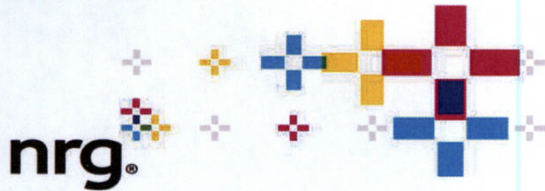


MD Ash Management  
25100 Chalk Point Road,  
Aquasco, Maryland 20608  
T (301) 843-4127 C (240) 375-3740



Certified Mail/Return Receipt Requested

Mr. Edward M. Dexter, Administrator  
Solid Waste Program, Suite 605  
Maryland Department of the Environment  
1800 Washington Blvd.  
Baltimore, MD. 21230

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MAR 4 2013  
SOLID WASTE  
OPERATIONS DIVISION

February 28, 2013

Re: 2012 CCB Tonnage Reports for GenOn's Generating Facilities in Maryland

Dear Mr. Dexter,

Pursuant to COMAR 26.04.10.08, enclosed please find the 2012 CCB tonnage reports for GenOn Mid-Atlantic, LLC's Morgantown and Dickerson Generating Stations, and GenOn Chalk Point, LLC's Chalk Point Generating Station.

If you have any questions regarding these reports, please contact me at 301-843-4127, or at [elizabeth.spitzer@nrgenergy.com](mailto:elizabeth.spitzer@nrgenergy.com).

Effective December 14, 2012, NRG Energy, Inc. (NRG) and GenOn Energy, Inc. (GenOn) have combined and will retain the name NRG Energy, Inc. As a result of the merger, all GenOn entities are now wholly owned subsidiaries of NRG. Although the parent corporations, NRG and GenOn, have merged, the entities have not merged or changed names. You can find additional information about NRG and the merger on the website: [www.nrgenergy.com](http://www.nrgenergy.com)

Regards,

Elizabeth A. Spitzer  
Environmental Analyst  
NRG Energy

Enclosures

# MARYLAND DEPARTMENT OF THE ENVIRONMENT

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

410-537-3315 • 800-633-6101 x3315 • [www.mde.state.md.us](http://www.mde.state.md.us)

Land Management Administration • Solid Waste Program

## **Coal Combustion Byproducts (CCBs) Annual Generator Tonnage Report Instructions for Calendar Year 2012**

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 2012. 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 [edexter@mde.state.md.us](mailto:edexter@mde.state.md.us).

**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:

*"(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."*

RECEIVED

MAR 4 2013

SOLID WASTE  
OPERATIONS DIVISION

**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, 2013:

A. Contact information:

Facility Name: Dickerson Generating Station

Name of Permit Holder: GenOn Mid-Atlantic, LLC

Facility Address: 21200 Martinsburg Road  
Street

Facility Address: Dickerson Maryland 20842  
City State Zip

County: Montgomery

Contact Information (Person filing report or Environmental Manager)

Facility Telephone No.: 301-601-6500 Facility Fax No.: 301-601-6556

Contact Name: Elizabeth A. Spitzer

Contact Title: Environmental Analyst

Contact Address: 25100 Eagle Harbor Rd  
Street

Contact Address: Aquasco Maryland 20608  
City State Zip

Contact Email: Elizabeth.Spitzer@nrgenergy.com

Contact Telephone No.: 301-843-4127 Contact Fax No.: 301-843-4156

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

B. A description of the process that generates the CCBs, including the type of coal or other raw material that generates the CCBs. If the space provided is insufficient, please attach additional pages:

See Attachment A.

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C. The volume and weight of CCBs generated during calendar year 2012, 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.

**Table I: Volume and Weight of CCBs Generated for Calendar Year 2012:** 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.

<b>Volume and Weight of CCBs Generated for Calendar Year 2012</b>				
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
28,060	4,661	34,243	794	909
Volume of CCB, in Cubic Yards	Volume of CCB, in Cubic Yards	Volume of CCB, in Cubic Yards	Volume of CCB, in Cubic Yards	Volume of CCB, in Cubic Yards
28,060	4,661	66,891	1,551	1,776
Weight of CCB, in Tons	Weight of CCB, in Tons	Weight of CCB, in Tons	Weight of CCB, in Tons	Weight of CCB, in Tons

Additional notes:

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.

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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. (See Attachment B).

F. A description of how you disposed of or used your CCBs in calendar year 2012, 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 28,060 tons of **flyash** generated at Dickerson in 2012, 1,414 tons were sold to SEFA,  
headquartered in Columbia, SC, and 26,646 tons were disposed of at the Westland Ash Site,  
located in Montgomery Co., Md.

All of the 4,661 tons of **bottom ash** generated in 2012 were sent to the Westland Ash Site,  
located in Montgomery Co., Md for disposal.

**On-Spec Gypsum** generated at Dickerson in 2012 was 66,891 tons. 101 tons were stored on-site  
at the end of 2011, and 2,822 tons were stored on-site at the end of 2012. Of this total, 64,170  
tons were transported by barge to LaFarge, located in Buchanan, NY.

**Off-Spec Gypsum** generated in 2012 was 1,551 tons, all of which was disposed of at Waste  
Management's Amelia Landfill located in Jetersville, Va.

