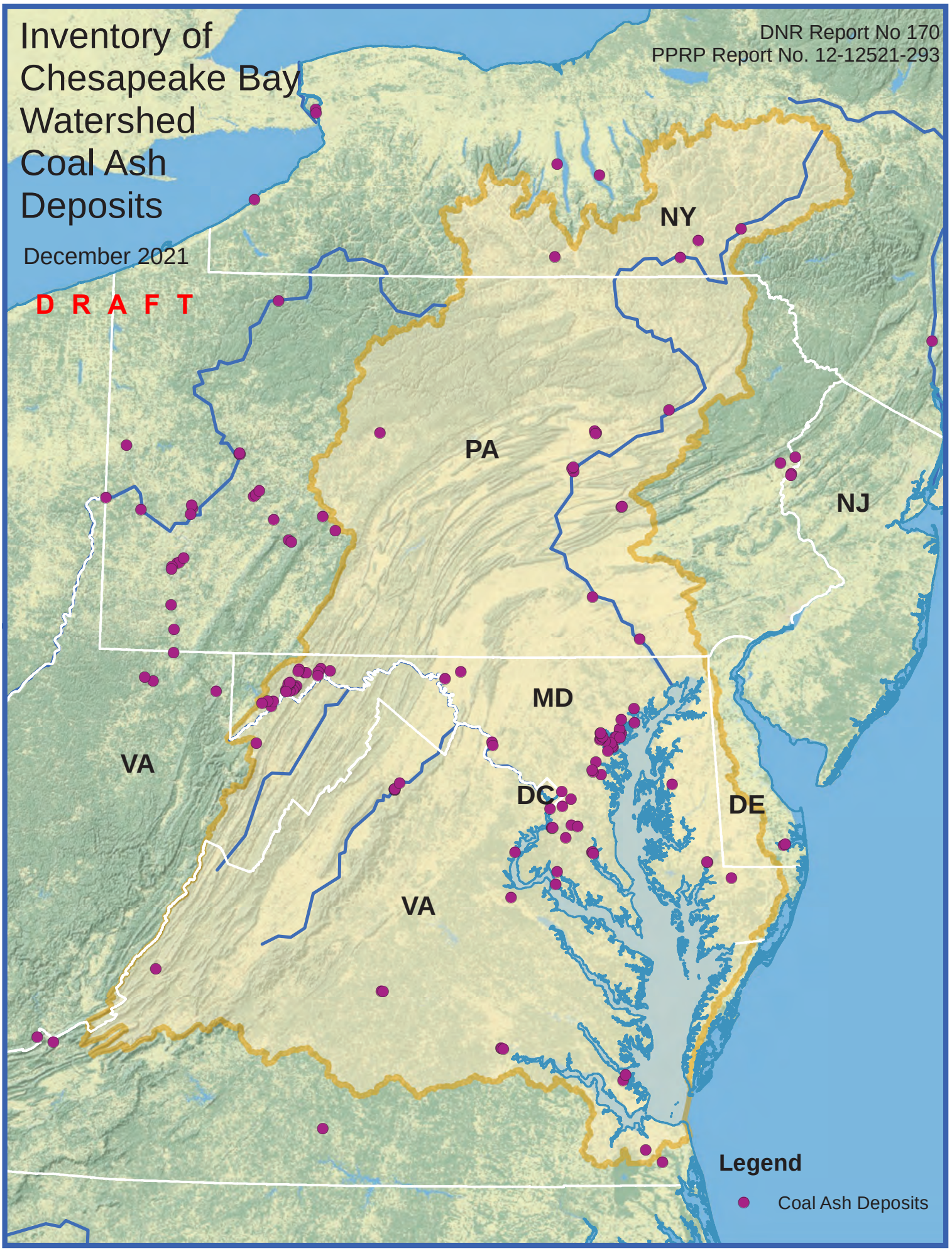

Inventory of Chesapeake Bay Watershed Coal Ash Deposits
December 2021
D R A F T
DNR Report No 170
PPRP Report No. 12-12521-293
NY
PA
NJ
MD
VA
DC
DE
VA
Legend
Coal Ash Deposits

Chesapeake Bay Watershed Coal Ash Inventory
Preface

Coal ash (also known as coal combustion residuals (CCR) or coal combustion by-products (CCBs)) is the solid residue that remains after coal is burned. The term coal ash includes both non-combustible mineral components contained within coal (fly ash, bottom ash, boiler slag, fluidized bed combustion ash (FBC), etc.), as well as solid emission control residues from scrubbers (flue gas desulfurization material (FGD)). These materials have been produced in one form or another since coal was first used for energy production. While these materials do not generally meet the definition of hazardous wastes as defined under the Resource Conservation and Recovery Act (RCRA), they may contain concentrated levels of toxic metals such as arsenic and mercury that were naturally present in the coal. Furthermore, the small particle size and high surface area of some coal ash materials; especially fly ash, facilitates leaching of these metals into groundwater and surface water. Beyond just being a waste product, the various types of coal ash have distinctive chemical and physical properties that make them useful as raw materials in a variety of manufactured products such as cement, concrete, grout, brick, tile, and wallboard.

In acknowledgement of the potential beneficial uses of CCBs, the Maryland Pozzolan Act was passed in 1974. The act addresses materials with pozzolanic properties, meaning that they will participate in cementitious reactions when mixed with free lime and water. Fly ash is a classic example of an effective and high-quality pozzolan material. The Pozzolan Act provided that pozzolanic materials should be beneficially used or stored in a manner to allow for future beneficial use.

In part because of the utility of coal ash for manufactured products, the 1980 Bevill Amendment excluded coal ash materials from the definition of waste under RCRA. Under this regulatory framework, coal ash was stored or disposed of in a variety of lined and unlined ponds and landfills and was utilized as structural fill (i.e. used to replace excavated earth in a matter that can support structures) at many sites across the United States. National attention was drawn to the handling of coal ash when a dam failure in Kingston, Tennessee in December 2008 resulted in a significant release of coal ash and impacted waters that caused severe environmental damage. During the period following, the United States Environmental Protection Agency (EPA) released reports about other cases in which coal ash fills (areas where coal ash had been used in large quantities to backfill pits or depressions or to re-contour the landscape) had been found to have caused environmental damage; among these "damage cases" was a former sand and gravel mine in Gambrills, Maryland (known as the BBSS Site). These damage cases led the EPA to establish the 2015 Federal CCR Rule (Rule), the federal rule for coal ash disposal. This rule established requirements for site selection and construction of new disposal sites, groundwater monitoring requirements for new and existing disposal sites, and closure timelines for non-compliant disposal sites.

However, the Rule did not address the millions of tons of coal ash that had been placed into unlined landfills, ponds, and structural fill sites that were closed prior to its enactment (also called "legacy sites"). These sites continue to have the potential to impact groundwater and surface water resources, not just in their immediate vicinity, but at downstream locations.

Within the Chesapeake Bay watershed, there are more than 80 deposits known to contain coal ash materials. The deposits range in size from five acres to hundreds of acres; some are small, containing hundreds or thousands of tons of material, while others contain millions of tons of material. The oldest known deposits date back to the 1950s. Many older sites have been closed, following the standards in place at the time of their closure, but some sites are currently in use or awaiting closure. Some deposits have groundwater monitoring networks in place and some have been the subject of groundwater investigations, but many have never been subject to groundwater monitoring, as it was not required at the time of ash placement. The continuing potential of legacy coal ash sites to impact water quality was highlighted by a report published in 2019 by the Environmental Integrity Project (EIP). The EIP used groundwater monitoring data published under the 2015 Federal CCR Rule to determine that the majority of coal ash disposal sites regulated under the Rule exhibit elevated concentrations of metals in nearby groundwater resources.

This inventory of coal ash deposits in the Chesapeake Bay watershed documents what is known about the relationship of these deposits to water quality. The Maryland Power Plant Research Program seeks to promote the recovery of coal ash deposits for beneficial use in a manner that will minimize their future impact on water quality. Ash that is recovered and beneficially used in solidified products like concrete, grout, brick, and tile has only minimal impact potential to the environment. Coal ash that is sold for beneficial use is a potential economic benefit to the owners of coal ash fill sites and industries that use by-products like coal ash in their products may find these materials more affordable than virgin raw materials. Thus, the beneficial use of coal ash in manufactured products provides both environmental and economic benefits. Even at sites where recovery of ash for beneficial use may not be logistically, or economically feasible, a reliable record of their presence in closed disposal and fill sites is important for monitoring and protecting water resources in the vicinity. It is necessary to record where these sites are located and be aware of planned redevelopment activities that could disturb the soil in these areas. This inventory was created to provide this kind of record.

Abstract

Decades of coal combustion for energy production in Maryland and across the Chesapeake Bay watershed have left numerous sites where coal ash was disposed of in landfills, ponds, and structural fill sites. Coal ash placed in such sites and not solidified into a solid matrix can leach metals to groundwater that eventually discharges to surface water. This inventory of coal ash deposits in the Chesapeake Bay watershed documents the locations of more than 80 known coal ash storage, use, and disposal sites and summarizes what is known about their history and relationship to water quality. These sites provide a source of ash that can be recovered and beneficially used in solidified products like concrete, grout, brick, and tile significantly reducing the need for natural materials and potential impacts to the environment. Even at sites where recovery of ash for beneficial use may not be logistically, or economically feasible, a reliable record of the presence of coal ash in closed disposal and structural fill sites is important for monitoring and protecting water resources in the vicinity. This inventory provides a necessary record of where these sites are located for use by land developers, potential consumers, and interested stakeholders.

Maryland Sites

Maryland:
Allegany County

AMCELLE RUBBLE LANDFILL COAL ASH DEPOSIT

Source: GoogleEarth, 2020; Image date September 2016.

Site Name: Amcelle Rubble Landfill

State, County, City: Maryland, Allegany County, Cumberland

Site Address: 13800 McMullen Hwy, SW, Cumberland

Coordinates: 39°35'53.13"N, 78°49'55.60"W

Owner/Contact: Carl Lazerow; Maryland Department of Public Safety; and Correctional Services

Number and Type of CCR Storage Units: 1 Structural fill

Accepted Materials (e.g. fly ash, gypsum): Unknown, likely Class F fly ash and bottom ash under landfill; the landfill received building demolition debris

Estimated Quantity of CCRs: Unknown

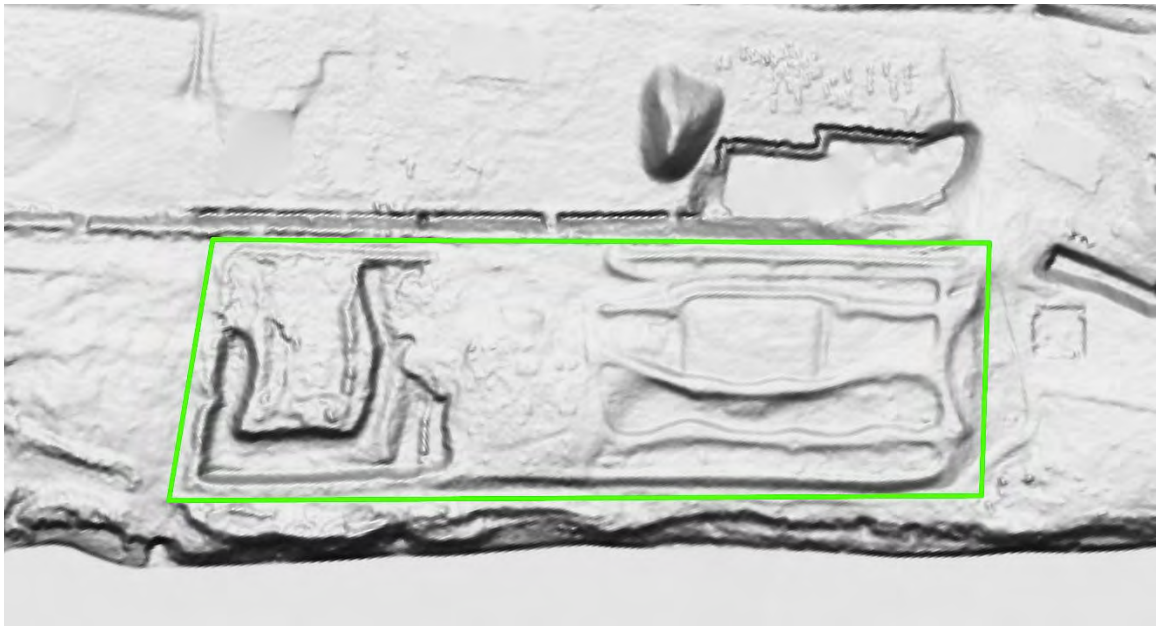
Estimated Area: 6.3 acres

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: October 2019

AMCELLE RUBBLE LANDFILL COAL ASH DEPOSIT – LiDAR HILLSHADE



Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data

Notes

Site History: The rubble landfill was constructed over a portion of a former CCR lagoon owned by Celanese, a manufacturing plant in Cumberland. The remaining portion of the former lagoon may have been intended to be a county landfill that was never constructed. The rubble landfill was closed and capped as of 2010. MDE 2010 CCR fact sheet indicates that vegetation is present on the CCR fill area not covered by the rubble landfill. The location marked in this image is based upon the appearance of land in this area and proximity to Amcelle St.

Environmental Impacts: Groundwater is monitored through a groundwater discharge permit that was renewed in 2020 (MDE, 2020).

Sources: Allegany County, 2011; MDE, 2010; MDE, 2019; MDE, 2020c

CABIN RUN/VINDEX ENERGY #6 COAL ASH DEPOSIT

Source: GoogleEarth, 2020; Image Date July 2020
Dashed line shows possible fill area based on surface morphology.

Site Name: Cabin Run/Vindex Energy #6

State, County, City: Maryland, Allegany County

Site Address: Southwest quadrant of intersection of Cabin Run Road and Rt. 36

Coordinates: 39°36'49.25"N 78°55'18.19"W

Owner/Contact: Beechwood Coal, LLC

Number and Type of CCR Storage Units: 1 Structural fill

Accepted Materials (e.g. fly ash, gypsum): FBC Fly ash and bottom ash

Estimated Quantity of CCRs: Unknown

Estimated Area: Unknown

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: October 2019

CABIN RUN/VINDEX ENERGY #6 ASH DEPOSIT – LiDAR HILLSHADE

Source: Maryland Department of Information Technology,
Geographic Information Office, Maryland iMAP LiDAR data
Dashed line shows possible fill area based on surface morphology.

Notes

Site History: MDE Site ID# SM-01-439. As of June 2017, the site was listed as "Active." Alkaline fluidized bed combustion (FBC) fly ash and bottom ash from Warrior Run Power Plant were used to reclaim surface mine. Records search indicates a Cabin Run Landfill for mixed wastes operated from 1975-1981. The landfill was associated with a former coal surface mine, but there are no records of CCR disposal there (see MDE, 2010). It is unclear if the mining and use of CCRs to backfill the mine (2012-2016) are associated with that site.

Environmental Impacts: Investigations were performed by MDE and EPA associated with Cabin Run Landfill in the late 1990s; it is unclear if this is associated with recent CCR use (2012-2016).

Sources: MDE, 2010; Hooker, 2017; MDE CCB, 2008-2017; Maryland MERLIN Online

DRAFT

COBRA MINING, INC. COAL ASH DEPOSIT

Source: GoogleEarth, 2020; Image Date November 2016
Dashed line shows possible fill area based on surface morphology.

Site Name: Cobra Mining, Inc.

State, County, City: Maryland, Allegany County

Site Address: Potomac Hollow Road - 0.5 miles East of Barton

Coordinates: 39°31'0.33"N 78°59'33.02"W

Owner/Contact: Vindex Energy Corp.

Number and Type of CCR Storage Units: 1 Structural fill

Accepted Materials (e.g. fly ash, gypsum): FBC Fly ash and bottom ash

Estimated Quantity of CCRs: Unknown

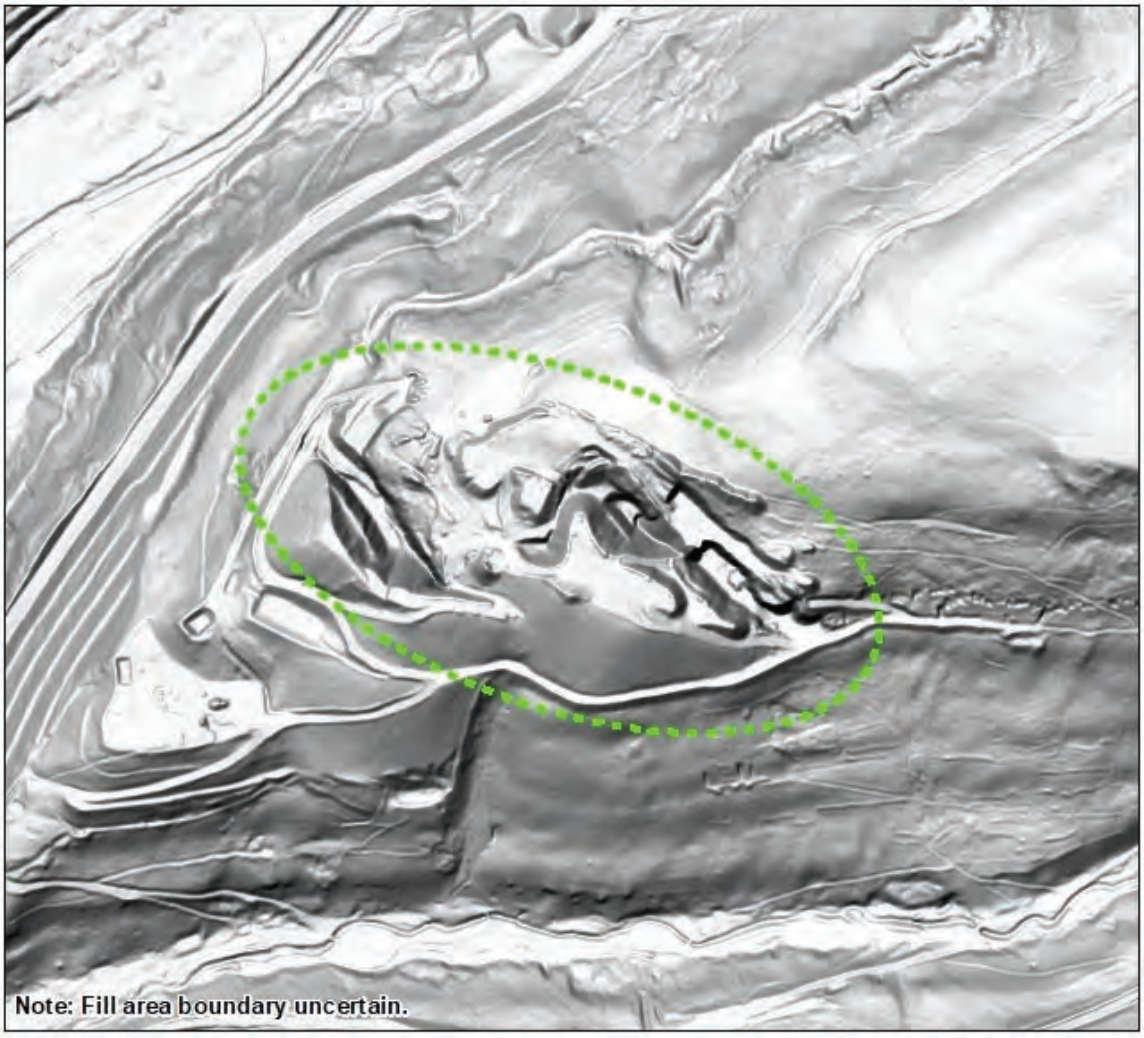
Estimated Area: Unknown

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: October 2020

COBRA MINING, INC. ASH DEPOSIT – LiDAR HILLSHADE



Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data

Notes

Site History: MDE Site ID# SM-01-437. As of June 2017, site status was listed as Active. Alkaline fluidized bed combustion (FBC) fly ash and bottom ash from the Warrior Run Power Plant were used to reclaim surface mine between 2004 and 2010.

Environmental Impacts: No information available.

Sources: MDE, 2010; Hooker, 2017; PPSP, 1982a; MDE, 2008-2017; Maryland MERLIN Online

CUMBERLAND SITE 1 COAL ASH DEPOSIT

Source: GoogleEarth 2020; Image date September 2016

Site Name: Cumberland Site 1

State, County, City: Maryland, Allegany County, Cumberland

Address: West Side of Rt. 220 near intersection with Upper Potomac Industrial Park St.

Coordinates: 39°38'14.50"N 78°47'55.36"W

Owner: Franklenberry Barth A. Sr-Donald K.

Number and Type of CCR Storage Units Onsite: 1 Structural fill

Accepted Materials: Class F fly ash, bottom ash

Estimated Quantity of CCRs: Unknown

Estimated Area: Approximately 5 acres (PPSP, 1982a)

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: September 2020

CUMBERLAND SITE 1 COAL ASH DEPOSIT– LiDAR HILLSHADE

Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data

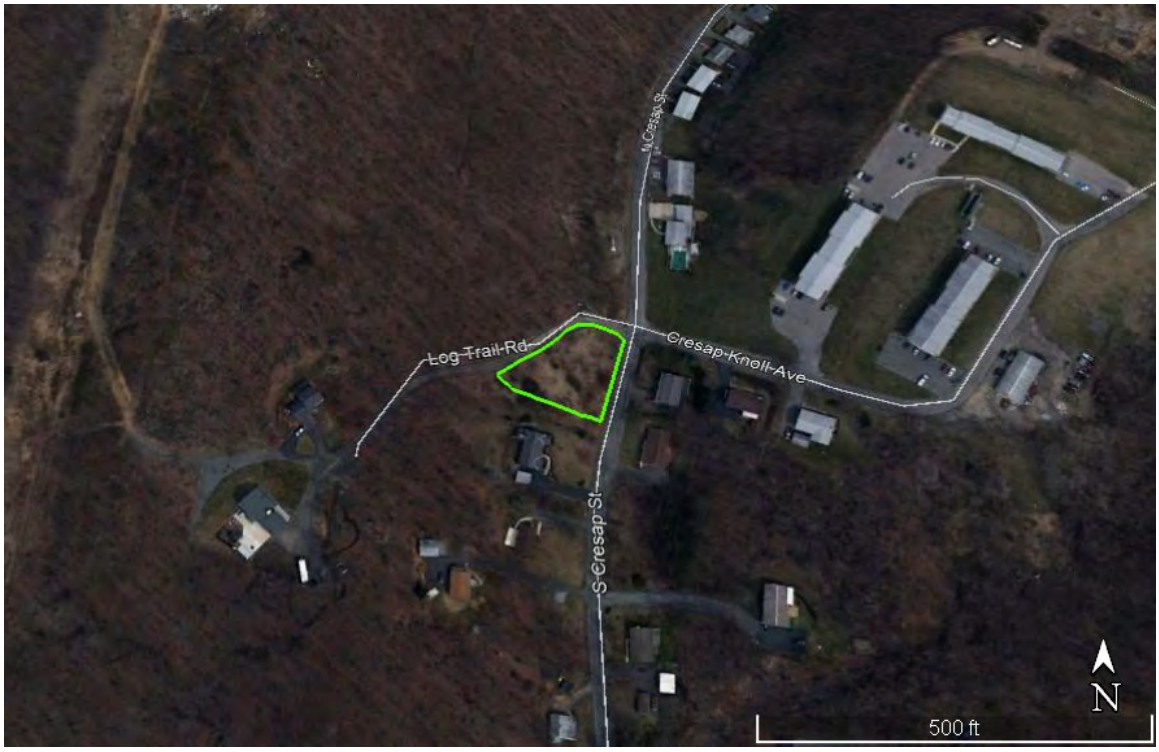
Notes

Site History: Site location and area are approximate. The site received fly ash and bottom ash from the Cumberland Power Plant from the late 1950s to the early 1960s. The Cumberland power plant generated relatively small quantities of ash that, at this time, were disposed of in "landfills south of Cumberland" (PPSP, 1982a). The plant stopped burning coal in 1970.

Environmental Impacts: No information available.

Sources: PPSP, 1982a; Maryland MERLIN Online

CUMBERLAND SITE 2 COAL ASH DEPOSIT



Source: GoogleEarth 2020; Image date November 2016

Site Name: Cumberland Site 2

State, County, City: Maryland, Allegany County, Cumberland

Address: West of N. Cresap St.

Coordinates: 39°37'6.67"N 78°48'42.63"W

Owner: Oster Wayne A. Firlie

Number and Type of CCR Storage Units Onsite: 1 Structural fill

Accepted Materials: Class F fly ash, bottom ash

Estimated Quantity of CCRs: Unknown

Estimated Area: Approximately 5 acres (PPSP, 1982a)

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: September 2020

CUMBERLAND SITE 2 COAL ASH DEPOSIT– LiDAR HILLSHADE

Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data

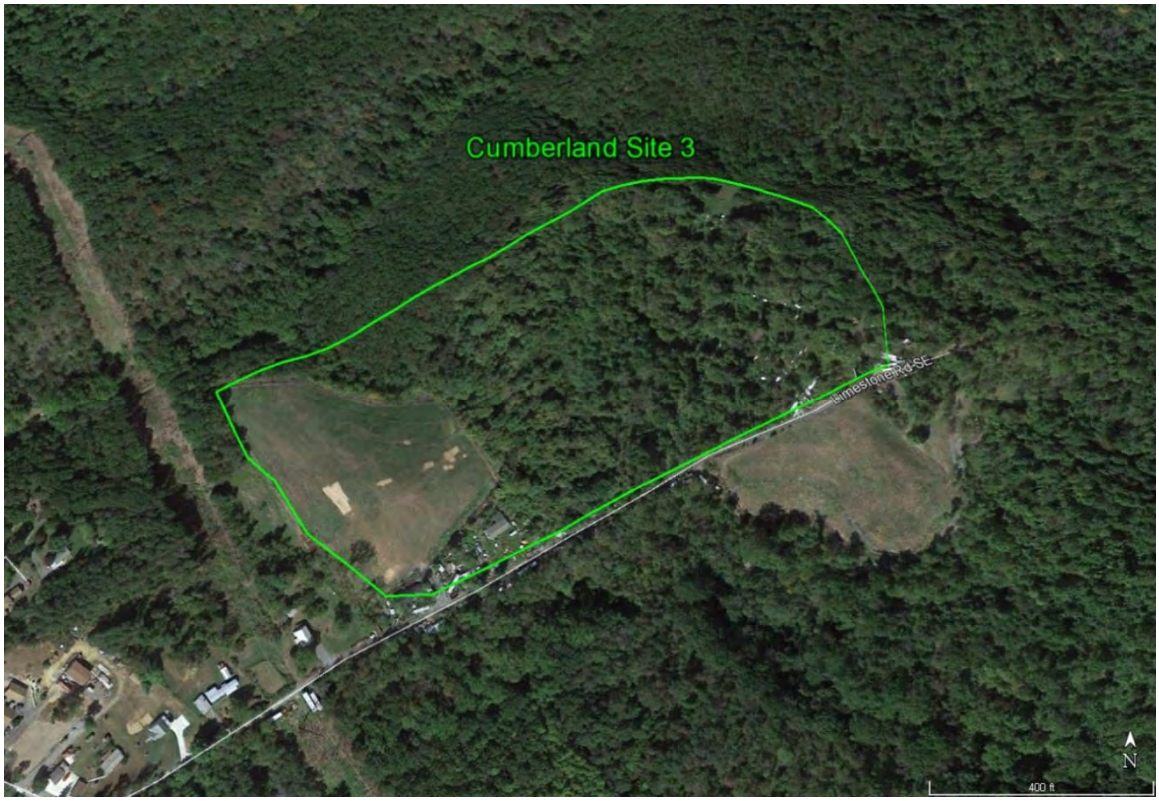
Notes

Site History: Site location and area are approximate. It appears that Log Trail Road may have been constructed over part of the fill site. The Cumberland Power Plant generated only small quantities of ash that were disposed of in landfills south of Cumberland. The Cumberland Power Plant stopped burning coal in 1970 (PPSP, 1982a).

Environmental Impacts: No information available.

Sources: PPSP, 1982a; Maryland MERLIN Online

CUMBERLAND SITE 3 COAL ASH DEPOSIT



Source: GoogleEarth, 2020; Image date September 2016.

Site Name: Cumberland Site 3

State, County, City: Maryland, Allegany County, Cumberland

Address: North of Limestone Rd.

Coordinates: 39°37'31.89"N 78°43'34.55"W

Owner: Diggs, Joseph T. (associated with a former landfill), possibly also Brabson Delmas Ray-Carolyn

Number and Type of CCR Storage Units Onsite: 1 Landfill

Accepted Materials: Class F fly ash, bottom ash, domestic waste

Estimated Quantity of CCRs: Unknown

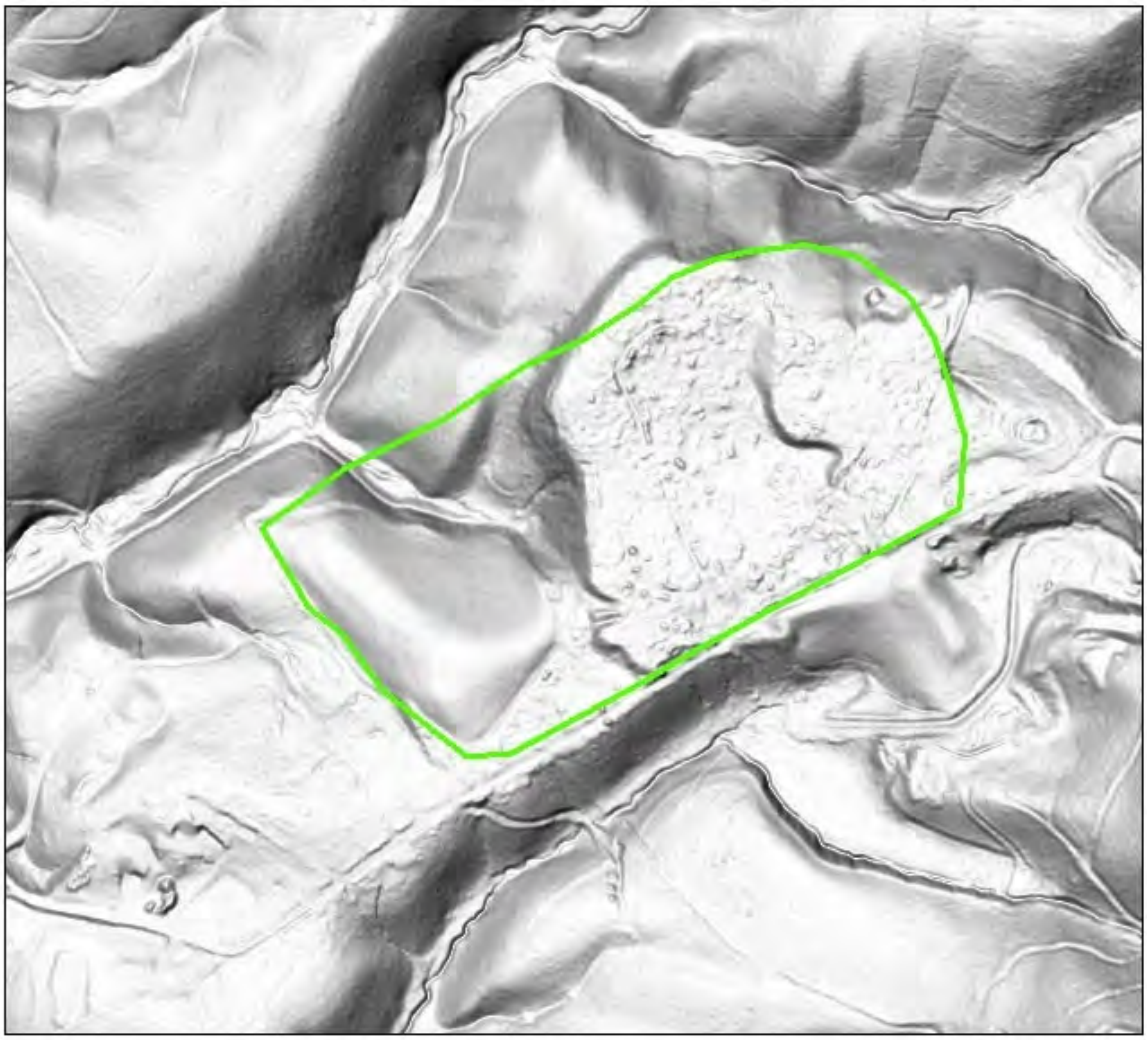
Estimated Area: 5 acres

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: September 2020

CUMBERLAND SITE 3 COAL ASH DEPOSIT – LiDAR HILLSHADE



Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data

Notes

Site History: Site location and area are approximate. The site received fly ash and bottom ash from the Cumberland Power Plant from the late 1950s to the early 1960s. The Cumberland Power Plant generated relatively small quantities of ash that, at this time, were disposed of in "landfills south of Cumberland". The plant stopped burning coal
in 1970.

Environmental Impacts: The site is located on Limestone Road south of Cumberland and is near the Diggs Sanitary Landfill former Superfund site. Operations ceased in 1968. The site was listed with the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) in 1981. State and federal investigations occurred in 1981, 1986, and 1992. The site was archived in CERCLIS in 1994.

Sources: PPSP, 1982a; Maryland MERLIN Online

G&S COAL CO. #4 COAL ASH DEPOSIT

Source: GoogleEarth, 2020. Image Date: November 2016
Dashed line shows possible fill area based on surface morphology.

Site Name: G&S Coal Co. #4

State, County, City: Maryland, Allegany County

Address: Miller Road, South of Barton, 1 mile east of Rt. 36 Intersection

Coordinates: 39°30'33.45"N 79°0'36.60"W

Owner: TTT Coal Co., Inc.

Number and Type of CCR Storage Units Onsite: 1 Structural fill

Accepted Materials: FBC fly ash and bottom ash

Estimated Quantity of CCRs: Unknown

Estimated Area: Unknown

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: September 2020

G&S COAL CO. #4 COAL ASH DEPOSIT – LiDAR HILLSHADE

Source: Maryland Department of Information Technology,
Geographic Information Office, Maryland iMAP LiDAR data
Dashed line shows possible fill area based on surface morphology.

Notes

Site History: MDE ID#: SM-01-440. As of June 2017, site status was listed as Active. Alkaline FBC fly ash and bottom ash from the Warrior Run Power Plant were used to reclaim a surface coal mine. Active status indicated in 2010 Fact Sheet and appearance on satellite image.

Environmental Impacts: MDE, 2010 indicates that offsite water monitoring has been performed.

Sources: Hooker, 2017; MDE, 2010; Maryland MERLIN Online

MOUNTAIN VIEW LANDFILL COAL ASH DEPOSIT

Source: GoogleEarth, 2020. Image Date: November 2016

Site Name: Mountain View Landfill

State, County, City: Maryland, Allegany County

Address: 13300 New George's Creek Road, Frostburg

Coordinates: 39°36'43.81"N 78°54'35.32" W

Owner: Chambers of MD, Inc.

Number and Type of CCR Storage Units Onsite: 1 Landfill

Accepted Materials: Class F fly, possible bottom ash, and domestic waste

Estimated Quantity of CCRs: Approximately 10,000 tons (MDE, 2010)

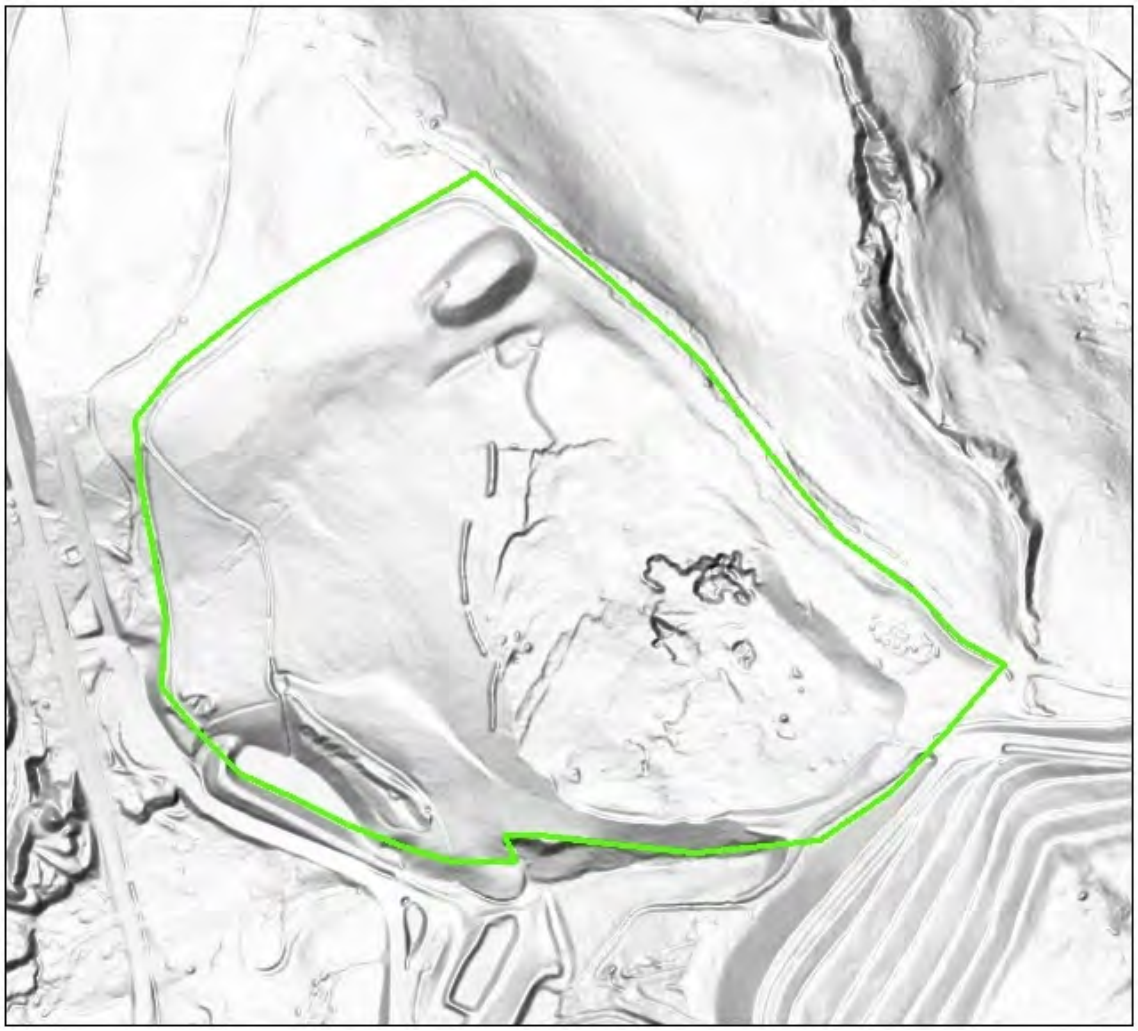
Estimated Area: Unknown

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: October 2020

MOUNTAIN VIEW LANDFILL COAL ASH DEPOSIT – LiDAR HILLSHADE



Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data

Notes

Site History: Class F fly ash from the Brandon Shores and H.A. Wagner Power Plant was disposed of at the site. The full period of active disposal is unknown but as of 2008 approximately 10,000 tons of CCRs had been disposed at the site (MDE, 2010). The facility was still active as of 2021.

Environmental Impacts: Groundwater monitoring is performed onsite in accordance with the landfill permit (MDE, 2010).

Sources: MDE, 2010; Allegany Co. Maryland, 2021.

RITCHIE TRUCKING AND EXCAVATION COAL ASH DEPOSIT

Source: GoogleEarth, 2019; Image Date November 2016.
Dashed line shows possible fill area based on surface morphology.

Site Name: Ritchie Trucking and Excavating

State, County, City: Maryland, Allegany County

Site Address: Midlothian Rd 1 mile south of Frostburg

Coordinates: 39°39'4.73"N 78°56'55.94"W

Owner/Contact: Allegany Coal Land Co.

Number and Type of CCR Storage Units: 1 Structural fill

Accepted Materials (e.g. fly ash, gypsum): FBC Fly ash and bottom ash

Estimated Quantity of CCRs: Unknown

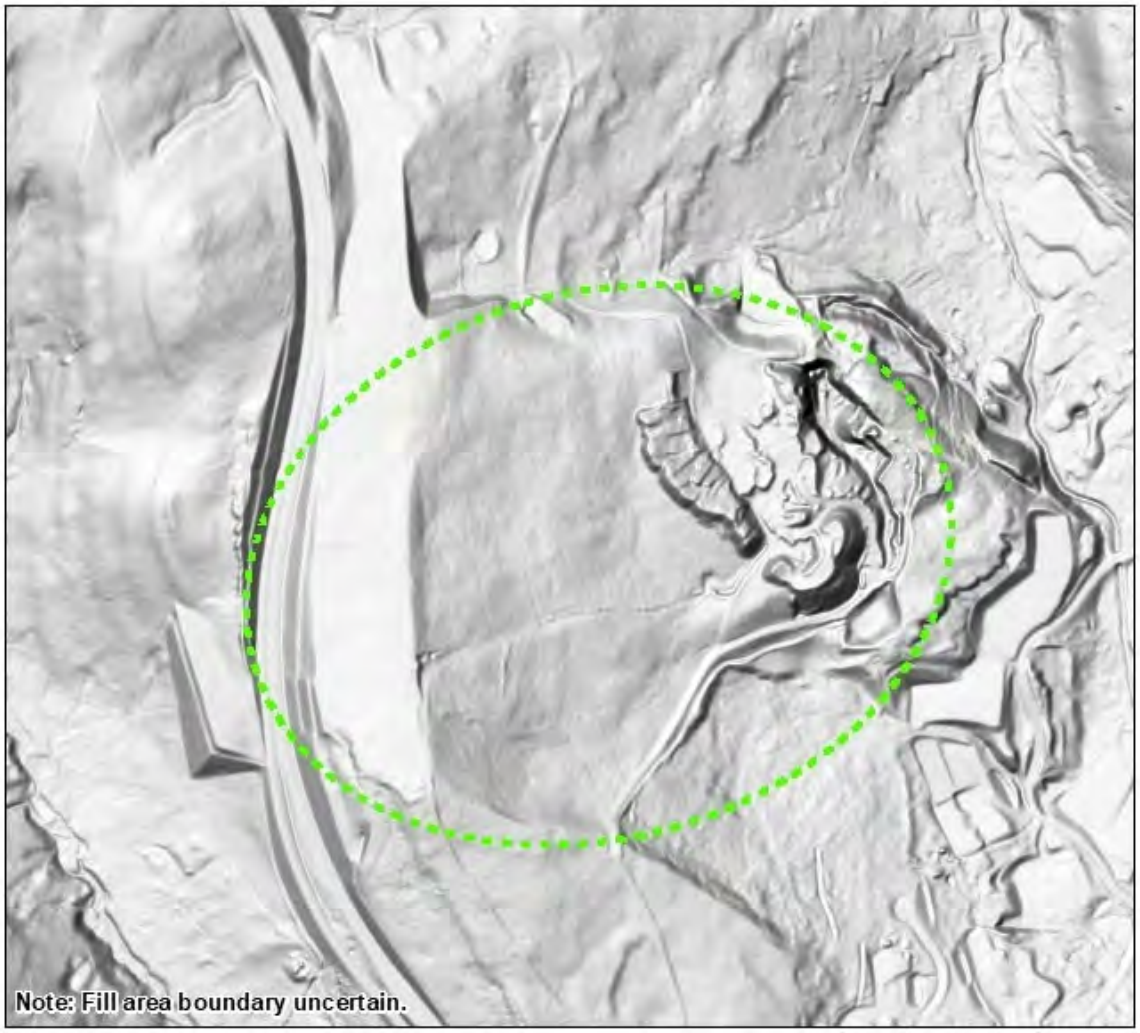
Estimated Area: Unknown

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: October 2020

RITCHIE TRUCKING AND EXCAVATION COAL ASH DEPOSIT – LiDAR HILLSHADE



Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data
Dashed line shows possible fill area based on surface morphology.

