220 West Main Street
P.O. Box 32010
Louisville, KY 40232

CERTIFIED MAIL
CERTIFIED NUMBER 7015 1520 0000 7959 1062
RETURN RECEIPT REQUESTED

January 24, 2019

Mr. Matt King
Engineering Manager
Air Pollution Control District
701 West Ormsby Ave
Louisville, KY 40203

RE: LG&E's Mill Creek Generating Station Title V Renewal Permit Application

Dear Mr. King

Pursuant to Regulation 2.16, Section 3, LG&E submits a timely and complete permit renewal application for the Mill Creek Generating Station. Mill Creek Title V permit 145-97-TV (R6) was issued on 7/31/2014 and expires on 7/31/2019.

If you have any questions regarding this permit application, please feel free to contact Brandan Burfict at (502) 627-2791.

Sincerely,

Brandan Burfict
Environmental Engineer

CC: Mr. J. Didelot (Mill Creek Generating Station)
Mr. K. Booker (Mill Creek Generating Station)
File Copy

Louisville Metro Air Pollution Control District

Permit Application and Renewal
Form AP-100A

Administrative Information

Deliver application to: Imber
701 W. Ormsby Ave.Suite 303
Louisville, KY 40203

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

In accordance with District regulation 2.03, section 1, you may not install, modify, or operate an affected facility unless a permit has been issued by the District. Please complete all requested information in this application and associated attachments. Incomplete applications may result in denial of issuing a permit to construct or operate the affected facility.

Type of Application

☐ **Construction** Proposed date to start construction: ☐ **Operating** ☒ **Renewal**

☐ **Update :** Date of original application submission: _____

Administrative Change : ☐ RO Change (pg. 5) ☐ Address/Contact information ☐ Owner or Operator

Modification/Revision : ☐ Major ☐ Minor

Source Category: ☒ Major (Title V) ☐ FEDOOP ☐ FEDOOP, STAR Exempt ☐ Minor

Date of application submission: 1/24/2019

To apply as an Exempt or Registered source, submit Form **AP-500A** rather than this form.

Source Information

Plant (Facility) name: Louisville Gas and Electric: Mill Creek Generating Station Plant ID: 0127

Plant street address: 14460 Dixie Highway

City: Louisville ZIP + 4: 40272

Primary Source Industrial Classification (SIC) No.: 4911 **OR** Primary NAICS No.: 221112

KY Secretary of State Organization number:

Nature of business: Generation of electricity for local and remote distribution

Nature of surrounding area: ☒ Residential ☒ Industrial ☐ Commercial ☐ Rural ☐ Urban

Applicant Information

Name: Joe Didelot Title: (if an individual) General Manager

Address: 14460 Dixie Highway

City: Louisville State: KY ZIP + 4: 40272

Applicant is: ☐ Owner ☐ Operator ☒ Owner & Operator ☐ Corporation/LLC ☐ LP

- **If the applicant is a Corporation or a Limited Liability Corporation, submit a copy of the current Certificate of Authority from the Kentucky Secretary of State.**
- **If the applicant is a Limited Partnership, submit a copy of the current Certificate of Limited Partnership from the Kentucky Secretary of State.**

☒ **Certificate has not changed since last submission on 02 / 16 /20 16 .** (a new certificate is not required.)

Applicants agent (if applicable):

Applicant or agent e-mail: Joe.Didelot@lge-ku.com Applicant or agent phone: 502-933-6559

Owner Information (same as applicant ☒)			
Name:		Title:	
Address:			
City:		State:	ZIP + 4:
e-mail:			Phone:

Operator Information (same as applicant ☒)			
Name:		Title:	
Address:			
City:		State:	ZIP + 4:
e-mail:			Phone:

Responsible Official (same as applicant ☐)					
Name:	Ralph Bowling	Title:	VP Power Production		
Address:	220 W. Main Street				
City:	Louisville	State:	KY	ZIP + 4:	40202
e-mail:	Ralph.Bowling@lge-ku.com			Phone:	

Environmental Contact (same as ☐ owner ☐ operator ☐ applicant)					
Name:	Brandan Burfict	Title:	Environmental Engineer		
Address:	220 W. Main Street				
City:	Louisville	State:	KY	ZIP + 4:	40202
e-mail:	Brandan.Burfict@lge-ku.com			Phone	502-627-2791

Correspondence				
General correspondence:	☐ owner	☐ operator	☒ environmental contact	☐ other (describe below)
Billing correspondence:	☐ owner	☐ operator	☒ environmental contact	☐ other (describe below)
Environmental correspondence:	☐ owner	☐ operator	☒ environmental contact	☐ other (describe below)

Brief description of project, or reason for application

Title V Permit 145-97-TV (R6) will be expiring on 7/31/2019. The permit application is for the renewal of Title v permit for the Mill Creek Generating Station.

Application Documents

Check all other forms which are attached as part of this application, indicating the number of copies, if multiple:

Forms marked with an ***** are **REQUIRED** from Title V sources submitting an operating or renewal application.
Forms marked with a **#** may also be required, depending on the Title V source's circumstances.

☒ AP-100B: Emission Unit Definition *	☐ AP-200A: Generic Process	☒ AP-300A: Generic Control Device
☒ AP-100C: Emission Data *	☐ AP-200B: Abrasive Blasting	☒ AP-300B: Baghouse (Fabric Filter)
☒ AP-100D: Stack Data *	☐ AP-200C: Grain Terminal	☒ AP-300C: Cyclone
☒ AP-100E: Emission Calculations *	☒ AP-200D: Silo/Storage Bin	☐ AP-300D: Settling Chamber
☐ AP-100F: Emission Summary	☒ AP-200E: Combustion Source	☒ AP-300E: Electrostatic Precipitator
☒ AP-100G: Alternate Operating Scenario *	☐ AP-200F: Crematory	☒ AP-300F: Chemical Scrubber
☒ AP-100H: Applicable Requirements *	☐ AP-200G: Printing Press Operation	☒ AP-300G: Reducing System (SCR, etc.)
☒ AP-100J: Compliance Monitoring *	☐ AP-200H: Surface Coating Operation	☐ AP-300H: Condenser
☒ AP-100K: Compliance Certification *	☒ AP-200J: Generator or Engine	☐ AP-300J: Liquid/Vapor Separator
☐ AP-100L: Compliance Schedule #	☐ AP-200K: Used Oil Heater	☐ AP-300K: Adsorption
☒ AP-100M: Risk Management Plan	☐ AP-200L: Hot Mix Asphalt	☐ AP-300L: Oxidizer or Afterburner
☒ AP-100N: Episode Standby Plan	☐ AP-200M: Dry Cleaning	☐ AP-300M: Flare
☒ AP-100P: Insignificant Activities #	☒ AP-200N: VOC Storage Tank	☐ AP-300N: Venturi Scrubber
☒ AP-150B: Production Rate *	☒ AP-200P: Solvent Metal Cleaning	
☐ AP-101X: Request for Temporary Exemption	☒ AP-200R: Cooling Tower	☐ AP-900B: Certified Progress Report #

Supporting Documents

Check other attachments which are part of this application:

- ☐ Process Flow Diagram (**Required** for **all** construction applications)
- ☒ Material Safety Data Sheets (MSDS)
- ☐ Calculations for Actual emissions (**Required for FEDOOP Renewals**)
- ☒ Stack Test Reports
- ☐ Claim of Confidentiality
- ☐ Other:

Filing Fee

The filing fee listed in the revision of APCD *Regulation 2.08 Schedule of Fees* in effect on the date of filing is due with the submittal of the application. Your application will not be acted upon until the fee is received. This fee is not required when updating facility information such as contacts or Responsible Officials.

☒ The appropriate filing fee is included with this application

Emission Information

Minor sources are not required to complete the Actual Emissions and Requested Limit columns of the following section. Minor sources may also leave the Potential Emissions column blank, but doing so may delay processing of this application. FEDOOP and Title V sources must complete this section of the application.

Reported emissions are: ☒ **plant-wide** ☐ **project**

Pollutant	Potential Emissions (tons/year)	Previous Year Actual Emissions (Required for FEDOOP renewals) (tons/year)	Requested Limit PSD/NSR, FEDOOP*, etc. (tons/year)
PM	153,992	1,199	
PM10	954	210	
CO	1,502	1,023	
NO_x	38,726	6,983	
SO_2	341,769	3,040	
Lead	17.32	0.10	
VOC	196	123	
Total HAP	6,722	35	
Single HAP			

* FEDOOP must have at least one requested limit.

Responsible Official Certification

The "Responsible Official" is the person in charge of a principal business function, or other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of that person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit. See District regulation 1.02, section 1.71 for a complete, detailed definition of Responsible Official.

Based on information and belief formed after reasonable inquiry, I certify that the statements and information in this document and all associated attachments are true, accurate, and complete.

BY:

Ralph Bowling
Typed or Printed Name of Signatory

1/17/19
Date

Ralph Bowling
Authorized Signature

VP Power Production
Title of Signatory

Louisville Metro Air Pollution Control District

Permit Application and Renewal
Form AP-100B

Emission Unit Definition

Mail application to:
850 Barret Avenue
Louisville, KY 40204
OR
e-mail to:
airpermits@louisvilleky.gov

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd

General Information

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of Submission:	1/24/2019		
Emission Unit Name:	Gasoline storage tank	Emission Unit ID:	IA1
SIC code:	4911	SCC code:	☒ Continuous ☐ Batch

Operating Schedule

		Hours / day	Days / week	Weeks / year	Seasonal Variation (%)	
Normal	(Mon-Fri)	24	5	52	Jan - Mar:	25
	(Sat-Sun)	24	2	52	Apr – Jun:	25
Maximum	(Mon-Fri)	24	5	52	Jul – Sep:	25
	(Sat-Sun)	24	2	52	Oct – Dec:	25

Emission Unit Definition

Process Description: stage I gasoline refueling station

Raw Materials: NA

Products: NA

Fuel Usage

	Emission Point #		Emission Point #	
	Primary Fuel	Secondary Fuel	Primary Fuel	Secondary Fuel
Fuel Type:				
Normal usage per year:				
Maximum usage per year:				

Emission Point Information

Emission Point #	Emission Point Description	Manufacturer	Model #	Maximum Rated Capacity	Date Installed (mm/dd/yy)	Control Equipment ID#	Stack ID #
E20	Gasoline Refueling Station			3000 gallons	1993		

Louisville Metro Air Pollution Control District

Permit Application and Renewal
Form AP-100B

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FAX: (502) 574-5137
www.louisvilleky.gov/apcd

General Information

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of Submission:	1/24/2019		
Emission Unit Name:	Parts Washer	Emission Unit ID:	IA2
SIC code:	4911	SCC code:	☒ Continuous ☐ Batch

Operating Schedule

		Hours / day	Days / week	Weeks / year	Seasonal Variation (%)	
Normal	(Mon-Fri)	24	5	52	Jan - Mar:	25
	(Sat-Sun)	24	2	52	Apr – Jun:	25
Maximum	(Mon-Fri)	24	5	52	Jul – Sep:	25
	(Sat-Sun)	24	2	52	Oct – Dec:	25

Emission Unit Definition

Process Description: Eight (8) Parts Washer

Raw Materials: NA

Products: NA

Fuel Usage

	Emission Point #		Emission Point #	
	Primary Fuel	Secondary Fuel	Primary Fuel	Secondary Fuel
Fuel Type:				
Normal usage per year:				
Maximum usage per year:				

Emission Point Information

Emission Point #	Emission Point Description	Manufacturer	Model #	Maximum Rated Capacity	Date Installed (mm/dd/yy)	Control Equipment ID#	Stack ID #
IE1- IE8	Parts Washer		Various				

Louisville Metro Air Pollution Control District

Permit Application and Renewal
Form AP-100B

Emission Unit Definition

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Louisville, KY 40204
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e-mail to:
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FAX: (502) 574-5137
www.louisvilleky.gov/apcd

General Information

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of Submission:	1/24/2019		
Emission Unit Name:	Emergency Generators	Emission Unit ID:	IA3
SIC code:	4911	SCC code:	☒ Continuous ☐ Batch

Operating Schedule

		Hours / day	Days / week	Weeks / year	Seasonal Variation (%)	
Normal	(Mon-Fri)	24	5	52	Jan - Mar:	25
	(Sat-Sun)	24	2	52	Apr – Jun:	25
Maximum	(Mon-Fri)	24	5	52	Jul – Sep:	25
	(Sat-Sun)	24	2	52	Oct – Dec:	25

Emission Unit Definition

Process Description: emergency generators

Raw Materials: NA

Products: NA

Fuel Usage

	Emission Point # 36		Emission Point # 37	
	Primary Fuel	Secondary Fuel	Primary Fuel	Secondary Fuel
Fuel Type:	Diesel		Diesel	
Normal usage per year:				
Maximum usage per year:	800 HP		800 HP	

Emission Point Information

Emission Point #	Emission Point Description	Manufacturer	Model #	Maximum Rated Capacity	Date Installed (mm/dd/yy)	Control Equipment ID#	Stack ID #
E36	Turning Gear Generator	Caterpillar	C18	800 HP	2007		
E37	FGD Quench Water	Caterpillar	3412		2007		
IE24	NG Generator	Kohler	60REZGB	105 HP	2018		

Louisville Metro Air Pollution Control District

Permit Application and Renewal
Form AP-100B

Emission Unit Definition

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General Information

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of Submission:	1/24/2019		
Emission Unit Name:	Fire Pump Engines	Emission Unit ID:	IA4
SIC code:	4911	SCC code:	☒ Continuous ☐ Batch

Operating Schedule

		Hours / day	Days / week	Weeks / year	Seasonal Variation (%)	
Normal	(Mon-Fri)	24	5	52	Jan - Mar:	25
	(Sat-Sun)	24	2	52	Apr – Jun:	25
Maximum	(Mon-Fri)	24	5	52	Jul – Sep:	25
	(Sat-Sun)	24	2	52	Oct – Dec:	25

Emission Unit Definition

Process Description: Fire Pump Engines

Raw Materials: NA

Products: NA

Fuel Usage

	Emission Point # IE9		Emission Point # IE10	
	Primary Fuel	Secondary Fuel	Primary Fuel	Secondary Fuel
Fuel Type:	Diesel		Diesel	
Normal usage per year:				
Maximum usage per year:	187 gallon fuel tank		300 gallon fuel tank	

Emission Point Information

Emission Point #	Emission Point Description	Manufacturer	Model #	Maximum Rated Capacity	Date Installed (mm/dd/yy)	Control Equipment ID#	Stack ID #
IE9	Fire Pump Engine	Clarke	JU4H-UFADY8	157 HP	2013		
IE10	Fire Pump Engine	Clarke	JU6H-UFADY58	183 HP	2013		

Louisville Metro Air Pollution Control District

Permit Application and Renewal
Form AP-100B

Emission Unit Definition

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FAX: (502) 574-5137
www.louisvilleky.gov/apcd

General Information

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of Submission:	1/24/2019		
Emission Unit Name:	Other insignificant activities	Emission Unit ID:	IA-OT
SIC code:	4911	SCC code:	☒ Continuous ☐ Batch

Operating Schedule

		Hours / day	Days / week	Weeks / year	Seasonal Variation (%)	
Normal	(Mon-Fri)	24	5	52	Jan - Mar:	25
	(Sat-Sun)	24	2	52	Apr – Jun:	25
Maximum	(Mon-Fri)	24	5	52	Jul – Sep:	25
	(Sat-Sun)	24	2	52	Oct – Dec:	25

Emission Unit Definition

Process Description: Other insignificant activities

Raw Materials: NA

Products: NA

Fuel Usage

	Emission Point #		Emission Point #	
	Primary Fuel	Secondary Fuel	Primary Fuel	Secondary Fuel
Fuel Type:				
Normal usage per year:				
Maximum usage per year:				

Emission Point Information

Emission Point #	Emission Point Description	Manufacturer	Model #	Maximum Rated Capacity	Date Installed (mm/dd/yy)	Control Equipment ID#	Stack ID #
IE11	Lubricating Oil Tanks			Various	Various		
IE12	1000 gallon storage tank			1000 gallons			
IE13	kerosene storage tank						
IE14	Cooling towers for U2 and U3						
IE15	Gypsum Handling			NA	Various		
IE16	Gypsum Dewatering System			NA	2018		
IE17	Bottom/Fly Ash Storage Silo			325 tph	2018		S30
IE18	Bottom/Fly Ash Storage Silo			325 tph	2018		S31
IE19	Pug Mill Mixer			200 tph	2018		
IE20	Pug Mill Mixer			200 tph	2018		
IE21	Pug Mill Mixer			200 tph	2018		
IE22	Pug Mill Mixer			200 tph	2018		
IE23	Process Water System			NA	2019		S32a-b

Louisville Metro Air Pollution Control District

Permit Application and Renewal
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FAX: (502) 574-5137
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General Information

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of Submission:	1/24/2019		
Emission Unit Name:	Electric Utility Steam Generating Unit (EGU) – Unit 1	Emission Unit ID:	U1
SIC code:	4911	SCC code:	☒ Continuous ☐ Batch

Operating Schedule

		Hours / day	Days / week	Weeks / year	Seasonal Variation (%)	
Normal	(Mon-Fri)	24	5	52	Jan - Mar:	25
	(Sat-Sun)	24	2	52	Apr – Jun:	25
Maximum	(Mon-Fri)	24	5	52	Jul – Sep:	25
	(Sat-Sun)	24	2	52	Oct – Dec:	25

Emission Unit Definition

Process Description: Combustion of fuel in an indirect-fired heat exchanger to produce steam. Steam produced turns the turbine to produce electricity.

