Earth Conservancy

Dedicated to Mine Land Reclamation, Conservation, & Economic Development in the Wyoming Valley

DRAFT

Analysis of Brownfields Cleanup Alternatives

Wanamie East Reclamation

Newport Township, Luzerne County, PA

Prepared by
Earth Conservancy

INTRODUCTION AND BACKGROUND

Earth Conservancy (EC) has prepared this Analysis of Brownfields Cleanup Alternatives (ABCA) for reclamation of a ±2-acre mine-scarred site in the Wanamie section of Newport Township, Luzerne County, Pennsylvania. Upon completion, the project will improve environmental health in the area through 1.) reclaiming mine-scarred land; 2.) restoring hydrologic function; and 3.) reducing production of acid mine drainage (AMD). EC intends the restored area to be available for residential and/or small commercial development.

An ABCA provides the public with information about environmental and contamination issues at a site and evaluates remediation alternatives. This evaluation will be revised, as necessary, and incorporated into the final site cleanup plan for review by the community, project partners, regulatory oversight agencies, and the US Environmental Protection Agency (USEPA).

Organization & History

EC is a nonprofit organization dedicated to addressing the impacts of historic coal mining activity in northeastern Pennsylvania. In 1994, EC purchased the lands of the bankrupt Blue Coal Corporation. Generally located to the west of Wilkes-Barre, many of the 16,500 acres have been ignored, seen only as permanent eyesores and reminders of the past. EC, however, views the lands as an opportunity for transformation, progress, and growth. In pursuit of this, EC 1.) Develops sustainable land-use plans; 2.) Commits to provide 10,000 acres for recreation and open space; 3.) Leads reclamation efforts of mine-scarred lands and water resources and guides their reutilization; 4.) Funds its work through the sale of Conservancy land and other resources, and through public and private sector partners; 5.) Partners with local communities to achieve our mission; and 6.) Educates the community-at-large on environmental issues, the benefits of reclamation, and effective land-use planning.

As of today, over 2,090 mine-scarred acres have been reclaimed, with thousands of jobs created through their redevelopment. Two constructed treatment systems mitigate acid mine drainage pollution in local watersheds. And more than 9,375 acres have been conserved for recreation and greenspace. EC's work has earned the organization nine Pennsylvania Governor's Awards and one USEPA Mid-Atlantic Award for Environmental Excellence. Over $69.5 million has been invested to date. All projects trace back to

EC's overarching mission, one that seeks a more livable community now, and clears the way for positive, progressive change for future generations.

Site Description & Proposed Scope of Work

The Wanamie Reclamation project involves two mine-scarred sites that bookend the primary residential area of Wanamie, Newport Township. Historically, both areas were part of the Wanamie Colliery, which was both deep and strip-mined by the Glen Alden Coal Company and, subsequently, the Blue Coal Corporation. The Wanamie East property is approximately 2 acres and is characterized by a highly irregular topography of severe peaks, valleys, and mining waste piles. Terrain Roughness Index values range from 0.47 to nearly 90, with an average of 23.3, quantifying the extreme surface variability across the site. Elevations span 45 feet (685' to 730'), with slopes varying from nearly level to exceeding 80°. Evidence of illegal dumping is present (e.g., tires, household trash), but not indicative of hazardous substances. The site is owned by EC.

The property lies within the Newport Creek watershed, a 14-square-mile subwatershed of the Susquehanna River Drainage Basin and, ultimately, the Chesapeake Bay watershed. Mining activities in the area profoundly altered natural surface and groundwater pathways. Presently, precipitation infiltrates rapidly through the loose spoil materials and into the subterranean mine pools. When the water resurfaces through openings or seeps, it becomes laden with acid mine drainage (AMD). AMD degrades local streams, impacts ecosystems, and impairs the Susquehanna River.

Generally, reclamation of Wanamie East involves mass cut-and-fill earthwork to reduce the waste piles and fill the depressions to create a stable, uniform landscape, improving drainage and long-term stability. The full scope of work includes:

- Grading approximately 2 acres of land;
- Reestablishing natural drainage paths;
- Revegetation of the area.

This ABCA has been written as part of grant application requirements specified by USEPA for its Brownfields Cleanup Program. A map showing the project location is included as Attachment A.

Cleanup Objectives

The objectives of the Wanamie East reclamation project are:

1. Restoration of hydrologic conditions in the watershed;
2. Reduction of nonpoint source pollution (AMD) in the watershed;
3. Improvement of habitat; and
4. Recovery of the site for community benefit (e.g., safety, economics, aesthetics).

