

Coal Combustion By-Product Storage, Use, and Disposal Sites in Maryland

PPRAC

Nov 15, 2017

CCB Recovery and Beneficial Use



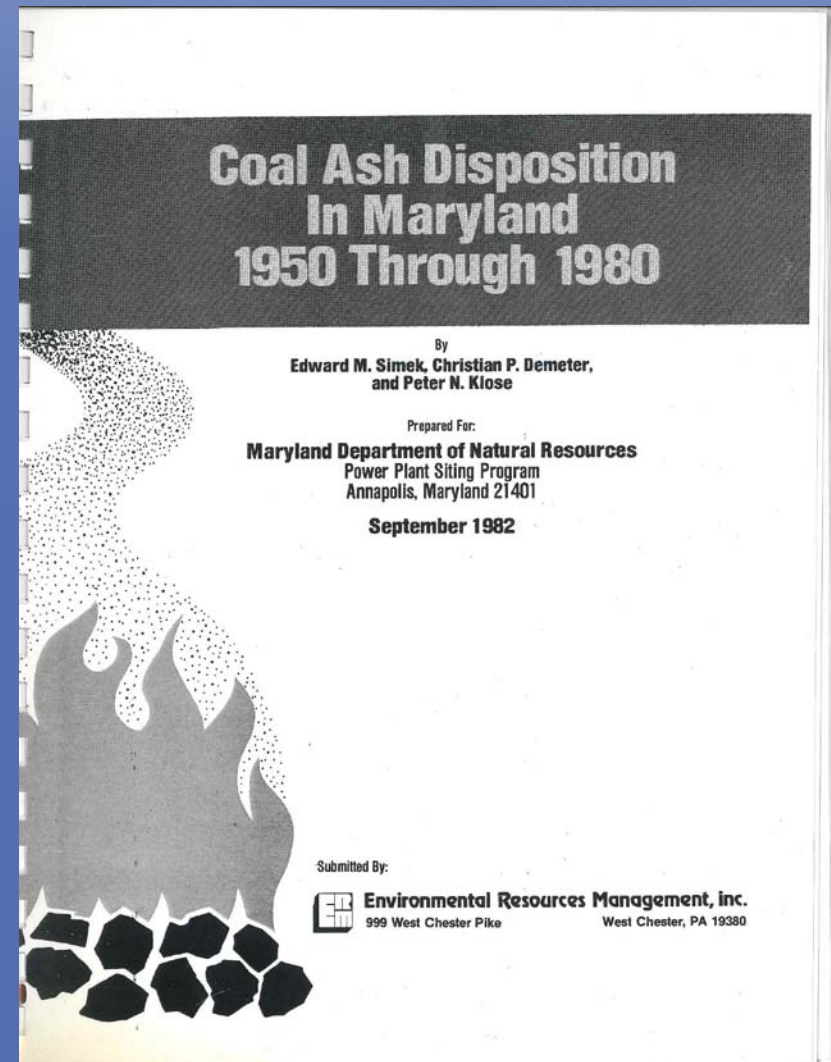
- CCB recovery from the R. Paul Smith landfill began in 2009.
 - 400,000 tons mined in 2016
 - Nearly 2,000,000 tons mined over 7 years of operation
 - Entire landfill expected to be mined by 2020.
- Operators of beneficiation facilities are researching beneficiation of disposed ash.



1982 Report



- Identified and reviewed 38 Sites
- Information Sources:
 - Utilities
 - State and Local Officials
 - Hauling Companies
 - FERC files