Raw Materials: Fossil Fuels

Products: Electricity

Fuel Usage

	Emission Point # E1		Emission Point #	
	Primary Fuel	Secondary Fuel	Primary Fuel	Secondary Fuel
Fuel Type:	Fossil Fuel	Natural Gas		
Normal usage per year:	899,069 tons	52 MMscf		
Maximum usage per year:	1,171,801 tons	73		

Emission Point Information

Emission Point #	Emission Point Description	Manufacturer	Model #	Maximum Rated Capacity	Date Installed (mm/dd/yy)	Control Equipment ID#	Stack ID #
E1	Unit 1 Boiler	Combustion Engineering	Tangentially-Fired Controlled Circ	3,085	May 1970	C1,C26, C27	S33
E2	Unit 1 Coal Silo	Fisher-Klosterman	XQ340-13	2,700 CFM	July 2004	C3	S5

Louisville Metro Air Pollution Control District

Permit Application and Renewal
Form AP-100B

Emission Unit Definition

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FAX: (502) 574-5137
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General Information

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of Submission:	1/24/2019		
Emission Unit Name:	Electric Utility Steam Generating Unit (EGU) – Unit 2	Emission Unit ID:	U2
SIC code:	4911	SCC code:	☒ Continuous ☐ Batch

Operating Schedule

		Hours / day	Days / week	Weeks / year	Seasonal Variation (%)	
Normal	(Mon-Fri)	24	5	52	Jan - Mar:	25
	(Sat-Sun)	24	2	52	Apr – Jun:	25
Maximum	(Mon-Fri)	24	5	52	Jul – Sep:	25
	(Sat-Sun)	24	2	52	Oct – Dec:	25

Emission Unit Definition

Process Description: Combustion of fuel in an indirect-fired heat exchanger to produce steam. Steam produced turns the turbine to produce electricity.

Raw Materials: Fossil Fuels

Products: Electricity

Fuel Usage

	Emission Point # E3		Emission Point #	
	Primary Fuel	Secondary Fuel	Primary Fuel	Secondary Fuel
Fuel Type:	Fossil Fuel	Natural Gas		
Normal usage per year:	896,263 tons	18 MMscf		
Maximum usage per year:	1,171,801 tons	25 MMscf		

Emission Point Information

Emission Point #	Emission Point Description	Manufacturer	Model #	Maximum Rated Capacity	Date Installed (mm/dd/yy)	Control Equipment ID#	Stack ID #
E3	Unit 2 Boiler	Combustion Engineering	Tangentially-Fired Controlled Circ	3,085	Aug 1970	C4,C27,C29	S33
E4	Unit 2 Coal Silos	American Air Filter	Type D Rotoclone AAF/No 16	6,000 CFM	Aug 1970	C6	S6

Louisville Metro Air Pollution Control District

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Emission Unit Definition

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General Information

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of Submission:	1/24/2019		
Emission Unit Name:	Electric Utility Steam Generating Unit (EGU) – Unit 3	Emission Unit ID:	U3
SIC code:	4911	SCC code:	☒ Continuous ☐ Batch

Operating Schedule

		Hours / day	Days / week	Weeks / year	Seasonal Variation (%)	
Normal	(Mon-Fri)	24	5	52	Jan - Mar:	25
	(Sat-Sun)	24	2	52	Apr – Jun:	25
Maximum	(Mon-Fri)	24	5	52	Jul – Sep:	25
	(Sat-Sun)	24	2	52	Oct – Dec:	25

Emission Unit Definition

Process Description: Combustion of fuel in an indirect-fired heat exchanger to produce steam. Steam produced turns the turbine to produce electricity.

Raw Materials: Fossil Fuels

Products: Electricity

Fuel Usage

	Emission Point # E5		Emission Point #	
	Primary Fuel	Secondary Fuel	Primary Fuel	Secondary Fuel
Fuel Type:	Fossil Fuel	Natural Gas		
Normal usage per year:	1,211,152 tons	177 MMscf		
Maximum usage per year:	1,596,840 tons	221 MMscf		

Emission Point Information

Emission Point #	Emission Point Description	Manufacturer	Model #	Maximum Rated Capacity	Date Installed (mm/dd/yy)	Control Equipment ID#	Stack ID #
E5	Unit 3 Boiler	Babcock & Wilcox	Natural Circulation Wall-Fired	4,204 MMBtu/hr	May 1973	C7, C22, C29, C39	S4
E6	Unit 3 Coal Silos	American Air Filter	Type D Rotoclone AAF/No 16	6,000 CFM	May 1973	C9	S7

Louisville Metro Air Pollution Control District

Permit Application and Renewal
Form AP-100B

Emission Unit Definition

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General Information

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of Submission:	1/24/2019		
Emission Unit Name:	Electric Utility Steam Generating Unit (EGU) – Unit 4	Emission Unit ID:	U4
SIC code: 4911	SCC code:	☒ Continuous	☐ Batch

Operating Schedule

		Hours / day	Days / week	Weeks / year	Seasonal Variation (%)	
Normal	(Mon-Fri)	24	5	52	Jan - Mar:	25
	(Sat-Sun)	24	2	52	Apr – Jun:	25
Maximum	(Mon-Fri)	24	5	52	Jul – Sep:	25
	(Sat-Sun)	24	2	52	Oct – Dec:	25

Emission Unit Definition

Process Description: Combustion of fuel in an indirect-fired heat exchanger to produce steam. Steam produced turns the turbine to produce electricity.

Raw Materials: Fossil Fuels

Products: Electricity

Fuel Usage

	Emission Point # E7		Emission Point #	
	Primary Fuel	Secondary Fuel	Primary Fuel	Secondary Fuel
Fuel Type:	Fossil Fuel	Natural Gas		
Normal usage per year:	1,416,953 tons	210 MMscf		
Maximum usage per year:	1,908,688 tons	262 MMscf		

Emission Point Information

Emission Point #	Emission Point Description	Manufacturer	Model #	Maximum Rated Capacity	Date Installed (mm/dd/yy)	Control Equipment ID#	Stack ID #
E7	Unit 4 Boiler	Babcock & Wilcox	Natural Circulation Wall-Fired	5,025 MMBtu/hr	May 1975	C10,C23, C30, C31	S34
E8	Unit 4 Coal Silos	American Air Filter	Type D Rotoclone AAF/No 16	6,000 CFM	May 1975	C12	S8

Louisville Metro Air Pollution Control District

Permit Application and Renewal
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FAX: (502) 574-5137
www.louisvilleky.gov/apcd

General Information

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of Submission:	1/24/2019		
Emission Unit Name:	Fly ash storage & Handling unit	Emission Unit ID:	U8
SIC code:	4911	SCC code:	☒ Continuous ☐ Batch

Operating Schedule

		Hours / day	Days / week	Weeks / year	Seasonal Variation (%)	
Normal	(Mon-Fri)	24	5	52	Jan - Mar:	25
	(Sat-Sun)	24	2	52	Apr – Jun:	25
Maximum	(Mon-Fri)	24	5	52	Jul – Sep:	25
	(Sat-Sun)	24	2	52	Oct – Dec:	25

Emission Unit Definition

Process Description: Flyash is stored and transfer via truck, rail, or conveyor offsite or onsite at the facilty's landfill.

Raw Materials: NA

Products: NA

Fuel Usage

	Emission Point #		Emission Point #	
	Primary Fuel	Secondary Fuel	Primary Fuel	Secondary Fuel
Fuel Type:				
Normal usage per year:				
Maximum usage per year:				

Emission Point Information

Emission Point #	Emission Point Description	Manufacturer	Model #	Maximum Rated Capacity	Date Installed (mm/dd/yy)	Control Equipment ID#	Stack ID #
E13	Fly Ash Silo A	Flex Kleen	120	75 tph	8-1978	C15	S13
E13	Fly Ash Silo B	Wheelabrator	Jet III	47.5 tph	8-1978	C16	S14
E31	Fly Ash Dry Load Out	DCL		80.5 tph	4-2005	C37,C38	S42, S43
E32	Rail Car Load out	Stephens Mfg		42.9 tph	4-2005; 2/2007	C24,C25	S22,S23
E33	Fly Ash Wet Load Out	Conveying Technologies	9931868 -2A	150 tph	1998		

Louisville Metro Air Pollution Control District

Permit Application and Renewal
Form AP-100B

Emission Unit Definition

Mail application to:
850 Barret Avenue
Louisville, KY 40204
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e-mail to:
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(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd

General Information

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of Submission:	1/24/2019		
Emission Unit Name:	Fly ash transfer bin	Emission Unit ID:	U9
SIC code:	4911	SCC code:	☒ Continuous ☐ Batch

Operating Schedule

		Hours / day	Days / week	Weeks / year	Seasonal Variation (%)	
Normal	(Mon-Fri)	24	5	52	Jan - Mar:	25
	(Sat-Sun)	24	2	52	Apr – Jun:	25
Maximum	(Mon-Fri)	24	5	52	Jul – Sep:	25
	(Sat-Sun)	24	2	52	Oct – Dec:	25

Emission Unit Definition

Process Description: Flyash is stored and transfer via conveyor to fly ash silos

Raw Materials: NA

Products: NA

Fuel Usage

	Emission Point #		Emission Point #	
	Primary Fuel	Secondary Fuel	Primary Fuel	Secondary Fuel
Fuel Type:				
Normal usage per year:				
Maximum usage per year:				

Emission Point Information

Emission Point #	Emission Point Description	Manufacturer	Model #	Maximum Rated Capacity	Date Installed (mm/dd/yy)	Control Equipment ID#	Stack ID #
E16	Unit 1 and 2 Fly Ash Transfer Bin			80.5	1978	C19	S17, S24, S25
E17	Unit 3 Fly Ash Transfer Bin			80.5	1978	C20	S18, S26, S27
E18	Unit 4 Fly Ash Transfer Bin			80.5	1978	C21	S19, S28, S29

Louisville Metro Air Pollution Control District

Permit Application and Renewal
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General Information

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of Submission:	1/24/2019		
Emission Unit Name:	Limestone processing operation	Emission Unit ID:	U12
SIC code:	4911	SCC code:	☒ Continuous ☐ Batch

Operating Schedule

		Hours / day	Days / week	Weeks / year	Seasonal Variation (%)	
Normal	(Mon-Fri)	24	5	52	Jan - Mar:	25
	(Sat-Sun)	24	2	52	Apr – Jun:	25
Maximum	(Mon-Fri)	24	5	52	Jul – Sep:	25
	(Sat-Sun)	24	2	52	Oct – Dec:	25

Emission Unit Definition

Process Description: Material handling of limestone

Raw Materials: NA

Products: NA

Fuel Usage

	Emission Point #		Emission Point #	
	Primary Fuel	Secondary Fuel	Primary Fuel	Secondary Fuel
Fuel Type:				
Normal usage per year:				
Maximum usage per year:				

Emission Point Information

Emission Point #	Emission Point Description	Manufacturer	Model #	Maximum Rated Capacity	Date Installed (mm/dd/yy)	Control Equipment ID#	Stack ID #
E24	Barge Unloading			750 tph	1999		
E25	Transfer Point from conveyor to Storage pile			1000 tph	1999		
E26	Transfer Point from hopper to LA conveyor			1000 tph	1999		
E27	Transfer Point from LA conveyor to LB conveyor			1000 tph	1999		
E28	Limestone crushers			100 tph	2001; 2002		

Louisville Metro Air Pollution Control District

Permit Application and Renewal
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General Information

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of Submission:	1/24/2019		
Emission Unit Name:	Haul Roads	Emission Unit ID:	U15
SIC code:	4911	SCC code:	☒ Continuous ☐ Batch

Operating Schedule

		Hours / day	Days / week	Weeks / year	Seasonal Variation (%)	
Normal	(Mon-Fri)	24	5	52	Jan - Mar:	25
	(Sat-Sun)	24	2	52	Apr – Jun:	25
Maximum	(Mon-Fri)	24	5	52	Jul – Sep:	25
	(Sat-Sun)	24	2	52	Oct – Dec:	25

Emission Unit Definition

Process Description: Paved and Unpaved Roads

Raw Materials: NA

Products: NA

Fuel Usage

	Emission Point #		Emission Point #	
	Primary Fuel	Secondary Fuel	Primary Fuel	Secondary Fuel
Fuel Type:				
Normal usage per year:				
Maximum usage per year:				

Emission Point Information

Emission Point #	Emission Point Description	Manufacturer	Model #	Maximum Rated Capacity	Date Installed (mm/dd/yy)	Control Equipment ID#	Stack ID #
E39a	Paved Roads		NA	NA	NA		
E39b	Unpaved Roads		NA	NA	NA		

Louisville Metro Air Pollution Control District

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General Information

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of Submission:	1/24/2019		
Emission Unit Name:	Sorbent Storage Silos	Emission Unit ID:	U16
SIC code:	4911	SCC code:	☒ Continuous ☐ Batch

Operating Schedule

		Hours / day	Days / week	Weeks / year	Seasonal Variation (%)	
Normal	(Mon-Fri)	24	5	52	Jan - Mar:	25
	(Sat-Sun)	24	2	52	Apr – Jun:	25
Maximum	(Mon-Fri)	24	5	52	Jul – Sep:	25
	(Sat-Sun)	24	2	52	Oct – Dec:	25

Emission Unit Definition

Process Description: sorbent storage silos

Raw Materials: NA

Products: NA

Fuel Usage

	Emission Point #		Emission Point #	
	Primary Fuel	Secondary Fuel	Primary Fuel	Secondary Fuel
Fuel Type:				
Normal usage per year:				
Maximum usage per year:				

Emission Point Information

Emission Point #	Emission Point Description	Manufacturer	Model #	Maximum Rated Capacity	Date Installed (mm/dd/yy)	Control Equipment ID#	Stack ID #
E40a-E40h	Sorbent Silos	BCSI	BCSI-14	120 tons	2012	C32a-C32h	S35a-S35h

Louisville Metro Air Pollution Control District

Permit Application and Renewal
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General Information

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of Submission:	1/24/2019		
Emission Unit Name:	PAC Storage Silos	Emission Unit ID:	U17
SIC code:	4911	SCC code:	☒ Continuous ☐ Batch

