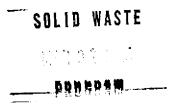


NRG Chalk Point, LLC Chalk Point Generating Station 25100 Eagle Harbor Road Aquasco, Maryland 20608

February 24, 2015

CERTIFIED MAIL 7014 0510 0000 9657 9613 Return Receipt Requested

Ms. Martha Hynson Maryland Department of the Environment Land Management Administration 1800 Washington Boulevard, Suite 605 Baltimore MD 21230-1719



Re: 2014 CCB Tonnage Report for NRG Chalk Point LLC's Chalk Point Generating Station

Dear Ms. Hynson,

Pursuant to COMAR 26.04.10.08, enclosed please find the 2014 CCB Tonnage Reports for NRG Chalk Point, LLC's Chalk Point Generating Station.

If you have any questions regarding this report, please contact me at 301-843-4439, or at timothy.klares@nrg.com.

16\_

Regard

Timothy Klares

Senior Environmental Analyst

Enclosures Cc: CP1, CP2

#### MARYLAND DEPARTMENT OF THE ENVIRONMENT

Land Management Administration • Solid Waste Program

1800 Washington Boulevard • Suite 605 • Baltimore Maryland 21230-1719

410-537-3315 • 800-633-6101 x3315 • www.mde.maryland.gov

# Coal Combustion Byproducts (CCBs) Annual Generator Tonnage Report Instructions for Calendar Year 2014

The following is general information relating to the requirement for reporting quantities of coal combustion byproducts (CCBs) that were managed in the State of Maryland during calendar year 2014. Please answer the questions on the form provided, attaching additional information and any requested supplemental information to the back of the form. Note that the form for this year requires both volume and weight of the CCBs produced. If you know one of these parameters but not the others, for example, you have the tonnage produced but not the volume, you may calculate the other parameter; however, please provide the calculations and assumptions that you used in your estimate. Questions can be directed to the Solid Waste Program at (410) 537-3315 or via email at ed.dexter@maryland.gov.

I. Background. This requirement that generators of CCBs submit an annual report was instituted in the Code of Maryland Regulations COMAR 26.04.10.08, that was promulgated effective December 1, 2008. The regulation requires that any non-residential generator of CCBs submit a report to the Department by March 1 of each year describing the manner in which CCBs generated within the State were managed during the preceding calendar year. Additional information and specific instructions follow. For more detailed information, please refer to COMAR 26.04.10.08.

## II. General Information and Applicability.

A. Definitions. CCBs are defined in COMAR 26.04.10.02B as:

**DRHMRHM** 

- "(3) Coal Combustion Byproducts. (a) "Coal combustion byproducts" means the residue generated by or resulting from the burning of coal.
- (b) "Coal combustion byproducts" includes fly ash, bottom ash, boiler slag, pozzolan, and other solid residuals removed by air pollution control devices from the flue gas and combustion chambers of coal burning furnaces and boilers, including flue gas desulfurization sludge and other solid residuals recovered from flue gas by wet or dry methods."

A generator of CCBs is defined in COMAR 26.04.10.02B as:

- "(9) Generator.
- (a) "Generator" means a person whose operations, activities, processes, or actions create coal combustion byproducts.
- (b) "Generator" does not include a person who only generates coal combustion byproducts by burning coal at a private residence."

31-Jan-14 TTY Users: 800-735-2258 Page 1 of 6

B. Applicability. If you or your company meets the definition of a generator of CCBs as defined above, you must provide the information as required below. For the purposes of this report, "you" shall hereinafter refer to the generator defined above. Please note that COMAR 26.04.10.08 requires generators of CCBs to submit an annual report to the Department concerning the disposition of the CCBs that they generated the previous year. THIS INCLUDES CCBS THAT WERE NOT SEPARATELY COLLECTED BUT WERE PRODUCED BY THE BURNING OF COAL AND WERE DIRECTLY CONTRIBUTED TO A PRODUCT, such as cement. Where the amount cannot be directly measured, estimates based on the amount of coal burned can be used. The method of determining the volume of CCBs produced must be described.

**III. Required Information.** The following information must be provided to the Department by March 1, 2015:

A. Contact information:		
Facility Name: Chalk Point Generating St	ation	
Name of Permit Holder: NRG Chalk Point	, LLC	
Facility Address: 25100 Eagle Harbor Ro	ad	
Facility Address: Aquasco City	Maryland State	20608 Zip
County: Prince George's County		
Contact Information (Person filing report of	or Environmental Manager)	
Facility Telephone No.: 301-843-4100	Facility Fax No.: 301	-843-4281
Contact Name: Timothy Klares		
Contact Title: <u>Senior Environmental Spec</u>	ialist	
Contact Address: 25100 Eagle Harbor Ro	Street	
Contact Address: Aquasco City	Maryland State	20608 Zip
Contact Email: <u>Timothy.Klares@nrg.com</u>		
Contact Telephone No.: 301-843-4439	Contact Fax No.: 301	-843-4156

For questions on how to complete this form, please contact the Solid Waste Program at 410-537-3315

19-Dec-14 TTY Users: 800-735-2258 Facility Name: Chalk Point Generating Station CCB Tonnage Report - 2014

. A description of laterial that general	-	_		,	~ *:	
ages:		DS. II tile sp	acc provide	a is mount	cient, picase	attach additiona
ee Attachment A.						
			*	<del></del>		
				<del></del>		
		<del></del>				<del></del>

C. The volume and weight of CCBs generated during calendar year 2014, including an identification of the different types of CCBs generated and the volume of each type generated. If the space provided is insufficient, please attach additional pages in a similar format. If converting from volume to weight or weight to volume, please provide your calculations and assumptions.

<u>Table I: Volume and Weight of CCBs Generated for Calendar Year 2014</u>: Please note the change to this table from previous years, to include both the volume and weight of the types of CCBs your facility produces.