These goals are consistent with EC's mission, EC's original *Land Use Plan* (1996), its *Newport Township Master Plan* (2019), and findings in a recent housing market analysis, funded through a 2022 USEPA Technical Assistance award. Moreover, they are consistent with the goals, recommendations, and regulations of EC's frequent partners on reclamation and restoration projects, including USEPA, the US Office of Surface Mining & Reclamation Enforcement (OSMRE), the US Army Corps of Engineers, the Pennsylvania Department of Environmental Protection (PADEP), and PADEP's Bureau of Abandoned Mine Reclamation.

SUMMARY OF PREVIOUS INVESTIGATIONS

In 1983, under the Blue Coal Corporation, a comprehensive property analysis was conducted by Resource Technologies Corporation (RTC) on all its 16,500 acres. The Wanamie East parcel was described as "very heavily stripped, cuts and refuse piles abound." In 1993, RTC completed a second appraisal of the Blue Coal properties as part of bankruptcy proceedings. Properties identified as having potential issues of concern were subjected to a multi-site Phase I Environmental Site Assessment (ESA). Wanamie East was not flagged for further review. Both analyses were completed before EC's purchase of the land in 1994.

A search of the US Department of Agriculture's Natural Resources Conservation Service's Web Soil Survey confirms that approximately 97.3% of the Wanamie East site is Mine Dump (Mg).[1] As described in the *Soil Survey of Luzerne County* (1981) by the US Department of Agriculture:

- Mine dump consists of "nearly level to very steep, unconsolidated, dark colored, low quality coal and rock material [that] is a waste product of the coal mining industry. Runoff is slow to very rapid. Extremely acid sulphur compound leachates are common in some of these dumps. [….] As a result of extreme acidity, low fertility, and other undesirable features, this material has very little vegetative cover and little value for farming" (p. 31).[2]

Mine dump areas are not classified as hazardous waste under federal regulations.

In 2025, Verdantas, LLC, completed a Phase I ESA for the Wanamie East site, in accordance with the ASTM E1527-21 standard for All Appropriate Inquiries (AAI). The assessment included a comprehensive review of public documents, photographs, and maps; regulatory correspondence; a detailed environmental database search; interviews with local officials; and an on-site reconnaissance. The report concluded that because of the site's historical use for coal-mining operations, there was a potential for encountering impacts to soils, groundwater, and surface water. No hazardous materials or evidence of regulated waste were observed during the site reconnaissance. No Business Environmental Risks (BERs) were identified. A Phase II ESA was not recommended.

As delineated in the USEPA Notice of Funding Opportunity for Brownfields Cleanup Grants, in lieu of a Phase II ESA, an applicant may provide equivalent documentation that demonstrates "a basic understanding of what contaminants need to be cleaned up on the site." According to the *Frequently Asked Questions* document, "For abandoned coal mine sites, Office of Surface Mining assessments of physical and safety hazards are considered Phase II equivalent reports." The Wanamie East site has been evaluated by OSMRE and is listed in its Abandoned Mine Land Inventory System as #PA-1653. The site is characterized by a refuse (culm) pile.

SITE ASSESSMENT FINDINGS

The conditions documented at the Wanamie East site reflect the core environmental, economic, and social challenges USEPA's Brownfields Program seeks to address. Cleanup and redevelopment of such properties support the program's goals of protecting human health, improving the environment, and strengthening local economies by returning impaired and underutilized land to productive use.[3]

[1] USDA. (n.d.). Web Soil Survey Soil Map [interactive map]. https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

[2] Bush, R.D. (1981). *Soil Survey of Luzerne County, Pennsylvania*. Washington, D.C.: U.S. Department of Agriculture Soil Conservation Service in Cooperation with The Pennsylvania State University College of Agriculture and the Pennsylvania Department of Environmental Resources State Conservation Commission.

[3] USEPA. (2025). Land Revitalization. https://www.epa.gov/land-revitalization

As mine-scarred land, the Wanamie East site exemplifies these challenges. Although the environmental degradation is the most visible legacy, it, in turn, creates conditions that depress land value, deter investment, and limit community benefit. Reclaiming the site will directly address these issues by:

- Reducing exposure to environmental and physical hazards through stabilizing disturbed mine materials, addressing erosion, and correcting drainage conditions that produce AMD.
- Improving watershed health and resilience to stormwater impacts by restoring natural hydrologic function, increasing infiltration, establishing vegetation, and reducing pollutant loading to receiving waters.
- Supporting community-aligned reuse by converting a long-standing environmental liability into land that can accommodate future development identified in local and regional planning efforts.
- Enhancing economic revitalization by addressing conditions that hinder redevelopment.

