

# MINE-SCARRED LANDS REVITALIZATION

## Models Through Partnerships

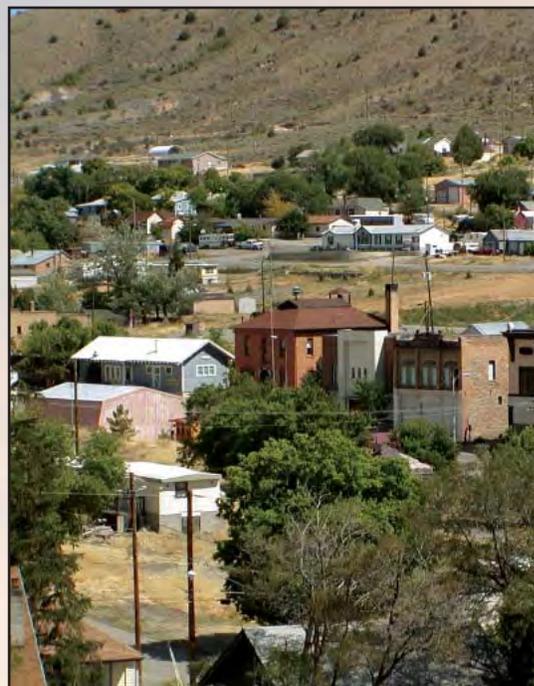


The Year One Report on the Brownfields Federal Partnership  
Mine-Scarred Lands Initiative

**This report provides** an update of the Brownfields Federal Partnership Mine-Scarred Lands Initiative (MSL Initiative)—an interagency partnership designed to explore approaches to mine-scarred lands cleanup and community revitalization by supporting six Demonstration Projects. It is hoped that other mining communities will benefit from the experiences, lessons learned, and financial and technical resources identified through these projects. The six Demonstration Projects featured in this report are: Bullfrog Mine, Beatty, Nevada; Cranberry Creek Corridor, Hazleton, Pennsylvania; Eureka Town Site, San Juan County, Colorado; Kelly’s Creek Watershed, Kanawha County, West Virginia; Pennsylvania Mine, Summit County, Colorado; and Stone Creek Tipple Site, Lee County, Virginia.

The purpose of this report is to:

- Document the unique challenges and opportunities for MSL reuse
- Describe the MSL Initiative and its future activities
- Provide a discussion of the objectives and accomplishments of each of the six Demonstration Projects



*Eureka township, one of the many communities which has been affected by mine-scarred lands*

Mine-scarred lands are lands, associated waters, and surrounding watersheds where extraction, beneficiation, or processing of ores and minerals (including coal) has occurred.

On January 11, 2002, President Bush signed into law the Small Business Liability Relief and Brownfields Revitalization Act (Public Law 107-118; H.R. 2869). The Brownfields Law expands the definition of brownfields to include mine-scarred lands, providing a new legal and financial tool for cleanup and revitalization of mining properties and communities (Section 101(39)(D)(ii)(III)).

## MINE-SCARRED LANDS OPPORTUNITIES

As a centerpiece of American history and industrial expansion, our mining heritage has left a legacy of more than 500,000 abandoned hard rock and coal mining sites throughout the United States. For impacted communities, these properties present revitalization opportunities since many sites are located on large, flat tracts of land, often in otherwise rugged landscapes. The cleanup and revitalization of mine-scarred lands creates positive environmental impacts such as cleaner water, healthier ecosystems, and increased safety for residents, and often involves economic development and historical restoration.



*Abandoned coal-loading facilities are often close to transportation assets and residential communities*

Although mining properties offer significant revitalization opportunities, there are a number of complicating factors associated with cleanup and reuse activities. These factors include regulatory complexities (a myriad of applicable laws), economic factors (resource management infrastructure and land ownership), and environmental, public health, and safety concerns (acid mine drainage and waste tailings). The perception of contamination, both locally and regionally, also inhibits the reuse of mining sites. However, as these issues are interconnected, there is an opportunity to develop an integrated approach to cleanup and revitalization.

# THE MINE-SCARRED LANDS INITIATIVE

## WHY THE MSL INITIATIVE WAS CREATED

Across the country, communities are working to clean up and revitalize mine-scarred lands. With the passage of the Brownfields Law, the federal partners recognized the opportunity to better coordinate their support to these communities. Mine-scarred lands cleanup and reuse projects differ from traditional urban brownfields; the MSL initiative formed to develop tools and strategies to meet these unique challenges.

The federal partners decided to work with local communities on six Demonstration Projects. These projects represent the variety and scale of challenges shared by mining communities across the country, which include, but are not limited to: coordinating cleanup and revitalization funding; expanding infrastructure for development; addressing mixed ownership of lands; coordinating multi-stakeholder revitalization efforts; addressing complex liability issues; and identifying feasible economic development options to replace mining.

## MSL INITIATIVE'S COLLABORATIVE AND COMMUNITY ORIENTED APPROACH

A key factor of the MSL Initiative's success is that the partners have worked collaboratively throughout the process. After project selection, the group gathered information by visiting community members and other stakeholders to learn more about their reuse visions, background of revitalization activities, and specific challenges. By asking for local input at the beginning of the process, the federal partners more accurately understood each community's challenges and identified specific opportunities for federal support.



*Acid mine drainage remediation using a passive treatment system*

## Mission of the MSL Initiative

To foster the cleanup and sustainable revitalization of mine-scarred lands and affected communities.

## Goals of the MSL Initiative

- Develop a collaborative, integrated approach among federal partners
- Select MSL Demonstration Projects
- Identify and coordinate federal resources
- Facilitate information exchange and replication of successful approaches

## MSL Initiative Federal Partners

- Appalachian Regional Commission
- U.S. Army Corps of Engineers
- U.S. Department of Agriculture
- U.S. Department of Housing and Urban Development
- U.S. Department of the Interior
- U.S. Environmental Protection Agency

As the projects have transitioned from learning about communities' challenges to providing direct support, the federal partners continue to work with local, regional, and state stakeholders. By building partnerships that include stakeholders with varying expertise (e.g., local understanding, technical, and economic expertise), the federal partners are engaging in discussions on complex challenges that local communities are facing. These partnerships will continue to be a key driver in developing workable solutions and models for mining communities across the country.

# BULLFROG MINE

## Beatty, Nevada

This project illustrates how developing diverse partnerships can support innovative and sustainable reuse opportunities.