Notes

Site History: MDE ID#: SM-08-40. As of June 2017, site status is listed as capped. Alkaline fluidized bed combustion (FBC) fly ash and bottom ash from the Warrior Run Power Plant were used to reclaim the surface mine. The site has been inactive since 2010 (MDE, 2010).

Environmental Impacts: MDE, 2010 indicates that offsite water monitoring has been performed.

Sources: Hooker, 2017; MDE, 2010

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TRI-STAR MINING #3 COAL ASH DEPOSIT

Source: GoogleEarth 2019; Image Date: November 2016
Dashed line shows possible fill area based on surface morphology.

Site Name: Tri-Star Mining#3

State, County, City: Maryland, Allegany County

Site Address: Michael Road via Bartlett Run Rd - 2.1 miles west of Barton

Coordinates: 39°31'54.10"N 79°1'57.48"W

Owner/Contact: BTC Development

Number and Type of CCR Storage Units: 1 Structural fill

Accepted Materials (e.g. fly ash, gypsum): FBC Fly ash and bottom ash

Estimated Quantity of CCRs: Unknown

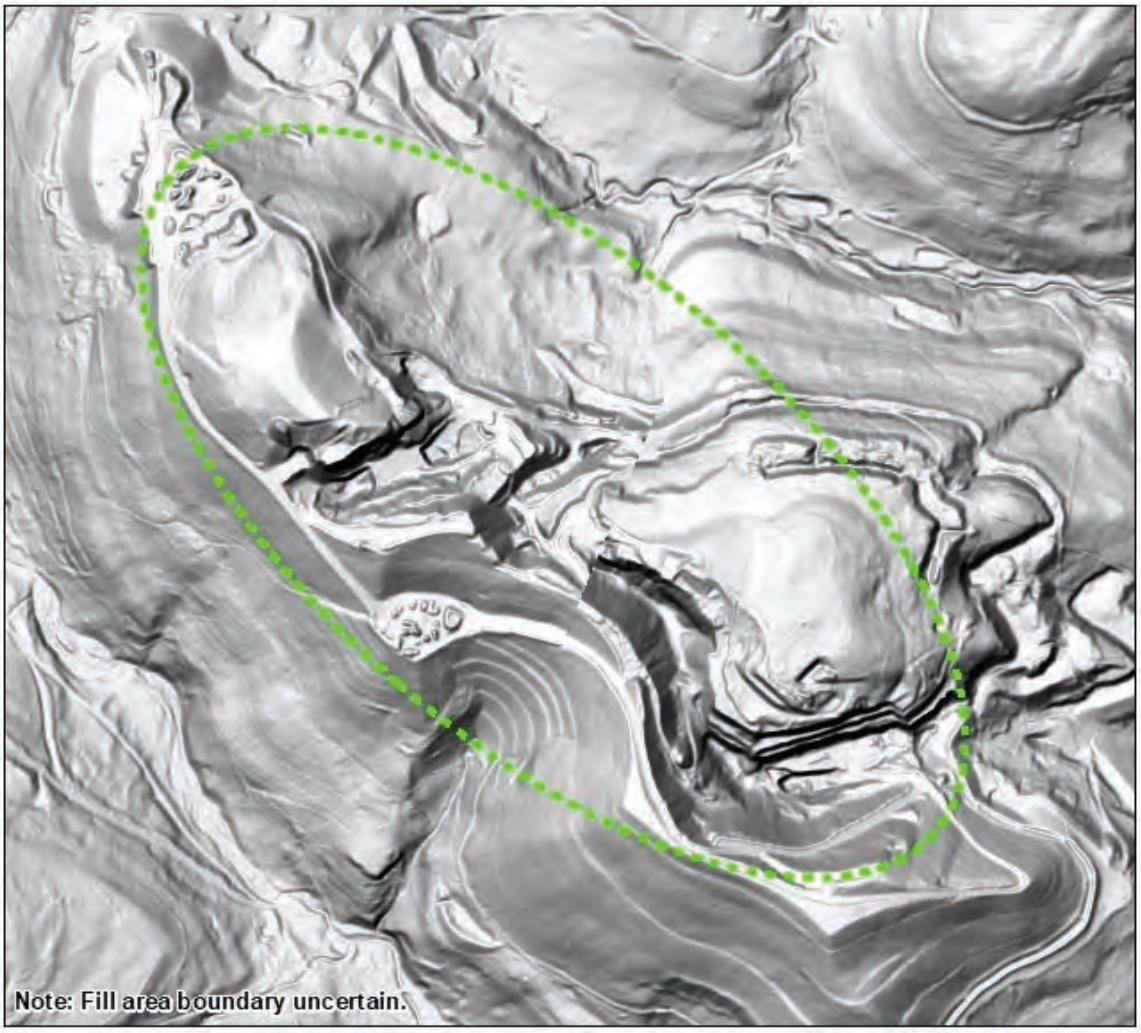
Estimated Area: Unknown

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: October 2020

TRI-STAR MINING #3 ASH DEPOSIT – LiDAR HILLSHADE



Source: Maryland Department of Information Technology,
Geographic Information Office, Maryland iMAP LiDAR data
Dashed line shows possible fill area based on surface morphology.

Notes

Site History: MDE ID#: SM-91-419. As of June 2017, site status was listed as complete. Alkaline fluidized bed combustion (FBC) fly ash and bottom ash from the Warrior Run Power Plant were used to reclaim a surface coal mine. Exact filling dates are uncertain, however, MDE records indicate that filling activities were completed before 2017.

Environmental Impacts: No information available.

Sources: Hooker, 2017; MDE, 2010; Maryland MERLIN Online

TRI-STAR MINING #4 COAL ASH DEPOSIT

Source: GoogleEarth, 2019; Image Date: November 2016
Dashed line shows possible fill area based on surface morphology.

Site Name: Tri-Star Mining#4

State, County, City: Maryland, Allegany County

Site Address: Rt. 36 1.3 miles north of Westernport

Coordinates: 39°29'57.46"N 79° 2'3.34"W;

Owner/Contact: Unclear from Maryland MERLIN Online

Number and Type of CCR Storage Units: 1 Structural fill

Accepted Materials (e.g. fly ash, gypsum): FBC Fly ash and bottom ash

Estimated Quantity of CCRs: Unknown

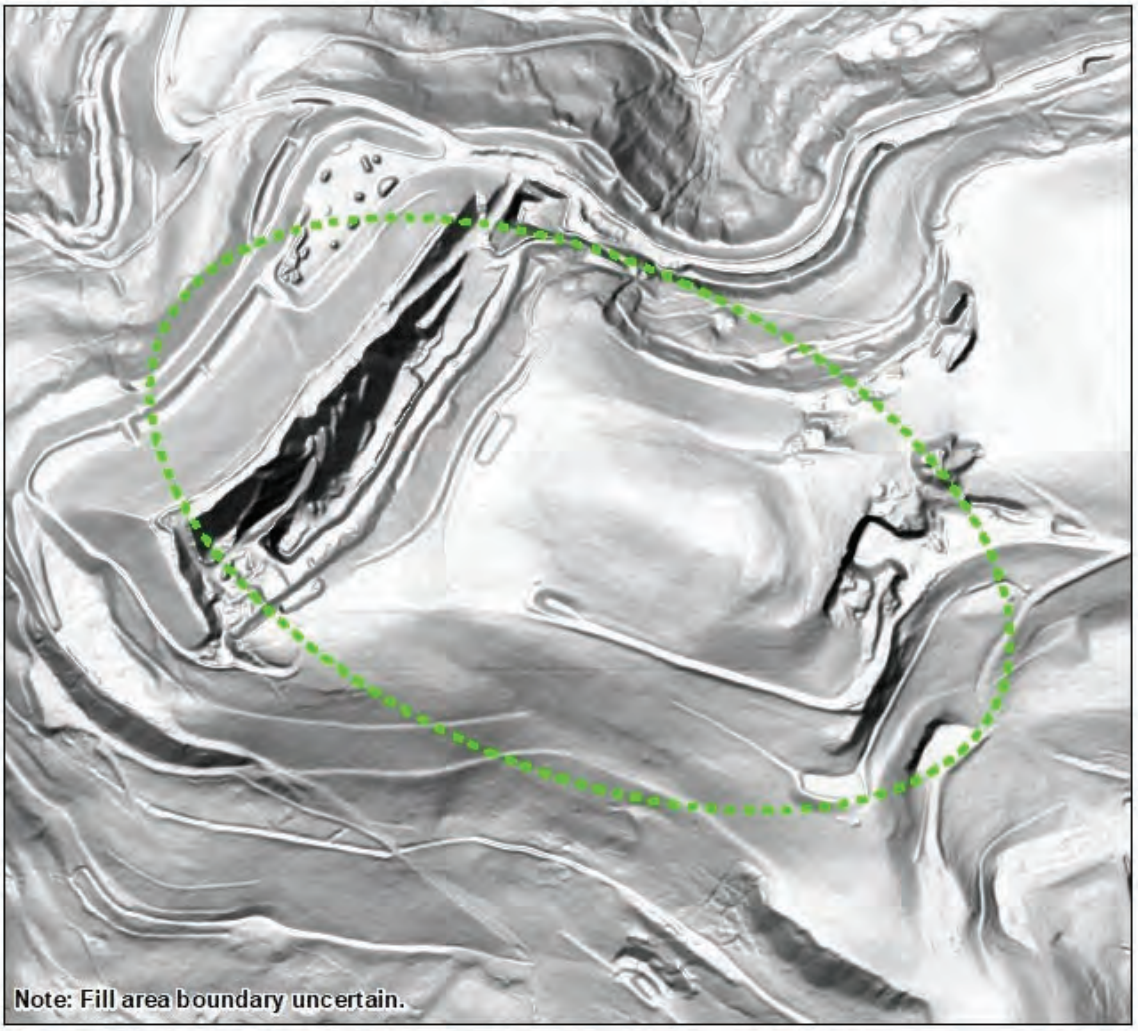
Estimated Area: Unknown

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: October 2020

TRI-STAR MINING #4 ASH DEPOSIT – LiDAR HILLSHADE



Source: Maryland Department of Information Technology,
Geographic Information Office, Maryland iMAP LiDAR data
Dashed line shows possible fill area based on surface morphology.

Notes

Site History: MDE ID#: SM-84-264. As of June 2017, site status was listed as complete. Alkaline fluidized bed combustion (FBC) fly ash and bottom ash from the Warrior Run Power Plant were used to reclaim a surface coal mine. Exact filling dates are uncertain, however, MDE records indicate that filling activities were completed before 2017.

Environmental Impacts: No information available.

Sources: MDE, 2010; Maryland MERLIN Online

VINEX ENERGY 4 COAL ASH DEPOSIT

Source: GoogleEarth, 2019. Image Date: November 2016.
Dashed line shows possible fill area based on surface morphology.

Site Name: Vindex Energy 4

State, County, City: Maryland, Allegany County

Address: Potomac Hollow Road - 0.2 miles east of Barton

Coordinates: 39°31'18.33"N 78°59'43.74"W

Owner: Zollner, LLC.

Number and Type of CCR Storage Units Onsite: 1 Structural fill

Accepted Materials: FBC fly ash and bottom ash

Estimated Quantity of CCRs: Unknown

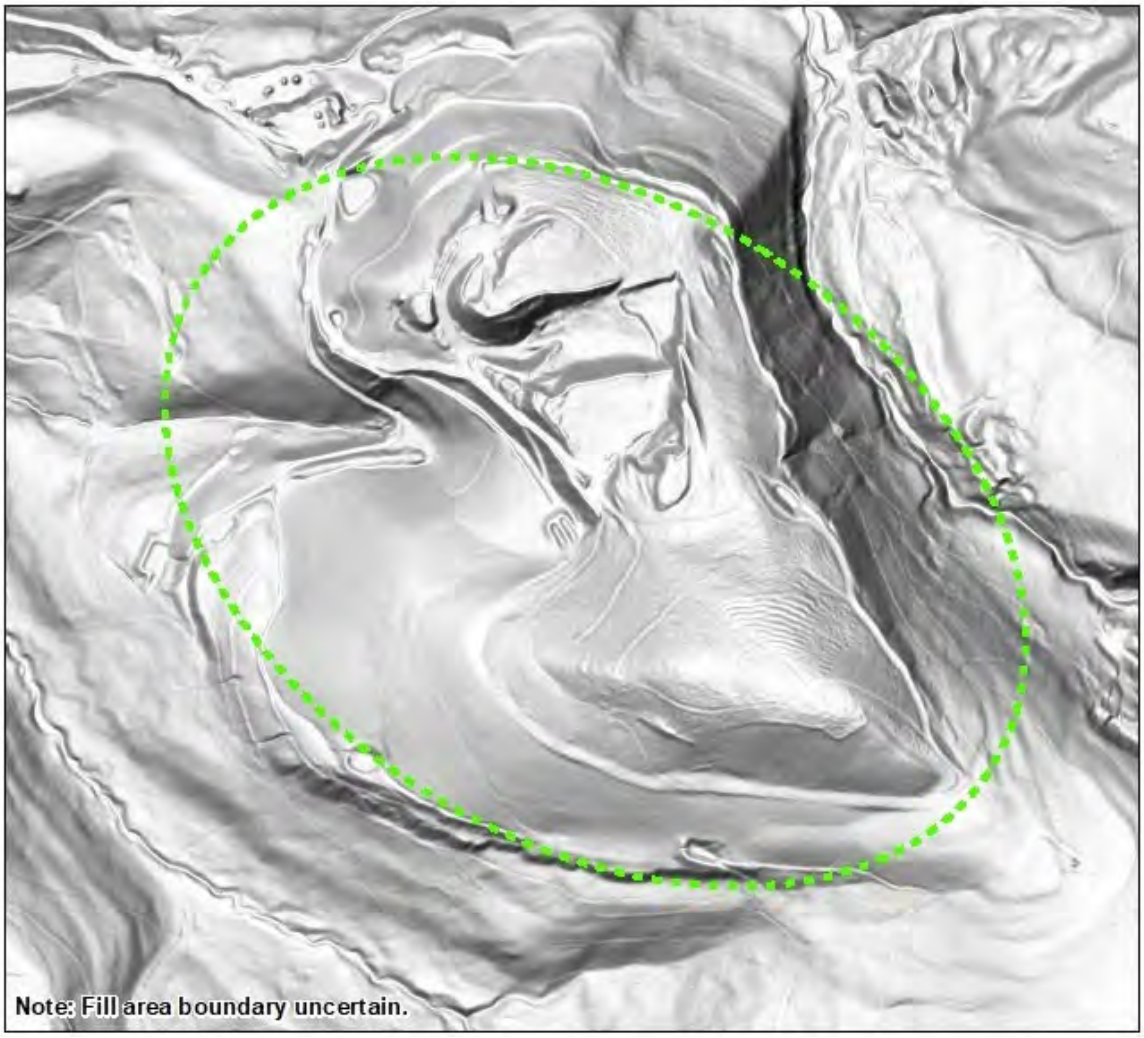
Estimated Area: Unknown

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: October 2020

VINEX ENERGY 4 COAL ASH DEPOSIT – LiDAR HILLSHADE



Source: Maryland Department of Information Technology,
Geographic Information Office, Maryland iMAP LiDAR data
Dashed line shows possible fill area based on surface morphology.

Notes

Site History: MDE ID#: SM-96-427 as of 2017 MDE lists the site status as complete. Alkaline fluidized bed combustion (FBC) fly ash and bottom ash were used to reclaim a surface coal mine. The period of active filling is uncertain but may have been between 2008 and 2009.

Environmental Impacts: No information available.

Sources: MDE, 2010; MDE, 2008-2017; Maryland MERLIN Online

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VINDEX ENERGY 5 COAL ASH SITE

Source: GoogleEarth, 2019. Image Date: November 2016
Dashed line shows possible fill area based on surface morphology.

Site Name: Vindex Energy 5

State, County, City: Maryland, Allegany County

Address: Potomac Hollow Rd east of Barton

Coordinates: 39°31'50.95"N 78°58'50.04"W

Owner: Vindex Energy Corp.

Number and Type of CCR Storage Units Onsite: 1 Structural fill

Accepted Materials: FBC Fly ash and bottom ash

Estimated Quantity of CCRs: Unknown

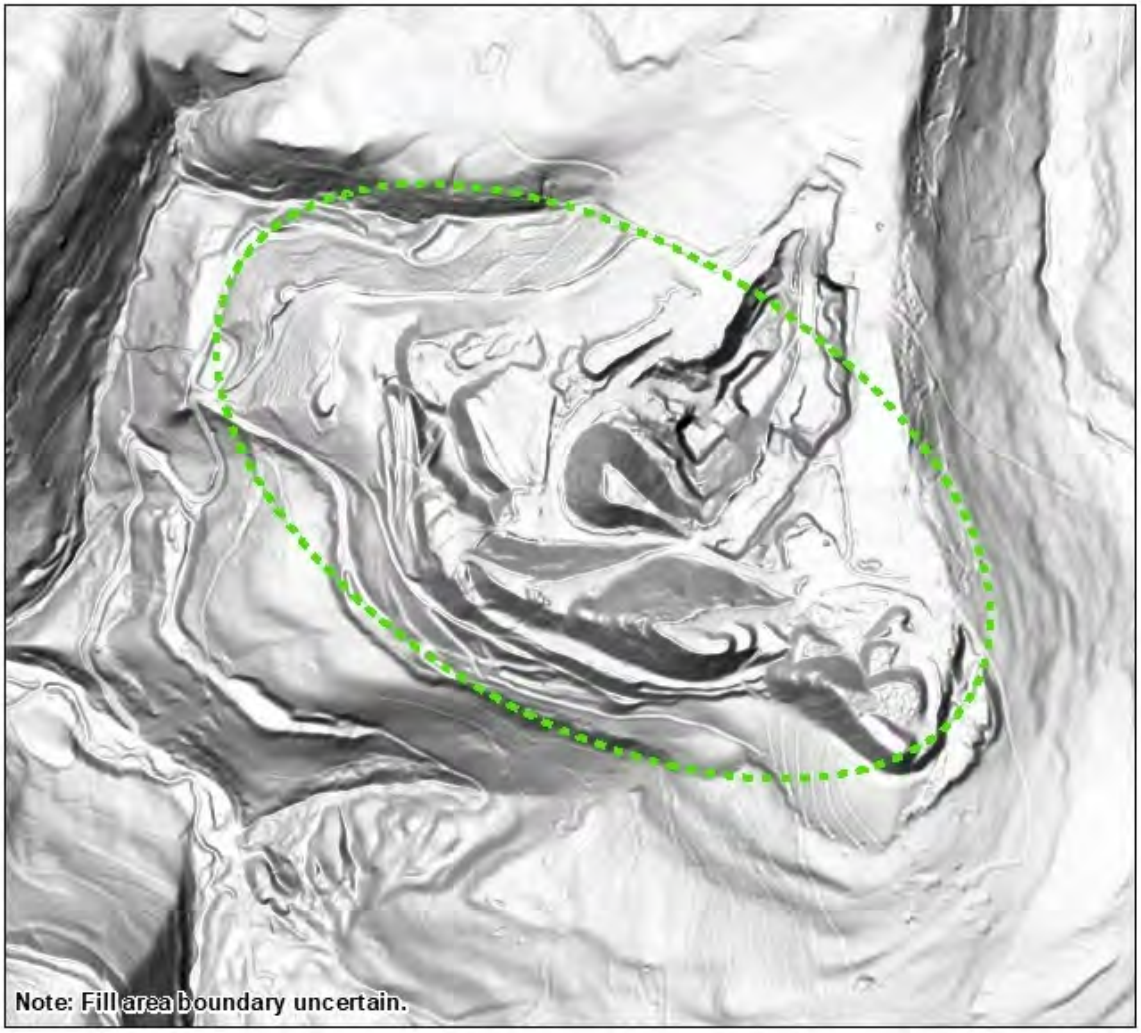
Estimated Area: Unknown

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: October 2020

VINDEX ENERGY 5 COAL ASH SITE – LiDAR HILLSHADE



Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data
Dashed line shows possible fill area based on surface morphology.

Notes

Site History: MDE ID#: SM-99-432. As of 2017 MDE lists the site status as active. Alkaline FBC fly ash and bottom ash from the Warrior Run Power Plant were used to reclaim a surface coal mine. The period of active filling is uncertain but may be 2008-2009.

Environmental Impacts: No information available.

Sources: Hooker, 2017; MDE, 2010; MDE, 2008-2017; Maryland MERLIN Online

VINDEX ENERGY CORP. – CARLOS COAL ASH SITE

Source: GoogleEarth, 2019. Image Date: November, 2016
Dashed line shows possible fill area based on surface morphology.

Site Name: Vindex Energy Corp. Carlos

State, County, City: Maryland, Allegany County

Address: Legislative Rd 1.4 miles south of Midlothian

Coordinates: 39°37'21.69"N 78°58'30.92"W

Owner: May be Vindex or Beechwood Coal, LLC

Number and Type of CCR Storage Units Onsite: 1 Structural fill

Accepted Materials: FBC Fly ash and bottom ash

Estimated Quantity of CCRs: Unknown

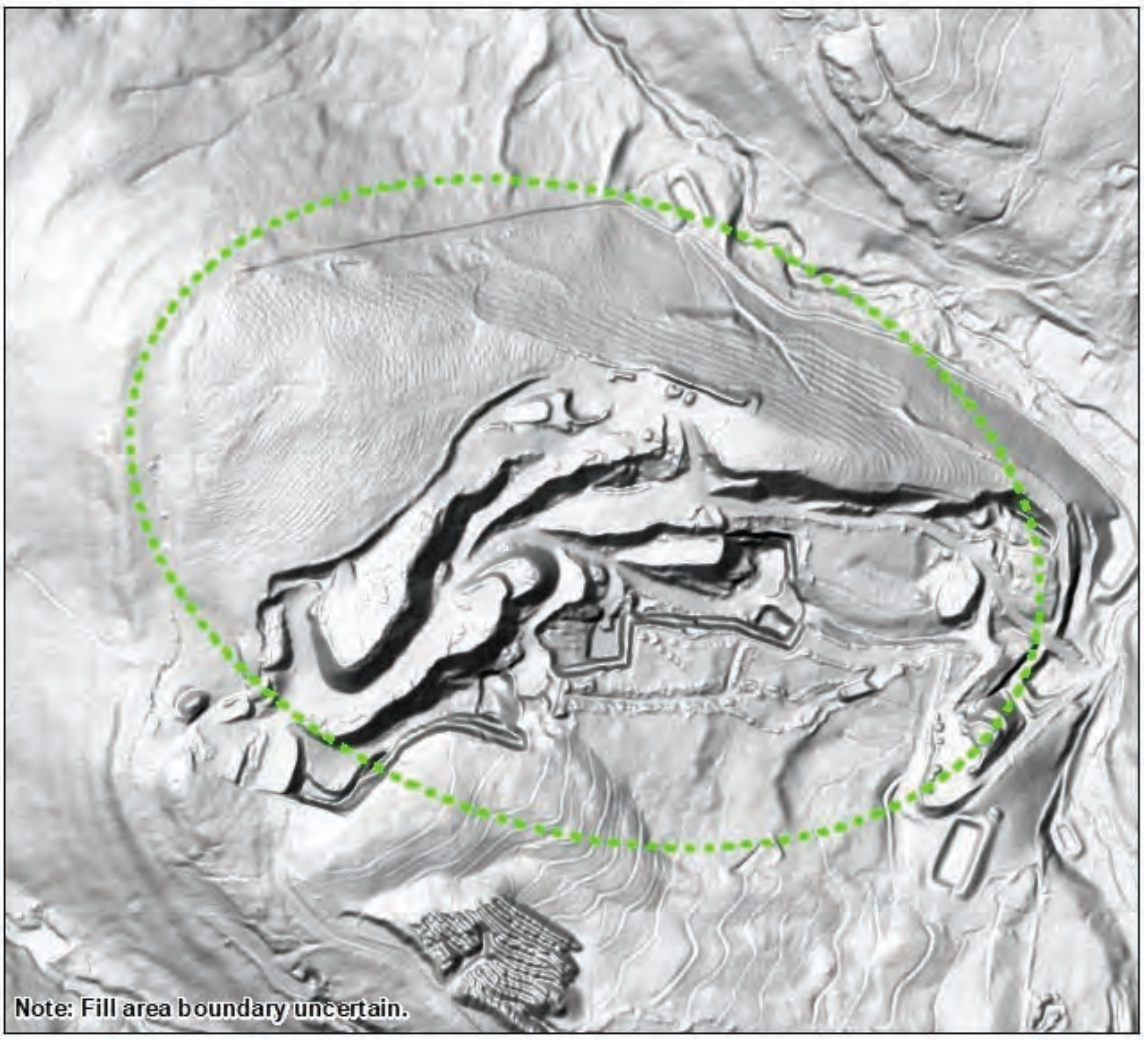
Estimated Area: Unknown

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: October 2020

VINDEX ENERGY CORP. – CARLOS COAL ASH SITE – LiDAR HILLSHADE



Source: Maryland Department of Information Technology,
Geographic Information Office, Maryland iMAP LiDAR data
Dashed line shows possible fill area based on surface morphology.

Notes

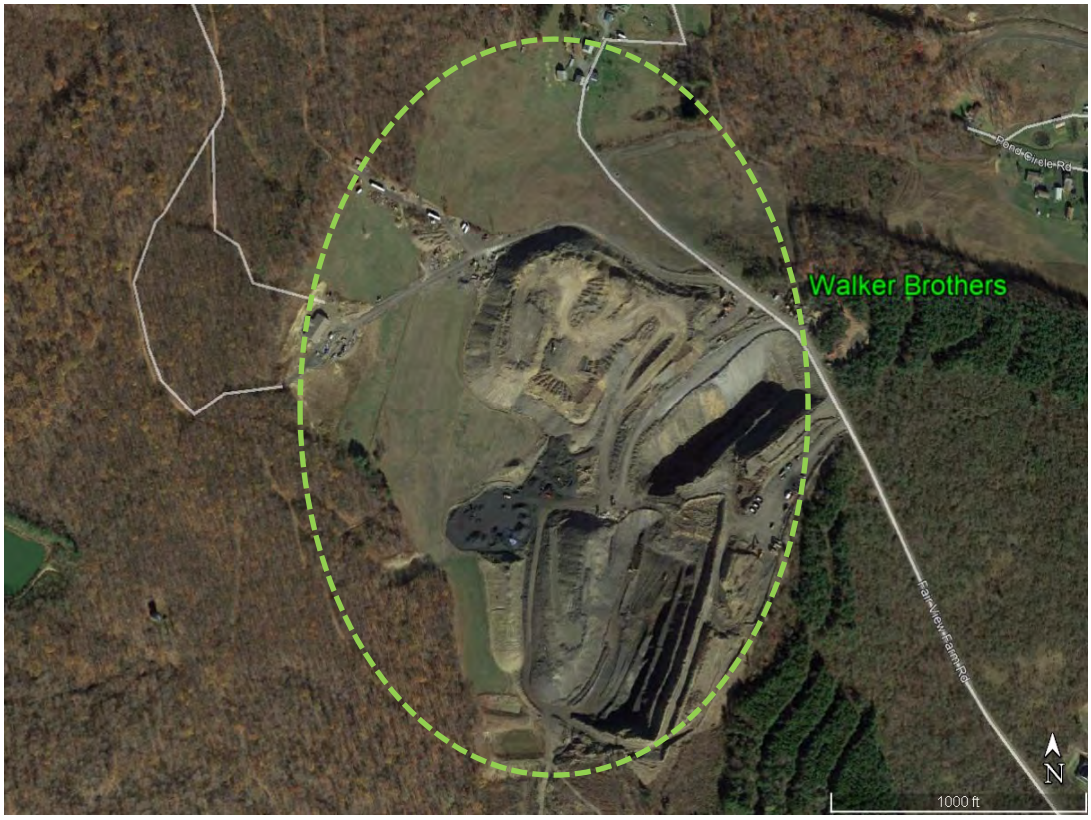
Site History: MDE ID#: SM-84-393. As of 2017 MDE lists the site status as active. Alkaline FBC fly ash and bottom ash from the Warrior Run Power Plant were used to reclaim a surface coal mine.

Environmental Impacts: No information available.

Sources: ArchCoal, 2012; Coal Diver, 2020; MDE, 2008-2017; Maryland MERLIN Online; PPSP, 1982

DRAFT

WALKER BROTHERS COAL ASH DEPOSIT



Source: GoogleEarth, 2019. Image Date: November 2016
Dashed line shows possible fill area based on surface morphology

Site Name: Walker Brothers

State, County, City: Maryland, Allegany County

Address: West Side of Fair View Farm Rd., north of the intersection with Morgan Ct.

Coordinates: 39°37'58.15"N 78°57'55.52"W

Owner: Walker Brothers

Number and Type of CCR Storage Units Onsite: 1 Structural fill

Accepted Materials: FBC Fly ash and bottom ash

Estimated Quantity of CCRs: 12,118 tons

Estimated Area: Unknown

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: October 2020

WALKER BROTHERS COAL ASH DEPOSIT - LiDAR HILLSHADE

Source: Maryland Department of Information Technology,
Geographic Information Office, Maryland iMAP LiDAR data
Dashed line shows possible fill area based on surface morphology

Notes

Site History: MDE ID#: SM-07-453. As of 2017 MDE lists the site status as active.

Environmental Impacts: No information available.

Sources: Hooker, 2017

Maryland:
Anne Arundel County

BBSS COAL ASH DEPOSIT

Source: GoogleEarth 2020; Image date November 2019

Site Name: BBSS

State, County, City: Maryland, Anne Arundel County, Gambrills

Site Address: MD Rt. 3 between Evergreen Road and Waugh Chapel Road

Coordinates: 39° 1'57.23"N, 76°41'11.86"W

Owner: BBSS, LLC; LOBS, LLC; Waugh Chapel R&D South, LLC

Number and Type of CCR Storage Units Onsite: 2 Structural fill

Accepted Materials (e.g. fly ash, gypsum): Class F fly ash

Estimated Quantity of CCRs: 4,000,000 tons (total) (MDE, 2010)

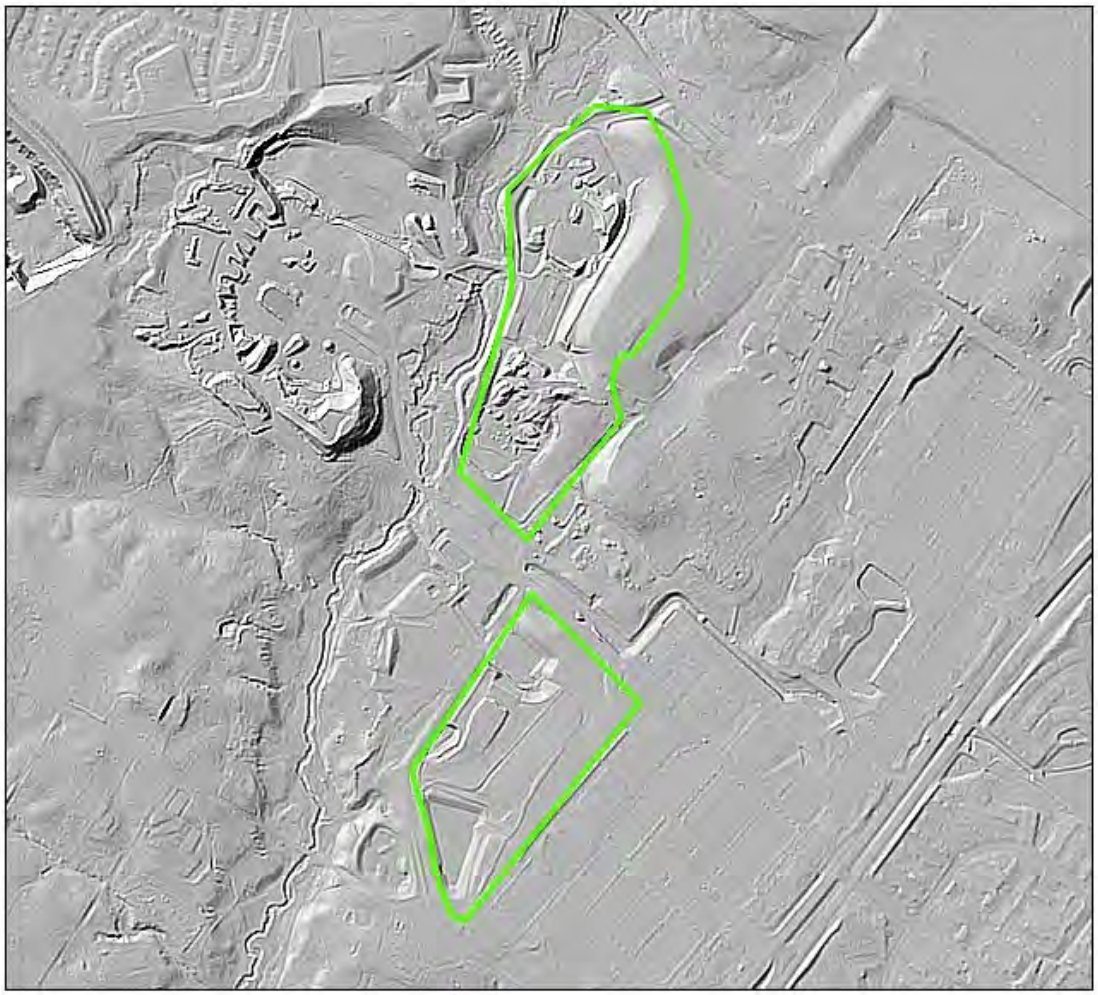
Estimated Area: Approximately 48 acres (Waugh Chapel Pit) and approximately 30 acres (Turner Pit)

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: September 2020

BBSS COAL ASH DEPOSIT – LiDAR HILLSHADE



Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data

Notes

Site History: Class F fly ash from the Brandon Shores and H.A. Wagner Power Plant was used to reclaim former sand and gravel pits between 1995 and 2007. The site is divided into two major sections: the Turner Pit and the Waugh Chapel Pit. The Turner Pit is a small portion of the BBSS site. The majority of the Turner Pit has been capped and is covered by a shopping center and parking lots, but satellite imagery indicates that the western portion of the Turner Pit is not redeveloped or vegetated. The Waugh Chapel Pit portion of the BBSS site has been capped but appears not to have been fully redeveloped.

Environmental Impacts: Groundwater impacts identified in 2006-2007. Cleanup and penalties were ordered by MDE and Anne Arundel County in 2007. The lawsuit filed in 2007 by adjacent residents, was settled in 2008. Groundwater monitoring and treatment are currently occurring. The BBSS site was one of 38 proven CCR damage cases identified by EPA in the lead up to publishing the 2015 CCR disposal rule.

Sources: MDE, 2010; PPRP, 2007; Maryland MERLIN Online

DRAFT

BRANDON WOODS COAL ASH DEPOSIT

Source: GoogleEarth, 2020. Image Date: November 2019
Dashed line shows possible fill area based on site development pattern.

Site Name: Brandon Woods

State, County, City: Maryland, Anne Arundel County, Shawville

Site Address: 7629 Gambrills Cove Rd., Curtis Bay

Coordinates: 39°10'32.43"N, 76°32'29.13"W

Owner: Brandon Woods, LLC

Number and Type of CCR Storage Units Onsite: 1 Structural fill

Accepted Materials (e.g., fly ash, gypsum): Class F fly ash

Estimated Quantity of CCR: 35,000,000 tons

Estimated Area: 200 acres

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: September 2020

BRANDON WOODS COAL ASH DEPOSIT – LiDAR HILLSHADE

Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data
Dashed line shows possible fill area based on site development pattern.

Notes

Site History: Class F fly ash from the Brandon Shores and H.A. Wagner Power Plants were placed at the site between 1982 and 1993. CCR is believed to be approximately 10 feet thick across the site. Site cover consists of concrete, asphalt, landscaping, and a 351,620 square foot slab-on-grade warehouse used for overflow and distribution. Part of the CCR is likely under Solley Rd., due to road widening completed on the Brandon Woods side around 1996.

Environmental Impacts: Groundwater monitoring was performed from 1981 through at least 1997. Reports on the site were prepared prior to, during, and after placement of CCR. A VCP application for the site was filed in 2014 (resolution uncertain). A Phase II investigation was performed in 2014, it included evaluation of the cap materials and a survey by Wildlife Heritage Service. Cap material thickness was found to be variable across the site with a higher permeability than anticipated. The WHS survey resulted in site activity restrictions due to a colony of Least Terns nesting on the building.

Sources: MDE, 2010; PPER, 1994; Siegel, 1996

JOY-BOEHM COAL ASH DEPOSIT

Source: GoogleEarth, 2020. Image Date: November 2019
Dashed line shows possible fill area based on site development pattern.

Site Name: Joy/Boehm Landfill

State, County, City: Maryland, Anne Arundel, Crownsville

Site Address: 1373 St. Stephens Church Rd., Crownsville, MD

Coordinates: 39° 0'41.90"N, 76°37'48.98"W

Owner: Boehm, Lois

Number and Type of CCR Storage Units Onsite: 1 Landfill (exact location not mapped in available resources)

Accepted Materials (e.g., fly ash, gypsum): Industrial waste, tires, CCRs of unspecified type (likely fly ash and bottom ash)

Estimated Quantity of CCR: Unknown

Estimated Area: Unknown

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: October 2019

JOY-BOEHM COAL ASH DEPOSIT – LiDAR HILLSHADE

Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data
Dashed line shows possible fill area based on site morphology.

Notes

Site History: The landfill was permitted to receive various industrial wastes in the mid-1970s until it was closed through state enforcement in the mid-1980s. CCRs are believed to have been used as structural fill and to have been placed in a clay-lined industrial portion of the landfill beginning in the late 1970s until 1985.

Environmental Impacts: Monitoring wells are present onsite. MDE filed a lawsuit for tire cleanup in 2010.

Sources: MDE, 2010; Jackson, 2012; Barr, 2012

MILLERSVILLE LANDFILL COAL ASH DEPOSIT

Source: GoogleEarth, 2020. Image Date: November 2019
Dashed line shows possible fill area based on site development pattern.

Site Name: Millersville Landfill

State, County, City: Maryland, Anne Arundel County, Millersville

Site Address: 389 Burnes Crossing Road, Millersville, MD

Coordinates: 39° 5'31.53"N, 76°40'6.30"W

Owner: Anne Arundel County

Number and Type of CCR Storage Units: The number of cells containing CCR is unknown.

Accepted Materials (e.g., fly ash, gypsum): Class F fly ash, municipal waste

Estimated Quantity of CCBs: 64,000 cubic yards

Estimated Area: Unknown

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: October 2019

MILLERSVILLE LANDFILL COAL ASH DEPOSIT – LiDAR HILLSHADE

Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data
Dashed line shows possible fill area based on site development pattern.

Notes

Site History: Class F fly ash from Brandon Shores and Wagner Power Plants were disposed of at this municipal landfill. The site is still an active municipal landfill as of 2021 however, CCR disposal is no longer occurring. The exact cells in which CCRs were disposed of are uncertain; they may be within closed portions of the landfill.

Environmental Impacts: Groundwater monitoring is currently occurring under MDE municipal landfill requirements.

Sources: MDE, 2010

SOLLEY ROAD COAL ASH DEPOSIT

Source: GoogleEarth, 2020. Image Date: October 2018

Site Name: Solley Road Site

State, County, City: Maryland, Anne Arundel County, Glen Burnie

Address: 7890 Solley Road, Glen Burnie, MD

Coordinates: 39°09'28.91"N 76°34'19.18"W

Owner: BFI Waste Systems of North America

Number and Type of CCR Storage Units Onsite: 1 Landfill

Accepted Materials (e.g., fly ash, gypsum): Class F fly ash, commercial and industrial wastes and sludges

Estimated Quantity of CCR: Unknown

Estimated Area: 53 Acres

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: October 2020

SOLLEY ROAD COAL ASH DEPOSIT – LiDAR HILLSHADE

Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data

Notes

Site History: Fly ash from the Wagner Power Plant was disposed of at the site from 1965 through 1975. From 1963 to 1970 municipal and industrial wastes were burned at the site. In 1973, Browning Ferris Industries purchased the site and began landfilling the east area. The west fill area was closed in 1977 and the east fill area closed in 1980. A portion of the east fill area operated as a secure hazardous waste facility from 1980 to 1982. The entire site is closed at this time.

Environmental Impacts: Various environmental studies have been performed at the site. A 1981 site investigation identified elevated levels of chromium, manganese, and several organic compounds in groundwater. A leachate collection system was installed in 1991. In 1993, a TCE plume was identified at the site and a groundwater extraction system was installed in response. EPA issued a Corrective Action Permit in 1991 and a Final Remedy was issued in July 2012.

