

COAL COMBUSTION RESIDUALS FUGITIVE DUST CONTROL PLAN

NRG BRANDYWINE COAL ASH
MANAGEMENT SITE



Prepared for

NRG MD Ash Management LLC

25100 Chalk Point Road
Aquasco, MD. 20608

September 28, 2015



12420 Milestone Center Drive, Suite 150
Germantown, MD 20876
Job No: 60429240

**NRG Brandywine Ash Management Site
CCR Fugitive Dust Control Plan Revision Register**

CCR Fugitive Dust Control Plan Revision Cycle	Date	Revision No.
Initial CCR Fugitive Dust Control Plan	September 28, 2015	Rev 0

Professional Engineering Certification

I have visited the NRG Morgantown and Chalk Point Generating Stations and the associated Brandywine Ash Management Site located in Brandywine, Maryland, and I hereby certify that this initial CCR Fugitive Dust Control Plan meets the requirements of the Code of Federal Regulations (CFR), 40 CFR §257.80 (Subpart D—Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments, §257.80 – Air Criteria). Any subsequent amendments to this Plan will be reviewed by a Professional Engineer to ensure that it meets the requirements of 40 CFR §257.80.

Name of Registered Professional Engineer: Jeffrey Hutchins

Registration Number: MD PE 13186

Expiration Date: October 10, 2016

Signature and Seal: 

Date: 9/28/15



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1.0 INTRODUCTION

The Brandywine Ash Management Site (Brandywine Ash Site) is owned by NRG MD Ash Management LLC (NRG) and is operated as a management facility for coal combustion residuals (CCRs) also referred to as coal fly ash and bottom ash, produced at NRG's Morgantown and Chalk Point Generating Stations.

The Brandywine Ash Site is located at the intersection of North Keys Road and Gibbons Church Road in the town of Brandywine in Prince George's County, Maryland. The street address of the Brandywine Facility is:

NRG MD Ash Management LLC
Brandywine Ash Management Site
11710 North Keys Road
Brandywine, MD. 20613

Maps showing the location of NRG's Morgantown and Chalk Point Generating Stations and the Brandywine Ash Site are presented in Appendix A.

1.1 OBJECTIVE OF THE FUGITIVE DUST CONTROL PLAN

The purpose of this document is to provide a framework to guide NRG in its operation and management of CCR activities at the Brandywine Ash Site in a manner that will effectively minimize CCR from becoming airborne, in accordance with relevant federal regulations. These requirements apply in addition to, not in place of any applicable standards under the Occupational Safety and Health Act or any applicable State or local CCR or erosion and sediment control regulations.

1.2 REGULATORY BASIS

Since December 1, 2008 the Brandywine Ash Site has been regulated for CCRs by the Maryland Department of the Environment (MDE) under the Code of Maryland (COMAR) §26.04.10.01 through .04 and related sections.

As of April 17, 2015, the Brandywine Ash Site has also been regulated by the Code of Federal Regulations (CFR) under 40 CFR §257.80. That regulation requires operators of CCR units to prepare a CCR Fugitive Dust Control Plan by October 19, 2015, and to operate the facility in accordance with the Plan thereafter. This CCR Fugitive Dust Control Plan is prepared to comply with that and related regulations.

Additionally, §257.80(d) makes reference to requirements for recordkeeping, notification, and public accessibility to this Plan via the internet as established in §257.105(g), §257.106(g), and §257.107(g).

1.3 IMPLEMENTATION RESPONSIBILITIES

The Brandywine Site Supervisor is responsible for implementing procedures for the reduction and prevention of dust in and around the site and ensuring compliance with applicable requirements, specifically including 40 CFR §257.80, as well as other applicable federal, state, and local regulations.

1.4 DOCUMENT INFORMATION

This CCR Fugitive Dust Control Plan was prepared on behalf of NRG and was accepted into the NRG operating record in accordance with 40 CFR §257.105(g)(1) on October 19, 2015.

A Register of Revisions and Amendments to this CCR Fugitive Dust Control Plan is presented on Page i of the Plan. Any Revisions or Amendments to the Plan are included in Appendix B with a statement of certification by a licensed professional engineer and placed into NRG operating record in accordance with 40 CFR §257.105(g)(1).

