

# Abandoned Mine Land Impacts and Reclamation via the AML Trust Fund in Pennsylvania

Produced by the Eastern PA  
Coalition for Abandoned Mine  
Reclamation (EPCAMR) for the  
Western PA Watershed Program



# Organization of the Abandoned Mine Land Information System (AMLIS) Database

- A nationwide database held by the Office of Surface Mining (OSM) and populated by the states (PA DEP Bureau of Abandoned Mine Reclamation in PA) to identify high priority coal and non coal hazards eligible for reclamation using the Abandoned Mine Reclamation Fund. Which are usually only coal-related problems due to mining prior to the enactment of SMCRA in 1977 and meeting the first two objective known as Priorities 1 and 2
- Most of the data was collected between the early 1980's to late 1990's with updates in reclaimed areas as recent as 2005. Consists of 3 separate but integrated databases
  - **Problem Areas** – the general area affected (encompasses the 2 below)
  - **Problem Feature Points** - mine shafts, vertical openings, mine drainage seeps, mining structures and old equipment
  - **Problem Feature Areas** – an actual feature such as a dangerous highwalls, stripping pits, culm banks, underground mine fire, or a subsidence area

# Priority 1 & 2 Problem Types

Problem	Type Symbol	Measured
1. <a href="#">Clogged Stream Lands</a>	CSL	Acres
2. <a href="#">Industrial/Residential Waste</a>	IRW	Acres
3. <a href="#">Clogged Streams</a>	CS	Miles
4. <a href="#">Polluted Water: Agr. &amp; Indust.</a>	PWAI	Count
5. <a href="#">Dangerous Highwall</a>	DH	Linear Feet
6. <a href="#">Polluted Water: Human Consumption</a>	PWHC	Count
7. <a href="#">Dangerous Impoundments</a>	DI	Count
8. <a href="#">Portals</a>	P	Count
9. <a href="#">Dangerous Pile and Embankment</a>	DPE	Acres
10. <a href="#">Subsidence</a>	S	Acres
11. <a href="#">Dangerous Slides</a>	DS	Acres
12. <a href="#">Surface Burning</a>	SB	Acres
13. <a href="#">Gases: Hazardous/Explosive</a>	GHE	Count
14. <a href="#">Underground Mine Fire</a>	UMF	Acres
15. <a href="#">Hazardous Equipment &amp; Facilities</a>	HEF	Count
16. <a href="#">Vertical Opening</a>	VO	Count
17. <a href="#">Hazardous Water Body</a>	HWB	Count

Click on the hyperlinks above for a description. Source: OSM's Website <http://www.osmre.gov/aml/inven/zinvin.htm>