Sources: PPSP, 1982a; MDE, BFI Fact Sheet; EPA, 2012a; EPA, 2020a; Maryland MERLIN Online

WAGNER POWER PLANT ASH DEPOSITS

Source: GoogleEarth, 2020. Image Date: November 2019

Site Name: Wagner Power Plant

State, County, City: Maryland, Anne Arundel County, Curtis Bay

Site Address: Wagner Station Rd. Curtis Bay

Coordinates: 39°11'14.08"N 76°32'16.36"W and 39°10'50.16"N 76°31'49.41"W

Owner: Raven FS Property Holdings, LLC

Number and Type of CCR Storage Units Onsite: 2 Structural fills

Accepted Materials (e.g. fly ash, gypsum): Class F fly ash and bottom ash

Estimated Quantity of CCRs: Unknown

Estimated Area: Unknown

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: September 2020

WAGNER POWER PLANT ASH DEPOSITS – LiDAR HILLSHADE

Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data

Notes

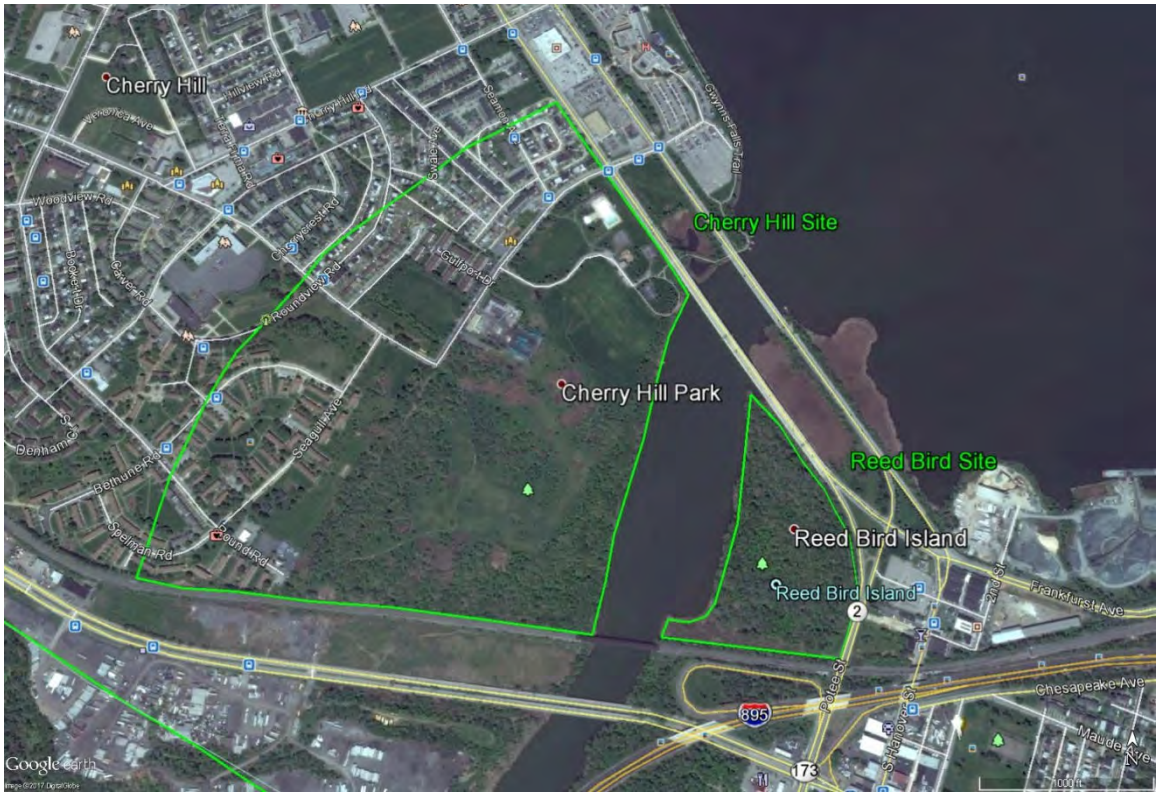
Site History: An investigation in 1982 indicated that onsite disposal of Class F fly ash and bottom ash occurred between 1980 and 1982; it is unknown whether filling continued beyond 1982. Wagner Site 1 is described as being along the railroad that is adjacent to the power plant. A windshield survey performed on 26 July 2017 confirmed that about 60% of the Wagner Site 2 is paved, the remainder vegetated. Of particular note was a vegetated wetlands-like ravine within this area. The presence of old railroad tracks was also confirmed.

Environmental Impacts: No information was available.

Sources: PPSP, 1982a; Hoyt, 2017; Maryland MERLIN Online

Maryland:
Baltimore City

CHERRY HILL COAL ASH DEPOSIT



Source: GoogleEarth, 2020. Image Date: October 2019

Site Name: Cherry Hill Site

State, County, City: Maryland, Baltimore City

Site Address: Northwest quadrangle where 895 meets West Patapsco Ave.

Coordinates: 39°14'36.55"N 76°36'52.64"W

Owner: City of Baltimore

Number and Type of CCR Storage Units: 1 Landfill

Accepted Materials (e.g., fly ash, gypsum): Fly ash, bottom ash, domestic waste

Estimated Quantity of CCR: Unknown

Estimated area: 250 acres

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: October 2019

CHERRY HILL COAL ASH DEPOSIT – LiDAR HILLSHADE

Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data

Notes

Site History: Fly ash and bottom ash from the Westport, Gould Street, and Wagner Power Plants were placed at the site during the 1950s and early 1960s. By 1982, it was reported that housing had been built over a portion of the site containing CCR and that an active solid waste disposal facility was still operating adjacent to the Patapsco River.

Environmental Impacts: None available.

Sources: PPSP, 1982a; Maryland MERLIN Online

FORT ARMISTEAD COAL ASH DEPOSIT

Source: GoogleEarth 2020; Image date November 2019

Site Name: Fort Armistead Lot 15 Industrial Landfill

State, County, City: Maryland, Baltimore City

Site Address: 3601 Fort Armistead Rd., Baltimore

Coordinates: 39°11'59.16"N: 76°32'18.33"W

Owner: Raven Lot 15, LLC

Number and Type of CCR Storage Units Onsite: 1 Landfill

Accepted Materials: Class F fly ash, Class C fly ash, bottom ash, FGD material

Estimated Quantity of CCRs: 710,600 tons (As of 2017)

Estimated Area: 75 acres

Beneficial Use Projects: None

CCR Compliance Website: https://www.talenenergy.com/ccr-rule-compliance-data-information/

Last Update: September 2020

FORT ARMISTEAD COAL ASH DEPOSIT– LiDAR HILLSHADE

Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data

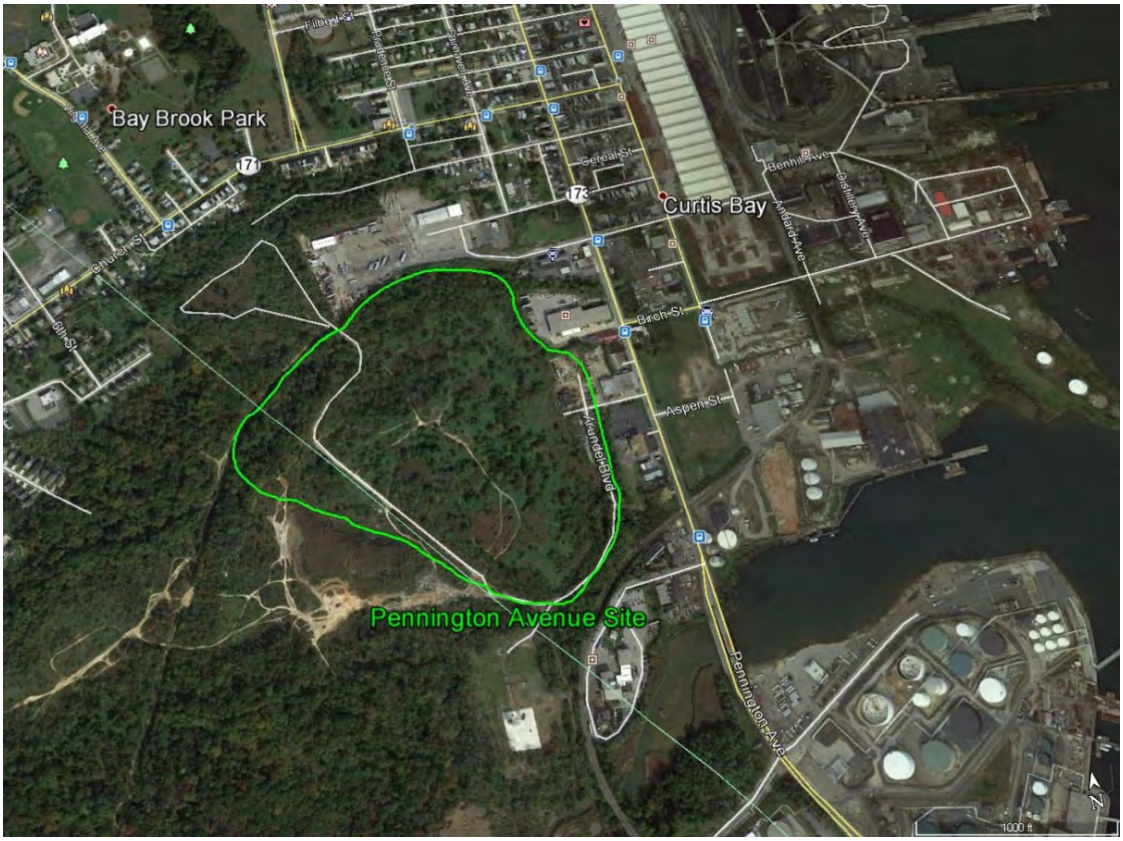
Notes:

Site History: Landfill is permitted under MDE permit #2018-WIF-0653. Disposal of CCRs at the site began in 2011. The landfill is active as of 2020. The landfill has historically received CCRs from the Brandon Shores, H.A. Wagner, and C.P. Crane Power Plants. The overall capacity of the landfill is 6.3 million cubic yards.

Environmental Impacts: The landfill was constructed in compliance with Maryland state requirements for CCR disposal as of 2010 (including synthetic liner and leachate collection system). Groundwater monitoring is performed in compliance with state and federal regulations.

Sources: MDE, 2008-2017; MDE, 2020b

PENNINGTON AVENUE ASH DEPOSIT



Source: GoogleEarth 2020; Image date October 2018

Site Name: Pennington Avenue Site

State, County, City: Maryland, Baltimore City

Site Address: 1501 Aspin St., Baltimore, MD

Coordinates: 39°13'3.32"N 76°35'29.38"W

Owner: City of Baltimore

Number and Type of CCR Storage Units Onsite: 1 Landfill

Accepted Materials: Class F fly ash,

Estimated Quantity of CCRs: Unknown

Estimated Area: 68 Acres

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: October 2020

PENNINGTON AVENUE ASH DEPOSIT – LiDAR HILLSHADE

Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data

Notes

Site History: A clay mine operated at the site from the 1950s into the 1970s. MDE 2009a indicates that filling activities occurred between the closure of the clay mine and the beginning of municipal landfill operation in 1976, which lasted until the landfill closed in 1981. PPSP, 1982a reports that fly ash from the Gould Street, Westport, and Wagner Power Plants was placed at the site during the 1960s and that, as of the preparation of that report, the site was an active landfill.

Environmental Impacts: A 1997 investigation by MDE identified slightly elevated levels of metals in the sediment and soil and slightly elevated levels of metals and volatile organic compounds in groundwater beneath the site. EPA reviewed the available data and in 1998 issued a No Further Remedial Action Plan status letter. A 2007 Phase I site assessment for the property identified recognized environmental conditions associated with the previous use as a landfill.

Sources: MDE, 2009a; PPSP, 1982a; Maryland MERLIN Online

QUARANTINE ROAD ASH DEPOSIT – LiDAR HILLSHADE

Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data

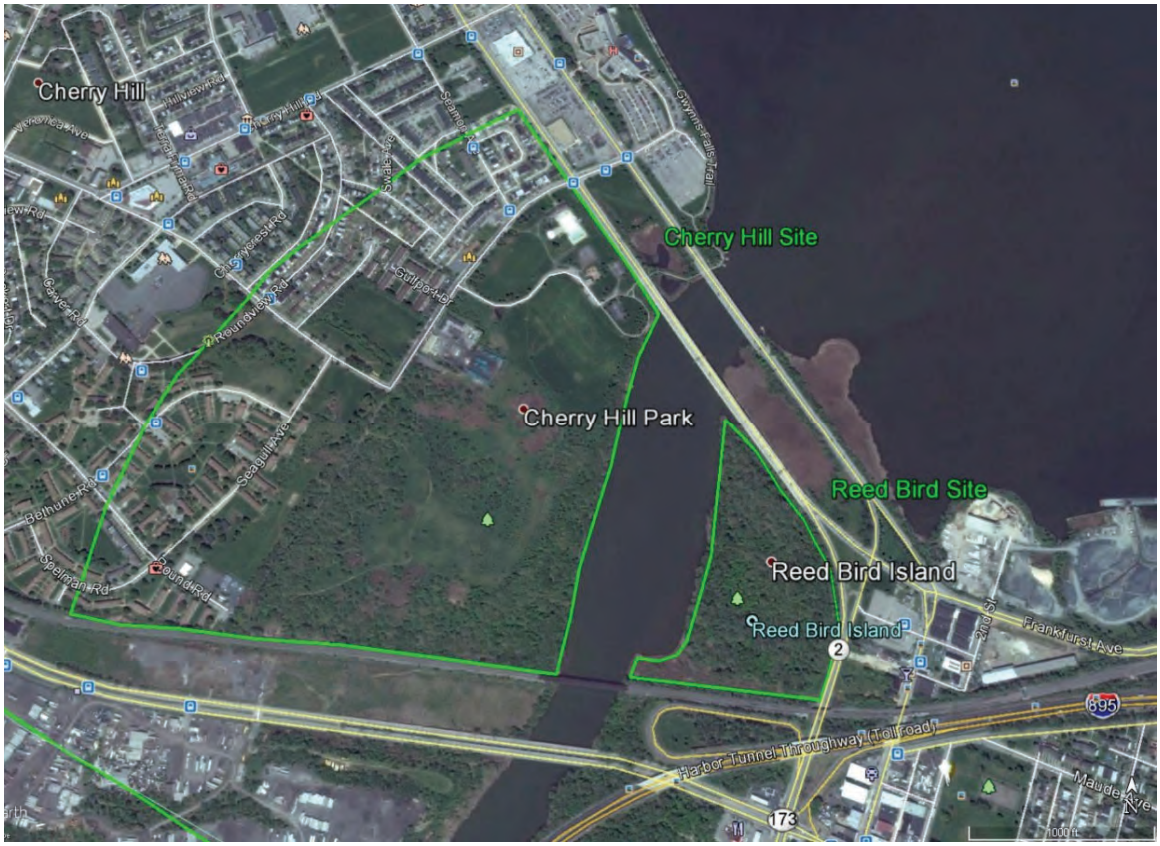
Notes

Site History: Fly ash from the Wagner Power Plant was placed at the site between 1968 and 1975. The landfill stopped receiving waste in 1979 and was capped in 1984. The landfill primarily accepted commercial and industrial solid wastes and sludges (fly ash) was mixed with sludges used as a cover along Quarantine Road. The landfill was closed and capped in 1984. Note that there is an active municipal landfill adjacent to this site to the west (6100 Quarantine Road).

Environmental Impacts: A leachate collection and treatment system was initially constructed in 1980 but dismantled in 1983 and 1984. An investigation performed by NUS in 1984 determined that groundwater beneath the landfill contained low to moderate levels of cyanide, arsenic, and other organic and inorganic contaminants. During the last site inspection in 1985, no leachate seeps were identified. Leachate is currently collected and taken off-site for treatment and disposal. EPA recommended that the site be given a No Further Remedial Action Planned status.

Sources: PPSP, 1982a; MDE, 2014a; Maryland MERLIN Online

REED BIRD ISLAND ASH DEPOSIT



Source: GoogleEarth 2020; Image date October 2018

Site Name: Reed Bird Site

State, County, City: Maryland, Baltimore City

Site Address: Northeast quadrant where 895 meets West Patapsco Ave.

Coordinates: 39°9'54.44"N 76°41'8.57"W

Owner: City of Baltimore

Number and Type of CCR Storage Units Onsite: 1 Landfill

Accepted Materials: Incinerator ash, domestic waste, demolition debris, fly ash, and bottom ash

Estimated Quantity of CCRs: Unknown

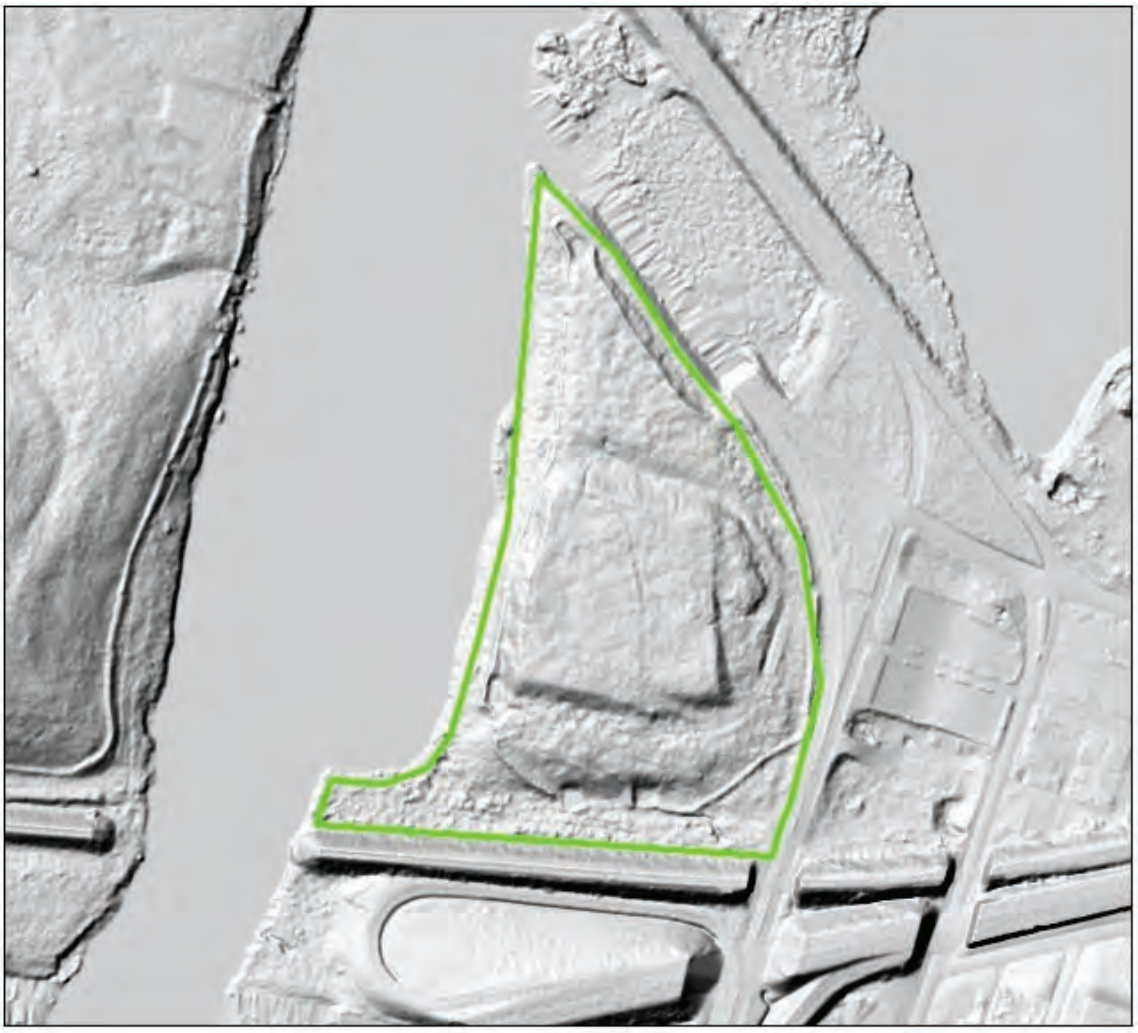
Estimated Area: 18 Acres

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: October 2020

REED BIRD ASH DEPOSIT – LiDAR HILLSHADE



Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data

Notes

Site History: The fact sheet for this site indicates that it was historically connected with the Cherry Hill Park site, which lies to the west. Prior to filling activities, the site was part of a waterway bounded by a marsh. The area was filled in with incinerator ash and landfill disposal in the area included domestic waste as well as demolition debris. Fly ash and bottom ash from the Wagner, Gould Street, and Westport Power Plants were placed at the site during the 1960s. All disposal activities at the site ceased in 1997.

Environmental Impacts: Site investigations in 1983 and 1992 identified elevated lead in groundwater and sediment and low levels of PCBs in soil. Following a site review in 1990, MDE recommended that EPA archive the site.

Sources: PPSP, 1982a; MDE, 2014c; Maryland MERLIN Online

THOMAS COVE ASH DEPOSIT

Source: GoogleEarth 2020; Image date October 2018

Site Name: Thomas Cove Site

State, County, City: Maryland, Baltimore City

Site Address: 5501 Quarantine Road, Baltimore, MD 21226

Coordinates: 39°12'27.97"N 76°32'46.83"W

Owner: State of Maryland

Number and Type of CCR Storage Units Onsite: 1 Landfill

Accepted Materials: Fly ash, chrome ore waste, lime-containing waste

Estimated Quantity of CCRs: Unknown

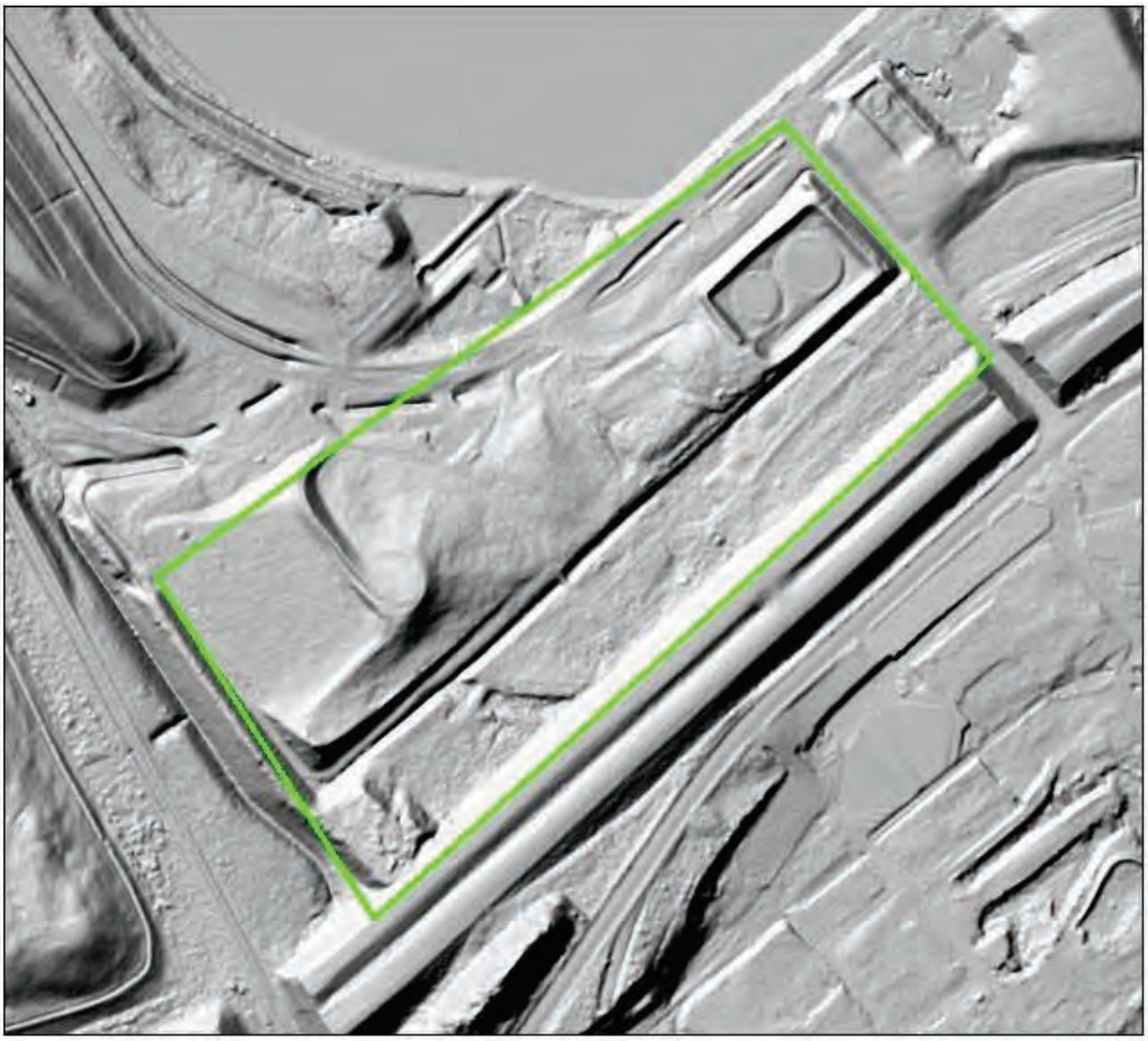
Estimated Area: Unknown

Beneficial Use Projects: None

CCR Compliance Website: none

Last Update: October 2020

THOMAS COVE ASH DEPOSIT – LiDAR HILLSHADE



Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data

Notes

Site History: Fly ash from the Wagner Power Plant was placed at the site in 1979. Map available at EPA, 2020b indicates that this site overlaps with the Hawkins Point Hazardous Waste Landfill.

Environmental Impacts: None available for the Thomas Cove site specifically, broader information about the Hawkins Point site is available at EPA, 2020b.

Sources: PPSP, 1982a; EPA, 2020b; Maryland MERLIN Online

WESTPORT POWER PLANT ASH DEPOSIT

Source: GoogleEarth 2020; Image date March 2020
Dashed line shows possible fill area based on surface morphology.

Site Name: Westport Power Plant Sites 1 and 2

State, County, City: Maryland, Baltimore City

Site Address: 2101 Kloman St., Baltimore, MD

Coordinates: 39°15'57.76"N 76°37'40.52"W and 39°15'45.42"N 76°37'48.88"W

Owner: Westport Property Investments, LLC

Number and Type of CCR Storage Units Onsite: 2 Structural fill sites

Accepted Materials: Class F fly ash and bottom ash

Estimated Quantity of CCRs: Unknown

Estimated Area: Unknown

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: September 2020

WESTPORT POWER PLANT ASH DEPOSIT – LiDAR HILLSHADE

Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data
Dashed line shows possible fill area based on surface morphology.

Notes

Site History: Both sites received fly ash and bottom ash from the Westport Power Plant from approximately 1960 through 1970. The plant stopped burning coal in 1970. Westport Site 1: Ash used to fill cooling ponds and low areas adjacent to the plant; a parking lot was built over this area. Westport Site 2: Ash was transported by narrow gauge railroad to the edge of plant property and landfilled. A windshield survey of both sites was performed on 26 July 2017, both sites were viewed from Kloman St., which runs along the western site boundary. Onsite observations combined with aerial imagery indicate that about 30% of Site 1 and 60% of Site 2 is paved. An abandoned railroad spur was visible and appeared to cross a corner of Site 2.

Environmental Impacts: None available.

Sources: PPSP, 1982a; Maryland MERLIN Online

Maryland:
Baltimore County

BATTLE GROVE COAL ASH DEPOSIT

Source: GoogleEarth, 2020. Image Date November 2019.

Site Name: Battle Grove Park

State, County, City: Maryland, Baltimore County, Dundalk

Address: New Battle Grove Circle

Coordinates: 39°15'45.19"N 76°28'3.37"W

Owner: Baltimore County

Number and Type of CCR Storage Units Onsite: 1 Structural fill

Accepted Materials: Class F fly ash, bottom ash

Estimated Quantity of CCRs: Unknown

Estimated Area: Approximately 15 acres (PPSP, 1982a)

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: October 2020

BATTLE GROVE PARK COAL ASH DEPOSIT – LiDAR HILLSHADE

Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data

Notes

Site History: Class F fly ash and bottom ash from the Riverside Power Plant were placed at the site during the early 1950s. While the quantity of material placed is not known, PPSP, 1982a reports that this was a relatively small fill site.

Environmental Impacts: No information available.

Sources: PPSP, 1982a; Maryland MERLIN Online

CHARLESMONT SITE COAL ASH DEPOSIT

Source: GoogleEarth, 2020. Image Date: November 2019

Site Name: Charlesmont Site

State, County, City: Maryland, Baltimore County

Address: Southwest of North Point Road and Deboy Avenue

Coordinates: 39°16'27.78"N 76°28'46.52"W

Owner: Baltimore County, fill possibly also extends under multiple private homes.

Number and Type of CCR Storage Units Onsite: 1 Structural fill

Accepted Materials: Class F fly ash, bottom ash

Estimated Quantity of CCRs: Unknown

Estimated Area: Approximately 30 acres (PPSP, 1982a)

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: October 2020

CHARLESMONT SITE COAL ASH DEPOSIT – LiDAR HILLSHADE

Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data

Notes

Site History: Class F fly ash and bottom ash from the Riverside Power Plant were placed at the site during the early 1950s. While the quantity of CCR placed at the site is not known, PPSP, 1982 refers to this as a relatively small fill site.

Environmental Impacts: No information available.

Sources: PPSP, 1982a; Maryland MERLIN Online

COFFIN POINT COAL ASH DEPOSIT

Source: GoogleEarth 2020; Image date September 2016

Site Name: Coffin Point Site

State, County, City: Maryland, Baltimore County, Dundalk

Address: 4330 Broening Hwy.

Coordinates: 39°13'56.92"N 76°30'15.41"W

Owner: State of Maryland (Highway Administration)

Number and Type of CCR Storage Units Onsite: 1 Structural fill

Accepted Materials: Class F fly ash, bottom ash

Estimated Quantity of CCRs: Unknown

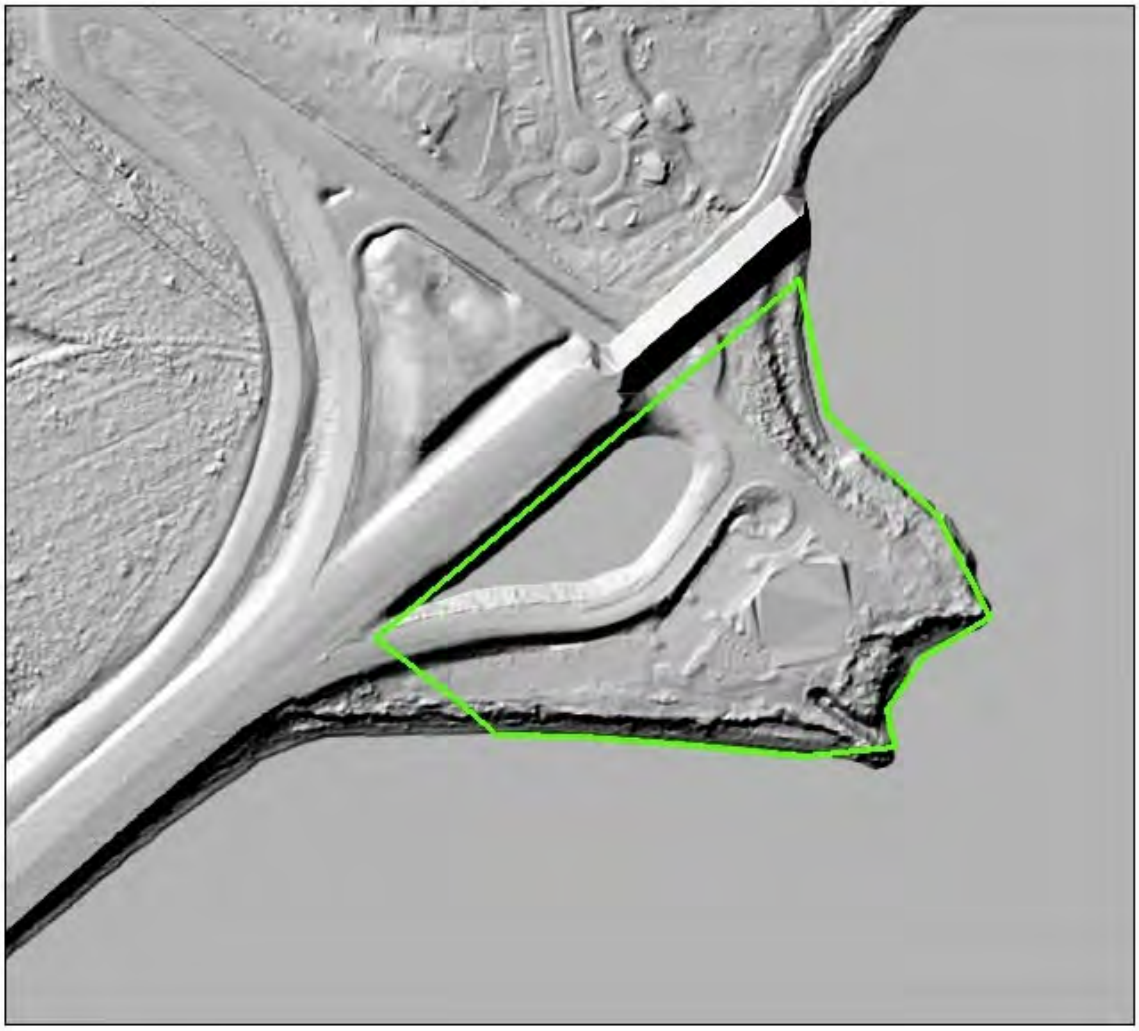
Estimated Area: Approximately 8 acres (PPSP, 1982a)

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: October 2020

COFFIN POINT SITE COAL ASH DEPOSIT – LiDAR HILLSHADE



Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data

Notes

Site History: Class F fly ash and bottom ash from the Riverside Power Plant were placed at the site during the early 1950s. While the quantity of CCR placed at the site is not known, PPSP, 1982a refers to this as a relatively small fill site.

Environmental Impacts: No information available.

Sources: PPSP, 1982a; Maryland MERLIN Online

C.P. C RANE POWER PLANT ASH DEPOSIT

Source: GoogleEarth, 2020. Image Date: November 2019

Site Name: C. P. Crane Power Plant Site

State, County, City: Maryland, Baltimore County

Site Address: 1021 Carroll Island Road, Middle River, MD 21220

Coordinates: 39°19'33.34"N, 76°22'1.84"W

Owner: C. P. Crane, LLC

Number and Type of CCR Storage Units Onsite: Unknown, likely one or more structural fills

Accepted Materials: Boiler slag and fly ash

Estimated Quantity of CCRs: Unknown

Estimated Area: Unknown

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: September 2020

C.P. CRANE POWER PLANT ASH DEPOSIT – LiDAR HILLSHADE

Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data

Notes:

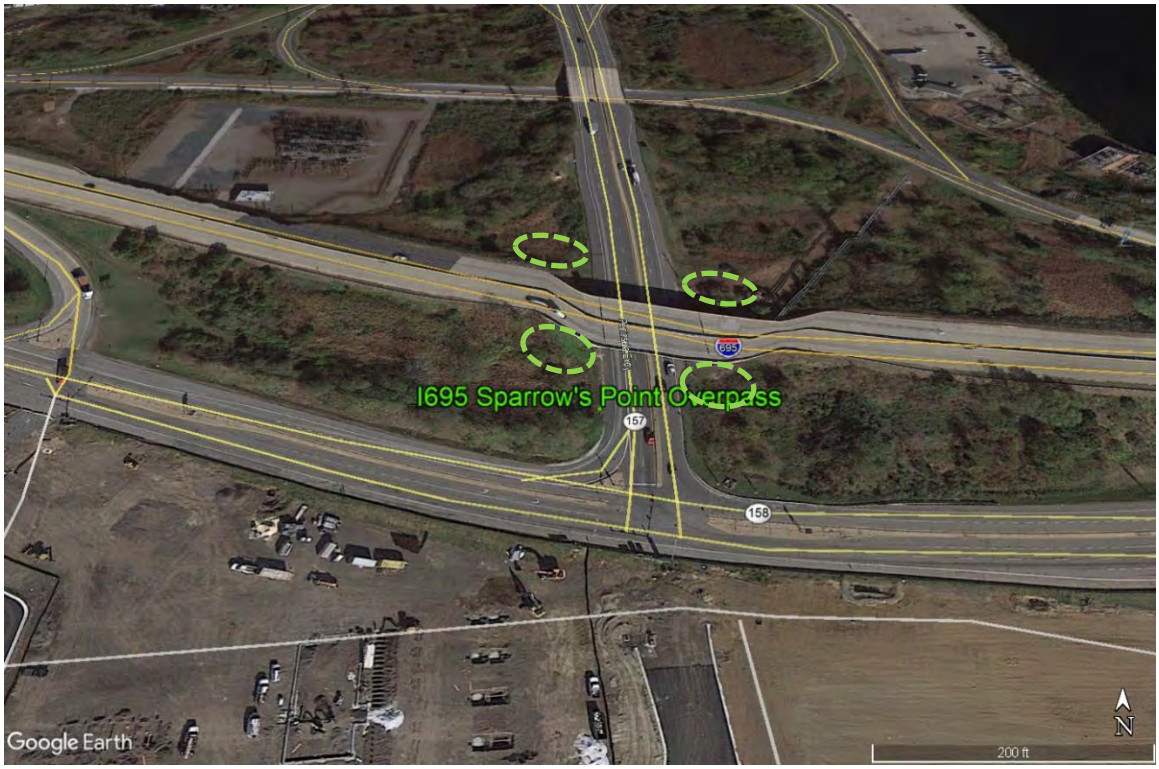
Site History: During the period between 1961 and 1980, most slag from the plant was sold, but some was disposed of on site near the plant and along the railroad right-of-way. In 2010 the C.P. Crane Power Plant began using Powder River Basin coal, which meant that Class C fly ash was generated. This material was disposed of in off-site landfills. In 2018 the plant stopped burning coal and thus stopped producing CCR.

Environmental Impacts: No information available.

Sources: PPSP, 1982a; Maryland MERLIN Online

DRAFT

I695 SPARROW'S POINT OVERPASS COAL ASH DEPOSIT



Source: GoogleEarth 2020; Image date November 2019
Dashed line shows possible fill area based on surface morphology.

Site Name: I695 Sparrow's Point

State, County, City: Maryland, Baltimore County

Address: I-695 adjacent to Former Sparrow's Point Steel Plant

Coordinates: 39°14'12.77"N 76°28'25.82"W

Owner: Maryland State Highway Administration

Number and Type of CCR Storage Units Onsite: 1 Structural fill

Accepted Materials: Class F fly ash

Estimated Quantity of CCRs: 320,000 tons

Estimated Area: Unknown

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: October 2020

I695 SPARROW'S POINT OVERPASS COAL ASH DEPOSIT – LiDAR HILLSHADE

Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data
Dashed line shows possible fill area based on surface morphology.

Notes

Site History: Class F fly ash from the Brandon Shores and HA Wagner Power Plants was used to construct embankments at the I695 overpass at Sparrow's Point. Filling activities occurred between 1996 and 1998.

Environmental Impacts: Groundwater data was collected before placement of CCR and both groundwater and pore water were monitored following completion of the construction project. A follow-up groundwater study was performed in 2014.

Sources: MDE, 2010; PPRP, 2004; PPRP, 2017a

NORRIS FARM COAL ASH DEPOSIT

Source: GoogleEarth, 2020. Image Date: October 2018

Site Name: Norris Farm Site

State, County, City: Maryland, Baltimore County, Dundalk

Site Address: 101 Norris Lane, Dundalk

Coordinates: 39°17'11.34"N 76°28'44.64"W

Owner: Browning-Ferris Inc.

Number and Type of CCR Storage Units: 1 Landfill

Accepted Materials (e.g., fly ash, gypsum): Various municipal and industrial wastes (see below), fly ash, and bottom ash for a limited period.

Estimated Quantity of CCR: Unknown

Estimated Area: 230 acres (total landfill area)

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: October 2020

NORRIS FARM COAL ASH DEPOSIT – LiDAR HILLSHADE

Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data

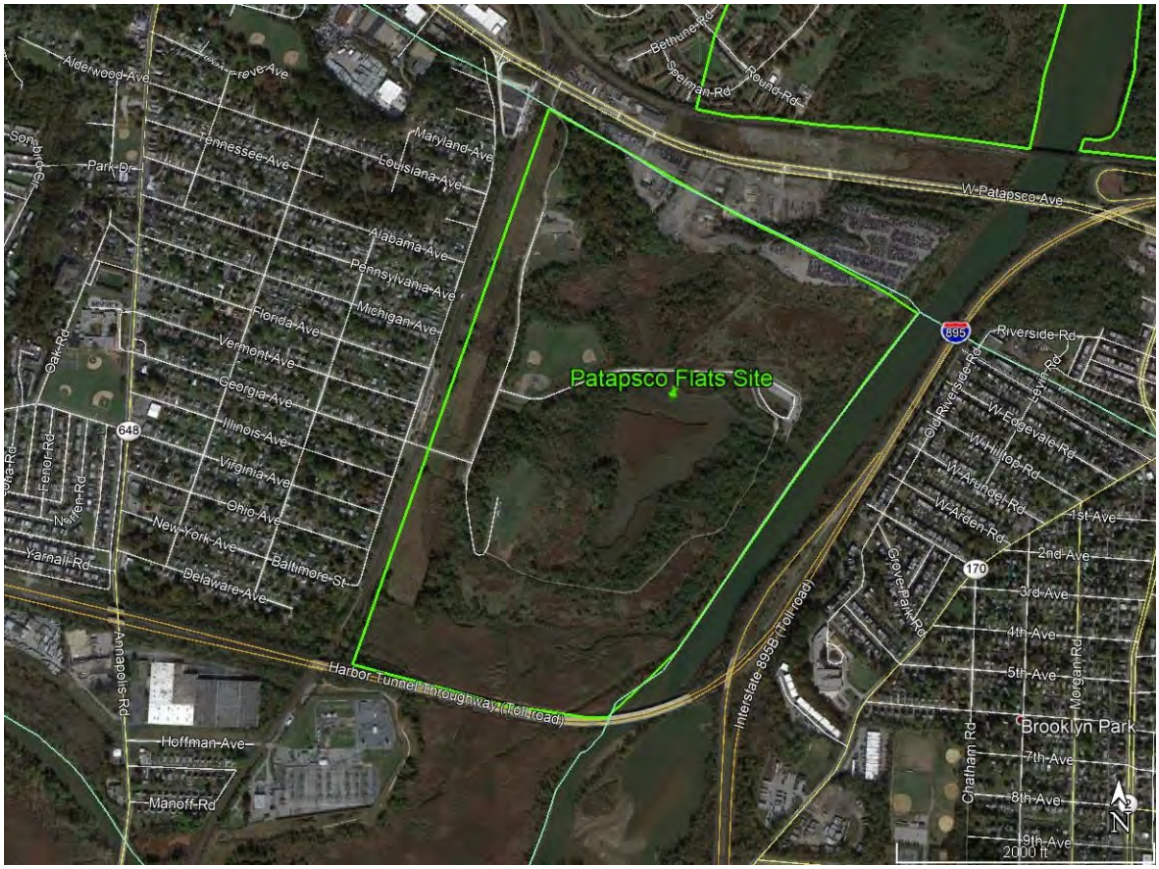
Notes

Site History: The site was a sand and gravel operation prior to 1967 when the site was converted to a sanitary landfill. Municipal and industrial wastes including acids, bases, pesticides, organics, and commercial sludges were received at the facility. PPSP, 1982a indicates that fly ash and bottom ash from Riverside and Wagner Power Plants were placed at the site during portions of the 1960s and 1970s. The landfill was capped in 1990. October 2014, the aerial image showed no activity onsite. Beginning in February 2017 construction activity is visible in the center of the site. Activity continues through at least November 2019.

