



# pennsylvania

DEPARTMENT OF ENVIRONMENTAL PROTECTION

Office of Active and Abandoned Mine Operations

PINE CITY

Abandoned Mine Reclamation Project

Contract No. OSM 16(1047)102.1

Bureau of Abandoned Mine Reclamation  
Rachel Carson State Office Building, 13<sup>th</sup> Floor  
400 Market Street  
Harrisburg, PA 17101

**DEPARTMENT OF ENVIRONMENTAL PROTECTION  
ACTIVE AND ABANDONED MINE OPERATIONS  
BUREAU OF ABANDONED MINE RECLAMATION**

**PINE CITY  
ABANDONED MINE RECLAMATION PROJECT  
CONTRACT NO. OSM 16(1047)102.1**

**FACT SHEET**

**Location:** Elk Township, Clarion County (Lower Clarion River Watershed). The site is approximately one-half mile north of Pine City on Pine City Road (T-890) between Etzel Road (T-404) and Shippen Road (T-405). Latitude: 41° 18' 47"; Longitude -79° 29' 46"

**Official Start Date:** August 27, 2012

**Contract Completion Date:** May 24, 2013

**Contractor:** Morgan's Excavating, LLC

**Property Owners:** Richard and Zelda Smith  
Sherri Lawrence  
Duane and Karen Hepler

**Project Cost:** \$162,769.74 (Final), \$159,223.00 (Bid Amount)

**Project Area:** 17.4 acres

**Purpose:** To eliminate public health and safety hazards by grading dangerous spoil piles/embankments in Elk Township, Clarion County to approximate original contour and re-establishing the forest.

**Description:** The site was last strip-mined by A. P. Weaver & Sons circa 1967. There is one residence within 160 feet, one within 500 feet, and one within 1,000 feet of the site. Reclamation included eliminating 1,300 linear feet of dangerous/steep spoil piles/embankments, ranging from 25 to 45 feet high, on each side of on Pine City Road, backfilling a 6-foot deep water impoundment, installing earthen berms and windrow wildlife habitats, re-vegetating portions of the site with grasses and legumes, and planting native 9,200 tree seedlings.

Forestry Reclamation Approach (FRA) techniques were used to encourage growth of native tree species. The FRA technique was developed by the Appalachian Regional Reforestation Initiative (ARRI), a coalition of groups with the main objective of restoring forests on surface mines and promoting the planting of high-value hardwood trees on coal-mined lands in the Appalachian region.

The FRA enhances tree growth by creating a suitable rooting medium that is no less than four feet deep and is comprised of topsoil, weathered sandstone, or the best material available. Material is loosely graded in order to avoid compaction. The ARRI finished grade surface (in fill areas) was created from the final four feet of earthen materials excavated in the cut areas. The cut material was dumped or pushed in the fill areas into “hummocky” interlocking non-compacted piles approximately four feet high. The contractor placed material so that adjacent piles interlocked and were staggered down slope to prevent concentrated storm water runoff pathways. The ARRI finished grade surface (in cut areas) was created by ripping long narrow trenches or furrows at 45 degree angles to the contour and again at six foot intervals parallel to the contour into the final cut surface finished grade areas. The cut surface area was specified to be ripped sufficiently to loosen the soil over the entire area to a depth of at least four feet. Information on the FRA can be obtained from the OSM website, <http://arri.osmre.gov>. Native tree species selected for suitability on mine sites and to promote natural forest succession included Northern Red Oak, White Oak, Red Pine, Eastern White Pine or Virginia White Pine, Sweet or Gray Birch, Quaking Aspen, Red Maple, Tulip Poplar, Black Cherry and Sugar Maple. Tree seedlings had a four-inch to six-inch minimum height requirement and were obtained from suppliers approved by the Department of Environmental Protection. The seedlings were planted on a six foot by ten foot grid spacing in April 2013.

**Funding:**

This project was financed through Pennsylvania’s Federal Abandoned Mine Land (AML) Grant funded by the coal industry via fees paid on each ton of coal mined.

