

Interstate 79

Longwall Mining

Pennsylvania Department of Environmental Protection
Bureau of Mining and Reclamation

2004



*Why Do the
Pa Department of
Environmental Protection
and PENNDOT
Allow Longwall Mining
Beneath State Highways?*

STATE MINING COMMISSION ACT

Approved June 1, 1933

The State Mining Commission Act:

In 1933, the Pennsylvania General Assembly enacted Act 296 providing for the creation of State mining commissions. Under the Act, a Commonwealth agency or coal owner may request a commission to be convened whenever there is a need to resolve support requirements beneath a state highway. The commission has the power to determine if coal support must be provided and the amount the Commonwealth must pay the coal owner for leaving coal support in place. A commission's decision to require coal support is authorized only in cases where the cost of purchasing coal support is less than the cost of repairing the anticipated damage and in cases where the subsidence will result in loss of life or personal injury to persons properly using the highway.

State Mining Commissions Consist of 5 Members:

- PRESIDENT JUDGE OF THE COURT OF COMMON PLEAS
- PUBLIC UTILITY COMMISSION
- SECRETARY OF MINES (PADEP)
- STATE GOVERNMENT OWNING LAND (i.e. PENNDOT)
- OWNER OF COAL



*Determinations of the State
Mining Commission on the
Removal of Coal Underneath
Interstate 79*

- PENNDOT had an opportunity to leave a certain portion of the underlying coal in place for vertical and lateral support of the proposed highway.
- The corporations that owned the Mineral and Support Rights had future plans to mine the coal from these same properties.
- The coal owners petitioned the Court of Common Pleas to convene a State Mining Commission to determine, authorize, and direct what underlying and adjacent coal if any, was to be left unmined and in place for the purpose of providing vertical and lateral support of the proposed highway.

State mining commissions were convened in 1971 and 1973, respectively, to determine if any of the coal reserves were to remain in place to provide support for Interstate 79. In both cases, the commissions decided to waive support requirements based on the following considerations:

- The thickness of the overburden, which ranges from 368 to 640 feet.
- The determination that the cost of repairing and replacing the damaged road and structures would be less than the cost of purchasing coal support.
- The determination that the mining of the coal would not result in the loss of life or personal injury to persons properly using the highway.

These coal reserves are now part of the Foundation Coal Corporation's Cumberland and Emerald Mines, formerly RAG American Coal's Cumberland and Emerald Mines, in Greene County.

*When Will the Longwall
Panels Cross Interstate 79?*

- Foundation Coal Corporation's Cumberland Mine plans to longwall mine eight panels (each panel is approximately 1,250 feet wide) beneath I-79 in Whiteley Township starting in late Summer to early Fall of 2004.
- Foundation Coal Corporation's Emerald Mine plans to longwall mine six panels (each panel is approximately 1,400 feet wide) beneath I-79 in Franklin and Whiteley townships, starting sometime in 2005.
- It will take about eight to 10 days for each panel to cross under I-79.