Environmental Impacts: EPA conducted a preliminary assessment of the site in 1980. Another site assessment was performed by NUS Corporation in 1986. Analytical results showed low levels of organic and inorganic groundwater contamination. In 1992, the EPA listed the site as "No Further Remedial Action Planned".

Sources: PPSP, 1982a; MDE, Norris Farm Landfill; Maryland Merlin Online

PATAPSCO FLATS COAL ASH DEPOSIT



Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data

Site Name: Patapsco Flats Site

State, County, City: Maryland, Baltimore County

Site Address: Southwest quadrant where 895 meets West Patapsco Ave.

Coordinates: 39°14'5.56"N 76°37'36.75"W

Owner: Baltimore County

Number and Type of CCR Storage Units: 1 Landfill

Accepted Materials (e.g., fly ash, gypsum): Fly ash, bottom ash, domestic waste

Estimated Quantity Unknown

Estimated Area: 260 acres

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: October 2019

PATAPSCO FLATS COAL ASH DEPOSIT – LiDAR HILLSHADE

Source: Maryland Department of Information Technology,
Geographic Information Office, Maryland iMAP LiDAR data
Dashed line shows possible fill area based on site development pattern.

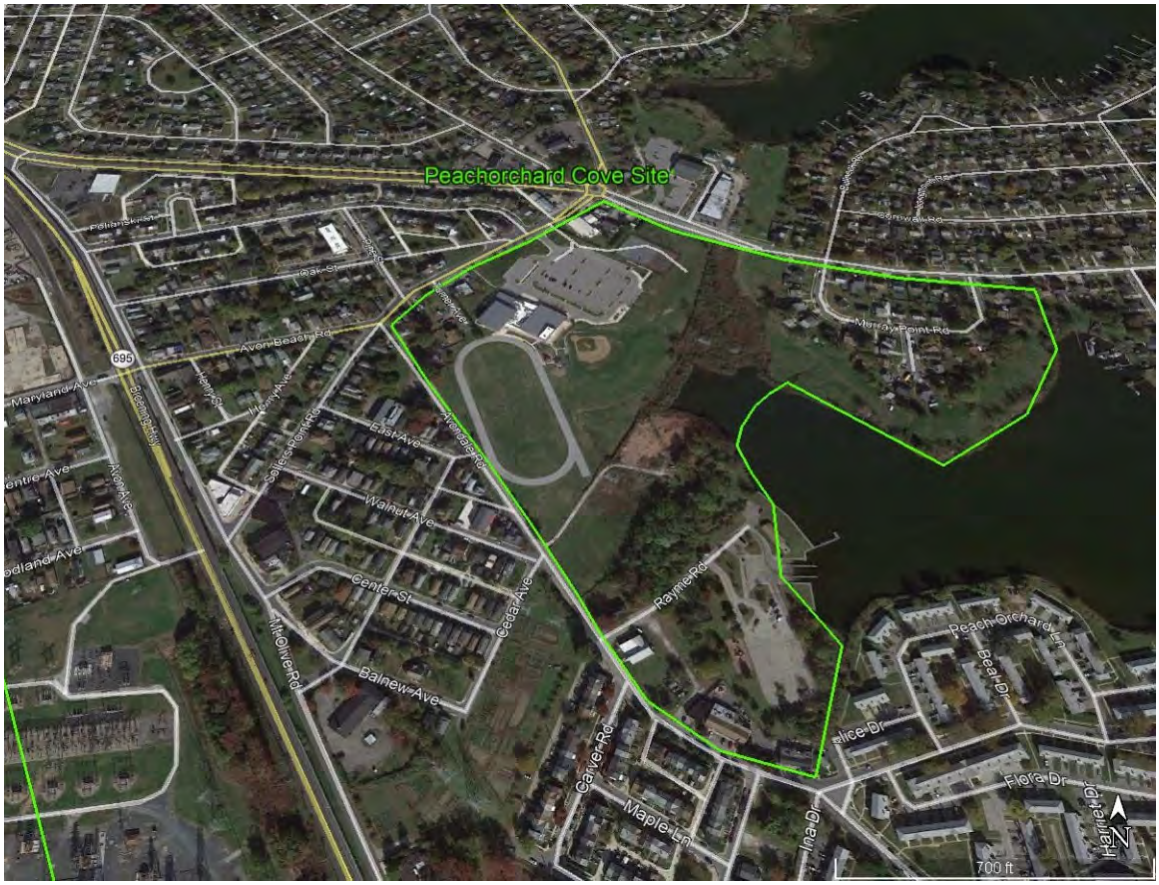
Notes

Site History: 1982 report lists this as an inactive landfill and that fly ash and bottom ash from the Westport, Gould Street, and Wagner Power Plants were placed at the site intermittently from the 1950s into the 1960s. The site is listed in the 2009 MDE Historic Landfill Initiative also known as Reliable SLF and a site with no defined location or owner.

Environmental Impacts: No information available.

Sources: MDE, 2009b; PPSP, 1982a; Maryland MERLIN Online

PEACH ORCHARD COVE COAL ASH DEPOSIT



Source: GoogleEarth, 2020. Image Date: November 2019

Site Name: Peach Orchard Cove Site

State, County, City: Maryland, Baltimore County, Baltimore

Site Address: 335 Sollers Point Rd.; Baltimore, MD
(multiple smaller individual addresses)

Coordinates: 39°14'35.74"N 76°30'26.53"W

Owner: Baltimore County; Our Lady of Lavang Roman Catholic Church; multiple other private owners

Number and Type of CCR Storage Units Onsite: 1 Structural fill

Accepted Materials (e.g., fly ash, gypsum): Fly ash and bottom ash

Estimated Quantity of CCR: Unknown

Estimated Area: 15 acres

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: October 2020

PEACH ORCHARD COVE COAL ASH DEPOSIT – LiDAR HILLSHADE

Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data

Notes

Site History: Fly ash and bottom ash from the Riverside Power Plant were placed at the site during the 1950s and early 1960s.

Environmental Impacts: No information available.

Sources: PPSP, 1982a; Maryland MERLIN Online

RIVERSIDE POWER PLANT ASH DEPOSIT

Source: GoogleEarth 2020; Image date November 2019

Site Name: Riverside Power Plant Site

State, County, City: Maryland, Baltimore County, Dundalk

Site Address: 4000 Broening Hwy., Dundalk, MD

Coordinates: 39°14'17.21"N 76°30'52.23"W

Owner: Constellation Power Generator; Baltimore Gas & Electric (BGE)

Number and Type of CCR Storage Units Onsite: Unknown, likely one or more structural fills

Accepted Materials: Class F fly ash and bottom ash

Estimated Quantity of CCRs: Unknown

Estimated Area: Unknown

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: September 2020

RIVERSIDE POWER PLANT ASH DEPOSIT – LiDAR HILLSHADE

Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data

Notes

Site History: Some ash was disposed of in various portions of plant property during the early 1950s (PPSP, 1982a). A windshield survey was performed on 25 July 2017. The presence of buildings, above-ground storage tanks, and paved areas was confirmed. The southern portion of the site was not easily visible. Trucks owned by BGE were noted at the site. The area where CCRs had been placed could not be discerned.

Environmental Impacts: None available.

Sources: PPSP, 1982a; Maryland MERLIN Online

DRAFT

ROSSVILLE INDUSTRIAL SITE COAL ASH DEPOSIT

Sources: GoogleEarth 2020; Image date November 2019
Dashed line shows possible fill area based on surface morphology.

Site Name: Rossville Industrial Park

State, County, City: Maryland, Baltimore County, Rosedale

Site Address: 9114-9200 and 9107-9201 Yellow Brick Rd. and left side of Lennings Lane

Coordinates: 39°20'49.86"N 76°28'2.43"W

Owner: Philly Elder, LLC

Number and Type of CCR Storage Units Onsite: 1 Structural fill

Accepted Materials: Class F fly ash

Estimated Quantity of CCRs: 45,000 tons (MDE, 2010)

Estimated Area: 35 acres (MDE, 2013)

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: September 2020

ROSSVILLE INDUSTRIAL SITE COAL ASH – LiDAR HILLSHADE

Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data
Dashed line shows possible fill area based on surface morphology.

Notes:

Site History: Class F fly ash from the C.P. Crane, Brandon Shores, and H.A. Wagner Power Plants were used at this site. BGE applied to the Maryland Department of Health (formerly the Dept. of Health & Mental Hygiene) in July 1982 for a permit to develop the site by reclaiming the former clay mine with CCRs. In Oct. 1982, the Baltimore County Dept. of Health issued a Special Waste Disposal Facilities Permit to dispose of fly ash at the site. MDE issued an Industrial Waste Disposal Permit to dispose of fly ash at the site in Jan. 1988. MDE issued a Pozzolan exemption for the disposal of coal ash at the site in Apr. 1988. This essentially voided previous permits by exempting the disposal of Pozzolan from waste regulations; however, BGE continued to monitor the site.

Environmental Impacts: Investigations of soil and groundwater impacts and extent of CCRs were performed in 2008 and 2010. In 2011, the site was accepted into the MDE VCP program with proposed future use of restricted commercial/industrial use. According to Brownfields Master List April 2017, the site was still active with monitoring, though no active remediation was occurring.

Sources: MDE, 2010; MDE, 2013; MDE, 2020a

Maryland:
Charles County

FAULKNER FLY ASH STORAGE SITE ASH DEPOSIT

Source: GoogleEarth 2020; Image date October 2017
Dashed line shows possible fill area based on surface morphology.

Site Name: Faulkner Fly Ash Storage Site

State, County, City: Maryland, Charles County, Faulkner

Site Address: 10200 Faulkner Road, Faulkner, MD 20664

Coordinates: 38°26'19.33"N 76°57'30.99"W

Owner: NRG

Number and Type of CCR Storage Units Onsite: 1 Landfill

Accepted Materials: Class F fly ash and bottom ash

Estimated Quantity of CCRs: 7 million cubic yards (MDE, 2010)

Estimated Area: 180 acres (Wheeler, 2013)

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: September 2020

FAULKNER FLY ASH STORAGE SITE COAL ASH DEPOSIT
– LiDAR HILLSHADE

Source: Maryland Department of Information Technology,
Geographic Information Office, Maryland iMAP LiDAR data
Dashed line shows possible fill area based on surface morphology.

Notes:

Site History: Class F fly ash from the Morgantown Power Plant was disposed of at the site from 1975 until 2010.

Environmental Impacts: A report on site environmental aspects was published in 1983 (PPRP, 1983). A consent decree issued in 2013 settled lawsuits from the state and environmental groups.

Sources: MDE, 2010; PPRP, 1983; Wheeler, 2013

MORGANTOWN POWER PLANT COAL ASH DEPOSIT

Source: GoogleEarth, 2019. Image Date November 2019

Site Name: Morgantown Power Plant Site

State, County, City: Maryland, Charles County, Faulkner

Site Address: 12620 Crain Hwy, Newburg, MD 20664

Coordinates: 38°21'39.37"N 76°58'20.60"W

Owner: GenOn

Number and Type of CCB Storage Units Onsite: Unknown, likely one or more structural fills

Accepted Materials: Class F fly ash and bottom ash

Estimated Quantity of CCBs: Unknown

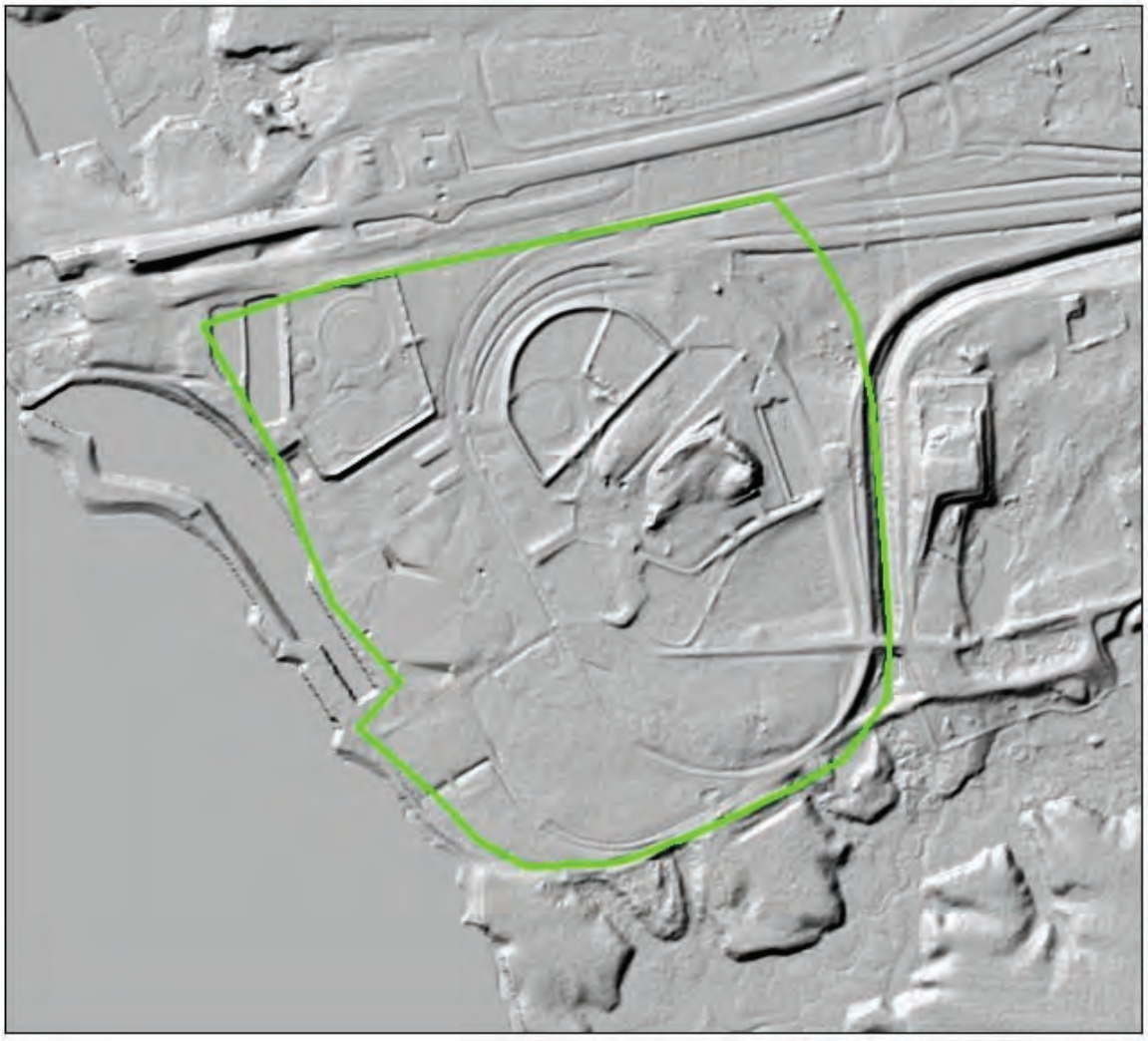
Estimated Area: Unknown

Beneficial Use Projects: None

CCB Compliance Website: None

Last Update: September 2020

MORGANTOWN POWER PLANT ASH DEPOSIT – LiDAR HILLSHADE



Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data

Notes

Site History: Small quantities of ash co-disposed with dredge spoils in low areas adjacent to the Morgantown Power Plant during the early 1970s (PPSP, 1982).

Environmental Impacts: None available.

Sources: PPSS, 1982a; Knight, 2017; Maryland MERLIN Online

WALDORF SITE COAL ASH DEPOSIT

Source: GoogleEarth 2020; Image date October 2019

Site Name: Waldorf Site

State, County, City: Maryland, Charles County, Waldorf

Address: 2600 Crain Hwy, Waldorf, MD 20601

Coordinates: 39°38'16.79"N 76°53'52.95"W

Owner: Waldorf Toyota (Kody Holdings, LLC)

Number and Type of CCR Storage Units Onsite: 1 Structural fill

Accepted Materials: Class F fly ash, bottom ash

Estimated Quantity of CCRs: Unknown

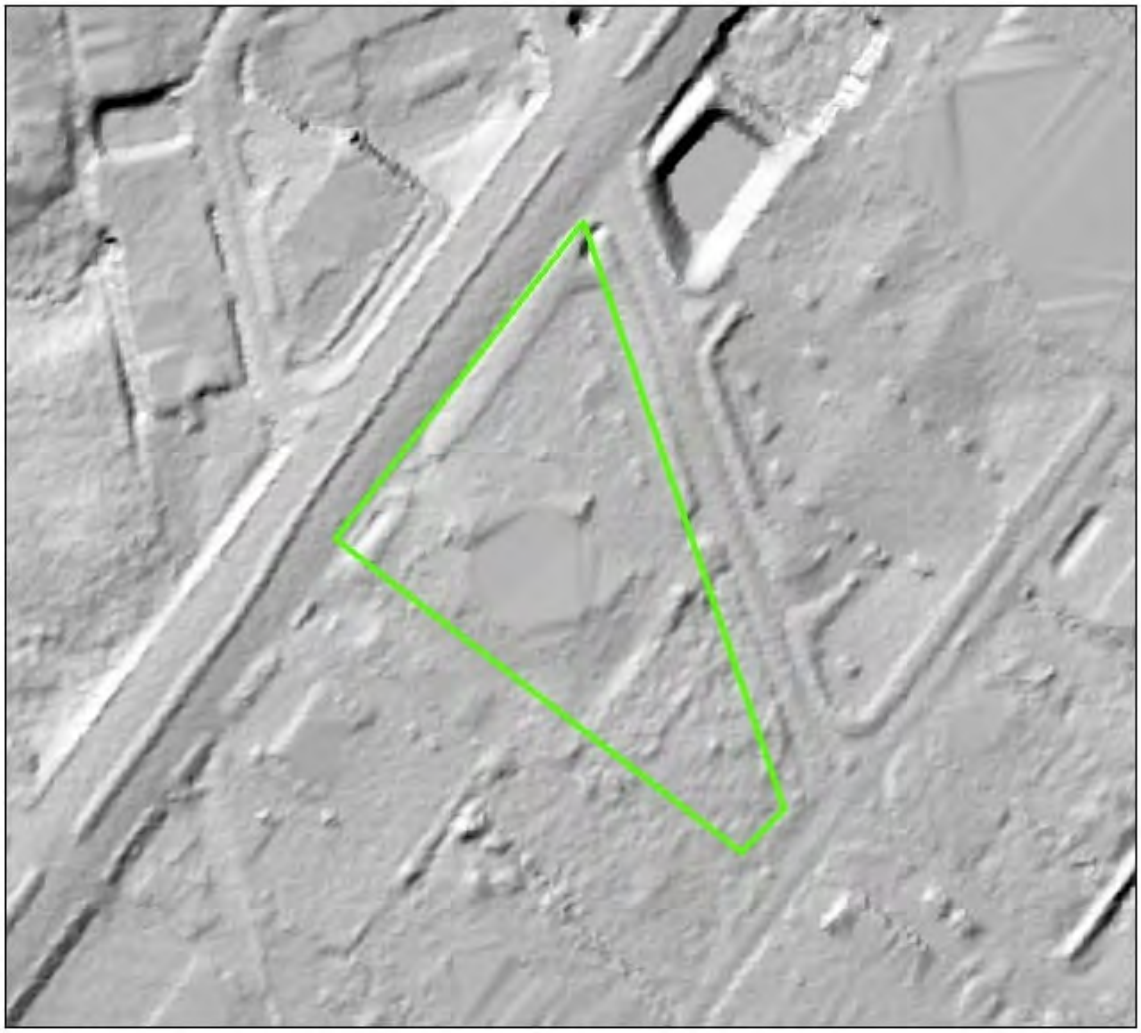
Estimated Area: Approximately 5 acres (PPSP, 1982a)

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: October 2020

WALDORF SITE COAL ASH DEPOSIT – LiDAR HILLSHADE



Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data

Notes

Site History: Class F fly ash and bottom ash from the Morgantown Power Plant were placed at the site during the early 1970s.

Environmental Impacts: Some EPA and MDE site records were identified that relate to the operation of an auto dealership, but no information was available regarding environmental impacts related to CCR at the site.

Sources: PPSP, 1982a; Maryland MERLIN Online

Maryland:
Dorchester County

VIENNA POWER PLANT COAL ASH DEPOSITS

Source: GoogleEarth, 2020; Image date October 2013

Site Name: Vienna Power Plant Sites 1 and 2

State, County, City: Maryland, Dorchester County, Vienna

Site Address: Chapel of East Road, Vienna

Coordinates: 38°29'11.21"N 75°49'16.18"W and 38°29'2.93"N 75°48'46.66"W

Owner: Delmarva Power

Number and Type of CCB Storage Units Onsite: 1 or more structural fills;
1 closed surface impoundment

Accepted Materials: Class F fly ash

Estimated Quantity of CCBs: Unknown

Estimated Area: Unknown

Beneficial Use Projects: None

CCB Compliance Website: None

Last Update: September 2020

VIENNA POWER PLANT ASH DEPOSITS – LiDAR HILLSHADE

Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data

Notes:

Site History: The Vienna Power Plant stopped burning coal in 1972. Between 1950 and 1966, Class F fly ash is reported to have been sluiced to a settling basin onsite (Site 1), but no further details are given as to the exact location of the basin (PPSP, 1982). From 1966 to 1972, CCR were sluiced from the power plant to a diked area located on the east side of the Nanticoke River (Site 2). During that time, the majority of bottom ash was sold.

Environmental Impacts: Several environmental impact studies were published between 1982 and 1984. PPSP 1982b indicates that the diked area east of the Nanticoke River experienced multiple breaches during the period in which it received fly ash. There are no records of legal action, cleanup, or response actions related to environmental impacts.

Sources: PPSP, 1982a; PPSP, 1982b; Maryland MERLIN Online

Maryland:
Garrett County

DRAFT

ARJ CONSTRUCTION COAL ASH DEPOSIT

Source: GoogleEarth, 2020. Image Date: November 2016.
Dashed line shows possible fill area based on surface morphology.

Site Name: ARJ Construction Site

State, County, City: Maryland, Garrett County

Address: West of Westernport Road

Coordinates: 39°30'44.96"N 79° 6'0.72"W

Owner: ARJ Construction

Number and Type of CCR Storage Units Onsite: 1 Structural fill

Accepted Materials: FBC fly ash, bottom ash

Estimated Quantity of CCRs: Between 68,690 and 180,000 tons

Estimated Area: Unknown

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: October 2020

ARJ CONSTRUCTION COAL ASH DEPOSIT– LiDAR HILLSHADE

Source: Maryland Department of Information Technology,
Geographic Information Office, Maryland iMAP LiDAR data
Dashed line shows possible fill area based on surface morphology.

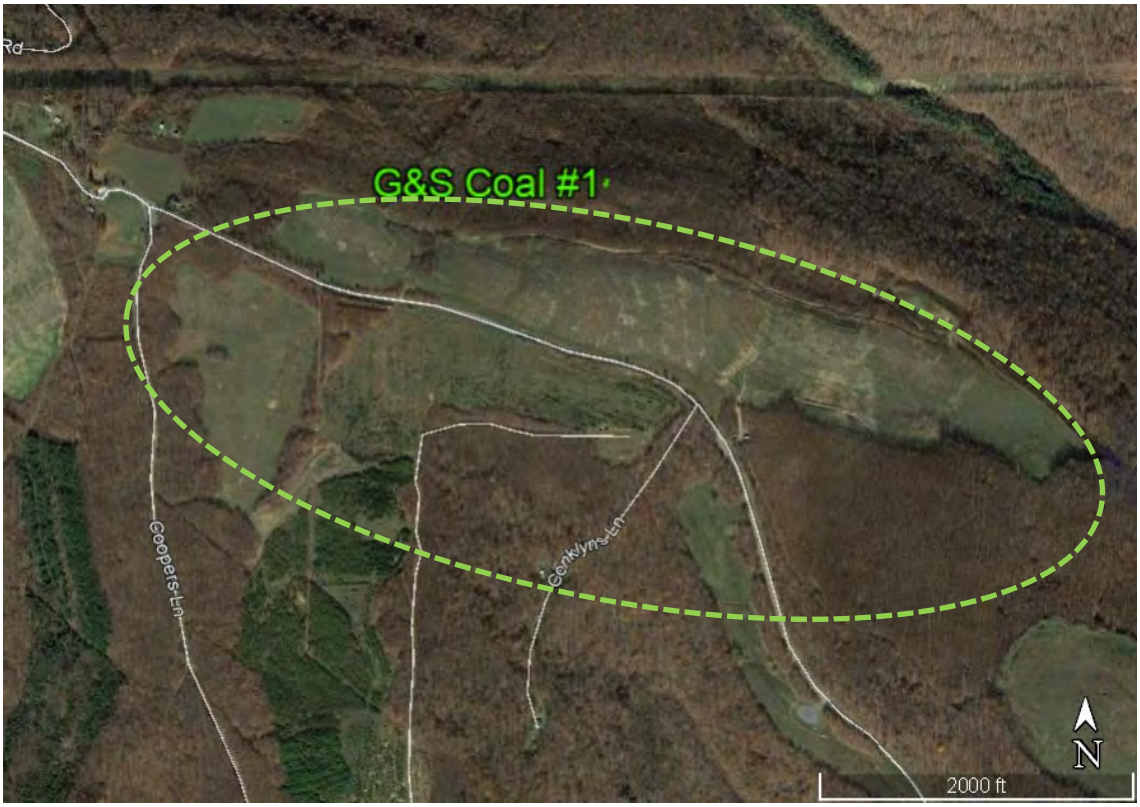
Notes

Site History: MDE ID#: SM-13-463, as of 2017, MDE site status is listed as active. The site is permitted to receive a maximum of 180,000 tons of alkaline FBC material from the Warrior Run Power Plant. As of 2017, 68,690 tons had been placed. Fill activities began in 2016.

Environmental Impacts: No information available.

Sources: Hooker, 2017

G&S COAL #1 COAL ASH DEPOSIT



Source: GoogleEarth, 2020. Image Date: November 2016.
Dashed line shows possible fill area based on surface morphology and historical aerial images.

Site Name: G&S Coal #1

State, County, City: Maryland, Garrett County

Address: Mt. Zion Road - 2.9 Miles SE of Rt. 135

Coordinates: 39°26'24.88"N 79°10'47.03"W

Owner: Duckworth, Mary V.

Number and Type of CCR Storage Units Onsite: 1 Structural fill

Accepted Materials: FBC fly ash, bottom ash

Estimated Quantity of CCRs: Unknown

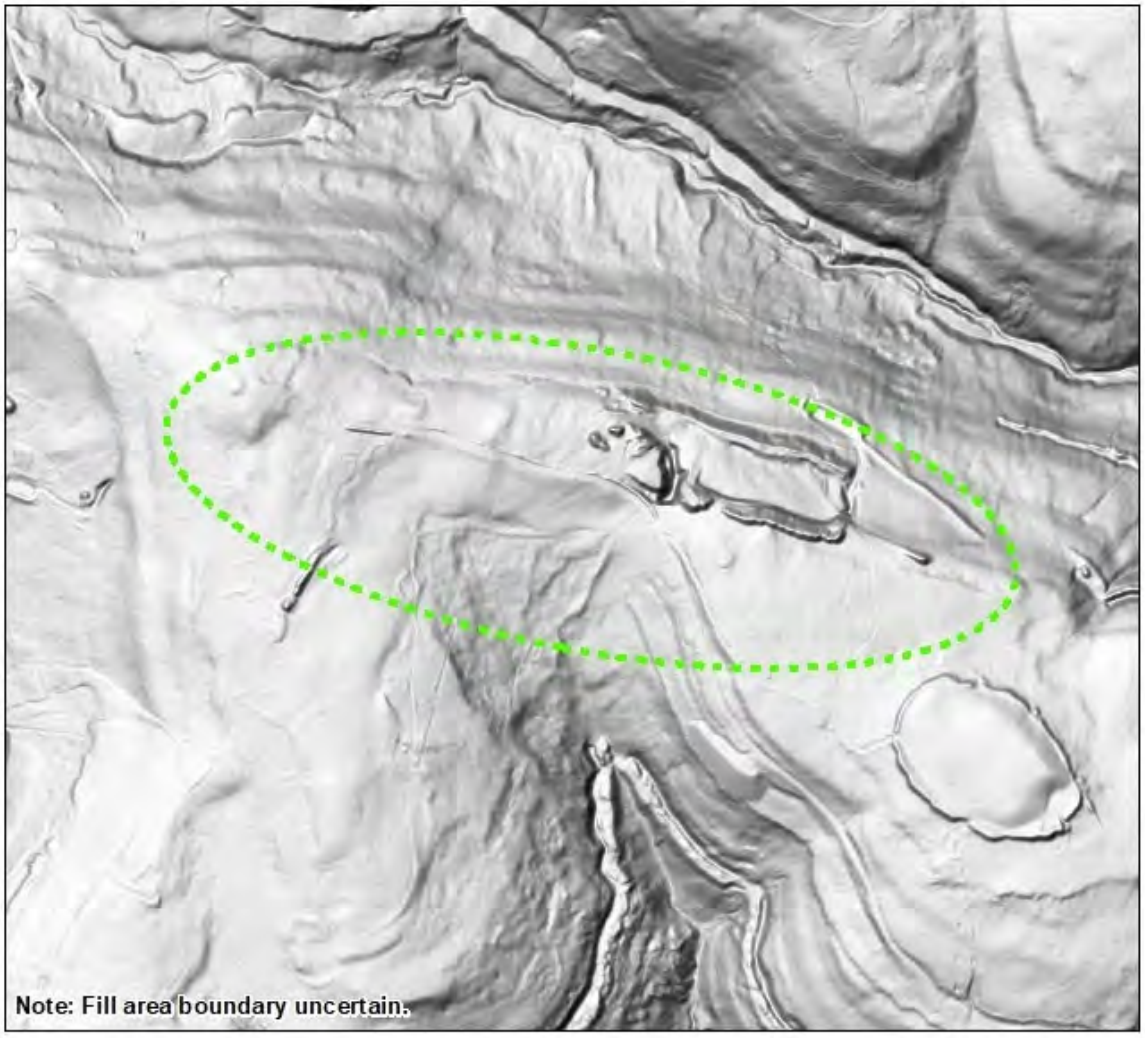
Estimated Area: Unknown

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: October 2020

G&S COAL #1 COAL ASH DEPOSIT – LiDAR HILLSHADE



Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data
Dashed line shows possible fill area based on surface morphology and historical aerial images.

Notes

Site History: MDE ID#: SM-92-421, as of 2017, MDE site status is listed as active. Alkaline FBC fly ash and bottom ash from Warrior Run Power Plant were used to reclaim a surface coal mine.

Environmental Impacts: No information available.

Sources: Hooker, 2017; MDE, 2010; Maryland MERLIN Online

G&S COAL #2 COAL ASH DEPOSIT

Source: GoogleEarth, 2020. Image Date: November 2016.
Dashed line shows possible fill area based on surface morphology and historical aerial images.

Site Name: G&S Coal #2

State, County, City: Maryland, Garrett County

Address: Pee Wee Road - 1 Mile east of Rt. 38

Coordinates: 39°23'56.91"N 79°10'31.67"W

Owner: G&S Coal Company, Inc.

Number and Type of CCR Storage Units Onsite: 1 Structural fill

Accepted Materials: FBC fly ash, bottom ash

Estimated Quantity of CCRs: Unknown

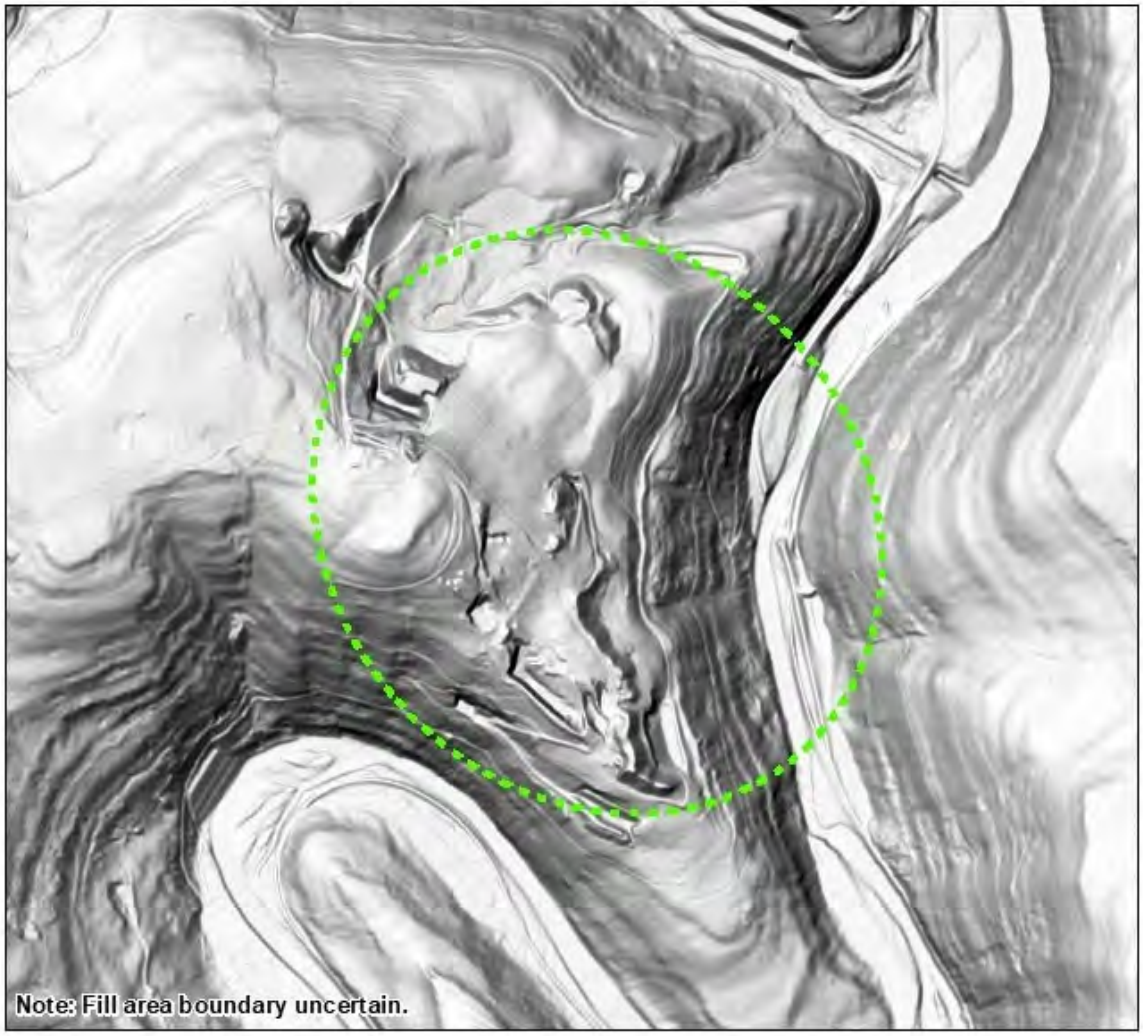
Estimated Area: Unknown

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: October 2020

G&S COAL #2 COAL ASH DEPOSIT – LiDAR HILLSHADE



Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data
Dashed line shows possible fill area based on surface morphology and historical aerial images.

Notes

Site History: MDE ID#: SM-00-435, as of 2017, MDE site status is listed as active. Alkaline FBC fly ash and bottom ash from Warrior Run Power Plant were used to reclaim a surface coal mine.

Environmental Impacts: No information available.

Sources: MDE, 2010; Maryland MERLIN Online

G&S COAL #3 COAL ASH DEPOSIT

Source: GoogleEarth, 2020. Image Date November, 2016.
Dashed line shows possible fill area based on surface morphology and historical aerial images.

Site Name: G&S Coal #3

State, County, City: Maryland, Garrett County

Address: Rt. 136 6 miles S of Bloomington

Coordinates: 39°27'45.00"N 79°4'32.25"W

Owner: G&S Coal Company, Inc.

Number and Type of CCR Storage Units Onsite: 1 Structural fill

Accepted Materials: FBC fly ash, bottom ash

Estimated Quantity of CCRs: Unknown

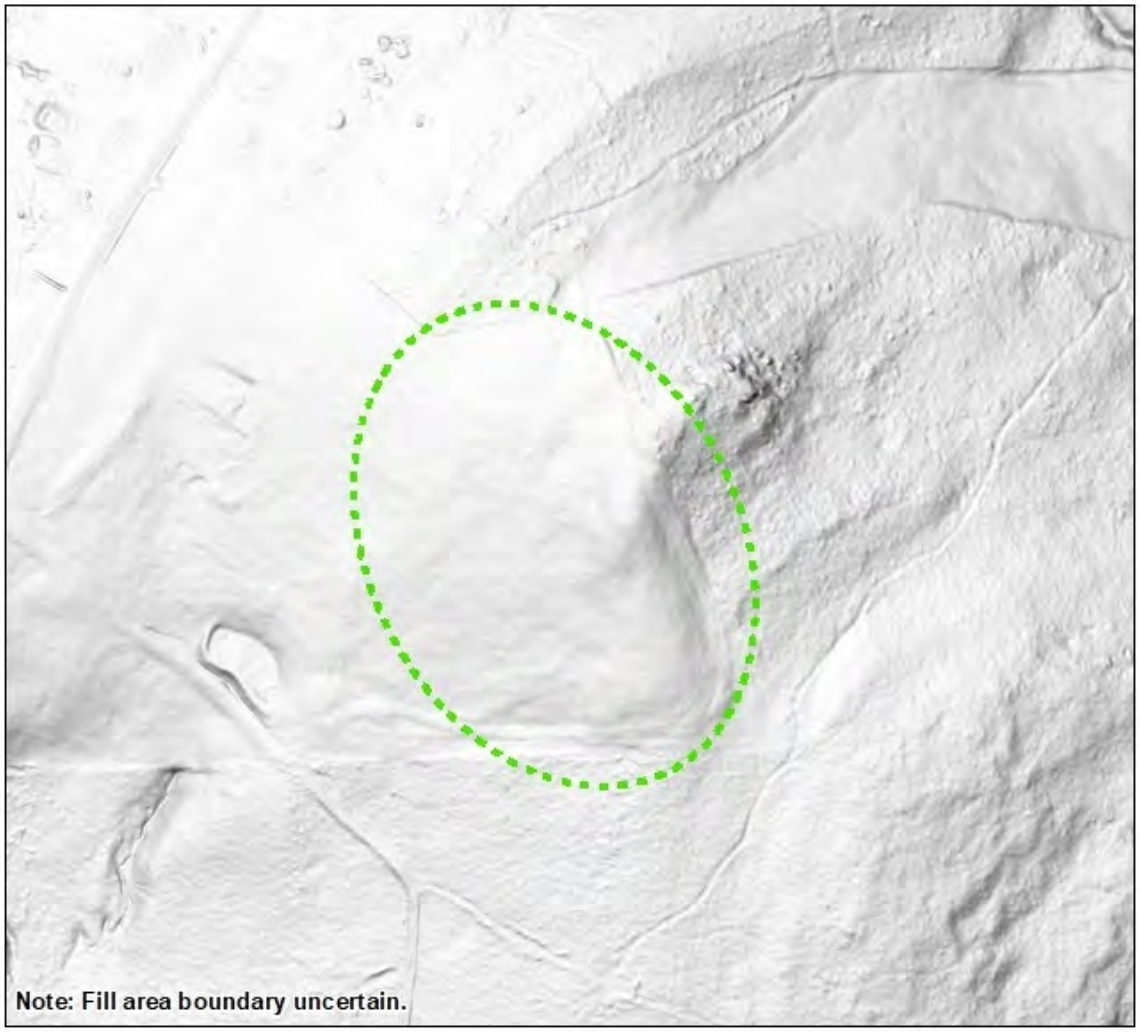
Estimated Area: Unknown

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: October 2020

G&S COAL #3 COAL ASH DEPOSIT– LiDAR HILLSHADE



Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data
Dashed line shows possible fill area based on surface morphology and historical aerial images.

Notes

Site History: MDE ID#: SM-02-441, as of 2017, MDE site status is listed as complete. Alkaline FBC fly ash and bottom ash from Warrior Run Power Plant were used to reclaim a surface coal mine. Location is estimated.

Environmental Impacts: No information available.

Sources: Hooker, 2017; MDE, 2010

G&S COAL COMPANY SITE COAL ASH DEPOSIT

Source: GoogleEarth, 2020. Image Date: November 2016
Dashed line shows possible fill area based on surface morphology and historical aerial images.

Site Name: G&S Coal Company

State, County, City: Maryland, Garrett County

Address: North of Pee Wee Rd.

Coordinates: 39°24'19.92"N 79°11'48.80"W

Owner: G&S Coal Company

Number and Type of CCR Storage Units Onsite: 1 Structural fill

Accepted Materials: FBC fly ash and bottom ash

Estimated Quantity of CCRs: 1,902 tons (Hooker, 2017)

Estimated Area: Unknown

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: October 2020

G&S COAL COMPANY SITE COAL ASH DEPOSIT– LiDAR HILLSHADE

Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data
Dashed line shows possible fill area based on surface morphology and historical aerial images.

Notes

Site History: MDE ID#: SM-08-455, MDE status as of June 2017 is listed as active. The site was permitted in 2010 to receive a maximum of 12,000 tons of alkaline FBC ash from the Warrior Run Power Plant. As of 2017 approximately 1,902 tons had been placed.

Environmental Impacts: No information available.

Sources: Hooker, 2017

MORAN COAL COMPANY #2 COAL ASH DEPOSIT

Source: GoogleEarth, 2020. Image Date: November 2016.
Dashed line shows possible fill area based on surface morphology and historical aerial images.