Operating Schedule

		Hours / day	Days / week	Weeks / year	Seasonal Variation (%)	
Normal	(Mon-Fri)	24	5	52	Jan - Mar:	25
	(Sat-Sun)	24	2	52	Apr – Jun:	25
Maximum	(Mon-Fri)	24	5	52	Jul – Sep:	25
	(Sat-Sun)	24	2	52	Oct – Dec:	25

Emission Unit Definition

Process Description: PAC storage silos

Raw Materials: NA

Products: NA

Fuel Usage

	Emission Point #		Emission Point #	
	Primary Fuel	Secondary Fuel	Primary Fuel	Secondary Fuel
Fuel Type:				
Normal usage per year:				
Maximum usage per year:				

Emission Point Information

Emission Point #	Emission Point Description	Manufacturer	Model #	Maximum Rated Capacity	Date Installed (mm/dd/yy)	Control Equipment ID#	Stack ID #
E41a-E41f	PAC Silos	BCSI	BCSI-14	94 tons	2012	C32a-C32h	S36a-S36f

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General Information

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of Submission:	1/24/2019		
Emission Unit Name:	Fly Ash Storage Silos	Emission Unit ID:	U18
SIC code:	4911	SCC code:	☒ Continuous ☐ Batch

Operating Schedule

		Hours / day	Days / week	Weeks / year	Seasonal Variation (%)	
Normal	(Mon-Fri)	24	5	52	Jan - Mar:	25
	(Sat-Sun)	24	2	52	Apr – Jun:	25
Maximum	(Mon-Fri)	24	5	52	Jul – Sep:	25
	(Sat-Sun)	24	2	52	Oct – Dec:	25

Emission Unit Definition

Process Description: Fly Ash storage silos for PJFF units

Raw Materials: NA

Products: NA

Fuel Usage

	Emission Point #		Emission Point #	
	Primary Fuel	Secondary Fuel	Primary Fuel	Secondary Fuel
Fuel Type:				
Normal usage per year:				
Maximum usage per year:				

Emission Point Information

Emission Point #	Emission Point Description	Manufacturer	Model #	Maximum Rated Capacity	Date Installed (mm/dd/yy)	Control Equipment ID#	Stack ID #
E42	Fly Ash Silo	Marietta Silos	Concrete Field	3,620 tons	2012	C34	S37

Louisville Metro Air Pollution Control District

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General Information

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of Submission:	1/24/2019		
Emission Unit Name:	Unit 4 Cooling Tower	Emission Unit ID:	U19
SIC code:	4911	SCC code:	☒ Continuous ☐ Batch

Operating Schedule

		Hours / day	Days / week	Weeks / year	Seasonal Variation (%)	
Normal	(Mon-Fri)	24	5	52	Jan - Mar:	25
	(Sat-Sun)	24	2	52	Apr – Jun:	25
Maximum	(Mon-Fri)	24	5	52	Jul – Sep:	25
	(Sat-Sun)	24	2	52	Oct – Dec:	25

Emission Unit Definition

Process Description: One cooling tower

Raw Materials: NA

Products: NA

Fuel Usage

	Emission Point #		Emission Point #	
	Primary Fuel	Secondary Fuel	Primary Fuel	Secondary Fuel
Fuel Type:	NA			
Normal usage per year:				
Maximum usage per year:				

Emission Point Information

Emission Point #	Emission Point Description	Manufacturer	Model #	Maximum Rated Capacity	Date Installed (mm/dd/yy)	Control Equipment ID#	Stack ID #
E38	Unit 4 Cooling Tower	Zurn	12Z-3300	222,600	1982	NA	NA

Louisville Metro Air Pollution Control District

Permit Application and Renewal
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General Information

Plant Name:	Louisville Gas & Eletric Company, Mill Creek Generating Station			Plant ID:	0127
Date of Submission:	1/24/2019				
Emission Unit Name:	Gypsum Pelletizing Plant			Emission Unit ID:	U20
SIC code:	4911	SCC code:	221112	☒ Continuous	☐ Batch

Operating Schedule

		Hours / day	Days / week	Weeks / year	Seasonal Variation (%)	
Normal	(Mon-Fri)	24	5	52	Jan - Mar:	25
	(Sat-Sun)	24	2	52	Apr – Jun:	25
Maximum	(Mon-Fri)	24	5	52	Jul – Sep:	25
	(Sat-Sun)	24	2	52	Oct – Dec:	25

Emission Unit Definition

Process Description: The raw gypsum is received, pelletized and so commerically

Raw Materials: Gpysum

Products: Pelletized Gypsum

Fuel Usage

	Emission Point # 45		Emission Point # 46	
	Primary Fuel	Secondary Fuel	Primary Fuel	Secondary Fuel
Fuel Type:	NG		NG	
Normal usage per year:				
Maximum usage per year:	Combined - 42 MMBtu/hr		Combined - 42 MMBtu/hr	

Emission Point Information

Emission Point #	Emission Point Description	Manufacturer	Model #	Maximum Rated Capacity	Date Installed (mm/dd/yy)	Control Equipment ID#	Stack ID #
E44-a	Load hopper			50 tph	Fall 2012	C36	S39
E44-b	Conveyor			NA	Fall 2012	C36	S39
E44-c	Dispersion Dryer	Allgaier		NA	Fall 2012	NA	NA
E44-d	Pneumatic conveyor			NA	Fall 2012	NA	NA
E44-e	Load Hopper			50 tph	Fall 2012	NA	NA
E44-f	rotary airlock conveyor			NA	Fall 2012	NA	NA
E44-g	Pin Mixer			NA	Fall 2012	NA	NA
E44-h	Belt Conveyor			NA	Fall 2012	NA	NA
E44-i	Disc pelletizer			NA	Fall 2012	NA	NA
E44-j	Belt Conveyor			NA	Fall 2012	NA	NA
E44-k	Vibrating Fluid Bed Dryer	Allgaier		NA	Fall 2012	NA	NA
E44-l	Sizer/Screener	Mogensen		NA	Fall 2012	NA	NA
E44-m	Belt Conveyor			NA	Fall 2012	NA	NA
E44-n	Hammer Mill			NA	Fall 2012	NA	NA
E44-o	Limestone silo			NA	Fall 2012	NA	NA

Louisville Metro Air Pollution Control District

Permit Application and Renewal
Form AP-100B

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General Information

Plant Name:	Louisville Gas & Eletric Company, Mill Creek Generating Station			Plant ID:	0127
Date of Submission:	1/24/2019				
Emission Unit Name:	Gypsum Pelletizing Plant			Emission Unit ID:	U20
SIC code:	4911	SCC code:	221112	☒ Continuous	☐ Batch

Operating Schedule

		Hours / day	Days / week	Weeks / year	Seasonal Variation (%)	
Normal	(Mon-Fri)	24	5	52	Jan - Mar:	25
	(Sat-Sun)	24	2	52	Apr – Jun:	25
Maximum	(Mon-Fri)	24	5	52	Jul – Sep:	25
	(Sat-Sun)	24	2	52	Oct – Dec:	25

Emission Unit Definition

Process Description: The raw gypsum is received, pelletized and so commerically

Raw Materials: Gpysum

Products: Pelletized Gypsum

Fuel Usage

	Emission Point # 45		Emission Point # 46	
	Primary Fuel	Secondary Fuel	Primary Fuel	Secondary Fuel
Fuel Type:	NG		NG	
Normal usage per year:				
Maximum usage per year:	Combined - 42 MMBtu/hr		Combined - 42 MMBtu/hr	

Emission Point Information

Emission Point #	Emission Point Description	Manufacturer	Model #	Maximum Rated Capacity	Date Installed (mm/dd/yy)	Control Equipment ID#	Stack ID #
E44-p	De-Dusting System				Fall 2012		NA
E45	Dispersion Dryer	Allgaier		Combined - 42 MMBtu/hr	Fall 2012		S40
E46	Vibrating Fluid Bed Dryer	Allgaier		Combined - 42 MMBtu/hr	Fall 2012		S41

Louisville Metro Air Pollution Control District

Permit Application and Renewal
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General Information

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of Submission:	1/24/2019		
Emission Unit Name:	Coal Handling Facilities	Emission Unit ID:	U21
SIC code:	4911	SCC code:	☒ Continuous ☐ Batch

Operating Schedule

		Hours / day	Days / week	Weeks / year	Seasonal Variation (%)	
Normal	(Mon-Fri)	24	5	52	Jan - Mar:	25
	(Sat-Sun)	24	2	52	Apr – Jun:	25
Maximum	(Mon-Fri)	24	5	52	Jul – Sep:	25
	(Sat-Sun)	24	2	52	Oct – Dec:	25

Emission Unit Definition

Process Description: Material handling of coal

Raw Materials: NA

Products: NA

Fuel Usage

	Emission Point #		Emission Point #	
	Primary Fuel	Secondary Fuel	Primary Fuel	Secondary Fuel
Fuel Type:				
Normal usage per year:				
Maximum usage per year:				

Emission Point Information

Emission Point #	Emission Point Description	Manufacturer	Model #	Maximum Rated Capacity	Date Installed (mm/dd/yy)	Control Equipment ID#	Stack ID #
E47-a	Barge Unloading			1500 tph	1980		NA
E47-b	Railcar Unloading			2400 tph	1971		NA
E47-c	Coal Radial Stacker			1500 tph	1971		NA
E47-d	Coal Crushers			900 tph	2014		NA
E47-e1-16	Coal belt conveyors			750 tph; 2400 tph	1971		NA
E47-f	Coal Storage pile				1971		NA
E47-g	Fuel Additive Facility			NA	TBD		NA

Louisville Metro Air Pollution Control District

Permit Application and Renewal
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General Information

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of Submission:	1/24/2019		
Emission Unit Name:	Landfill	Emission Unit ID:	U22
SIC code:	4911	SCC code:	☒ Continuous ☐ Batch

Operating Schedule

		Hours / day	Days / week	Weeks / year	Seasonal Variation (%)	
Normal	(Mon-Fri)	24	5	52	Jan - Mar:	25
	(Sat-Sun)	24	2	52	Apr – Jun:	25
Maximum	(Mon-Fri)	24	5	52	Jul – Sep:	25
	(Sat-Sun)	24	2	52	Oct – Dec:	25

Emission Unit Definition

Process Description: Landfill haul roads and wind erosion

Raw Materials: NA

Products: NA

Fuel Usage

	Emission Point #		Emission Point #	
	Primary Fuel	Secondary Fuel	Primary Fuel	Secondary Fuel
Fuel Type:				
Normal usage per year:				
Maximum usage per year:				

Emission Point Information

Emission Point #	Emission Point Description	Manufacturer	Model #	Maximum Rated Capacity	Date Installed (mm/dd/yy)	Control Equipment ID#	Stack ID #
E48-a	Landfill Haul Roads			NA			NA
E48-b	Landfill Drop Points			NA			NA
E48-c	Landfill Wind Erosion			NA			NA

Louisville Metro Air Pollution Control District

Permit Application and Renewal
Form AP-100C

Emission Data

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Plant Name: Louisville Gas and Electric - Mill Creek Generating Station	Plant ID: 0127
Date of submission: 1/24/2019	

Emission Information

Emission Point: E20 Emission Point Description: Gasoline storage tank

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)
VOC	NA				7.15, Sec 3		Y
VOc	NA			10000 gals/month	6.40. Sec 1.1		Y

Emission Point: Emission Point Description:

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)

Emission Point: Emission Point Description:

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)

Emission Point: Emission Point Description:

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)

Louisville Metro Air Pollution Control District

Permit Application and Renewal
Form AP-100C

Emission Data

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Plant Name: Louisville Gas and Electric - Mill Creek Generating Station   Plant ID: 0127

Date of submission: 1/24/2019

Emission Information

Emission Point: IE1-8   Emission Point Description: Parts Washer

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)
VOC	NA		3	NA	6.18		Y

Emission Point: Emission Point Description:

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)

Emission Point: Emission Point Description:

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)

Emission Point: Emission Point Description:

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)

Louisville Metro Air Pollution Control District

Permit Application and Renewal
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Plant Name: Louisville Gas and Electric - Mill Creek Generating Station Plant ID: 0127

Date of submission: 1/24/2019

Emission Information

Emission Point: E36 Emission Point Description: Turning Gear Generator

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)
HAP			3	EPA certified	Subpart ZZZZ, Subpart III		Y

Emission Point: E37 Emission Point Description: FGD Quench Generator

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)
HAP			3	EPA certified	Subpart ZZZZ		Y

Emission Point: IE24 Emission Point Description: NG-Fired Emergency Generator

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)
HAP			3	EPA certified	Subpart ZZZZ, Subpart JJJJ		Y

Emission Point: Emission Point Description:

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)

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Plant Name: Louisville Gas and Electric - Mill Creek Generating Station   Plant ID: 0127

Date of submission: 1/24/2019

Emission Information

Emission Point: IE9-10   Emission Point Description: Fire Pump Engine

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)
HAP		NA	3	EPA certified	Subpart ZZZZ, Subpart III		Y
SO2			3	fuel contains <15 ppm of sulfur	Subpart ZZZZ, Subpart III		Y

Emission Point: Emission Point Description:

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)

Emission Point: Emission Point Description:

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)

Emission Point: Emission Point Description:

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)

Louisville Metro Air Pollution Control District

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Plant Name: Louisville Gas and Electric - Mill Creek Generating Station Plant ID: 0127

Date of submission: 1/24/2019

Emission Information

Emission Point: IE14 Emission Point Description: Cooling Towers

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)
PM		3.15 ton/yr	3	93.4 lb/hr	7.08,3.1.2		Y
PM		3.35 ton/yr	3	98.2 lb/hr	7.08,3.1.2		Y

Emission Point: IE15 Emission Point Description: Gypsum Handling Equipment

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)
PM		4.65 ton/yr	3	36.2 lb/hr	7.08,3.1.2		Y

Emission Point: IE16 Emission Point Description: Gypsum Dewatering System

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)
PM		0.49 ton/yr	3	30.1 lb/hr	7.08,3.1.2		Y

Emission Point: IE17-18 Emission Point Description: Ash Storage Silos

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)
PM		2.33 ton/yr	3	43.7 lb/hr	7.08,3.1.2		Y

Louisville Metro Air Pollution Control District

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Plant Name: Louisville Gas and Electric - Mill Creek Generating Station Plant ID: 0127

Date of submission: 1/24/2019

Emission Information

Emission Point: IE19-20 Emission Point Description: Pug Mill Mixers

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)
PM		5.4 ton/yr	3	40.41 lb/hr	7.08,3.1.2		Y

Emission Point: IE23a-b Emission Point Description: Hydrated Lime Silo

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)
PM		0.55 ton/yr	3	14.97 lb/hr	7.08,3.1.2		Y

Emission Point: IE23c-d Emission Point Description: PWS Handling

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)
PM		.00355 ton/yr	3	23 lb/hr	7.08,3.1.2		Y

Emission Point: IE14-23 Emission Point Description: IA-OT

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)
Opacity	NA	NA	NA	20%	7.08,3.1.2		Y
VOC			3	<1.5 psia	7.12,3.3		Y

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Plant Name: Louisville Gas and Electric - Mill Creek Generating Station Plant ID: 0127

Date of submission: 1/24/2019

Emission Information

Emission Point: E1 Emission Point Description: Unit 1 Boiler

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)
Particulate Matter	NA		3	0.11 lb/MMBtu	6.02, Sec 3.1		Y
Sulfur Dioxide	7446-09-5		3	1.2 lb/MMBtu	6.07, Sec 4.1		Y
Nitrogen Oxides (1hr avg)	NA		3	0.45 lb/MMBtu	6.47, Sec 3.5		Y
Nitrogen Oxides (30 day rolling avg)	NA		3	0.47 lb/MMBtu	6.42, Sec 4.3		Y

Emission Point: E1 Emission Point Description: Unit 1 Boiler

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)
VOC	NA		3	NA			
Carbon Monoxide	630-08-0		3	NA			

Emission Point: E2 Emission Point Description: Unit 1Coal Silo

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)
Particulate Matter			3	82.95 lb/hr	6.09, Sec 3.2		Y
Sulfur Dioxide	7446-09-5		3	NA			N
Nitrogen Oxides			3	NA			N
VOC			3	NA			N