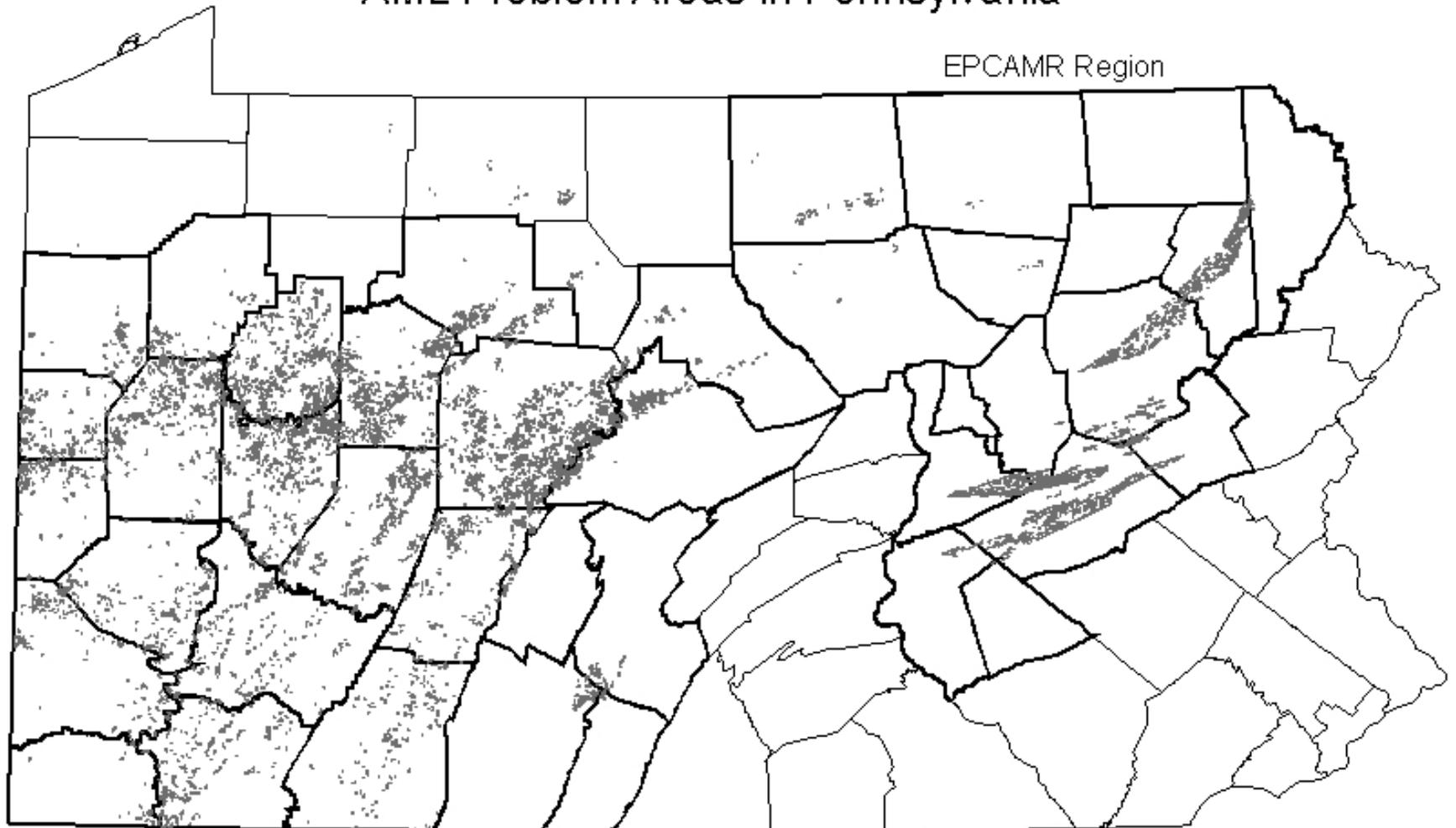
# Priority 3 Problem Types

Problem	Type Symbol	Measured As
1. <a href="#">Bench</a>	BE	Acres
2. <a href="#">Other</a>	O	
3. <a href="#">Industrial/Residential Waste</a>	DP	Acres
4. <a href="#">Pits</a>	PI	Acres
5. <a href="#">Equipment/Facilities</a>	EF	Count
6. <a href="#">Spoil Area</a>	SA	Acres
7. <a href="#">Gob Piles</a>	GO	Acres
8. <a href="#">Slurry</a>	SL	Acres
9. <a href="#">Highwall</a>	H	Feet
10. <a href="#">Slump</a>	SP	Acres
11. <a href="#">Haul Road</a>	HR	Acres
12. <a href="#">Water Problems</a>	WA	Gal./Minute
13. <a href="#">Mine Openings</a>	MO	Count

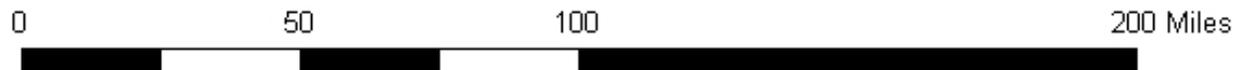
# Organization of the Abandoned Mine Land Information System (AMLIS) Database (continued)

- Contains information such as
  - Latitude and Longitude
  - Local Name
  - Estimated amount of Money needed to Reclaim
    - And the specific measurements that were used to arrive at this value (ex. acreage, perimeter, length, depth/height, flow/volume...)
  - OSM priority value
    - And the specific measurements that were used to arrive at this value (ex. the type of feature(s), distance to the nearest population, number of people impacted, injury or death on the site...)
  - Comments about the assessment (ex. comments from the assessor, date the assessment was made, name of the assessor and contact information)

# AML Problem Areas in Pennsylvania



WPCAMR Region



If you have an active internet connection, click the map to zoom in and view a specific area.