1.5 REGULATORY CROSSWALK TABLE

A regulatory crosswalk table mapping the required plan elements under 40 CFR §257.80 against the elements of this Plan is presented in Table 1 below.

Table 1 Regulatory Crosswalk Table

40 CFR 257 Citation	Description of Rule	CCR Fugitive Dust Control Plan Section
80(b)(1)	Identify dust control measures for CCR unit Describe dust control measures for CCR unit Explanation of why selected dust control measure is applicable and appropriate for site conditions of CCR unit	4.0
80(b)(2)	Emplacement of CCR into landfill as conditioned CCR	4.2
80(b)(3)	Procedures to log citizen complaints	6.1
80(b)(4)	Procedures for assessment of CCR Fugitive Dust Control Plan	5.0
80(b)(5)	Date of initial CCR Fugitive Dust Control Plan	1.4
80(b)(6)	Date of CCR Fugitive Dust Control Plan Amendments	1.4
80(b)(7)	Certification of CCR Fugitive Dust Control Plan	1.6
80(c)	Annual CCR Fugitive Dust Control Report	6.2
80(d)	Recordkeeping 257.105(g)(1) Notification 257.106(g)(1) Reporting 257.107(g)(1)	6.3

1.6 CERTIFICATION

A statement of certification by a licensed professional engineer that this initial CCR Fugitive Dust Control Plan meets the requirement of 40 CFR 257.80 is presented on Page ii of this Plan.

2.0 BACKGROUND

The Brandywine Ash Site is located at the intersection of North Keys Road and Gibbons Church Road in the town of Brandywine in Prince George's County, Maryland. The facility was initially constructed in 1971 and has received ash in four cells since then, including:

- Historical Area #1, which encompasses approximately 17.1 acres, was completed and closed many years ago. Historical Area #1 is located at the western side of the site adjacent to the PEPCO Right-of-Way and transmission lines, and Phase 1.
- Historical Area #2, which encompasses approximately 11.4 acres, was completed and closed many years ago. Historical Area #2 is located in the northern portion of the site adjacent to Phase 1 and south of Pond 004.
- Phase 1, which encompasses approximately 81.9 acres, was completed and closed in the period from 2007 to 2008. Phase 1 occupies a large portion of the middle of the site.
- Phase 2, which is the currently operational cell at the site, encompasses approximately 29 acres. Phase 2 is located south of Phase 1 and the main access road in the southern portion of the site. Phase 2 is not intended to be capped until coal ash storage operations are complete at the site.

Phase 1 and the two Historical Areas are scheduled to be closure capped with an engineered capping system under a Consent Decree with the MDE. During the fourth quarter of 2015, NRG intends to begin the construction phase of a project to permanently close Phase 1 and the two Historical Areas with a low permeability cap consisting of geosynthetic 40-mil HDPE liner, a 250-mil geocomposite drainage layer, a 2-foot final earthen cover, and vegetative stabilization.

3.0 SOURCES OF CCR FUGITIVE DUST

Fugitive dust is generated when dry fine grained material becomes airborne, thus removing it from the control of the owner/operator of the facility. Since CCR is generated by the combustion of coal, it may be very dry when it exits the burner. For this reason all CCR that will be shipped to the Brandywine Ash Site from the Morgantown and Chalk Point Generating Stations is conditioned with water before loading and leaving the station.

3.1 CCR GENERATION AREAS

All CCR that is deposited at the Brandywine Ash Site is generated from burning of raw coal for the production of electricity at the NRG Morgantown and Chalk Point Generating Stations. The Brandywine Ash Site does not accept CCR from any other sources.

The CCR that is generated at each of the two power plants is broadly separated into two types: fly ash and bottom ash. The two types of coal ash are handled differently.

3.1.1 Fly Ash

Fly ash is stored in large diameter concrete silos. Once sufficient fly ash has been stored in the silos as determined by the NRG operator, the fly ash can be released from the silo through a closed trough system and into a conditioning mixer located on a superstructure adjacent to the silos above the haul truck loading area. Inside the conditioning mixer, water would be sprayed into the fly ash via a multi-spray nozzle configuration inside the mixer. The ash would then be mixed with the water by a rotating paddle system until the operator determined that the ash had an approximate 15-percent moisture content throughout the ash in the mixer. At that point it would be ready for loading in a truck for hauling to the Brandywine Ash Site.

