Stineman Refuse Pile – *Path of the Flood Trail*

2021 OSMRE Award Nomination

Pre-Construction Photo (2019)

Post-Construction Photo (2020)
Stineman Refuse Pile – Path of the Flood Trail
2017 Abandoned Mine Land Economic Revitalization Reclamation Project

LOCATION
Problem Area 2710 (PA 2710)
South Fork Borough, Cambria County, Pennsylvania

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SUBMITTED FOR:
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Pennsylvania Department of Environmental Protection
Bureau of Abandoned Mine Reclamation, Cambria District Office
Ebensburg, PA 15931

PROJECT START DATE
April 9, 2019

PROJECT COMPLETION DATE
October 31, 2021*

PROJECT COSTS*
$2,045,591.40

PROJECT PARTNERS
PA DEP, Bureau of Abandoned Mine Reclamation
U.S. DOI Office of Surface Mining
Cambria County Conservation & Recreation Authority
Foundation for Pennsylvania Watersheds
Al Penn En, Inc. (Property Owner)

DESIGN CONSULTANT
Minetech Engineers, Inc.

CONTRACTOR
Robindale Energy Services, Inc. – Armagh, PA

DATE SUBMITTED
* - Values accurate as of: May 10, 2021
**Project Background**

**Project Location**

The Stineman Refuse Pile – Path of the Flood Trail project (Project) is located in the southern area of South Fork Borough, Cambria County, Pennsylvania. The abandoned mine land (AML) site is located within Problem Area 2710 (PA 2710 – South Fork Southwest), which is referenced on the Geistown 7.5 Minute USGS Quadrangle Map. The Project is located approximately 80 miles east of Pittsburgh, PA. South Fork Borough totals approximately 320 acres in size with the refuse pile footprint consuming 27 of those acres, or roughly 8.5% of the borough limits. The aerial imagery in Figure 1 was taken five months into the reclamation of the Project and shows the borough limits outlined in yellow. The population of South Fork Borough in the 2010 United States Census was 928.

**Mining History**

The dangerous condition of the refuse pile area was a direct result of deep mining of coal by the Stineman Coal and Coke Company, which ceased mining operations prior to 1939. The historical aerial photo in Figure 2 shows the refuse pile from its condition in 1958, which was almost identical to the condition of the pile in 2019 prior to reclamation. The dangerous abandoned mine land feature (AMLF) meets the Office of Surface Mining Reclamation and Enforcement’s (OSM’s) Priority 2 (P2) safety criteria for Dangerous Piles and Embankments (DPE).

**Description of AML Problems**

The P2 Stineman Refuse Pile covered 27 acres of land and averaged 50 feet in height. The approximate total volume of the pile was 600,000 cubic yards (C.Y.). The refuse material was comprised of loose, unconsolidated...
shale and coal refuse with extremely steep slopes that led down into the South Fork Little Conemaugh River. Parts of the refuse pile had burned in the past that also resulted in a burnt, harden refuse material known as “red dog.” With the refuse pile adjacent to the river, coal refuse was actively eroding into the river while leaching acidic metals added to the impairment of the river. The DPE was easily accessible from Maple Street, which promoted site visitation of off-road vehicles. Evidence of this was apparent from the trails and tracks located throughout the DPE area. According to the 2010 United States Census, there are 484 houses in South Fork. The proximity of these homes to the refuse pile can be seen in Figures 1 and 2.

**Innovative Use of Current Technology**

To restore the site to pre-mining conditions, as much refuse as possible would need to be removed from the Project area so that the remaining material could be regraded on site into a more stable configuration. The Pennsylvania Department of Environmental Protection, Bureau of Abandoned Mine Reclamation’s (PA DEP, BAMR’s) reclamation contract was issued through a grant agreement with the Cambria County Conservation & Recreation Authority (CCCRA). CCCRA competitively bid the Project through the county’s construction contracting system. The technical specifications required a minimum of 200,000 C.Y. of material to be removed, while the remaining material could be left on site to be regraded. The technical specifications stated that the refuse removed could either be sold to a cogeneration power plant or placed in a PA DEP-permitted coal refuse disposal or coal refuse reprocessing surface mine permit site. Depending on the quality and marketability of the refuse more than 200,000 C.Y. could be removed but would be considered incidental to the contract.

