
 - Dunbar, West Virginia

Regulation 21 emissions calculations and registrations for a variety of industries in West Virginia, including manufacturing and chemical facilities, a bulk fuel terminal, numerous gasoline stations, and dry cleaners.

Title V Certified Emissions Statements (CESIs) and emissions inventories (EIs) for a variety of facilities throughout West Virginia, including manufacturing facilities, small chemical companies and numerous quarries and asphalt plants.

Emission Inventory Statements (EISs) for over 30 facilities, including a bulk gasoline terminal, manufacturing facilities, and numerous asphalt plants and quarries.

Environmental Management

Prepared Environmental Management System Manuals for facilities in West Virginia and Ohio:

- Gestamp West Virginia, LLC
- Greer Industries, Inc.
- PC West Virginia Synthetic Fuels, LLC
- Creo Manufacturing America, LLC
- SDR Plastics, Inc.
- West Virginia Forestry Association
- Koppers Industries

Landfills/Solid Waste/Waste Disposal

Jackson County Landfill:

- Monthly tonnage reports
- Coordination of groundwater, surface water and methane gas sampling and
- Operations Manual and Annual Operational Reports
- Hazardous Waste Exclusion Plan and associated training
- Response to DEP Notices of Violation

Operations Manual and Hazardous Waste Exclusion Plan for a landfill in Omar, West Virginia.

Comprehensive Litter and Solid Waste Control Plans for Jackson, Mason and Wood Counties, West Virginia.

Solid Waste Facility Siting Plans for Jackson, Mason, and Wood Counties, West Virginia.

Environmental Assessments/Impact Statements

Environmental Assessment or Categorical Exclusion documents for facilities in West Virginia and Maryland:

- Crown Communications (numerous cellular towers)
- Greystone Development
- Columbia Gas Transmission Corporation
- West Virginia Division of Highways

FERC Reports

Columbia Gas Transmission Corporation – Environmental Resource Reports for FERC applications for several pipeline projects. The projects included individual pipeline replacement projects and a large market expansion project.

ESAs (Phase I and II)

Phase I Environmental Site Assessments:

- Hester Industries, Inc.
- Parks Corporation
- Juliana Glass
- Resource Developers and Consultants, Inc.
- Barrack's Auto
- Go-Mart, Inc.

Phase II Environmental Site Assessments:

- Hester Industries, Inc.
- Juliana Glass
- Barrack's Auto

Remediation

Site Characterization/Remediation Plans for various facilities in West Virginia:

- Swanson Plating Company
- Transdistribution Company
- Wayne Lumber Company
- Batteries, Inc.
- Vienna Cleaners
- Inco Alloys