3.1.2 Bottom Ash

Conditioned (wetted) bottom ash generated at the two plants is transferred from the plant burners through a collective operating system to a storage point where the ash is stored until loading into haul trucks. The NRG operator determines that the bottom ash is at an acceptable consistency with a moisture content to load into trucks for hauling to the Brandywine Ash Site.

3.2 TRANSPORTATION OF CCR

3.2.1 Fly Ash

Once the NRG operator determines that the fly ash is properly conditioned in the mixer assembly, the operator would open a bottom door on the mixer assembly and the ash would be loaded into a waiting tractor trailer or dump truck (fully enclosed on all four sides) equipped with a tarp that snugly and securely covers the entire load of ash. The truck would then drive from the ash loading area at either Morgantown or Chalk Point plants to the Brandywine Ash Site on public roads for offloading of the conditioned fly ash into the active portion of Phase 2.

3.2.2 Bottom Ash

The tractor trailers or dump trucks, once loaded with bottom ash, are covered with tight fitting tarps. The trucks then drive from the Morgantown and Chalk Point plants to the Brandywine Ash Site where the bottom ash is offloaded into the active portion of Phase 2.

3.2.3 Transportation of CCR to Ash Storage Sites

CCRs are transported from NRG's Morgantown and Chalk Point Generating Stations by means of semi-trucks and dump trucks that are fully enclosed on all four sides and have been completely covered with a firmly secured tarp system to prevent loss of CCR and to minimize dust emissions during transportation. Transport of CCR to the Brandywine Ash Site has been regulated by MDE for several years in accordance with COMAR 26.04.10.03 which requires NRG to take all reasonable precautions to prevent particulate matter from becoming airborne or causing fugitive air emissions during the transportation of CCRs from the generating plants to the Brandywine Ash Site. In addition to covering all transport vehicles with a tarp system, the following steps are also taken:

- Before leaving a site where CCRs are loaded or off-loaded, vehicles transporting CCRs will be rendered clean and free of excess material or debris that could blow off, fall off, or spill during transportation.
- CCRs being loaded or off-loaded from a vehicle will be sufficiently moistened or otherwise conditioned or contained to prevent CCRs from becoming airborne or causing fugitive emissions.
- Following loading but prior to departure from the plant, the transporter will inspect each vehicle that contains CCR. An inspection log will be maintained in the truck for 30 days for each of these inspections.
- Truck speeds will be limited to 15 mph on site haul roads.

CCR's, when delivered to Brandywine Ash Site, will be directed to offload in the active fill area of Phase 2.

3.2.4 Truck Washing

During hauling operations, before leaving a site where CCRs are loaded, measures are taken to control tracking of CCRs onto plant roads and beyond. Washing of trucks at truck washing station will be conducted. All trucks will be cleaned prior to leaving the Generating Station Property.

3.3 OFFLOADING AND EMPLACEMENT OF CCR

When the CCR haul trucks arrive at the active fill area of Phase 2, they are routed to the active disposal area in Phase 2. Haul roads are multi-directional and are currently posted with a maximum speed limit of 15 mph. This is both a safety measure and it minimizes the possibility that trucks will kick up dust. CCRs are deposited at the working face under the direction of a site operator also serving as a spotter; spread over the current working face with a bulldozer in uniform lifts; and compacted with a smooth-drum roller. Emplaced CCR is regularly watered by a dedicated water truck that is permanently on site. This prevents the ash from drying out and becoming airborne.

4.0 CCR DUST CONTROL MEASURES

The Brandywine Ash Site will continue to use the fugitive dust control measures that are currently in practice, and that have proven to be highly effective at controlling and preventing fugitive CCR dust.

4.1 ROAD WATERING

NRG currently controls the presence of CCRs, dust, and mud on the Brandywine site access roads and fugitive emissions generated by traffic over paved areas by frequent wetting of the roads by way of the site's dedicated water truck. The water truck refills from the onsite ponds and other resources.