**Project Management:**

Bureau of Abandoned Mine Reclamation

Harrisburg Office

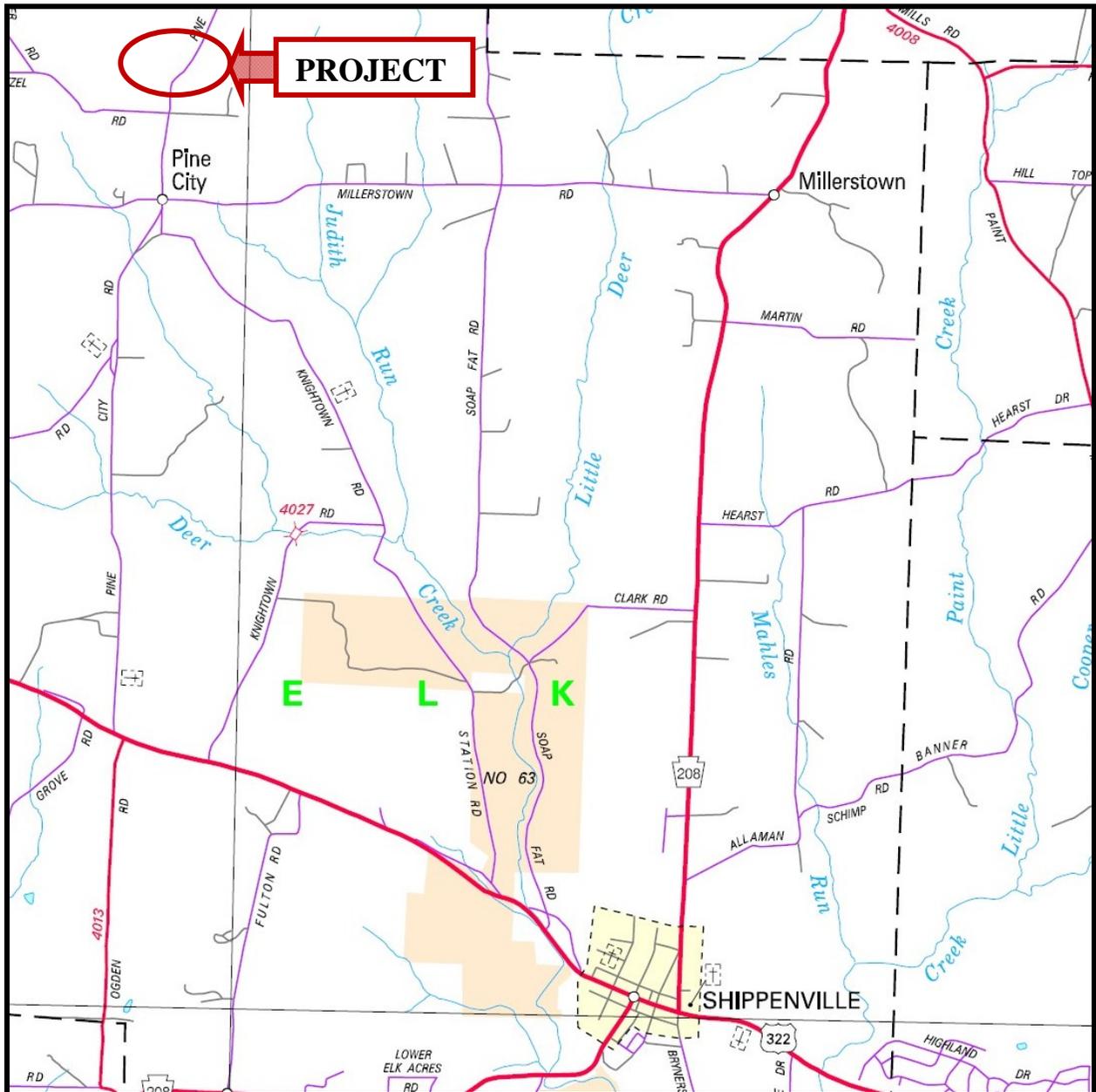
(Contact: Carol Varano @ 717.783.5641 or cvarano@pa.gov)

**Accomplishments:**

PRIORITY	AMLF #	AMLF KEYWORD	MEASUREMENTS						QUANTITY	UNIT
			ACRES	HEIGHT	LENGTH	COUNT	VOL.	FLOW		
2	14	DPE	6.7	25	1,300	-	-	-	6.7	Acres
2	15	DPE	8.4	45	1,300	-	-	-	8.4	Acres

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Location Map



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Pre-Construction



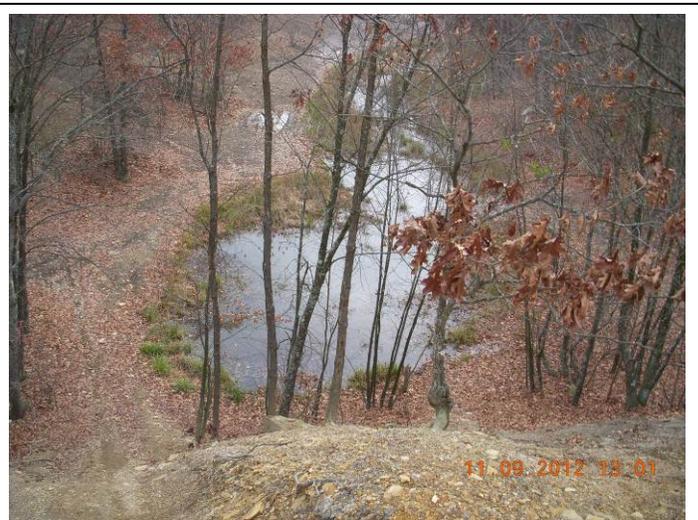
Steep Embankment & Water Impoundment



Steep Embankment & Spoils



Tree Covered Spoil Pile



Water Impoundment from Top of Spoil Pile

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During Construction



Hummocky Piles for Tree Planting



Hummocky Piles for Tree Planting



Ripped Area for Tree Planting

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Post-Construction



Native Trees Planted on 6 'x 10' Spacing



Reclamation Completed - Grass Starting to Grow



Tree Planting - FRA



Reclamation Completed - Grass Growing

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Post-Construction



Hummocky Piles  
(Immediately after reclamation - August 2013)

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Post-Construction



Hummocky Piles  
(One year's tree growth - May 2014)