Volume and	Weight of CCBs Gen	erated for Calenda	<u>ır Year 2014</u>	
Flyash Type of CCB	Bottom Ash Type of CCB	On-Spec Gypsum Type of CCB	Off Spec Gypsum Type of CCB	WWTP Fines Type of CCB
69,874  Volume of CCB, in Cubic Yards	8,548  Volume of CCB, in  Cubic Yards	52,119 Volume of CCB, in Cubic Yards	301 Volume of CCB, in Cubic Yards	Volume of CCB, in Cubic Yards
69,874 Weight of CCB, in Tons	8,548 Weight of CCB, in Tons	101,811 Weight of CCB, in Tons	588 Weight of CCB, in Tons	980 Weight of CCB, in Tons

19-Dec-14

TTY Users: 800-735-2258

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CCB Tonnages are reported in dry short tons. CCB volumes are reported in dry Cubic Yards.
WWTP Tons represent fines from the Flue Gas Desulfurization's Waste Water Treatment
Volumes of Flyash in Dry Cubic Yards are calculated from dry short tons using a density of 1.0
Tons/Dry CY.
Volumes of Bottom Ash in Dry Cubic Yards are calculated from dry short tons using a density of
1.0 Tons/Dry CY.
Volumes of On-Spec Gypsum, Off-Spec Gypsum and WWTP Fines are calculated from dry
short tons using a density of 1.95 Tons/Dry CY.

- D. Descriptions of any modeling or risk assessments, or both, conducted relating to the CCBs or their use that were performed by you or your company during the reporting year. Please attach this information to the report.
- E. Copies of all laboratory reports of all chemical characterizations of the CCBs. Please attach this information to the report.
- F. A description of how you disposed of or used your CCBs in calendar year 2014, identifying:
- (a) The types and volume of CCBs disposed of or used (if different than described in Paragraph C above) including any CCBs stored during the previous calendar year, the location of disposal, mine reclamation and use sites, and the type and volume of CCBs disposed of or used at each site:

Of the 69,874 tons of flyash generated at Chalk Point in 2014, 53,673 tons were sent to
Morgantown for processing at the STAR Facility, and were 16,201 tons were disposed of at the
Brandywine Ash Site, located in Prince George's Co., Md.
All of the 8,548 tons of bottom ash generated in 2014 were sent to the Brandywine Ash Site,
located in Prince George's Co., Md for disposal.
On-Spec Gypsum generated at Chalk Point in 2014 was 101,811 tons. A total of 1,543 tons
were stored on-site at the end of 2013, and 3,703 tons were stored on-site at the end of 2014. Of
this total, 99,651 tons were transported by barge to LaFarge, located in Buchanan, NY.
Off-Spec Gypsum generated in 2014 was 588 tons, all of which was disposed of at Waste
Management's Amelia Landfill located in Jetersville, Va.
WWTP Fines produced in 2014 was 980 tons, all of which was disposed of at Waste
Management's Amelia Landfill located in Jetersville, Va.

Page 4 of 6 19-Dec-14 TTY Users: 800-735-2258

and (b) The different uses by type and volume of CCBs: On-Spec Gypsum: Volume: 99,651 tons sold Use: Waliboard Flyash: Volume: 51,047 tons sold Use: Cementitious material for concrete products If the space provided is insufficient, please attach addition G. A description of how you intend to dispose of or use itifying: tion of (a) The types and volume of CCBs intended to be intended disposal, mine reclamation and use sites, and the type and volume of a site. ntended to be disposed of or used at each site: FlyAsh: Approximately 70,000 tons/year to be generated, with approximately 54,000 tons to be sent to the Morgantown STAR facility for processing, and 16,000 tons to be disposed of at the Brandywine Ash site, in Prince George's County, Md. Bottom Ash: Anticipate 8,500 tons/year to be generated and sent to the Brandywine Ash Site, located in Prince George's Co., Md, for disposal. On-Spec Gypsum: Anticipate approximately 102,000 tons/year to be generated, with approximately 4,000 tons stored on site at the Chalk Point Generating Station and approximately 98,000 tons/year being transported by barge to LaFarge, located in Buchanan, NY. Off-Spec Gypsum: Approximately 600 tons/year to be generated and disposed of at Waste Management's Amelia Landfill located in Jetersville, Va. WWTP Fines: Approximately 1,000 tons/year to be generated and disposed of at Waste Management's Amelia Landfill located in Jetersville, Va. and (b) The different intended uses by type and volume of CCBs. On-Spec Gypsum:\_ Volume: 98,000 tons/year to be sold. Use: Wallboard Flvash: Volume: 51,000 tons/year to be sold Use: Cementitious material for concrete products

Facility Name: Chalk Point Generating Station CCB Tonnage Report - 2014

19-Dec-14 TTY Users: 800-735-2258 Facility Name: Chalk Point Generating Station \_\_ CCB Tonnage Report - 2014

If the space provided is insufficient, please attach additional pages in a similar format.

IV. Signature and Certification. An authorized official of the generator must sign the annual report, and certify as to the accuracy and completeness of the information contained in the annual report:

	Greg Staggers, General Manager, Chalk Point  Generating Station  301-843-4121	
Signature	Name, Title, & Telephone No. (Print or Type)	Date
Lyng Frys	gregory.staggers@nrg.com	2/26/15
	Your Email Address	

## V: Attachments (please list):

<u>Chalk Point Ger</u>	erating Station	Process Descr	iption		
Microbac Repor	t #14D0476: A	nalyses for Fly	Ash, Bottom	Ash, Off-Spec	Gypsum and
WTP Fines		•			
		. w.	· · · · · · · · · · · · · · · · · · ·		,, <u>.</u>
<u>-</u> .		<u></u>			
		-81-	1.	<del></del> -	<u> </u>
	<del></del>				·