In general, water trucks will apply water at regular intervals – no less than once every three hours – during daily operations and construction, beginning at the start of each day's activities and as needed thereafter. In the event that this is not adequate to control dust, broom sweeping and/or vacuum sweeping may be used in concert with water.

During hauling operations, tracking of CCRs onto the site access roads will be controlled at all times to prevent transport of CCRs beyond the active area of Phase 2. Tracking of CCRs onto access roads from Phase 2 will be strictly controlled by periodic washing of trucks and equipment, and scraping material from tires and equipment tracks. Trucks and equipment will be cleaned inside Phase 2. All trucks will be cleaned and/or washed prior to leaving the Brandywine Ash Site.

The site access roads will be inspected by the Site Supervisor at the end of each day and cleaned of any CCRs. In the event sediment or CCRs from the site are observed on the access roads, the Site Supervisor will immediately have the road cleaned. All CCRs and/or sediment material collected during cleaning activities will be disposed of back into Phase 2.

All water that has come into contact with CCRs shall be managed in accordance with the site's NPDES permit and shall be directed to the leachate Pond 006.

4.2 OFFLOADING AND PLACEMENT OF CCR

- CCR Watering: The active CCR working areas are watered as necessary by the facility's dedicated water truck to maximize ash compaction and minimize dust, as directed by the Site Supervisor. Water from Ponds 002, 004, and 006 is used for dust suppression and wet ash compaction.
- Compacting: All exposed areas of the active fill area not currently being worked will be rolled with a smooth drum roller in accordance with site operating procedures.

4.3 IN-PLACE CONTROL MEASURES

- Temporary Covers: If needed, CCR may be covered to prevent it from drying out and becoming airborne. The Brandywine Ash Site receives only CCR from the Morgantown and Chalk Point Generating Stations. Daily cover application for vectors, odor, and material scatter is not required. Daily cover may be applied if operating conditions dictate a need for cover. Operating conditions that may warrant application of daily cover include predicted high winds; immediate need because of sustained high winds; a shortage of water for CCR conditioning/dust control. The operations supervisor/foreman will determine if, and when, daily cover is needed. Daily cover may include use of a thin layer of soil, tarps, or other approved material. NRG has been authorized by MDE to use “Posi-Shell”, a spray on application, as an alternative to the temporary soil cap.
- Completed and closed areas will be capped with an engineered geosynthetic closure cap including a 2-foot earthen cover and permanent stabilization with vegetation.

5.0 PROCEDURES FOR PERIODIC ASSESSMENTS

5.1 SITE INSPECTIONS

The Site Supervisor (or designee) will perform inspections to verify compliance with these dust control procedures. Inspections of paved and unpaved areas are as follows.

- Daily Inspections
 - Paved Areas – These areas will be visually inspected on a daily basis during construction and operations. Monitoring of entrance roads leading to the ash facility will be conducted on the same schedule as on-site roadways. The primary objective of these measures will be to reduce the silt loading on the traveled road portions.
 - Unpaved Areas – These areas will be monitored on a daily basis during construction and operations. Parking lot areas which carry less traffic than access roads may be monitored less frequently. Dust emissions generated on unpaved areas will be controlled primarily through the use of the dedicated mobile water truck. This will be conducted on a daily basis depending on the weather conditions, beginning at the start of each day’s work. In general, all unpaved areas which are traveled will receive water to reduce dust.
- Weekly Inspections

When the site is idle (no CCR activities) the site will be inspected weekly at a minimum (as required by 40 CFR §257.84) to ensure that no portion of the site has a potential to generate fugitive dust emissions.

- Annual Inspection

Under 40 CFR 257.84 the CCR unit is required to be inspected by a qualified professional engineer annually. CCR fugitive dust control issues would be one element of this inspection.

5.2 ASSESSING THE EFFECTIVENESS OF THE PLAN

At any time during normal daily operations, any individual conducting CCR activities is authorized and expected to notify the Site Supervisor of any condition observed which could potentially result in fugitive dust emissions. The Site Supervisor will be responsible to initiate corrective action, and if needed will recommend revisions to the Fugitive Dust Control Plan. Weekly inspections of the operational areas performed by qualified individuals should also be used to identify any fugitive dust issues that might arise during operations.