CCCRA received two bids on the Project. The low bidder was Robindale Energy Services, Inc. (RES) for $1,970,979.72. Their proposal was to remove marketable coal refuse and transport to their cogeneration facilities where it would be burned to produce electricity. The second bid received was for $5,268,235, which proposed the removal of coal refuse and placement in a PA DEP-permitted coal refuse disposal site. With RES’ ability to remove the waste coal for electro-cogeneration power, project costs were reduced significantly and essentially made the Project possible.

*Figure 3: Screener brought on site to sort coal refuse*
cogeneration facilities, Ebensburg Power. Ebensburg Power has a more limited fuel prep system than Seward Generation, and therefore a screener was necessary to remove refuse material on site that was greater than two-inch top size. In addition, the Ebensburg Power is significantly smaller than Seward Generation with the ability to only handle ten truckloads per day whereas Seward Generation has the capability of handling up to 100 truckloads per day. With the longer screening times and Ebensburg Power being ten times smaller, the amount of refuse removed in July, August and September were significantly reduced to an average of 10,000 C.Y. per month. At the beginning of October, the turbine repairs were made, and the Seward Generation began accepting refuse material again.

Another special circumstance that affected this Project along with the rest of the world was COVID-19. When the global pandemic hit the United States in March 2020, businesses and schools were shuttered, and power consumption plummeted. The demand for electricity was historically less than average. RES had no choice but to run all their plants at 60% capacity. Fortunately, a large majority of marketable refuse was already removed from the site prior to the pandemic. From March 2020 to September 2020, RES removed only 11,000 C.Y. Despite the special and unique considerations that took place during construction, RES was able to complete the Project on schedule.

**On-site Difficulty of the Project**

As with much of western Pennsylvania, the original contour of the DPE area, prior to any mining activities, is rolling topography. The DPE averaged 50 feet in height with existing steep, unstable slopes. Along the northern extent of the pile, the slopes were 1:1 where they eroded into the South Fork Little Conemaugh River. The reclamation plan called for finished slopes that did not exceed 13%. The best outcome for the Project would occur by removing the most refuse possible. The contractor was required to remove a minimum of 200,000 C.Y. of refuse, but was permitted to remove additional refuse if the contractor determined it to be marketable. In total, 216,000 C.Y. of refuse was removed from the site, and the remaining refuse was regraded on site. One hundred twenty-six tons of lime was incorporated into the revegetation of the site. The existing slopes of the refuse pile, especially near the river, made the use of certain equipment more difficult. To help control erosion, a refuse barrier along with approved Erosion and Sediment (E&S) controls was maintained at the edge of the river until the rest of the site was reclaimed.

The topography of the site and the areas upslope of the Project limits caused drainage issues along the trail. Minetech Engineers Inc.’s design plan called for 13 drainage culverts along the trail to handle stormwater. RES installed 14 additional culverts along the trail to handle areas that were deemed to have excess stormwater. The topography of the site and the area’s abundant rainfall has made stormwater an ongoing issue. The Project has been extended an extra year to monitor the effects of excessive stormwater events and trail stability. Minor repairs have already been made to the trail, which included extending ditches along the sides of the trail and adding additional drainage culverts along the trail to avoid further washouts.

**Project Start and Completion Dates and Construction Costs**

An official inquiry of the P2 DPE was reported on July 21, 2010, by board members of CCCRA. Due to the large project scope and funding priorities, the project was never pursued. In late 2016, the property owner of the Stineman Refuse Pile along with CCCRA contacted PA DEP BAMR concerning the reclamation of the site to accommodate an extension of the Path of the Flood Trail. With the Abandoned Mine Land Economic Revitalization (AMLER) funding being approved in 2017, BAMR began planning and project development in May 2017. The contract with CCCRA was executed on December 26, 2018. RES began construction on April 9, 2019, and completed reclamation of the refuse pile and trail extension on October 31, 2020. The contract with CCCRA was then extended to October 31, 2021, to monitor stormwater issues. To date, the total cost of the Project is $2,045,591.40.
Name of the Organizations Responsible for the Reclamation, Including Contractors

The responsible organizations were PA DEP, BAMR; OSM; CCCRA; Minetech Engineers, Inc., as the design consultant; RES, as the reclamation contractor; Al Penn En, Inc., as the property owner; Foundation for Pennsylvania Watersheds; Cambria County Commissioners; and South Fork Borough.