**WWTP Fines** produced in 2012 was 1,776 tons, all of which was disposed of at Waste  
Management's Amelia Landfill located in Jetersville, Va.

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and (b) The different uses by type and volume of CCBs:

**FlyAsh:**

Volume: 1,414 tons sold in Maryland for Geotechnical Grout Applications..

**On-Spec Gypsum:**

Volume: 64,170 tons sold

Use: Wallboard

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

G. A description of how you intend to dispose of or use CCBs in the next 5 years, identifying:

(a) The types and volume of CCBs intended to be disposed of or used, the location of intended disposal, mine reclamation and use sites, and the type and volume of CCBs intended to be disposed of or used at each site:

**FlyAsh:** Approximately 28,000 tons/year to be generated, with about 1,400 tons to be sold to SEFA, headquartered in Columbia, SC, and 26,600 tons to be sent for disposal at the Westland Ash Site, located in Montgomery Co., Md.

**Bottom Ash:** Anticipate 4,700 tons/year to be generated and sent to the Westland Ash Site, located in Montgomery Co., Md, for disposal.

**On-Spec Gypsum:** Anticipate 67,000 tons/year to be generated, with approximately 3,000 tons stored on site at the Dickerson Generating Station and approximately 64,000 tons/year being transported by barge to LaFarge, located in Buchanan, NY.

**Off-Spec Gypsum:** Approximately 1,600 tons/year to be generated and disposed of at Waste Management's Amelia Landfill located in Jetersville, Va.

**WWTP Fines:** Approximately 1,800 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.

**FlyAsh:**

Volume: 1,400 tons/year to be sold in Md for Geotechnical Grout Applications..

**On-Spec Gypsum:**


Volume: 64,000 tons/year to be sold.

Use: Wallboard

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:

This is to certify that, to the best of my knowledge, the information contained in this report and any attached documents are true, accurate, and complete.

 _____ Signature	<u>Jay Bellingham, General Manager, Dickerson                  Generating Station</u> 301-601-6521 _____ Name, Title, & Telephone No. (Print or Type)  Jay.bellingham@nrenergy.com _____ Your Email Address	_____ 2/28/13 _____ Date
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**V: Attachments (please list):**

A) Dickerson Generating Station Process Description

B) Microbac Analyses for Dickerson Fly Ash, Bottom Ash, Off- Spec Gypsum and WWTP Fines

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## **Attachment A**

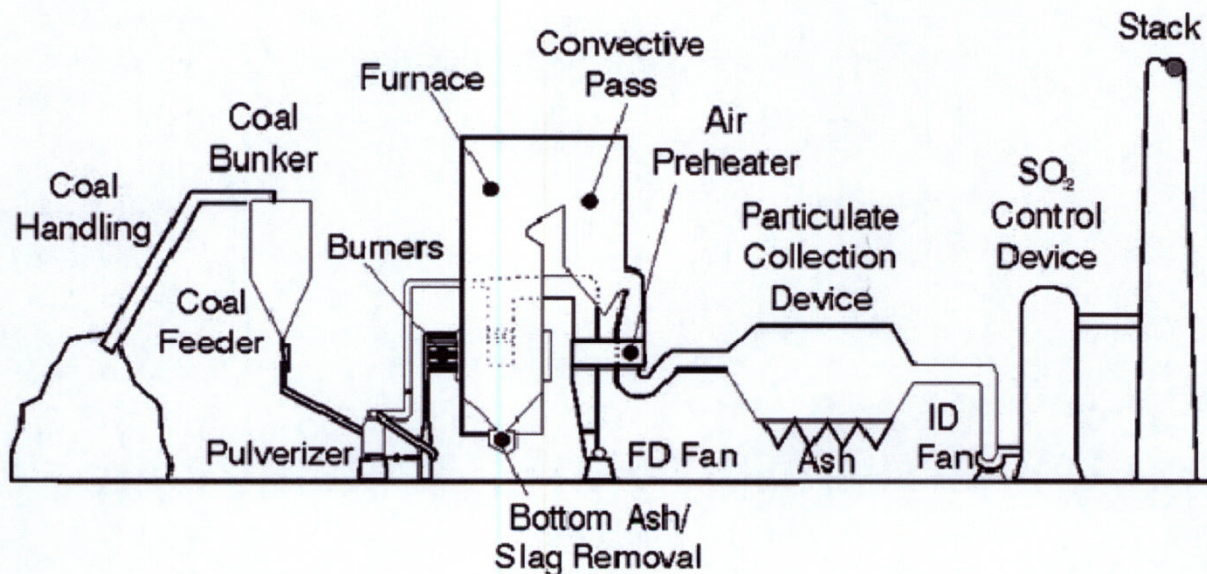
## Attachment A

Dickerson Generating Station  
21200 Martinsburg Road,  
Dickerson, Montgomery County, MD. 20842  
301-601-6500

The Dickerson Generating Station is located on the Potomac River, south of the Monocay River in upper Montgomery County, near Dickerson, MD. The facility is engaged in the generation of electric energy for sale. The primary SIC code for this facility is 4911. The facility consists of three steam units, each rated at 191 MWs (base loaded), firing bituminous coal. Each unit is tangentially fired, with a superheater, reheat and economizer. Electrostatic precipitators (ESPs) and a baghouse are installed for particulate control. Low NO<sub>x</sub> burners, Separated Over-Fired Air (SOFA), Selective Non Catalytic Reduction (SNCR) along with an advanced combustion control system are installed on each unit to reduce and control emissions of oxides of nitrogen (NO<sub>x</sub>). A Wet Scrubber (FGD) was installed and went in service on the three units in late 2009. The units exhaust through the scrubber stack or, when the FGD is not in service, through a common 700 ft. stack.