At a minimum, preparation of the annual CCR Fugitive Dust Control Report will stimulate a review of the entire Plan and its effectiveness, and any revisions or amendments that might be needed.

6.0 REPORTING AND RECORDKEEPING

6.1 CITIZEN INPUT

The Site Supervisor (or designee) will maintain a log of citizen input and any complaints received. The log will include the date and time the input was received, the name of the citizen (if given), the details of the input, and any response or corrective action taken. Any individual involved in any CCR activities is authorized and expected to notify the Site Supervisor of any citizen input or complaint received.

This information will be included in Appendix C of this Plan and in the annual CCR Fugitive Dust Control Report as discussed in Section 6.2.

6.2 ANNUAL CCR FUGITIVE DUST CONTROL REPORT

The Site Supervisor (or designee) will annually prepare a Fugitive Dust Control Report that includes a description of the actions taken by the owner or operator to control CCR fugitive dust, a record of all citizen complaints, and a summary of any corrective measures taken.

The initial annual report must be completed no later than 14 months after placing the initial CCR Fugitive Dust Control Plan in the facility's operating record. The deadline for completing a subsequent report is one year after the date of completing the previous report. The annual CCR Fugitive Dust Control Report will not be considered complete until the report has been placed in the facility's operating record as required by 40 CFR §257.105(g)(2).

6.3 RECORDS, NOTIFICATIONS, AND INTERNET ACCESS

In accordance with 40 CFR 257.105 a written operating record will be maintained at the CCR facility. This operating record will include the most recent version of this CCR Fugitive Dust Control Plan, any subsequent revisions or amendments, and the annual CCR Fugitive Dust Control Report. Annual reports must be maintained for a minimum of five years. The written record may also be maintained as computer files.

In accordance with 40 CFR 257.107 NRG will maintain a publicly accessible internet website entitled "CCR Rule Compliance Data and Information". The most recent version of the CCR Fugitive Dust Control Plan, along with any revisions or amendments will be maintained on this website. The annual CCR Fugitive Dust Control Report will also be maintained on this website. Required information must be posted to the CCR website within 30 days of being entered into the facility's operating record, and must be available to the public for a minimum of five years.

In accordance with 40 CFR 257.106 NRG will notify the Director of the MDE Solid Waste Program whenever information has been placed in the facility's operating record and/or posted to the CCR website. Copies of such information will be provided to MDE as required.