*Where Will the Longwall
Panels Cross Interstate 79?*

PROJECT LOCATION MAP

Cumberland Mine

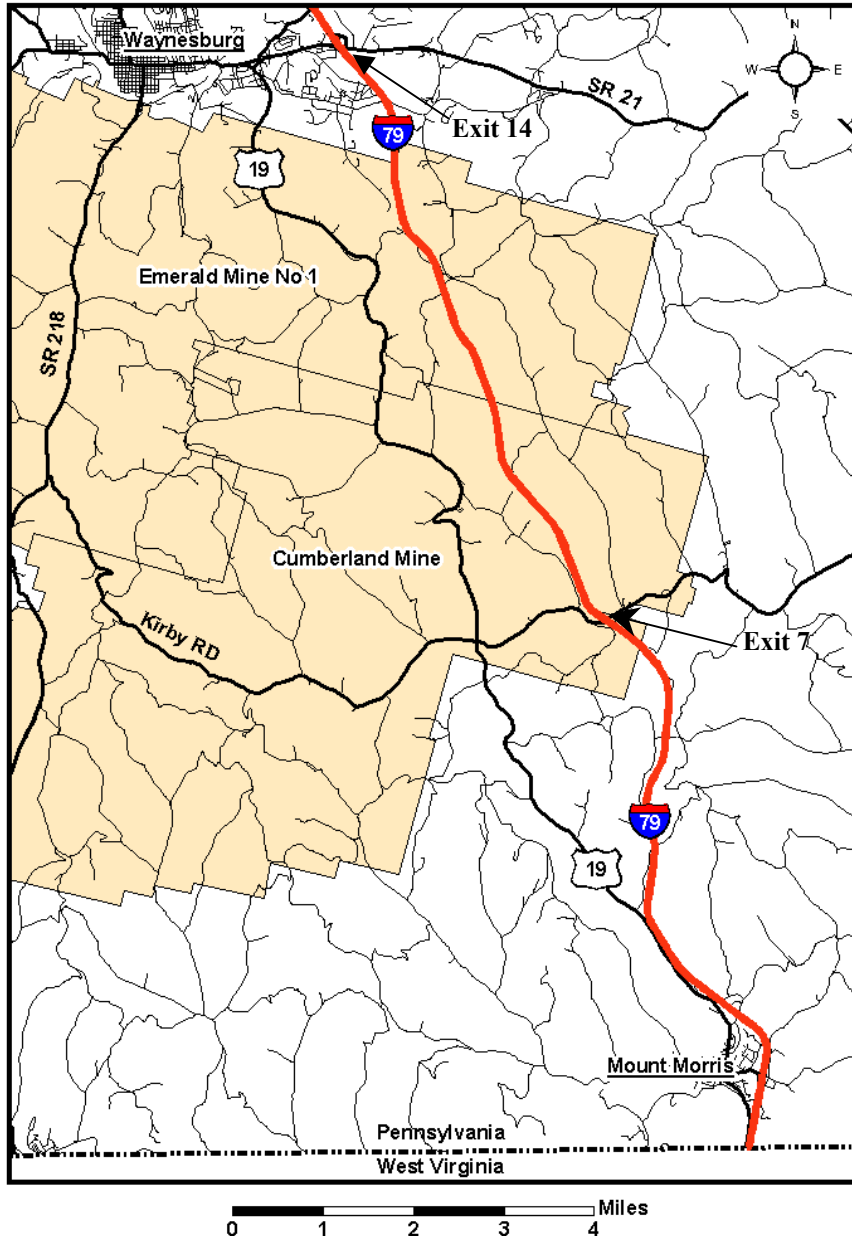
**Mile Post: 6.5
to
Mile Post: 9.5**

Whiteley Township, Greene County

Emerald Mine No. 1

**Mile Post: 9.5
to
Mile Post: 12.0**

**Franklin & Whiteley Townships,
Greene County**