19-Dec-14 TTY Users: 800-735-2258

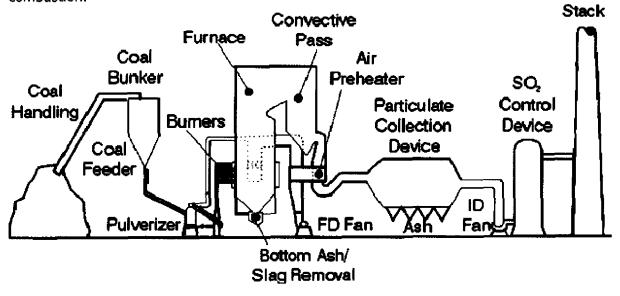
## Attachment A

Chalk Point Generating Station 25100 Eagle Harbor Road, Aquasco, Prince George's County, MD. 20608 301-843-4100

The Chalk Point Generating Station is located on the Patuxent River at Swanson's Creek in Prince George's County, MD. The facility is engaged in the generation of electrical energy for sale. The primary SIC code is 4911. There are two coal burning, opposite wall fired units each with a superheater, double reheat and economizer and each rated at 365 MWs (base loaded). The primary fuel for these boilers is bituminous coal. Pollution control devices on Unit 1 include low NOx burners with Separated Over-Fired Air (SOFA), and Selective Catalytic Reduction (SCR) for control of oxides of nitrogen (NOx); and electrostatic precipitators (ESP) for the control of particulate matter. Pollution control devices on Unit 2 include low NOx burners with Separated Over-Fired Air (SOFA), and Selective Auto-Catalytic Reduction (SACR) for control of oxides of nitrogen (NOx); and electrostatic precipitators (ESP) for the control of particulate matter. A Wet Scrubber (FGD) was installed and went in service on both units in late 2009. Units 1 & 2 exhausts through the scrubber stack or, when the FGD is not in service, through a common single stack.

Coal is currently delivered by rail. The rail cars are emptied using a rotary dumper then transferred by conveyor and dravo to either a storage pile or is fed directly to the units' bunker.

The illustration below shows a simple schematic diagram for a typical pulverized coal combustion system. The coal is prepared by grinding to a very fine consistency for combustion.



#### **Attachment A**

The CCBs currently produced and used are a result of the combustion of pulverized coal.

Ash is formed in the boiler while coal combusts. In general, pulverized coal combustion results in approximately 10% ash, of which 65%–85% is fly ash, and the remainder is coarser bottom ash. Bottom ash is a coarse material and falls to the bottom of the boiler. Fly ash is finer than bottom ash and is carried along the combustion process with flue gas. Particulate collection devices remove fly ash from the flue gas and the collected ash is transferred to one of two ash silos. Flyash that is not marketed is sent to the Brandywine Ash Site, located in Prince George's County, MD. The bottom ash is conveyed out of the bottom of the boiler via a wet sluice system to hydrobins, where the water is then decanted and the bottom ash sent to the Brandywine Ash Site.

Gypsum is a byproduct of SO2 removal by the Flue Gas Desulfurization (FGD) system, commonly known as a scrubber. Chalk Point uses wet scrubbers for SO2 removal. Wet scrubbing uses a slurry of limestone alkaline sorbent to remove SO2 from the air stream. The byproduct - gypsum - is conveyed to a storage dome temporarily where it is then delivered by rail to the Morgantown Station and sent to Buchannan, New York to be made into wallboard. Gyspum that doesn't meet the specifications for wallboard production is transported for disposal to Waste Management's Amelia Landfill in Virginia. Waste Water Treatment Plant Fines (WWTP Fines) are removed from the Scrubber's WWTP as needed and transported to Waste Management's Amelia Landfill in Virginia for disposal.

#### Attachment B



## Microbac Laboratories, Inc.

Baltimore Division
2101 Van Deman Street • Baltimore, MD 21224

Phone: 410-633-1800 Fax: 410-633-6553 www.microbac.com

#### **COVER LETTER**

Glenn St. Clair NRG Energy - Chalk Point Gen. Sta. 25100 Chalk Point Road Aquasco, MD 20608

RE: Chalk Point-FGD Special Yearly

Glenn St. Clair

July 11, 2014

NRG Energy - Chalk Point Gen. Sta.

Report No.: 14D0476

The report of analyses contains test results for samples received at Microbac Laboratories, Inc., Baltimore Division on 04/03/2014 13:20.

The enclosed results were obtained from and applicable to the sample(s) as received at the laboratory. All sample results are reported on an "as received" basis unless otherwise noted.

All data included in this report has been reviewed and meet the applicable project and certification specific requirements, unless otherwise noted.

This report has been paginated in its entirety and shall not be reproduced except in full, without the written approval of Microbac Laboratories, Inc.

We appreciate the opportunity to service your analytical needs. If you have any questions, please feel free to contact us.

This Data Package contains the following:

- This Cover Page
- Sample Summary
- Test Results
- Certifications/Notes and Definitions
- Cooler Receipt Log
- Chain of Custody

Mefanie C Duopp Ki

7/11/2014

Final report reviewed by:

Melanie C. Duszynski/Project Manager

Report issue date

All samples received in proper condition and results conform to ISO 17025 and TNI NELAC standards unless otherwise noted.

If we have not met or exceeded your expectations, please contact Melanie C. Duszynski/Project Manager at 410-633-1800. You may also contact Trevor Boyce, President at trevor.boyce@microbac.com





#### **Baltimore Division**

2101 Van Deman Street • Baltimore, MD 21224

Phone: 410-633-1800 Fax: 410-633-6553

www.microbac.com

#### **CERTIFICATE OF ANALYSIS**

NRG Energy - Chalk Point Gen. Sta.

25100 Chalk Point Road

Aquasco, MD 20608

Project: Chalk Point-FGD Special Yearly Project Number: Chalk Pt-FGD Special Yearly

Project Manager: Glenn St. Clair

Report: 14D0476

Reported: 07/11/2014 14:59

#### **SAMPLE SUMMARY**

Sample ID	Laboratory ID	Matrix	Туре	Date Sampled	Date Received
040214-Gypsum	14D0476-01	Solid	Not Specified	04/02/2014 10:50	04/03/2014 13:20
040114-Fly Ash	14D0476-02	Solid	Not Specified	04/01/2014 09:30	04/03/2014 13:20
040114-Bottom Ash	14D0476-03	Solid	Not Specified	04/01/2014 09:30	04/03/2014 13:20
040114-WWTP Fines	14D0476-04	Solid	Not Specified	04/01/2014 09:30	04/03/2014 13:20

Microbac Laboratories, Inc. - Baltimore

Mefanie C Dusppki



#### **Baltimore Division**

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NRG Energy - Chalk Point Gen. Sta.