# Organization of the PA DEP Bureau of Abandoned Mine Reclamation Database

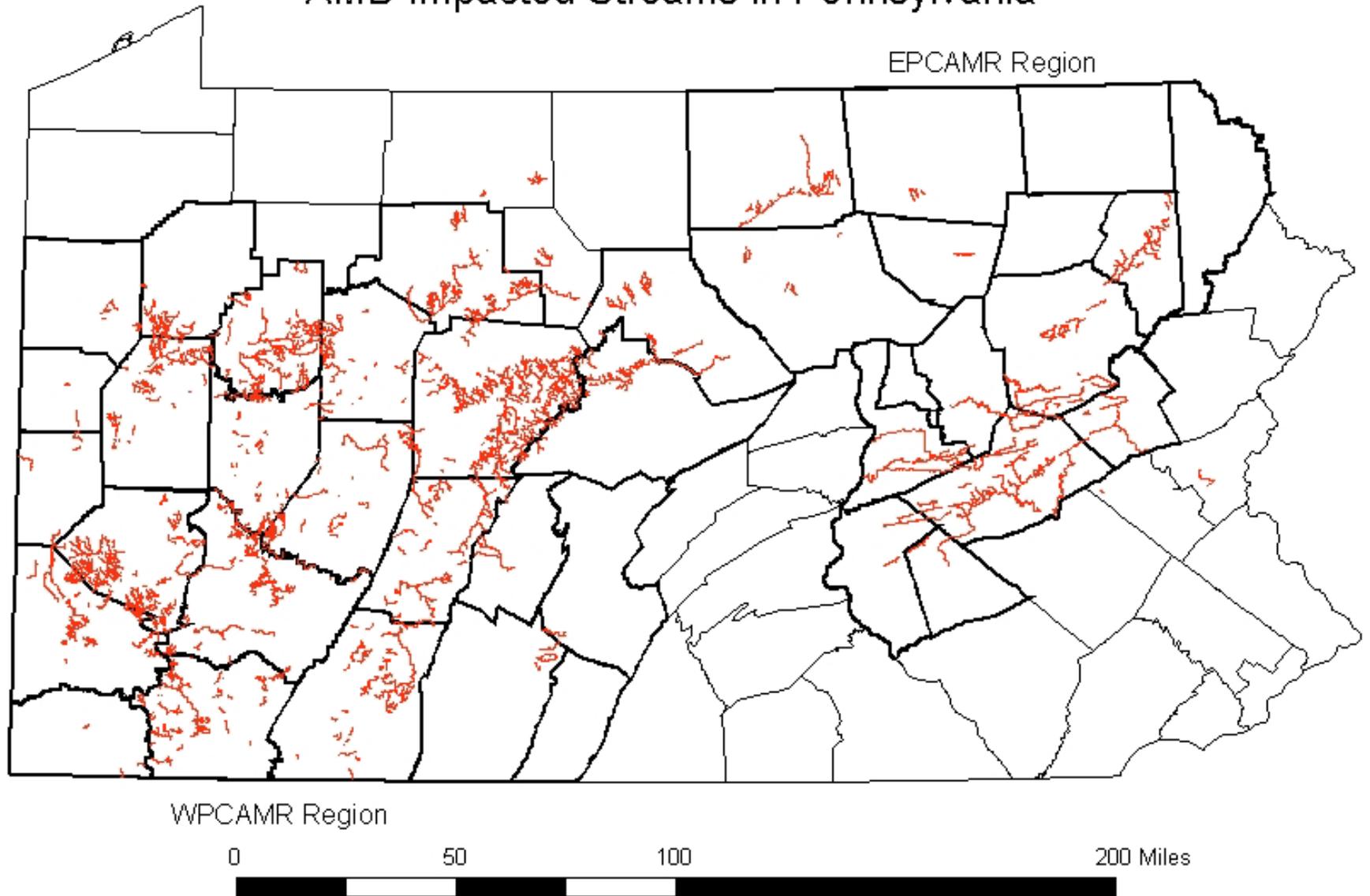
- Reclaimed information ranges between 1955 to 2005.
- Contains a historical accounting of reclamation work that has been done within Problem Areas by the PA DEP Bureau of Abandoned Mine Reclamation.
- Contains information such as the type of features addressed, the amount of money spent, the project name, and the OSM Priority Value

# So What has EPCAMR Actually Done?

Using Arc GIS 9.1 Arc Info Software through a Memorandum of Understanding through the Office of Surface Mining to:

- Combine (aka “relate”) the PA DEP Bureau of Abandoned Mine Reclamation Database with the Abandoned Mine Land Information System (AMLIS) Database using GIS.
- Interpret the database and create symbology to make it easier to understand for everyone
- Added other layers from the EPCAMR GIS Database such as:
  - Current and Past Aerial Photos and Topographic Maps useful in AMLIS Database verification
  - Location of Active Mining Operations which link to DEP’s e-Facts
  - Location of Anthracite Discharges assessed by USGS ([WRIR 95-4243](#))
  - 303 (d) List of Waters Impaired by Abandoned Mine Drainage (AMD)
  - OSM Harrisburg Field Office’s AMD Passive Treatment System Database
  - Towns, County Boundaries, Streams and Roads for User Orientation
- Exported all this information to a format that is readable by a free version of Arc GIS known as Arc Reader. This information can be copied to a CD or DVD to distribute to reclamation partners for their own analysis.

# AMD Impacted Streams in Pennsylvania



If you have an active internet connection, click the map to zoom in and view a specific area.

# Typical AML Impacted Community in the Anthracite Region: Swoyersville, Luzerne Co., PA



~ 1:24,000 Scale

Aerial Photo Source: USDA 2004

# Typical AML Impacted Community in the Anthracite Region: Swoyersville, Luzerne Co., PA

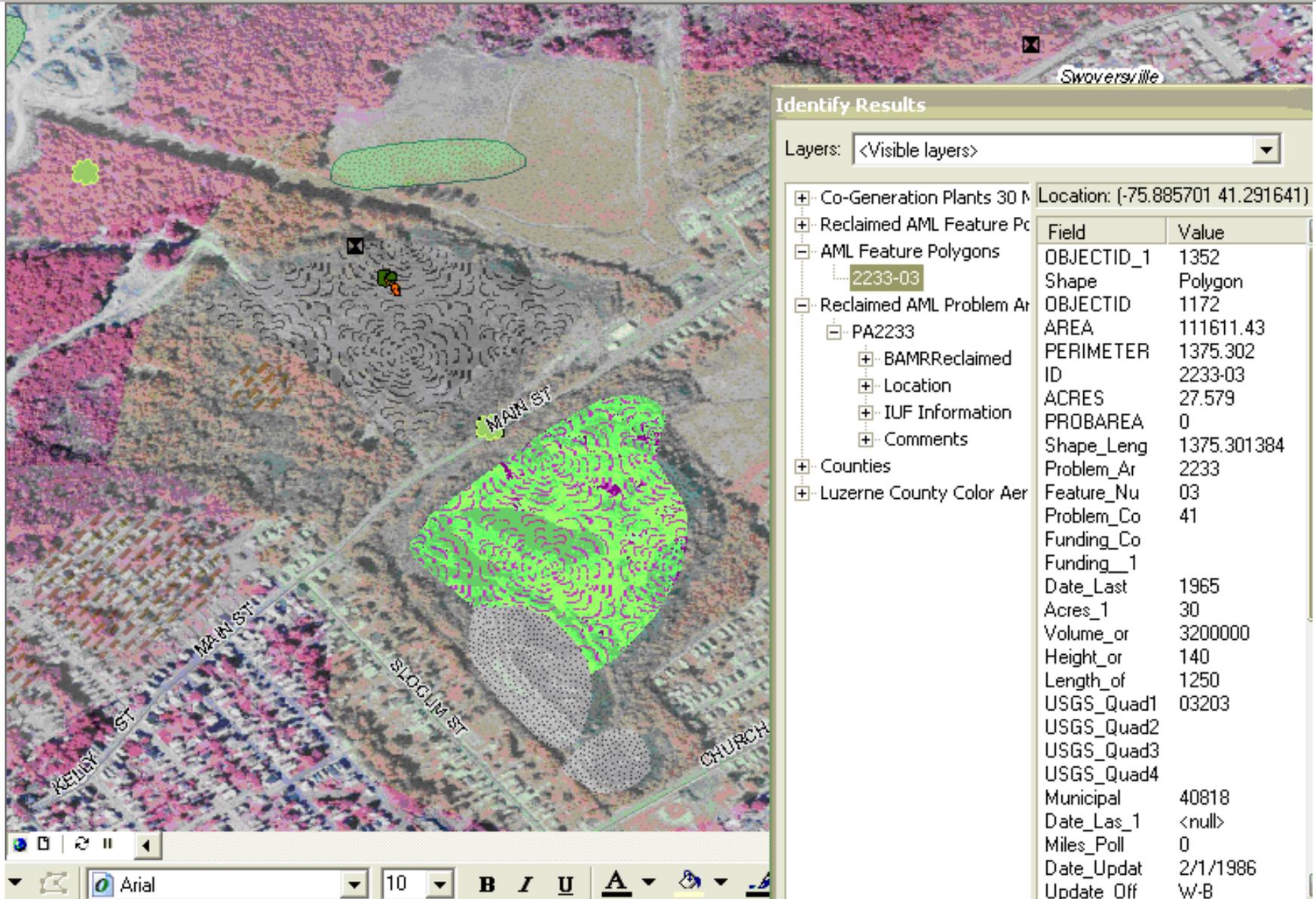


Tammy Amico doesn't mind the view of a culm bank from her front porch on White Street in Swoyersville, but she believes it impacts the value of her home and should be considered as the property is reassessed.

~ 1:10,000 Scale

Aerial Photo Source: USDA 2004; Photo with caption source: Times Leader March 27, 2005

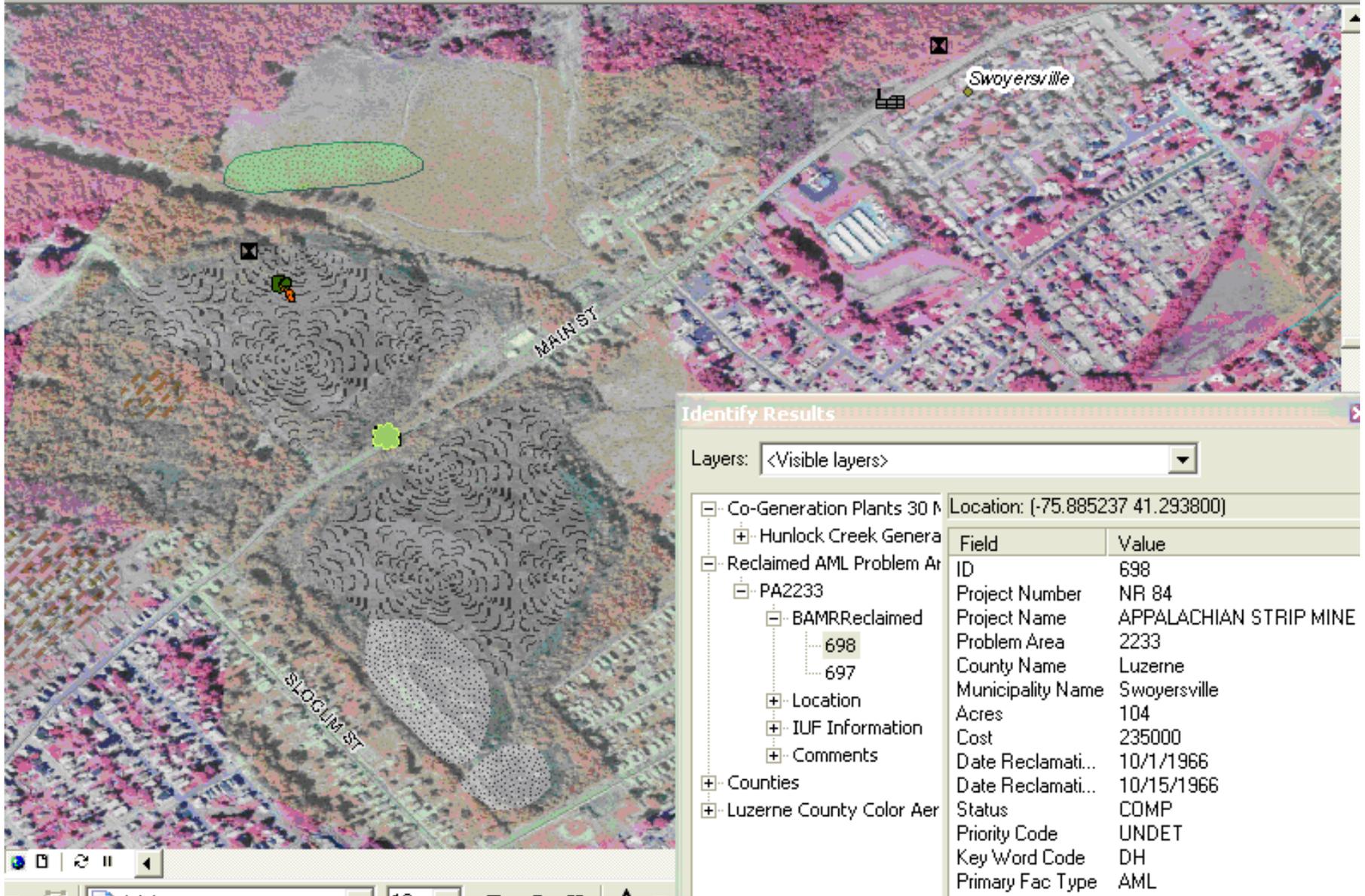
# Typical AML Impacted Community in the Anthracite Region: Swoyersville, Luzerne Co., PA