Site Name: Moran Coal Company #2

State, County, City: Maryland, Garrett County

Address: Westernport Rd. - 1.5 miles west of Westernport

Coordinates: 39°29'30.82"N 79°3'47.46"W

Owner: Moran Coal Company

Number and Type of CCR Storage Units Onsite: 1 Structural fill

Accepted Materials: FBC fly ash, bottom ash

Estimated Quantity of CCRs: Unknown

Estimated Area: Unknown

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: October 2020

MORAN COAL #2 COAL ASH DEPOSIT – LiDAR HILLSHADE

Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data
Dashed line shows possible fill area based on surface morphology and historical aerial images.

Notes

Site History: MDE ID#: SM004-445, as of 2017, MDE site status is listed as complete. Alkaline FBC fly ash and bottom ash from Warrior Run Power Plant were used to reclaim a surface coal mine.

Environmental Impacts: No information available.

Sources: Hooker, 2017; MDE, 2010; Maryland MERLIN Online

MORAN COAL COMPANY/LUKE PAPER MILL COAL ASH DEPOSIT

Source: GoogleEarth 2020; Image date November 2019

Site Name: Moran Coal Co./Luke Paper Mill Ash Site

State, County, City: Maryland, Garrett County

Address: Old Westernport Road - Site B of Franklin Strip Mine

Coordinates: 39°30'27.60"N 79°4'3.18"W

Owner: Moran Coal Co.

Number and Type of CCR Storage Units Onsite: 1 Structural fill

Accepted Materials: Class F fly ash

Estimated Quantity of CCRs: 444,000 (MDE, 2010)

Estimated Area: Unknown

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: October 2020

MORAN COAL COMPANY/LUKE PAPER MILL COAL ASH DEPOSIT
– LiDAR HILLSHADE

Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data

Notes

Site History: MDE ID#: CCR-10-001, as of 2017, MDE site status is active. Fly ash from the Luke Paper Mill (also referred to as Verso Co., or New Page) Power Plant was used to reclaim an abandoned surface coal mine. The site was actively receiving ash at least through 2010, however the paper mill was shut down in 2019 and placement of CCRs ended at or prior to that point. A review of historical satellite photos indicates active CCR movement gradually south and east. Portions may have been capped recently. It is possible that this ash may contain high unburned carbon levels (it is black in color) and would have to be tested to determine if it is appropriate for cement kiln feedstock.

Environmental Impacts: MDE, 2010 indicates that water quality monitoring was performed at the site under the General Industrial Stormwater Permit.

Sources: MDE, 2010; Maryland MERLIN Online

SAVAGE MOUNTAIN MINERALS COAL ASH SITE

Source: GoogleEarth, 2020. Image Date: November 2016.
Dashed line shows possible fill area based on surface morphology.

Site Name: Savage Mountain Minerals

State, County, City: Maryland, Garrett County

Address: Michael Road via Bartlett Run Rd - 1.7 miles west of Barton

Coordinates: 39°33'8.03"N 79°2'3.30"W

Owner: Russel, Donald, Sr. Life, Int. (Maryland MERLIN Online)

Number and Type of CCR Storage Units Onsite: 1 Structural fill

Accepted Materials: FBC fly ash, bottom ash

Estimated Quantity of CCRs: Unknown

Estimated Area: Unknown

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: October 2020

SAVAGE MOUNTAIN MINERALS COAL ASH DEPOSIT
– LiDAR HILLSHADE

Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data
Dashed line shows possible fill area based on surface morphology.

Notes

Site History: MDE ID#: SM-05-448, as of 2017, MDE site status is listed as active. Alkaline FBC fly ash and bottom ash from Warrior Run Power Plant were used to reclaim a surface coal mine. Historic aerial images are available on GoogleEarth dating back to 1995. Although Hooker, 2017 indicates that the site is active, data provided by MDE also indicate that no CCR have been placed at the site since 2010. A review of historical images indicates that the site was vegetated between 2011 and 2013.

Environmental Impacts: No information available.

Sources: MDE, 2010; Hooker, 2017

DRAFT

TRI STAR MINING COAL ASH DEPOSIT

Source: GoogleEarth, 2020. Image Date: November 2016.
Dashed line shows possible fill area based on surface morphology.

Site Name: Tri Star Mining

State, County, City: Maryland, Garrett County

Address: Russell Road via Bartlett Run Rd. - 1.2 miles NW of Barton

Coordinates: 39°33'3.19"N79° 1'55.43"W

Owner: BTC Development

Number and Type of CCR Storage Units Onsite: 1 Structural fill

Accepted Materials: FBC fly ash, bottom ash

Estimated Quantity of CCRs: Unknown

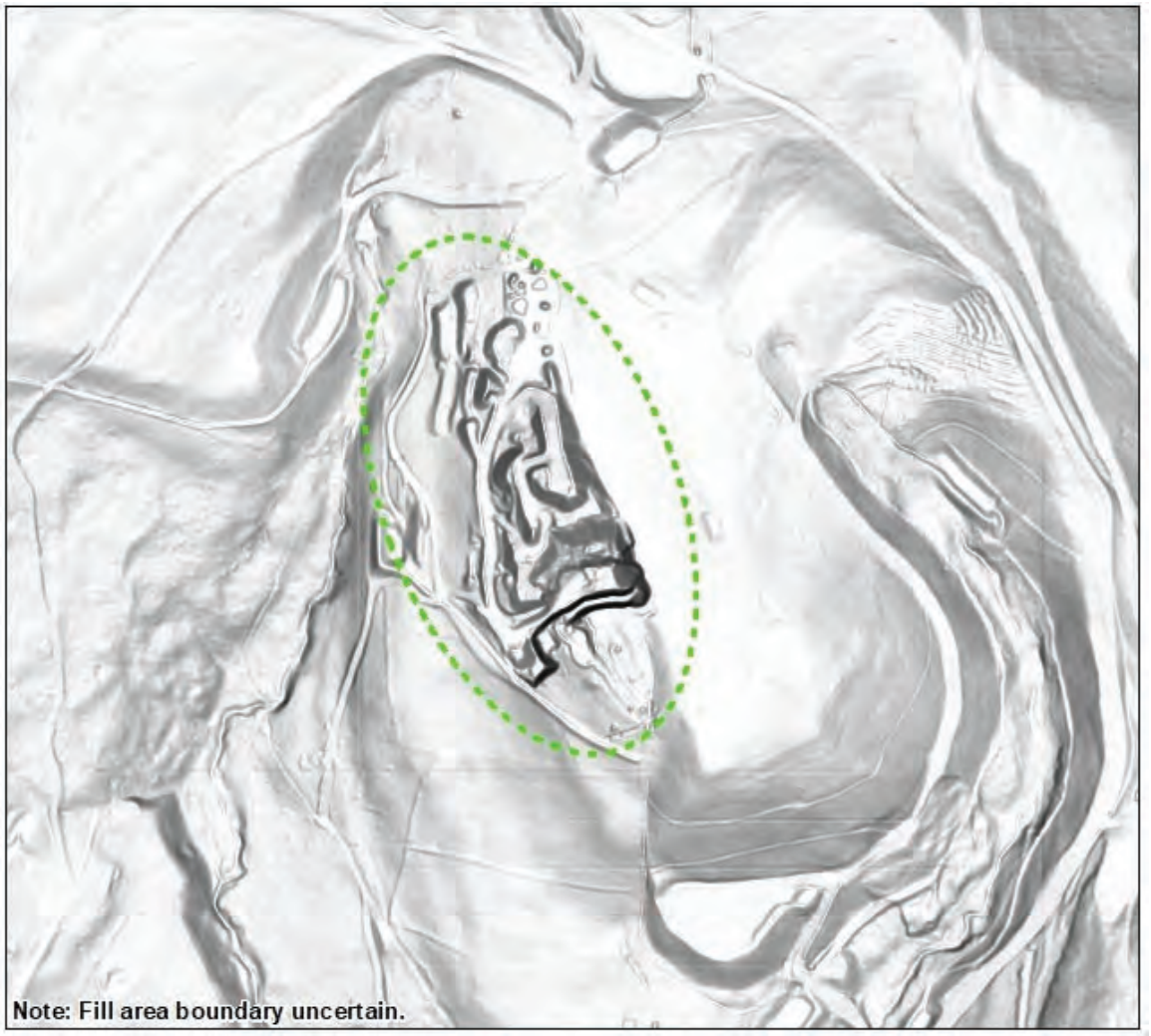
Estimated Area: Unknown

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: October 2020

TRI STAR MINING COAL ASH DEPOSIT– LiDAR HILLSHADE



Source: Maryland Department of Information Technology,
Geographic Information Office, Maryland iMAP LiDAR data
Dashed line shows possible fill area based on surface morphology.

Notes

Site History: MDE ID#: SM-99-434, as of 2017, MDE site status is listed as complete. Alkaline FBC fly ash and bottom ash from the Warrior Run Power Plant were used to reclaim a surface coal mine. This location appears to be the location of a highwall collapse in 2007. Satellite imagery indicates there is still some activity adjacent to this site to the west (may be an adjacent mine permitted separately).

Environmental Impacts: No information available.

Sources: MDE, 2010; Hooker, 2017; Cumberland Times, 2010; Maryland MERLIN Online

DRAFT

TRI STAR MINING #2 COAL ASH DEPOSIT

Source: GoogleEarth, 2020. Image Date: November 2016.
Dashed line shows possible fill area based on surface morphology and historical images.

Site Name: Tri Star Mining #2

State, County, City: Maryland, Garrett County

Address: Russell Road via Bartlett Run Rd. - 2.3 miles NW of Barton

Coordinates: 39°32'21.04"N 79°2'44.20"W

Owner: BTC Development

Number and Type of CCR Storage Units Onsite: 1 Structural fill

Accepted Materials: FBC fly ash, bottom ash

Estimated Quantity of CCRs: Unknown

Estimated Area: Unknown

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: October 2020

TRI STAR MINING #2 COAL ASH DEPOSIT– LiDAR HILLSHADE

Source: Maryland Department of Information Technology,
Geographic Information Office, Maryland iMAP LiDAR data
Dashed line shows possible fill area based on surface morphology and historical images.

Notes

Site History: MDE ID#: SM-03-444, as of 2017, MDE site status is listed as complete. Alkaline FBC fly ash and bottom ash from Warrior Run Power Plant were deposited to reclaim a surface coal mine.

Environmental Impacts: No information available.

Sources: MDE, 2010; Maryland MERLIN Online

VINDEX ENERGY CORP. ISLAND SOUTH COAL ASH DEPOSIT

Source: GoogleEarth, 2020. Image Date: November 2016.
Dashed line shows possible fill area based on surface morphology.

Site Name: Vindex Energy Corp. Island South

State, County, City: Maryland, Garrett County

Address: Sharpless Mine Road via. Mt. Zion Rd - 0.6 miles S of Rt. 135

Coordinates: 39°26'14.92"N 79°12'35.85"W

Owner: G&S Coal Co. (Maryland MERLIN Online)

Number and Type of CCR Storage Units Onsite: 1 Structural fill

Accepted Materials: FBC fly ash, bottom ash

Estimated Quantity of CCRs: Unknown

Estimated Area: Unknown

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: October 2020

VINDEX ENERGY CORP. ISLAND SOUTH COAL ASH DEPOSIT
– LiDAR HILLSHADE

Source: Maryland Department of Information Technology,
Geographic Information Office, Maryland iMAP LiDAR data
Dashed line shows possible fill area based on surface morphology.

Notes

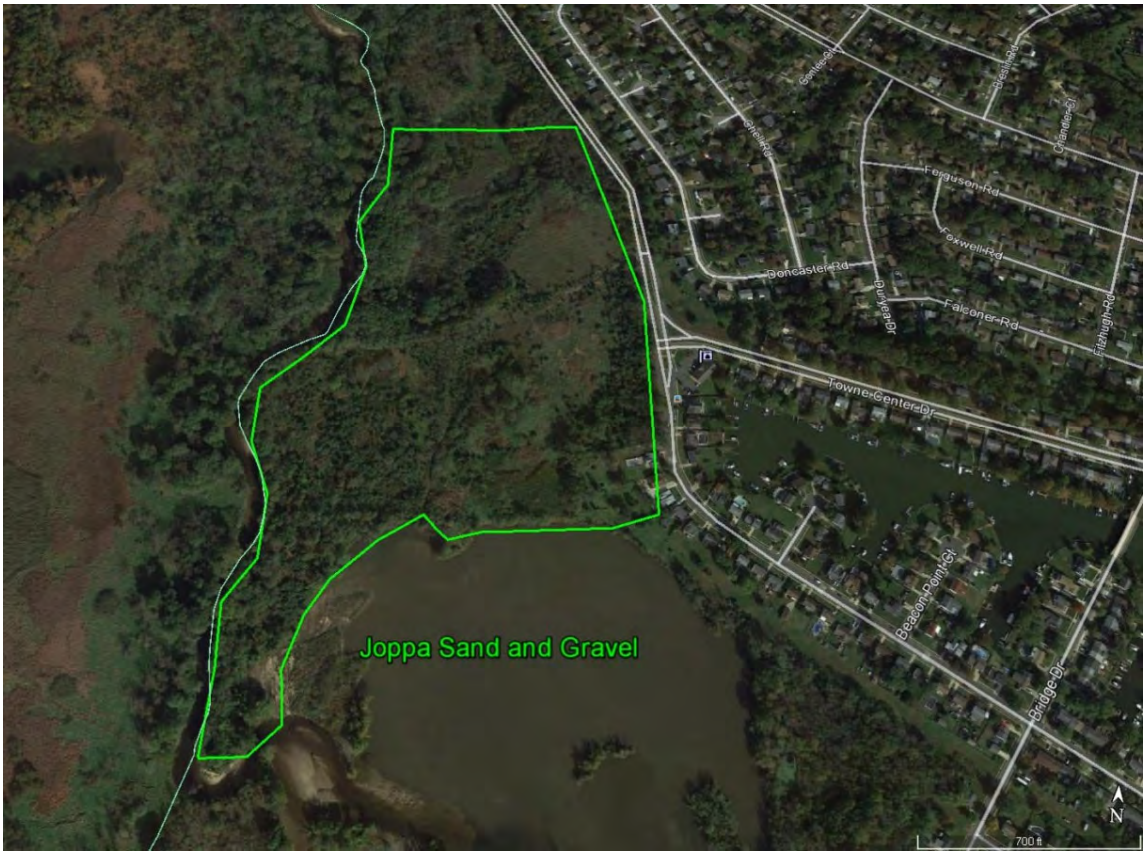
Site History: MDE ID#: SM-902-443, as of 2017, MDE site status is listed as complete. Alkaline FBC fly ash and bottom ash from Warrior Run Power Plant were used to reclaim a surface coal mine.

Environmental Impacts: No information available.

Sources: MDE, 2010; Maryland MERLIN Online; MDE 2008-2017

Maryland:
Harford County

JOPPA SAND AND GRAVEL SITE COAL ASH DEPOSIT



Source: GoogleEarth, 2020; Image date November 2019

Site Name: Joppa Sand and Gravel Site

State, County, City: Maryland, Harford County

Site Address: East Bank of Little Gunpowder Falls, just north of Rumsey Island

Coordinates: 39°24'44.81"N 76°22'7.36"W

Owner: State of Maryland

Number and Type of CCR Storage Units Onsite: 1 Structural fill

Accepted Materials: Class F fly ash

Estimated Quantity of CCRs: Unknown

Estimated Area: Approximately 40 acres (PPSP, 1982a)

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: September 2020

JOPPA SAND AND GRAVEL COAL ASH DEPOSIT – LiDAR HILLSHADE

Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data

Notes

Site History: Class F fly ash from the H.A. Wagner Power Plant was disposed of at the site around 1980. PPSP, 1982 indicates CCRs were combined with construction debris and oyster shells. During the 1980s there were a series of lawsuits between the sand and gravel mine owner and Maryland over ownership of the site. These were resolved in 1987, with no mention of CCRs as part of the lawsuit. Article on lawsuits indicates there was a filling of wetlands but does not specify if CCRs were used. A windshield survey was performed on 25 July 2017. The site was viewed from Shore Dr. which runs along the eastern site boundary. The site is mostly vegetated. One paved private access road was visible. Signs along the fence indicate that some portions of the site may be currently used for recreational purposes.

Environmental Impacts: No information available.

Sources: PPSP, 1982a; Open Jurist, Joppa vs MD article; Maryland MERLIN Online

Maryland:
Montgomery County

DICKERSON POWER PLANT COAL ASH DEPOSIT

Source: GoogleEarth, 2020. Image Date: October 2019
Dashed line shows possible fill area based on site development pattern.

Site Name: Dickerson Power Plant Site

State, County, City: Maryland, Montgomery County, Dickerson

Site Address: 21200 Martinsburg Rd., Dickerson, MD 20842

Coordinates: 39°12'41.31"N 77°27'39.96"W

Owner: Potomac Electric Power Co. (NRG)

Number and Type of CCB Storage Units Onsite: Unknown, likely one or more structural fills

Accepted Materials: Class F fly ash and bottom ash

Estimated Quantity of CCBs: Unknown

Estimated Area: Unknown

Beneficial Use Projects: None

CCB Compliance Website: None

Last Update: October 2020

DICKERSON POWER PLANT ASH DEPOSIT – LiDAR HILLSHADE

Source: Maryland Department of Information Technology,
Geographic Information Office, Maryland iMAP LiDAR data
Dashed line shows possible fill area based on site development pattern.

Notes

Site History: Class F fly ash and bottom ash generated at the power plant were disposed of onsite between 1959 and 1973; the exact areas where ash was placed could not be determined during production of this report. From 1973 to 1981, this material was disposed of in Pennsylvania. In 1981, the Westland Coal Ash Storage site was constructed to dispose of fly ash and bottom ash from the Dickerson Power Plant (PPSP, 1982a).

Environmental Impacts: None available.

Sources: PPSP, 1982a; Maryland MERLIN Online

WESTLAND FLY ASH STORAGE SITE ASH DEPOSIT

Source: GoogleEarth, 2020. Image Date: October 2019

Site Name: Westland Fly Ash Storage Site

State, County, City: Maryland, Montgomery County, Dickerson

Site Address: 20831 Martinsburg Road, Dickerson, MD 20842

Coordinates: 39°11'30.85"N 77°27'30.87"W

Owner: GenOn MD Ash Management, LLC

Number and Type of CCB Storage Units Onsite: 1 Landfill

Accepted Materials: Class F fly ash and bottom ash

Estimated Quantity of CCBs: 3.5 million cubic yards (MDE, 2010)

Estimated Area: Unknown

Beneficial Use Projects: Recovery of CCBs for use in cement manufacture began in 2019

CCB Compliance Website: https://www.genon.com/ccr-rule-compliance/

Last Update: October 2020

WESTLAND POWER PLANT ASH DEPOSIT – LiDAR HILLSHADE

Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data

Notes:

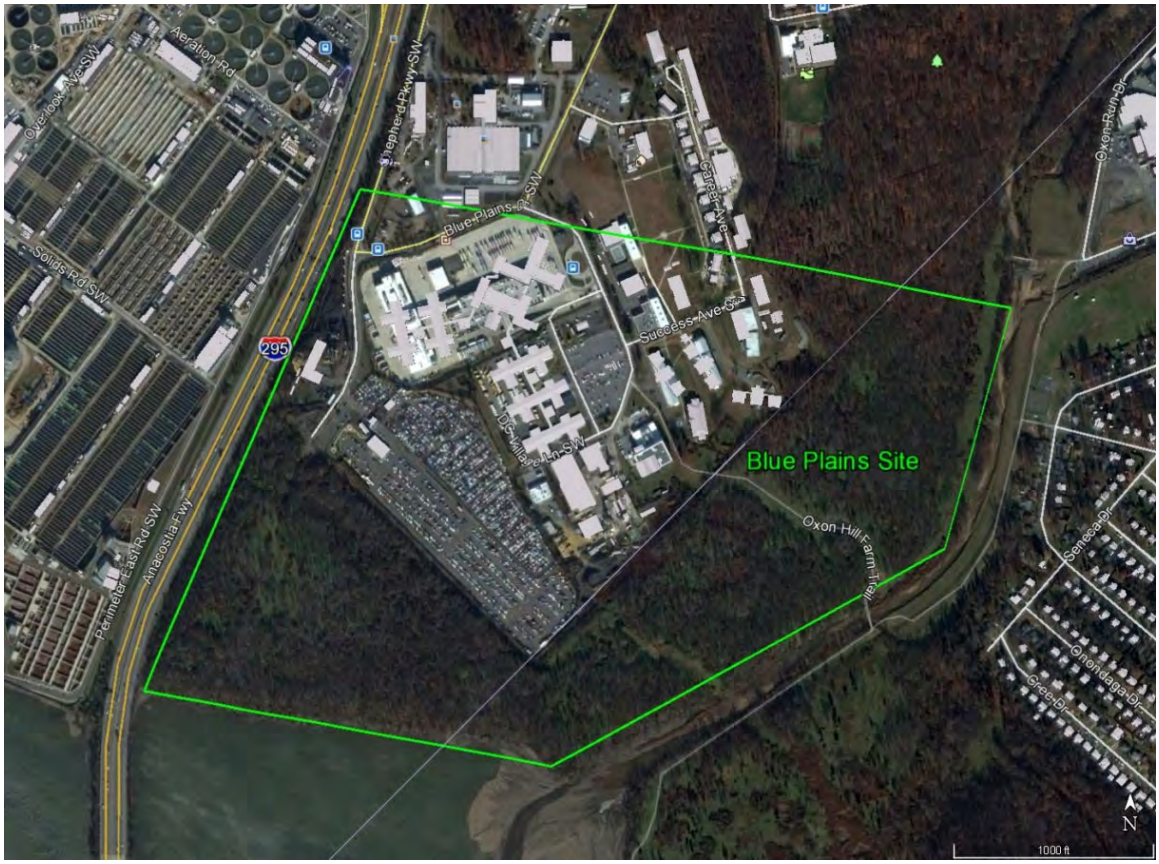
Site History: Active CCR storage site receiving CCRs from Dickerson Power Plant since 1981. Recovery of CCR for sale to the cement industry began in 2019.

Environmental Impacts: Consent decree issued in 2013 settling lawsuits from State and environmental groups claiming that the landfill had impacted groundwater quality (Wheeler, 2013).

Sources: PPSP, 1982; MDE, 2010; Wheeler, 2013

Maryland:
Prince George's County

BLUE PLAINS COAL ASH DEPOSIT



Source: GoogleEarth, 2020. Image Date: July 2019

Site Name: Blue Plains Site

State, County, City: Maryland, Prince George's County, and Washington DC

Site Address: East of 295 near Oxon Run

Coordinates: 38°48'51.95"N 77°0'54.50"W

Owner: Two unimproved parcels are located in Prince George's County with the owner listed as the United States

Number and Type of CCR Storage Units: 1 Structural fill

Accepted Materials (e.g., fly ash, gypsum): Class F fly ash

Estimated Quantity of CCR: Unknown

Estimated Area: 100 acres

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: October 2019

BLUE PLAINS COAL ASH DEPOSIT – LiDAR HILLSHADE

Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data

Notes

Site History: Fly ash from the Benning Road and Buzzard Point Power Plants was placed at the site during the 1950s. Most of this site is located within Washington DC. The portion of the site within Washington DC is partly developed with parking lots and buildings. The remainder of site appears to be vegetated. There is a Blue Plains Wastewater Treatment Plant in the area, unknown whether it extends onto the old landfill area.

Environmental Impacts: None available.

Sources: PPSP, 1982a; Maryland MERLIN Online

BRANDYWINE FLY ASH STORAGE SITE ASH DEPOSIT

Source: GoogleEarth 2020; Image date October 2019
Dashed line shows possible fill area based on surface morphology.

Site Name: Brandywine Fly Ash Storage Site

State, County, City: Maryland, Prince George's County, Brandywine

Site Address: 11700 North Keys Road, Brandywine

Coordinates: 38°42'5.25"N 76°48'30.44"W

Owner: NRG

Number and Type of CCR Storage Units Onsite: 1 Landfill

Accepted Materials: Class F fly ash, bottom ash, FGD products (potentially including sodium sulfate)

Estimated Quantity of CCRs: 7 million cubic yards (MDE, 2010)

Estimated Area: 300 acres (Wheeler, 2010)

Beneficial Use Projects: None

CCR Compliance Website: https://www.genon.com/ccr-rule-compliance/

Last Update: October 2020

BRANDYWINE FLY ASH STORAGE SITE COAL ASH DEPOSIT
– LiDAR HILLSHADE

Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data
Dashed line shows possible fill area based on surface morphology.

Notes:

Site History: Active CCR storage site receiving CCRs from Chalk Point and Morgantown Power Plants since 1970.

Environmental Impacts: A lawsuit was filed by MDE in 2010 that included Faulkner and Westland in a consent decree issued in 2013. In addition, Hurricane Irene reportedly caused ash overflow at the site in 2011 (Wheeler, 2013).

Sources: PPSP, 1982a; MDE, 2010; Wheeler, 2010; Wheeler, 2013

CHALK POINT POWER PLANT COAL ASH DEPOSITS

Source: GoogleEarth, 2020. Image Date: October 2019

Site Name: Chalk Point Power Plant Site

State, County, City: Maryland, Prince George's County, Aquasco

Site Address: 25100 Chalk Point Rd., Aquasco, MD 20608

Coordinates: 38°32'37.95"N 76°41'13.90"W

Owner: GenOn Chalk Point, LLC

Number and Type of CCB Storage Units Onsite: Unknown, at least two, possibly more structural fills

Accepted Materials: Class F fly ash and bottom ash

Estimated Quantity of CCBs: Unknown

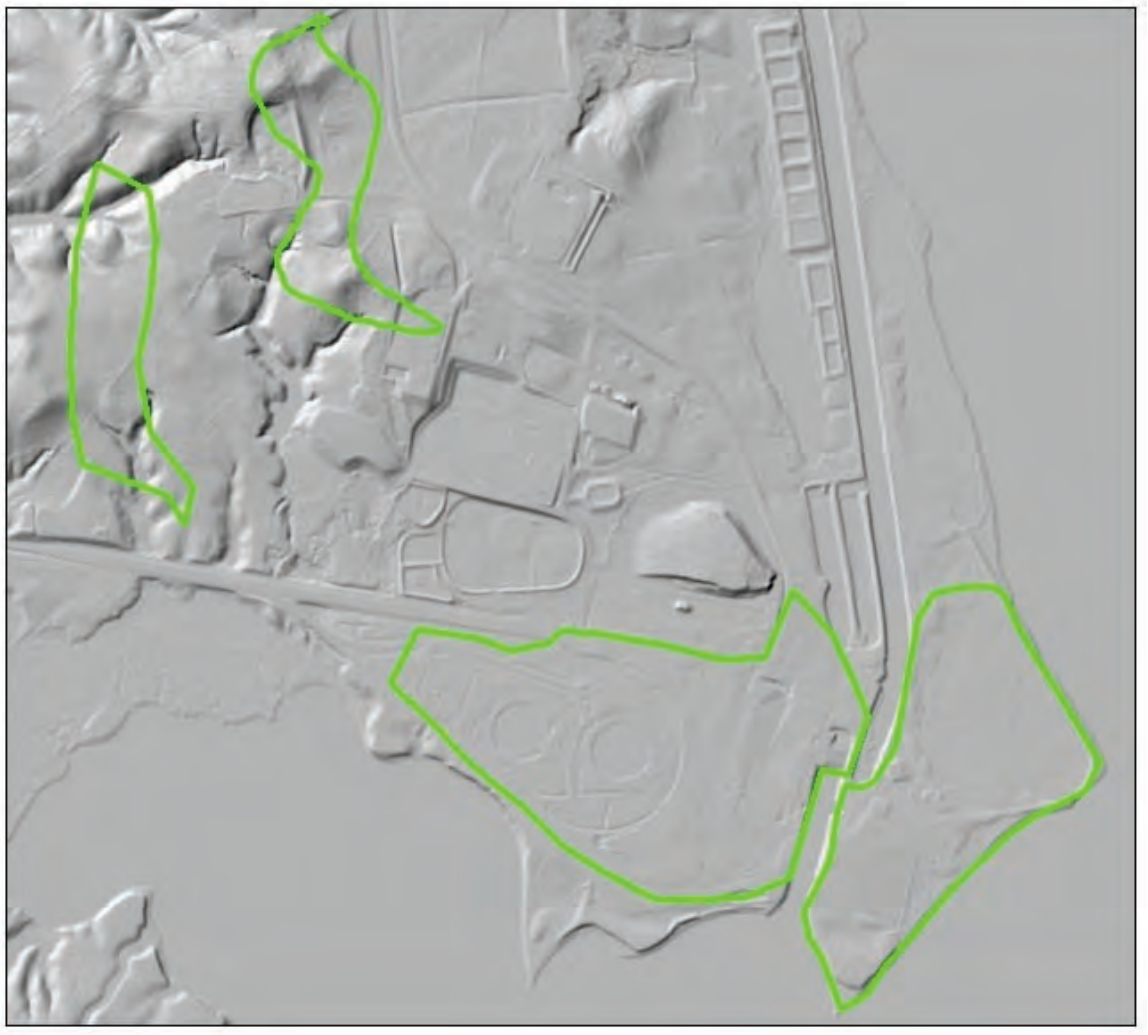
Estimated Area: Unknown

Beneficial Use Projects: None

CCB Compliance Website: None

Last Update: October 2020

CHALK POINT POWER PLANT ASH DEPOSIT – LiDAR HILLSHADE



Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data

Notes

Site History: Class F fly ash and bottom ash generated at the power plant were disposed of in on-site landfills from 1964 to 1970 (PPSP, 1982). Disposal moved to the Brandywine landfill in 1970.

Environmental Impacts: No information available.

Sources: PPSP, 1982a; Maryland MERLIN Online

DYSON ROAD ASH DEPOSIT

Source: GoogleEarth 2020; Image date April 2018

Site Name: Dyson Road Site

State, County, City: Maryland, Prince George's County

Address: Triangle formed by Dyson Rd., Rt. 301., and Missouri Ave.

Coordinates: 38°42'49.66"N 76°51'11.38"W

Owner: Marlboro Tobacco Market Inc. and Dyson Road LLC

Number and Type of CCR Storage Units Onsite: 1 Structural fill

Accepted Materials: Class F fly ash and bottom ash

Estimated Quantity of CCRs: Unknown

Estimated Area: 3 acres (PPSP, 1982)

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: September 2020

DYSON ROAD ASH DEPOSIT – LiDAR HILLSHADE

Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data

Notes

Site History: Site location and area are approximate. The site received fly ash and bottom ash from the Chalk Point and Morgantown Power Plants during the early 1970s. PPSP, 1982a indicates that this was a relatively small filling project.

Environmental Impacts: No information available.

Sources: PPSP, 1982a; Maryland MERLIN Online

KENILWORTH AVENUE SITE COAL ASH DEPOSIT

Source: GoogleEarth 2020; Image date July 2017

Site Name: Kenilworth Avenue Site

State, County, City: Maryland, Prince George's County

Address: Not available

Coordinates: 38°54'53.37"N 76°55'37.98"W

Owner: Developed, multiple owners

Number and Type of CCR Storage Units Onsite: 1 Structural fill

Accepted Materials: Class F fly ash, bottom ash

Estimated Quantity of CCRs: Unknown

Estimated Area: Approximately 50 acres

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: October 2020

KENILWORTH SITE COAL ASH DEPOSIT – LiDAR HILLSHADE

Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data

Notes

Site History: Class F fly ash and bottom ash from the Benning Road and Buzzard Point Power Plants were placed at the site during the 1950s.

Environmental Impacts: None available.

Sources: PPSP, 1982a; Maryland MERLIN Online

PISCATAWAY SITES 1, 2, AND 3 ASH DEPOSITS

Source: GoogleEarth 2020; Image date April 2018

Site Name: Piscataway Sites 1, 2, and 3

State, County, City: Maryland, Prince George's County

Address: Piscataway Dr.

Coordinates: 38°41'56.47"N 77°0'15.78"W; 38°41'53.11"N 77°0'8.24"W; and 38°41'56.97"N 76°59'49.50"W

Owner: United States of America and Piscataway Hills Citizens Association (Site 1); Pardo, Marianita A. Etal (Site 2); MD National Capital Park and Planning Co. (Site 3)

Number and Type of CCR Storage Units Onsite: 3 Structural fills

Accepted Materials: Class F fly ash and bottom ash

Estimated Quantity of CCRs: Unknown

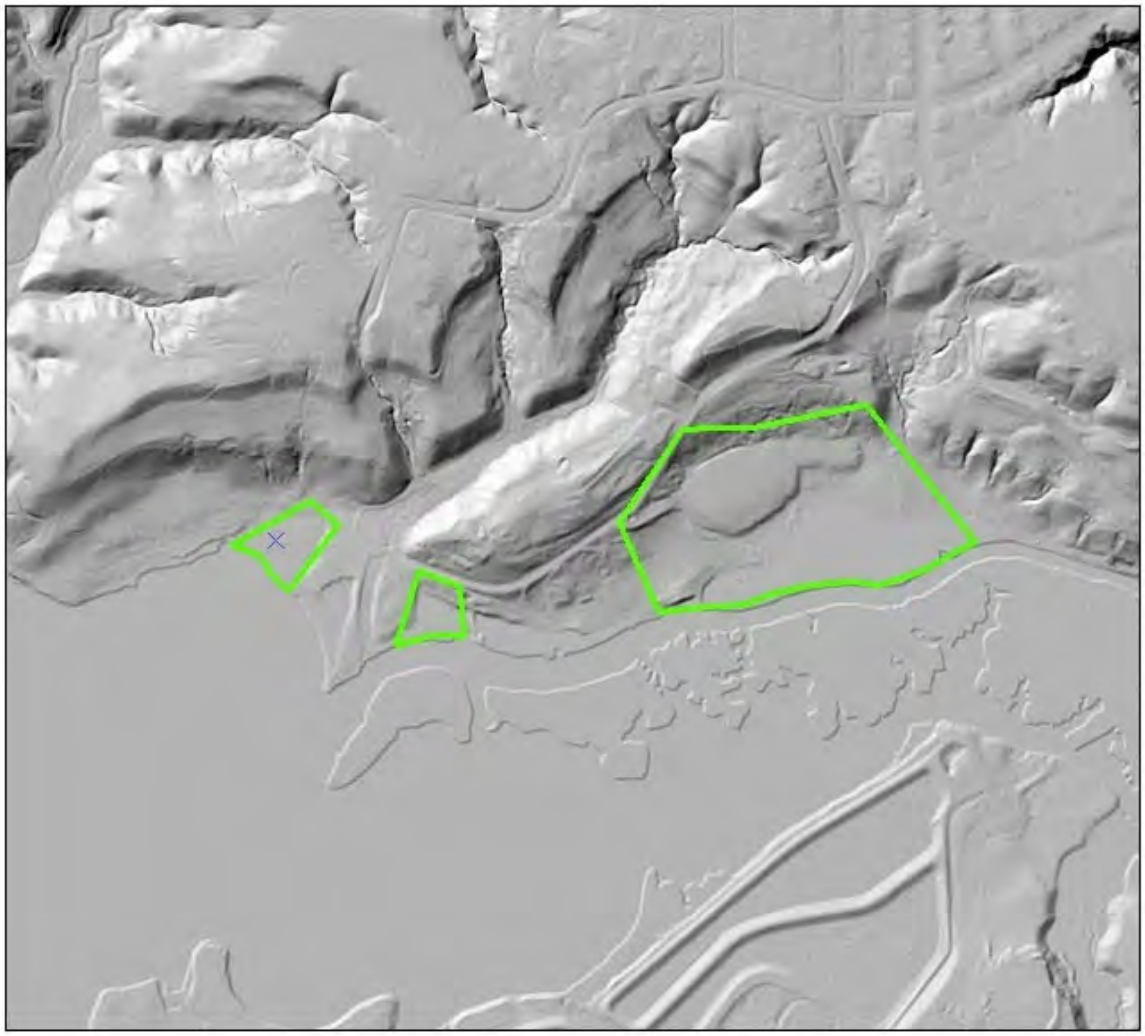
Estimated Area: 2 acres (Sites 1 and 2); 10 acres (Site 3); Approximate aggregate acreage – 14 acres (PPSP, 1982a)

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: September 2020

PISCATAWAY SITES 1, 2, AND 3 ASH DEPOSIT – LiDAR HILLSHADE



Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data

Notes

Site History: CCRs from Benning Road and Buzzard Point Power Plants were disposed of at these three sites during the early 1970s. PPSP, 1982a indicates that this was a relatively small filling project. A windshield survey of all 3 sites was performed on 28 July 2017. Visibility of Sites 2 and 3 was limited due to heavy vegetation, but sites appeared to be vegetated with steep terrain. Site 1 was not accessible because Piscataway Dr. ends before it reaches this site.

Environmental Impacts: No information available.

Sources: PPSP, 1982a; Maryland MERLIN Online

RITCHIE ROAD SITE COAL ASH DEPOSIT

Source: GoogleEarth, 2020. Image Date: April 2020

Site Name: Ritchie Road Site

State, County, City: Maryland, Prince George's County

Site Address: Northwest of the intersection of Ritchie Road and Ritchie Spur Road

Coordinates: 38°52'12.68"N 76°51'24.43"W

Owner: Prince Georges County and four others: EK Ritchie LLC, Alan Bortnick, Norman Spence and Lexington Drive LLP

Number and Type of CCB Storage Units Onsite: 1 Structural fill

Accepted Materials: Class F fly ash and bottom ash

Estimated Quantity of CCBs: Unknown

Estimated Area: Approximately 1 acre (PPSP, 1982)

Beneficial Use Projects: None

CCB Compliance Website: None

Last Update: October 2020

RITCHIE ROAD SITE ASH DEPOSIT – LiDAR HILLSHADE

Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data

Notes

Site History: Class F fly ash and bottom ash from the Benning Road and Buzzard Point Power Plants were placed as fill at this site between 1967 and 1968. PPSP, 1982a describes this site as a "relatively small fill site."

Environmental Impacts: None available.

Sources: PPSP, 1982a; Maryland MERLIN Online

WOODS CORNER ASH DEPOSIT

Source: GoogleEarth 2020; Image date March 2021

Site Name: Woods Corner Site

County: Prince George's County

Site Address: Northeast corner of I-95 and Branch Avenue

Coordinates: 38°49'31.78"N 76°55'13.92"W

Owner: The site is developed with multiple owners

Number and Type of CCR Storage Units Onsite: 1 Structural fill

Accepted Materials: Class F fly ash, construction debris, and domestic waste

Estimated Quantity of CCRs: Unknown

Estimated Area: 120 Acres

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: October 2020

WOODS CORNER ASH DEPOSIT – LiDAR HILLSHADE

Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data

Notes

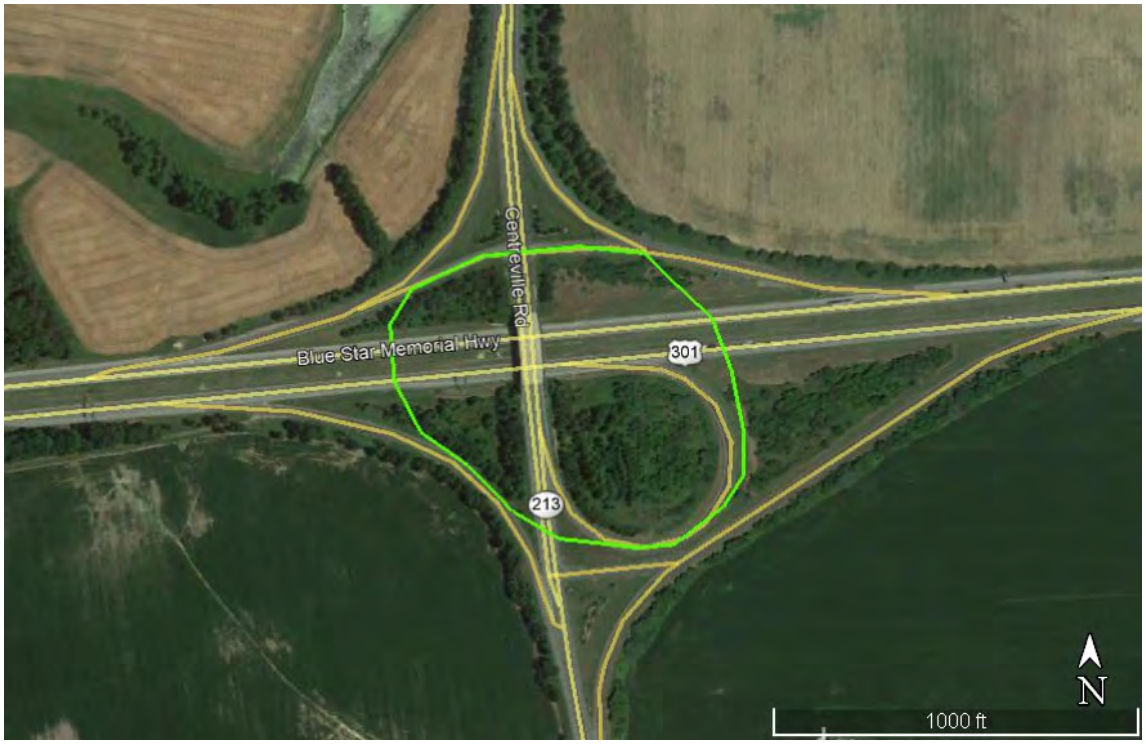
Site History: Fly ash from the Benning Road and Buzzard Point Power Plants were placed at the site during the 1960s.

Environmental Impacts: None available.