*Cumberland Mine I-79 /
Longwall Crossings*

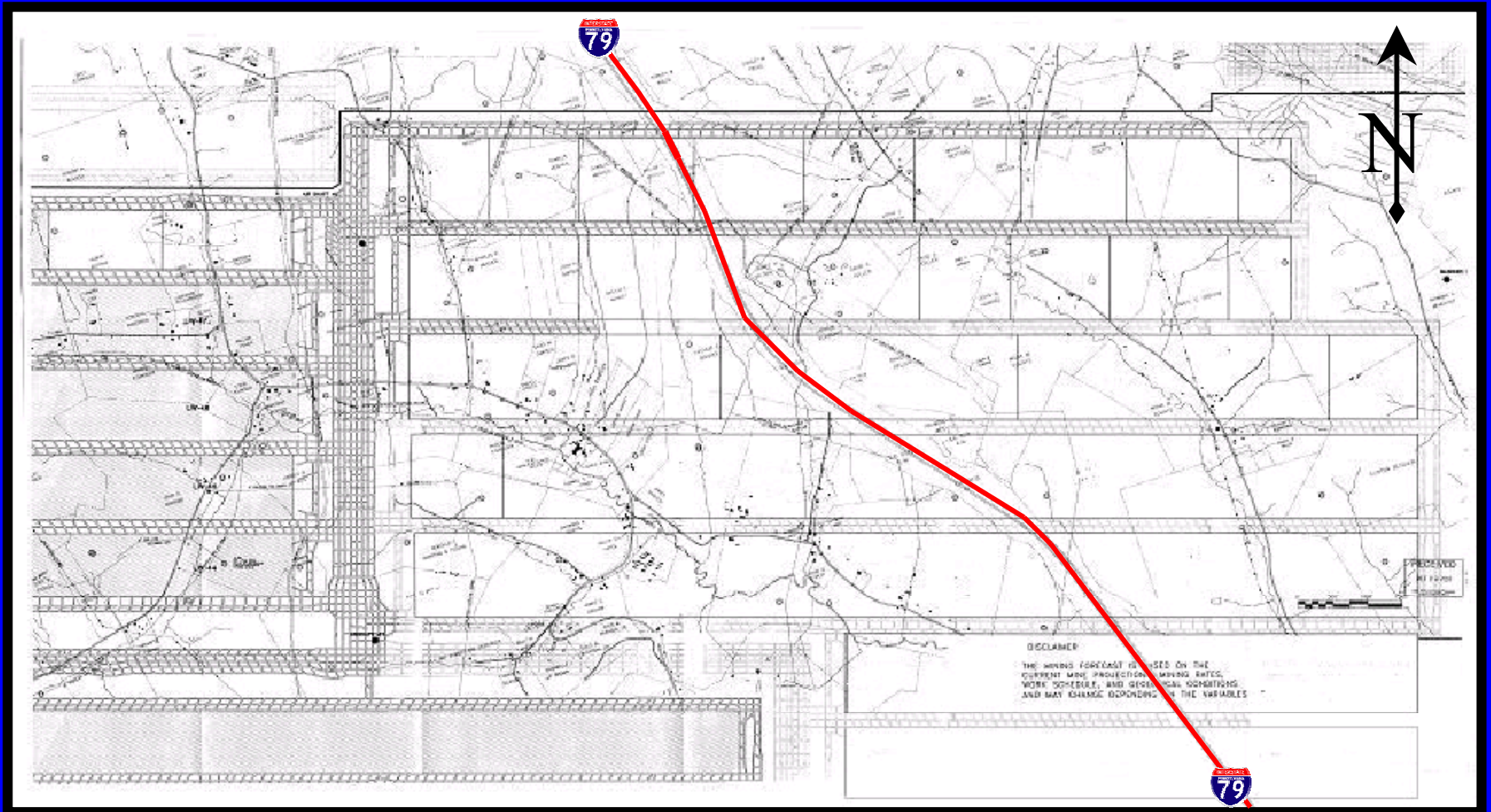
Mile Post: 6.5

to

Mile Post: 9.5

**Whiteley Township,
Greene County**

PENNDOT District 12



Interstate 79 / Cumberland Mine
Longwall Panel Locations
Whiteley Township, Greene County
No Scale