### KEY CHALLENGES AND STRATEGIES AT-A-GLANCE

Limited available land: By building a partnership with Barrick Gold, the Town of Beatty was able to acquire 81 acres of land for reuse.

Collaborative partnering for the planning of a renewable energy project: Through its diverse partnerships, the Beatty community has received commitments from key partners to plan for the development of renewable energy production.

### REUSE OPPORTUNITIES IN BEATTY

Beatty, Nevada is a small community surrounded by approximately 10,000 acres of federal Bureau of Land Management (BLM) land that is located 110 miles northwest of Las Vegas and eight miles east of Death Valley National Park. During its 100-year history, the economic livelihood of the town has relied upon the cyclical nature of the mining, railroad, and federal industries. The most recent gold mining operations ended in 1999 at the

Bullfrog Mine. Barrick Gold, Inc., the former owner of the mine, transferred two mining properties (67-acres and 14-acres) for reuse to Beatty in June 2005. Since the majority of usable land in the area is federally-owned, this land acquisition provides a unique economic opportunity. Reuse ideas that have been considered include: renewable energy production (e.g. wind and solar); tourism; residential; light and clean manufacturing; warehousing; an industrial park; and automotive testing.

#### Community Overview Beatty Area

Population	1,200
Area	175 sq. mi.
Unemployment Rate	4%

98% of land in Nye County is federally-owned.

\*Demographic information is approximated



### PARTNERSHIPS LEAD TO RENEWABLE ENERGY POSSIBILITIES

Given the region's high concentrations of natural solar and wind power, renewable energy production has emerged as a primary potential reuse option for this former mining area. The Nevada Energy Office has provided significant leadership in convening energy-related stakeholders (e.g., Nevada Energy Task Force,

the Department of Energy (DOE), BLM, research labs and utilities) to research opportunities related to solar, wind, and geothermal resources. With assistance from the MSL Initiative, stakeholders gathered for an Information Exchange Forum in July 2005 to share information about renewable energy possibilities in Beatty, discuss issues and opportunities, and develop a plan for moving forward.

Previous studies show that the Beatty area has solar energy potential that ranks among the highest in the United States and has potential for wind power generation. Additionally, Nevada offers a government and business climate that supports renewable energy. Existing policies include a property tax exemption favoring developments that utilize renewable energy, a green pricing program, and renewable energy legislation that calls for 15 percent of total electricity to be renewable by 2013. Furthermore, \$4 million per year has been earmarked for renewable energy research at Nevada universities. The feasibility and economic benefits of renewable energy development in Beatty need further research, including analysis of energy potential, transmission possibilities, management options, and incentives. Feasibility research will include possibilities on the 81 acres of Beatty properties, surrounding BLM lands, and other Barrick Gold mining properties. At the Information Exchange Forum, stakeholders expressed their commitment to the project and outlined a general plan for moving forward that will be more clearly outlined in the coming months.

## MOVING FORWARD

With the acquisition of the mining properties and targeted federal and state assistance, Beatty plans to take advantage of its location by creating an economic development plan that recognizes and builds upon its natural assets as well as other economic influences in the area. The renewable energy concept has enabled Beatty to work closely with regional, state, and federal partners, and will serve as a basis for collaborative land recycling and economic development planning in the future. This Demonstration Project will serve as a model on how to coordinate partnerships at all levels to develop a creative, sustainable reuse that meets all parties' interests.

## MSL INITIATIVE PROJECT CONTACT

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*Aerial view of the Bullfrog Mine*

## RESOURCES

The following resources have supported mine-scarred lands revitalization efforts:

- *U.S. Department of Energy:* Provided support in convening energy-related stakeholders to discuss feasibility of renewable energy production.
- *U.S. Environmental Protection Agency:* Interviewed local stakeholders, identifying potential reuse options and federal assistance. Worked with Beatty to engage stakeholders interested in renewable energy production opportunities, facilitate planning meetings, and provide collaborative coordination support.
- *U.S. EPA Brownfields Assessment Grant (\$650,000):* Awarded Nye County three Brownfields Assessment grants and a greenspace grant (in 2002 and 2005) to target and assess brownfields in towns across the county. The county used a portion of these EPA funds to perform due diligence of the Barrick parcels being transferred to the town of Beatty for economic development.

## Critical Stakeholders

- Beatty Economic Development Council
- Barrick Gold, Inc.
- Nye County
- Nevada Energy Office
- Nevada Energy Task Force
- Nevada Division of Minerals and Mines
- Utility companies
- Desert Research Institute
- National Renewable Energy Labs
- U.S. Department of Energy
- U.S. Department of the Interior, Bureau of Land Management
- U.S. Department of the Interior, Office of Surface Mining
- U.S. Environmental Protection Agency

# CRANBERRY CREEK CORRIDOR

## Hazleton, Pennsylvania

This project illustrates the challenge of integrating cleanup, compaction, infrastructure, and other site development activities. It also illustrates the importance of coordinating citizen engagement.

### KEY CHALLENGES AND STRATEGIES AT-A-GLANCE

In addition to cleanup and reclamation, mine-scarred lands often require soil compaction to support redevelopment projects: The MSL Working Group partners are identifying potential local, state, and federal funding programs that can be tailored to address the full life cycle from mine-scarred land reclamation through reuse.

Limited community engagement in reclamation and redevelopment process: A community engagement strategy is under development.

### APPLYING ECONOMIC DEVELOPMENT EXPERTISE TO MINE-SCARRED LANDS REDEVELOPMENT

Stakeholders in the Greater Hazleton area have developed new industrial and corporate parks, successfully reducing the economic dependence on the coal industry. CAN DO (Community Area New Development Organization), the area's economic development driver, has brought new

industry and jobs to the area for more than 50 years. However, the hundreds of acres of mine-scarred lands at the community gateway are a barrier to future economic success. The blight and perception of contamination deters potential investors and the development of new businesses. Though CAN DO has historically developed open space, it has recently realized the potential to reclaim the mine-scarred lands that plague the region in order to eliminate visual blight and productively reuse property.

Recently, CAN DO purchased two mine-scarred lands properties at the community gateway, the Cranberry Creek Corridor and Harwood Innovations site. The 366-acre Cranberry Creek Corridor is slated for a mixed-use center with commercial, residential, and recreational components. The 82-acre Harwood Innovations site will host a business incubator or an education center.