25100 Chalk Point Road

Aquasco, MD 20608

Project: Chalk Point-FGD Special Yearly Project Number: Chalk Pt-FGD Special Yearly

Project Manager: Glenn St. Clair

Report: 14D0476

Reported: 07/11/2014 14:59

## 040214-Gypsum

14D0476-01 (Solid) Sampled: 04/02/2014 10:50; Type: Not Specified

Analyte	Result	Reporting Limit	Units	Limits	Prepared	Analyzed	Analyst	Method	Notes
Analyte	Result	*	-			7 daily zeu	Thuryst	100 mode	110100
		Microba	c Laboratorie	s, Inc E	laltimore				
Wet Chemistry									
% Solids	80.75	0.05	% by Weight		040714 1547	040814 1255	EWM	SM (20) 2540G	
Chloride	81	41	mg/kg dry		040814 1223	040814 1300	BLL	SM(20)4500CI-C(M)	
рН	8.15	0.100	pH Units		040814 0940	040814 1155	EWM	EPA 9045D	<b>Z</b> 10
Sulfate as SO4	83000	5800	mg/kg dry		041514 0740	041514 0904	LCR	ASTM D516-02(M)	
General Chemistry									
Paint Filter Free Liquid	NEGATIVE		P/A		040714 0845	040714 0845	VAS	EPA 9095A	
Mercury, Total by EPA 7000	Series Methods							_	
Mercury	0.51	0.031	mg/kg dry		041814 1302	041814 1611	FAK	EPA 7471A	
Metals, Total by EPA 6000/70	000 Series Methods			<u>.</u>				<u></u>	
Silver	ND	2.8	mg/kg dry		041414 1028	041614 1638	APS	EPA 6010B	
Aluminum	270	14	mg/kg dry		041414 1028	041614 1638	APS	EPA 6010B	
Arsenic	ND	5.6	mg/kg dry		041414 1028	041614 1638	APS	EPA 6010B	
Barium	23	2.8	mg/kg dry		041414 1028	041614 1638	APS	EPA 6010B	
Beryllium	ND	1.1	mg/kg d <del>r</del> y		041414 1028	041614 1638	AP\$	EPA 6010B	
Calcium	190000	280	mg/kg dry		041414 1028	041614 2208	APS	EPA 6010B	
Cadmium	ND	0.56	mg/kg dry		041414 1028	041614 1638	APS	EPA 6010B	
Cobalt	ND	2.8	mg/kg dry		041414 1028	041614 1638	APS	EPA 6010B	
Chromium	ND	2.8	mg/kg dry		041414 1028	041614 1638	APS	EPA 6010B	
Copper	ND	2.8	mg/kg dry		041414 1028	041614 1638	APS	EPA 6010B	
Iron	220	11	mg/kg dry		041414 1028	041614 1638	APS	EPA 6010B	
Potassium	170	28	mg/kg dry		041414 1028	041614 1638	APS	EPA 6010B	
Magnesium	ND	280	mg/kg dry		041414 1028	041614 2208	APS	EPA 6010B	
Manganese	ND	2.8	mg/kg dry		041414 1028	041614 1638	APS	EPA 6010B	
Sodium	610	560	mg/kg dry		041414 1028	041614 1638	APS	EPA 6010B	B7, E

Microbac Laboratories, Inc. - Baltimore







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Phone: 410-633-1800 Fax: 410-633-6553 www.microbac.com

#### **CERTIFICATE OF ANALYSIS**

NRG Energy - Chalk Point Gen. Sta.

25100 Chalk Point Road

Aquasco, MD 20608

Project: Chalk Point-FGD Special Yearly Project Number: Chalk Pt-FGD Special Yearly

Project Manager: Glenn St. Clair

Report: 14D0476

Reported: 07/11/2014 14:59

#### 040214-Gypsum

14D0476-01 (Solid) Sampled: 04/02/2014 10:50; Type: Not Specified

Analyte	Result	Reporting Limit	Units	Limits	December	A malama 1	<b>4</b> 1	M.d. 1	3.5
		Limit	Units	Limits	Prepared	Analyzed	Analyst	Method	Notes
		Microba	c Laboratori	es, Inc l	Baltimore				
Metals, Total by EPA 600	0/7000 Series Methods					_			
Nickel	ND	5.6	mg/kg dry		041414 1028	041614 1638	APS	EPA 6010B	
Lead	ND	5.6	mg/kg dry		041414 1028	041614 1638	APS	EPA 6010B	
Antimony	ND	110	mg/kg dry		041414 1028	041614 2208	APS	EPA 6010B	D4
Selenium	ND	5.6	mg/kg dry		041414 1028	041614 1638	APS	EPA 6010B	
Thallium	ND	11	mg/kg dry		041414 1028	041614 1638	APS	EPA 6010B	
Vanadium	ND	2.8	mg/kg dry		041414 1028	041614 1638	APS	EPA 6010B	
Zinc	ND	2.8	mg/kg dry		041414 1028	041614 1638	APS	EPA 6010B	
CLP Extraction by EPA	1311			_					
TCLP Extraction	NEGATIVE		N/A		041014 1428	041114 0928	MKM	EPA 1311	
CCLP Metals by 6000/700	0 Series Methods								_
Silver	ND	0.20	mg/L	5.0	041414 1115	041414 1741	APS	EPA 6010B	
Arsenic	ND	0.20	mg/L	5.0	041414 1115	041414 1741	APS	EPA 6010B	
Barium	ND	0.50	mg/L	100	041414 1115	041414 1741	APS	EPA 6010B	
Cadmium	ND	0.20	mg/L	1.0	041414 1115	041414 1741	APS	EPA 6010B	
Chromium	ND	0.20	mg/L	5.0	041414 1115	041414 1741	APS	EPA 6010B	
Mercury	ND	0.0020	mg/L	0.20	041714 1349	041814 1159	FAK	EPA 7470A	
Lead	ND	0.20	mg/L	5.0	041414 1115	041414 1741	APS	EPA 6010B	
Sefenium	ND	0.20	mg/L	1.0	041414 1115	041414 1741	APS	EPA 6010B	

Microbac Laboratories, Inc. - Baltimore

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Melanie C. Duszynski, Project Manager

**Original Report** 

Page 4 of 14



## **Baltimore Division**

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Phone: 410-633-1800 Fax: 410-633-6553

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#### **CERTIFICATE OF ANALYSIS**

NRG Energy - Chalk Point Gen. Sta.