Coal is delivered to the Dickerson facility by rail. The rail cars are emptied using a rotary dumper, then transferred by conveyor to either a storage pile or fed directly to a unit's 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**

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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 two ash silos. Fly ash that is not marketed is sent to the Westland Ash Site, whose property is separated from the Dickerson facility by a public road, and is also located in Montgomery County. 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 Westland Ash Site, where it is often used in the construction of flyash disposal cells.

Gypsum is a byproduct of SO<sub>2</sub> removal by the Flue Gas Desulfurization (FGD) system, commonly known as a scrubber. Dickerson uses wet scrubbers for SO<sub>2</sub> removal. Wet scrubbing utilizes a chemical reaction with limestone alkaline sorbent to remove SO<sub>2</sub>, - as well as some mercury contaminants - from the air stream. The byproduct - gypsum - is sent to the Morgantown Generating Station where it is then conveyed to a barge and transported to La Farge located in Buchanan, New York where it is made into wallboard. Gypsum 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**

**COVER LETTER**

Pat Miglio  
GenOn-Dickerson  
21200 Martinsburg Rd.  
Dickerson, MD 20842  
RE: Coal Combustion By Products

July 18, 2012  
Report No.: 12F1369

The report of analyses contains test results for samples received at Microbac Laboratories, Inc., Baltimore Division on 06/27/2012 11:57.

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.

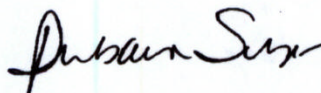
All data included in this report has been reviewed and meet the applicable project and certification specific requirements, unless otherwise noted.

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



7/18/2012

Final report reviewed by:

Barbara Schroyer/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 Mark Horan, Managing Director, at 410-633-1800 You may also contact Sean Hyde, Chief*



**Microbac Laboratories, Inc.**

Baltimore Division

2101 Van Deman Street • Baltimore, MD 21224

Phone: 410-633-1800

Fax: 410-633-6553

www.microbac.com

**CERTIFICATE OF ANALYSIS**

GenOn-Dickerson 21200 Martinsburg Rd. Dickerson, MD 20842	Project: Coal Combustion By Products Project Number: Coal Combustion By Products Project Manager: Pat Miglio	Report: 12F1369 Reported: 07/18/2012 13:42
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**SAMPLE SUMMARY**

Sample ID	Laboratory ID	Matrix	Type	Date Sampled	Date Received
Fly Ash	12F1369-01	Solid	Not Specified	06/25/2012 12:00	06/27/2012 11:57
Bottom Ash	12F1369-02	Solid	Not Specified	06/25/2012 12:00	06/27/2012 11:57
FGD WWTP Fines	12F1369-03	Solid	Not Specified	06/25/2012 14:00	06/27/2012 11:57
FGD Synthetic Gypsum	12F1369-04	Solid	Not Specified	06/25/2012 14:00	06/27/2012 11:57

Microbac Laboratories, Inc., Baltimore Division

Barbara Schroyer, Project Manager

*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.*

**Original Lab Report**



**Microbac Laboratories, Inc.**

Baltimore Division

2101 Van Deman Street • Baltimore, MD 21224

Phone: 410-633-1800

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**CERTIFICATE OF ANALYSIS**

GenOn-Dickerson 21200 Martinsburg Rd. Dickerson, MD 20842	Project: Coal Combustion By Products Project Number: Coal Combustion By Products Project Manager: Pat Miglio	Report: 12F1369 Reported: 07/18/2012 13:42
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**Fly Ash**

12F1369-01 (Solid) Sampled: 06/25/2012 12:00; Type: Not Specified

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Analyst	Method	Notes
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**Microbac Laboratories, Inc., Baltimore Division**

**Wet Chemistry**

% Solids	79.55	0.05	% by Weight	062812 1400	062912 1008	LCR	SM (20) 2540G	
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**General Chemistry**

Sulfur	0.47	0.050	% by Weight	070712 1158	070912 1320	BMC	ASTM D129-91	
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**Mercury, Total by EPA 7000 Series Methods**

Mercury	1.1	0.031	mg/kg dry	070612 0911	070912 1439	APS	SW846 7471B	
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**Metals, Total by EPA 6000/7000 Series Methods**