#### Community Overview Hazleton Area

Population	55,000
Area	6 sq. mi.
Unemployment Rate	7%

\*Demographic information is approximated



## SITE DEVELOPMENT CHALLENGES

CAN DO stakeholders are exploring innovative approaches to site compaction. Current funding sources can be used for filling the land so that it can be used for greenspace. However, this funding does not support compacting the land to ensure that it is stable enough to support the weight of redevelopment construction projects. Because compaction is such an expensive process, and CAN DO has had difficulty identifying sources that fund compaction, the remediation and redevelopment process has been slowed.

To help CAN DO address the compaction issues, the MSL Initiative partners are exploring the possibilities and restrictions of local, state, and federal funding programs, as well as private sector tools. A network of specific technical and financial programs, contacts, and resources will be established to help CAN DO and its local government partners develop a funding plan for the Cranberry Creek Corridor Project.

## ENGAGING THE COMMUNITY

The proposed mixed-use development on the Cranberry Creek Corridor property will provide a number of community benefits such as entertainment venues and athletic fields. CAN DO has limited experience in conducting community engagement activities required by such projects. Therefore, the MSL Initiative is providing support to help CAN DO design a collaborative community engagement strategy that informs stakeholders on contamination issues and invites community members to join in the visioning and redevelopment process.

## MSL INITIATIVE PROJECT CONTACT

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Artist's rendition of the Cranberry Creek Corridor Redevelopment Project  
©Quad 3 Group

## MOVING FORWARD

With its expertise in economic development initiatives, CAN DO is well suited to undertake mine-scarred lands revitalization projects. Although the cleanup and redevelopment of mine-scarred lands presents new funding and community engagement challenges, CAN DO has outlined a plan for moving forward. This project will serve as a model for communities across the county on how to develop a funding plan and engage community stakeholders.

## RESOURCES

The following resources have supported mine-scarred lands revitalization efforts:

- *Appalachian Regional Commission*: Provided support to identify funding sources tailored to address the full cleanup and reuse life cycle and develop a community engagement plan.
- *U.S. Environmental Protection Agency*: Interviewed local stakeholders, identifying potential reuse options and federal assistance.

## Critical Stakeholders

CAN DO  
Hazleton Chamber of Commerce  
Luzerne County Community College  
Penn State Hazleton  
City of Hazleton  
Hazle Township  
Pennsylvania Department of Environmental Protection, Bureau of Mine Reclamation  
Pennsylvania Department of Community and Economic Development  
Appalachian Regional Commission  
U.S. Department of the Interior, Office of Surface Mining  
U.S. Economic Development Administration  
U.S. Environmental Protection Agency

# EUREKA TOWN SITE

San Juan County, Colorado

This project demonstrates the challenges of achieving a win-win solution in mixed ownership situations.

## KEY CHALLENGES AND STRATEGIES AT-A-GLANCE

Matching cleanup and reuse with community-based interests: The Animas River Stakeholders Group (ASRG) provides a forum to discuss diverse and sustainable reuse options.

Mixed ownership of lands: A multi-party land trade is underway.

## EUREKA TOWN SITE REUSE OPPORTUNITIES

The 180-acre Eureka Town Site is one of the few flat areas in mountainous San Juan County that lends itself to development, though the lands are partially contaminated by mill tailings and have mixed ownership. Public lands managed by the Bureau of Land Management (BLM) co-exist with lands owned by San Juan County and Sunnyside Gold Corporation (Sunnyside) in a checkerboard pattern (i.e., the lands are not contiguous to one another). A three-party land trade is underway that will promote the reuse goals for the area. This land

trade will support the community's efforts to: document history by preserving what is left of the ghost town; develop camping facilities to attract tourists; create gravel harvesting to supply infrastructure needs; and restore the natural functions of the floodplain.

## INITIAL RECLAMATION SUCCESS

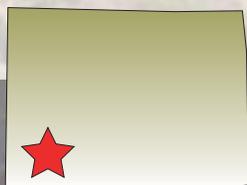
The key driver for revitalization efforts in the community is the Animas River Stakeholders Group (ARSG). ARSG is a collaboration of community and mining representatives, citizen interest groups, and state and federal agencies that focus on cleanup options of the Animas River in a community and watershed risk-based approach. The stakeholders provide input on the cleanup strategy and water quality standards applied to the reclamation of mines in the watershed. The group formed in 1994 in response to the Colorado Water Quality Control Division's reevaluation and upgrading of standards and classifications for segments of the upper Animas River watershed. An EPA proposal, that suggested the entire upper watershed be designated a Superfund site, was another impetus for forming ARSG. Through a series of informal negotiations and discussions, EPA agreed not to take any formal Superfund action as long as reclamation is in progress.

### Community Overview San Juan County

Population	600
Area	400 sq. mi.
Unemployment Rate	14%

There is only one active town in the county and 26 ghost towns.

\*Demographic information is approximated



The formation of ARSG has enabled the community to participate in a collaborative decision making process at both the state and federal levels. ARSG has characterized remediation efforts on the upper Animas River watershed and will continue to provide a public review forum for Eureka stakeholders to explore the opportunities presented by reclamation and redevelopment of area mine-scarred lands. Group members have obtained more than \$29 million for watershed assessment and mine reclamation, and the watershed has begun to respond in improved downstream fisheries.

Sunnyside reclaimed several historical and permitted mining sites, including removal of some mill tailings from the Eureka Town Site. The mill tailings were not generated by the company, yet it assumed responsibility for portions of the cleanup. Sunnyside has spent approximately \$12 million in the watershed. However, some mill tailings remain on the surface in the Eureka Town Site. To redevelop this site, the remaining mill tailings must be cleaned up.