Emerald Mine No. 1
I-79 / Longwall
Crossings

Mile Post: 9.5

to

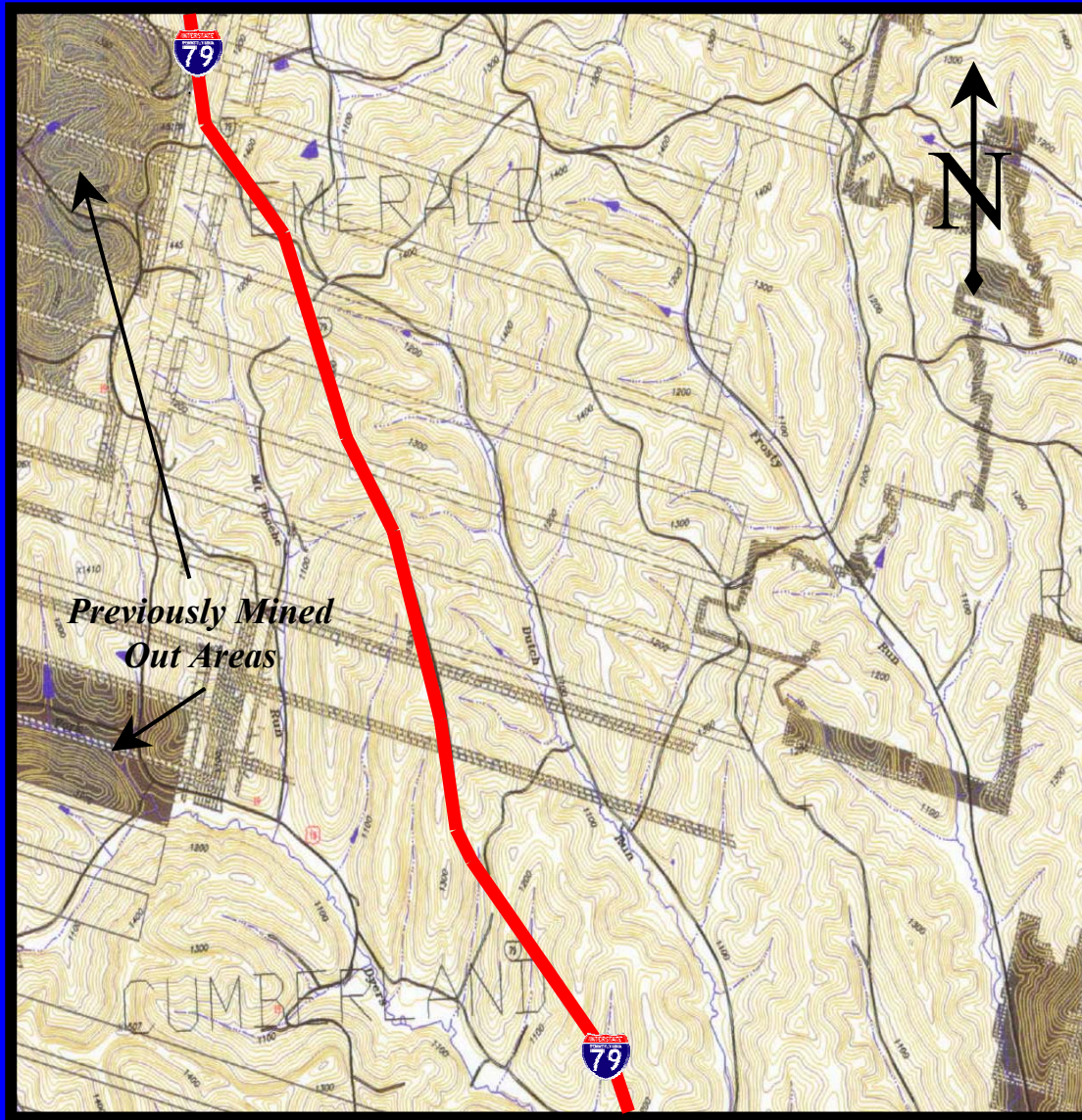
Mile Post: 12.0

Franklin & Whiteley

Townships,

Greene County

PENNDOT District 12



**Interstate 79 /
Emerald Mine No. 1**

Longwall Panel Locations

**Franklin & Whiteley
townships,
Greene County**

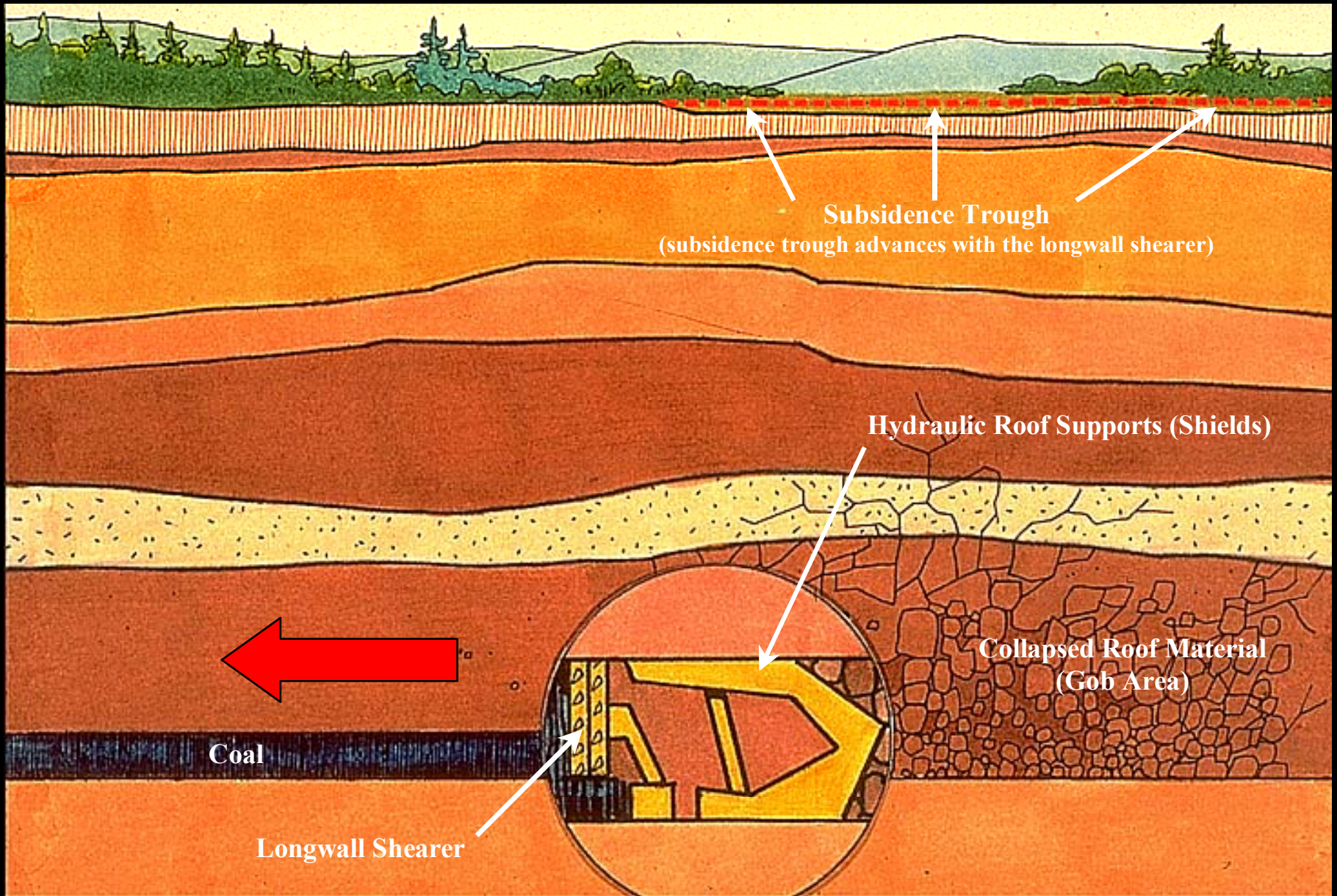
No Scale

*How Will the Coal Be
Mined?*

Longwall Mining

In longwall mining, a large panel of coal is isolated by the development of entries and crosscuts called mains. The longwall mining shearer is then set up along the coal face. This face can be anywhere from 800 to 1,500 feet wide.

The coal is removed by a longwall shearer. This shearer continuously moves across the width of the panel and removes the coal face. The mined coal is then hauled by a conveyor along the length of the face and removed from the mine. The roof is supported by special hydraulic supports and shields that are advanced as the mining progresses. The mine roof is allowed to collapse behind in a carefully controlled manner.



Longwall Mining



LONGWALL MINING

*Who Will Be Involved
With the Monitoring,
Surveillance, and Safety
of Interstate 79 During
the Longwall Mining
Crossing?*

PADEP's Monitoring and Surveillance Efforts

- Daily inspections of Interstate 79.
- Open lines of communication with PENNDOT, the PA State Police, and the Foundation Coal Corporation.
- Photographic surveillance from fixed reference points.