25100 Chalk Point Road

Aquasco, MD 20608

Project: Chalk Point-FGD Special Yearly

Project Number: Chalk Pt-FGD Special Yearly

Project Manager: Glenn St. Clair

Report: 14D0476

Reported: 07/11/2014 14:59

#### 040114-Fly Ash

#### 14D0476-02 (Solid) Sampled: 04/01/2014 09:30; Type: Not Specified

Analyte	Result	Reporting Limit	Units	Limits	Prepared	Analyzed	Analyst	Method	Notes
-Siaiyw	Result	Liuit	Oma	Linns	Trepared	Allalyza	Alialyst	Wiedlod	NOCE
		Microba	c Laboratorie	s, Inc B	Baltimore				
Vet Chemistry									
% Solids	100.4	0.05	% by Weight		040714 1547	040814 1255	EWM	SM (20) 2540G	
Chloride	ND	50	mg/kg dry		040814 1223	040814 1300	BLL	SM(20)4500C1-C(M)	
рН	9,28	0.100	pH Units		040814 0940	040814 1155	EWM	EPA 9045D	210
Sulfate as SO4	22000	1200	mg/kg dry		041514 0740	041514 0904	LCR	ASTM D516-02(M)	
General Chemistry									
Paint Filter Free Liquid	NEGATIVE		P/A		040714 0845	040714 0845	VAS	EPA 9095A	
Mercury, Total by EPA 7000	Series Methods								
Mercury	0.34	0.023	mg/kg dry		041814 1302	041814 1613	FAK	EPA 7471A	
1etals, Total by EPA 6000/70	00 Series Methods								
Silver	ND	2.0	mg/kg dry		041414 1028	041614 1642	APS	EPA 6010B	
Aluminum	16000	10	mg/kg dry		041414 1028	041614 1642	APS	EPA 6010B	
Arsenic	63	4.1	mg/kg dry		041414 1028	041614 1642	APS	EPA 6010B	
Barium	120	2.0	mg/kg dry		041414 1028	041614 1642	APS	EPA 6010B	
Beryllium	3.3	0.82	mg/kg dry		041414 1028	041614 1642	APS	EPA 6010B	
Calcium	9600	20	mg/kg dry		041414 1028	041614 1642	APS	EPA 6010B	
Cadmium	1.3	0.41	mg/kg dry		041414 1028	041614 1642	APS	EPA 6010B	
Cobalt	ND	2.0	mg/kg dry		041414 1028	041614 1642	APS	EPA 6010B	
Chromium	43	2.0	mg/kg dry		041414 1028	041614 1642	APS	EPA 6010B	
Copper	17	2.0	mg/kg dry		041414 1028	041614 1642	APS	EPA 6010B	
Iron	54000	82	mg/kg dry		041414 1028	041714 1148	APS	EPA 6010B	
Potessium	1900	20	mg/kg dry		041414 1028	041614 1642	APS	EPA 6010B	
Magnesium	1100	20	mg/kg dry		041414 1028	041614 1642	APS	EPA 6010B	
Manganese	96	2.0	mg/kg dry		041414 1028	041614 1642	APS	EPA 6010B	
Sodium	920	410	mg/kg dry		041414 1028	041614 1642	APS	EPA 6010B	B7, I
Nickel	6,9	4.1	mg/kg dry		041414 1028	041614 1642	APS	EPA 6010B	

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#### **Baltimore Division**

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#### **CERTIFICATE OF ANALYSIS**

NRG Energy - Chalk Point Gen. Sta.

Aquasco, MD 20608

25100 Chalk Point Road

Project: Chalk Point-FGD Special Yearly

Project Number: Chalk Pt-FGD Special Yearly

Project Manager: Glenn St. Clair

Report: 14D0476

Reported: 07/11/2014 14:59

#### 040114-Fly Ash

#### 14D0476-02 (Solid) Sampled: 04/01/2014 09:30; Type: Not Specified

Analyte	Result	Reporting Limit	Units	Limits	Prepared	Analyzed	Analyst	Method	Notes
		Microbac	c Laboratorio	es, Inc I	Baltimore				
Metals, Total by EPA 6000/700	0 Series Methods								
Lead	17	4.1	mg/kg dry		041414 1028	041614 1642	APS	EPA 6010B	
Antimony	ND	8.2	mg/kg dry		041414 1028	041614 1642	APS	EPA 6010B	
Selenium	ND	4.1	mg/kg dry		041414 1028	041614 1642	APS	EPA 6010B	
Thallium	ND	8.2	mg/kg dry		041414 1028	041614 1642	APS	EPA 6010B	
Vanadium	100	2.0	mg/kg dry		041414 1028	041614 1642	APS	EPA 6010B	
Zinç	54	2.0	mg/kg dry		041414 1028	041614 1642	APS	EPA 6010B	
TCLP Extraction by EPA 1311									
TCLP Extraction	NEGATIVE		N/A		041014 1428	041114 0928	МКМ	EPA 1311	
TCLP Metals by 6000/7000 Se	ries Methods								
Silver	ND	0.20	mg/L	5.0	041414 1115	041414 1745	APS	EPA 6010B	
Arsenic	ND	0.20	mg/L	5.0	041414 1115	041414 1745	APS	EPA 6010B	
Barium	ND	0.50	mg/L	100	041414 1115	041414 1745	APS	EPA 6010B	
Cadmium	ND	0.20	mg/L	1.0	041414 1115	041414 1745	APS	EPA 6010B	
Chromium	ND	0.20	mg/L	5.0	041414 1115	041414 1745	APS	EPA 6010B	
Mercury	ND	0.0020	mg/L	0.20	041714 1349	041814 1211	FAK	EPA 7470A	
Lead	ND	0.20	mg/L	5.0	041414 1115	041414 1745	APS	EPA 6010B	
Selenium	ND	0.20	mg/L	1.0	041414 1115	041414 1745	APS	EPA 6010B	

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Melanie C. Duszynski, Project Manager

Original Report

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#### **CERTIFICATE OF ANALYSIS**

NRG Energy - Chalk Point Gen. Sta.