Emission Point: E2 Emission Point Description: Unit 1 Fossil Fuel Silo Dust Collector

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)
Carbon Monoxide	630-08-0		3	NA			N

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Plant Name: Louisville Gas and Electric - Mill Creek Generating Station Plant ID: 0127

Date of submission: 1/24/2019

Emission Information

Emission Point: E3 Emission Point Description: Unit 2 Boiler

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)
Particulate Matter	NA		3	0.11 lb/MMBtu	6.02, Sec 3.1		Y
Sulfur Dioxide	7446-09-5		3	1.2 lb/MMBtu	6.07, Sec 4.1		Y
Nitrogen Oxides (1hr avg)	NA		3	0.45 lb/MMBtu	6.47, Sec 3.5		Y
Nitrogen Oxides (30 day rolling avg)	NA		3	0.47 lb/MMBtu	6.42, Sec 4.3		Y

Emission Point: E3 Emission Point Description: Unit 2 Boiler

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)
VOC	NA		3	NA			
Carbon Monoxide	630-08-0		3	NA			

Emission Point: E4 Emission Point Description: Unit 2 Coal Silo

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)
Particulate Matter			3	82.95 lb/hr	6.09, Sec 3.2		Y
Sulfur Dioxide	7446-09-5		3	NA			N
Nitrogen Oxides			3	NA			N
VOC			3	NA			N

Emission Point: E4 Emission Point Description: Unit 2 Coal Silo

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)
Carbon Monoxide	630-08-0		3	NA			N

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Plant Name: Louisville Gas and Electric - Mill Creek Generating Station Plant ID: 0127

Date of submission: 1/24/2019

Emission Information

Emission Point: E5 Emission Point Description: Unit 3 Boiler

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)
Particulate Matter	NA		3	0.10 lb/MMBtu	7.06, Sec 4.1.2		Y
Sulfur Dioxide	7446-09-5		3	1.2 lb/MMBtu	7.06, Sec 5.1.2		Y
Nitrogen Oxides (1hr avg)	NA		3	0.50 lb/MMBtu	6.47, Sec 3.5		Y
Nitrogen Oxides (30 day rolling avg)	NA		3	0.52 lb/MMBtu	6.42, Sec 4.3		Y

Emission Point: E5 Emission Point Description: Unit 3 Boiler

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)
VOC	NA		3	NA			
Carbon Monoxide	630-08-0		3	NA			

Emission Point: E6 Emission Point Description: Unit 3 Coal Silo

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)
Particulate Matter			3	82.95 lb/hr	6.09, Sec 3.2		Y
Sulfur Dioxide	7446-09-5		3	NA			N
Nitrogen Oxides			3	NA			N
VOC			3	NA			N

Emission Point: E6 Emission Point Description: Unit 3 Coal Silo

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)
Carbon Monoxide	630-08-0		3	NA			N

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Plant Name: Louisville Gas and Electric - Mill Creek Generating Station Plant ID: 0127

Date of submission: 1/24/2019

Emission Information

Emission Point: E7 Emission Point Description: Unit 4 Boiler

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)
Particulate Matter	NA		3	0.10 lb/MMBtu	7.06, Sec 4.1.2		Y
Sulfur Dioxide	7446-09-5		3	1.2 lb/MMBtu	7.06, Sec 5.1.2		Y
Nitrogen Oxides (1hr avg)	NA		3	0.50 lb/MMBtu	6.47, Sec 3.5		Y
Nitrogen Oxides (30 day rolling avg)	NA		3	0.52 lb/MMBtu	6.42, Sec 4.3		Y

Emission Point: E7 Emission Point Description: Unit 4 Boiler

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)
VOC	NA		3	NA			
Carbon Monoxide	630-08-0		3	NA			
Nitrogen Oxides (3hr rolling avg)				0.70 lb/MMBtu	7.06, Sec 6.1.3		

Emission Point: E6 Emission Point Description: Unit 4 Coal Silo

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)
Particulate Matter			3	82.95 lb/hr	6.09, Sec 3.2		Y
Sulfur Dioxide	7446-09-5		3	NA			N
Nitrogen Oxides			3	NA			N
VOC			3	NA			N

Emission Point: E6 Emission Point Description: Unit 4 Coal Silo

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)
Carbon Monoxide	630-08-0		3	NA			N

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Plant Name: Louisville Gas and Electric - Mill Creek Generating Station Plant ID: 0127

Date of submission: 1/24/2019

Emission Information

Emission Point: E13 Emission Point Description: Fly Ash Silo A and B

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)
Particulate Matter	NA	123 ton/yr	3	34.9 lb/hr	7.08, Sec 3.3		Y
Opacity	NA		3	20%	7.08, Sec 3.1.1		Y
TAC	NA		3	STAR limits	5.21, Sec 4.2-3		Y

Emission Point: E31 Emission Point Description: Fly Ash Dry Loadout

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)
Particulate Matter	NA	43.85 ton/yr	3	32.4 lb/hr	7.08, Sec 3.3		Y
Opacity	NA		3	20%	7.08, Sec 3.1.1		Y
TAC	NA		3	STAR limits	5.21, Sec 4.2-3		Y

Emission Point: E32 Emission Point Description: Railcar Loadout

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)
Particulate Matter	NA	32.95 ton/yr	3	30.9 lb/hr	7.08, Sec 3.3		Y
Opacity	NA		3	20%	7.08, Sec 3.1.1		Y
TAC	NA		3	STAR limits	5.21, Sec 4.2-3		Y

Emission Point: E33 Emission Point Description: Fly Ash Wet Loadout

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)
Particulate Matter	NA	16.21 ton/yr	3	38.6 lb/hr	7.08, Sec 3.3		Y
Opacity	NA			20%	7.08, Sec 3.1.1		Y
TAC	NA			STAR limits	5.21, Sec 4.2-3		Y

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Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of submission:	1/24/2019		

Emission Information

Emission Point: E16,17,19 Emission Point Description: Fly Ash Transfer Bin

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)
Particulate Matter	NA	75.75 ton/yr	3	34.9 lb/hr	7.08, Sec 3.3		Y
Opacity	NA		3	20%	7.08, Sec 3.1.1		Y
TAC	NA		3	STAR limits	5.21, Sec 4.2-3		Y

Emission Point: Emission Point Description:

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)

Emission Point: Emission Point Description:

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)

Emission Point: Emission Point Description:

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)

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Plant Name: Louisville Gas and Electric - Mill Creek Generating Station Plant ID: 0127

Date of submission: 1/24/2019

Emission Information

Emission Point: E24 Emission Point Description: Barge Unloading

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)
Particulate Matter	NA	66.39 ton/yr	3	49.9 lb/hr	7.08, Sec 3.1.2		Y
Opacity	NA			20%	7.08, Sec 3.1.1		Y

Emission Point: E25,26,27 Emission Point Description: Limestone Handling

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)
Particulate Matter	NA	265.57 ton/yr	3	52.3 lb/hr	7.08, Sec 3.1.2		Y
Opacity	NA			20%	7.08, Sec 3.1.1		Y
Opacity	NA			10%	Opacity		Y

Emission Point: E28 Emission Point Description: Limestone Ball Mill

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)
Particulate Matter	NA	.7621 ton/yr	3	31.8 lb/hr	7.08, Sec 3.1.2		Y
Opacity	NA			15%	40 CFR 60.672(b)		Y
Opacity	NA			12%	40 CFR 60.672(b)		Y

Emission Point: Emission Point Description:

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)

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Plant Name: Louisville Gas and Electric - Mill Creek Generating Station	Plant ID: 0127
Date of submission: 1/24/2019	

Emission Information

Emission Point: E38 Emission Point Description: Unit 4 Cooling Tower

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)
Particulate Matter	NA	9.32 ton/yr	3	97.9 lb/hr	7.08, Sec 3.1.2		Y
Opacity	NA			20%	7.08, Sec 3.1.1		Y

Emission Point: Emission Point Description:

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)

Emission Point: Emission Point Description:

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)

Emission Point: Emission Point Description:

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)

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Plant Name: Louisville Gas and Electric - Mill Creek Generating Station Plant ID: 0127

Date of submission: 1/24/2019

Emission Information

Emission Point: E39a Emission Point Description: Paved Haul Roads

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)
Particulate Matter	NA	NA	3	NA	1.14, Sec 2.1		Y
Opacity	NA			20%	1.14, Sec 2.3		Y

Emission Point: E39b Emission Point Description: Unpaved Haul Roads

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)
Particulate Matter		NA	3	NA	1.14, Sec 2.1		Y
Opacity				20%	1.14, Sec 2.3		Y

Emission Point: Emission Point Description:

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)

Emission Point: Emission Point Description:

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)

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Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of submission:	1/24/2019		

Emission Information

Emission Point: E40a-h Emission Point Description: Sorbent Stroage Silos

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)
Particulate Matter	NA	1.06 ton/yr	3	6.9 lb/hr	7.08, Sec 3.3		Y
Opacity	NA			20%	7.08, Sec 3.1.1		Y

Emission Point: Emission Point Description:

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)

Emission Point: Emission Point Description:

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)

Emission Point: Emission Point Description:

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)

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Plant Name: Louisville Gas and Electric - Mill Creek Generating Station	Plant ID: 0127
Date of submission: 1/24/2019	

Emission Information

Emission Point: E41a-f Emission Point Description: PAC Storage Silos

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)
Particulate Matter	NA	1.06 ton/yr	3	9.7 lb/hr	7.08, Sec 3.3		Y
Opacity	NA			20%	7.08, Sec 3.1.1		Y

Emission Point: Emission Point Description:

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)

Emission Point: Emission Point Description:

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)

Emission Point: Emission Point Description:

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)

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Plant Name: Louisville Gas and Electric - Mill Creek Generating Station	Plant ID: 0127
Date of submission: 1/24/2019	

Emission Information

Emission Point: E42 Emission Point Description: Fly Ash Storage Silos

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)
Particulate Matter	NA	1.21 ton/yr	3	13.9 lb/hr	7.08, Sec 3.3		Y
Opacity	NA			20%	7.08, Sec 3.1.1		Y

Emission Point: Emission Point Description:

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)

Emission Point: Emission Point Description:

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)

Emission Point: Emission Point Description:

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)

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Plant Name: Louisville Gas and Electric - Mill Creek Generating Station Plant ID: 0127

Date of submission: 1/24/2019

Emission Information

Emission Point: E44 Emission Point Description: Gypsum Pelletizing Plant

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)
Particulate Matter	NA	1.336 ton/yr	3	32.4 lb/hr	7.08, Sec 3.3		Y
Opacity	NA			20%	7.08, Sec 3.1.1		Y

Emission Point: E45-46 Emission Point Description: NG-fired Heaters

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)
Particulate Matter		.0577 ton/yr	3		7.06, Sec 4.1.2		Y
Opacity				20%	7.06, Sec 4.2		Y
SO2		.108 ton/yr	3		7.06, Sec 5.1.2		Y
HAP		681 lb/yr	3		40 CFR 63.7540		Y

Emission Point: Emission Point Description:

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)

Emission Point: Emission Point Description:

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)

Louisville Metro Air Pollution Control District

Permit Application and Renewal
Form AP-100C

Emission Data

Mail application to:
850 Barret Avenue
Louisville, KY 40204
OR
e-mail to:
airpermits@louisvilleky.gov

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd

Plant Name: Louisville Gas and Electric - Mill Creek Generating Station Plant ID: 0127

Date of submission: 1/24/2019

Emission Information

Emission Point: E47 Emission Point Description: Coal Handling Facilities

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)
Particulate Matter		9.8 ton/yr	3	55.8 lb/hr	7.08, Sec 3.1.2		Y
Particulate Matter		15.7 ton/yr	3	89.5 lb/hr	7.08, Sec 3.2		Y
Particulate Matter		9.8 ton/yr	3	83 lb/hr	7.08, Sec 3.2		
Particulate Matter		1.04 ton/yr	3	51.4 lb/hr	7.08, Sec 3.1.2		

Emission Point: E47 Emission Point Description: NG-fired Heaters

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)
Particulate Matter		8.32 ton/yr	3	73.9 lb/hr	6.09, Sec 4.1.2		Y
Particulate Matter		15.15 ton/yr	3	89.5 lb/hr	7.06, Sec 4.2		Y
Opacity				20%	7.06, Sec 5.1.2		Y

Emission Point: Emission Point Description:

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)

Emission Point: Emission Point Description:

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)

Louisville Metro Air Pollution Control District

Permit Application and Renewal
Form AP-100C

Emission Data

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(502) 574-6000
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Plant Name: Louisville Gas and Electric - Mill Creek Generating Station   Plant ID: 0127

Date of submission: 1/24/2019

Emission Information

Emission Point: E48   Emission Point Description: Landfill

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)
Particulate Matter	NA		3	NA	1.14, Sec 2.1		Y
Opacity	NA			20%	1.14, Sec 2.3		Y

Emission Point: Emission Point Description:

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)

Emission Point: Emission Point Description:

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)

Emission Point: Emission Point Description:

Regulated Pollutant	CAS#	Maximum Emission Rate	Method (see note)	Allowable Emission Rate	Applicable Regulation	Requested Emission Rate	Controlled? (Y / N)

Louisville Metro Air Pollution Control District

Permit Application and Renewal
Form AP-100D

Exhaust Stack Information

Mail application to:
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Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Associated process equipment:	U3	Emission Point:	E5
Date of submission:	1/24/2019		

Exhaust Point Information

Stack ID:	S4				
Description of exhaust point (stack, vent, roof monitor, indoors, etc):	Stack				
Distance to nearest plant boundary from exhaust point discharge:	675 feet				
Discharge height above grade :	600 feet		Good Engineering Practice (GEP) height:		
Diameter (or equivalent diameter) of exhaust point:	19.5 feet				
Exit gas flow rate:	Maximum (ACFM) -	1319995	Minimum (ACFM) -		
Exit gas temperature:	@ maximum airflow -	121 ° F	@ minimum airflow -	°	
Orientation of exhaust: vertical, upward			Is there a stack cap? ☐ Yes ☒ No		
Stack location: UTM zone 16S	Northing:	Easting	**OR**	Latitude 38.05181	Longitude -85.90994

Stack Site Information

Dimensions of building on which exhaust point is located:	Length -	NA	Width -	NA	Height - NA
Location of stack relative to building:	Distance from North edge -		Distance from East edge -		
Distance to nearest building :	145 ft	Direction to Nearest building:			
Dimensions of the nearest building:	Length -	742.5 ft	Width -	348.8 ft	Height - 219 ft

Louisville Metro Air Pollution Control District

Permit Application and Renewal
Form AP-100D

Exhaust Stack Information

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Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Associated process equipment:	U1	Emission Point:	E2
Date of submission:	1/24/2019		

Exhaust Point Information

Stack ID:	S5			
Description of exhaust point (stack, vent, roof monitor, indoors, etc):	Stack			
Distance to nearest plant boundary from exhaust point discharge:	335 feet			
Discharge height above grade :	107 feet	Good Engineering Practice (GEP) height:		
Diameter (or equivalent diameter) of exhaust point:	1 feet			
Exit gas flow rate:	Maximum (ACFM) - 12000	Minimum (ACFM) -		
Exit gas temperature:	@ maximum airflow - 68 ° F	@ minimum airflow - °		
Orientation of exhaust: vertical, upward		Is there a stack cap? ☐ Yes ☒ No		
Stack location: UTM zone 16S	Northing: Easting	**OR**	Latitude 38.05347	Longitude -85.91089

Stack Site Information

Dimensions of building on which exhaust point is located:	Length -	742.5 ft	Width -	348.8 ft	Height -	219.5 ft
Location of stack relative to building:	Distance from North edge -		Distance from East edge -			
Distance to nearest building :	NA	Direction to Nearest building:				
Dimensions of the nearest building:	Length -		Width -		Height -	