Appendix A – Figures

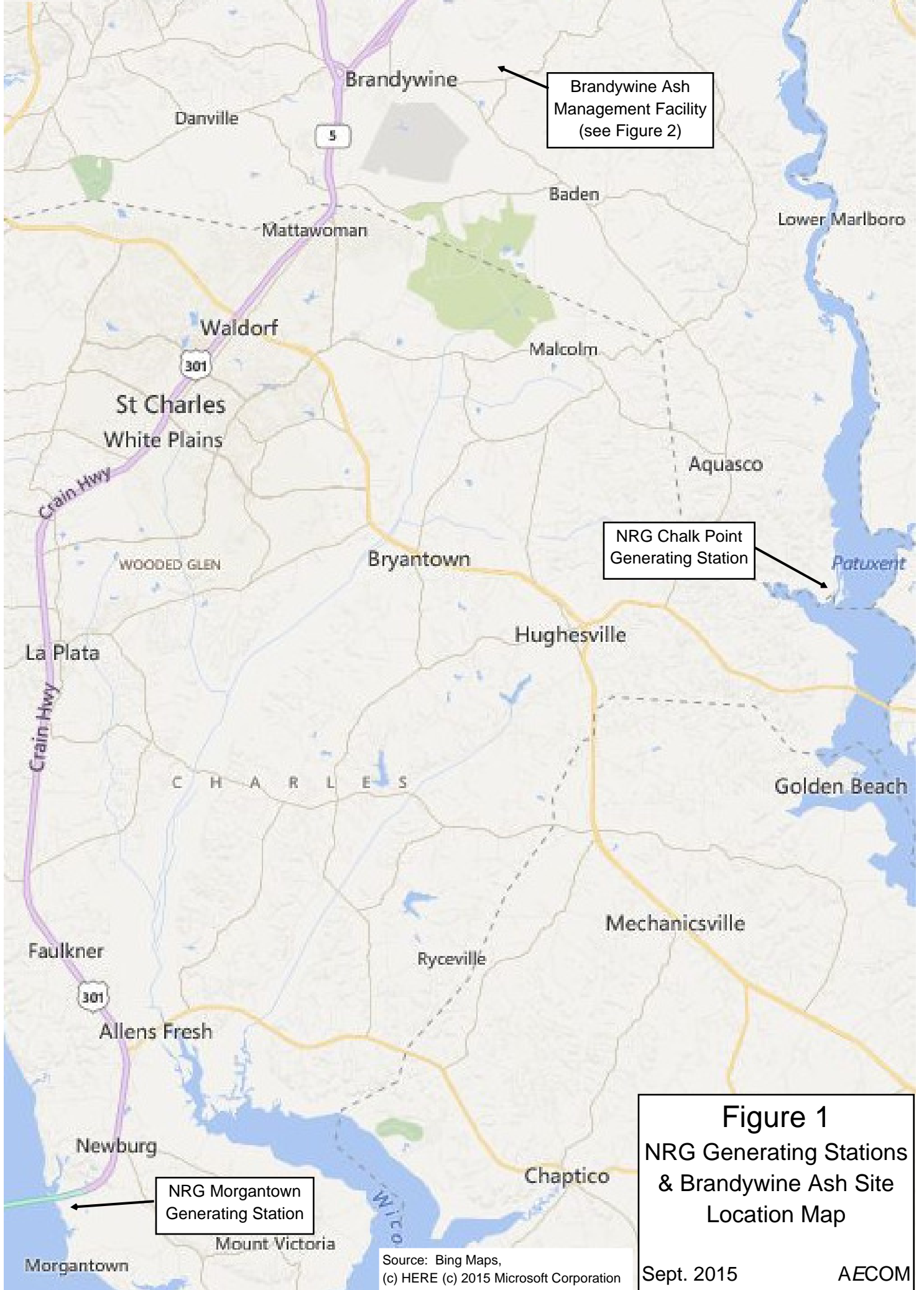