25100 Chalk Point Road

Aquasco, MD 20608

Project: Chalk Point-FGD Special Yearly

Project Number: Chalk Pt-FGD Special Yearly

Project Manager: Glenn St. Clair

Report: 14D0476

Reported: 07/11/2014 14:59

#### 040114-Bottom Ash

14D0476-03 (Solid) Sampled: 04/01/2014 09:30; Type: Not Specified

		Reporting							
Analyte	Result	Limit	Units	Limits	Prepared	Analyzed	Analyst	Method	Notes
		Microba	c Laboratorie	s, Inc B	Baltimore				
Wet Chemistry								_	
% Solids	84,47	0.05	% by Weight		040714 1547	040814 1255	EWM	SM (20) 2540G	
Chloride	320	49	mg/kg dry		040814 1223	040814 1300	BLL	\$M(20)4500C1-C(M)	
рН	8.37	0.100	pH Units		040814 0940	040814 1155	EWM	EPA 9045D	Z10b
Sulfate as SO4	730	56	mg/kg dry		041514 0740	041514 0904	LCR	ASTM D516-02(M)	
General Chemistry							·		
Paint Filter Free Liquid	NEGATIVE		P/A		040714 0845	040714 0845	VAS	EPA 9095A	
Mercury, Total by EPA 7000 S	eries Methods					<del></del> .			
Mercury	ND	0.029	mg/kg dry		041814 1302	041814 1615	FAK	EPA 7471A	
Metals, Total by EPA 6000/700	00 Series Methods								
Silver	ND	2.2	mg/kg dry		041414 1028	041614 1646	APS	EPA 6010B	
Aluminum	6200	11	mg/kg dry		041414 1028	041614 1646	APS	EPA 6010B	
Arsenic	4.9	4.4	mg/kg dry		041414 1028	041614 1646	APS	EPA 6010B	
Barium	32	2.2	mg/kg dry		041414 1028	041614 1646	APS	EPA 6010B	
Beryllium	ND	0.87	mg/kg dry		041414 1028	041614 1646	APS	EPA 6010B	
Calcium	1600	22	mg/kg dry		041414 1028	041614 1646	APS	EPA 6010B	
Cadmium	ND	0.44	mg/kg dry		0414141028	041614 1646	APS	EPA 6010B	
Cobalt	ND	2.2	mg/kg dry		041414 1028	041614 1646	APS	EPA 6010B	
Chromium	7.0	2.2	mg/kg dry		041414 1028	041614 1646	APS	EPA 6010B	
Соррег	ND	2.2	mg/kg dry		041414 1028	041614 1646	APS	EPA 6010B	
Iron	18000	8.7	mg/kg dry		041414 1028	041614 1646	APS	EPA 6010B	
Potassium	630	22	mg/kg dry		041414 1028	041614 1646	APS	EPA 6010B	
Magnesium	400	22	mg/kg dry		041414 1028	041614 1646	APS	EPA 6010B	
Manganese	23	2.2	mg/kg dry		041414 1028	041614 1646	APS	EPA 6010B	
Sodium	580	440	mg/kg dry		041414 1028	041614 1646	APS	EPA 6010B	B7, B9
Committee	ND	•					APS	EPA 6010B	

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#### **CERTIFICATE OF ANALYSIS**

NRG Energy - Chalk Point Gen. Sta.

25100 Chalk Point Road

Project: Chalk Point-FGD Special Yearly

Project Number: Chalk Pt-FGD Special Yearly

Report: 14D0476

100

Reported: 07/11/2014 14:59

Aquasco, MD 20608

Project Manager: Glenn St. Clair

#### 040114-Bottom Ash

14D0476-03 (Solid) Sampled: 04/01/2014 09:30; Type: Not Specified

Analyte	Result	Reporting	** **						;
Attalyte	Result	Limit	Units	Limits	Prepared	Analyzed	Analyst	Method	Notes
		Microba	c Laboratorie	es, Inc I	Baltimore				
Metals, Total by EPA 6000/7	000 Series Methods								
Lead	ND	4.4	mg/kg dry		041414 1028	041614 1646	APS	EPA 6010B	
Antimony	ND	8.7	mg/kg dry		041414 1028	041614 1646	APS	EPA 6010B	
Selenium	ND	4.4	mg/kg dry		041414 1028	041614 1646	AP\$	EPA 6010B	
Thallium	ND	8.7	mg/kg dry		041414 1028	041614 1646	APS	EPA 6010B	
Vanadium	14	2.2	mg/kg dry		041414 1028	041614 1646	APS	EPA 6010B	
Zine	6.6	2.2	mg/kg dry		041414 1028	0416141646	APS	EPA 6010B	
TCLP Extraction by EPA 13	11								
TCLP Extraction	NEGATIVE		N/A		041014 1428	041114 0928	МКМ	EPA 1311	
TCLP Metals by 6000/7000 S	eries Methods	-			<u>,                                      </u>				
Silver	ND	0.20	mg/L	5.0	041414 1115	041414 1757	APS	EPA 6010B	
Arsenic	ND	0.20	mg/L	5.0	041414 1115	041414 1757	APS	EPA 6010B	
Barium	ND	0.50	mg/L	100	041414 1115	041414 1757	APS	EPA 6010B	
Cadmium	ND	0.20	mg/L	1.0	041414 1115	041414 1757	APS	EPA 6010B	
Chromium	ND	0.20	mg/L	5.0	041414 1115	041414 1757	APS	EPA 6010B	
Mercury	ND	0.0020	mg/L	0.20	041714 1349	041814 1212	FAK	EPA 7470A	
Lead	ND	0.20	mg/L	5.0	041414 1115	041414 1757	APS	EPA 6010B	
Selenium	ND	0.20	mg/L	1.0	041414 1115	041414 1757	APS	EPA 6010B	

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Mefanie C Dusypki



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#### **CERTIFICATE OF ANALYSIS**

NRG Energy - Chalk Point Gen. Sta.