2017 Report Goals



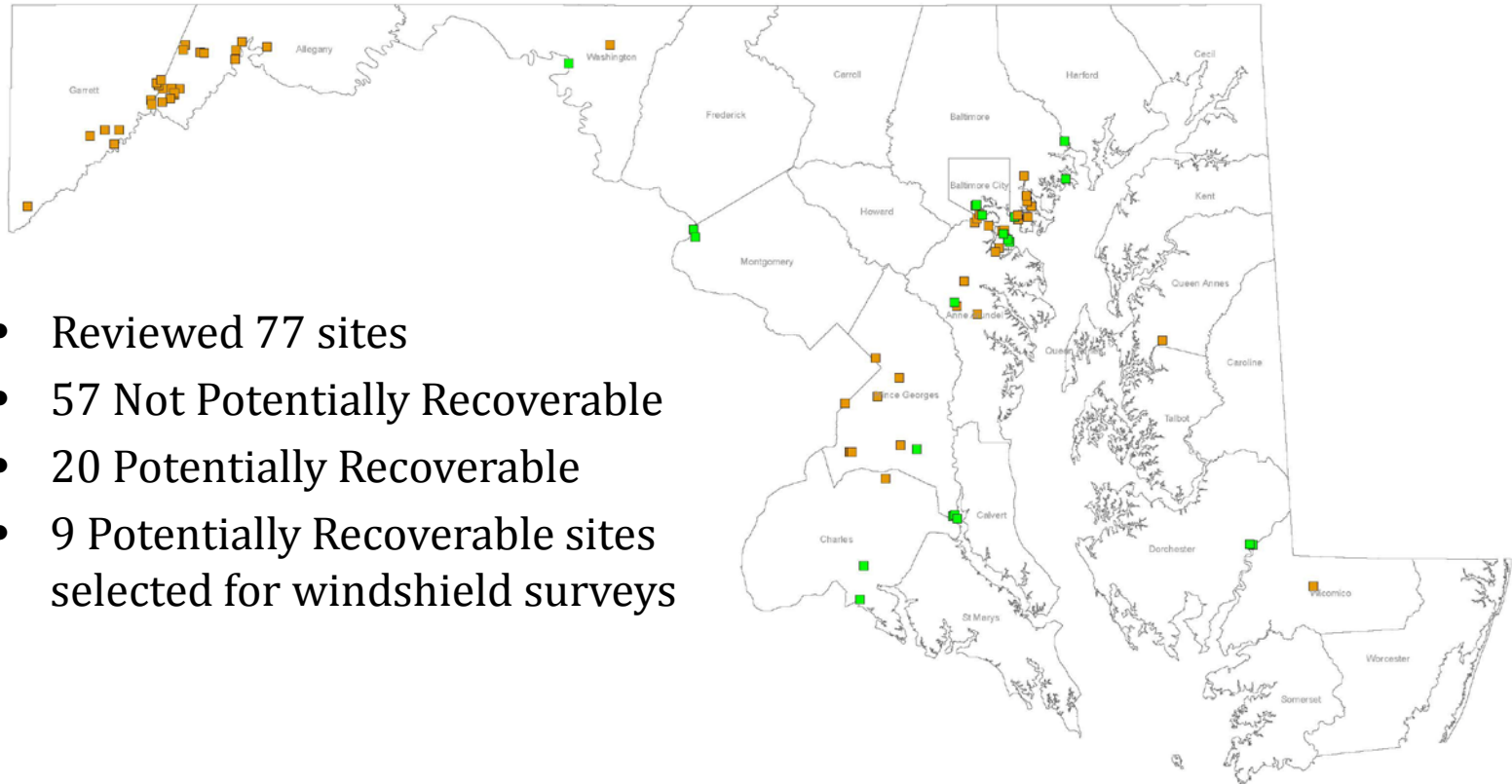
- Update list of known sites to include those listed in recent sources:
 - Facts About Coal Combustion By-Product Sites in Maryland (MDE fact sheet, published in 2010).
 - MDE Abandoned Mine Lands Division file search for coal mine reclamation sites (primary contact, Mr. Al Hooker).
- Update/verify land use.
- Assess recoverability potential for all sites.
 - Potentially Recoverable
 - Not Recoverable

Factors Affecting Recoverability



- Co-Disposal with other wastes.
- Current land use
- Known characteristics of material and placement.