*Has Longwall Mining Been
Completed Underneath
Other Interstate Highways?*

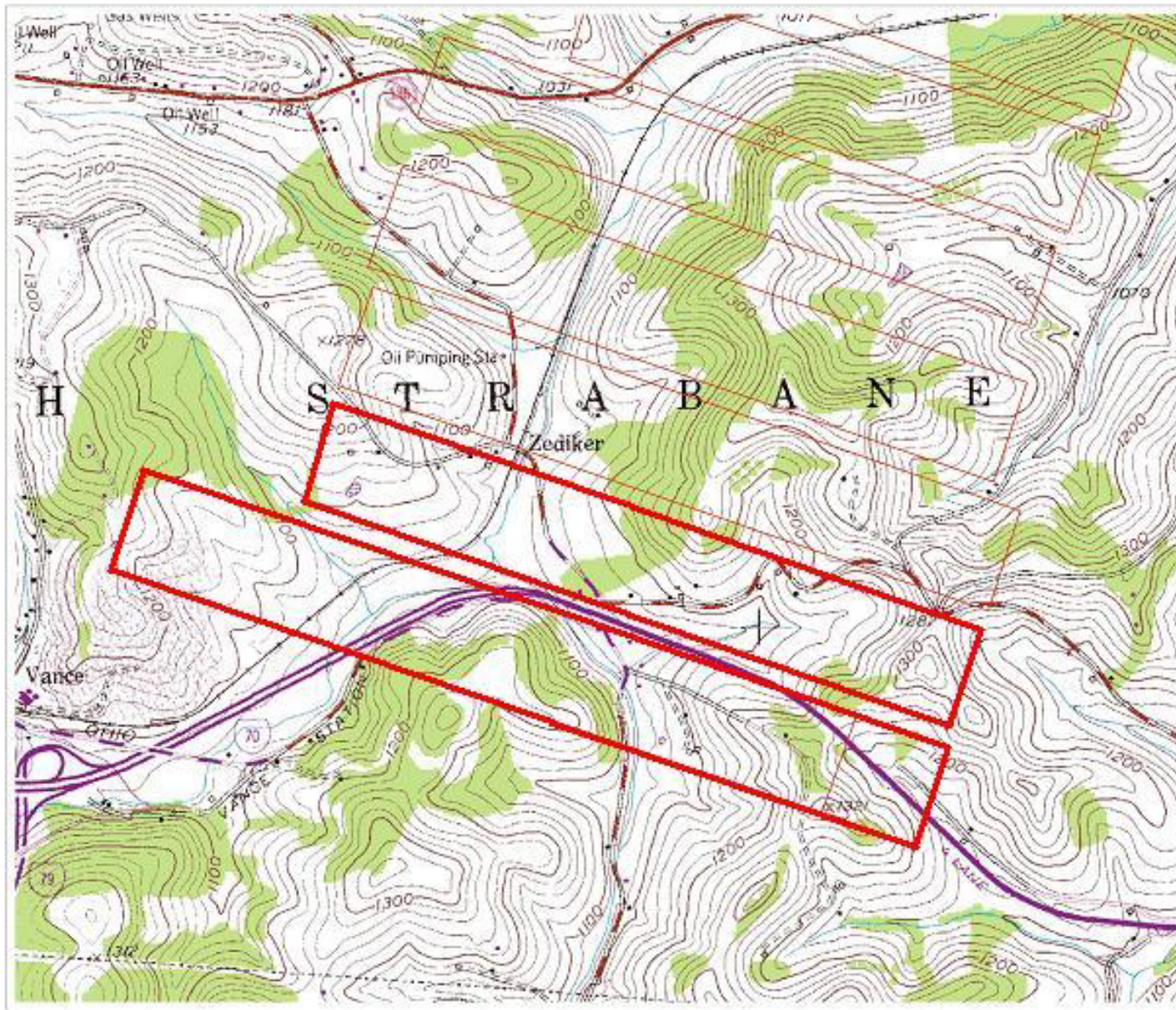
Interstate 70

From Nov. 1999 to Oct. 2000, Eighty-Four Mining Co. mined two longwall panels in South Strabane Township, Washington County, between the I-79 interchange and State Route 519. The first longwall panel crossed beneath two sections of I-70 and the second panel was adjacent to I-70.

Interstate 70

The panels were located just east of Washington, Washington County. Each panel was approximately 1,000 feet wide, 6,000 to 8,700 feet long, and six feet thick.

84 Mine, 4 South Panel, under Interstate 70



PA DEP
DEPARTMENT OF ENVIRONMENTAL PROTECTION
HARRISBURG, PA 17120

Legend

-  4 South Panel
-  Previously Mined Panels



Precautionary Measures along Interstate 70 at the Zediker Station Road Structure



Structure Shoring: concrete blocks, wooden cribbing, I-beam, and sand bags.

Monitoring along Interstate 70



TILTMETER — an instrument that measures horizontal and vertical movements of the surrounding area.

Interstate 70 Washington County, Pennsylvania



Before

8/4/2000

After



Longwall Subsidence

8/25/2000

Interstate 70 Washington County, Pennsylvania

Longwall Subsidence



8/25/2000

Interstate 70 Remediation Washington County, Pennsylvania

Skid Loader with Milling Head
(high areas were milled down)

Asphalt Overlay
(low areas were built up with asphalt)