~1:10,000 Scale

Data Source: AMLIS Database, PA DEP BAMR 2005 Aerial Photo Source: USDA 2004

# Typical AML Impacted Community in the Anthracite Region: Swoyersville, Luzerne Co., PA

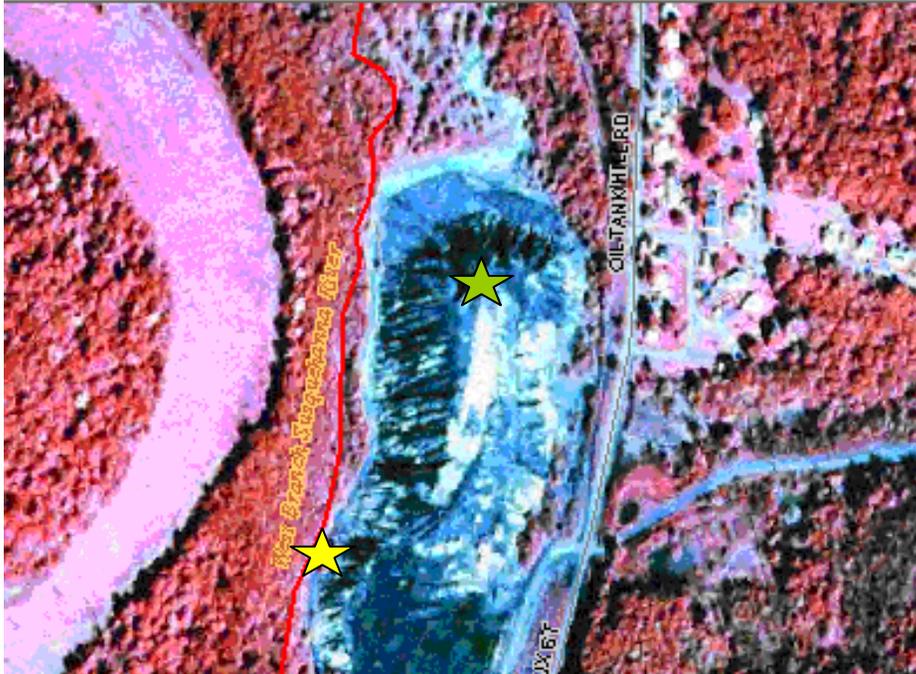