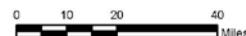
2017 Survey Results



- Reviewed 77 sites
- 57 Not Potentially Recoverable
- 20 Potentially Recoverable
- 9 Potentially Recoverable sites selected for windshield surveys



Scale in Miles
1 inch = 20 miles



Legend

- Potentially Recoverable
- Not Recoverable

Figure 1
Known CCB Sites Across Maryland

Examples of Not Recoverable Sites

Coal Mine Recovery –
Cabin Run



Co-Disposal with Other
Waste – Solley Road Site



Redeveloped (Buildings) –
Battle Grove Park



Redeveloped (Infrastructure) –
I-695 Overpass



Potentially Recoverable Sites

CCB landfill sites

Faulkner



Brandywine



Westland



Ft. Armistead



Potentially Recoverable Sites

Reclaimed Sand, Gravel, Clay Pits

BBSS



Joppa Sand & Gravel



Rossville Industrial Park



Potentially Recoverable Sites

Power Plant Storage Sites

Power Plant Storage Sites



Potentially Recoverable Sites

Other

Cumberland 1



Dyson Rd.



Moran Coal Co.



Piscataway Sites



Next Steps



- Develop scorecard to prioritize potentially recoverable sites.
 - Assess material quality (laboratory samples)
 - Assess material quantity
 - Identify degree of environmental risk posed by site
- Determine permit requirements (state, county, local)
- Contact site owner
 - Verify site use status and land use plans
 - Determine whether owner is amenable to CCB recovery
- Identify local stakeholders and outreach opportunities
- Assess transportation methods and logistics

Current Ash Activities

(Harvesting “low-hanging fruit”)



MERG Projects

- R. Paul Smith – Working with First Energy to accelerate CCB removal on WV side of Potomac River and seek MDE permit to mine CCBs on the flood plain of the Maryland side.
- Brandywine – Seeking contract to mine stored CCBs for beneficiation at STAR II.
- Verso Paper Mill – Investigating economics of moving daily production and legacy ash to Lehigh Cement Co.
- Dickerson/Westland – Completed CCB sampling & testing. Seeking permit to mine and transportation arrangements to send stored CCBs to Lehigh Cement.
- Mount Storm (West Virginia power plant) – Expand marketing of gypsum from current 20,000 tons/yr to 40,000 tons/yr.
- Former Warren Co., VA Power Plant – Working with First Energy to sample legacy ash left on flood plain of the Shenandoah River.

Sampling at Westland Ash Site



Westland Fly Ash Site
Sampling 10.17.17
SAMPLE BUCKETS
WSTLD#1 39°11'24.12"N, 77°27'28.32"W
WSTLD#2 39°11'23.91"N, 77°27'28.24"W
WSTLD#3 39°11'35.94"N, 77°27'20.43"W

Imagery Date: 4/14/2016 39°11'31.69" N 77°27'02.86" W elev. 0 ft eye alt 2903 ft

Current Ash Activities

(Harvesting “low-hanging fruit”)



SEFA Lead Project

- Seeking to operate STAR II at full capacity.

Shale Energy Recovery & Restoration Group (SHRRG)

- Marketing Warrior Run CCBs for stabilization of drill cuttings.

Current Ash Activities

(Harvesting “low-hanging fruit”)



PPRP Projects

- Seeking to prioritize CCB mining in Chesapeake Bay Watershed through investigation of current impacts on water quality or threat of impacts on water quality. (Comparable to Duke University investigation of coal ash ponds in Southeastern United States.)
- Mapping of coal fired power plants and associated CCB sites throughout Chesapeake Bay Watershed
 - Maryland – FSU identifying sampling points for potentially recoverable MD ash sites.
 - Virginia - Avtex Fibers Superfund Site – FSU GIS Center working with EPA on potential to mine CCBs disposed onsite.
 - Pennsylvania – Priority mapping of PA power plants reported to be releasing bromates to the Susquehanna River

Thank You!



Questions?