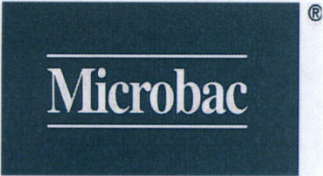
Silver	ND	1.3	mg/kg dry	070312 1415	070912 1806	PBK	EPA 6020	
Aluminum	27000	16	mg/kg dry	070312 1415	070512 1443	APS	EPA 6010B	
Arsenic	54	1.3	mg/kg dry	070312 1415	070912 1806	PBK	EPA 6020	
Barium	540	31	mg/kg dry	070312 1415	071012 1719	PBK	EPA 6020	
Beryllium	3.9	1.3	mg/kg dry	070312 1415	070912 1806	PBK	EPA 6020	
Calcium	26000	31	mg/kg dry	070312 1415	070512 1443	APS	EPA 6010B	
Cadmium	ND	1.3	mg/kg dry	070312 1415	070912 1806	PBK	EPA 6020	
Cobalt	13	1.3	mg/kg dry	070312 1415	070912 1806	PBK	EPA 6020	
Chromium	41	6.3	mg/kg dry	070312 1415	070912 1806	PBK	EPA 6020	
Copper	40	1.3	mg/kg dry	070312 1415	070912 1806	PBK	EPA 6020	
Iron	36000	13	mg/kg dry	070312 1415	070512 1443	APS	EPA 6010B	
Potassium	2400	31	mg/kg dry	070312 1415	070512 1443	APS	EPA 6010B	
Lithium	43	6.3	mg/kg dry	070312 1415	070512 1443	APS	EPA 6010B	
Magnesium	3500	31	mg/kg dry	070312 1415	070512 1443	APS	EPA 6010B	
Molybdenum	ND	6.3	mg/kg dry	070312 1415	070512 1443	APS	EPA 6010B	
Sodium	2000	310	mg/kg dry	070312 1415	070512 1443	APS	EPA 6010B	
Nickel	33	1.3	mg/kg dry	070312 1415	070912 1806	PBK	EPA 6020	
Lead	23	1.3	mg/kg dry	070312 1415	071012 1518	PBK	EPA 6020	
Antimony	ND	13	mg/kg dry	070312 1415	070512 1443	APS	EPA 6010B	

Microbac Laboratories, Inc., Baltimore Division

Barbara Schroyer, Project Manager

*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.*

**Original Lab Report**



# Microbac Laboratories, Inc.

Baltimore Division

2101 Van Deman Street • Baltimore, MD 21224

Phone: 410-633-1800

Fax: 410-633-6553

www.microbac.com

## CERTIFICATE OF ANALYSIS

GenOn-Dickerson 21200 Martinsburg Rd. Dickerson, MD 20842	Project: Coal Combustion By Products Project Number: Coal Combustion By Products Project Manager: Pat Miglio	Report: 12F1369 Reported: 07/18/2012 13:42
---	--	---

### Fly Ash

12F1369-01 (Solid) Sampled: 06/25/2012 12:00; Type: Not Specified

Analyte	Result	Reporting		Units	Prepared	Analyzed	Analyst	Method	Notes
		Limit							

### Microbac Laboratories, Inc., Baltimore Division

#### Metals, Total by EPA 6000/7000 Series Methods

Selenium	7.9	6.3	mg/kg dry	070312 1415	070512 1443	APS	EPA 6010B	B1, B7
Thallium	3.2	1.3	mg/kg dry	070312 1415	071012 1518	PBK	EPA 6020	
Vanadium	120	6.3	mg/kg dry	070312 1415	071012 1518	PBK	EPA 6020	
Vanadium	240	160	mg/kg dry	070312 1415	071012 1719	PBK	EPA 6020	
Zinc	73	13	mg/kg dry	070312 1415	070912 1806	PBK	EPA 6020	

#### TCLP Extraction by EPA 1311

TCLP Extraction	COMPLETED		N/A	062912 1800	063012 1100	BMC	EPA 1311	
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#### TCLP Metals by 6000/7000 Series Methods

Silver	ND	0.20	mg/L	070312 1028	070312 1418	APS	EPA 6010B	D
Arsenic	ND	0.20	mg/L	070312 1028	070312 1418	APS	EPA 6010B	D
Barium	ND	0.50	mg/L	070312 1028	070312 1418	APS	EPA 6010B	D
Cadmium	ND	0.20	mg/L	070312 1028	070312 1418	APS	EPA 6010B	D
Chromium	ND	0.20	mg/L	070312 1028	070312 1418	APS	EPA 6010B	D
Mercury	ND	0.0020	mg/L	070612 1104	070612 1824	APS	EPA 6020	D
Lead	ND	0.20	mg/L	070312 1028	070312 1418	APS	EPA 6010B	D
Selenium	ND	0.20	mg/L	070312 1028	070312 1418	APS	EPA 6010B	D

Microbac Laboratories, Inc., Baltimore Division

Barbara Schroyer, Project Manager

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.