Louisville Metro Air Pollution Control District

Permit Application and Renewal
Form AP-100D

Exhaust Stack Information

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FAX: (502) 574-5137
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Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Associated process equipment:	U2	Emission Point:	E4
Date of submission:	1/24/2019		

Exhaust Point Information

Stack ID:	S6			
Description of exhaust point (stack, vent, roof monitor, indoors, etc):	Stack			
Distance to nearest plant boundary from exhaust point discharge:	300 feet			
Discharge height above grade :	107 feet	Good Engineering Practice (GEP) height:		
Diameter (or equivalent diameter) of exhaust point:	1 feet			
Exit gas flow rate:	Maximum (ACFM) - 12000	Minimum (ACFM) -		
Exit gas temperature:	@ maximum airflow - 68 ° F	@ minimum airflow - ambient °		
Orientation of exhaust: vertical, upward		Is there a stack cap? ☐ Yes ☒ No		
Stack location: UTM zone 16S	Northing: Easting	**OR**	Latitude 38.05348	Longitude -85.91088

Stack Site Information

Dimensions of building on which exhaust point is located:	Length - 742.5		Width - 348.8		Height - 219.5	
Location of stack relative to building:	Distance from North edge -			Distance from East edge -		
Distance to nearest building : NA		Direction to Nearest building: NW				
Dimensions of the nearest building:	Length - NA		Width - NA		Height - NA	

Louisville Metro Air Pollution Control District

Permit Application and Renewal
Form AP-100D

Exhaust Stack Information

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Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Associated process equipment:	U3	Emission Point:	E6
Date of submission:			

Exhaust Point Information

Stack ID:	S7				
Description of exhaust point (stack, vent, roof monitor, indoors, etc):	Stack				
Distance to nearest plant boundary from exhaust point discharge:	300 feet				
Discharge height above grade :	104 feet			Good Engineering Practice (GEP) height:	
Diameter (or equivalent diameter) of exhaust point:	1.2 feet				
Exit gas flow rate:	Maximum (ACFM) -	12000		Minimum (ACFM) -	
Exit gas temperature:	@ maximum airflow -	68 ° F		@ minimum airflow -	ambient °
Orientation of exhaust: vertical, upward				Is there a stack cap? ☐ Yes ☒ No	
Stack location: UTM zone 16S	Northing:	Easting	**OR**	Latitude 38.05252	Longitude -85.91103

Stack Site Information

Dimensions of building on which exhaust point is located:	Length -	742.5 ft	Width -	348.8 ft	Height -	219.5 ft	
Location of stack relative to building:	Distance from North edge -			Distance from East edge -			
Distance to nearest building :	NA		Direction to Nearest building:				
Dimensions of the nearest building:	Length -	NA	Width -	NA	Height -	NA	

Louisville Metro Air Pollution Control District

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Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Associated process equipment:	U4	Emission Point:	E8
Date of submission:	1/24/2019		

Exhaust Point Information

Stack ID:	S8			
Description of exhaust point (stack, vent, roof monitor, indoors, etc):	Stack			
Distance to nearest plant boundary from exhaust point discharge:	300 feet			
Discharge height above grade :	104 feet	Good Engineering Practice (GEP) height:		
Diameter (or equivalent diameter) of exhaust point:	1.3 feet			
Exit gas flow rate:	Maximum (ACFM) - 12000	Minimum (ACFM) -		
Exit gas temperature:	@ maximum airflow - 68 ° F	@ minimum airflow - °		
Orientation of exhaust: vertical, upward		Is there a stack cap? ☐ Yes ☒ No		
Stack location: UTM zone 16S	Northing: Easting	**OR**	Latitude 38.05191	Longitude -85.91111

Stack Site Information

Dimensions of building on which exhaust point is located:	Length - 742.5 ft	Width - 348.8 ft	Height - 219.5 ft			
Location of stack relative to building:	Distance from North edge -		Distance from East edge -			
Distance to nearest building : NA	Direction to Nearest building:					
Dimensions of the nearest building:	Length -	Width -	Height -			

Louisville Metro Air Pollution Control District

Permit Application and Renewal
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Exhaust Stack Information

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Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Associated process equipment:	U8	Emission Point:	E13
Date of submission:	1/24/2019		

Exhaust Point Information

Stack ID:	S13			
Description of exhaust point (stack, vent, roof monitor, indoors, etc):	Stack			
Distance to nearest plant boundary from exhaust point discharge:	300 feet			
Discharge height above grade :	113 feet	Good Engineering Practice (GEP) height:		
Diameter (or equivalent diameter) of exhaust point:	2 feet			
Exit gas flow rate:	Maximum (ACFM) - 6000	Minimum (ACFM) -		
Exit gas temperature:	@ maximum airflow - 68 ° F	@ minimum airflow - °		
Orientation of exhaust: vertical, upward		Is there a stack cap? ☐ Yes ☐ No		
Stack location: UTM zone 16S	Northing: Easting	**OR**	Latitude 38.04639	Longitude -85.91021

Stack Site Information

Dimensions of building on which exhaust point is located:	Length - NA	Width - NA	Height - NA
Location of stack relative to building:	Distance from North edge -	Distance from East edge -	
Distance to nearest building : 180 ft	Direction to Nearest building: North		
Dimensions of the nearest building:	Length -	Width -	Height -

Louisville Metro Air Pollution Control District

Permit Application and Renewal
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Exhaust Stack Information

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Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Associated process equipment:	U8	Emission Point:	E13
Date of submission:	1/24/2019		

Exhaust Point Information

Stack ID:	S14			
Description of exhaust point (stack, vent, roof monitor, indoors, etc):	Stack			
Distance to nearest plant boundary from exhaust point discharge:	300 feet			
Discharge height above grade :	113 feet	Good Engineering Practice (GEP) height:		
Diameter (or equivalent diameter) of exhaust point:	2 feet			
Exit gas flow rate:	Maximum (ACFM) - 6000		Minimum (ACFM) -	
Exit gas temperature:	@ maximum airflow - 68 ° F		@ minimum airflow - °	
Orientation of exhaust: vertical, upward			Is there a stack cap? ☐ Yes ☐ No	
Stack location: UTM zone 16S	Northing:	Easting	**OR** Latitude 38.04639	Longitude -85.91021

Stack Site Information

Dimensions of building on which exhaust point is located:	Length - NA	Width - NA	Height - NA
Location of stack relative to building:	Distance from North edge -	Distance from East edge -	
Distance to nearest building : 180 ft	Direction to Nearest building: North		
Dimensions of the nearest building:	Length -	Width -	Height -

Louisville Metro Air Pollution Control District

Permit Application and Renewal
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Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Associated process equipment:	U9	Emission Point:	E16
Date of submission:	1/24/2019		

Exhaust Point Information

Stack ID:	S17			
Description of exhaust point (stack, vent, roof monitor, indoors, etc):	Stack			
Distance to nearest plant boundary from exhaust point discharge:	575 feet			
Discharge height above grade :	47.5 feet	Good Engineering Practice (GEP) height:		
Diameter (or equivalent diameter) of exhaust point:	1 feet			
Exit gas flow rate:	Maximum (ACFM) - 2572		Minimum (ACFM) -	
Exit gas temperature:	@ maximum airflow - 68 ° F		@ minimum airflow - °	
Orientation of exhaust: vertical, upward			Is there a stack cap? ☐ Yes ☐ No	
Stack location: UTM zone 16S	Northing:	Easting	**OR** Latitude 38.05321	Longitude -85.91024

Stack Site Information

Dimensions of building on which exhaust point is located:	Length - NA	Width - NA	Height - NA
Location of stack relative to building:	Distance from North edge -	Distance from East edge -	
Distance to nearest building :	Direction to Nearest building:		
Dimensions of the nearest building:	Length -	Width -	Height -

Louisville Metro Air Pollution Control District

Permit Application and Renewal
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Exhaust Stack Information

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Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Associated process equipment:	U9	Emission Point:	E17
Date of submission:	1/24/2019		

Exhaust Point Information

Stack ID:	S18			
Description of exhaust point (stack, vent, roof monitor, indoors, etc):	Stack			
Distance to nearest plant boundary from exhaust point discharge:	600 feet			
Discharge height above grade :	36 feet	Good Engineering Practice (GEP) height:		
Diameter (or equivalent diameter) of exhaust point:	1 feet			
Exit gas flow rate:	Maximum (ACFM) - 2572	Minimum (ACFM) -		
Exit gas temperature:	@ maximum airflow - 68 ° F	@ minimum airflow - °		
Orientation of exhaust: vertical, upward		Is there a stack cap? ☐ Yes ☐ No		
Stack location: UTM zone 16S	Northing: Easting	**OR**	Latitude 38.05272	Longitude -85.90999

Stack Site Information

Dimensions of building on which exhaust point is located:	Length - NA	Width - NA	Height - NA
Location of stack relative to building:	Distance from North edge -	Distance from East edge -	
Distance to nearest building :	Direction to Nearest building:		
Dimensions of the nearest building:	Length -	Width -	Height -

Louisville Metro Air Pollution Control District

Permit Application and Renewal
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Exhaust Stack Information

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Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Associated process equipment:	U9	Emission Point:	E18
Date of submission:	1/24/2019		

Exhaust Point Information

Stack ID:	S19			
Description of exhaust point (stack, vent, roof monitor, indoors, etc):	Stack			
Distance to nearest plant boundary from exhaust point discharge:	600 feet			
Discharge height above grade :	19 feet	Good Engineering Practice (GEP) height:		
Diameter (or equivalent diameter) of exhaust point:	1 feet			
Exit gas flow rate:	Maximum (ACFM) - 2572	Minimum (ACFM) -		
Exit gas temperature:	@ maximum airflow - 68 ° F	@ minimum airflow - °		
Orientation of exhaust: vertical, upward		Is there a stack cap? ☐ Yes ☐ No		
Stack location: UTM zone 16S	Northing: Easting	**OR**	Latitude 38.05148	Longitude -85.91007

Stack Site Information

Dimensions of building on which exhaust point is located:	Length - NA	Width - NA	Height - NA
Location of stack relative to building:	Distance from North edge -	Distance from East edge -	
Distance to nearest building :	Direction to Nearest building:		
Dimensions of the nearest building:	Length -	Width -	Height -

Louisville Metro Air Pollution Control District

Permit Application and Renewal
Form AP-100D

Exhaust Stack Information

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Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Associated process equipment:	U8	Emission Point:	E32
Date of submission:	1/24/2019		

Exhaust Point Information

Stack ID:	S22			
Description of exhaust point (stack, vent, roof monitor, indoors, etc):	Stack			
Distance to nearest plant boundary from exhaust point discharge:	900 feet			
Discharge height above grade :	17.3 feet	Good Engineering Practice (GEP) height:		
Diameter (or equivalent diameter) of exhaust point:	0.6 feet			
Exit gas flow rate:	Maximum (ACFM) - 1600	Minimum (ACFM) -		
Exit gas temperature:	@ maximum airflow - 100 ° F	@ minimum airflow - °		
Orientation of exhaust: vertical, upward		Is there a stack cap? ☐ Yes ☐ No		
Stack location: UTM zone 16S	Northing: Easting	**OR**	Latitude 38.04950	Longitude -85.90951

Stack Site Information

Dimensions of building on which exhaust point is located:	Length - NA	Width - NA	Height - NA
Location of stack relative to building:	Distance from North edge -	Distance from East edge -	
Distance to nearest building : 180 ft	Direction to Nearest building: North		
Dimensions of the nearest building:	Length -	Width -	Height -

Louisville Metro Air Pollution Control District

Permit Application and Renewal
Form AP-100D

Exhaust Stack Information

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Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Associated process equipment:	U8	Emission Point:	E32
Date of submission:	1/24/2019		

Exhaust Point Information

Stack ID:	S23			
Description of exhaust point (stack, vent, roof monitor, indoors, etc):	Stack			
Distance to nearest plant boundary from exhaust point discharge:	900 feet			
Discharge height above grade :	17.3 feet	Good Engineering Practice (GEP) height:		
Diameter (or equivalent diameter) of exhaust point:	0.6 feet			
Exit gas flow rate:	Maximum (ACFM) - 1600	Minimum (ACFM) -		
Exit gas temperature:	@ maximum airflow - 100 ° F	@ minimum airflow - °		
Orientation of exhaust: vertical, upward		Is there a stack cap? ☐ Yes ☐ No		
Stack location: UTM zone 16S	Northing: Easting	**OR**	Latitude 38.04950	Longitude -85.90951

Stack Site Information

Dimensions of building on which exhaust point is located:	Length - NA	Width - NA	Height - NA
Location of stack relative to building:	Distance from North edge -	Distance from East edge -	
Distance to nearest building : 180 ft	Direction to Nearest building: North		
Dimensions of the nearest building:	Length -	Width -	Height -

Louisville Metro Air Pollution Control District

Permit Application and Renewal
Form AP-100D

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Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Associated process equipment:	U9	Emission Point:	E16
Date of submission:	1/24/2019		

Exhaust Point Information

Stack ID:	S24			
Description of exhaust point (stack, vent, roof monitor, indoors, etc):	Stack			
Distance to nearest plant boundary from exhaust point discharge:	575 feet			
Discharge height above grade :	47.5 feet	Good Engineering Practice (GEP) height:		
Diameter (or equivalent diameter) of exhaust point:	1 feet			
Exit gas flow rate:	Maximum (ACFM) - 2572		Minimum (ACFM) -	
Exit gas temperature:	@ maximum airflow - 68 ° F		@ minimum airflow - °	
Orientation of exhaust: vertical, upward			Is there a stack cap? ☐ Yes ☐ No	
Stack location: UTM zone 16S	Northing:	Easting	**OR** Latitude 38.05321	Longitude -85.91024

Stack Site Information

Dimensions of building on which exhaust point is located:	Length - NA	Width - NA	Height - NA
Location of stack relative to building:	Distance from North edge -	Distance from East edge -	
Distance to nearest building :	Direction to Nearest building:		
Dimensions of the nearest building:	Length -	Width -	Height -

Louisville Metro Air Pollution Control District

Permit Application and Renewal
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Exhaust Stack Information

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Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Associated process equipment:	U9	Emission Point:	E16
Date of submission:	1/24/2019		

Exhaust Point Information

Stack ID:	S25			
Description of exhaust point (stack, vent, roof monitor, indoors, etc):	Stack			
Distance to nearest plant boundary from exhaust point discharge:	575 feet			
Discharge height above grade :	47.5 feet	Good Engineering Practice (GEP) height:		
Diameter (or equivalent diameter) of exhaust point:	1 feet			
Exit gas flow rate:	Maximum (ACFM) - 2572	Minimum (ACFM) -		
Exit gas temperature:	@ maximum airflow - 68 ° F	@ minimum airflow - °		
Orientation of exhaust: vertical, upward		Is there a stack cap? ☐ Yes ☐ No		
Stack location: UTM zone 16S	Northing: Easting	**OR**	Latitude 38.05321	Longitude -85.91024

Stack Site Information

Dimensions of building on which exhaust point is located:	Length - NA	Width - NA	Height - NA
Location of stack relative to building:	Distance from North edge -	Distance from East edge -	
Distance to nearest building :	Direction to Nearest building:		
Dimensions of the nearest building:	Length -	Width -	Height -

Louisville Metro Air Pollution Control District

Permit Application and Renewal
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Exhaust Stack Information

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Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Associated process equipment:	U9	Emission Point:	E17
Date of submission:	1/24/2019		

Exhaust Point Information

Stack ID:	S26			
Description of exhaust point (stack, vent, roof monitor, indoors, etc):	Stack			
Distance to nearest plant boundary from exhaust point discharge:	600 feet			
Discharge height above grade :	36 feet	Good Engineering Practice (GEP) height:		
Diameter (or equivalent diameter) of exhaust point:	1 feet			
Exit gas flow rate:	Maximum (ACFM) - 2572	Minimum (ACFM) -		
Exit gas temperature:	@ maximum airflow - 68 ° F	@ minimum airflow - °		
Orientation of exhaust: vertical, upward		Is there a stack cap? ☐ Yes ☐ No		
Stack location: UTM zone 16S	Northing: Easting	**OR**	Latitude 38.05272	Longitude -85.90999