On site Effectiveness

Effective/Innovative Use of Technology

CCCRA consulted Minetech Engineers, Inc. to develop a grading plan. Through the grading plan, improvements were made to the existing northern access road from Maple Street within South Fork Borough allowing construction vehicles access to the site. A second access road was constructed south of the site within neighboring Adams Township for use during construction and was later repurposed as the corridor for the trail. A weigh station was mobilized on site by RES to measure the amount of refuse material leaving the site. Weigh slips were submitted to CCCRA and PA DEP BAMR on a monthly basis to ensure that the contract minimum of 200,000 C.Y. of refuse material was removed. The technical specifications assumed one C.Y. of refuse equaled one ton. E&S controls included: rock construction entrances, 32-inch compost filter sock, rock filter outlets, drainage culverts and rock aprons, and seeding and mulching. Incorporating lime into the seeding procedure allowed for proper vegetative growth. The 1.6-mile trail extension constructed during reclamation repurposed the on-site red dog material as the subbase and a #10 crushed stone was used for the topcoat. The on-site red dog material provided an acceptable subbase for the trail and was a cost savings to the Project.

Figure 4: On-site red dog material was used as the base of the trail

Landscape Conforms to the Natural Environment

Reclamation success was achieved with the removal of 216,000 C.Y. of coal refuse material. The remaining refuse was regraded on site, capped with on-site topsoil and revegetated with native grasses. The Project has restored the area to its pre-mining conditions. The tree planting of a riparian forest buffer at the Project site, along the South Fork Little Conemaugh River, has begun. The riparian forest buffer will assist in reducing thermal impacts. Trees being planted include Eastern White Pine, Balsam Fir, Eastern Hemlock, Northern Red Oak, Chestnut Oak, White Oak, River Birch, Tulip Poplar, Sycamore and Mountain Laurel.

Elimination of Significant Health and Safety Problems

The P2 DPE was considered a health and safety hazard due to the close proximity to the borough and its residents. The property owner was concerned with the amount of site visitation from unauthorized off-road
vehicles (ORVs). The DPE measured 27 acres in size and averaged 50 feet in height and was extremely steep with unstable slopes that ORVs would traverse and/or scale. During heavy rainfall events large amounts of refuse and highly acidic metal laden runoff would add to the impairment of the South Fork Little Conemaugh River. In addition to being a hazard, the DPE was a major blemish for South Fork Borough. Currently with one-third of the pile removed and the remaining refuse regraded on site in a more stable configuration, the hazard has been eliminated. Additionally, with the incorporation of the 1.6-mile Path of the Flood Trail extension, the site has become a popular place for recreation and leisure activities.

**Funding**

*Effective Use of Funds*

The Project was completed as a grant agreement/contract between PA DEP BAMR and CCCRA. The original contract was executed on December 26, 2018, in the amount of $2,000,000, being fully funded from the AMLER Program. An additional $100,000 in AMLER funding was added to the agreement on June 19, 2019. The Project budget included line items for Administrative, Engineering, Reclamation and Trail Construction cost categories, which can be seen in Table 1. Administrative fees were reimbursed to CCCRA for travel, site inspection, project management and invoice preparation. Engineering fees included reclamation design, miscellaneous tasks for design preparation, and permitting. Reclamation included mobilization/demobilization; clearing and grubbing; E&S; loading of refuse; rehandling of red dog and other materials; incidental materials disposal; grading; fuel, labor, and equipment costs; and lime, seed and fertilizer. Trail construction included E&S, clearing and grubbing, grading of trail corridor, signage for trail and two parking areas for the trail. The contract with CCCRA allowed PA DEP BAMR to reclaim the Project area in a more-timely and cost-effective manner.