25100 Chalk Point Road

Aquasco, MD 20608

Project: Chalk Point-FGD Special Yearly

Project Number: Chalk Pt-FGD Special Yearly

Project Manager: Glenn St. Clair

Report: 14D0476

Reported: 07/11/2014 14:59

#### 040114-WWTP Fines

#### 14D0476-04 (Solid) Sampled: 04/01/2014 09:30; Type: Not Specified

Analyte	Result	Reporting Limit	Units	Limits	Prepared	Analyzed	Analyst	Method	Notes
, mary to				<del></del>		, mary zea	7 Hillary St	Medica	
		Microba	c Laboratorie	s, Inc B	altimore				
Wet Chemistry	<del></del>	-						<u> </u>	
% Solids	62.78	0.05	% by Weight		040714 1547	040814 1255	EWM	SM (20) 2540G	
Chloride	2900	64	mg/kg dry		040814 1223	040814 1300	BLL	SM(20)4500CI-C(M)	
рН	7.48	0.100	pH Units		040814 0940	040814 1155	EWM	EPA 9045D	Z10a
Sulfate as SO4	100000	3700	mg/kg dry		041514 0740	041514 0904	LCR	ASTM D516-02(M)	
General Chemistry		=				<del></del>			
Paint Filter Free Liquid	NEGATIVE		P/A		040714 0845	040714 0845	VAS	EPA 9095A	
Mercury, Total by EPA 7000	Series Methods	<del></del> ,							
Mercury	23	1.6	mg/kg dry		041814 1302	041814 1648	FAK	EPA 7471A	
Metals, Total by EPA 6000/70	000 Series Methods			_					
Silver	ND	3.8	mg/kg dry		041414 1028	041614 1650	APS	EPA 6010B	
Aluminum	5900	19	mg/kg dry		041414 1028	041614 1650	APS	EPA 6010B	
Arsenic	ND	7.5	mg/kg dry		041414 1028	041614 1650	APS	EPA 6010B	
Barium	240	3.8	mg/kg dry		041414 1028	041614 1650	APS	EPA 6010B	
Beryllium	ND	1.5	mg/kg dry		041414 1028	041614 1650	AP\$	EPA 6010B	
Calcium	230000	380	mg/kg dry		041414 1028	041714 0933	APS	EPA 6010B	
Cadmium	ND	0.75	mg/kg dry		041414 1028	041614 1650	APS	EPA 6010B	
Cobalt	ND	3.8	mg/kg dry		0414141028	041614 1650	APS	EPA 6010B	
Chromium	27	3.8	mg/kg dry		041414 1028	041614 1650	APS	EPA 6010B	
Copper	19	3.8	mg/kg dry		041414 1028	041614 1650	APS	EPA 6010B	
Iron	11000	15	mg/kg dry		041414 1028	041614 1650	APS	EPA 6010B	
Potassium	3600	38	mg/kg dry		041414 1028	041614 1650	AP\$	EPA 6010B	
Magnesium	3500	380	mg/kg dry		041414 1028	041714 0933	APS	EPA 6010B	
Manganese	590	3.8	mg/kg dry		041414 1028	041614 1650	APS	EPA 6010B	
Sodium	1300	750	mg/kg dry		041414 1028	041614 1650	AP\$	EPA 6010B	B7, B9
Nickel	33	7.5	mg/kg dry		041414 1028	041614 1650	APS	EPA 6010B	

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#### **CERTIFICATE OF ANALYSIS**

NRG Energy - Chalk Point Gen. Sta.

25100 Chalk Point Road

Project; Chalk Point-FGD Special Yearly

Project Number: Chalk Pt-FGD Special Yearly

Report: 14D0476

Aquasco, MD 20608

Project Manager: Glenn St. Clair

Reported: 07/11/2014 14:59

#### 040114-WWTP Fines

14D0476-04 (Solid) Sampled: 04/01/2014 09:30; Type: Not Specified

Analyte	Result	Reporting Limit	Units	Limits	Prepared	Analyzed	Analyst	Method	Notes
Allalyw	Result	<del> </del>	<del></del>		<u> </u>	Anatyzed	Allalyst	Method	Notes
		Microbac	: Laboratorio	es, Inc t	Saitimore				
Metals, Total by EPA 6000/700	0 Series Methods					···			
Lead	7.9	7.5	mg/kg dry		041414 1028	041614 1650	APS	EPA 6010B	
Antimony	ND	15	mg/kg dry		041414 1028	041614 1650	APS	EPA 6010B	
Selenium	69	7.5	mg/kg dry		041414 1028	041614 1650	APS	EPA 6010B	
Thallium	ND	15	mg/kg dry		041414 1028	041614 1650	APS	EPA 6010B	
Vanadium	5.7	3.8	mg/kg dry		041414 1028	041614 1650	APŞ	EPA 6010B	
Zinc	43	3.8	mg/kg dry		041414 1028	041614 1650	APS	EPA 6010B	
TCLP Extraction by EPA 1311				<u>_</u>			,		
TCLP Extraction	NEGATIVE		N/A		041014 1428	041114 0928	MKM	EPA 1311	
TCLP Metals by 6000/7000 Ser	ries Methods		<u> </u>						
Silver	ND	0.20	mg/L	5.0	041414 1115	041414 1801	APS	EPA 6010B	
Arsenic	ND	0.20	mg/L	5.0	041414 1115	041414 1801	APS	EPA 6010B	
Barium	ND	0.50	mg/L	100	041414 1115	041414 1801	APS	EPA 6010B	
Cadmium	ND	0.20	mg/L	1.0	041414 1115	041414 1801	APS	EPA 6010B	
Chromium	ND	0.20	mg/L	5.0	041414 1115	041414 1801	APS	EPA 6010B	
Mercury	ND	0.0020	mg/L	0.20	041714 1349	041814 1213	FAK	EPA 7470A	
Lead	ND	0.20	mg/L	5.0	041414 1115	041414 1801	APS	EPA 6010B	
Selenium	ND	0.20	mg/L	1.0	041414 1115	041414 1801	APS	EPA 6010B	