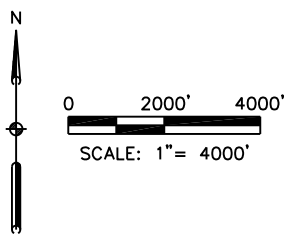
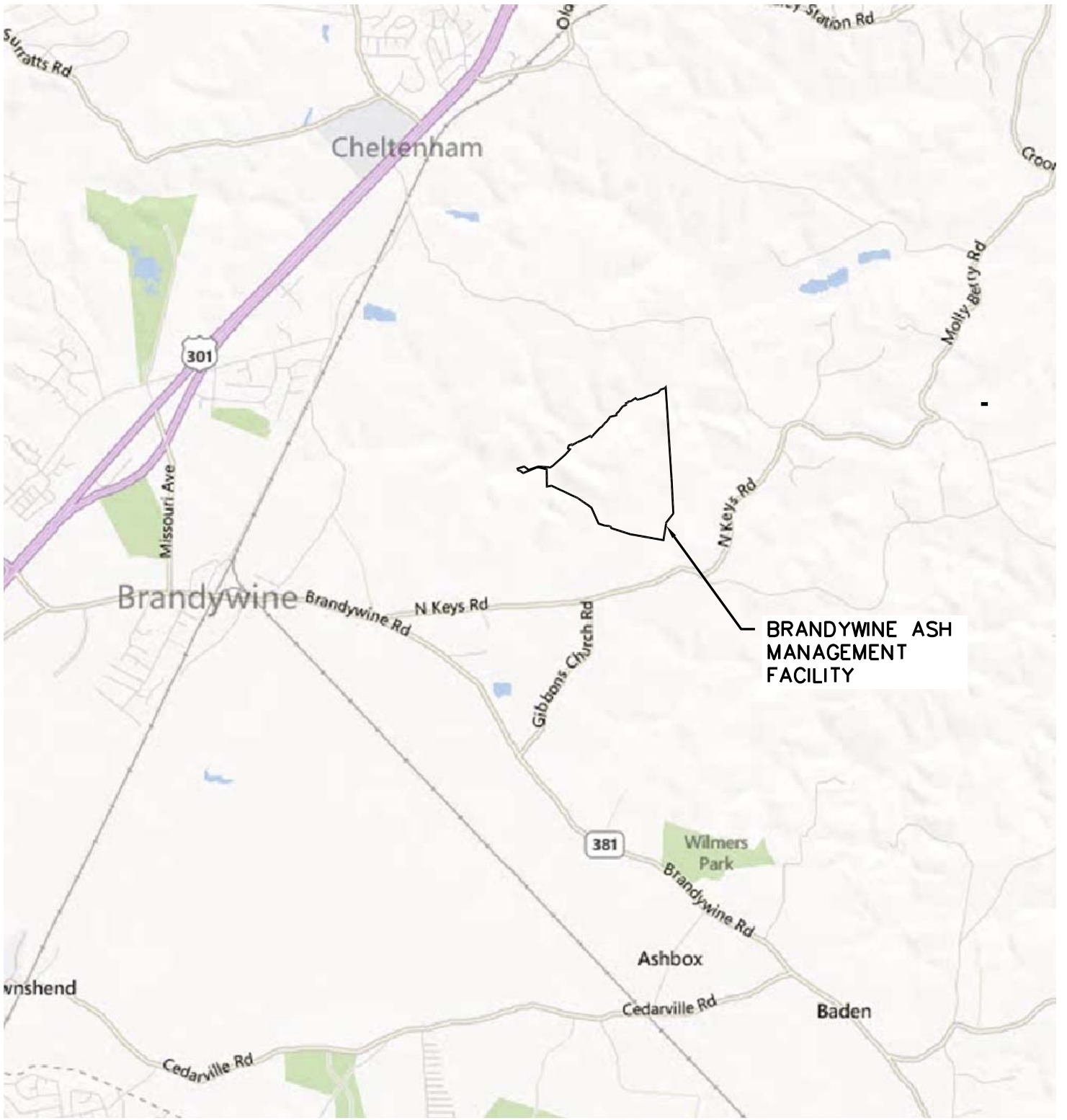