Stack Site Information

Dimensions of building on which exhaust point is located:	Length - NA	Width - NA	Height - NA
Location of stack relative to building:	Distance from North edge -	Distance from East edge -	
Distance to nearest building :	Direction to Nearest building:		
Dimensions of the nearest building:	Length -	Width -	Height -

Louisville Metro Air Pollution Control District

Permit Application and Renewal
Form AP-100D

Exhaust Stack Information

Mail application to:
850 Barret Avenue
Louisville, KY 40204
OR
e-mail to:
airpermits@louisvilleky.gov

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Associated process equipment:	U9	Emission Point:	E17
Date of submission:	1/24/2019		

Exhaust Point Information

Stack ID:	S27			
Description of exhaust point (stack, vent, roof monitor, indoors, etc):	Stack			
Distance to nearest plant boundary from exhaust point discharge:	600 feet			
Discharge height above grade :	36 feet	Good Engineering Practice (GEP) height:		
Diameter (or equivalent diameter) of exhaust point:	1 feet			
Exit gas flow rate:	Maximum (ACFM) - 2572	Minimum (ACFM) -		
Exit gas temperature:	@ maximum airflow - 68 ° F	@ minimum airflow - °		
Orientation of exhaust: vertical, upward		Is there a stack cap? ☐ Yes ☐ No		
Stack location: UTM zone 16S	Northing: Easting	**OR**	Latitude 38.05272	Longitude -85.90999

Stack Site Information

Dimensions of building on which exhaust point is located:	Length - NA	Width - NA	Height - NA
Location of stack relative to building:	Distance from North edge -	Distance from East edge -	
Distance to nearest building :	Direction to Nearest building:		
Dimensions of the nearest building:	Length -	Width -	Height -

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Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Associated process equipment:	U9	Emission Point:	E18
Date of submission:	1/24/2019		

Exhaust Point Information

Stack ID:	S28			
Description of exhaust point (stack, vent, roof monitor, indoors, etc):	Stack			
Distance to nearest plant boundary from exhaust point discharge:	600 feet			
Discharge height above grade :	19 feet	Good Engineering Practice (GEP) height:		
Diameter (or equivalent diameter) of exhaust point:	1 feet			
Exit gas flow rate:	Maximum (ACFM) - 2572		Minimum (ACFM) -	
Exit gas temperature:	@ maximum airflow - 68 ° F		@ minimum airflow - °	
Orientation of exhaust: vertical, upward			Is there a stack cap? ☐ Yes ☐ No	
Stack location: UTM zone 16S	Northing:	Easting	**OR**	Latitude 38.05148 Longitude -85.91007

Stack Site Information

Dimensions of building on which exhaust point is located:	Length - NA	Width - NA	Height - NA
Location of stack relative to building:	Distance from North edge -	Distance from East edge -	
Distance to nearest building :	Direction to Nearest building:		
Dimensions of the nearest building:	Length -	Width -	Height -

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Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Associated process equipment:	U9	Emission Point:	E18
Date of submission:	1/24/2019		

Exhaust Point Information

Stack ID:	S29			
Description of exhaust point (stack, vent, roof monitor, indoors, etc):	Stack			
Distance to nearest plant boundary from exhaust point discharge:	600 feet			
Discharge height above grade :	19 feet	Good Engineering Practice (GEP) height:		
Diameter (or equivalent diameter) of exhaust point:	1 feet			
Exit gas flow rate:	Maximum (ACFM) - 2572	Minimum (ACFM) -		
Exit gas temperature:	@ maximum airflow - 68 ° F	@ minimum airflow - °		
Orientation of exhaust: vertical, upward		Is there a stack cap? ☐ Yes ☐ No		
Stack location: UTM zone 16S	Northing: Easting	**OR**	Latitude 38.05148	Longitude -85.91007

Stack Site Information

Dimensions of building on which exhaust point is located:	Length - NA	Width - NA	Height - NA
Location of stack relative to building:	Distance from North edge -	Distance from East edge -	
Distance to nearest building :	Direction to Nearest building:		
Dimensions of the nearest building:	Length -	Width -	Height -

Louisville Metro Air Pollution Control District

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Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Associated process equipment:	IA-OT	Emission Point:	IE17
Date of submission:	1/24/2019		

Exhaust Point Information

Stack ID:	S30				
Description of exhaust point (stack, vent, roof monitor, indoors, etc):	Stack				
Distance to nearest plant boundary from exhaust point discharge:	feet				
Discharge height above grade :	TBD feet			Good Engineering Practice (GEP) height:	
Diameter (or equivalent diameter) of exhaust point:	TBD feet				
Exit gas flow rate:	Maximum (ACFM) -	TBD		Minimum (ACFM) -	
Exit gas temperature:	@ maximum airflow -	° F		@ minimum airflow -	°
Orientation of exhaust: vertical, upward				Is there a stack cap? ☐ Yes ☐ No	
Stack location: UTM zone 16S	Northing:	Easting	**OR**	Latitude	Longitude

Stack Site Information

Dimensions of building on which exhaust point is located:	Length -	NA	Width -	NA	Height -	NA
Location of stack relative to building:	Distance from North edge -			Distance from East edge -		
Distance to nearest building :			Direction to Nearest building:			
Dimensions of the nearest building:	Length -		Width -		Height -	

Louisville Metro Air Pollution Control District

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Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Associated process equipment:	IA-OT	Emission Point:	IE18
Date of submission:	1/24/2019		

Exhaust Point Information

Stack ID:	S31			
Description of exhaust point (stack, vent, roof monitor, indoors, etc):	Stack			
Distance to nearest plant boundary from exhaust point discharge:	feet			
Discharge height above grade :	TBD feet	Good Engineering Practice (GEP) height:		
Diameter (or equivalent diameter) of exhaust point:	TBD feet			
Exit gas flow rate:	Maximum (ACFM) - TBD	Minimum (ACFM) -		
Exit gas temperature:	@ maximum airflow - ° F	@ minimum airflow - °		
Orientation of exhaust: vertical, upward		Is there a stack cap? ☐ Yes ☐ No		
Stack location: UTM zone 16S	Northing: Easting	**OR**	Latitude	Longitude

Stack Site Information

Dimensions of building on which exhaust point is located:	Length - NA	Width - NA	Height - NA
Location of stack relative to building:	Distance from North edge -	Distance from East edge -	
Distance to nearest building :	Direction to Nearest building:		
Dimensions of the nearest building:	Length -	Width -	Height -

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(502) 574-6000
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Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Associated process equipment:	IA-OT	Emission Point:	IE23
Date of submission:	1/24/2019		

Exhaust Point Information

Stack ID:	S32				
Description of exhaust point (stack, vent, roof monitor, indoors, etc):	Stack				
Distance to nearest plant boundary from exhaust point discharge:		feet			
Discharge height above grade :	TBD feet			Good Engineering Practice (GEP) height:	
Diameter (or equivalent diameter) of exhaust point:	TBD feet				
Exit gas flow rate:	Maximum (ACFM) -	TBD		Minimum (ACFM) -	
Exit gas temperature:	@ maximum airflow -	° F		@ minimum airflow -	°
Orientation of exhaust: vertical, upward				Is there a stack cap? ☐ Yes ☐ No	
Stack location: UTM zone 16S	Northing:	Easting	**OR**	Latitude	Longitude

Stack Site Information

Dimensions of building on which exhaust point is located:	Length -	NA	Width -	NA	Height -	NA	
Location of stack relative to building:	Distance from North edge -			Distance from East edge -			
Distance to nearest building :			Direction to Nearest building:				
Dimensions of the nearest building:	Length -		Width -		Height -		

Louisville Metro Air Pollution Control District

Permit Application and Renewal
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Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Associated process equipment:	U1	Emission Point:	E1
Date of submission:	1/24/2019		

Exhaust Point Information

Stack ID:	S33				
Description of exhaust point (stack, vent, roof monitor, indoors, etc):	Stack				
Distance to nearest plant boundary from exhaust point discharge:	600 feet				
Discharge height above grade :	615 feet		Good Engineering Practice (GEP) height:		
Diameter (or equivalent diameter) of exhaust point:	28 feet				
Exit gas flow rate:	Maximum (ACFM) -	2067979	Minimum (ACFM) -		
Exit gas temperature:	@ maximum airflow -	130 ° F	@ minimum airflow -	°	
Orientation of exhaust: vertical, upward			Is there a stack cap? ☐ Yes ☐ No		
Stack location: UTM zone 16S	Northing:	Easting	**OR**	Latitude 38.05461	Longitude -85.90767

Stack Site Information

Dimensions of building on which exhaust point is located:	Length - NA		Width - NA		Height - NA
Location of stack relative to building:	Distance from North edge -		Distance from East edge -		
Distance to nearest building : 180 ft		Direction to Nearest building: North			
Dimensions of the nearest building:	Length -		Width -		Height -

Louisville Metro Air Pollution Control District

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Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Associated process equipment:	U4	Emission Point:	E7
Date of submission:	1/24/2019		

Exhaust Point Information

Stack ID:	S34				
Description of exhaust point (stack, vent, roof monitor, indoors, etc):	Stack				
Distance to nearest plant boundary from exhaust point discharge:	600 feet				
Discharge height above grade :	600 feet		Good Engineering Practice (GEP) height:		
Diameter (or equivalent diameter) of exhaust point:	25 feet				
Exit gas flow rate:	Maximum (ACFM) -	1641789	Minimum (ACFM) -		
Exit gas temperature:	@ maximum airflow -	130 ° F	@ minimum airflow -	°	
Orientation of exhaust: vertical, upward			Is there a stack cap? ☐ Yes ☐ No		
Stack location: UTM zone 16S	Northing:	Easting	**OR**	Latitude 38.02400	Longitude -85.91864

Stack Site Information

Dimensions of building on which exhaust point is located:	Length -	NA	Width -	NA	Height -	NA
Location of stack relative to building:	Distance from North edge -		Distance from East edge -			
Distance to nearest building :	180 ft	Direction to Nearest building:	North			
Dimensions of the nearest building:	Length -		Width -		Height -	

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Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Associated process equipment:	U16	Emission Point:	E40
Date of submission:	1/24/2019		

Exhaust Point Information

Stack ID:	S35			
Description of exhaust point (stack, vent, roof monitor, indoors, etc):	Stack			
Distance to nearest plant boundary from exhaust point discharge:	600 feet			
Discharge height above grade :	53.25 feet	Good Engineering Practice (GEP) height:		
Diameter (or equivalent diameter) of exhaust point:	14 feet			
Exit gas flow rate:	Maximum (ACFM) - 0.1	Minimum (ACFM) -		
Exit gas temperature:	@ maximum airflow - 68 ° F	@ minimum airflow - °		
Orientation of exhaust: vertical, upward		Is there a stack cap? ☐ Yes ☐ No		
Stack location: UTM zone 16S Northing:	Easting	**OR**	Latitude 38.05431	Longitude -85.91008

Stack Site Information

Dimensions of building on which exhaust point is located:	Length - NA	Width - NA	Height - NA
Location of stack relative to building:	Distance from North edge -	Distance from East edge -	
Distance to nearest building :	Direction to Nearest building:		
Dimensions of the nearest building:	Length -	Width -	Height -

Louisville Metro Air Pollution Control District

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Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Associated process equipment:	U17	Emission Point:	E41
Date of submission:	1/24/2019		

Exhaust Point Information

Stack ID:	S36			
Description of exhaust point (stack, vent, roof monitor, indoors, etc):	Stack			
Distance to nearest plant boundary from exhaust point discharge:	600 feet			
Discharge height above grade :	84.125 feet	Good Engineering Practice (GEP) height:		
Diameter (or equivalent diameter) of exhaust point:	14 feet			
Exit gas flow rate:	Maximum (ACFM) - 0.1	Minimum (ACFM) -		
Exit gas temperature:	@ maximum airflow - 68 ° F	@ minimum airflow - °		
Orientation of exhaust: vertical, upward		Is there a stack cap? ☐ Yes ☐ No		
Stack location: UTM zone 16S	Northing: Easting	**OR**	Latitude 38.05428	Longitude -85.91042

Stack Site Information

Dimensions of building on which exhaust point is located:	Length - NA	Width - NA	Height - NA
Location of stack relative to building:	Distance from North edge -	Distance from East edge -	
Distance to nearest building :	Direction to Nearest building:		
Dimensions of the nearest building:	Length -	Width -	Height -

Louisville Metro Air Pollution Control District

Permit Application and Renewal
Form AP-100D

Exhaust Stack Information

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Louisville, KY 40204
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FAX: (502) 574-5137
www.louisvilleky.gov/apcd

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Associated process equipment:	U18	Emission Point:	E42
Date of submission:	1/24/2019		

Exhaust Point Information

Stack ID:	S37			
Description of exhaust point (stack, vent, roof monitor, indoors, etc):	Stack			
Distance to nearest plant boundary from exhaust point discharge:	600 feet			
Discharge height above grade :	108 feet	Good Engineering Practice (GEP) height:		
Diameter (or equivalent diameter) of exhaust point:	40 feet			
Exit gas flow rate:	Maximum (ACFM) - 0.1	Minimum (ACFM) -		
Exit gas temperature:	@ maximum airflow - 68 ° F	@ minimum airflow - °		
Orientation of exhaust: vertical, upward		Is there a stack cap? ☐ Yes ☐ No		
Stack location: UTM zone 16S	Northing: Easting	**OR**	Latitude 38.02972	Longitude -85.91861

Stack Site Information

Dimensions of building on which exhaust point is located:	Length - NA	Width - NA	Height - NA
Location of stack relative to building:	Distance from North edge -	Distance from East edge -	
Distance to nearest building :	Direction to Nearest building:		
Dimensions of the nearest building:	Length -	Width -	Height -

Louisville Metro Air Pollution Control District

Permit Application and Renewal
Form AP-100D

Exhaust Stack Information

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FAX: (502) 574-5137
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Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Associated process equipment:	U20	Emission Point:	E44
Date of submission:	1/24/2019		

Exhaust Point Information

Stack ID:	S39			
Description of exhaust point (stack, vent, roof monitor, indoors, etc):	Stack			
Distance to nearest plant boundary from exhaust point discharge:	300 feet			
Discharge height above grade :	13 feet	Good Engineering Practice (GEP) height:		
Diameter (or equivalent diameter) of exhaust point:	12.86 feet			
Exit gas flow rate:	Maximum (ACFM) - 0.1	Minimum (ACFM) -		
Exit gas temperature:	@ maximum airflow - 68 ° F	@ minimum airflow - °		
Orientation of exhaust: vertical, upward		Is there a stack cap? ☐ Yes ☐ No		
Stack location: UTM zone 16S	Northing: Easting	**OR**	Latitude 38.04528	Longitude -85.91194

Stack Site Information

Dimensions of building on which exhaust point is located:	Length - NA	Width - NA	Height - NA
Location of stack relative to building:	Distance from North edge -	Distance from East edge -	
Distance to nearest building :	Direction to Nearest building:		
Dimensions of the nearest building:	Length -	Width -	Height -

Louisville Metro Air Pollution Control District

Permit Application and Renewal
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Exhaust Stack Information

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Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Associated process equipment:	U20	Emission Point:	E45
Date of submission:	1/24/2019		

Exhaust Point Information

Stack ID:	S40			
Description of exhaust point (stack, vent, roof monitor, indoors, etc):	Stack			
Distance to nearest plant boundary from exhaust point discharge:	300 feet			
Discharge height above grade :	29 feet	Good Engineering Practice (GEP) height:		
Diameter (or equivalent diameter) of exhaust point:	2.3 feet			
Exit gas flow rate:	Maximum (ACFM) - 23700	Minimum (ACFM) -		
Exit gas temperature:	@ maximum airflow - 120 ° F	@ minimum airflow - °		
Orientation of exhaust: vertical, upward		Is there a stack cap? ☐ Yes ☐ No		
Stack location: UTM zone 16S	Northing: Easting	**OR**	Latitude 38.04578	Longitude -85.91122

