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Presentation:
Historical and Recent Abandoned Underground Mine Roadway Mitigation in Maryland

ITGUAM 2013
Presentation Outline:

Mineral Mining in Maryland

Coal Mining in Maryland  -Historical
  -Recent

Abandoned Mine Issues of Common Interest to Bureau of Mines

Winding Ridge AMD Demonstration

Availability of Abandoned Mine Maps
Underground mines for copper, chromium, iron, calcite, green marble

Area of underground mines for fire clay and coal
Underground mineral mining examples:

Mineral Hill – iron and copper (inactive)

Soldier’s Delight – chromite (inactive)

LeFarge Texas – calcite – underground workings on the southern end, under roads (inactive underground).

Not really a concern - have encountered spoil piles with roadway construction.
Northern Appalachian coal region

EXPLANATION

- **Anthracite**
- **Low-volatile bituminous**
- **Medium- and high-volatile bituminous**
- **Boundary between coal regions**

From: USGS SIR 2010-5152
Review of Coal Mining in Maryland:

* Coal mining in western Maryland started in 1700s
* Underground (deep) mining started in 1820s
* Coal mining increased with arrival of B&O railroad (1842) and C&O Canal (1850)
* Peak coal production in 1907
* By 1941 most of underground coal mines abandoned
* Approximately 450 abandoned underground coal mines identified that pre-date SMCRA-1977
Some items that have occurred during highway construction and operations associated with underground coal mines,

1. Need to undercut (I-68)
2. Slope failure (Md Rt 36)
3. Rapid dewatering of mine (Md Rt 657)
4. Need to change alignment due to unstable spoil (gob) piles/slopes (Md Rt 36)
5. Need to grout to control subsidence (MD Rt 936)
6. Settlement monitoring (MD Rt 50)
MD Rt 36 Mt. Savage Slide, 2005

Map images from: Mine Drainage Abatement Investigations, 1974, Green Associates Inc., and Gannett Fleming Corddry and Carpenter Inc. for Md DNR
Md Rt 36 Mt. Savage rock buttress
I-68, undercut during construction to eliminate abandoned coal mine
I-68 Undercut during construction to eliminate abandoned coal mine
MD Rt. 936 Grouted to eliminate abandoned coal mine. Funded by Bureau of Mines, Contracted by SHA.
MD Rt. 657 Rapid dewatering flooded/undercut roadway
MD Rt 36
Relocated, slope failure
Md Rt 36 Westernport, Taylor Slide, abandoned mine openings
MD Rt 36 Westernport, Taylor Slide, Stone Buttress
Underground mine drainage at Westernport – Taylor Slide
Winding Ridge – Frazee Mine - closed

Casselman Mine - operating

Mettiki Mine - closed

Taylor #1 Mine – operating

Steyer #2 Mine – operating
Abandoned Mine Drainage Repair – note water level stain on roof
Stream Erosion and Restoration
No known mine maps. Field investigation conducted—estimated 3,900 yds void. When grouted used 5,600 yds, encountered unknown mine voids that prevented complete filling of mine with grout.
Availability of Abandoned Mine Maps:

Frostburg University Mine Map Program at J. Lewis Ort Library

http://www.fereshteh.net/student/mine_mapping/index.htm

http://www.frostburg.edu/minemapping/

MDE-Bureau of Mines web site for abandoned mine locations:

http://www.mdminemaps.org/mining/main.html
THE END
Questions?

Koontz Mine, Lonaconing, Maryland