Figure 1
 NRG Generating Stations
 & Brandywine Ash Site
 Location Map

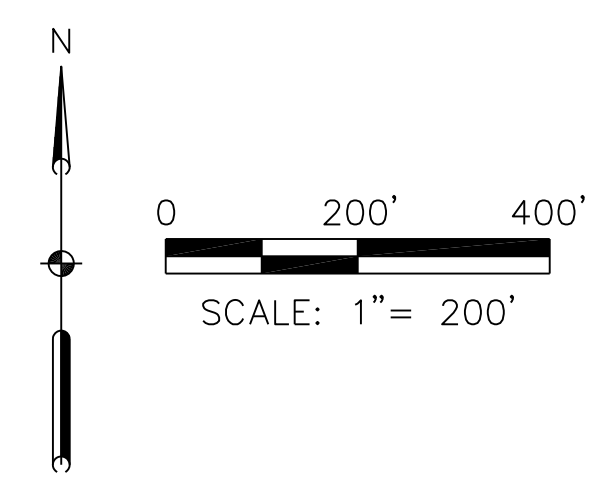
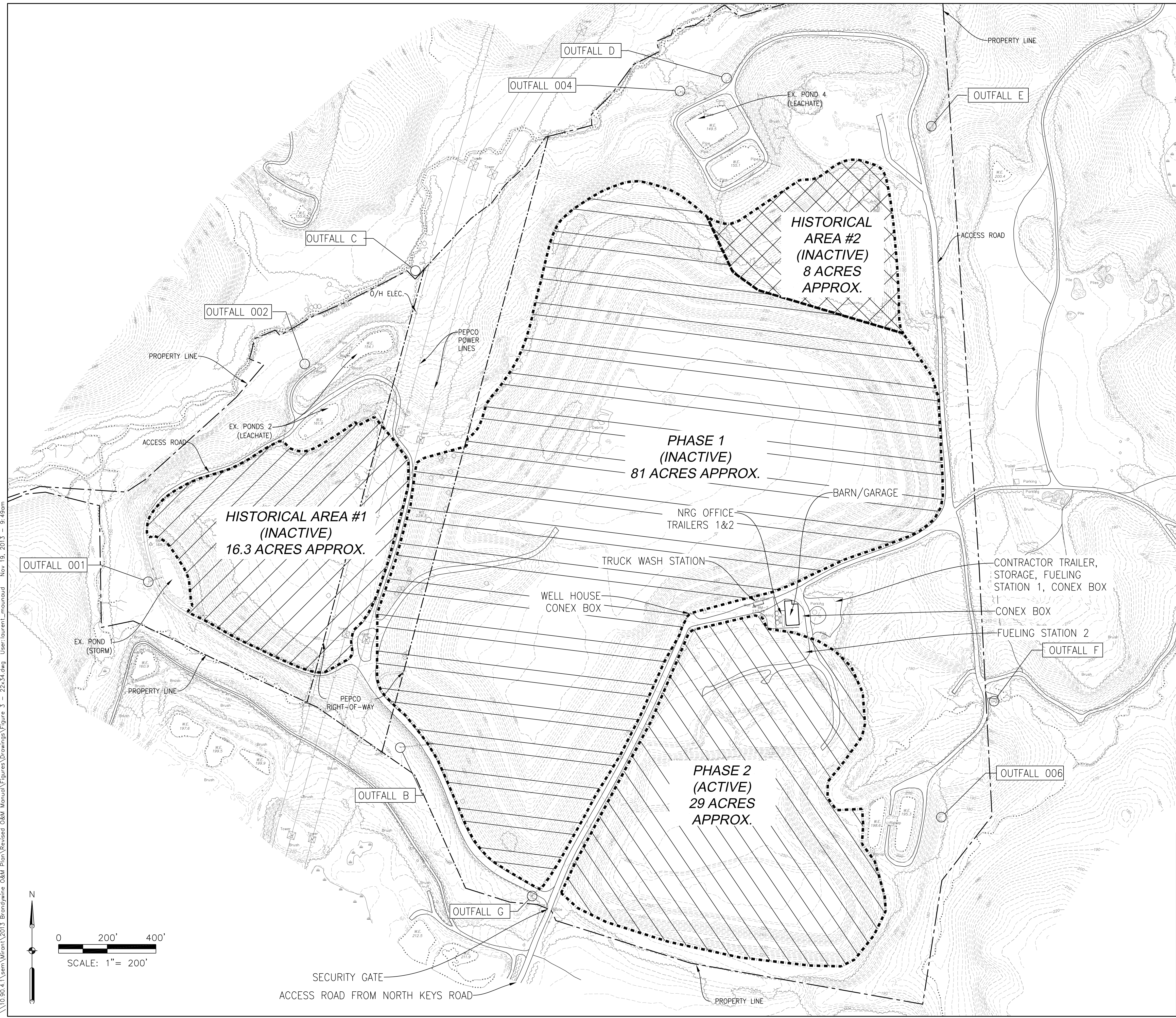
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 (c) HERE (c) 2015 Microsoft Corporation

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OWNER:			
		BRANDYWINE ASH MANAGEMENT FACILITY	
SITE LOCATION MAP			
PREPARED BY:			
		12420 MILESTONE CENTER DRIVE, SUITE 150 GERMANTOWN, MD 20876 TEL: 301.820.3000 FAX: 301.820.3009	
CHECKED BY:	PROJECT No.:	DATE:	FIGURE No.:
JRH	60429240	09/2015	2

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OWNER:		 BRANDYWINE ASH MANAGEMENT FACILITY		
BRANDYWINE FACILITY OPERATIONS PLAN				
PREPARED BY:		AECOM 12420 MILESTONE CENTER DRIVE, SUITE 150 GERMANTOWN, MD 20876 TEL: 301.820.3000 FAX: 301.820.3009		
CHECKED BY:	PROJECT No.:	DATE:	FIGURE No.:	
JRH	60429240	09/2015	3	

Appendix B – Plan Revisions and Amendments

Appendix C – Community Contact Form