**Leveraging – Use of Partners for Funding or Technology**

Under the contract, CCCRA was able to retain a design consultant and competitively bid the Project through the county’s construction contracting bidding system. The contract with CCCRA paid for the administrative, engineering, reclamation and trail construction costs. PA DEP BAMR was able to review and issue the PAG-02 National Pollutant Discharge Elimination System Permit as well as the state’s General Permit No. 7 for a minor road crossing. PA DEP BAMR also offered construction inspection services to alleviate additional costs that CCCRA would incur.

The Foundation for Pennsylvania Watersheds agreed to purchase a metal bench, trail signage and a gate for the trail, which totaled roughly $2,600.

The Conemaugh Valley Conservancy, a local non-profit organization, received a grant from the Western Pennsylvania Conservancy through a partnership with Pennsylvania’s Department of Conservation and Natural Resources. The grant allowed for the purchase of trees and planting supplies so that a riparian forest buffer

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Table 1: Grant Agreement by Line Item

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<th>Category</th>
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<td><strong>TOTAL</strong></td>
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*Figure 5: Riparian forest buffer along South Fork Little Conemaugh River*
could be constructed along the South Fork Little Conemaugh River, which can be seen in Figure 5.

OSM staff provided their assistance in aerial photography through drone flights prior to the Project start and again during construction of the Project. OSM’s pre-construction drone footage can be found here. OSM’s during construction drone footage can be found here and here. Additionally, RES provided PA DEP BAMR with aerial flight photography, which can be found here.

**Benefits to the Community**

**Community Support for the Project**

Clifford Kitner, Executive Director of CCCRA, has said that many residents and trail users have expressed their gratitude toward the new section of trail. In talking with Kitner, an elderly couple said, “The trail is the best thing to happen to South Fork.” Through conversations with community leaders and local businesses, both have seen an increase in the amount of trail users. Local groups, such as the Johnstown Running Club, have been observed using the newly constructed trail as part of sanctioned group runs, with members supporting local businesses before and after the activity.

CCCRA has a Memorial Bench Program that allows a unique opportunity for someone to purchase a bench to memorialize a loved one. Proceeds from this program go towards upkeep of the benches and to the Friends of the Trails program, which exists to enhance all Cambria County trails. To date, the 1.6-mile Path of the Flood Trail extension incorporated into the Project has already received 11 memorial benches, of which one is shown in Figure 6.

The Conemaugh Valley Conservancy organized a volunteer tree planting at the Project site in November 2020 where thousands of trees were planted by local organizations and community members.

A ribbon cutting ceremony was held by CCCRA on October 26, 2020, to commemorate the completion of the Project. Coverage of the ribbon-cutting ceremony can be found here and here.

**Long-Term Benefits to the Community**

The Project will provide long-standing benefits to the community. CCCRA holds the annual Path of the Flood Historic Race every Memorial Day to commemorate the 1889 Johnstown Flood (also known as the Great Flood of 1889), which occurred on May 31, 1889. The Great Flood was caused by the catastrophic failure of the South Fork Dam after several days of extremely heavy rainfall. The dam released over three trillion gallons of water, that traveled 14 miles downstream and flooded the city of Johnstown, PA, killing more than 2,200 people and accounting for $17 million in damage (equivalent to $484 million in 2019). The Stineman extension has helped CCCRA get 1.6 miles closer to following the flood path of the Great Flood. CCCRA is working collaboratively with the National Park Service and the Community Foundation for the Alleghenies to Pennsylvania 2021 Award Nomination – Stineman Refuse Pile – Path of the Flood Trail

![Figure 6: Memorial bench overlooking the reclaimed AML site](image-url)
connect the final 50 yards of the trail to the South Fork Dam, located within the Johnstown Flood National Memorial (National Park Service). The 2021 Path of the Flood Historic Race will be the first year that debuts the Stineman extension. The Historic Race typically brings over 1,000 registrants from across 20 different states. The Path of the Flood Trail course map can be found here.