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Melanie C. Duszynski, Project Manager

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#### **CERTIFICATE OF ANALYSIS**

NRG Energy - Chalk Point Gen. Sta.

Project: Chalk Point-FGD Special Yearly
25100 Chalk Point Road
Project Number: Chalk Pt-FGD Special Yearly
Aquasco, MD 20608
Project Manager: Glenn St. Clair

#### Project Requested Certification(s):

A2LA (Environmental)

#### Analyte Certification Exception Summary

No certification exceptions

All analysis performed were analyzed under the required certification unless otherwise noted in the above summary.

#### Certification List

Below is a list of certifications maintained by Microbac Laboratories, Inc. All data included in this report has been reviewed for and meets all project specific and quality control requirements of the applicable accreditation, unless otherwise noted. A complete list of individual analytes pursuant to each certification below is available upon request.

Code	Description	Certification Number	Expires	
  Microbac La	boratories, Inc Baltimore			
A2LA1	A2LA (Biology)	410.02	04/30/2015	
A2LA2	A2LA (Environmental)	410.01	04/30/2015	
CPSC	CPSC Testing of Childrens Products and Jewelry	1115	04/30/2015	
Pb	Environmental Lead (ELLAP)	410.01	04/30/2015	
MD	State of Maryland (Drinking Water)	109	06/30/2015	
  Microbac La	boratories, Inc., Richmond Division			
VA-R	Commonwealth of Virginia (NELAC) - Richmond	460022	06/14/2015	

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Melanie C. Duszynski, Project Manager

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200 11 of 14



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#### **CERTIFICATE OF ANALYSIS**

NRG Energy - Chalk Point Gen. Sta.

Project: Chalk Point-FGD Special Yearly

Report: 14D0476

25100 Chalk Point Road

Project Number: Chalk Pt-FGD Special Yearly

Reported: 07/11/2014 14:59

Aquasco, MD 20608

Project Manager: Glenn St. Clair

#### Qualifiers/Notes and Definitions

#### General Definitions:

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

#### Analysis Qualifiers/Notes:

#### Microbac Laboratories, Inc. - Baltimore

Z10c pH @ 28.1°C Z10b pH @ 23.6°C Z10a pH @ 23.0°C Z10 pH @ 22.6°C

D4 Sample diluted due to matrix interference.

B9 Target analyte detected in the initial calibration blank at or above reporting limit.

B7 Target analyte detected in continuing calibration blank at or above reporting limit.



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## **Cooler Receipt Log**

Cooler ID: Default Cooler		Cooler Temp: 1.30°C Work	Order: 14D0476
Custody Seals Intact:	Yes	COC/Containers Agree:	Yes
Containers Intact:	Yes	Correct Preservation:	Yes
Received On Ice:	Yes	Correct Number of Containers Received:	Yes
Radiation Scan Acceptable:	Yes	Sufficient Sample Volume for Testing:	Yes
COC Present:	Yes	Samples Received in Proper Condition:	Yes

Comments:



Instructions for completing the Chain of Custody Record on back QC and EDD Type (Required) This space is reserved for lab use only. e カナロロナ Sol/Solid (S), Ol(O), Wipe(WI), Drinking Water (DW), Groundwater (GW), Surface Water (SW), Waste Water (WW), Other (specify) Comments: Ī 301-818-4170 Sampler (DW) Certs Format: [] EDO SH (20)4500 CI-CLA Astm Dolla-Galm EPH GOLD Blow 846 COMPAR 26.3104.05 9 KIM Dades Comments [] Level I (NAC) EPA 90-45 ð [] Level II\*\* []LevelIII\*\* ) Archive Level V 301848-4475 Work Order Number: Page (ecelved for Lab By (signature) 7-17-0 \* Please notify lab prior to drop off. Dispose as appropriate Turnaround Time [] Standard (7 Business Days) Sampler Phone # [] RUSH\* Needed By: Fax (Jax #) Chain of Custody Record 80 10/10 [\$Telephone YELLOW - RECEIPT SPECIAL-FOD -YEARL Location CP- FGD-Special-Vrlu Microbac Laboratories Inc., Baltimore Division No. of Containers 3 Compliance Monitoring? [] Yes [] No 0930 0.930 0936 1050 Time Collected WHITE - ORIGINAL LAB enn.stckirenralenegy.com 2101 Van Deman St, Baitimore, MD 21224 [] Radioactive サードナ エー・エ Date Collected Sampler Signature (1)Agency/Program **Piltered** Project **PO** hed By (signature) (prignature) Composite 410-633-6553 410-633-1800 www.microbac.com 501 12.11 \*\* Surcharge May Apply to add'1 QC Packages\*\* drið Food(F), \*\*\*xirisM WUTP Fines Hazardous Challe 14. \*\* Matrix Types: Air(A), Childrens Product(CP) Fax: 芦 Botton Ash AL DOUR Meccasto, M We-mail (address) Flikh Radiation Scan Acceptable Yes / No Client Name NR6 Energy-Cilent Sample ID Sample Received on Ice of Refrigerated from Client (185 / No Too Cate Possible Mazard Identification emp upon receipt(\*C): \ , \ umber of Containers: Contact (y COO St Sampled by (PRINT) Send Report via City, State, Zip Cooler Number: \* elephone # たこのたの Address