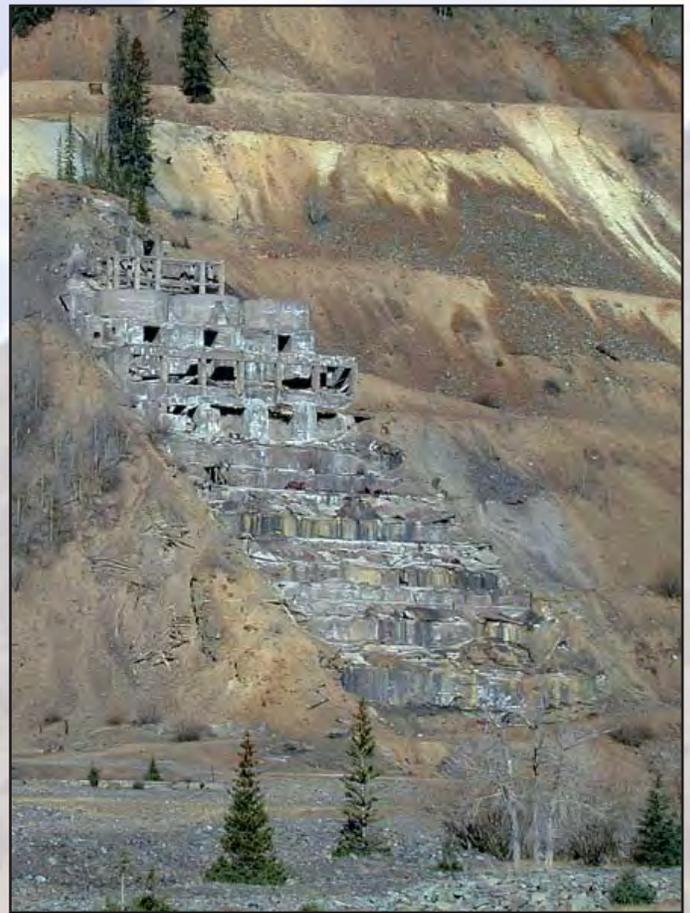
## REVITALIZATION CHALLENGES

Though the community has made progress in cleaning up the watershed, the following challenges remain:

- **Cleanup Goal:** There is the question of whether to remove all the mill tailings from the Town Site, only the surface tailings, or only those tailings negatively affecting the Animas River.
- **Land Reclamation:** Finding a disposal area for hazardous mill tailings is complicated because there are few suitable locations in San Juan County, and there is the question of who will take long term responsibility for the mill tailings repository.
- **Complex Land Negotiations:** While all parties involved in the proposed land trade wish to complete the trade, multi-party negotiations are moving slowly because of varied interests and potential liabilities.

## MSL INITIATIVE PROJECT CONTACT

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*Remains of the historic Eureka Mill*

## MOVING FORWARD

The community has made significant characterization and remediation progress through the efforts of ARSG and Sunnyside Gold Corporation. The MSL Initiative partners will continue to work with local stakeholders as they develop a reuse vision and plan for moving forward.

## RESOURCES

The following resources have supported mine-scarred lands revitalization efforts:

- *U.S. Environmental Protection Agency:* Interviewed local stakeholders, identifying potential reuse options and federal assistance.

## Critical Stakeholders

Animas River Stakeholder Group  
San Juan County  
Sunnyside Gold Corporation  
U.S. Department of the Interior,  
Bureau of Land Management  
U.S. Environmental Protection Agency

# KELLY'S CREEK

Kanawha County, West Virginia

This project illustrates innovative approaches associated with: development of wastewater infrastructure; remediation of coal acid mine drainage and collaboration with a private land owner to explore redevelopment of a large tract of previously mined land.

## KEY CHALLENGES AND STRATEGIES AT-A-GLANCE

Approximately 220 households do not have adequate wastewater treatment: A comprehensive plan has been created to address wastewater infrastructure, acid mine drainage, and development initiatives concurrently. The community has begun to engage related partners and to identify funding options.

AMD and other mining contamination: Kelly's Creek Communities Association (KCCA), the Office of Surface Mining (OSM) and the West Virginia Department of Environmental Protection (WVDEP) conducted research to determine critical discharge points.

Most available land for development is privately-owned: A preliminary redevelopment study funded by private land owners was conducted in 2002 as a result of initial discussions led by OSM. Opportunities for expanded land use studies were identified in facilitated planning sessions.

## HIGHLIGHTING THE COMMUNITY DRIVER

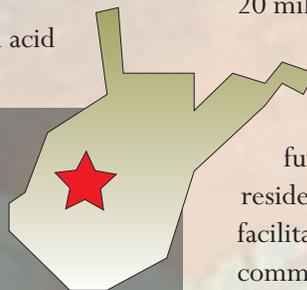
Along with Kanawha County, the Kelly's Creek Communities Association (KCCA) has been the key driver for revitalization efforts in the area since 1999 when it was created to "sustain, restore, and revitalize all that pertains to the watershed." The group is focused on watershed cleanup efforts including the development of wastewater infrastructure and acid mine drainage (AMD) remediation.

### Community Overview Kelly's Creek Watershed

Population	6,000
Area	25 sq. mi.
Unemployment Rate	11%

The Kelly's Creek Watershed encompasses seven communities within Kanawha County, including two that are incorporated.

\*Demographic information is approximated



## COLLABORATING WITH PRIVATE LAND OWNERS ON REDEVELOPMENT OPPORTUNITIES

KCCA is focusing its efforts on working with private land owners to redevelop a portion of a 7,000-acre property (which includes previously mined lands) into residential housing. The Kelly's Creek community is only 20 miles southeast of Charleston, the state capital, and is a desirable location for a bedroom community.

As a result of initial discussions led by the Office of Surface Mining (OSM), the property owners funded a preliminary land use study focused on residential redevelopment options. The MSL Initiative facilitated discussions between the private owners and community regarding development options, and outlined a comprehensive plan for concurrently addressing development initiatives, wastewater infrastructure, and AMD in an integrated way. A solution for each component needs to be considered in light of the entire project.

## OVERCOMING WATER QUALITY CHALLENGES

The Kelly's Creek area has significant water quality challenges related to wastewater and mining contamination.

- **Wastewater Infrastructure:** Kelly's Creek was once a community with 1,000 homes, small stores, and even an opera house. When the coal company left the area in the 1950s, the town soon declined. Today, approximately 220 households in Kelly's Creek have inadequate public wastewater treatment. Straight-pipe domestic waste discharges and failing septic systems are prevalent, and water quality sampling has shown high fecal coli form values. A wastewater feasibility study funded by the Canaan Valley Institute in 2001 provided critical information on cost estimates for several treatment options. Its findings show that the cost of a wastewater treatment system is prohibitively expensive, estimated between \$3-5 million. The community has initiated wastewater planning with the county and adjacent communities that could expand their treatment centers to serve residents.
- **Mining-Related Contamination:** Kelly's Creek has high levels of AMD and coal mine waste sedimentation in the creeks, as well as coal-waste piles from abandoned mines. KCCA, with support from OSM and West Virginia Department of Environmental Protection (WVDEP), conducted water monitoring of Kelly's Creek to determine which tributaries are the most critical to remediate, the AMD discharge points, and who is responsible for associated costs. Remediation planning is underway.