Stack Site Information

Dimensions of building on which exhaust point is located:	Length - NA	Width - NA	Height - NA
Location of stack relative to building:	Distance from North edge -	Distance from East edge -	
Distance to nearest building :	Direction to Nearest building:		
Dimensions of the nearest building:	Length -	Width -	Height -

Louisville Metro Air Pollution Control District

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Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Associated process equipment:	U20	Emission Point:	E46
Date of submission:	1/24/2019		

Exhaust Point Information

Stack ID:	S41				
Description of exhaust point (stack, vent, roof monitor, indoors, etc):	Stack				
Distance to nearest plant boundary from exhaust point discharge:	300 feet				
Discharge height above grade :	45 feet		Good Engineering Practice (GEP) height:		
Diameter (or equivalent diameter) of exhaust point:	2.8 feet				
Exit gas flow rate:	Maximum (ACFM) -	23700	Minimum (ACFM) -		
Exit gas temperature:	@ maximum airflow -	100 ° F	@ minimum airflow -	°	
Orientation of exhaust: vertical, upward			Is there a stack cap? ☐ Yes ☐ No		
Stack location: UTM zone 16S	Northing:	Easting	**OR**	Latitude 38.04589	Longitude -85.91117

Stack Site Information

Dimensions of building on which exhaust point is located:	Length -	NA	Width -	NA	Height -	NA
Location of stack relative to building:	Distance from North edge -		Distance from East edge -			
Distance to nearest building :	Direction to Nearest building:					
Dimensions of the nearest building:	Length -		Width -		Height -	

Louisville Metro Air Pollution Control District

Permit Application and Renewal
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Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Associated process equipment:	U8	Emission Point:	E31
Date of submission:	1/24/2019		

Exhaust Point Information

Stack ID:	S42		
Description of exhaust point (stack, vent, roof monitor, indoors, etc):	Stack		
Distance to nearest plant boundary from exhaust point discharge:	300 feet		
Discharge height above grade :	17 feet	Good Engineering Practice (GEP) height:	
Diameter (or equivalent diameter) of exhaust point:	1.5 feet		
Exit gas flow rate:	Maximum (ACFM) -	Minimum (ACFM) -	
Exit gas temperature:	@ maximum airflow - 68 ° F	@ minimum airflow - °	
Orientation of exhaust: vertical, upward		Is there a stack cap? ☐ Yes ☐ No	
Stack location: UTM zone 16S Northing:	Easting	**OR** Latitude 38.04639	Longitude -85.91021

Stack Site Information

Dimensions of building on which exhaust point is located:	Length - NA	Width - NA	Height - NA		
Location of stack relative to building:	Distance from North edge -		Distance from East edge -		
Distance to nearest building : 180 ft		Direction to Nearest building: North			
Dimensions of the nearest building:	Length -	Width -	Height -		

Louisville Metro Air Pollution Control District

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Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Associated process equipment:	U8	Emission Point:	E31
Date of submission:	1/24/2019		

Exhaust Point Information

Stack ID:	S43			
Description of exhaust point (stack, vent, roof monitor, indoors, etc):	Stack			
Distance to nearest plant boundary from exhaust point discharge:	300 feet			
Discharge height above grade :	20 feet	Good Engineering Practice (GEP) height:		
Diameter (or equivalent diameter) of exhaust point:	1.5 feet			
Exit gas flow rate:	Maximum (ACFM) -		Minimum (ACFM) -	
Exit gas temperature:	@ maximum airflow - 68 ° F		@ minimum airflow - °	
Orientation of exhaust: vertical, upward			Is there a stack cap? ☐ Yes ☐ No	
Stack location: UTM zone 16S	Northing:	Easting	**OR** Latitude 38.04639	Longitude -85.91021

Stack Site Information

Dimensions of building on which exhaust point is located:	Length - NA	Width - NA	Height - NA
Location of stack relative to building:	Distance from North edge -	Distance from East edge -	
Distance to nearest building :	Direction to Nearest building:		
Dimensions of the nearest building:	Length -	Width -	Height -

Louisville Metro Air Pollution Control District

Permit Application and Renewal
Form AP-100E

Emission Calculations

Deliver application to:
701 W. Ormsby Ave.Suite 303
Louisville, KY 40203

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of submission:	1/24/2019		

Emission Calculations

SEE ATTACHED SPREADSHEET

U1,U2,U3,U4 - Coal Combustion	Source	E-1 Boiler #1 dry bottom, tang fire	E-3 Boiler #2 dry bottom, tang fired	E-5 Boiler #3 dry bottom, wall fired	E-7 Boiler #4 dry bottom, wall fired
Coal Throughput (tons)		1,171,801	1,171,801	1,596,840	1,908,688
Heat Input (MMBtu/yr)		3,085,000,000	3,085,000,000	4,204,000,000	5,025,000,000
% Ash	MOR(2017 data)	9.26%	9.26%	9.27%	9.28%
% Sulphur	MOR(2017 data)	3.07	3.08	3.07	3.08
Operating Hours		8,760	8,760	8,760	8,760
PM Condensible Emission Factor (lb/MMBtu)	AP-42 Table 1.1-5	0.020	0.020	0.020	0.020
PM Condensible Emissions (tons/yr)		**30,850.00**	**30,850.00**	**42,040.00**	**50,250.00**
PM Filterable Emission Factor (lb/ton)	AP-42 Table 1.1-4	0.926	0.926	0.927	0.928
PM Filterable Emissions (tons/yr)		**542.54**	**542.54**	**740.14**	**885.63**
PM10 Emission Factor (lb/ton)	AP-42 Table 1.1-6	0.213	0.213	0.213	0.213
PM10 Emissions (tons/yr)		**124.79**	**124.79**	**170.23**	**203.70**
PM2.5 Emission Factor (lb/ton)	AP-42 Table 1.1-6	0.556	0.556	0.556	0.557
PM2.5 Emissions (tons/yr)		**325.53**	**325.53**	**444.08**	**531.38**
SO2 Emission Factor (lb/ton)	AP-42 Table 1.1-3	116.66	117.04	116.66	117.04
SO2 Emissions (tons/yr)		**68,351.2**	**68,573.8**	**93,143.7**	**111,696.4**
NOx Emission Factor (lb/ton)	AP-42 Table 1.1-3	15.0	15.0	12.0	12.0
NOx Emissions (tons/yr)		**8,788.5**	**8,788.5**	**9,581.0**	**11,452.1**
CO2 Emission Factor (lb/ton)	AP-42 Table 1.1-20	4810.0	4810.0	4810.0	4810.0
CO2 Emissions (tons/yr)		**2,818,181.4**	**2,818,181.4**	**3,840,400.2**	**4,590,394.6**
CO Emission Factor (lb/ton)	AP-42 Table 1.1-3	0.50	0.50	0.50	0.50
CO Emissions (tons/yr)		**292.95**	**292.95**	**399.21**	**477.17**
VOC Emission Factor (lb/ton)	AP-42 Table 1.1-19	0.06	0.06	0.06	0.06
VOC Emissions (tons/yr)		**35.15**	**35.15**	**47.91**	**57.26**
Ammonia Emission Factor (lb/ton)	EPA	0.000565	0.000565	0.031000	0.031000
Ammonia Emissions (tons/yr)		**0.3310**	**0.3310**	**24.7510**	**29.5847**
Sulfuric Acid Mist Emission Factor (lb/ton)	1% of SO2 EF	1.79E+00	1.79E+00	1.79E+00	1.79E+00
Sulfuric Acid Mist Emissions (tons/yr)		**1,046.63**	**1,050.04**	**1,426.26**	**1,710.35**
Acetaldehyde Emission Factor (lbs/MMBtu)	PISCES	3.20E-06	3.20E-06	3.20E-06	3.20E-06
Acetaldehyde Emissions (lbs/yr)		**9872.00**	**9872.00**	**13452.80**	**16080.00**
Acetophenone Emission Factor (lbs/MMBtu)	PISCES	1.20E-06	1.20E-06	1.20E-06	1.20E-06
Acetophenone Emissions (lbs/yr)		**3702.00**	**3702.00**	**5044.80**	**6030.00**
Acrolein Emission Factor (lbs/MMBtu)	PISCES	1.90E-06	1.90E-06	1.90E-06	1.90E-06
Acrolein Emissions (lbs/yr)		**5861.50**	**5861.50**	**7987.60**	**9547.50**
Benzene Emission Factor (lb/MMBtu)	PISCES	3.90E-06	3.90E-06	3.90E-06	3.90E-06
Benzene Emissions (lbs/yr)		**12031.50**	**12031.50**	**16395.60**	**19597.50**
Benzyl Chloride Emission Factor (lbs/MMBtu)	PISCES	2.80E-07	2.80E-07	2.80E-07	2.80E-07
Benzyl Chloride Emissions (lbs/yr)		**863.80**	**863.80**	**1177.12**	**1407.00**
Biphenyl Emission Factor (lbs/MMBtu)	PISCES	1.60E-07	1.60E-07	1.60E-07	1.60E-07
Biphenyl Emissions (lbs/yr)		**493.60**	**493.60**	**672.64**	**804.00**
Bis(2-Ethylhexyl) Phthalate Emission Factor (lbs/M	PISCES	3.60E-06	3.60E-06	3.60E-06	3.60E-06
Bis(2-Ethylhexyl) Phthalate Emissions (lbs/yr)		**11106.00**	**11106.00**	**15134.40**	**18090.00**
Bromoform Emission Factor (lbs/MMBtu)	PISCES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bromoform Emissions (lbs/yr)		**0.00**	**0.00**	**0.00**	**0.00**
Carbon Disulfide Emission Factor (lbs/MMBtu)	PISCES	1.10E-06	1.10E-06	1.10E-06	1.10E-06
Carbon Disulfide Emissions (lbs/yr)		**3393.50**	**3393.50**	**4624.40**	**5527.50**
2-Chloroacetophenone Emission Factor (lbs/ton)	AP-42 Table 1.1-14	7.00E-06	7.00E-06	7.00E-06	7.00E-06
2-Chloroacetophenone Emissions (lbs/yr)		**8.20**	**8.20**	**11.18**	**13.36**
Chlorobenzene Emission Factor (lbs/MMBtu)	PISCES	1.60E-07	1.60E-07	1.60E-07	1.60E-07
Chlorobenzene Emissions (lbs/yr)		**493.60**	**493.60**	**672.64**	**804.00**
Chloroform Emission Factor (lbs/MMBtu)	PISCES	8.00E-07	8.00E-07	8.00E-07	8.00E-07
Chloroform Emissions (lbs/yr)		**2468.00**	**2468.00**	**3363.20**	**4020.00**
p-Cresol Emission Factor (lbs/MMBtu)	PISCES	1.30E-06	1.30E-06	1.30E-06	1.30E-06
p-Cresol Emissions (lbs/yr)		**4010.50**	**4010.50**	**5465.20**	**6532.50**
Cumene Emission Factor (lbs/ton)	AP-42 Table 1.1-14	5.30E-06	5.30E-06	5.30E-06	5.30E-06
Cumene Emissions (lbs/yr)		**6.21**	**6.21**	**8.46**	**10.12**
Dibenzofuran Emission Factor (lbs/MMBtu)	PISCES	5.80E-07	5.80E-07	5.80E-07	5.80E-07
Dibenzofuran Emissions (lbs/yr)		**1789.30**	**1789.30**	**2438.32**	**2914.50**
Dibutyl Phthalate Emission Factor (lbs/MMBtu)	PISCES	1.10E-07	1.10E-07	1.10E-07	1.10E-07
Dibutyl Phthalate Emissions (lbs/yr)		**339.35**	**339.35**	**462.44**	**552.75**
1,4 - Dichlorobenzene Emission Factor (lbs/MMBt	PISCES	1.10E-06	1.10E-06	1.10E-06	1.10E-06
1,4 - Dichlorobenzene Emissions (lbs/yr)		**3393.50**	**3393.50**	**4624.40**	**5527.50**
Dimethyl Phthalate Emission Factor (lbs/MMBtu)	PISCES	9.00E-08	9.00E-08	9.00E-08	9.00E-08
Dimethyl Phthalate Emissions (lbs/yr)		**277.65**	**277.65**	**378.36**	**452.25**
Dimethyl Sulfate Emission Factor (lbs/ton)	AP-42 Table 1.1-14	4.80E-05	4.80E-05	4.80E-05	4.80E-05
Dimethyl Sulfate Emissions (lbs/yr)		**56.25**	**56.25**	**76.65**	**91.62**
2,4 - Dinitrotoluene Emission Factor (lbs/MMBtu)	PISCES	2.00E-07	2.00E-07	2.00E-07	2.00E-07
2,4 - Dinitrotoluene Emissions (lbs/yr)		**617.00**	**617.00**	**840.80**	**1005.00**
Ethyl Benzene Emission Factor (lbs/MMBtu)	PISCES	8.00E-07	8.00E-07	8.00E-07	8.00E-07
Ethyl Benzene Emissions (lbs/yr)		**2468.00**	**2468.00**	**3363.20**	**4020.00**
Ethyl Chloride Emission Factor (lbs/MMBtu)	PISCES	5.30E-07	5.30E-07	5.30E-07	5.30E-07
Ethyl Chloride Emissions (lbs/yr)		**1635.05**	**1635.05**	**2228.12**	**2663.25**
Ethylene Dibromide Emission Factor (lbs/MMBtu)	PISCES	2.60E-06	2.60E-06	2.60E-06	2.60E-06
Ethylene Dibromide Emissions (lbs/yr)		**8021.00**	**8021.00**	**10930.40**	**13065.00**
Formaldehyde Emission Factor (lbs/MMBtu)	PISCES	2.60E-06	2.60E-06	2.60E-06	2.60E-06
Formaldehyde Emissions (lbs/yr)		**8021.00**	**8021.00**	**10930.40**	**13065.00**
Hexane Emission Factor (lbs/MMBtu)	PISCES	4.90E-07	4.90E-07	4.90E-07	4.90E-07
Hexane Emissions (lbs/yr)		**1511.65**	**1511.65**	**2059.96**	**2462.25**
Hydrochloric Acid Emission Factor (lbs/MMBtu)	MATS	5.83E-04	5.83E-04	5.83E-04	5.83E-04
Hydrochloric Acid Emissions (lbs/yr)		**1798555.00**	**1798555.00**	**2450932.00**	**2929575.00**
Hydrogen Fluoride Emission Factor (lbs/MMBtu)	MATS	1.80E-04	1.80E-04	1.80E-04	1.80E-04
Hydrogen Fluoride Emissions (lbs/yr)		**555300.00**	**555300.00**	**756720.00**	**904500.00**
Isophorone Emission Factor (lbs/MMBtu)	PISCES	1.20E-06	1.20E-06	1.20E-06	1.20E-06
Isophorone Emissions (lbs/yr)		**3702.00**	**3702.00**	**5044.80**	**6030.00**
Methyl Bromide Emission Factor (lbs/MMBtu)	PISCES	8.90E-07	8.90E-07	8.90E-07	8.90E-07
Methyl Bromide Emissions (lbs/yr)		**2745.65**	**2745.65**	**3741.56**	**4472.25**
Methyl Chloride Emission Factor (lbs/MMBtu)	PISCES	1.10E-06	1.10E-06	1.10E-06	1.10E-06
Methyl Chloride Emissions (lbs/yr)		**3393.50**	**3393.50**	**4624.40**	**5527.50**
Methyl Chloroform Emission Factor (lbs/MMBtu)	PISCES	6.10E-07	6.10E-07	6.10E-07	6.10E-07
Methyl Chloroform Emissions (lbs/yr)		**1881.85**	**1881.85**	**2564.44**	**3065.25**
Methylhydrazine Emission Factor (lbs/ton)	AP-42 Table 1.1-14	1.70E-04	1.70E-04	1.70E-04	1.70E-04
Methylhydrazine Emissions (lbs/yr)		**199.21**	**199.21**	**271.46**	**324.48**
Methyl Iodide Emission Factor (lbs/MMBtu)	PISCES	2.00E-06	2.00E-06	2.00E-06	2.00E-06
Methyl Iodide Emissions (lbs/yr)		**6170.00**	**6170.00**	**8408.00**	**10050.00**
Methyl Isobutyl Ketone Emission Factor (lbs/MMBt	PISCES	2.30E-06	2.30E-06	2.30E-06	2.30E-06
Methyl Isobutyl Ketone Emissions (lbs/yr)		**7095.50**	**7095.50**	**9669.20**	**11557.50**
Methyl Methacrylate Emission Factor (lbs/MMBtu)	PISCES	1.10E-06	1.10E-06	1.10E-06	1.10E-06
Methyl Methacrylate Emissions (lbs/yr)		**3393.50**	**3393.50**	**4624.40**	**5527.50**
Methyl Tert-Butyl Ether Emission Factor (lbs/ton)	AP-42 Table 1.1-14	3.50E-05	3.50E-05	3.50E-05	3.50E-05
Methyl Tert-Butyl Ether Emissions (lbs/yr)		**41.01**	**41.01**	**55.89**	**66.80**