Observations regarding the undermining of Interstate 70

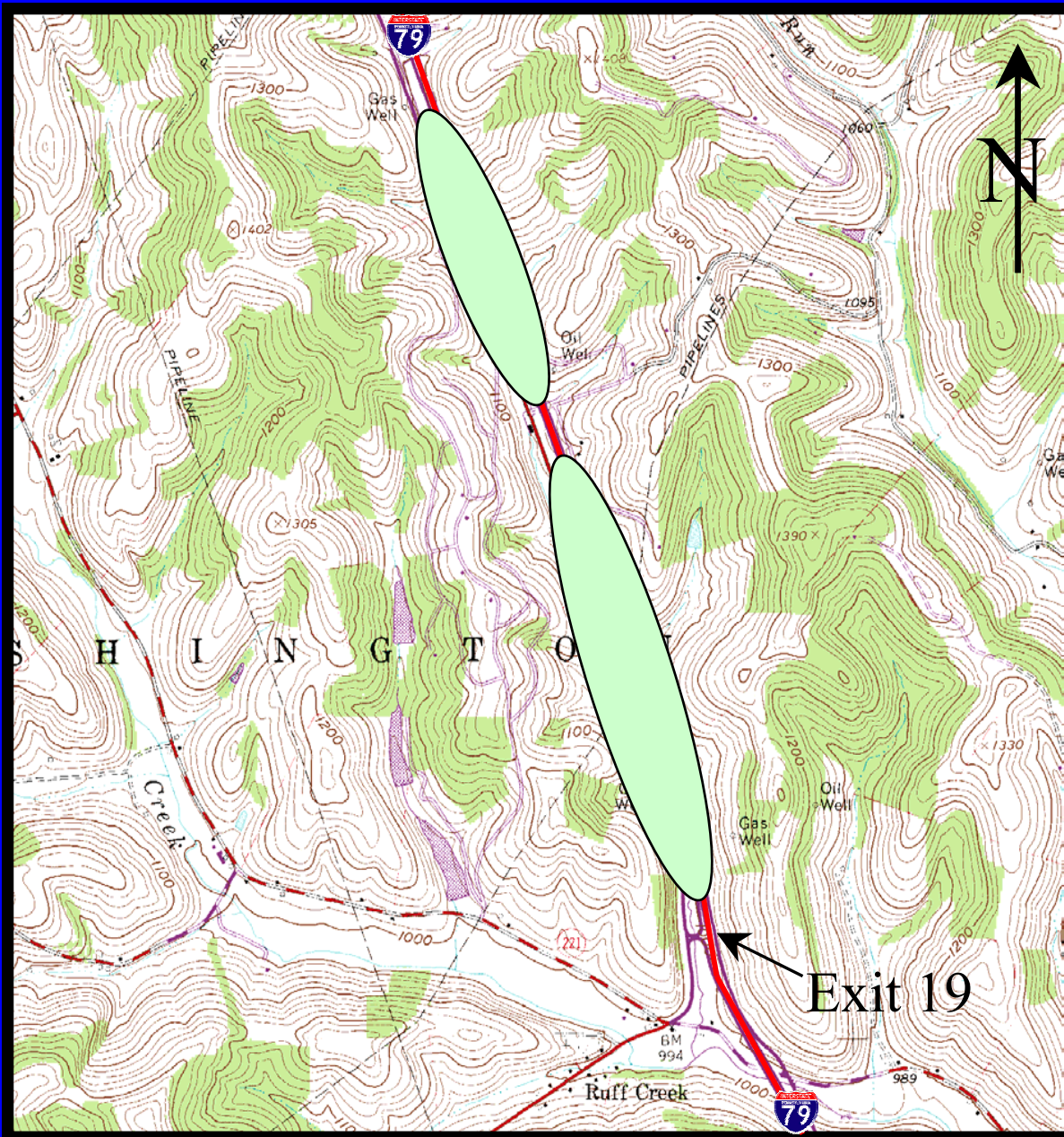
- It was less costly to repair the highway than to purchase the coal support. (\$2,153,369 vs. \$40,449,024)
- There were no accidents attributable to mining or repair work.

(For additional details, see the report. “Effects of Undermining Interstate 70, South Strabane Township, Washington County,” 2002, on DEP’s web site)

Interstate 79

Ruff Creek Interchange, Exit 19

From June 1982 to March 1989, Gateway Coal Company extracted coal from eight panels starting at Ruff Creek Interchange and heading north. The panels were approximately 500 feet wide, 1,400 to 3,000 feet long.