Original Lab Report





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Baltimore Division

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Phone: 410-633-1800

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## CERTIFICATE OF ANALYSIS

GenOn-Dickerson 21200 Martinsburg Rd. Dickerson, MD 20842	Project: Coal Combustion By Products Project Number: Coal Combustion By Products Project Manager: Pat Miglio	Report: 12F1369 Reported: 07/18/2012 13:42
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### Bottom Ash

12F1369-02 (Solid) Sampled: 06/25/2012 12:00; Type: Not Specified

Analyte	Result	Reporting		Units	Prepared	Analyzed	Analyst	Method	Notes
		Limit							

### Microbac Laboratories, Inc., Baltimore Division

#### Wet Chemistry

% Solids	74.52	0.05	% by Weight	062812 1400	062912 1008	LCR	SM (20) 2540G
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#### General Chemistry

Sulfur	0.29	0.050	% by Weight	070712 1158	070912 1320	BMC	ASTM D129-91
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#### Mercury, Total by EPA 7000 Series Methods

Mercury	ND	0.032	mg/kg dry	070612 0911	070912 1441	APS	SW846 7471B
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#### Metals, Total by EPA 6000/7000 Series Methods

Silver	ND	1.3	mg/kg dry	070312 1415	070912 1831	PBK	EPA 6020
Aluminum	26000	16	mg/kg dry	070312 1415	070512 1503	APS	EPA 6010B
Arsenic	4.6	1.3	mg/kg dry	070312 1415	070912 1831	PBK	EPA 6020
Barium	270	33	mg/kg dry	070312 1415	071012 1731	PBK	EPA 6020
Beryllium	2.0	1.3	mg/kg dry	070312 1415	070912 1831	PBK	EPA 6020
Calcium	17000	33	mg/kg dry	070312 1415	070512 1503	APS	EPA 6010B
Cadmium	ND	1.3	mg/kg dry	070312 1415	070912 1831	PBK	EPA 6020
Cobalt	8.0	1.3	mg/kg dry	070312 1415	070912 1831	PBK	EPA 6020
Chromium	22	6.5	mg/kg dry	070312 1415	070912 1831	PBK	EPA 6020
Copper	29	1.3	mg/kg dry	070312 1415	070912 1831	PBK	EPA 6020
Iron	62000	13	mg/kg dry	070312 1415	070512 1503	APS	EPA 6010B
Potassium	1900	33	mg/kg dry	070312 1415	070512 1503	APS	EPA 6010B
Lithium	28	6.5	mg/kg dry	070312 1415	070512 1503	APS	EPA 6010B
Magnesium	2300	33	mg/kg dry	070312 1415	070512 1503	APS	EPA 6010B
Molybdenum	ND	6.5	mg/kg dry	070312 1415	070512 1503	APS	EPA 6010B
Sodium	1400	330	mg/kg dry	070312 1415	070512 1503	APS	EPA 6010B
Nickel	22	1.3	mg/kg dry	070312 1415	070912 1831	PBK	EPA 6020
Lead	5.7	1.3	mg/kg dry	070312 1415	071012 1543	PBK	EPA 6020
Antimony	ND	13	mg/kg dry	070312 1415	071112 1710	APS	EPA 6010B

Microbac Laboratories, Inc., Baltimore Division

Barbara Schroyer, Project Manager

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Original Lab Report



# Microbac Laboratories, Inc.

Baltimore Division

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Phone: 410-633-1800

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www.microbac.com

## CERTIFICATE OF ANALYSIS

GenOn-Dickerson 21200 Martinsburg Rd. Dickerson, MD 20842	Project: Coal Combustion By Products Project Number: Coal Combustion By Products Project Manager: Pat Miglio	Report: 12F1369 Reported: 07/18/2012 13:42
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### Bottom Ash

12F1369-02 (Solid) Sampled: 06/25/2012 12:00; Type: Not Specified

Analyte	Result	Reporting		Units	Prepared	Analyzed	Analyst	Method	Notes
		Limit							

### Microbac Laboratories, Inc., Baltimore Division

#### Metals, Total by EPA 6000/7000 Series Methods

Selenium	ND	6.5	mg/kg dry	070312 1415	070512 1503	APS	EPA 6010B
Thallium	ND	1.3	mg/kg dry	070312 1415	071012 1543	PBK	EPA 6020
<b>Vanadium</b>	<b>47</b>	6.5	mg/kg dry	070312 1415	071012 1543	PBK	EPA 6020
Vanadium	ND	160	mg/kg dry	070312 1415	071012 1731	PBK	EPA 6020
<b>Zinc</b>	<b>26</b>	13	mg/kg dry	070312 1415	070912 1831	PBK	EPA 6020

#### TCLP Extraction by EPA 1311

TCLP Extraction	COMPLETED		N/A	062912 1800	063012 1100	BMC	EPA 1311
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#### TCLP Metals by 6000/7000 Series Methods

Silver	ND	0.20	mg/L	070312 1028	070312 1450	APS	EPA 6010B	D
Arsenic	ND	0.20	mg/L	070312 1028	070312 1450	APS	EPA 6010B	D
<b>Barium</b>	<b>0.66</b>	0.50	mg/L	070312 1028	070312 1450	APS	EPA 6010B	D
Cadmium	ND	0.20	mg/L	070312 1028	070312 1450	APS	EPA 6010B	D
Chromium	ND	0.20	mg/L	070312 1028	070312 1450	APS	EPA 6010B	D
Mercury	ND	0.0020	mg/L	070612 1104	070612 1830	APS	EPA 6020	D
Lead	ND	0.20	mg/L	070312 1028	070312 1450	APS	EPA 6010B	D
Selenium	ND	0.20	mg/L	070312 1028	070312 1450	APS	EPA 6010B	D