FORECASTED CLIMATE CONDITIONS

Based on federal risk assessments, the Wanamie Reclamation project area is not identified as having high exposure to most climate-related hazards:

- FEMA National Risk Index: The Census Tract containing the Wanamie East site is rated Very Low Risk (19.05%) relative to the rest of the United States.[4]
- FEMA Flood Map Service: The project area is mapped as Zone X, indicating minimal risk of riverine flooding.[5]
- US Global Change Research Program: Luzerne County is projected to experience more frequent and heavier rainfall events (16-17%) over the next several decades.[6]

Although baseline risk categories are low, the most relevant climate-related concern for the site is the expected increase in extreme precipitation events. Intense rainfall could: 1.) accelerate erosion, sedimentation, and slumping of mine spoils; and 2.) increase infiltration/percolation through the spoil material, contributing to AMD production. Regrading and vegetation establishment will reduce erosive potential associated with more frequent and heavier rainfall.

APPLICABLE REGULATIONS, LAWS, & STANDARDS

In consideration of current and future uses of the Wanamie East site, cleanup plans will provide for adequate protection of human health and the environment. EC and its procured engineers/contractors will adhere to all applicable local, state, and federal laws, regulations, and guidance in relation to brownfields and environmental remediation, including, but not limited to, the following:

Laws & Regulations

- The Wanamie East site has not been identified on the NPL, nor is under CERCLA or RCRA orders. Furthermore, EC is not potentially liable for contamination at the site under CERCLA §107, as stated in the Deed of Sale from the Trustee in Bankruptcy for the Blue Coal Corporation. All Appropriate Inquiries (AAI) were conducted prior to sale. EC is considered an Innocent Landowner (ILO) and is not potentially liable for AMD pollution originating at the site. AMD, while an environmental

[4] FEMA National Risk Index [map]. https://hazards.fema.gov/nri/map
[5] US Department of Homeland Security. *FEMA Flood Map Service Center* [map]. https://www.fema.gov/
[6] US Global Change Research Program (2023). *The Fifth National Climate Assessment in 15 Maps* [interactive map]. https://storymaps.arcgis.com/stories/0c8f2a21bd8d438fb4503e13cee8c682

pollutant, is not regulated as a CERCLA hazardous substance.

- Because no hazardous materials have been identified at the Wanamie East site, institutional controls, restrictions, and/or compliances will not be required.
- No historic sites are on or eligible for the National Register of Historic Places for the Wanamie East site.
- In accordance with state and federal guidelines, the project area was screened through the Pennsylvania Natural Diversity Index. No adverse impacts to species of concern were anticipated from the proposed project, as long as appropriate mitigation measures are implemented.
- Prior to construction, all appropriate permits will be obtained. This includes receipt of a National Pollutant Discharge Elimination System (NPDES) permit from the Luzerne Conservation District, which will identify sources of erosion and sediment on the properties and Best Management Practices to implement to address each (i.e., an Erosion and Sediment [E&S] Control Plan).
- Laws and regulations that are applicable to this cleanup include the Federal Small Business Liability Relief and Brownfields Revitalization Act, the Federal Davis-Bacon Act, state environmental law, and local municipality bylaws. Federal, state, and local laws regarding procurement of contractors to conduct the cleanup will be followed.
- During construction, the contractor will adhere to all federal, state, and local rules and regulations relating to the Occupational Safety and Health Administration (OSHA), including monitoring the site for hazardous conditions during work. The construction contract will require the contractor to immediately notify EC and the project engineer if a hazardous environmental condition is encountered. If unexpected contamination is encountered, work will cease and the appropriate agencies will be notified immediately.
- The contractor will implement dust control, equipment staging, and truck traffic safety measures during construction.
- EC will maintain vegetation and erosion controls for a minimum of two years following construction.

Cleanup Oversight

To ensure compliance with regulatory requirements and project goals, EC will provide project management, administrative services, and technical expertise during work. The selected project engineer will also assist in these roles, including periodic site visits to monitor progress and adherence to plans. Additional inspections will be carried out by the Luzerne Conservation District and PADEP to verify regulatory compliance and ensure any inconsistencies are immediately addressed.

Documentation & Reporting

The Wanamie Reclamation project will comply with all USEPA Brownfields Program requirements (e.g., information repository, community information plan, opportunities for public comment, ABCA, cleanup oversight, etc.). EC will be responsible for all documentation and reporting. A webpage dedicated to the Wanamie Reclamation project will also be launched. All records will be maintained for a minimum of three years following the project closeout, per USEPA requirements.