CCCRA also has plans for a ‘festival park,’ which will sit atop the newly reclaimed hillside. CCCRA is working with the property owner and with South Fork Borough, who will maintain the park. The festival park would include a pavilion and picnic table, which could serve multiple uses to the community.

Efforts are being made to incorporate the Stineman extension of the Path of the Flood Trail within the September 11 National Memorial Trail, which connects the 9/11 Memorial & Museum in New York, NY, the Flight 93 National Memorial in Shanksville, PA, and the National 9/11 Pentagon Memorial in Washington, D.C.

Surface Mining Control and Reclamation Act (SMCRA)

Exceeds the Spirit and Intent of SMCRA
The reclamation of the Stineman Refuse Pile, extension of the Path of the Flood Trail and the improvement of the South Fork Little Conemaugh River not only exceed the spirit and intent of SMCRA, but truly define SMCRA. The 600,000 C.Y. of waste coal sat atop the hillside overlooking South Fork Borough. The P2 DPE posed a serious hazard to those nearby. The water quality of the adjacent South Fork Little Conemaugh River was being compromised while the DPE’s steep slopes eroded into the river. The result of the PA DEP BAMR reclamation contract transformed a 27-acre refuse pile area into usable property with newfound recreational opportunities and has improved the social and economic opportunities of the residents of South Fork. The development of the Path of the Flood Trail has already brought many new and returning trail users to the area, and any further development planned by CCCRA will only enhance the tourism and recreational opportunities. The Project is a general welfare and social economic success story of an AML site that had negatively impacted the community since the Stineman Coal and Coke Company ceased operations in 1939.

Increased Public Awareness of SMCRA
The reclamation of the Stineman Refuse Pile is now the second coal refuse reclamation project completed in a
two-mile radius of South Fork Borough, the first being the Ehrenfeld AML Reclamation/Recreation and Watershed Improvement Project. Both projects were highly publicized due to their funding source through the AMLER Program. For AMLER eligibility, projects had to demonstrate a nexus with AML cleanup and economic and community development. The program is an opportunity for local communities and states to return impacted areas to productive reuse and the Project is an exemplary outcome of the AMLER Program.

CCCRA held numerous public meetings that discussed the Project, and multiple articles were written and publicized in the local news and newspaper. With the AML fee expiring on September 30, 2021, the importance of reauthorization was included in most of the publicized articles and news clips.

Transferability to Other AML Projects
The removal and reprocessing of coal refuse material has been similar to past PA DEP BAMR projects including: Ehrenfeld AML Reclamation/Recreation & Watershed Improvement Project, Dents Run AML/AMD Ecosystem Restoration Project, Huling Branch AML Reclamation/ATV Recreation & Watershed Improvement Project, and the Mather PA – Reclaiming a Company Town Refuse Pile. All projects were regarded as OSM award-winning projects.

PA DEP BAMR is working on a similar project, includes the Venango #1 project, currently in construction and estimated to be completed in Spring 2022. The Venango #1 project is providing 2017 AMLER funds to a local watershed in partnership with a cogeneration facility. The project will reclaim a 52-acre AML site by removing 200,000 tons of coal refuse and transporting to a cogeneration plant where it will be burned to produce electricity. To remediate the site, a portion of the resulting alkaline fly ash byproduct will be returned to the site and blended with existing on-site soil and additional pure alkaline. An aerial view of the Venango #1 project can be seen in Figure 8.

Summary/Conclusion
The Project addressed a hazardous P2 AML problem posing a threat to public health and safety and added to the impairment of the South Fork Little Conemaugh River. Partnerships with CCCRA, OSM and other local organizations facilitated the completion of the Project. The positive health, safety and environmental impacts were magnified since the Project site was so easily accessible. The Project also directly improved the general welfare and social economic hardships that the coal industry left on South Fork Borough. The residents of South Fork along with visitors will be able to enjoy the reclaimed area complete with the Path of the Flood Trail and any future planned development of the property. The reclamation of the Stineman Refuse Pile provides a phenomenal example of what can and is being accomplished through the AML Program here in Pennsylvania and throughout the country.