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Barbara Schroyer, Project Manager

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## CERTIFICATE OF ANALYSIS

GenOn-Dickerson  
21200 Martinsburg Rd.  
Dickerson, MD 20842

Project: Coal Combustion By Products  
Project Number: Coal Combustion By Products  
Project Manager: Pat Miglio

Report: 12F1369  
Reported: 07/18/2012 13:42

### FGD WWTP Fines

12F1369-03 (Solid) Sampled: 06/25/2012 14:00; Type: Not Specified

Analyte	Result	Reporting		Units	Prepared	Analyzed	Analyst	Method	Notes
		Limit							

### Microbac Laboratories, Inc., Baltimore Division

#### Wet Chemistry

% Solids	88.57	0.05	% by Weight	062812 1400	062912 1009	LCR	SM (20) 2540G
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#### General Chemistry

Sulfur	1.5	0.050	% by Weight	070712 1158	070912 1320	BMC	ASTM D129-91
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#### Mercury, Total by EPA 7000 Series Methods

Mercury	2.4	0.14	mg/kg dry	070612 0911	070912 1607	APS	SW846 7471B
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#### Metals, Total by EPA 6000/7000 Series Methods

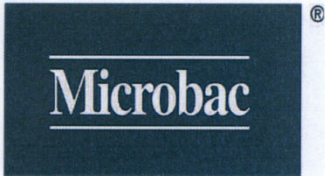
Silver	ND	0.73	mg/kg dry	070312 1415	070912 1835	PBK	EPA 6020
Aluminum	4000	9.1	mg/kg dry	070312 1415	070512 1507	APS	EPA 6010B
Arsenic	10	0.73	mg/kg dry	070312 1415	070912 1835	PBK	EPA 6020
Barium	120	18	mg/kg dry	070312 1415	071012 1735	PBK	EPA 6020
Beryllium	ND	0.73	mg/kg dry	070312 1415	070912 1835	PBK	EPA 6020
Calcium	240000	180	mg/kg dry	070312 1415	070512 1551	APS	EPA 6010B
Cadmium	ND	0.73	mg/kg dry	070312 1415	070912 1835	PBK	EPA 6020
Cobalt	3.9	0.73	mg/kg dry	070312 1415	070912 1835	PBK	EPA 6020
Chromium	31	3.6	mg/kg dry	070312 1415	070912 1835	PBK	EPA 6020
Copper	30	0.73	mg/kg dry	070312 1415	070912 1835	PBK	EPA 6020
Iron	18000	73	mg/kg dry	070312 1415	070512 1551	APS	EPA 6010B
Potassium	2000	18	mg/kg dry	070312 1415	070512 1507	APS	EPA 6010B
Lithium	9.2	3.6	mg/kg dry	070312 1415	070512 1507	APS	EPA 6010B
Magnesium	5900	180	mg/kg dry	070312 1415	070512 1551	APS	EPA 6010B
Molybdenum	ND	3.6	mg/kg dry	070312 1415	070512 1507	APS	EPA 6010B
Sodium	720	180	mg/kg dry	070312 1415	070512 1507	APS	EPA 6010B
Nickel	35	0.73	mg/kg dry	070312 1415	070912 1835	PBK	EPA 6020
Lead	5.6	0.73	mg/kg dry	070312 1415	071012 1547	PBK	EPA 6020
Antimony	ND	7.3	mg/kg dry	070312 1415	070512 1507	APS	EPA 6010B

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Barbara Schroyer, Project Manager

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CERTIFICATE OF ANALYSIS

Table with 3 columns: Client info (GenOn-Dickerson), Project info (Coal Combustion By Products), and Report info (12F1369).

FGD WWTP Fines

12F1369-03 (Solid) Sampled: 06/25/2012 14:00; Type: Not Specified

Table with 9 columns: Analyte, Result, Reporting Limit, Units, Prepared, Analyzed, Analyst, Method, Notes.

Microbac Laboratories, Inc., Baltimore Division

Metals, Total by EPA 6000/7000 Series Methods

Table listing metal results: Selenium (72), Thallium (ND), Vanadium (15), Vanadium (ND), Zinc (170).

TCLP Extraction by EPA 1311

Table with 1 row: TCLP Extraction, COMPLETED, N/A, 062912 1800, 063012 1100, BMC, EPA 1311.

TCLP Metals by 6000/7000 Series Methods

Table listing TCLP metal results: Silver, Arsenic, Barium, Cadmium, Chromium, Mercury, Lead, Selenium.