## MOVING FORWARD

Kelly's Creek stakeholders understand that addressing wastewater infrastructure, AMD, and development initiatives is crucial to achieving their cleanup and revitalization goals. With the support of the MSL Initiative federal partners and other state and local partners, they will continue to move forward with the comprehensive plan. This project will serve as a model for communities across the county on how to work collaboratively with private land owners, develop infrastructure, and remediate AMD by engaging and coordinating a network of partners.

## MSL INITIATIVE PROJECT CONTACTS

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KCCA advisory board meeting

## RESOURCES

The following resources have supported mine-scarred lands revitalization efforts:

- *Regional Intergovernmental Council:* Provided technical support to develop grant applications and request for proposals for wastewater treatment and AMD remediation initiatives.
- *Canaan Valley Institute:* Researched wastewater treatment alternatives.
- *West Virginia Department of Environmental Protection:* Researched acid mine drainage sources.
- *Appalachian Regional Commission:* Worked with KCCA to develop a strategy that addresses wastewater treatment planning, land use planning, and AMD activities.
- *U.S. Department of the Interior, Office of Surface Mining:* Researched acid mine drainage sources and committed three full-time OSM VISTA (Volunteers In Service To America) to KCCA over the past several years.
- *U.S. Environmental Protection Agency:* Interviewed local stakeholders, identifying potential reuse options and federal assistance.
- *U.S. EPA Brownfields Assessment Grant (\$200,000):* EPA awarded Kanawha County, WV this grant in 2002 to target and assess brownfields properties in the Kelly's Creek Watershed.

## Critical Stakeholders

Kelly's Creek Communities Association  
Kanawha County  
Private landowners  
Public Service Districts  
Regional Intergovernmental Council  
West Virginia Department of  
Environmental Protection  
Appalachian Regional Commission  
U.S. Department of the Interior,  
Office of Surface Mining  
U.S. Environmental Protection Agency

# PENNSYLVANIA MINE

## Summit County, Colorado

This project illustrates how mining-related cleanup and reuse issues associated with CERCLA and CWA liability are being explored to achieve innovative solutions.

### CHALLENGES AND STRATEGIES AT-A-GLANCE

Liability issues associated with the Clean Water Act (CWA) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA): The Snake River Watershed Task Force (SRWTF) explored innovative solutions and conducted related environmental studies. The MSL Initiative partners have engaged key federal representatives and are working with the SRWTF to outline a facilitated, collaborative process to address liability issues.

### BACKGROUND OF SUMMIT COUNTY

Summit County is known for its variety of outdoor recreational opportunities such as skiing, hiking, biking, and fishing. The ski resorts in the area—Keystone, Arapahoe Basin (A-Basin), and Breckenridge—are among the region's largest employers, and provide key sources of tax revenue. They are also among the region's primary water users; the contamination of the Snake River Watershed presently limits snow making and increases operation costs.

### WATERSHED STAKEHOLDERS EXPLORE ENVIRONMENTAL SOLUTIONS

The local champion for the watershed is the Snake River Watershed Task Force (SRWTF). Formed in 1999, the task force includes members of the local business

community, representatives of state, local, and federal agencies, and other citizens concerned with the quality of the water in the watershed. The Keystone Center (a nonprofit not affiliated with the Keystone ski resort) facilitates and provides collaboration support for the SRWTF by bringing together stakeholders with an interest in the watershed.

Studies suggest that a primary source of the metals and acid in the greater watershed is the draining adit (discharge point) of the Pennsylvania Mine. Acid mine drainage (AMD) flows from this adit at 30-100 gallons per minute directly into Peru Creek, resulting in conditions that are too acidic to sustain aquatic life. This single orphaned mine is also responsible for a substantial portion of the metals in the watershed. In 1998, both Peru Creek and the Snake River were placed on the Clean Water Act's (CWA) Section 303(d) list of impaired waters due to the high concentration of zinc, copper, and other metals.

By addressing environmental issues, local stakeholders hope to achieve the following revitalization objectives:

- Delisting Peru Creek and Snake River from the CWA Section 303(d) list of impaired waters
- Facilitating economic growth by improving water quality
- Establishing a trailhead for the Continental Divide National Scenic Trail
- Establishing a trout fishery

#### Community Overview Summit County

Population	25,000
Area	600 sq. mi.
Unemployment Rate	4%

\*Demographic information is approximated



## COMPLEX CWA AND CERCLA LIABILITY CHALLENGES

Liability challenges and the significant cleanup costs continue to hamper revitalization efforts. The Clean Water Act (CWA) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) pose liability concerns regarding water treatment, especially in light of long-term costs. Additionally, there are some issues regarding past and present land ownership of the Pennsylvania Mine that may need clarification. The challenges these laws pose are:

- **CWA:** The CWA prohibits the discharge of pollutants into a broad range of waters unless the discharge is authorized by a permit. Such a permit would likely require treatment by any party that acquires land, and could potentially subject them to perpetual liability. Significantly, the law has a provision that allows individuals adversely affected by discharges of contaminated water to bring a citizen suit for violations.
- **CERCLA (Superfund):** Past and current owners and operators of contaminated properties may be potentially responsible parties (PRP) and therefore may be subject to CERCLA liability for the cost or performance of a cleanup.

Any proposed remediation solution for the Pennsylvania Mine must address legal requirements of federal and state laws, and local ordinances. Remediation may take between 20 and 50 years to ensure the water body does not return to the list of impaired waters, and treatment may last into perpetuity.

## COLLABORATIVE DECISION-MAKING PROCESS TO ADDRESS LIABILITY CHALLENGES

Key federal and regional representatives critical to resolving liability issues are optimistic that an innovative solution to address liability issues can be developed through a facilitated decision-making process. The process will focus not only on achieving an agreement to address the cleanup of the mine and surrounding watershed, but also on putting mechanisms in place to ensure a clear delineation of roles, timeframes, and accountability, while leaving flexibility for future events.

## MSL INITIATIVE PROJECT CONTACT

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*Metal deposits in Peru Creek*

## MOVING FORWARD

All partners support a facilitated decision-making process so that the community can achieve its revitalization objectives. The MSL Initiative will provide monetary support to initiate a process, which will include all affected parties. Ideally, this project will serve as a model for communities across the country on how to collaboratively coordinate partnerships and develop innovative solutions to environmental liability challenges.