~1:10,000 Scale

Data Source: AMLIS Database, PA DEP BAMR 2005 Aerial Photo Source: USDA 2004



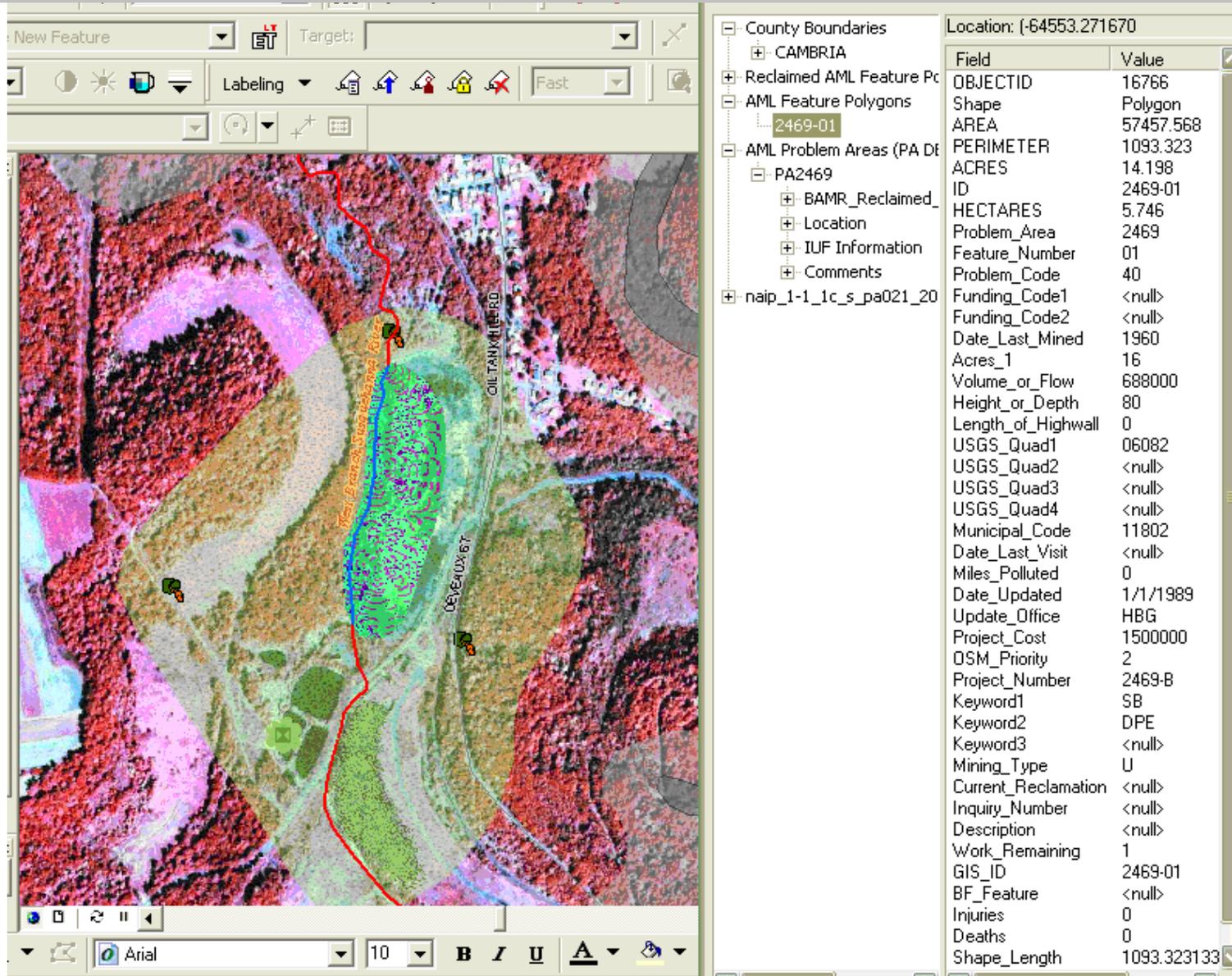
# Typical AML Impacted Community in the Bituminous Region: Watkins, Cambria Co., PA