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Handwritten signature of Barbara Schroyer

Barbara Schroyer, Project Manager

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## CERTIFICATE OF ANALYSIS

GenOn-Dickerson 21200 Martinsburg Rd. Dickerson, MD 20842	Project: Coal Combustion By Products Project Number: Coal Combustion By Products Project Manager: Pat Miglio	Report: 12F1369 Reported: 07/18/2012 13:42
---	--	---

### FGD Synthetic Gypsum

12F1369-04 (Solid) Sampled: 06/25/2012 14:00; Type: Not Specified

Analyte	Result	Reporting		Prepared	Analyzed	Analyst	Method	Notes
		Limit	Units					

### Microbac Laboratories, Inc., Baltimore Division

#### Wet Chemistry

% Solids	79.52	0.05	% by Weight	062812 1400	062912 1009	LCR	SM (20) 2540G
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#### General Chemistry

Sulfur	2.7	0.050	% by Weight	070712 1158	070912 1320	BMC	ASTM D129-91
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#### Mercury, Total by EPA 7000 Series Methods

Mercury	0.090	0.031	mg/kg dry	070612 0911	070912 1446	APS	SW846 7471B
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#### Metals, Total by EPA 6000/7000 Series Methods

Silver	ND	1.1	mg/kg dry	070312 1415	070912 1855	PBK	EPA 6020
Aluminum	350	14	mg/kg dry	070312 1415	070512 1511	APS	EPA 6010B
Arsenic	ND	1.1	mg/kg dry	070312 1415	070912 1855	PBK	EPA 6020
Barium	30	1.1	mg/kg dry	070312 1415	071012 1607	PBK	EPA 6020
Beryllium	ND	1.1	mg/kg dry	070312 1415	070912 1855	PBK	EPA 6020
Calcium	290000	280	mg/kg dry	070312 1415	070512 1555	APS	EPA 6010B
Cadmium	ND	1.1	mg/kg dry	070312 1415	070912 1855	PBK	EPA 6020
Cobalt	ND	1.1	mg/kg dry	070312 1415	070912 1855	PBK	EPA 6020
Chromium	ND	5.5	mg/kg dry	070312 1415	070912 1855	PBK	EPA 6020
Copper	ND	1.1	mg/kg dry	070312 1415	070912 1855	PBK	EPA 6020
Iron	720	110	mg/kg dry	070312 1415	070512 1555	APS	EPA 6010B
Potassium	190	28	mg/kg dry	070312 1415	070512 1511	APS	EPA 6010B
Lithium	ND	5.5	mg/kg dry	070312 1415	070512 1511	APS	EPA 6010B
Magnesium	900	280	mg/kg dry	070312 1415	070512 1555	APS	EPA 6010B
Molybdenum	ND	5.5	mg/kg dry	070312 1415	070512 1511	APS	EPA 6010B
Sodium	ND	280	mg/kg dry	070312 1415	070512 1511	APS	EPA 6010B
Nickel	12	1.1	mg/kg dry	070312 1415	070912 1855	PBK	EPA 6020
Lead	ND	1.1	mg/kg dry	070312 1415	071012 1607	PBK	EPA 6020
Antimony	ND	11	mg/kg dry	070312 1415	070512 1511	APS	EPA 6010B
Selenium	ND	5.5	mg/kg dry	070312 1415	070512 1511	APS	EPA 6010B

Microbac Laboratories, Inc., Baltimore Division

Barbara Schroyer, Project Manager

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CERTIFICATE OF ANALYSIS

Table with project details: GenOn-Dickerson, Project: Coal Combustion By Products, Report: 12F1369, etc.

FGD Synthetic Gypsum

12F1369-04 (Solid) Sampled: 06/25/2012 14:00; Type: Not Specified

Table with columns: Analyte, Result, Reporting Limit, Units, Prepared, Analyzed, Analyst, Method, Notes

Microbac Laboratories, Inc., Baltimore Division

Metals, Total by EPA 6000/7000 Series Methods

Table with metal analysis results: Thallium, Vanadium, Zinc

TCLP Extraction by EPA 1311

Table with TCLP extraction result: TCLP Extraction, COMPLETED, N/A

TCLP Metals by 6000/7000 Series Methods

Table with TCLP metal analysis results: Silver, Arsenic, Barium, Cadmium, Chromium, Mercury, Lead, Selenium

Microbac Laboratories, Inc., Baltimore Division

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Barbara Schroyer, Project Manager

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**CERTIFICATE OF ANALYSIS**

GenOn-Dickerson 21200 Martinsburg Rd. Dickerson, MD 20842	Project: Coal Combustion By Products Project Number: Coal Combustion By Products Project Manager: Pat Miglio	Report: 12F1369 Reported: 07/18/2012 13:42
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**Project Requested Certification(s):**

A2LA (Environmental)  
State of Pennsylvania (NELAC)

*Analyte Certification Exception Summary*

**Microbac Laboratories, Inc., Baltimore Division**

**Matrix: Solid**

**ASTM D129-91**

Sulfur: No Certification

**EPA 6010B**

Arsenic: No Certification

Barium: No Certification

Cadmium: No Certification

Chromium: No Certification

Lead: No Certification

Selenium: No Certification

Silver: No Certification

**EPA 6020**

Mercury: No Certification

**SM (20) 2540G**

% Solids: No Certification

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

Microbac Laboratories, Inc., Baltimore Division

Barbara Schroyer, Project Manager

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## CERTIFICATE OF ANALYSIS

GenOn-Dickerson  
21200 Martinsburg Rd.  
Dickerson, MD 20842

Project: Coal Combustion By Products  
Project Number: Coal Combustion By Products  
Project Manager: Pat Miglio