Sources: PPSP, 1982a; Maryland MERLIN Online

Maryland:
Queen Anne's County

US RT. 301 and MD 213 OVERPASS COAL ASH DEPOSIT



Source: GoogleEarth 2020; Image date June 2018

Site Name: Rt. 301 and MD 213 Overpass Site

State, County, City: Maryland, Queen Anne's County, Centerville

Address: Intersection of Rt. 301 and MD 213

Coordinates: 39°0'54.12"N 76°4'35.55"W

Owner: Maryland State Highway Administration

Number and Type of CCR Storage Units Onsite: 1 Structural fill

Accepted Materials: Class F fly ash

Estimated Quantity of CCRs: 60,000 tons

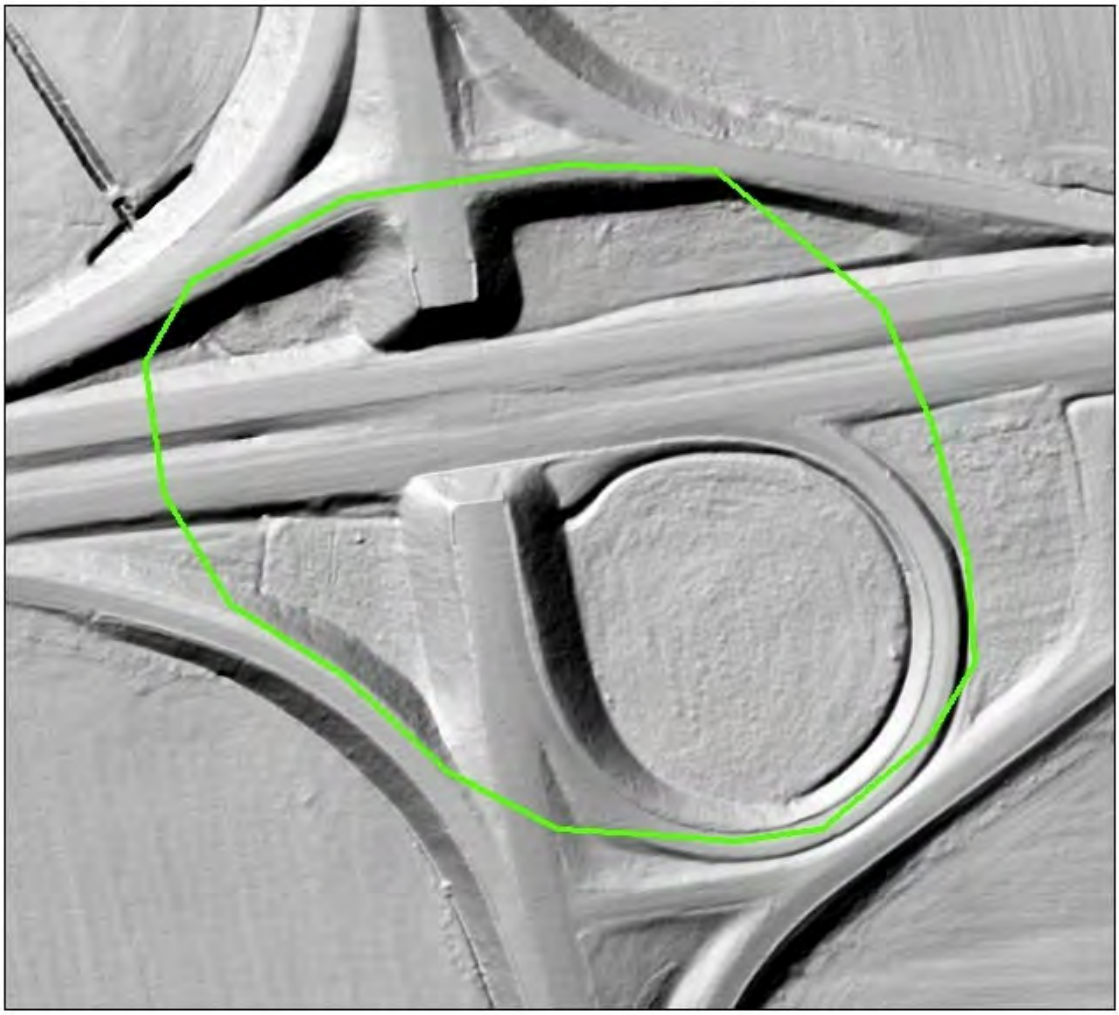
Estimated Area: Unknown

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: October 2020

US RT. 301-MD 213 OVERPASS ASH DEPOSIT– LiDAR HILLSHADE



Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data

Notes

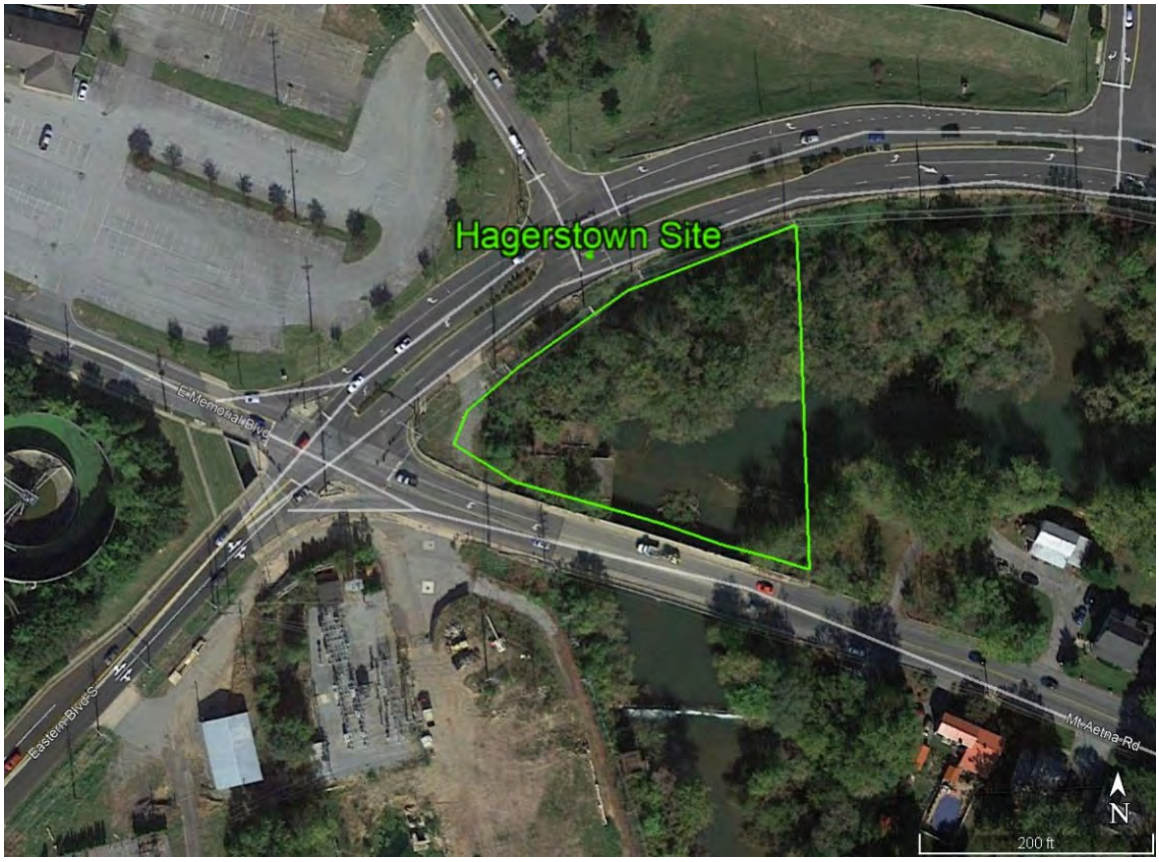
Site History: Class F fly ash from the Brandon Shores and Indian River Power Plants was used to construct embankments at the Rt. 301 and MD 213 interchange near Centerville, Maryland. Construction took place between 1993 and 1994.

Environmental Impacts: Groundwater data was collected before placement of CCR and both groundwater and pore water were monitored following completion of the construction project. A report on monitoring results was prepared in 2004. The groundwater study concluded that leachate was generated within the fill material but was generally attenuated in subsurface soils. A follow-up study was conducted in 2014 and reached similar conclusions.

Sources: MDE, 2010; PPRP, 2004; PPRP, 2017b

Maryland:
Washington County

HAGERSTOWN SITE COAL ASH DEPOSIT



Source: GoogleEarth 2020; Image date November 2016

Site Name: Hagerstown Power Plant Site

State, County, City: Maryland, Washington, Hagerstown

Address: Corner of Eastern Blvd. and Mt. Aetna Rd, along the bank of Antietam Creek

Coordinates: 38°37'53.38"N 77°42'34.70"W

Owner: Hagerstown Fiber and Light

Number and Type of CCR Storage Units Onsite: 1 Structural fill

Accepted Materials: Class F fly ash, bottom ash

Estimated Quantity of CCRs: Unknown

Estimated Area: Approximately 5 acres (PPSP, 1982a)

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: October 2020

HAGERSTOWN SITE COAL ASH DEPOSIT – LiDAR HILLSHADE

Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data

Notes

Site History: A portion of the fly ash and bottom ash from Hagerstown Fiber and Light was disposed of onsite from the 1950s until 1971. PPSP 1982a indicates that this plant produced a relatively small amount of CCR and much of the material was sent to a landfill in Pennsylvania. The Hagerstown Plant stopped burning coal in 1971.

Environmental Impacts: None available.

Sources: PPSP, 1982a; Maryland MERLIN Online

Maryland:
Wicomico County

NEWLAND PARK LANDFILL COAL ASH DEPOSIT

Source: GoogleEarth 2020; Image date March 2013

Site Name: Newland Park Sanitary Landfill

State, County, City: Maryland, Wicomico, Salisbury

Address: 7151 Brick Kiln Road, Salisbury, MD

Coordinates: 38°23'20.76"N 75°38'4.56"W

Owner: Wicomico County Department of Public Works

Number and Type of CCR Storage Units Onsite: 1 Landfill

Accepted Materials: Class F fly ash, bottom ash

Estimated Quantity of CCRs: Approximately 200,000 cubic yards

Estimated Area: Approximately 100 acres

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: October 2020

NEWLAND PARK LANDFILL COAL ASH DEPOSIT – LiDAR HILLSHADE

Source: Maryland Department of Information Technology, Geographic Information Office, Maryland iMAP LiDAR data

Notes

Site History: Fly ash from the Indian River Power Plant was used as structural fill under the landfill liner system. As of 2020, the landfill is still active.

Environmental Impacts: Groundwater is monitored as required by MDE landfill regulations.

Sources: MDE, 2010; MDE 2020b

Delaware Sites

SEAFORD POWER PLANT CCR SITE

Source: Google Earth, 2020, Image Date, 2018; Polygons: Source: Western MD Regional GIS Center,

Site Name: Seaford Power Plant

State, County, City: Delaware, Sussex County, Seaford

Site Address: 25876 Dupont Rd. Seaford, MD 19973

Coordinates: 38°37'23.19"N 75°37'59.38"W

Owner: INVISTA/Koch Industries

Number and Type of CCR Storage Units Onsite: 1 Landfill and 2 CCR surface impoundments which are empty of any CCR

Accepted Materials: 85% Fly ash and 15% Bottom Ash

Estimated Quantity of CCR: Unknown volume, 12 acres landfill with a maximum height of approximately 25 feet

Estimated Area: 12 acre landfill, empty impoundments cover 10 acres

Beneficial Use Projects: Unknown

CCB Compliance Website: Unknown

Last Update: November 2020

SEAFORD POWER PLANT CCR SITE – LIDAR HILLSHADE

Source: Western MD Regional GIS Center, 2020, Pennsylvania PASDA, USGS LIDAR 2017

Notes:

Site History: Invista operates a nylon textiles manufacturing site which included a coal-burning power plant for the generation of steam and electricity to operate the site. Three steam boilers burned bituminous coal for steam and power generation. After restructuring, the site completely converted to natural gas-fired boilers in April 2009.

The Coal Ash Landfill received the ash generated from the onsite power plant. When burning coal, the power plant generated fly ash and bottom ash. The fly ash and bottom ash were sluiced to one of two Coal Ash Settling Ponds located to the south of the power plant. The ash was then trucked to the onsite landfill. The settling ponds have been dredged out and are empty. The Coal Ash Landfill has accepted ash under a DNREC permit since 1979. Of the ash produced from the combustion of coal, approximately 85 percent (by volume) was fly ash and the other 15 percent was bottom ash. There was not much difference between the generated bottom ash and fly ash, other than particle size. The amount of ash generated per year was approximately 25,000 tons (dry weight) based on a material balance. The total amount in the landfill is unknown as ash was used to create a nearby golf course. The landfill is unlined but is covered by a geomembrane. No more ash is being accepted in the landfill today.

Environmental Impacts: A December 2008 EPA progress report on the Invista Seaford Plant found arsenic in the underlying groundwater and stated that the source of the arsenic is most likely coal ash generated by the site's power plant. This prompted Invista to convert its coal-fired boilers to natural gas.

Sources: EPA, 2020c; Gem.wiki, 2020d; DuPont Seaford Plant (Invista), 2006

New York Sites

AES HICKLING POWER PLANT

Aerial Photo Source: Google Earth, 2016

Site Name: AES Hickling Power Plant

State, County, City: New York, Steuben County, Corning

Site Address: 11884 Hickling Rd., Corning, NY 14830

Coordinates: 42° 7'20.78"N, 76°58'56.59"W

Owner: AES

Number and Type of CCB Storage Units Onsite: None

Accepted Materials: Unknown

Estimated Quantity of CCBs: Unknown

Beneficial Use Projects: Unknown

CCB Compliance Website: Unknown

Last Update: January 2021

AES HICKLING POWER PLANT - LIDAR HILLSHADE

(SEE WEBER LANDFILL)

Site History: The Hickling generation plant was constructed in 1948 by the New York State Electric & Gas Corporation, Hickling featuring two coal-fired boilers and large turbines. Hickling was a medium power-producing plant, regularly generating up to 70 megawatts of energy during off-peak periods. The power plant was in operation for over 50 years before Hickling's new owners, AES, placed it on cold standby. The power plant was retired in 2000.

See Weber Landfill sheet for CCR description.

Environmental Impacts: See Weber Landfill

Sources: Levy Konigsburg, LLP; Energy Justice Network AES Hickling, LLC; Industryabout.com, 2014a; United States Securities and Exchange Commission, 2001; ashtracker.org, 2017c

AES JENNISON POWER PLANT

Aerial Photo Source: Google Earth, 2016

Site Name: AES Jennison Power Plant

State, County, City: New York, Chenango County, Bainbridge

Site Address: Route 7 Bainbridge, New York 13733

Coordinates: 42°16'36.99"N, 75°28'45.88"W

Owner: GMMM Holdings I LLC

Number and Type of CCR Storage Units Onsite: None

Accepted Materials: Unknown

Estimated Quantity of CCRs: Unknown

Beneficial Use Projects: Unknown

CCB Compliance Website: Unknown

Last Update: October 2020

AES JENNISON POWER PLANT – LIDAR HILLSHADE

(SEE WEBER LANDFILL)

Site History: The AES Jennison power station was constructed and operated by the New York State Electric & Gas Corporation. It went online in 1945, serving the central New York market in Chenango County. The plant featured four coal-fired stoker boilers that delivered steam to General Electric turbines. In 1999, Jennison was sold to AES. Today, it sits idle, after serving Central New York for over 50 years, from 1945 to 2000. In 2011, the plant was sold to GMMM Holdings I LLC for basically scrap.

See Weber Landfill for CCR information.

Environmental Impact: See Weber Landfill

Sources: Energy Justice Network. AES Jennison, LLC; Tedsoutfit Wiki. AES Jennison Generation Plant; Simonson, 2010; Gem.wiki, 2019b; United States Securities and Exchange Commission, 1999b.

AES WESTOVER LLC POWER PLANT

Aerial Photo Source: Google Earth, 2017

Name: AES Westover LLC Power Plant

State, County, City: New York, Broome County, Johnson City

Site Address: 720 Riverside Dr., Johnson City, NY 13790

Coordinates: 42° 6'41.39"N, 75°58'27.31"W

Owner: AEE2 LLC

Accepted Materials: Unknown

Estimated Quantity of CCRs: Unknown

Beneficial Use Projects: Although no specific projects are mentioned, fly ash was used for beneficial use.

CCR Compliance Website: None

Last Update: January 2021

AES WESTOVER LLC POWER PLANT – LIDAR HILLSHADE

No ash was found nearby. See Weber landfill for Westover reference.

Site History: The Power Station in Johnson City, New York, was constructed in 1917 by the New York State Electric and Gas Corporation (NYSEG). During its operation, the power plant consisted of three coal-fired boilers, which provided steam to two turbine generators with a generating capacity of 119 megawatts. In 1999, AES Corporation purchased the plant and renamed it AES Westover. In 2011, the power plant was sold to GMMM Holdings LLC, who indicated that it intended to salvage or scrap the equipment and demolish the plant for potential redevelopment. AES Westover closed in 2012.

There was no information regarding the disposal of Coal Combustion Residuals (CCRs) for this power station other than the fact that some of the ash was used for beneficial purposes. There is a landfill that is located nearby, however, that may have been a site for ash deposition. More research will have to be done to determine this possibility.

Environmental Impacts: No information available.

Sources: Gem.wiki, 2019a; Justia, 2017; Tedsoutfit Wiki; Industryabout.com, 2014b; Nycourts.gov, 2006; Cassell, 2012

WEBER COAL ASH DEPOSIT

Aerial Photo Source: Google Earth, 2020, Polygons: Source: Western MD Regional GIS Center, 2017

Site Name: Weber Ash Disposal Site

State, County, City: New York, Broome County, Port Crane

Site Address: Gould Road, Port Crane, New York 13833

Coordinates: 42°12'40.89"N, 75°49'29.05"W

Owner: AES NY LLC

Number and Type of Storage Units Onsite: This is a monofil ash disposal site that accepted ash from multiple sources.

Accepted Materials: Fly ash and bottom ash

Estimated Quantity of CCR: The 13-acre site was used for approximately 12 to 15 years for the landfilling of by-products generated from the combustion of coal. It is estimated that approximately 1,200 to 1,500 tons per year were landfilled at the site.

Beneficial Use Projects: Unknown

CCR Compliance Website: None

Last Update: December 2020

WEBER COAL ASH DEPOSIT – LIDAR HILLSHADE

Source: Western MD Regional GIS Center, Hillshade generated from data from gis.ny.gov

Notes:

Site History: The Weber Ash Disposal Site was constructed by New York State Electric and Gas in 1978. It is an inactive 13-acre landfill, made of two coal ash cells, Weber I and II, which closed in 1981 and 2001, respectively.

The Weber Ash Disposal Site accepted fly ash and bottom ash from the now-retired Jennison, Hickling, Westover, and Greenridge Power Plants. The Greenridge Power Plant has been recommissioned, and is being powered by gas turbines. The site was lined and collected mainly fly and bottom ash when still active. The site also contained a leachate treatment facility. The disposal site was capped in December 2001.

*Environmental Impact: T*he Weber Ash Disposal Site has 13 groundwater monitoring wells, two of which have been polluted above federal advisory levels based on samples collected between January 3, 2011, and December 15, 2015. Groundwater at this site contains unsafe levels of manganese and arsenic. In October 1999, AES Creative Resources, L.P., entered into a consent order with the New York State Department of Environmental Conservation (NYSDEC) to resolve water quality violations. The consent order included a suspended $5,000 civil penalty and a requirement to submit an approved closure plan by October 8, 2000.

Sources: Ashtracker.org, 2017c; United States Securities and Exchange Commission, 1999a; Sterns and Wheeler, 2010

Pennsylvania Sites

BRUNNER ISLAND POWER PLANT COAL ASH DEPOSIT

Aerial Photo Source: Google Earth 2015, Polygons: Western MD Regional GIS Center, 2020

Site Name: Brunner Island Power Plant Ash Deposit

State, County, City: Pennsylvania, York County, York Haven

Site Address: 1400 Wago Rd., York Haven, PA 17370

Coordinates: 40° 5′ 44″ N, 76° 41′ 49″ W

Owner: Talen Energy

Number and Type of CCR Storage Units Onsite: Numerous closed CCR basins, one unlined, active CCR basin (Ash Basin 6), and one active CCR landfill (Disposal Area 8).

Accepted Materials: Various CCRs, fly & bottom ash, sludge

Estimated Quantity of CCRs: Approximately 3 million tons

Beneficial Use Projects: Yes, see below

CCR Compliance Website: talenenergy.com/ccr-brunner-island

Last Update: January 2021

BRUNNER ISLAND POWER PLANT COAL ASH DEPOSIT – LIDAR HILLSHADE

Source: Western MD Regional GIS Center, Hillshade generated from Hurricane Sandy LIDAR 2015 data from Pennsylvania PASDA

Notes
Online Date: 1961 (334 MW), 1965 (390 MW), and 1969 (759 MW)
Technology: Currently 2 natural gas-fired and 1 coal-fired turbine

Site History: The Brunner Island Power Plant in York County, Pennsylvania was built and owned by Pennsylvania Power and Light (PPL). On June 1, 2015, Talen Energy was formed from PPL, and now owns the Brunner Island Power Plant. Brunner Island burns coal for fuel, but as of 2017, it was adding natural gas-firing capabilities to all three of its units. Under a settlement announced by Talen Energy and the Sierra Club, the power plant will operate the plant only on natural gas during the peak ozone season (May through September), beginning in 2023. Talen Energy will completely cease burning coal by December 31, 2028.

The plant's coal-burning operations generate over 671,800 tons of coal combustion residuals (CCRs) annually, which have historically been disposed of in onsite basins and landfills. Today these include **Ash Basins 4, 5, and 7** which are closed and monitored.

Ash Landfill 8 (Disposal Area 8), according to Geosyntec (2016), is an active CCR landfill constructed in 2008 to accept coal combustion residuals produced by the plant. The landfill was built in the middle and on top of Ash Basin 5, which was closed in 1987. The plan is to leave CCRs in place when the landfill is closed.

Ash Basin No. 6 was constructed in 1979 for the purpose of storing fly ash, bottom ash, and various sludges. CCRs are pumped into the basin as a water slurry. Ash then settles from the slurry for storage and beneficial reuse. Ash Basin No. 6 in its current configuration has an original storage volume of approximately 2,600 acre-feet at the top of the embankment. The basin is formed by an embankment constructed with fill and includes a 10-foot thick clay liner. Overall, the impoundment has a surface area of about 70 acres and is divided into three main areas. The northern part of the main basin has been completely filled with ash. The southern part of the main basin has not been completely filled and holds water. To the south of the main basin is a polishing pond, which also holds water. Talen is no longer discharging ash slurry into the basin, although process water that is exposed to ash is still being discharged at the northwest corner of the basin; therefore, the ash basin is still considered active. Existing ash near the north end of the basin is being reclaimed and removed for beneficial re-use. The total CCR storage capacity of Ash Basin 6 is approximately 3,864,000 tons. An estimated 3,206,635 tons of CCR remains in the ash basin, resulting in a remaining CCR storage capacity from the existing CCR surface to the reservoir surface elevation, of 657,365 tons in the southern part of the basin where ash has not been deposited. Talen reported that the CCR Removal Project has resulted in the removal of 83,545 tons in 2015, 182,559 tons in 2016, and 125,391 tons in 2017 resulting in a total of 391,495 tons of non-dry CCR material since ash removal began in 2015. Lehigh Cement calculates an average unit weight of non-dry CCR material to be 100.3 pounds per cubic foot (pcf). Prior to the start of the CCR Removal Project, an estimated 3,598,130 tons of non-dry CCR were in the ash basin. Subtracting what has currently been removed leaves the basin with 3,206,635 tons of non-dry impounded CCR material remaining. According to Talen Energy (April 28, 2016, "Quarterly Groundwater Report: 1st Quarter 2016, Basin No. 6") operation of Basin 6 is to be discontinued, and a "Clean Closure (ash removal)" process was begun in July of 2015.

Fly ash from the Brunner Island facility is approved for use in construction projects, especially for use in concrete mixes to reduce alkali silica reactivity of aggregate. Ash above the water table within the basin is currently being excavated and the ash is being beneficially reused off-site. It is anticipated that this process will take 15 years to complete (from start to finish). Additionally, the air quality control devices installed at the plant remove up to 97 percent of incoming sulfur dioxide at the plant. The flue gas desulfurization systems are comprised of limestone forced oxidation scrubbers that produce synthetic gypsum as a by-product which is shipped offsite to wallboard manufacturing facilities.

In 2008, CCRs from Brunner Island were used as fill in the construction of the Royal Manchester Golf Course (Geosyntec, 2016). The golf course is situated southwest of the power plant. The CCR wastes applied to the golf course were blended with a soil amendment (Stabil – Fill) that includes lime to attempt to stabilize constituents of CCR wastes and prevent leaching of contaminants into the groundwater system.

Water Quality:
CCR and non-CCR wastewater deposited in Ash Basin 6 and Disposal Area 8, which sits atop Ash Basin 5, discharge to groundwater that is directly connected, hydrologically, to the Susquehanna River and its tributary, Black Gut Creek. Ash Basin 6 is within 700 feet of the banks of the Susquehanna and its tributary. Ash Basin 5 is approximately 500 feet from surface waters. Disposal Area 8 is approximately 800 feet from Black Gut Creek. Talen also admits that the groundwater elevation beneath these units is higher than the elevation of the Susquehanna River and Black Gut Creek. The groundwater table is higher than the bottom layer of CCR deposited in Ash Basin 6 and Ash Basin 5. Additionally, because Ash Basin 5 and 6 are unlined and are leaking CCR and/or non-CCR wastewater, and because contents of Disposal Area 8 are passing through unlined Ash Basin 5, all three of these units are discharging CCR and non-CCR pollutants to surface waters via hydrologically connected groundwater.

Sources: Ashtracker.org, 2019a; Talen Energy; 2021a

HATFIELD'S FERRY POWER STATION ASH DEPOSIT

Source: Google Earth, 2020; Polygons: Western MD Regional GIS Center, 2020

Site Name: Hatfield's Ferry Power Station

State, County, City: Pennsylvania, Greene County, Carmichaels

Site Address: 2773 E Roy Furman Hwy, Carmichaels, PA 15320

Coordinates: 39°51'2.89"N, 79°56'50.84"W

Owner: FirstEnergy

Number and Type of CCB Storage Units Onsite: 1 landfill

Accepted Materials (e.g., fly ash, gypsum): Ash, likely gypsum, possibly other waste

Estimated Quantity of CCBs: Unknown

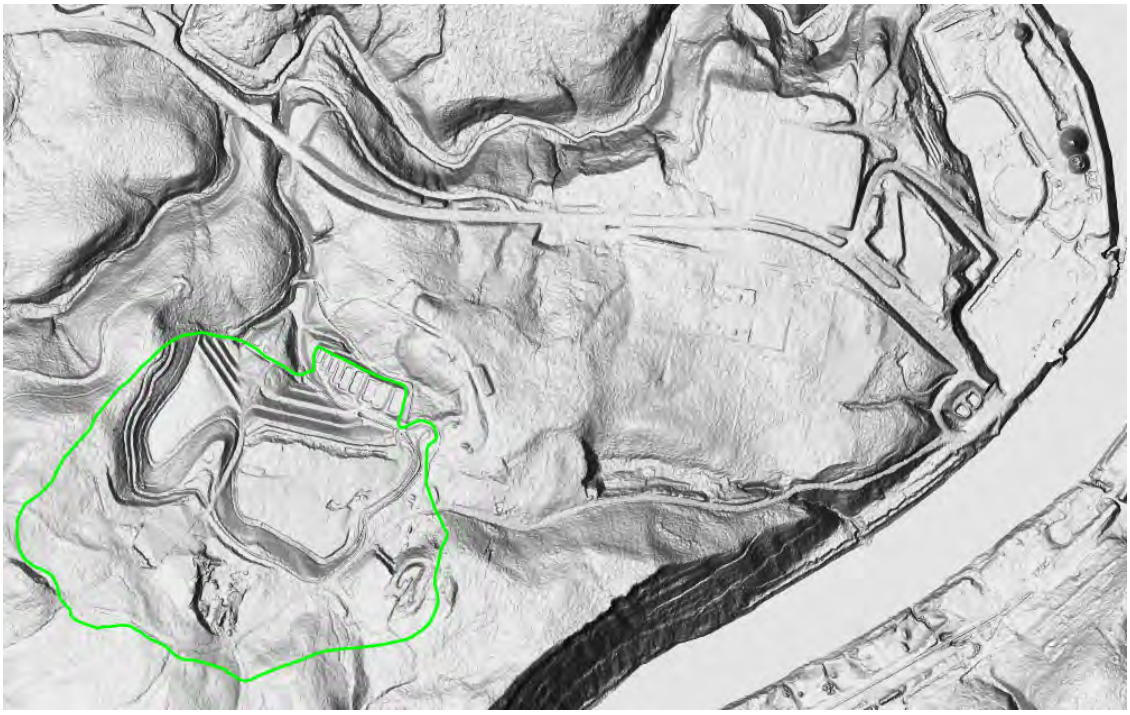
Estimated Area: Unknown

Beneficial Use Projects: Unknown

CCB Compliance Website: https://energyharbor.com/en/powering-the-grid/compliance-and-data-reporting

Last Update: September 2020

HATFIELD'S FERRY POWER STATION ASH DEPOSIT – LIDAR HILLSHADE



Source: Western MD Regional GIS Center, Hillshade generated from PAMAP LIDAR 2006-08 data from Pennsylvania PASDA

Site History: The Hatfield's Ferry Power Station was a 1.7-gigawatt, 3 Unit, coal power plant located in Greene County, Pennsylvania. The plant was operated by FirstEnergy and began operations in 1969 and was shut down in 2013. The plant was decommissioned October 9, 2013.

The Hatfield's Ferry Coal Combustion Byproduct (CCB) Landfill is a captive facility. Presently, CCR and other permitted waste are being placed intermittently in the landfill as Hatfield's Ferry Power Station was deactivated.

FirstEnergy applied for a minor modification to the permit in 2015 to utilize the remaining disposal capacity at the Hatfield's Ferry Power Station CCB Landfill for disposal of Bruce Mansfield Plant flue gas desulfurization (FGD) material upon closure of the Little Blue Run Impoundment. The permit authorized modifications to allow for FGD material barged from the Bruce Mansfield Plant to be disposed of at the Hatfield's Ferry Power Station CCB Landfill.

Environmental Impacts: The Hatfield's Ferry Power Station CCB landfill has contaminated surface water around the facility with elevated levels of boron and molybdenum.

Sources: Frazier, 2017; FirstEnergy Generation, 2015; EarthJustice, 2017; Energy Harbor Generation, 2020; Wikipedia.org, 2020.

HOLTWOOD POWER PLANT ASH DEPOSIT

Source: Google Earth, 2020; Polygons: Western MD Regional GIS Center, 2020

Site Name: Holtwood Power Plant Ash Deposit

State, County, City: Pennsylvania, Lancaster County, Holtwood

Site Address: Old Pinnacle Road, Holtwood PA 17532

Coordinates: 39°49'50.84"N, 76°19'07.06"W

Owner: Brookfield Renewables

Number and Type of CCB Storage Units Onsite: One surface impoundment

Accepted Materials (e.g., fly ash, gypsum): Unknown, most likely only ash

Estimated Quantity of CCB: Unknown, PPL indicates the ash sludge has been removed and the basin filled with soil

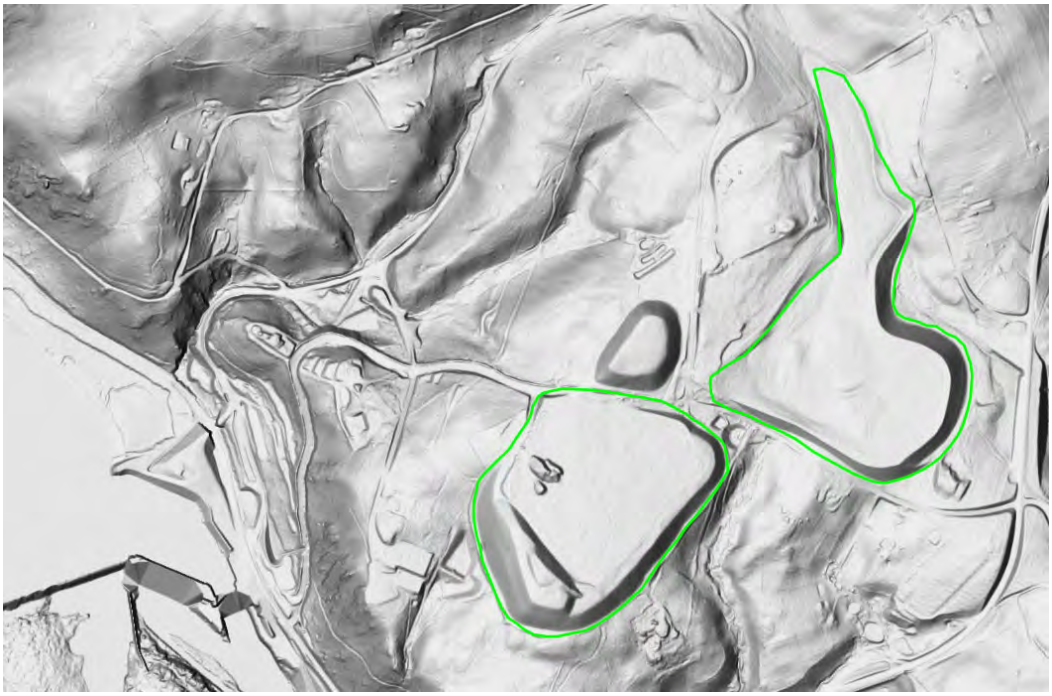
Estimated Area: Unknown

Beneficial Use Projects: Unknown

CCB Compliance Website: None

Last Update: October 2020

HOLDTWOOD POWER PLANT ASH DEPOSIT – LIDAR HILLSHADE



Source: Western MD Regional GIS Center, PA PASDA, Hurricane Sandy 2015 LIDAR

Notes

Site History: In the 1920s, the Holtwood Coal Company began burning coal dredged from behind the adjacent dam on the Susquehanna River in their steam-generating facility. The plant continued to expand its steam-generating capacity through the 1940s and 1950s. Burning dredged coal ash was discontinued in the 1970s due to unavailability. The Holtwood Coal Power Plant was operated by Pennsylvania Power and Light (PPL) from 1954 to 1999. The coal plant was demolished and only the upgraded hydroelectric power plant remains.

The Holtwood Ash Basin is a 40-acre closed ash basin that held ash deposits from the Holtwood Dam (from 1980 to 1999) when the company retired the coal unit. No information on the size or volume of waste that was contained in the impoundment was provided. Holtwood used on average of 15 to 20 tons of the bottom ash per year during operations. PPL stated in a 2009 news article that the coal ash sludge was removed, and the basin filled with dirt several years ago.

The other manmade earthen structure directly west of the known ash basin has no further information. Topographic study of the site indicates it is a manmade structure similar to the known ash basin directly east of it.

Environmental Impacts: No current impacts noted

Sources: Lancaster County, 2019; Lewitt, 2011; Brubeker, 2002; The Coal Industry, 1920; Reilly, 2009; Shirk, 2009; PPL Generation, 2009a,b; Porse, 2010; NRC, 2009; Crable, 2009

HUNLOCK CREEK POWER PLANT ASH DEPOSIT

Source: 2010 Google Earth, Polygons: Western MD Regional GIS Center, 2020

Site Name: Hunlock Creek Power Plant

State, County, City: Pennsylvania, Luzerne County, Hunlock Creek

Site Address: 390 State Route 11, Hunlock Creek, PA 18621

Coordinates: 41°12'1.92"N, 76° 4'20.27"W

Owner: UGI

Number and Type of CCR Storage Units Onsite: 2 Surface impoundments

Accepted Materials (e.g., fly ash, gypsum): Fly ash, bottom ash

Estimated Quantity of CCRs: Reports indicated all ash removed as of 2013

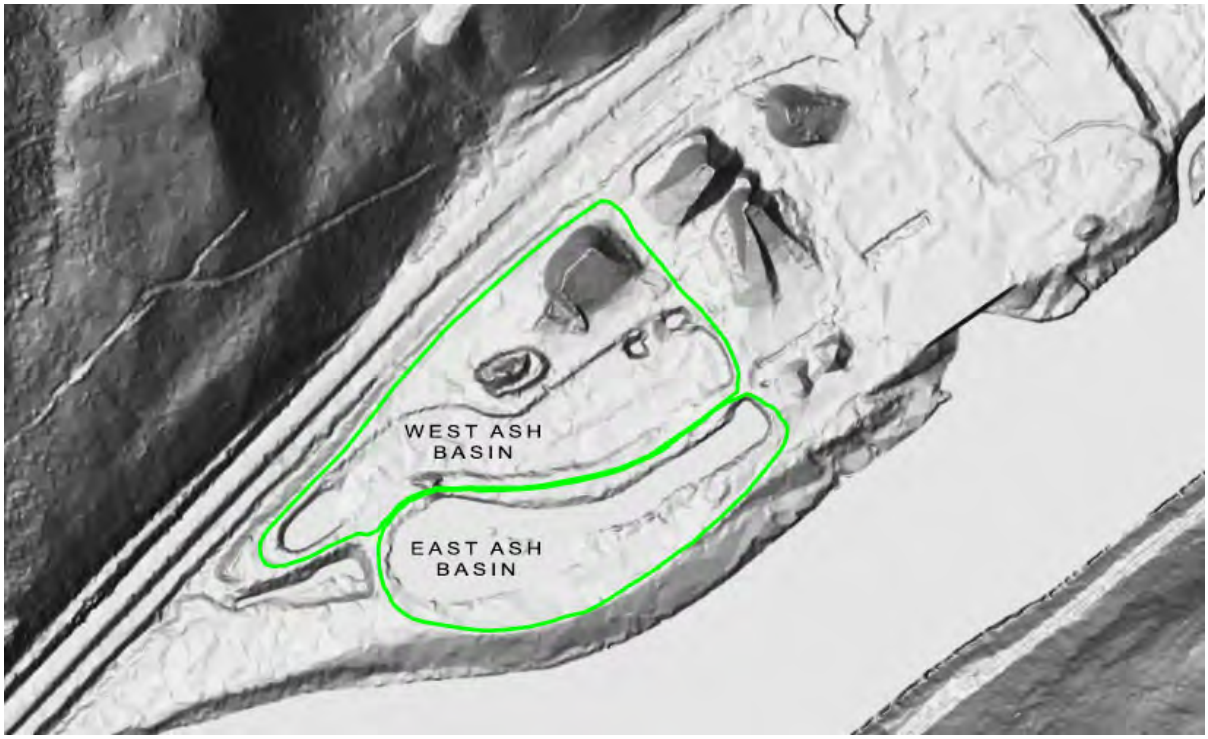
Estimated Area: Unknown

Beneficial Use Projects: Unknown

CCB Compliance Website: None

Last Update: September 2020

HUNLOCK CREEK POWER PLANT ASH DEPOSIT – LIDAR HILLSHADE



Source: Western MD Regional GIS Center, Hillshade generated from PAMAP LIDAR 2006-08 data from Pennsylvania PASDA

Notes

Site History: The station began generating electricity from coal in 1924, however the 50-Megawatt coal unit was not in operation until 1959. The station's coal units 1 & 2 were retired in 1975 and in 2010 unit 3 was converted to two gas turbines which ended coal use at this station.

The east and west basins were constructed in the early 1960s to collect Coal Combustion Residuals (CCR) from the power station. The basins were dredged regularly, approximately every two years, and the ash obtained was temporarily stored on-site for drying purposes, and later disposed of off-site.

The two ash basins stopped receiving ash, were emptied, and were in the process of being reclaimed as of 2011. According to a 2011 assessment conducted by the U.S. Environmental Protection Agency, ash from these basins was trucked off-site to a regulated mine reclamation facility and some of the bottom ash was used as anti-skid material on roads.

As of 2013 all ash has been removed and deposited in an approved mine site. During the time that the plant used coal, the plant burned 220,000 tons of coal annually, creating between 50,000 and 60,000 tons of ash per year.

Environmental Impacts: Potentially polluted ground & surface water at levels dangerous to human health.

Sources: EPA, 2011; EPA, 2012b; Ashtracker.org, 2017b

MONTOUR POWER PLANT COAL ASH DEPOSIT

Source: Google Earth 2020; Polygons Source: Western Maryland Regional GIS Center, 2018;

Site Name: Montour Power Plant Coal Ash Deposit

State, County, City: Pennsylvania, Montour County, Washingtonville

Site Address: 18 McMichael Rd, Washingtonville, PA 17884

Coordinates: 41°04'14.09"N 76°39'54.71"W

Owner: Talen Energy

Number and Type of CCB Storage Units Onsite: 2 Unlined ponds, 3 landfills

Accepted Materials (e.g., fly ash, gypsum): Fly ash, bottom ash fly ash, coal mill rejects, soils containing pyrites, and other industrial wastes

Estimated Quantity of CCBs: See Site History

Estimated Area: See Site History

Beneficial Use Projects: Unknown

CCB Compliance Website: https://www.talenenergy.com/ccr-montour/

Last Update: October 2020

MONTOUR POWER PLANT ASH DEPOSIT – LIDAR HILLSHADE

Source: Western MD Regional GIS Center, Pennsylvania PASDA, USGS LIDAR 2017

Notes

Site History: Ash Basin No. 1 is a 155-acre unlined, earthen dike disposal impoundment placed in service in 1971 and is located adjacent to the Montour Steam Electric Station.

A revised total storage capacity for Ash Basin No. 1 was granted by the DEP to be 9,642,000 cubic yards or roughly 10,510,044 tons. As of a 2017 inspection, an estimated 8,916,775 tons of CCR has already been deposited, resulting in a remaining storage capacity of 1,593,269 tons.

Ash Basin No. 2 is a 34-acre, clay/plastic lined CCR landfill that accepted ash from 1982-89.

Ash Basin No. 3 covers 50.6 acres and is divided into four disposal cells. As of the time of a 2017 inspection, approximately 1,139,838 tons of material had been landfilled in Basin No. 3 Cells A and B (about 56 percent of the capacity), and 23 percent of the total landfill storage capacity of 4,992,221 tons for Cells A, B, C, and D.

Environmental Impacts: Montour CCR compliance webpage indicates the Montour Power Plant is associated with concerning levels of groundwater pollutants.

Sources: SAIC, 1997; PPL, 2009b; Talen, 2016; HDP, 2016; Talen, 2020a; Talen, 2020b; Talen, 2021b

PIXELLE – SPRING GROVE POWER PLANT COAL ASH DEPOSIT

Source: Google Earth, 2020 Polygons: Western MD Regional GIS Center, 2020

Site Name: Pixelle – Spring Grove Power Plant

State, County, City: Pennsylvania, York County, Spring Grove

Site Address: 128 S. Main Street, Spring Grove, PA 17362

Coordinates: 39°52'16.69"N, 76°52'2.96"W

Owner: Pixelle Specialty Solutions LLC

Number and Type of CCR Storage Units Onsite: Ash is used for mine reclamation and agricultural applications

Accepted Materials: N/A

Estimated Quantity of CCRs: Daily production not known

Estimated Area: N/A

Beneficial Use Projects: Mine reclamation and agricultural applications

CCR Compliance Website: None

Last Update: November 2020

PIXELLE – SPRING GROVE POWER PLANT COAL ASH DEPOSIT LIDAR HILLSHADE

Source: Western MD Regional GIS Center, Hillshade generated from 2015 Hurricane Sandy LIDAR data from Pennsylvania PASDA

Notes

Site History: The P.H. Glatfelter Company, a producer of engineered papers (such as tobacco papers and sophisticated filter papers) and specialty printing papers, was founded in 1864 in Spring Grove, Pennsylvania. It has been family-owed since its beginning until it was sold to Lindsey Goldberg LLC in November of 2018. Boiler ash is used for strip mine reclamation and lime mud is applied in agricultural applications at the P H Glatfelter Plant. The location of the strip mines where the bottom ash is deposited is unknown. The P H Glatfelter Power Plant originally had four coal–fired powered boilers and one boiler that was fueled by black liquor. In December of 2016, the construction of two (2) Babcock & Wilcox (B&W), 405.8 MMBtu per hour each, natural gas-fired boilers and the installation of a hydrated lime injection system took place. As part of the project, three (3) coal-fired power boilers will be decommissioned leaving the plant with two (2) natural-gas boilers, two (2) coal–fired power boilers, and one (1) black liquor-fueled boiler. 2020 EIA data indicates Pixelle is down to one coal boiler.