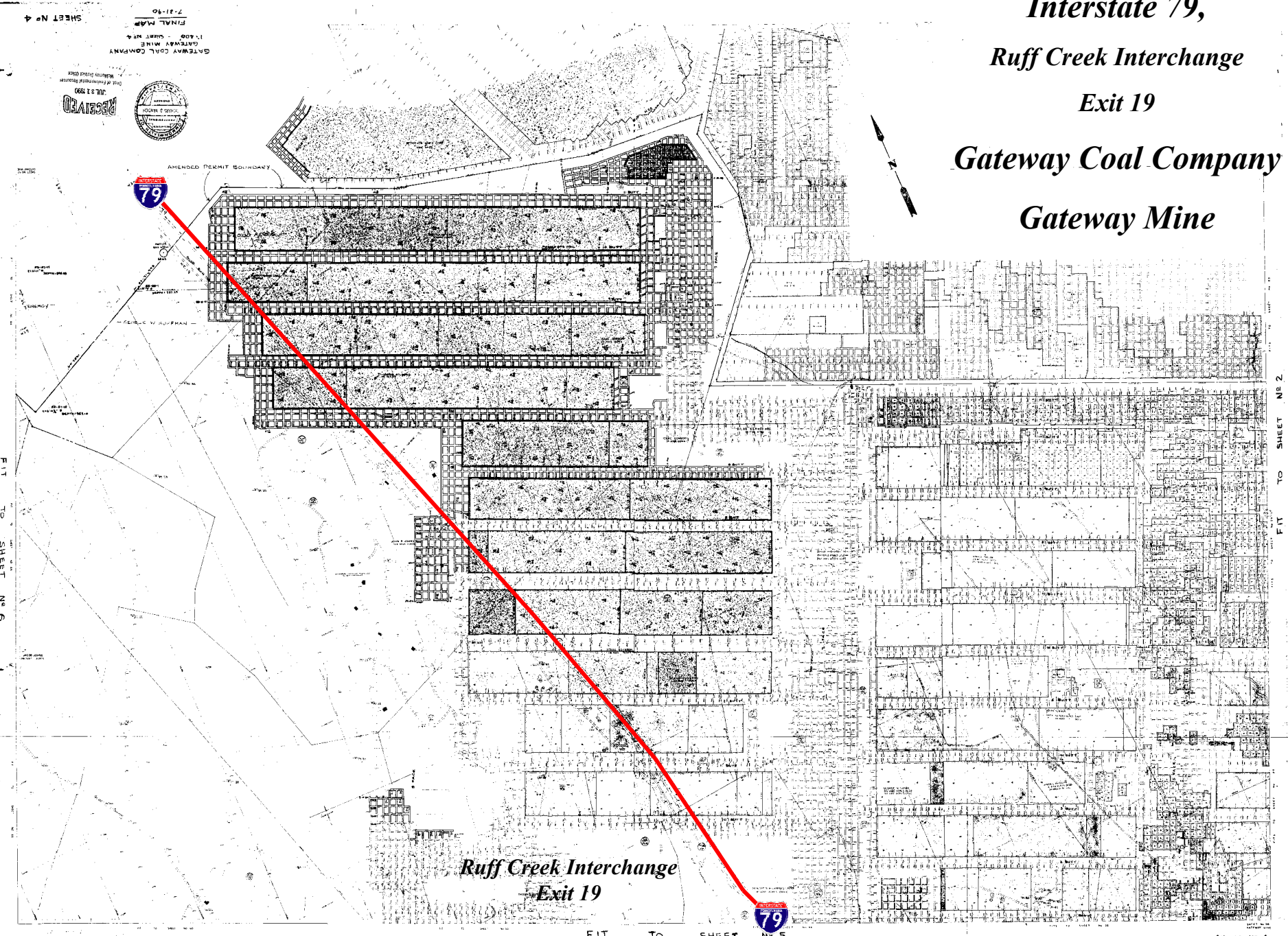


***Interstate 79, Exit 19
Ruff Creek Interchange
Gateway Coal Company
Gateway Mine***

***○ : Areas were Longwall Mining
crossed under Interstate 79***

No Scale

*Interstate 79,
Ruff Creek Interchange
Exit 19
Gateway Coal Company
Gateway Mine*





Longwall Subsidence

3/14/2001

Interstate 79, Exit 19
Ruff Creek Interchange
Gateway Coal Company
Gateway Mine

To learn more about underground mining, visit PADEP's:

Bureau of Mining and Reclamation at:

<http://www.dep.state.pa.us/dep/deputate/minres/BMR/BMRhome.htm>

**To learn more about the Longwall Mining under
Interstate-70, visit PADEP's:**

<http://www.dep.state.pa.us/dep/deputate/minres/Longwall/I-70/I-70home.htm>

“Effects of Undermining Interstate 70, South Strabane Township, Washington County” (February 2002)