Report: 12F1369  
Reported: 07/18/2012 13:42

### 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
<b>Microbac Laboratories, Inc., Baltimore Division</b>			
A2LA1	A2LA (Biology)	410.02	04/30/2013
A2LA2	A2LA (Environmental)	410.01	04/30/2013
VA-B	Commonwealth of Virginia (NELAC) - Baltimore	460170-1829	06/14/2013
CPSC	CPSC Testing of Childrens Products and Jewelry	1115	04/30/2013
Pb	Environmental Lead (ELLAP)	410.01	04/30/2013
NJ	New Jersey	NLC120001	06/30/2013
MD	State of Maryland (Drinking Water)	109	06/30/2013
PA	State of Pennsylvania (NELAC)	68-00339	08/31/2012
USDA	US Department of Agriculture	P330-09-00021	02/19/2012
WV	West Virginia	054	08/31/2012
<b>Microbac Laboratories, Inc., Richmond Division</b>			
VA-R	Commonwealth of Virginia (NELAC) - Richmond	460022-1834	06/14/2013

Microbac Laboratories, Inc., Baltimore Division

Barbara Schroyer, Project Manager

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**CERTIFICATE OF ANALYSIS**

GenOn-Dickerson 21200 Martinsburg Rd. Dickerson, MD 20842	Project: Coal Combustion By Products Project Number: Coal Combustion By Products Project Manager: Pat Miglio	Report: 12F1369 Reported: 07/18/2012 13:42
---	--	---

**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 Division**

- D Sample Diluted
- B7 Target analyte detected in continuing calibration blank at or above reporting limit.
- B1 Target analyte detected in method blank at or above reporting limit.



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**Cooler Receipt Log**

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**Cooler ID:** Default Cooler

**Cooler Temp:** 8.00 °C

**Work Order:** 12F1369

Custody Seals Intact: Yes

Containers Intact: Yes

Received On Ice: Yes

Radiation Scan Acceptable: Yes

COC Present: Yes

COC/Containers Agree: Yes

Correct Preservation: Yes

Correct Number of Containers Received: Yes

Sufficient Sample Volume for Testing: Yes

Samples Received in Proper Condition: Yes

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**Comments:**



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Work Order Number:

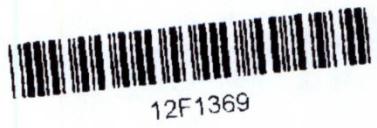
Chain of Custody Record

Page 1 of 1

Client Name: Gen On Energy Inc Project: Annual CCB Analysis Turnaround Time: \_\_\_\_\_ QC and EDD Type (Required):  
 Address: 3200 Martinsburg Rd Location: Dickerson Gen Sta  Standard (7 Business Days)  EDD  
 City, State, Zip: Dickerson, MD 20842 PO #: \_\_\_\_\_  RUSH\* Needed By: \_\_\_\_\_ Format: \_\_\_\_\_  
 Contact: Andrew McCulloch Compliance Monitoring?  Yes  No \*Please notify lab prior to drop off. Comments: \_\_\_\_\_  
 Telephone #: 301 601 6520 (1) Agency/Program \_\_\_\_\_  
 Sampled by (PRINT): A. Galvin Sampler Signature: [Signature] Sampler Phone #: 301 601 6520  
 Send Report via  e-mail (address) \_\_\_\_\_  Mail  Telephone  Fax (fax #) \_\_\_\_\_

\*\* Matrix Types: Soil/Solid (S), Sludge, Oil, Wipe, Drinking Water (DW), Groundwater (GW), Surface Water (SW), Waste Water (WW), Other (specify)

Client Sample ID	Matrix**	Grab	Composite	Filtered	Date Collected	Time Collected	No. of Containers	Requested Analysis	Comments
Fly Ash	S	<input checked="" type="checkbox"/>			6/25/12	1200	1	TCP Metals *	* see a Hachard
Bottom Ash	S	<input checked="" type="checkbox"/>			6/25/12	1200	1	Total Metals *	
FGD WWT# Fines	S	<input checked="" type="checkbox"/>			6/25/12	1400	1		
FGD Synthetic Gypsum	S	<input checked="" type="checkbox"/>			6/25/12	1400	1		



Possible Hazard Identification:  Hazardous  Non-Hazardous  Radioactive  Sample Disposition:  Dispose as appropriate  Return  Archive

Relinquished By (signature): [Signature] Date/Time: 6/27/12 0930 Received By (signature): [Signature] Date/Time: 6/27/12 1057  
 Relinquished By (signature): [Signature] Date/Time: \_\_\_\_\_ Received By (signature): [Signature] Date/Time: \_\_\_\_\_  
 Relinquished By (signature): [Signature] Date/Time: \_\_\_\_\_ Received By (signature): \_\_\_\_\_ Date/Time: \_\_\_\_\_

Printed Name/Affiliation: A. McCulloch Printed Name/Affiliation: [Signature]  
 Printed Name/Affiliation: [Signature] Printed Name/Affiliation: S. Baptist

Number of Containers: \_\_\_\_\_  
 Order Number: \_\_\_\_\_  
 Sample Received on location: \_\_\_\_\_  
 Refrigerated from Client:  Yes / No  
 Radiation Scan Acceptable Year / No: \_\_\_\_\_