Environmental Impacts: No impacts noted for current ash production.

Sources: epa.gov; eia.gov; gem.wiki; Glatfelter.com; power-eng.com; pennlive.com;

SHAWVILLE POWER PLANT ASH DEPOSIT

Source: Google Earth, 2020 Image Date, 2020

Site Name: Shawville Power Plant Ash Deposit

State, County, City: Pennsylvania, Clearfield County, Shawville

Site Address: 250 Power Plant Dr, Woodland, PA 16881

Coordinates: 41° 3'32.43"N, 78°21'56.23"W

Owner: NRG

Number and Type of CCR Storage Units Onsite: Appears to be one large landfill directly south of the power plant

Accepted Materials (e.g., fly ash, gypsum): Fly ash, bottom ash, and pyrites

Estimated Quantity of CCRs: At least 10 million tons (GIS measurements)

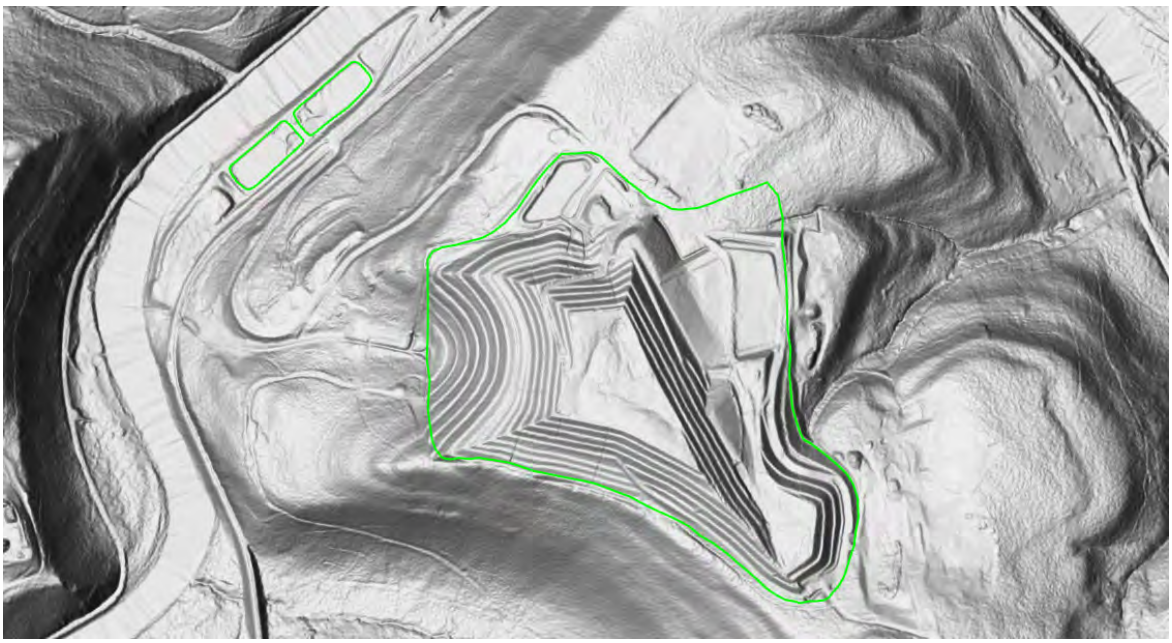
Estimated Area: See Site History

Beneficial Use Projects: None

CCR Compliance Website: None

Last Update: September 2020

SHAWVILLE POWER PLANT ASH DEPOSIT – LIDAR HILLSHADE



Source: Western MD Regional GIS Center, Hillshade generated from USGS LIDAR 2017 data from Pennsylvania PASDA

Notes

Site History: In 1954, when coal was being used as fuel at the 625MW Shawville plant, fly ash was transported to a large "dry" landfill and bottom ash went to a single impoundment known as Ash Pond A & B. Prior to 1989, bottom ash and fly ash were sluiced to two impoundments known as Ponds 1 and 2. Pond 1 is now a stormwater management area and Pond 2 was converted into the new impoundment consisting of Ash Ponds A and B. The original landfill that began operation in the 1950s covers approximately 40.5 acres and is located about 0.75 miles from the Shawville Station.

Due to engineering issues, an alternative ash disposal landfill site was decided upon in the late 1980s, when PADEP agreed to the construction of a lined landfill over the old landfill. The newer portion of the landfill was issued a permit in 1992 and was allowed to be built over the old unlined disposal site. The permitted disposal area consists of 120 acres (15 acres closed disposal area, 50 acres active disposal area, 55 acres support activities). Approximately 217,000 tons of waste per year is disposed at the site and is comprised of fly ash (74%), bottom ash (18%), pyrites (8%) and minor quantities of miscellaneous, noncombustible solid waste. Company records indicate that approximately 11,000 dry tons of bottom ash was impounded annually.

Environmental Impacts: No information available.

Sources: SAIC, 1997; O'Brien and Gere, 2012; Energy Justice Network, Shawville Power Plant; Cassell, 2015a; Cassell, 2015b

SUNBURY POWER PLANT ASH DEPOSIT

Source: Google Earth, 2020 Image date: 2020

Site Name: Sunbury Power Plant Ash Deposit

State, County, City: Pennsylvania, Snyder County, Shamokin Dam

Site Address: 11th Ave, Shamokin Dam, PA 17876

Coordinates: 40°51'15.12"N, 76°50'34.10"W and 40°51'42.16"N, 76°49'58.56"W

Owner: Originally PPL, now Sunbury Generation (under 30-year lease w/ Panda Power Funds)

Number and Type of CCR Storage Units Onsite: Two landfills 1.3 miles northwest of the power plant. One surface impoundment (Ash Basin 1), not pictured, southwest of the plant, appears to have been removed.

Accepted Materials (e.g., fly ash, gypsum): Fly ash in the Northern and Southern basin, Basin 1 received fly and bottom ash, coal rejects, water treatment sludge, river silt, and construction debris.

Estimated Quantity of CCRs: Basin No.1 = 1200 acre-feet, landfills unknown

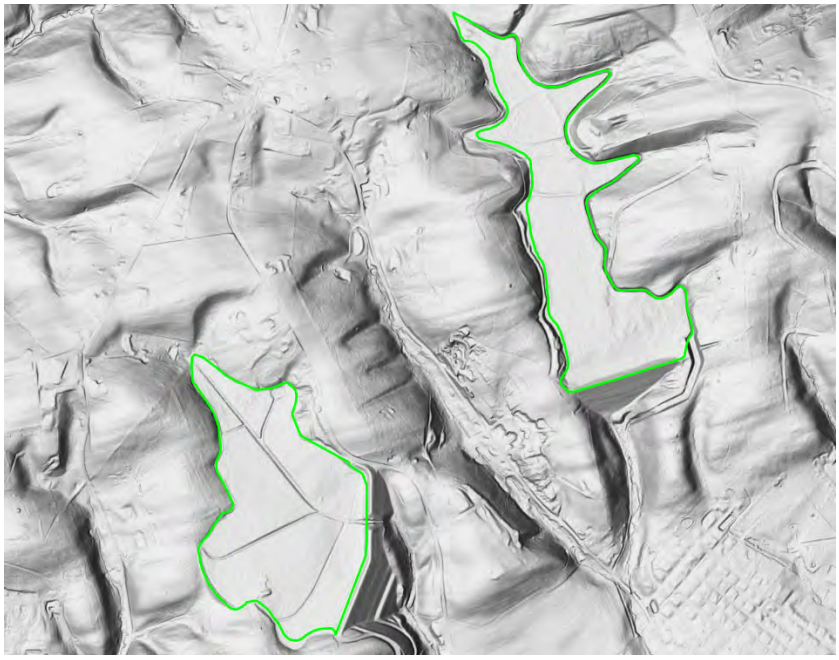
Estimated Area: 120 acres

Beneficial Use Projects: None

CCB Compliance Website: sunburygeneration.com/ccr-compliance-data-and-information/

Last Update: October 2020

SUNBURY POWER PLANT ASH DEPOSIT – LIDAR HILLSHADE



Source: Western MD Regional GIS Center, Hillshade generated from USGS LIDAR 2017 data from Pennsylvania PASDA

Notes

Site History: The old Sunbury coal plant began operations in 1949 and was closed in 2014 after 65 years of operation. The 400-MW coal-fired Sunbury Power Plant was replaced with a three-unit, 1.1-GW combined cycle plant, called the Hummel Power Station, on Oct. 28, 2018. Originally built for Pennsylvania Power & Light, today the plant is owned by Sunbury Generation, a subsidiary of Corona Power, LLC.

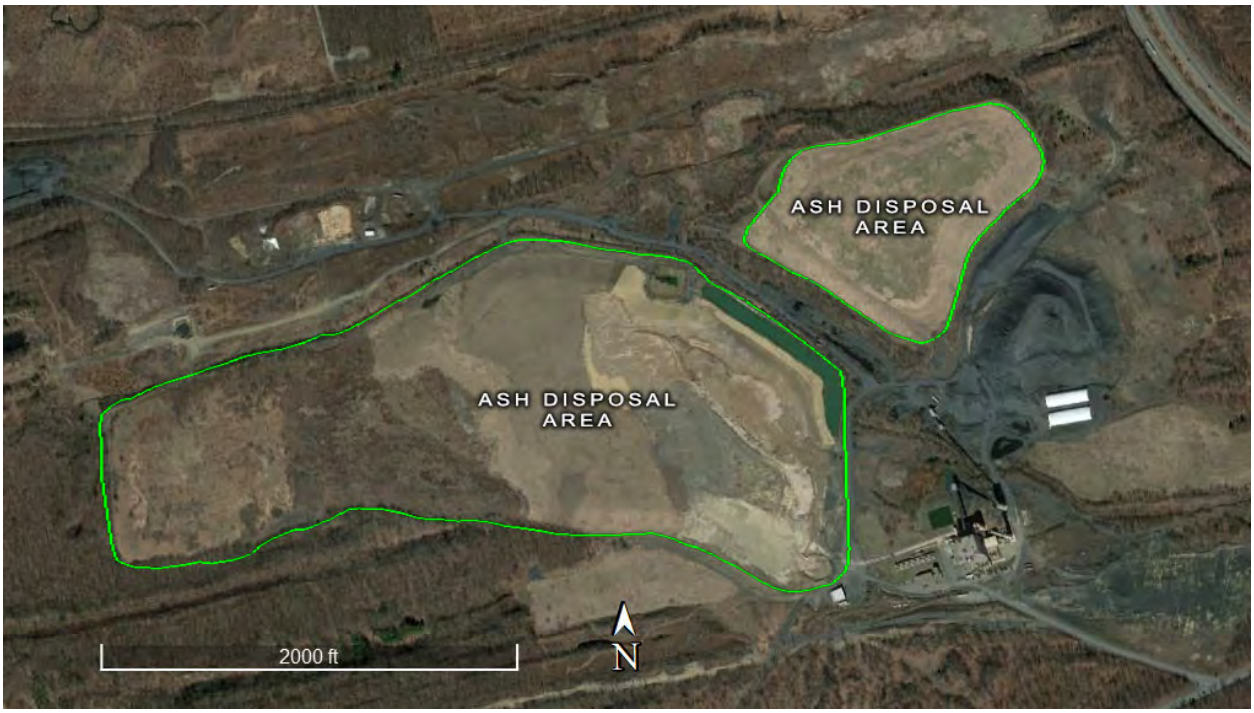
The two offsite landfills are located approximately 1.3 miles northwest of the power plant. These landfills (the Northern Ash Basin and the Southern Ash Basin) received fly ash and were closed in the late 1980s and 1990s respectively.

Residual Waste Ash Basin No.1 (not pictured) is an unlined, diked impoundment encompassing approximately 62.0 acres with 55 acres available for waste disposal. Ash Basin No. 1 received both bottom ash and fly ash, however, in 1955 PP&L (the facility's former owner) directed the fly ash to offsite disposal and beneficial use sites. Over the years Basin No. 1 also received coal rejects, Water Treatment Plant sludges, storm runoff and various treated plant waste. Since retirement of the Sunbury Power Plant in July of 2014, material placed in the Basin has consisted primarily of captive clean construction demolition wastes associated with construction of the Hummel Station Power Plant project. Based on the estimated bottom of the basin, there is approximately 1,200 acre-feet of disposed material within the impoundment. Approximately 55 acre-feet of the material is soil that is stockpiled for use during closure.

Environmental Impacts: No information available.

Sources: O'Brien and Gere, 2010b; PennDOT, 2017; Strawser, 2016; Cassell, 2015b

WESTWOOD POWER PLANT CCR DEPOSIT



Source: GoogleEarth, 2020; Polygons Source: Western Maryland Regional GIS Center, 2020

Site Name: Westwood Power Plant CCR Deposit

State, County, City: Pennsylvania, Schuylkill, Joliett

Site Address: Route 209 South, Tremont, PA 17981

Coordinates: 40°37'14.46"N, 76°27'5.52"W

Owner: WPS Power Development

Number and Type of CCR Storage Units Onsite: 2 Landfills

Accepted Materials (e.g., fly ash, gypsum): CCR leftovers from burning gob (culm) with limestone

Estimated Quantity of CCRs: Unknown

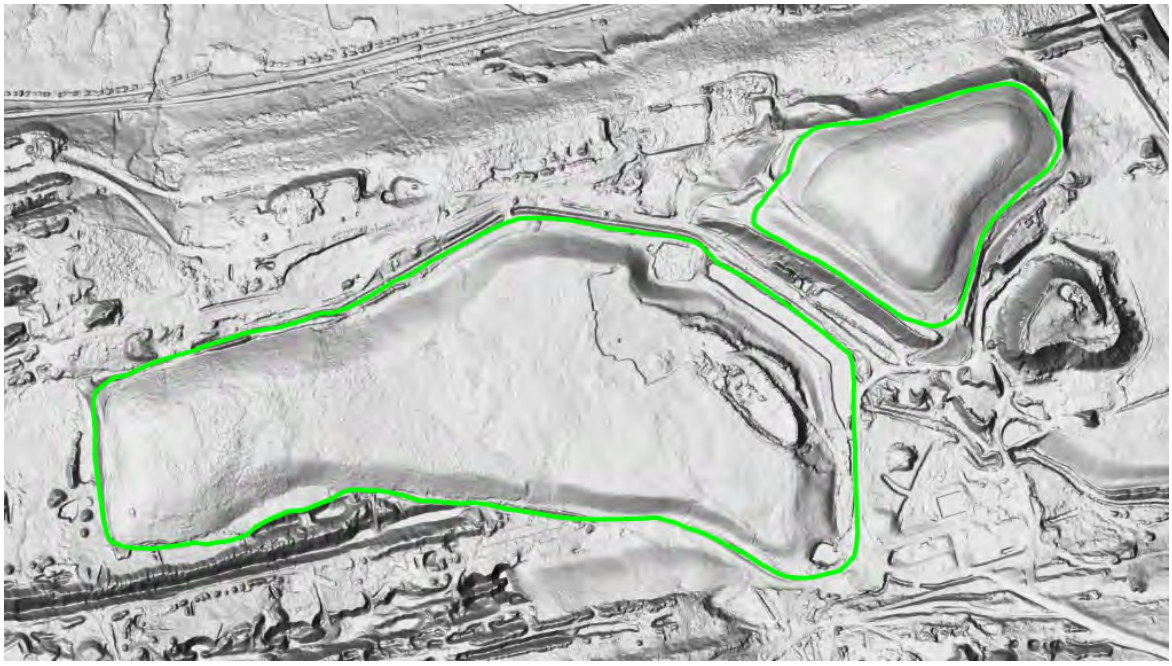
Estimated Area: 100 acres

Beneficial Use Projects: Mine reclamation

CCB Compliance Website: None

Last Update: November 2020

WESTWOOD POWER PLANT ASH DEPOSIT – LIDAR HILLSHADE



Notes

Site History: The Westwood Generating Station was built by CinCap VI, LLC and came online in 1987. It used waste anthracite coal to produce 36 megawatts of power. In September of 2000, WPS Power Development purchased the Westwood Generating Station from CinCap VI, LLC.

The coal combustion residuals (CCR) from this plant are deposited on site in landfills that have been permitted by the PADEP. The approximate locations of these permits are outlined on the aerial photo. The power plant uses a Circulating Fluidized Bed (CFB) boiler that converts waste coal into low-cost power. The plant burns waste anthracite coal (culm) in combination with crushed limestone, which reduces sulfur emissions during the combustion process. The plant burns approximately 1,200 tons of coal culm per day and 80 tons of limestone per day. The plant is equipped with an 8-module baghouse system with 2,016 filter bags, to further reduce plant emissions.

Environmental Impacts: No notable effects on water quality.

Sources: Legere, 2015; WPS Westwood Generation, 2021; Kraus, 1987; Kraus, 1986; Hornberg et al., 2005; USDOI, 2009.

Virginia Sites

AMELIA LANDFILL ASH DEPOSIT

Aerial Photo Source: Google Earth, 2019, Polygons: Source: Western MD Regional GIS Center, 2021

Name: Amelia Landfill

State, County, City: Virginia, Amelia, Jetersville

Site Address: 20221 Maplewood Rd, Jetersville, VA 23083

Coordinates: 37°18'20.82"N, 78° 3'48.51"W

Owner: Waste Management

Number and Type of CCR Units Onsite: County landfill

Accepted Materials: Fly and bottom ash

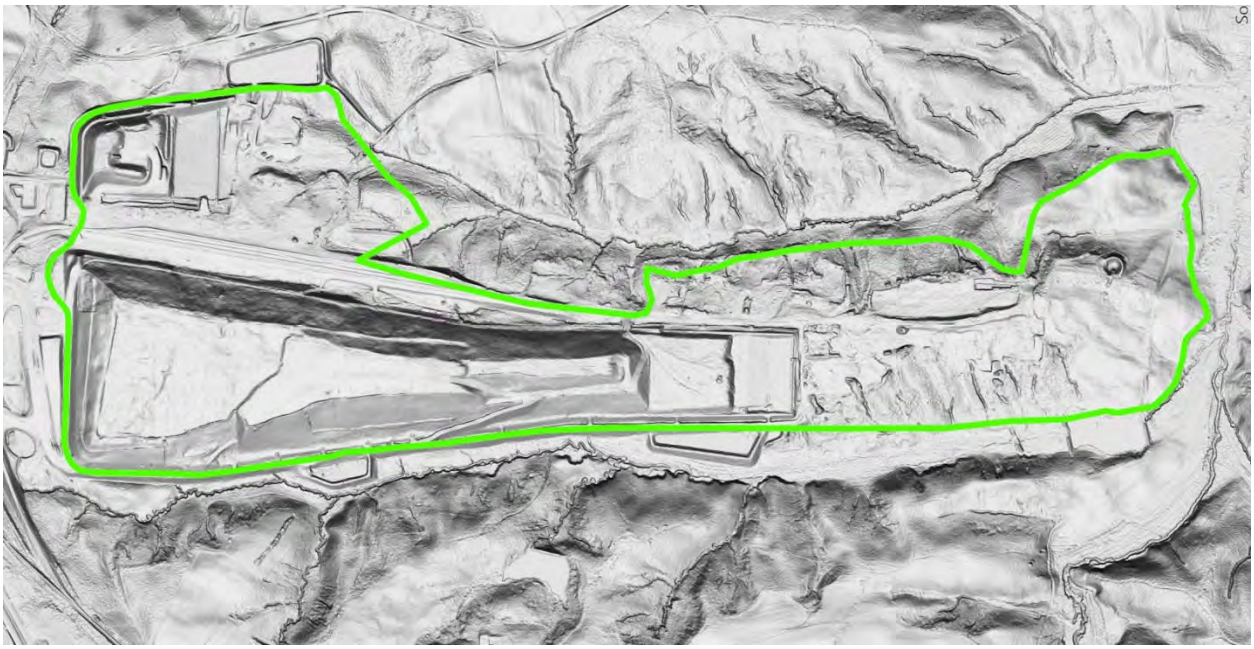
Estimated Quantity of CCRs: Over 1.5 million pounds

Beneficial Use Projects: Unknown

CCR Compliance Website: None

Last Update: February 2021

AMELIA LANDFILL ASH DEPOSIT– LIDAR HILLSDADE



Site History: The Maplewood Recycling and Waste Disposal Facility in Amelia County opened in 1993. It replaced the county-operated facility and privatized the disposal of the county's municipal solid waste. Amelia officials concurred with Waste Management and Federal officials that coal ash was not a hazardous waste and understood the county would generate extra revenue from the extra business of receiving ash.

Starting in 2015, the landfill received 1.5 million pounds from a Duke Energy coal ash impoundment at the Dan River Steam Station in Eden, North Carolina. Duke then agreed to close their pond, which had no liner, and move the ash to a modern landfill. It built one next to the former pond, but while construction was underway the utility shipped ash to the Amelia landfill. In addition to Duke Energy, the Amelia Landfill accepts ash from various Virginia power plants.

Environmental Impacts: No environmental concerns at this time.

Sources: Szkotak, 2016; Wastebins, 2021; Virginiaplaces.org, 2019; USAOC, 2016

BIRCHWOOD POWER PLANT CCR SITE

Source: Google Earth, 2020, Polygons: Source: Western MD Regional GIS Center, 2020

Name: Birchwood Power Plant

State, County, City: Virginia, King George County, King George

Site Address: 10900 Birchwood Drive King George, VA 22485

Coordinates: 38°16'34.57"N, 77°18'42.00"W

Owner: Co-owned by J-Power Development Company LTD and General Electric

Number and Type of CCR Storage Units: No onsite storage units. 1 offsite landfill.

Accepted Materials: Fly ash and bottom ash

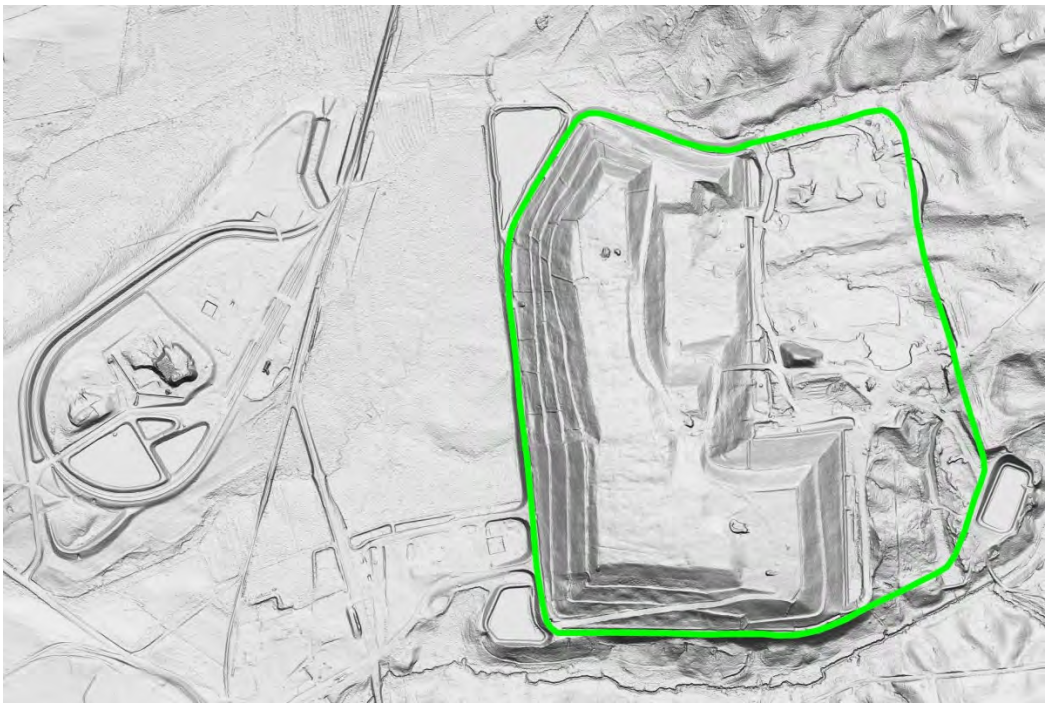
Estimated Quantity of CCRs: Unknown

Beneficial Use Projects: Partnered with a company for 4 years to beneficially use its ash to produce green products.

CCR Compliance Website: Unknown

Last Update: December 2020

BIRCHWOOD POWER PLANT CCR SITE – LIDAR HILLSHADE



Source: Western MD Regional GIS Center, 2020, LIDAR data:

Site History: The Birchwood Power Plant was permitted and constructed in the early 1990s and began operation in 1996 as a high-efficiency plant with a full suite of emission controls for pollutants, including a high-efficiency fabric filter baghouse to control fly ash emissions. Introduced in 2016, GE Power's Digital Power Plant for Steam software, addressed machine performance to make the plant exceptionally efficient. It is scheduled to close in February 2021.

When the Birchwood Power Plant came online in 1996 it began depositing its ash in the King George County Landfill adjacent to the facility. This was done until 2005 when it partnered with Universal Aggregates to supply all of its ash for its facility that was constructed to turn ash into construction aggregate used to make lightweight, durable concrete blocks. Universal Aggregates processed all the ash produced at Birchwood (more than 100,000 tons a year) until 2009. Today the plant, once again, uses the landfill as a disposal site for its ash (see the figure above). There exists a $0.6-2MM / yr. ash disposal contract with the landfill & local trucking through until the plant closes in 2021.

Environmental Impact: The Birchwood Power Plant has no impact on the surrounding area. There has been no groundwater contamination, and no evidence of toxic chemicals present from the landfill.

Sources: Dennen, 2015; Dyson, 2020; Power Technoloy, 2017; Energy Justice Network, Birchwood Power; Gem.wiki, 2021; J-Power USA, 2021

BREMO POWER PLANT CCR SITE

Aerial Photo Source: Google Earth, 2020, Polygons: Source: Western MD Regional GIS Center, 2020

Name: Bremo Power Plant

State, County, City: Virginia, Fluvanna County, Bremo Bluff

Site Address: 1038 Bremo Rd., Bremo Bluff, VA 23022

Coordinates: 37°42'32.92"N, 78°17'14.34"W

Owner: Dominion Virginia Power

Number and Type of CCR Storage Units Onsite: 3 Ash ponds/impoundments

Accepted Materials: Fly ash and bottom ash

Estimated Quantity of CCRs: Ponds have either been dredged or are in the process of being dredged.

Estimated Area of CCRs: Over 40 acres

Beneficial Use Projects: Unknown

CCR Compliance Website: https://www.dominionenergy.com/projects-and-facilities/electric-projects/coal-ash/ccr-rule-compliance-data-and-information

Last Update: December 2020

BREMO POWER PLANT CCR SITE – LIDAR HILLSDADE

Source: Western MD Regional GIS Center, 2020, LIDAR data: vgin.maps.arcgis.com

Site History: The Power station was opened in 1931, and at the time had two units that strictly burned coal. These two units were shut down and replaced with two new coal-burning units in 1950 and 1958. In 2014 the two coal-powered units were converted to natural gas. In 2019 the two power units were placed in "cold reserve" to be used if more power is needed.

The West Ash Pond (WAP) is approximately 17 acres in size and was used as a water treatment pond to settle and manage low-volume wastewaters, including CCR. In 2014, the Station converted from a coal-fired power plant to a natural gas-fired power plant. No new CCR has been placed in the WAP after the conversion. The WAP contained approximately 327,000 cubic yards (CY) of CCR prior to the start of excavation activities.

The East Ash Pond (EAP) is an approximately 26.5-acre impoundment that was used for the storage of CCR from the Bremo Power Station. The pond was placed into service in the 1930s and was capped with soil fill in the mid-1980s except for the eastern portion of the pond, which remained wet, allowing pass-through of drainage from the adjacent area to the north. The EAP contained approximately 1,800,000 cubic yards of CCR prior to the start of excavation activities.

As of 2019, the majority of CCR in the West and East Ash Ponds has been emptied and removed to other sites or relocated to the North Ash Pond (NAP). Final CCR removal of all CCR will be disposed of in a designated off-site facility.

Environmental Impacts: After the remediation of the ash ponds, with the exception of the North Ash Pond, the only deleterious effect on the environment is a slightly elevated lithium level in the groundwater.

Sources: Ashtracker.org, 2017a; Golder Associates Inc., 2019a; Golder Associates, Inc., 2015; Golder Associates Inc., 2016; Gem.wiki, 2020a

CHESAPEAKE ENERGY CENTER CCR SITE

Aerial Photo Source: Google Earth, 2014, Polygons: Western Maryland Regional GIS Center, 2021

Name: Chesapeake Energy Center

State, County, City: Virginia, City of Chesapeake

Site Address: 2701 Vepco Street, Chesapeake, VA 23323

Coordinates: 36°45'47.84"N, 76°18'8.58"W

Owner: Dominion Virginia Power

Number and Type of CCR Storage Units: 1 Ash landfill and 1 ash impoundment

Accepted Materials: Bottom ash and Fly ash (Landfill)

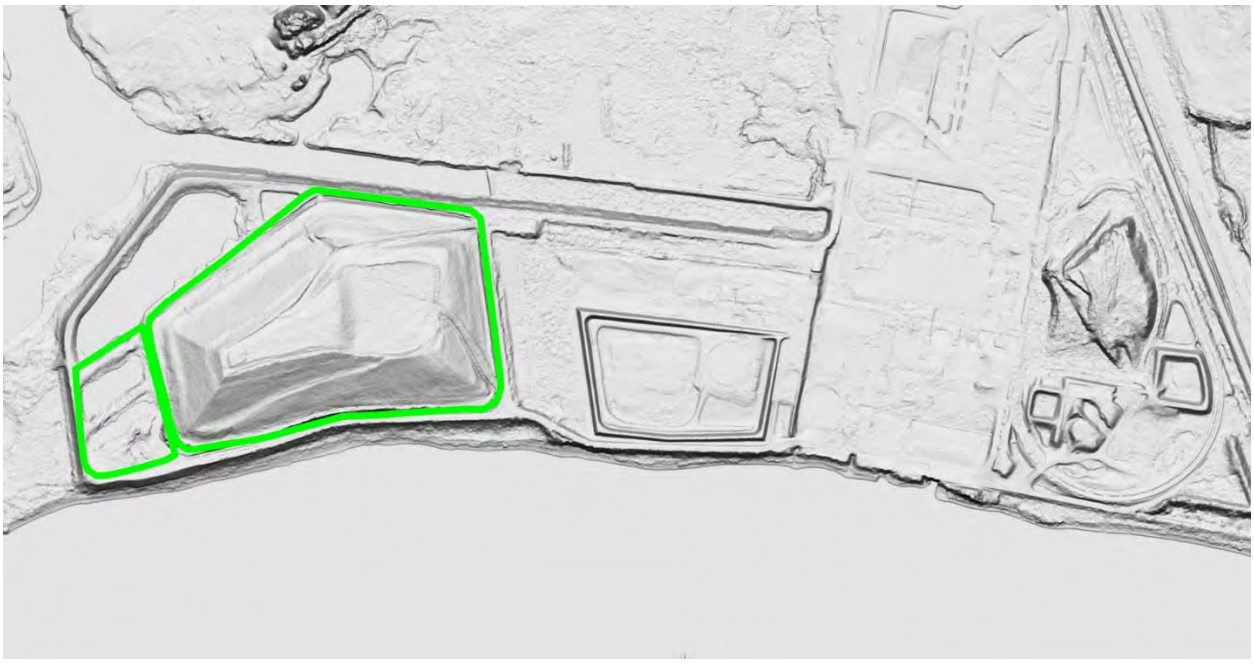
Estimated Quantity of CCRs: As of November 2018, the landfill contains approximately 975,000 cubic yards of CCR.

Beneficial Use Projects: Fly ash was used in the construction of the Battlefield Golf Course in Chesapeake, Virginia as well as in the making of concrete blocks.

CCB Compliance Website: https://www.dominionenergy.com/projects-and-facilities/electric-projects/coal-ash/ccr-rule-compliance-data-and-information

Last Update: January 2021

CHESAPEAKE ENERGY CENTER CCR SITE – LIDAR HILLSHADE



Source: Western MD Regional GIS Center, 2021, LIDAR data: vgin.maps.arcgis.com

Site History: The CEC was developed in the early 1950s and operated on coal until the late 1960s. The station converted to oil in the 1970s and re-converted to coal in the 1980s. The four coal-fired generating units were removed from service as of 23 December 2014 and decommissioned as of 2016.

Prior to the 1980s, CCR from Chesapeake Energy Center (CEC) generating units was routed to the Historic Pond located on the peninsula. In the mid-1980s, a lined landfill, an unlined bottom ash pond, and an unlined sedimentation pond were constructed over the Historic Pond at CEC. During active plant operation, the Bottom Ash Pond received sluiced bottom ash from the plant, which was allowed to settle before being excavated and hauled to the adjacent CCR landfill for disposal or marketed for beneficial reuse. The Chesapeake Energy Center stopped producing CCR as it was decommissioned and demolished.

Environmental Impact: The following constituents were detected at levels above the Groundwater Protection Standard Exceedance at the Bottom Ash Pond: Arsenic, Beryllium, Cobalt, Lithium, Selenium, and Radium 226 and 228 (combined).

Sources: Golder Associates, Inc., 2020d; O'Brien and Gere, 2010a.

CHESTERFIELD POWER PLANT CCR SITE

Source: Google Earth, 2020, Polygons: Source: Western MD Regional GIS Center, 2020

Name: Chesterfield Power Plant

State, County, City: Virginia, Chesterfield County, Chester

Site Address: 500 Coxendale Rd., Chester, VA 23836

Coordinates: 37°22'55.86"N, 77°22'58.05"W

Owner: Dominion Virginia Power

Number and Type of CCR Storage Units: 2 Unlined ponds and 1 lined landfill along with a gypsum storage silo.

Accepted Materials: Fly & bottom ash, boiler slag, coal mill rejects, coal fines, and dredge materials.

Estimated Quantity of CCRs: Unknown

Beneficial Use Projects: Gypsum is collected and sent to be used in wallboard. Other by-products (fly ash) are used to make concrete blocks.

CCR Compliance Website: https://www.dominionenergy.com/projects-and-facilities/electric-projects/coal-ash/ccr-rule-compliance-data-and-information

Last Update: December 2020

CHESTERFIELD POWER PLANT CCR SITE – LIDAR HILLSHADE

Source: Google Earth, 2020, Polygons: Source: Western MD Regional GIS Center, 2020

Site History: The Chesterfield Power Station is Virginia's largest coal-fired power plant. By 1949, the site had a second coal-fired generator. Those units have been retired and replaced over the years with a set of six generators, two of which burn natural gas. Today, Chesterfield operates 2 gas generators and 2 coal-fired generators. The coal-fired generators will be retired in 2021.

Legislation passed during the 2019 Virginia General Assembly requires Dominion Energy to remove approximately 15 million cubic yards of coal ash currently stored in two closed coal ash ponds at Chesterfield Power Station within 15 years and directs the company to consult with Chesterfield County regarding a plan to address various transportation-related concerns, including fugitive dust. The coal ash must be recycled or placed in a lined landfill that meets Federal Coal Combustion Residuals (CCR) and Virginia CCR regulations.

In 2017 the upper and lower ponds were discontinued, and a 66-acre lined landfill was built. As of now only dry ash is being produced from the power plant. All of this ash is deposited in this landfill. Additionally, some ash from the two closed ponds was deposited at this site.

Environmental Impacts: Seepage from unlined ponds into the groundwater along the shoreline of the James River near the Chesterfield Power Station took place. Also, in 2016 certain groundwater monitoring wells at this site showed unsafe levels of manganese, arsenic, ammonia, and molybdenum.

Sources: Southern Environmental Law Center, 2017; Ashtracker.org, 2019b; GAI, 2016; GAI, 2018; Golder Associates, 2017; Golder Associates, 2020a, Golder Associates, 2020b; Geosyntec Consultants, 2018; Energy Justice Network, Chesterfield Power Station; Gem.wiki, 2020c

CLOVER POWER PLANT COAL ASH DEPOSIT

Aerial Photo Source: Google Earth, 2020, Polygons: Source: Western MD Regional GIS Center, 2020

Site Name: Clover Power Plant
State, County, City: Virginia, Halifax County, Clover
Site Address: 4091 Clover Road, Clover, VA 24534
Coordinates: 36°52'41.34"N, 78°42'59.18"W
Owner: Dominion Virginia Power 50%, Old Dominion Electric Cooperative 50%
Number and Type of CCR Storage Units Onsite: 1 Ash landfill, 5 settling ponds, and 2 sedimentation ponds
Accepted Materials: The landfill contains fly ash, bottom ash, gypsum, and coal mine rejects while the sedimentation ponds accept sludge from the plant. The settling ponds accept runoff (ash fines) from the landfill. The undefined landfill requires more investigation.
Estimated Quantity of CCBs: There were 6,420,000 cubic yards of ash in the landfill in 2019.
Estimated Area of CCRs: 78 Acres
Beneficial Use Projects: Unknown
CCB Compliance Website: https://www.dominionenergy.com/projects-and-facilities/electric-projects/coal-ash/ccr-rule-compliance-data-and-information
Last Update: November 2020

CLOVER POWER PLANT COAL ASH DEPOSIT – LIDAR HILLSHADE

Hillshading generated from LIDAR data from: vgin.maps.arcgis.com

Notes

Site History: The 881-MW Clover Power Station came online in 1995 and operates two primary pulverized coal-fired boilers nominally each rated at 4,085 MMBtu/hr for the purpose of generating electricity. The current landfill was developed and permitted as an industrial landfill for the management of CCR on October 17, 2000. There is also an undefined landfill south of the current landfill that must be investigated further.

Dominion has operated the Stage 3 landfill for disposal of CCRs produced at the Station since June 2002. The CCRs include fly ash, bottom ash, coal mill rejects, and gypsum. All ash produced by the power plant is trucked to the landfill as is the sludge from two nearby sedimentation ponds. The permitted area of the landfill comprises approximately 78.5 acres designated for CCR disposal. The area was subdivided into phases, all of which have now been constructed. Dominion plans to continue filling the Stage 3 landfill until it reaches its final design grades. At final capacity, this landfill will contain approximately 8,000,000 cubic yards of CCR material. As of 2019, ash-filled 80% of the landfill. The settling ponds are essentially stormwater runoff ponds and do not contain ash.

Environmental Impact: Although Clover's two sediment ponds do not meet EPA rules for handling and storage of coal ash waste, no notable water quality impacts have been found.

Sources: South Boston News & Mecklenburg Sun, 2020; Proctor, 2020; Energy Justice, 2021a; Old Dominion Electric Corporation, 2021; Earth Justice, 2014; Golder Associates, 2018a; Golder 2019b; TRC Environmental Corporation, 2018

PORTSMOUTH GENCO POWER PLANT CCR SITE

Source: Google Earth, 2020; Image Date, 2019, Polygons: Source: Western MD Regional GIS Center, 2020

Name: Portsmouth Genco Power Plant

State, County, City: Virginia, Portsmouth City, Portsmouth

Site Address: 1 Wild Duck Ln., Portsmouth, VA 23703

Coordinates: 36°52'9.77"N, 76°21'21.77"W

Owner: Quantum Energy Partners LLC

Number and Type of CCR Storage Units: Onsite fly ash impoundment (inactive), 1 landfill in North Carolina

Accepted Materials: Bottom ash and fly ash (impoundment)

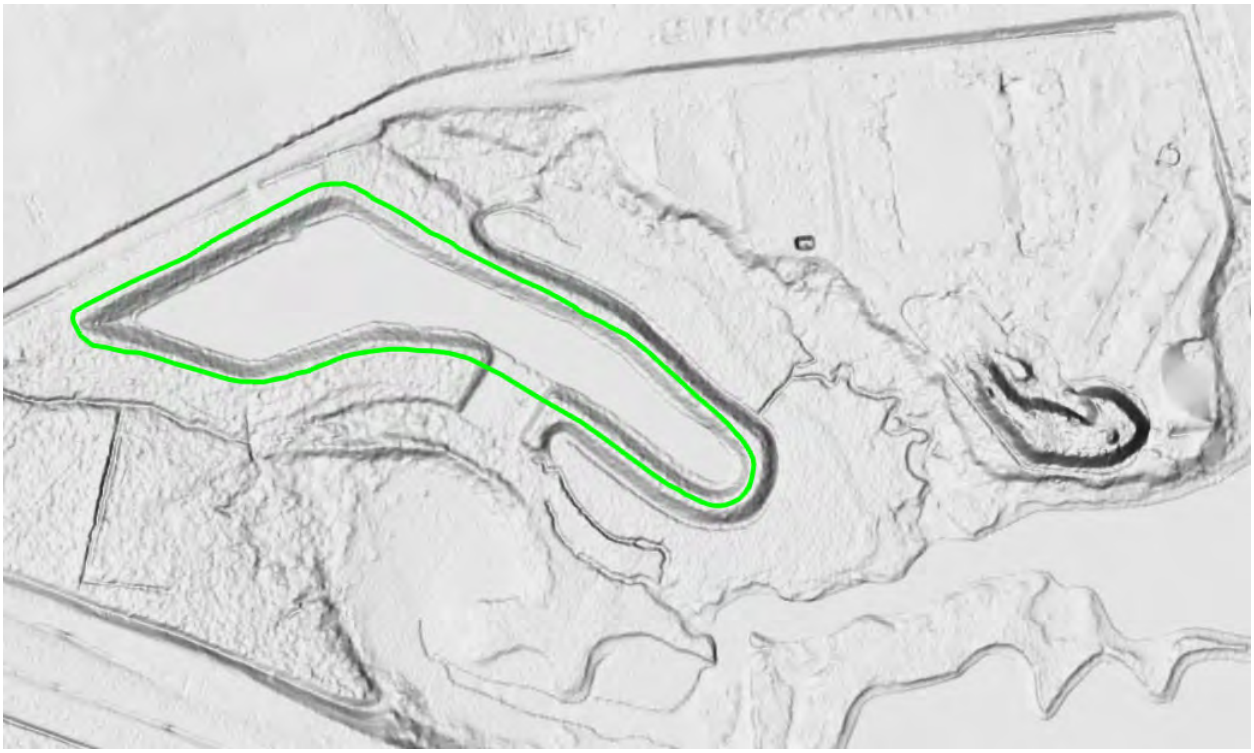
Estimated Quantity of CCR: Unknown

Beneficial Use Projects: Unknown

CCB Compliance Website: Unknown

Last Update: January 2021

PORTSMOUTH GENCO POWER PLANT CCR SITE – LIDAR HILLSHADE



Source: Western MD Regional GIS Center, 2020, LIDAR data:

Site History: The Portsmouth Genco, LLC facility was an upgraded version of the plant originally developed and constructed by Cogentrix in 1988. The plant was a stoker coal-fired cogeneration facility. Although originally designed and commissioned as a cogeneration plant, Portsmouth no longer is operating and was decommissioned in June of 2015. In March of 2016, the plant was sold to Quantum Energy Partners LLC, a biomass developer.