## RESOURCES

The following resources have supported mine-scarred lands revitalization efforts:

- *Keystone Center:* Provides facilitation support to Snake River Watershed Task Force.
- *U.S. Environmental Protection Agency:* Interviewed local stakeholders, identifying potential reuse options and federal assistance, and facilitated initial discussions with representatives that are critical to resolving liability issues.
- *U.S. EPA Brownfields Assessment Grant (\$200,000):* EPA awarded Summit County this grant in 2001 to target and assess brownfields properties.

## Critical Stakeholders

Snake River Watershed Task Force  
Ski resorts  
Summit County  
Colorado Department of Public Health and Environment  
U.S. Department of Agriculture, Forest Service  
U.S. Environmental Protection Agency  
U.S. Forest Service  
Environmental groups

# STONE CREEK

Lee County, Virginia

This project seeks to establish a reuse example for abandoned coal loading facilities scattered throughout Appalachia.



## KEY CHALLENGES AND STRATEGIES AT-A-GLANCE

Lack of reuse examples for hundreds of abandoned coal tipple sites in Appalachian coalfields: Stakeholders have outlined a strategic plan for cleanup and reuse of the property; this will serve as an example for other tipple sites across the region.

## TIPPLE SITES ACROSS THE REGION

The Stone Creek Tipple site is one of approximately 70 abandoned tipple sites in Southwest Virginia. At tipple sites, coal is loaded for transportation to processing facilities. Abandoned sites can pose safety hazards from degraded physical structures and possible contamination. Because actual extraction does not occur at tipple sites themselves, they are not eligible for reclamation funding through the Abandoned Mine Land fund, a program set up under the Surface Mining Control and Reclamation Act (SMCRA). Abandoned tipple sites are typically well suited for redevelopment because they are relatively small (Stone Creek Tipple site is 1.5 acres), flat, and located near transportation corridors and existing infrastructure.

## DEVELOPING AN OUTDOOR CLASSROOM THROUGH CLEANUP AND REUSE

In cooperation with the Lee County School System, the Stone Creek Tipple site will be redeveloped into an outdoor classroom where students will learn about public health and environmental issues related to mine-scarred lands.

Local stakeholders focused on securing funding for all phases of cleanup and redevelopment. These efforts have been rewarded as funding for each phase of the project (e.g., assessment, property transfer, cleanup, and redevelopment) has been procured either through in-kind services or grant funding. Local stakeholders also developed a strategic reuse plan including the following steps: conducting the property assessment; facilitating property transfer; establishing education agreements; and designing, developing, and implementing a cleanup and reuse plan. The MSL Initiative partners helped the community outline these steps and will provide technical support throughout the process. To date, an EPA Targeted Brownfields Assessment has been initiated and stakeholders have made progress on the property transfer.

### Community Overview Pennington Gap, VA

Population	1,800
Area	2 sq. mi.
Unemployment Rate	3%

\*Demographic information is approximated

## COMMUNITY-BASED VISIONING AND PLANNING PROCESS

To ensure broad support for their revitalization efforts, local project leaders and the MSL Initiative partners invited community members and stakeholders from other successful mine-scarred lands redevelopment projects within the region to help establish a cleanup and reuse vision. Community meetings and open houses were held to share information on reuse options and funding sources with the broader community.

## MOVING FORWARD

As local stakeholders, with the technical support provided by the MSL Initiative, complete each phase of the cleanup and redevelopment process, they are building their expertise. The success achieved at the Stone Creek Tipple site will act as an example of tipple site reuse that can be applied to tipple sites in Appalachia, as well as small mine-scarred land properties across the country.