~1:10,000 Scale

Photo Sources: Bruce Golden, WPCAMR 2005 Aerial Photo Source: USDA 2004

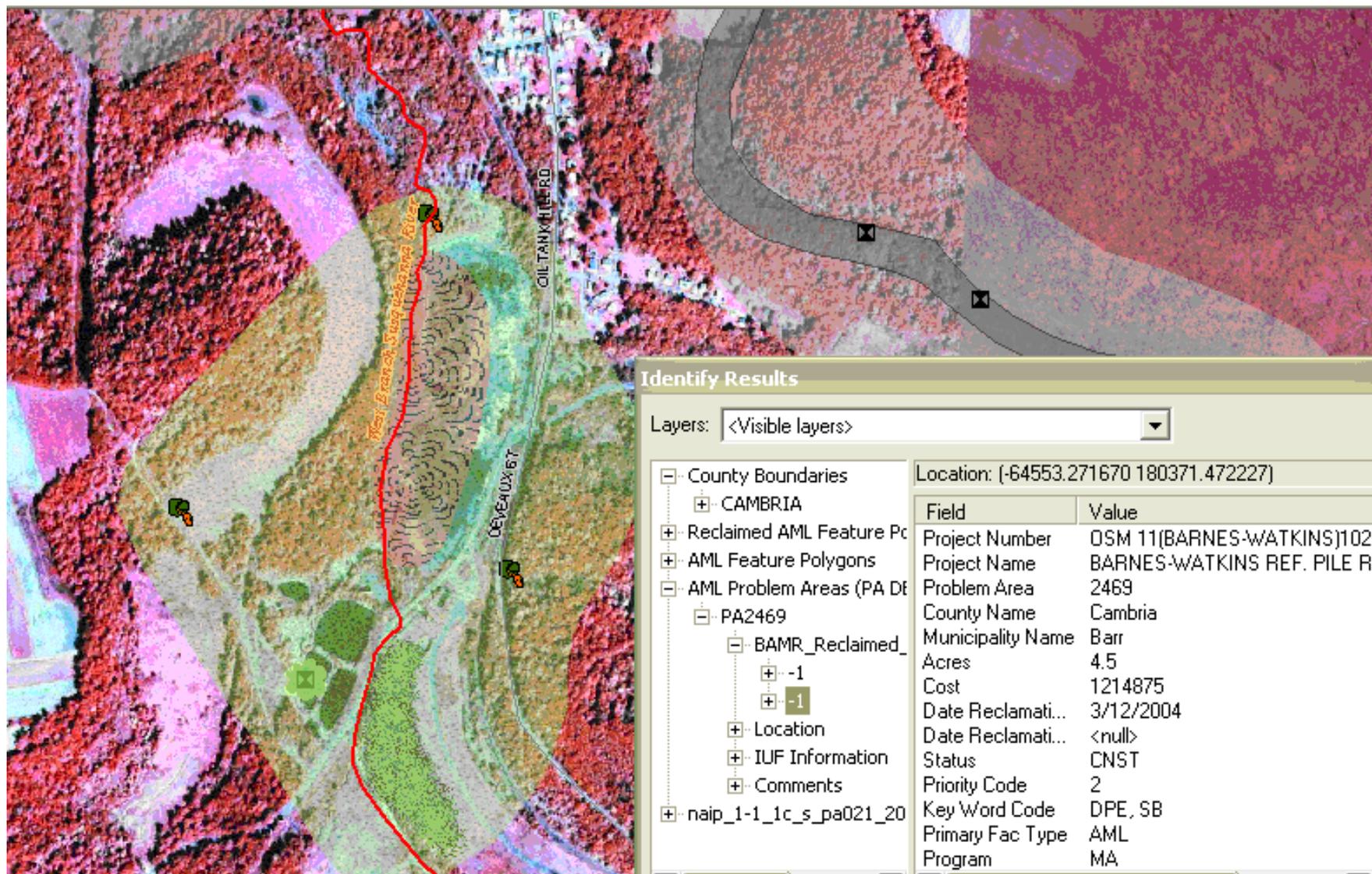
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~1:10,000 Scale

Data Source: AMLIS Database, PA DEP BAMR 2005 Aerial Photo Source: USDA 2004

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~1:10,000 Scale

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# Disclaimer

Funding support for this product was provided by the Western PA Watershed Program to distribute, draw statistical analysis and interpret the AMLIS and PA DEP Bureau of Abandoned Mine Reclamation Historical Database.

AMLIS and PA DEP Bureau of Abandoned Mine Reclamation Historical Database was developed by the PA Department of Environmental Protection and the US Department of the Interior Office of Surface Mining and represents reclamation work done on Abandoned Mine Land Problem Areas and Features eligible for “Title 4” funding from the Surface Mining and Reclamation Act of 1977. Some of the PA DEP Bureau of Abandoned Mine Reclamation Historical Database entries predate SMCRA Funding therefore these funds were provided by other programs of the state or federal government. This reclamation database does not account for re-mining initiatives provided through the PA DEP District Mining Offices, private industry work, watershed group efforts, or other government agency efforts.

EPCAMR collects GIS data for educational or planning purposes only. Data accuracy depends on the source and scale at which the layers was drawn. Additional surveying may be needed for greater detail. EPCAMR does not represent the AMLIS and PA DEP Bureau of Abandoned Mine Reclamation Historical Databases as perfect or whole, and does not make additions or changes to the databases. For other layers shown in this presentation, origin information is provided in the layer’s respective Arc GIS Metadata.

EPCAMR is a program of the Luzerne Conservation District shared also by 14 other counties in the Anthracite Region. PA DEP 319 Program funds the work of the Regional Coordinator and Watershed Outreach Coordinator. The views expressed herein are those of the authors and do not necessarily reflect the views of the EPA, DEP of any of its sub-agencies.