EVALUATION OF CLEANUP ALTERNATIVES

To address the brownfield conditions at the site, three alternatives were considered for the Wanamie East reclamation project. To satisfy USEPA requirements, the effectiveness, implementability, and cost of

each alternative must be considered prior to selecting a recommended cleanup plan. All alternatives are at the same location; only remediation methods differ.

Alternative #1 | No Action

Alternative #1 leaves all issues of concern in their existing state. No mitigation of environmental damage would occur, nor would issues related to safety or AMD be addressed. Re-use of the site without remediation would be impossible. This alternative would neither meet EC's stated objectives for the project, nor conform to EC's mission.

Alternative #2 | Reclamation Only

Under Alternative #2, the site will be reclaimed through mass earthwork and installation of stormwater and erosion-control infrastructure. Targeted cuts and fills will be completed to reduce steep grades and to establish stable contours across the property. All earthwork will be performed in accordance with an approved E&S Control Plan and NPDES permit. Stormwater improvements, such as riprap-lined swales, HDPE conveyance pipe, and an outlet structure, will restore hydrologic function and reduce uncontrolled runoff. Following regrading, imported topsoil will be placed across disturbed areas, and the site will be revegetated with a meadow grass seed mix. This plan will stabilize soils, reduce erosion, improve infiltration, and reduce stormwater contact with underlying spoil materials that contribute to AMD.

The cost estimate for Alternative #2 is $189,000. This alternative will effectively address the site's primary environmental, stormwater, and public-safety issues while laying the groundwork for future redevelopment opportunities.

Alternative #3 | Removal of Spoil Material & Restoration to Native Grade

Alternative #3 follows the same general scope of work as proposed in Alternative #2. However, in this scenario reclamation would involve excavation and off-site disposal of all mine spoil material. This would be followed by reconstruction of the landscape to approximate natural pre-mining grades. Through this, similar environmental and safety objectives will be achieved as in Alternative #2, with the added benefits of maximizing the amount of readily developable land and minimizing the amount of disturbance required for redevelopment. It would also boost EC's ability to return the property to productive use more quickly.

The budget for Alternative #3 would include substantial additional costs for excavation, transportation, and disposal of mine spoil materials, as well as labor and the importation of clean structural fill to reconstruct site grades. Alternative #3 would also result in short-term environmental disturbances (e.g., truck traffic, dust generation). Although full excavation would address environmental and safety problems and create a larger, development-ready parcel, the cost would be several million dollars, far beyond what is typically considered reasonable for a brownfield cleanup project of this type and scale.

Recommended Cleanup Alternative

After reviewing remedial alternatives, the recommended alternative is **Alternative #2, Reclamation Only**. Alternative #1 cannot be recommended because it does not address site risks, environmental impacts, or EC's long-term goals for the property. Alternative #3, while ideal for redevelopment of the site, far exceeds what is necessary to address the environmental and community impacts, and is not a cost-effective use of resources. Alternative #2 has meaningful environmental, economic, and social benefits, while remaining fiscally responsible.

ADDITIONAL CONSIDERATIONS

Sustainable Remediation Potential

The selected alternative employs strategies consistent with USEPA's *Principles for Greener Cleanups* (2009), ensuring the project aligns with sustainable practices and efficient resource management. By optimizing material use and targeting cleanup activities, the environmental footprint of the project is minimized while still achieving the desired safety, environmental, and reuse goals. Specifically, this approach results in reduced energy consumption, decreased resource use, and less habitat disturbance.

Public Participation

Public comment on the Wanamie Reclamation project is important to the cleanup process. A final cleanup method will be selected only after the public is given adequate time to review and comment on the ABCA and all comments have been reviewed and responded to appropriately.

EC will solicit input from the public on this draft ABCA by 1.) posting a copy of the ABCA on EC's website; 2.) notifying the public of the ABCA's availability on social media; and 3.) publishing a public notice in a local newspaper inviting input on the ABCA at a public meeting. Modifications to the ABCA may be made on the proposed alternative based on new information and/or comments received from the public. Should a cooperative agreement be awarded, a full *Community Involvement Plan* will be developed.

Limitations & Contact

The contents and format of this report are based upon information available and are comparable to cleanup planning documents developed and approved in connection with previous USEPA Region 3 Brownfields Grant programs. This report is based on information available at the time of preparation and is subject to revision should new information become available.

Questions or comments regarding the content of this ABCA report are welcome and should be directed to the undersigned at 570.823.3445 or t.ostrowski@earthconservancy.org.

EARTH CONSERVANCY

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Project Location Map

Wanamie East | Newport Township, Luzerne County, PA