*Deteriorating stream bank*

## MSL INITIATIVE PROJECT CONTACT

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estockton@arc.gov

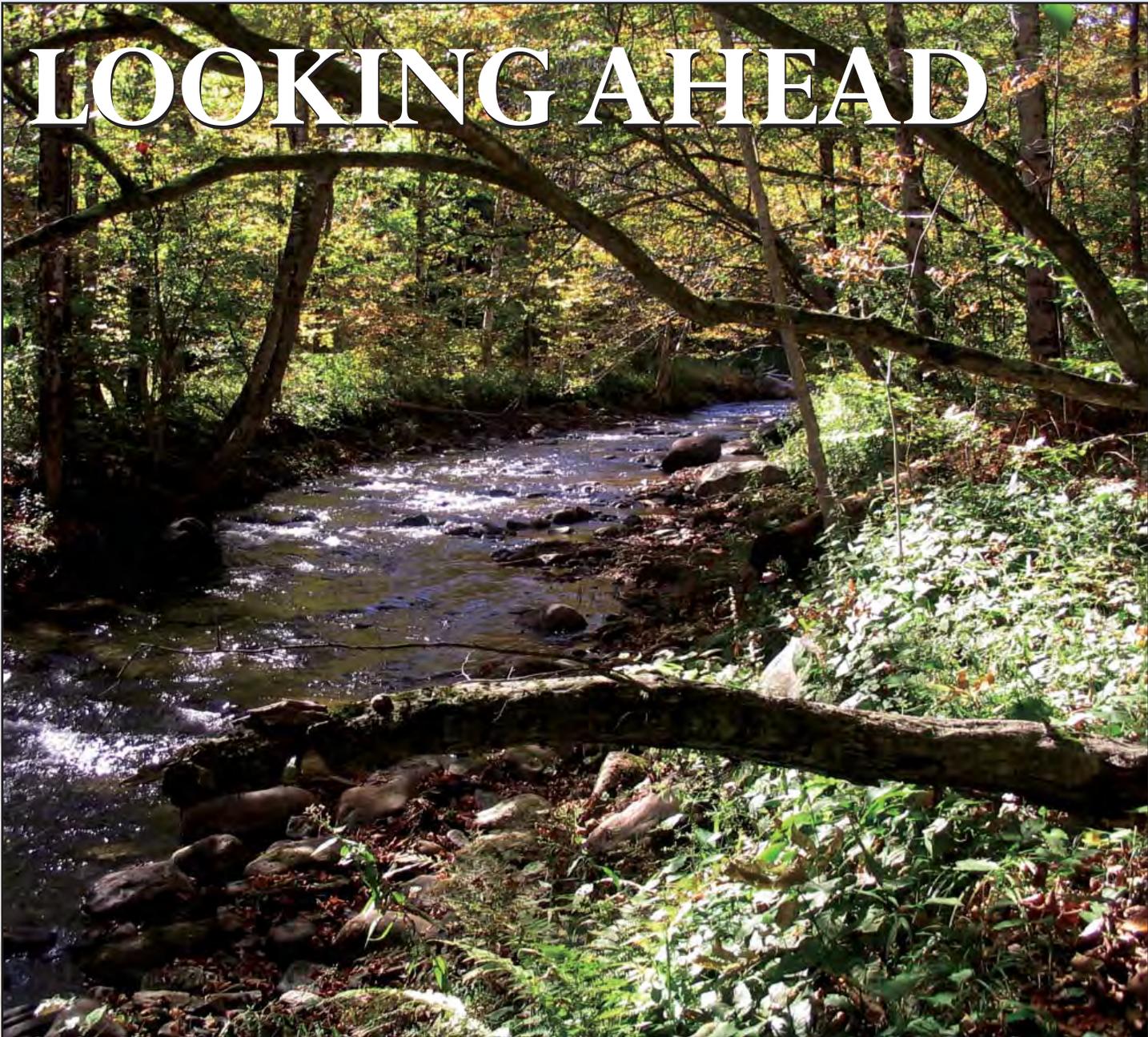
## RESOURCES

The following resources have supported mine-scarred lands revitalization efforts:

- *VA Department of Transportation*: Committed to performing over 300 feet of stream bank restoration as part of its wetlands program. Stream bank erosion at the Stone Creek Tipple Site releases mining-related sediment into the surrounding creek adversely impacting the watershed's ecology.
- *Appalachian Regional Commission*: Provided technical contractor support for cleanup and reuse planning.
- *National Fish and Wildlife Foundation 5 Star Grant (\$10,000)*: Provided grant for the construction of the Outdoor Classroom and for a portion of the stream bank restoration.
- *U.S. Department of the Interior, Office of Surface Mining*: Supporting an internship sponsored by the Upper Tennessee River Roundtable to develop a Brownfields Grant Application. If awarded, the grant would be used to assist in reuse of all tipple sites within four watersheds in the Stone Creek region.
- *U.S. Environmental Protection Agency*: Interviewed local stakeholders, identifying potential reuse options and federal assistance.
- *EPA Region 3 Targeted Brownfields Assessment (\$25,000)*: Committed to conduct a targeted brownfields assessment on the property.

## Critical Stakeholders

Daniel Boone Soil and Water  
Conservation District  
Lee County  
Virginia Department of Mines  
Minerals and Energy  
Virginia Department of  
Environmental Quality  
Virginia Department of Transportation  
Appalachian Regional Commission  
U.S. Department of the Interior,  
Fish and Wildlife Service  
U.S. Department of the Interior,  
Office of Surface Mining  
U.S. Environmental Protection Agency



## **DEVELOPING STRATEGIES FOR SUCCESS**

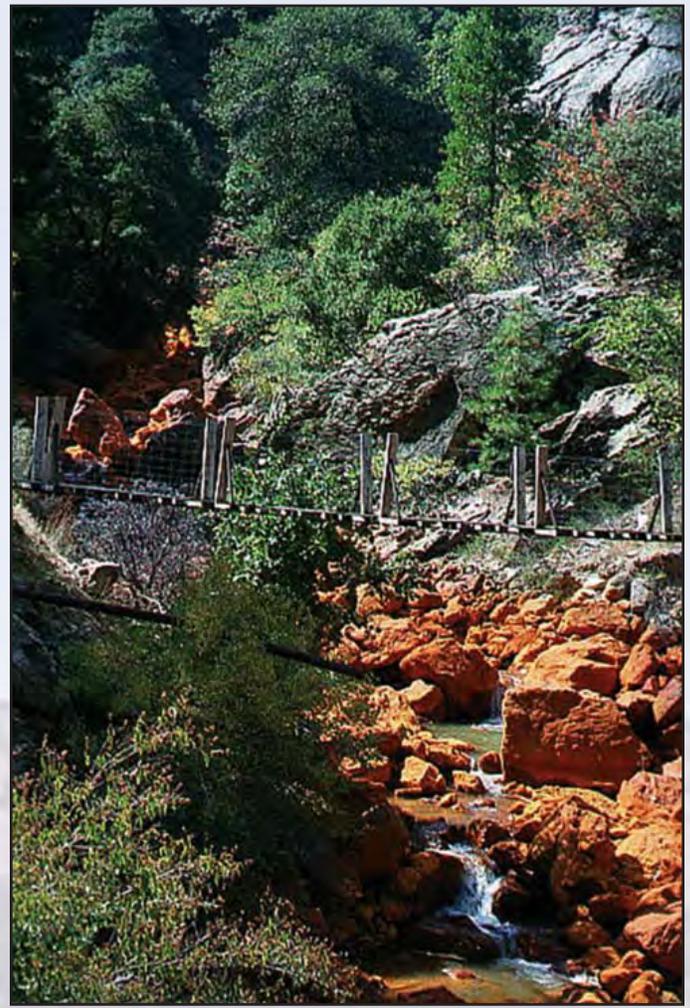
Applying a collaborative approach, the MSL Initiative federal partners will continue to support the Demonstration Projects in building partnerships, identifying funding resources, and providing expertise in cleanup approaches and redevelopment strategies. Local leaders will build upon the foundational work of the MSL Initiative, the local resources they have developed (e.g., skills, knowledge, partnerships, funding), and the support of identified federal and state programs to further revitalization efforts.

The MSL Initiative's partners will use the Demonstration Projects as platforms for other reuse projects by developing models that can be applied to a range of challenges. For example, the Kelly's Creek Demonstration Project will illustrate strategies associated with developing infrastructure and working with private land owners, while the Pennsylvania Mine Demonstration Project will demonstrate how to convene a range of stakeholders to resolve complex liability issues.

# RESOURCES FOR MINE-SCARRED LANDS COMMUNITIES

To capture the lessons learned through the Demonstration Projects, the MSL Initiative partners will produce a toolkit that can be used by communities with associated mine-scarred lands challenges. The toolkit will include:

- **Demonstration Project Case Studies:** Document the challenges faced, strategies used, and lessons learned.
- **Partnership Building Strategies:** Illustrate how to build partnerships, engage stakeholders, and develop reuse visions.
- **MSL Technical Information:** Review relevant federal and state laws, outline how laws impact local redevelopment efforts, highlight innovative technologies, identify possible economic development strategies, and list support options from the Brownfields Land Revitalization and Technology Technical Support Center.
- **MSL Financial Resources:** Provide key information about federal funding opportunities and share ideas about how local stakeholders can creatively leverage support for projects.