When the Portsmouth GENCO Power Plant was in operation, bottom ash was deposited in an onsite ash impoundment that was subsequently dredged and hauled to an offsite landfill. Fly ash created from boilers was also hauled to an offsite landfill in North Carolina. According to a 2010 report, about 45,000 tons of coal ash from small power plants owned by Cogentrix (previous owner of Portsmouth GENCO) were used as structural fill on 12.8 acres of land at Alamac Road in Robeson County, North Carolina. This may or may not be the site where Portsmouth's ash was transported.

Environmental Impact: No environmental impact data currently available.

Sources: Walzer, 2012; BBEDL, 2021; Energy Justice Network, 2021b; Balasta, 2016; Sourcewatch Organization, 2020a; Southeast Coal Ash Organization, 2010; Newman et al.; 2021.

POSSUM POINT POWER PLANT COAL ASH DEPOSIT

Aerial Photo Source: Google Earth, 2020, Polygons: Source: Western MD Regional GIS Center, 2020

Site Name: Possum Point Power Plant

State, County, City: Virginia, Prince William, Dumfries

Site Address: 19000 Possum Point Road Dumfries, VA 22026

Coordinates: 38°32'52.24"N, 77°17'7.51"W

Owner: Dominion Virginia Power

Number and Type of CCR Storage Units Onsite: 1 Active impoundment – Pond D

Accepted Materials: Unspecified CCR, likely fly ash and bottom ash

Estimated Quantity of CCRs: 4 Million cubic yards (Pond D)

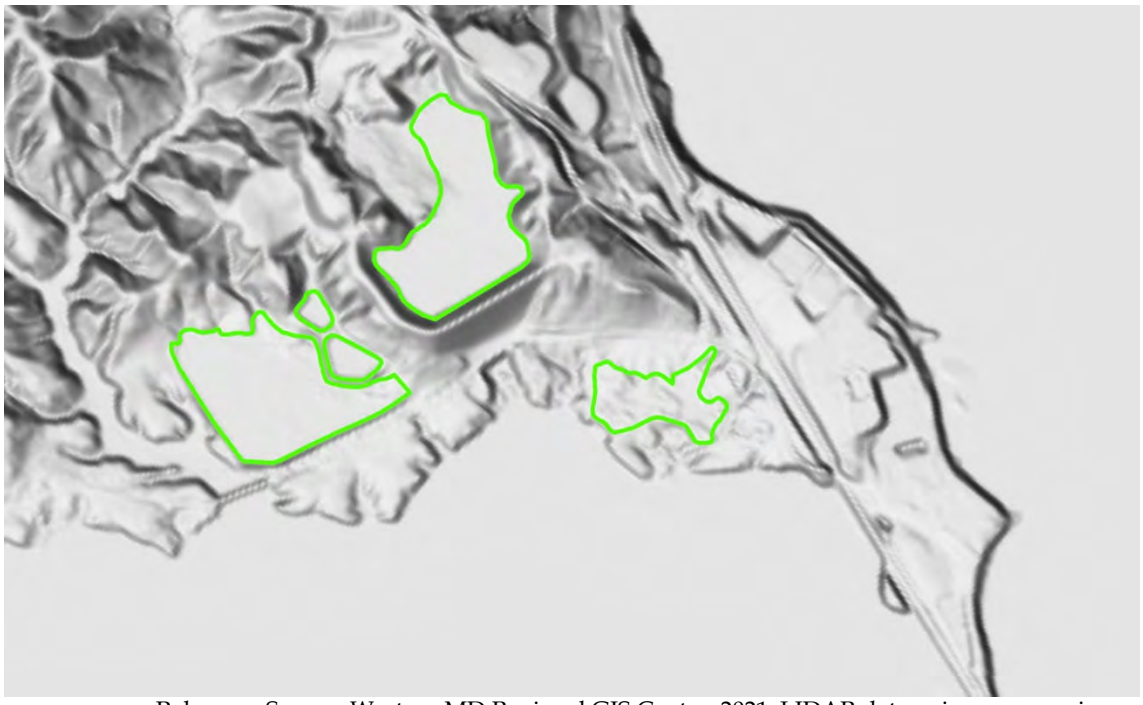
Estimated Area of CCRs: 64 Acres

Beneficial Use Projects: Dominion mentions recycling but nothing specific to this site

CCR Compliance Website: dominionenergy.com

Last Update: February 2021

POSSUM POINT POWER PLANT COAL ASH DEPOSIT – LIDAR HILLSHADE



Polygons: Source: Western MD Regional GIS Center, 2021; LIDAR data vgin.maps.arcgis.com

Site History: The Possum Point Power Plant was built in 1948 with two coal-fired boilers, Units 3 (107 MW) & 4 (232 MW), going online in 1955. These two coal units were converted to natural gas in 2003.

CCRs were first managed in Ponds A, B, & C, which were constructed in 1955, and closed several years later after they reached capacity. In later years, CCR went to Ponds D and E until the plant converted to natural gas in 2003. Pond E operated from 1968 to 2013. Beginning in 2015, CCR from impoundments A, B, C, and E were removed and consolidated to Pond D, which was reconstructed in 1988 with a clay liner. The 64-acre Pond D is estimated to contain 4 million cubic yards of CCR that are to either be recycled or moved to an approved, lined landfill. EPA and state regulations require the impoundment to be removed within 15 years. Dominion has not announced a closure plan as of February 2021. Recent legislation has prohibited Dominion from simply draining and capping Pond D.

Environmental Impact: Pollution from Pond D travels into nearby water bodies and groundwater. The Possum Point Power Station has 25 groundwater monitoring wells. Ten of these have been polluted above federal advisory levels. Groundwater at this site contains unsafe levels of manganese, nickel, cobalt, cadmium, arsenic, boron, and radium. Dominion has been ordered to pay for water testing for nearby residents and provide city water hookups where water wells have been contaminated.

Sources: Dominion Energy, 2020a; Energy Justice Network, Possum Point Power Station; IndustryAbout, 2015; Aquilogic, 2018; US Department of Energy, 1994; Berti, 2020

RIVERTON POWER PLANT CCR SITE

Aerial Photo Source: Google Earth, 2020, Polygons: Source: Western MD Regional GIS Center, 2020

Site Name: Riverton Power Plant

State, County, City: Virginia, Warren County, Riverton

Site Address: None, 0.5 miles south of Warren Co. Power Station

Coordinates: 38°57'40.97"N, 78°10'35.15"W

Owner: Unknown

Number and Type of CCR Storage Units Onsite: 1 Probable ash landfill

Accepted Materials: Unknown

Estimated Quantity of CCRs: Unknown

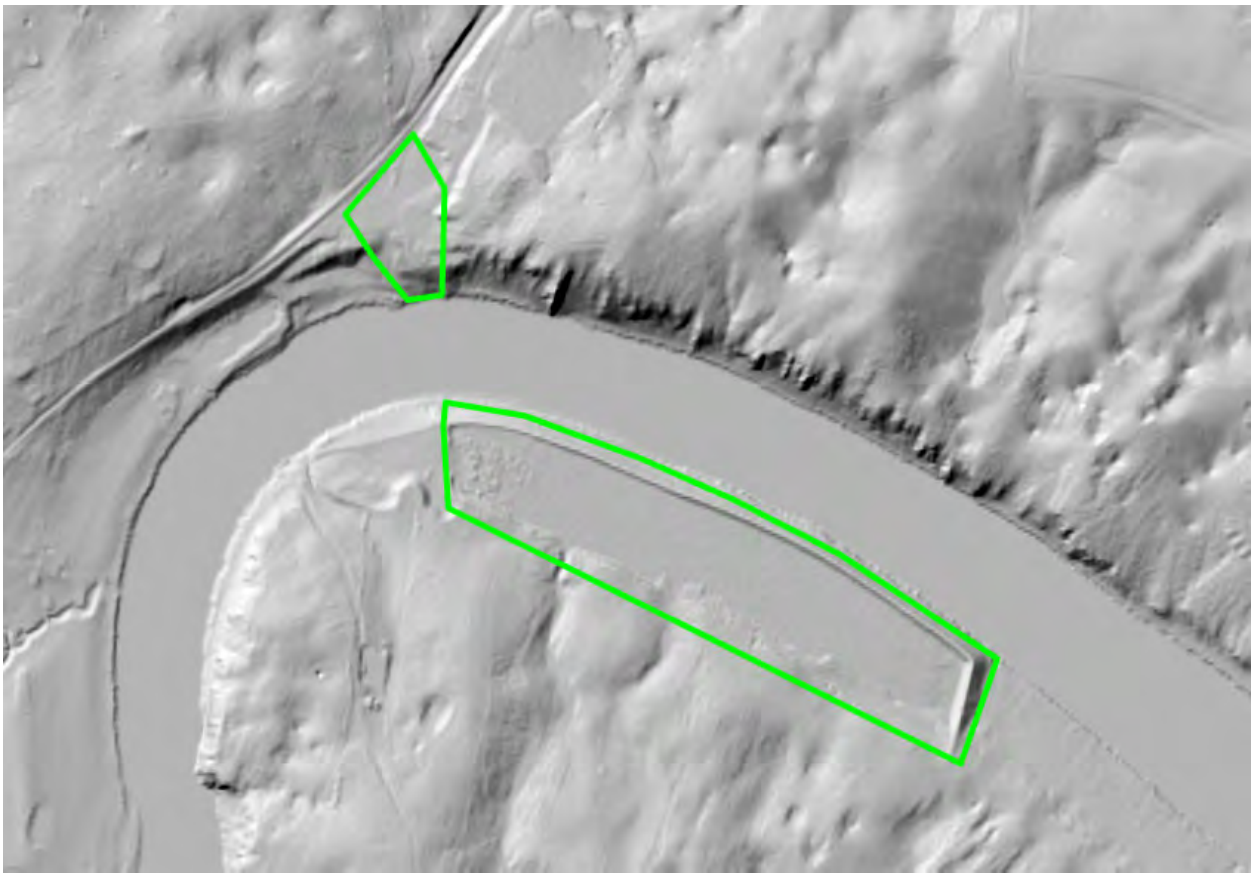
Estimated Area of CCRs: 20 Acres

Beneficial Use Projects: Unknown

CCR Compliance Website: None

Last Update: January 2021

RIVERTON POWER PLANT CCR SITE – LIDAR HILLSHADE



Polygons: Source: Western MD Regional GIS Center, 2020; LIDAR Hillshade server elevation.nationalmap.gov

Site History: The coal-fired, 35 megawatt Riverton Power Station was built by Potomac Edison of Virginia in 1949. The station, which was situated on limestone bluffs overlooking the Shenandoah River, was converted to burn oil in 1973. Operations continued until the plant was retired in 1983. A GIS investigation suggests the suspected CCR site is an impoundment/landfill directly south of the power plant across the Shenandoah River.

Environmental Impact: unknown

Sources: Small Town Papers, 1982

WESTROCK PAPER MILL POWER PLANT CCR SITE

Aerial Photo Source: Google Earth, 2016, Polygons: Source: Western MD Regional GIS Center, 2020

Name: Westrock Paper Mill

State, County, City: Virginia, Alleghany County, Covington

Site Address: 104 W. Riverside Street, Covington, VA 24426

Coordinates: 37°48'19.25"N, 80° 0'12.64"W

Owner: Westrock

Number and Type of CCR Storage Units Onsite: 3 Fly ash landfills

Accepted Materials: The newest Landfill would take fly ash, lime mud, wastewater treatment sludge, and general mill trash such as office paper and demolition debris. Older landfill's contents are unknown other than fly ash.

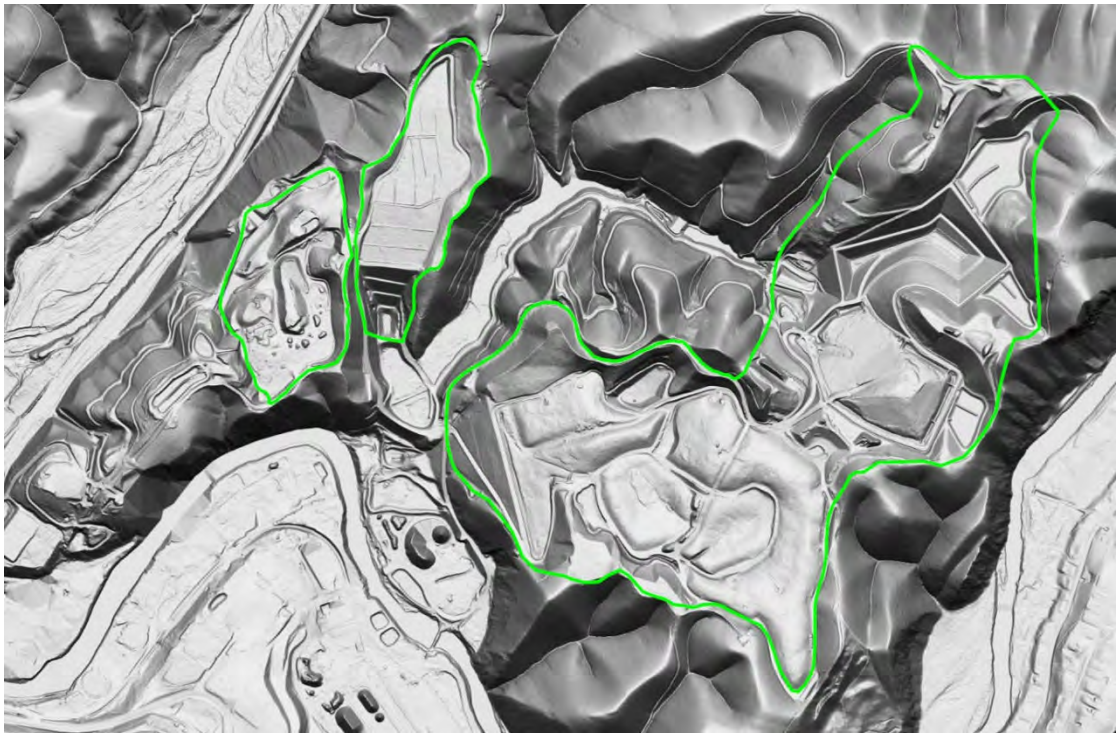
Estimated Quantity of CCRs: Unknown

Beneficial Use Projects: Some fly ash is used beneficially but no specific projects are known.

CCR Compliance Website: None

Last Update: December 2020

WESTROCK PAPER MILL POWER PLANT CCR SITE – LIDAR HILLSHADE



Source: Western MD Regional GIS Center, 2020, LIDAR data: vgin.maps.arcgis.com

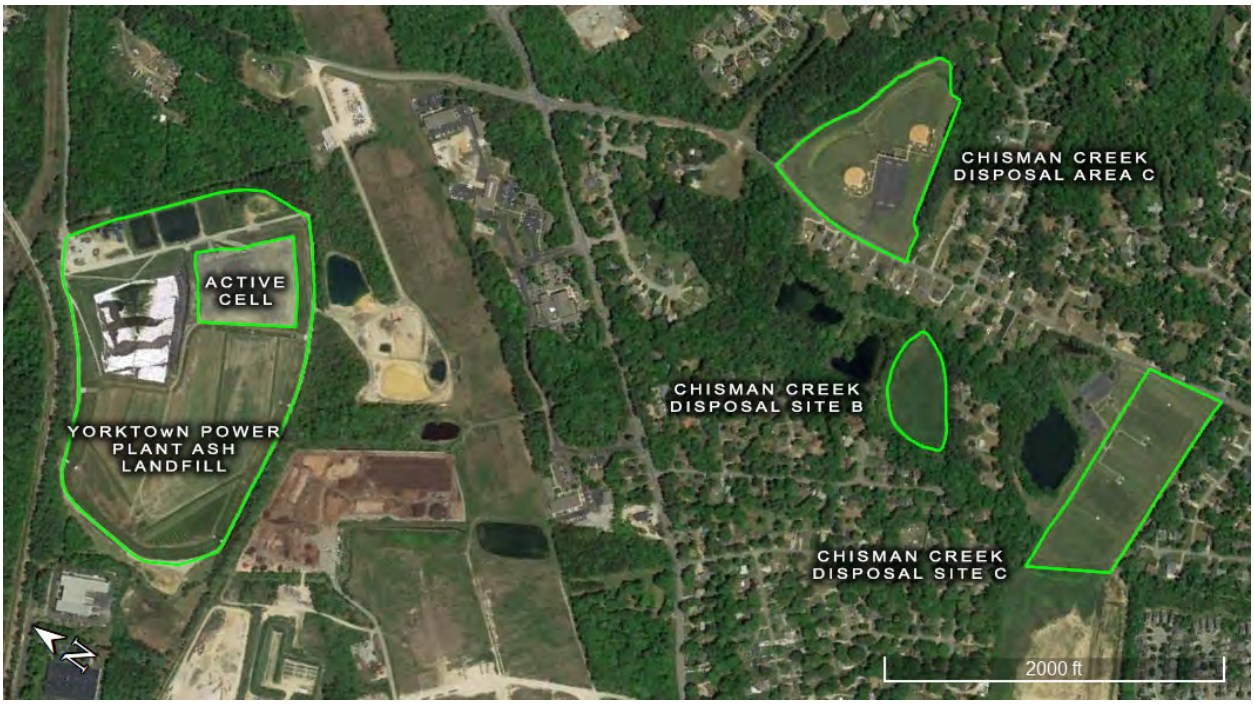
Site History: Prior to constructing and placing its open-loop biomass cogeneration facility into service in 2013, WestRock's (Mead/Westvaco at the time) paper mill had eight boilers that burned various types of fuel, including coal, natural gas, fuel oil, and black liquor that met the paper mill's steam needs. WestRock began constructing its open-loop biomass cogeneration facility in October 2011. WestRock also retrofitted one of its pre-existing boilers to supply steam to a new steam turbine generator to generate electricity. The corporation Westrock was formed in 2015 after the merger of Mead/Westvaco and RockTenn. Currently, the plant only uses a small bit of coal for heating purposes.

In 1994 Westvaco built a 66-acre state-of-the-art landfill on a 228-acre site behind the mill. The landfill replaced three old ones, also built before state rules took effect. The new landfill would take fly ash, lime mud, which is a calcium carbonate byproduct of wastewater treatment sludge, and general mill trash such as office paper and demolition debris. The landfill has liners made of impermeable plastic and a drain system to collect liquid and pipe it back to Westrock's wastewater treatment plant. There is no information regarding the specific makeup of the older landfills. To optimize its management of fly ash the mill converted its boiler ash handling system from a water-managed to a dry ash system in 2017 enabling lagoons to be closed. The dry ash can then be used as cement aggregate.

Environmental Impact: As of 2020 Westrock has cleaned up its water quality problems and now does not emit chemicals above EPA standards.

Sources: Easton, 2017; Easton, 2015; Reid, 2014; Energy Justice Network, Westvaco Covington; MeadWestvaco Corporation, 2011; Chittum, 2012; Watro, 2017; Griggsby, 2018; McCue, 1994

YORKTOWN POWER PLANT CCR SITE



Aerial Photo Source: Google Earth, 2018, Polygons: Source: Western MD Regional GIS Center, 2020

Name: Yorktown Power Plant

State, County, City: Virginia, York County, Yorktown

Site Address: 1600 Waterview Rd., Yorktown, VA 23692

Coordinates: 37°11'11.36"N, 76°28'18.72"W

Owner: Dominion Virginian Power

Number and Type of CCR Storage Units: 1 Offsite landfill and 3 historic landfills

Accepted Materials: Fly ash, bottom ash, pyrites, and limestone injection multi-stage burner ash (current landfill).

Estimated Quantity of CCRs: Unknown

Estimated Area: 48 Acres

Beneficial Use Projects: Unknown

CCR Compliance Website: https://www.dominionenergy.com/projects-and-facilities/electric-projects/coal-ash/ccr-rule-compliance-data-and-information

Last Update: January 2021

YORKTOWN POWER PLANT CCR SITE – LIDAR HILLSHADE

Source: Western MD Regional GIS Center, 2020, LIDAR data: vgin.maps.arcgis.com

Site History: The Yorktown Power Station has been burning coal and oil at various times in its long history of operation (since 1957). On Sept. 1, 2011, Dominion announced plans to close one of two coal-fired units at the Yorktown Power Station by 2015 and convert the second coal-fired unit to natural gas. In 2015 Dominion received an exemption to operate the two coal units of Yorktown into the spring of 2017. However, in June 2017 the plant received an emergency order by the U.S. Department of Energy to operate through September 14, 2017, on a "very limited basis" as necessary if electrical loads are high over the summer. Both coal units will be retired for good in 2021.

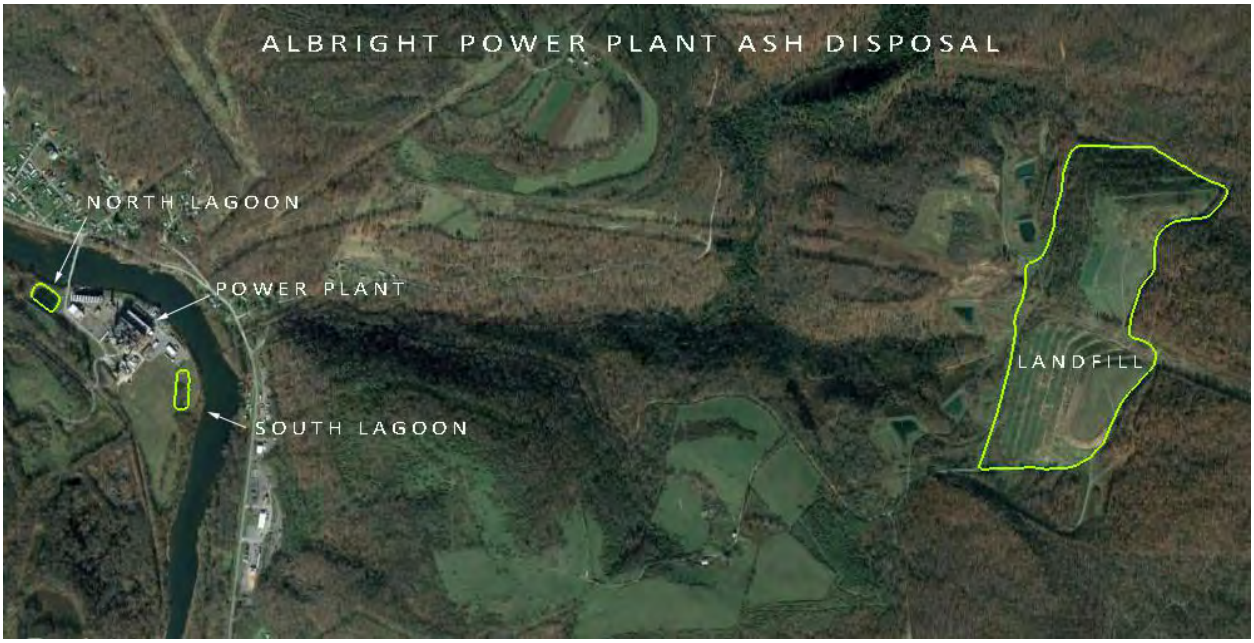
Dominion has operated the landfill for disposal of CCBs produced at the power plant since the early 1980s. The CCBs include fly ash, bottom ash, pyrites, and limestone injection multi-stage burner ash. The permitted area of the landfill comprises approximately 48 acres designated for placement of CCBs. The area is divided into 12 cells. Cells 1 through 11 have received CCBs and are covered with intermediate cover soil. Cell 12 is currently open and active (see Figure above). There are three other sites near Chisman Creek where 500,000 tons of coal combustion residuals from the Yorktown Power Generating Station were disposed of from 1957 to 1974. The CCBs included fly ash and bottom ash from burning coal mixed with petroleum coke. These sites are now considered Superfund Sites.

Environmental Impacts: The Yorktown Landfill has several groundwater monitoring wells. One of these wells has been polluted above federal advisory limits. Groundwater at this site contains unsafe levels of molybdenum. The Superfund Sites continue to be monitored for any groundwater problems.

Sources: Fearing, 2019; EPA, 2021; Dominion Energy, 2020a; Gem.wiki, 2020f; Golder Associates, 2018b; Golder Associates, 2020c

West Virginia Sites

ALBRIGHT POWER PLANT ASH DEPOSIT



Aerial Photo Source: Google Earth, Polygons: Western MD Regional GIS Center, 2020

Site Name: Albright Power Plant Ash Deposit

State, County, City: West Virginia, Preston County, Albright

Site Address: 530 Power Plant Rd., Albright, WV 26519

Coordinates: 39°29'16.15"N, 79°36'16.58"W

Owner: Monongahela Power Company

Number and Type of CCB Storage Units Onsite: Appears to be one landfill approximately 1.75 miles east of the power plant two small impoundments.

Accepted Materials: Fly ash and bottom ash in landfill

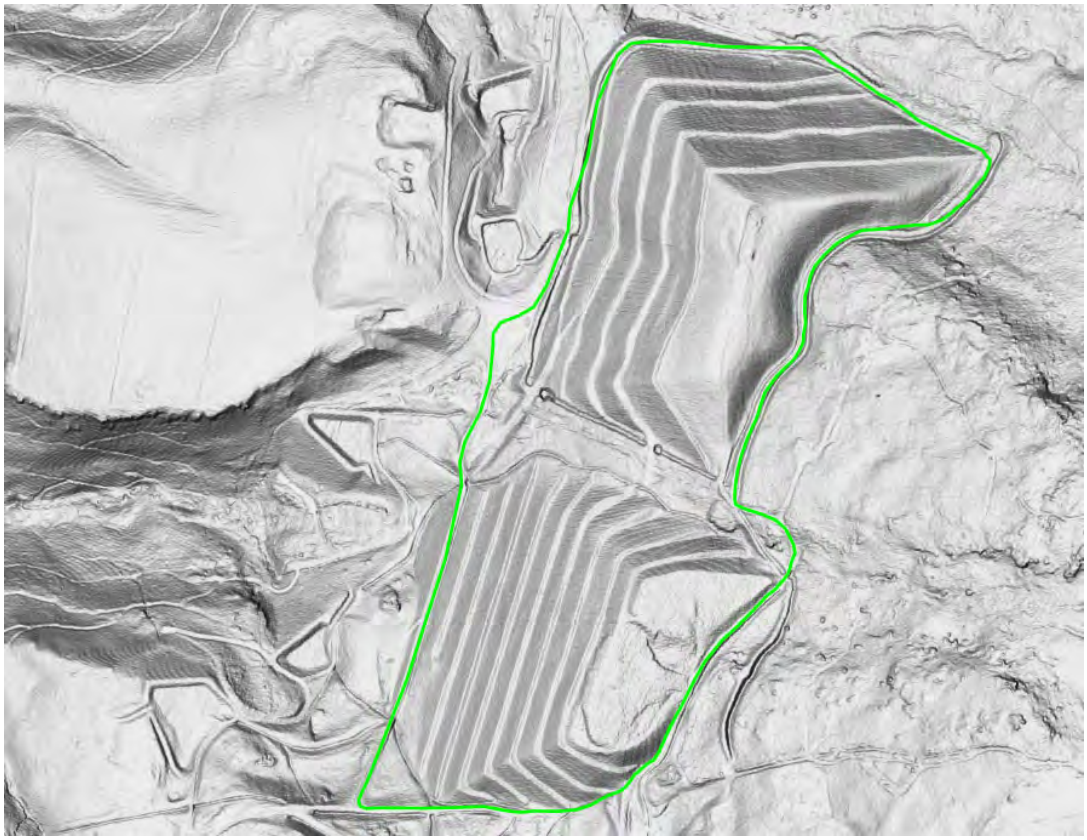
Estimated Quantity of CCBs: Ponds were dredged in 2012, landfill not known

Beneficial Use Projects: Some ash was taken for beneficial use but no further details are available

CCR Compliance Website: https://armgroup.net/projects/albright-power-station-closed-landfill/

Last Update: September 2020

ALBRIGHT POWER PLANT ASH DEPOSIT – LIDAR HILLSHADE



Source: Western MD Regional GIS Center, Pennsylvania PASDA, USGS LIDAR 2017

Notes:

Site History: At one time impoundments on the premises of the Albright Power Plant held coal combustion residuals (CCR). When the plant ceased operations in 2012 CCR was no longer handled at the facility. The power plant has not operated since August 2012 and the decommissioning of the plant took place at that time. The decommissioning process included the removal of all coal, dredging of the two impoundments, and removal of all chemicals from the property. During the operation of the facility, CCR was trucked to a nearby landfill.

Environmental Impacts: Groundwater at the landfill site contains unsafe levels of nickel, manganese, thallium, sulfate, antimony, chromium, lead, arsenic, boron, and selenium. FirstEnergy admitted that discharges from Albright's landfills contaminated groundwater in excess of state standards for thallium and federal standards for chromium and nickel. In 2011, the facility was the subject of a citizen suit alleging violations of the Clean Water Act imposed limits on arsenic discharges from its impoundments. As a result of this suit, FirstEnergy agreed to close the power plant and stop disposing of coal combustion waste at this facility. (ashtracker.org)

Sources: Ashtracker.org, 2020a; ARM Group, 2020; MonPower, 2014; Global Energy Monitor, 2020

MT STORM POWER PLANT ASH DEPOSIT

Aerial Photo Source: Google Earth, Polygons: Western MD Regional GIS Center, 2020

Site Name: Mt Storm Power Plant Ash Deposit

State, County, City: West Virginia, Grant County, Mt. Storm

Site Address: 436 Dominion Boulevard, Mt. Storm, West Virginia

Coordinates: 39°11'34.68"N, 79°16'54.25"W

Owner: Dominion

Number and Type of CCR Storage Units Onsite: 2 Onsite landfills, 5 onsite low volume waste ponds

Accepted Materials: Fly & bottom ash, FGD materials

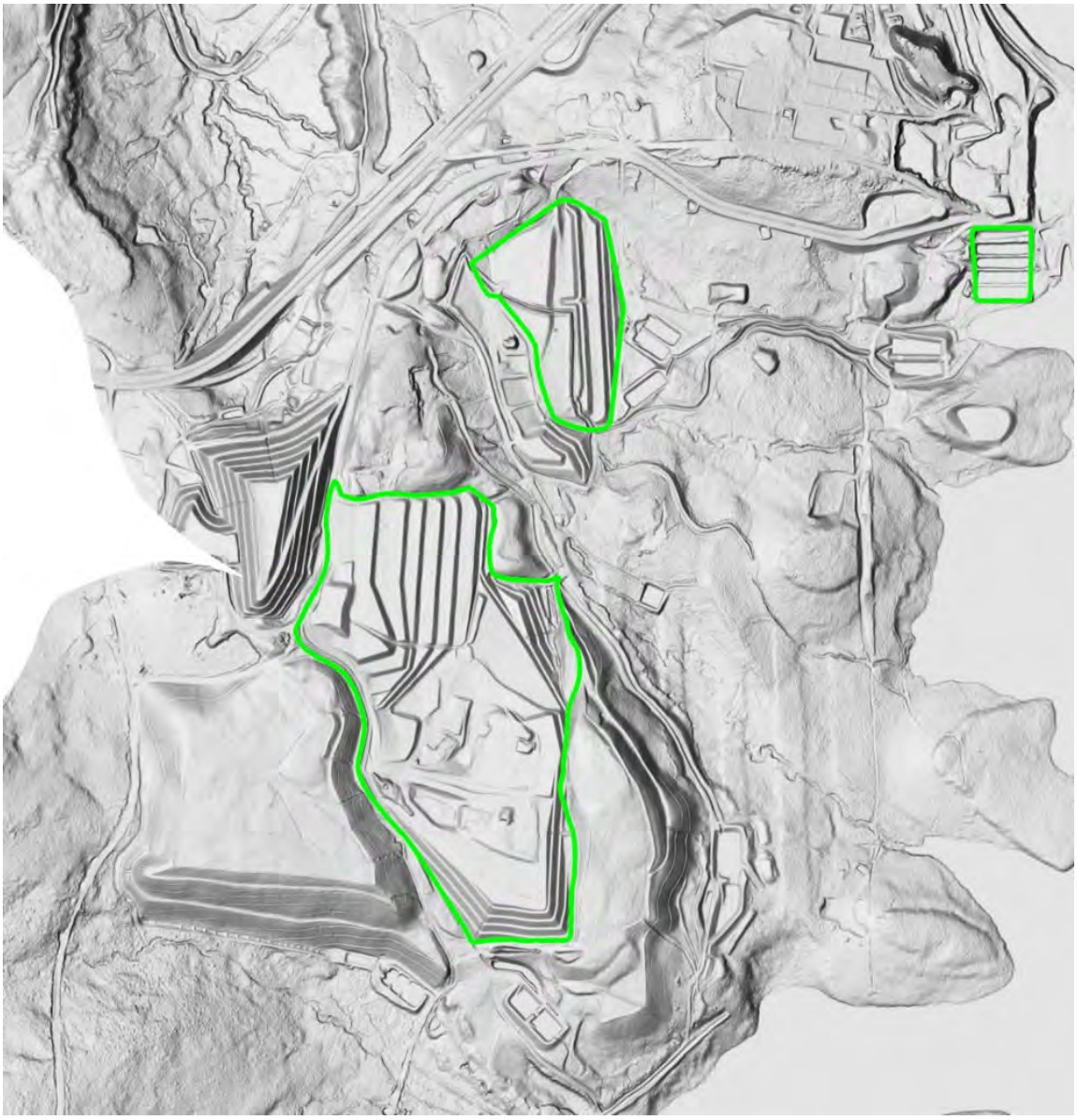
Estimated Quantity of CCRs: 50 Million tons

Beneficial Use Projects: FGD sludge used for mine reclamation and cement

CCB Compliance Website: https://www.dominionenergy.com/projects-and-facilities/electric-projects/coal-ash/ccr-rule-compliance-data-and-information

Last Update: February 2021

MT STORM POWER PLANT ASH DEPOSIT – LIDAR HILLSHADE



Source: Western MD Regional GIS Center, WV LIDAR

Site History: The three boiler, 1,662 megawatt, coal-fired Mt. Storm Power Station and adjoining 1,200-acre Mt. Storm Lake were constructed in 1965. The Station is located approximately 40 miles south-southwest of Cumberland, Maryland. The first power generation turbine at the Station went online in September 1965 and was followed by the second turbine in June 1966. The third turbine went online in December 1973.

The Mt. Storm Power Station consists of four major areas which include the Powerhouse, the active Phase A Flue Gas Desulfurization (FGD) By-Product Disposal Facility, the Closed Five-Year Storage Disposal Facility site, and the active Phase B Ash Disposal Facility. The Phase A facility encompasses an approximate permitted area of 235 acres and the Phase B landfill contains approximately 426 acres. The Low Volume Sedimentation Ponds, fly ash and bottom

ash hoppers, and FGD building are included in the Powerhouse area of the facility. Fly ash, bottom ash, and FGD are designed to be transported by truck to the onsite Phase A or Phase B landfills. Bottom ash is either transported to an onsite bottom ash screening operation for off-site beneficial reuse or to the Phase B Landfill for disposal. FGD material is either transported off-site for beneficial reuse or sent to the Phase A Landfill for disposal. The Phase A and B landfill facilities consist of active waste disposal areas, sediment ponds, and leachate management areas. The Station Low Volume Sedimentation Ponds receive a variety of Power Station wastewaters for treatment. Included in the wastewater streams received is bottom ash dewatering water, including bottom ash fines, which are settled out in the ponds. Periodically, the ponds are dredged of settled solids, which are then transported by truck to the Phase B Landfill for disposal.

Calculations from historical Energy Information Administration coal consumption data indicate approximately 50 million tons of may be present.

Older ash landfills exist onsite and not covered here due to the lack of publicly available information. Further research is necessary.

Environmental Impacts: Ashtracker.org reports several monitoring locations to have pollutants exceeding water quality standards.

Sources: Ashtracker.org, 2020b; Dominion Energy, 2015; Dominion Energy, 2020a; McElhinny, 2020; Earth Justice, 2020

RP SMITH POWER PLANT ASH DEPOSIT

Aerial Photo Source: Google Earth, Polygons: Western MD Regional GIS Center, 2021

Site Name: RP Smith Power Plant Ash Deposit

State, County, City: Facilities east of river: Maryland, Washington County, Williamsport

Facilities west of river: West Virginia, Berkeley County, Marlowe

Site Address: Ripple Way Road, Marlowe, WV 25419

Coordinates: 39°35'19.62"N, 77°50'0.22"W

Owner: FirstEnergy

Number and Type of CCR Storage Units Onsite: 4 Impoundments, 1 landfill

Accepted Materials: Fly ash and bottom ash

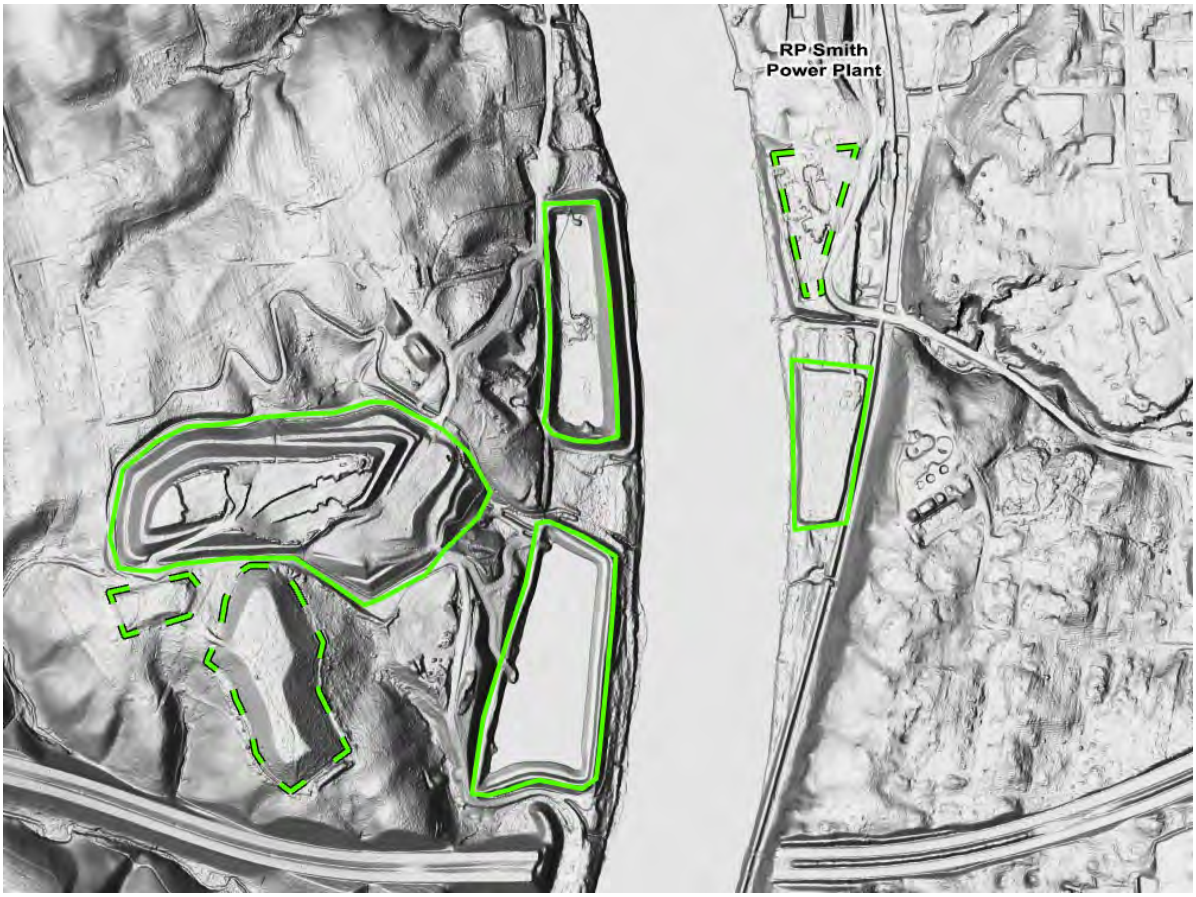
Estimated Quantity of CCRs: The CCR landfill has been removed. CCR remains on the Maryland side in a retired impoundment.

Beneficial Use Projects: The CCR landfill has been recycled into cement.

CCR Compliance Website: None

Last Update: February 2021

RP SMITH PLANT ASH DEPOSIT – LIDAR HILLSHADE



Source: Site Polygons - Western MD Regional GIS Center, LIDAR MD IMAP

Site History: The first generating unit at the RP Smith Plant began service in 1927 as part of the West Penn Electric Company. The 1927 unit was replaced by a new unit in 1947 with a nameplate capacity of 34.5 MW. An additional 75 MW operating unit was constructed in 1958, bringing the capacity to 115 MW. In 1960 the West Penn Electric Company was renamed Allegheny Power System, Inc. The RP Smith station was one of six FirstEnergy stations to be retired in 2012. In its last years, the plant was operated intermittently. FirstEnergy ceased plant operations on September 1, 2012.

Up to 50,000 tons of CCR were generated annually. Ash Ponds #3 and #4 were constructed in the 1960s to receive ash sluiced from the power plant across the river. Allegany Energy noted in one report, that Pond #1 (removed) and Pond #2 (filled with soil and covered with grass) used to exist on the Maryland side at the power plant site, but they were retired in the 1960s (2012 Dam Assessment Report). GIS measurements indicate there may be over 800,000 cubic yards of material present at the southern impoundment on the Maryland side. It is unknown how much of this material is ash vs. soil fill. Removal and recycling of the 30-acre CCR landfill on the West Virginia side of the river began in 2009 and was nearly complete as of 2020. More than 3 million tons of CCR were delivered to the cement industry for recycling into cement.

Environmental Impacts: none known

Sources: CHA Consulting, 2010; MDE, 2008-2017; Lee et al, 2015

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