*Rocks stained by acid mine drainage*

## LESSONS OF COLLABORATION AND INNOVATION

The initial successes of the Demonstration Projects illustrate that collaborative and innovative approaches to complex technical and economic challenges can effectively address mine-scarred lands cleanup and revitalization issues. The MSL federal partners and Demonstration Project community members will build on current partnerships to develop practical solutions and replicable models for other mining communities. An integral part of our history and community, mining continues to fuel our nation's economic expansion. By learning from and building upon the approaches taken by the MSL Demonstration Projects, former and future mining lands and communities will be equipped with the tools and insights that benefit communities, the environment, and our economies.



*Newly planted trees as part of a reclamation project* 16

# BACKGROUND ON MSL CLEANUP AND REVITALIZATION

Stakeholders face a number of considerations related to mine-scarred lands cleanup and revitalization.

The key environmental, economic development and statutory considerations of relevance to mine-scarred lands cleanup and revitalization stakeholders are outlined below.

## ENVIRONMENTAL CONSIDERATIONS

- **Acid Mine Drainage (AMD):** Acidic water discharge with elevated metal content seeps into streams, degrading ecosystems and threatening public water supplies.
- **Stockpiled Waste Rock and Tailings:** Wastes from mining operations are left behind in large gob piles or waste dumps, often contributing to metal loading in streams and rivers.
- **Other Contamination:** Chemicals from leaking containers left behind and contaminants involved in mining operations such as cyanide and arsenic, as well as PCBs from electrical transformers can seep into the groundwater and soil.
- **Degraded Physical Structures:** Open shafts, rotting support structures, equipment, electrical transformers, and open pits pose a safety threat.



*Open mine pits and deteriorating structures create safety hazards*

## ECONOMIC DEVELOPMENT CONSIDERATIONS

- **Insufficient Infrastructure:** Rural mining communities often have complex runoff management issues and inadequate wastewater treatment and drinking water facilities.
- **Complex Land Ownership:** Large tracts of federally or privately-owned land constrain development possibilities.
- **Resource Management Infrastructure:** Coordination and integration are needed to identify and manage funding and other resources for redevelopment. Reuse planning and funding management require a blend of expertise and a multidisciplinary approach that is often not available in smaller communities.

## SOME APPLICABLE FEDERAL STATUTES

- **Small Business Liability Relief and Brownfields Revitalization Act (Brownfields Law)** – Authorizes funding to assess and clean up mine-scarred lands and provides certain liability clarifications.
- **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)** – Provides funding for cleanups, either through payment for or implementation of cleanups by responsible parties.
- **Clean Water Act (CWA)** – Regulates discharge of pollutants into navigable waters, including those associated with mine-scarred lands.
- **Resource Conservation and Recovery Act (RCRA)** – Governs the management of solid and hazardous waste, including those associated with mine-scarred lands.
- **Surface Mining Control and Reclamation Act (SMCRA)** – Created the Abandoned Mine Land (AML) Fund to pay for remediation associated with pre-1977 mining activities, and regulates current coal mining activity and reclamation.
- **General Mining Law of 1872**– Granted free access to prospect for minerals on public lands and allows for the purchase of these lands.

# MSL INITIATIVE FEDERAL PARTNERS

## **Appalachian Regional Commission (ARC)**

Creates opportunities for self-sustaining economic development and provides technical support for the Appalachian region.

Eric Stockton  
(202) 884-7752  
estockton@arc.gov

## **U.S. Army Corps of Engineers (USACE)**

Provides engineering services to foster environmental protection and flood control and shares knowledge about watershed approaches.

Jane Mergler  
(202) 761-0314  
jane.a.mergler@HQ02.USACE.Army.mil

## **U.S. Department of Agriculture (USDA)**

### **Forest Service**

Provides support by coordinating cleanup of mine-scarred lands on National Forests that are adjacent to mine-scarred land communities. Also provides technical expertise in mine site cleanup and assistance through the State and Cooperative Forestry Program.

### **Rural Development**

Provides extensive grant and loan programs for community development in small and rural communities including business, community infrastructure, utilities, and housing.

### **Natural Resource Conservation Service**

Provides support to local Resource Conservation and Development corporations (RC&Ds) to accelerate the conservation, development, and utilization of natural resources, improve the general level of economic activity, and enhance the environment and standard of living in designated RC&D areas. These 501(c)(3) organizations cover most of the United States and are supported by USDA employees.

### **Departmental Administration**

Coordinates USDA support for brownfield communities.

Blake Velde  
(202) 205-0906  
Blake.Velde@usda.gov

## **U.S. Department of Housing and Urban Development (HUD)**

Provides grants to support community planning and development and creates affordable housing.

Steve Rhodside  
(202) 708-1322 x7375  
stephen\_m\_rhodside@hud.gov

## **U.S. Department of the Interior (DOI)**

### **Bureau of Land Management (BLM)**

Manages 261 million acres of land, primarily in the west, and sustains the health, diversity and productivity of the public lands for the use and enjoyment of present and future generations.

George Stone  
(202) 557-3573  
george\_m\_stone@blm.gov

### **Office of Surface Mining (OSM)**

Ensures coal mines are operated in a manner that protects citizens and the environment during mining and assures that the land is restored to beneficial use following mining, and to mitigate the effects of past mining by aggressively pursuing reclamation of abandoned coal mines.

Allan Comp  
(202) 208-2836  
tcomp@osmre.gov

### **Office of Environmental Policy and Compliance (OEPC)**

Provides for a coordinated and unified approach and response to environmental issues that affect multiple DOI bureaus and acts as an advocate for programs that enable the bureaus to accomplish their missions in an efficient and effective manner.

Ruth Lodder  
(202) 208-3302  
ruth\_lodder@ios.doi.gov

## **U.S. Environmental Protection Agency (EPA)**

### **Office of Brownfields Cleanup and Redevelopment (OBCR)**

Provides funding for the assessment and cleanup of brownfields throughout the nation.

Jennifer Bohman  
(202) 566-2771  
bohman.jennifer@epa.gov

### **Conflict Prevention and Resolution Center (CPRC)**

Provides alternative dispute resolution and collaboration support and technical assistance in coordinating stakeholders.

Lee Scharf  
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### **Office of Superfund Remediation and Technology Innovation (OSRTI)**

Provides technical expertise on Superfund-related liability and technology needs.

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