U1,U2,U3,U4 - Coal Combustion	Source	E-1 Boiler #1 dry bottom, tang fire	E-3 Boiler #2 dry bottom, tang fired	E-5 Boiler #3 dry bottom, wall fired	E-7 Boiler #4 dry bottom, wall fired
Methylene Chloride Emission Factor (lbs/MMBtu)	PISCES	2.70E-06	2.70E-06	2.70E-06	2.70E-06
Methylene Chloride Emissions (lbs/yr)		**8329.50**	**8329.50**	**11350.80**	**13567.50**
Naphthalene Emission Factor (lbs/MMBtu)	PISCES	6.20E-07	6.20E-07	6.20E-07	6.20E-07
Naphthalene Emissions (lbs/yr)		**1912.70**	**1912.70**	**2606.48**	**3115.50**
Phenol Emission Factor (lbs/MMBtu)	PISCES	3.30E-06	3.30E-06	3.30E-06	3.30E-06
Phenol Emissions (lbs/yr)		**10180.50**	**10180.50**	**13873.20**	**16582.50**
Propionaldehyde Emission Factor (lbs/MMBtu)	PISCES	1.90E-06	1.90E-06	1.90E-06	1.90E-06
Propionaldehyde Emissions (lbs/yr)		**5861.50**	**5861.50**	**7987.60**	**9547.50**
Styrene Emission Factor (lbs/MMBtu)	PISCES	7.00E-07	7.00E-07	7.00E-07	7.00E-07
Styrene Emissions (lbs/yr)		**2159.50**	**2159.50**	**2942.80**	**3517.50**
Tetrachloroethylene Emission Factor (lbs/MMBtu)	PISCES	4.20E-07	4.20E-07	4.20E-07	4.20E-07
Tetrachloroethylene Emissions (lbs/yr)		**1295.70**	**1295.70**	**1765.68**	**2110.50**
Toluene Emission Factor (lbs/MMBtu)	PISCES	1.70E-06	1.70E-06	1.70E-06	1.70E-06
Toluene Emissions (lbs/yr)		**5244.50**	**5244.50**	**7146.80**	**8542.50**
1,2,4 - Trichlorobenzene Emission Factor (lbs/MM	PISCES	1.50E-06	1.50E-06	1.50E-06	1.50E-06
1,2,4 - Trichlorobenzene Emissions (lbs/yr)		**4627.50**	**4627.50**	**6306.00**	**7537.50**
Vinyl Acetate Emission Factor (lbs/MMBtu)	PISCES	3.10E-07	3.10E-07	3.10E-07	3.10E-07
Vinyl Acetate Emissions (lbs/yr)		**956.35**	**956.35**	**1303.24**	**1557.75**
Vinyl Chloride Emission Factor (lbs/MMBtu)	PISCES	7.30E-07	7.30E-07	7.30E-07	7.30E-07
Vinyl Chloride Emissions (lbs/yr)		**2252.05**	**2252.05**	**3068.92**	**3668.25**
Xylene Emission Factor (lbs/MMBtu)	PISCES	1.26E-06	1.26E-06	1.26E-06	1.26E-06
Xylene Emissions (lbs/yr)		**3887.10**	**3887.10**	**5297.04**	**6331.50**
Antimony Emission Factor (lb/MMBtu)	MATS	4.22E-07	4.22E-07	4.22E-07	4.22E-07
Antimony Emissions (lbs/yr)		**1301.87**	**1301.87**	**1774.09**	**2120.55**
Arsenic Emission Factor (lb/MMBtu)	MATS	2.52E-06	2.52E-06	2.52E-06	2.52E-06
Arsenic Emissions (lbs/yr)		**7774.20**	**7774.20**	**10594.08**	**12663.00**
Beryllium Emission Factor (lb/MMBtu)	MATS	1.18E-07	1.18E-07	1.18E-07	1.18E-07
Beryllium Emissions (lbs/yr)		**364.03**	**364.03**	**496.07**	**592.95**
Cadmium Emission Factor (lb/MMBtu)	MATS	2.20E-07	2.20E-07	2.20E-07	2.20E-07
Cadmium Emissions (lbs/yr)		**678.70**	**678.70**	**924.88**	**1105.50**
Chromium III Emission Factor (lb/MMBtu)	MATS	4.18E-06	4.18E-06	4.18E-06	4.18E-06
Chromium III Emissions (lbs/yr)		**12895.30**	**12895.30**	**17572.72**	**21004.50**
Cobalt Emission Factor (lb/MMBtu)	MATS	5.10E-07	5.10E-07	5.10E-07	5.10E-07
Cobalt Emissions (lbs/yr)		**1573.35**	**1573.35**	**2144.04**	**2562.75**
Cyanide Emission Factor (lb/ton)	AP-42Table 1.1-16	2.50E-03	2.50E-03	2.50E-03	2.50E-03
Cyanide Emissions (lbs/yr)		**2929.50**	**2929.50**	**3992.10**	**4771.72**
Lead Emission Factor (lb/MMBtu)	MATS	2.25E-06	2.25E-06	2.25E-06	2.25E-06
Lead Emissions (lbs/yr)		**6941.25**	**6941.25**	**9459.00**	**11306.25**
Manganese Emission Factor (lb/MMBtu)	MATS	1.01E-05	1.01E-05	1.01E-05	1.01E-05
Manganese Emissions (lbs/yr)		**31158.50**	**31158.50**	**42460.40**	**50752.50**
Mercury Emission Factor (lb/hr)	CEMS	2.32E-03	2.32E-03	1.03E-03	9.70E-04
Mercury Emissions (lbs/yr)		**20.32**	**20.32**	**9.02**	**8.50**
Nickel Emission Factor (lb/MMBtu)	MATS	2.74E-05	2.74E-05	2.74E-05	2.74E-05
Nickel Emissions (lbs/yr)		**84529.00**	**84529.00**	**115189.60**	**137685.00**
Selenium Emission Factor (lb/MMBtu)	MATS	9.24E-06	9.24E-06	9.24E-06	9.24E-06
Selenium Emissions (lbs/yr)		**28505.40**	**28505.40**	**38844.96**	**46431.00**
Chromium VI Emission Factor (lb/MMBtu)	MATS	5.70E-07	5.70E-07	5.70E-07	5.70E-07
Chromium VI Emissions (lbs/yr)		**1758.45**	**1758.45**	**2396.28**	**2864.25**
Copper Emission Factor (lb/MMBtu)	EPRI	2.16E-06	2.16E-06	5.45E-06	2.16E-06
Copper Emissions (lbs/yr)		**6663.23**	**6660.92**	**22903.18**	**10842.19**

U1,U2,U3,U4 - Natural Gas Combustion	Source	E-1 Boiler #1 NG	E-3 Boiler #2 NG	E-5 Boiler #3 NG	E-7 Boiler #4 NG
Natural Gas (MMCF/yr)		73.00	25.00	221.00	262.00
Heat Input (MMBtu/yr)		74,825	25,625	226,525	268,550
As Fired BTU/CF		1,025	1,025	1,025	1,025
Operating Hours		8,760	8,760	8,760	8,760
PM Condensible Emission Factor (lb/MMCF)	AP-42 Table 1.4-2	5.70	5.70	5.70	5.70
PM Condensible Emissions (tons/yr)		**0.21**	**0.07**	**0.63**	**0.75**
PM Filterable Emission Factor (lb/MMCF)	AP-42 Table 1.4-2	1.9	1.9	1.9	1.9
PM Filterable Emissions (tons/yr)		**0.07**	**0.02**	**0.21**	**0.25**
PM10 Emission Factor (lb/MMCF)	AP-42 Table 1.4-2	1.9	1.9	1.9	1.9
PM10 Emissions (tons/yr)		**0.07**	**0.02**	**0.21**	**0.25**
PM2.5 Emission Factor (lb/MMCF)	AP-42 Table 1.4-2	1.90E+00	1.90E+00	1.90E+00	1.90E+00
PM2.5 Emissions (tons/yr)		**0.07**	**0.02**	**0.21**	**0.25**
SO2 Emission Factor (lb/MMCF)	AP-42 Table 1.4-2	0.6	0.6	0.6	0.6
SO2 Emissions (tons/yr)		**0.02**	**0.01**	**0.07**	**0.08**
NOx Emission Factor (lb/MMCF)	AP-42 Table 1.4-1	280.0	280.0	190.0	190.0
Nox Emissions (tons/yr)		**10.22**	**3.50**	**21.00**	**24.89**
CO2 Emission Factor (lb/MMCF)	AP-42 Table 1.4-2	120000.0	120000.0	120000.0	120000.0
CO2 Emissions (tons/yr)		**4,380.00**	**1,500.00**	**13,260.00**	**15,720.00**
CO Emission Factor (lb/MMCF)	AP-42 Table 1.4-1	84.0	84.0	84.0	84.0
CO Emissions (tons/yr)		**3.07**	**1.05**	**9.28**	**11.00**
VOC Emission Factor (lb/MMCF)	AP-42 Table 1.4-2	5.50	5.50	5.50	5.50
VOC Emissions (tons/yr)		**0.20**	**0.07**	**0.61**	**0.72**
Ammonia Emission Factor (lb/MMCF)	EPA	3.2	3.2	3.2	3.2
Ammonia Emissions (tons/yr)		**0.1168**	**0.0400**	**0.3536**	**0.4192**
Methane Emission Factor (lb/MMCF)	AP-42 Table 1.4-2	2.30	2.30	2.30	2.30
Methane Emissions (lbs/yr)		**0.08**	**0.03**	**508.30**	**602.60**
2-Methylnaphthalene Emission Factor (lbs/MMCF)	AP-42 Table 1.4-3	2.40E-05	2.40E-05	2.40E-05	2.40E-05
2-Methylnaphthalene Emissions (lbs/yr)		**1.75E-03**	**6.00E-04**	**5.30E-03**	**6.29E-03**
3-Methylchloranthrene Emission Factor (lbs/MMCF)	AP-42 Table 1.4-3	1.80E-06	1.80E-06	1.80E-06	1.80E-06
3-Methylchloranthrene Emissions (lbs/yr)		**1.31E-04**	**4.50E-05**	**3.98E-04**	**4.72E-04**
7,12 - Dimethylbenz[a] Anthracene Emission Factor (lbs/MMCF)	AP-42 Table 1.4-3	1.60E-05	1.60E-05	1.60E-05	1.60E-05
7,12 - Dimethylbenz[a] Anthracene Emissions (lbs/yr)		**1.17E-03**	**4.00E-04**	**3.54E-03**	**4.19E-03**
Acenaphthene Emission Factor (lbs/MMCF)	AP-42 Table 1.4-3	1.80E-06	1.80E-06	1.80E-06	1.80E-06
Acenaphthene Emissions (lbs/yr)		**1.31E-04**	**4.50E-05**	**3.98E-04**	**4.72E-04**
Acenaphthylene Emission Factor (lbs/MMCF)	AP-42 Table 1.4-3	1.80E-06	1.80E-06	1.80E-06	1.80E-06
Acenaphthylene Emissions (lbs/yr)		**1.31E-04**	**4.50E-05**	**3.98E-04**	**4.72E-04**
Anthracene Emission Factor (lbs/MMCF)	AP-42 Table 1.4-3	2.40E-06	2.40E-06	2.40E-06	2.40E-06
Anthracene Emissions (lbs/yr)		**1.75E-04**	**6.00E-05**	**5.30E-04**	**6.29E-04**
Benz[a] Anthracene Emission Factor (lbs/MMCF)	AP-42 Table 1.4-3	1.80E-06	1.80E-06	1.80E-06	1.80E-06
Benz[a] Anthracene Emissions (lbs/yr)		**1.31E-04**	**4.50E-05**	**3.98E-04**	**4.72E-04**
Benzene Emission Factor (lb/MMCF)	AP-42 Table 1.4-3	2.10E-03	2.10E-03	2.10E-03	2.10E-03
Benzene Emissions (lbs/yr)		**1.53E-01**	**5.25E-02**	**4.64E-01**	**5.50E-01**
Benzo[a] Pyrene Emission Factor (lbs/MMCF)	AP-42 Table 1.4-3	1.20E-06	1.20E-06	1.20E-06	1.20E-06
Benzo[a] Pyrene Emissions (lbs/yr)		**8.76E-05**	**3.00E-05**	**2.65E-04**	**3.14E-04**
Benzo[b] Fluoranthene Emission Factor (lbs/MMCF)	AP-42 Table 1.4-3	1.80E-06	1.80E-06	1.80E-06	1.80E-06
Benzo[b] Fluoranthene Emissions (lbs/yr)		**1.31E-04**	**4.50E-05**	**3.98E-04**	**4.72E-04**
Benzo(g,h,i) Fluoranthene Emission Factor (lbs/MMCF)	AP-42 Table 1.4-3	1.20E-06	1.20E-06	1.20E-06	1.20E-06
Benzo(g,h,i) Fluoranthene Emissions (lbs/yr)		**8.76E-05**	**3.00E-05**	**2.65E-04**	**3.14E-04**
Butane Emission Factor (lbs/MMCF)	AP-42 Table 1.4-3	2.10E+00	2.10E+00	2.10E+00	2.10E+00
Butane Emissions (lbs/yr)		**1.53E+02**	**5.25E+01**	**4.64E+02**	**5.50E+02**
Chrysene Emission Factor (lbs/MMCF)	AP-42 Table 1.4-3	1.80E-06	1.80E-06	1.80E-06	1.80E-06
Chrysene Emissions (lbs/yr)		**1.31E-04**	**4.50E-05**	**3.98E-04**	**4.72E-04**
Dibenzo[a,h] Anthracene Emission Factor (lbs/MMCF)	AP-42 Table 1.4-3	1.20E-06	1.20E-06	1.20E-06	1.20E-06
Dibenzo[a,h] Anthracene Emissions (lbs/yr)		**8.76E-05**	**3.00E-05**	**2.65E-04**	**3.14E-04**
Dichlorobenzene Emission Factor (lbs/MMCF)	AP-42 Table 1.4-3	1.20E-03	1.20E-03	1.20E-03	1.20E-03
Dichlorobenzene Emissions (lbs/yr)		**8.76E-02**	**3.00E-02**	**2.65E-01**	**3.14E-01**
Ethane Emission Factor (lbs/MMCF)	AP-42 Table 1.4-3	3.10E+00	3.10E+00	3.10E+00	3.10E+00
Ethane Emissions (lbs/yr)		**2.26E+02**	**7.75E+01**	**6.85E+02**	**8.12E+02**
Fluoranthene Emission Factor (lbs/MMCF)	AP-42 Table 1.4-3	3.00E-06	3.00E-06	3.00E-06	3.00E-06
Fluoranthene Emissions (lbs/yr)		**2.19E-04**	**7.50E-05**	**6.63E-04**	**7.86E-04**
Fluorene Emission Factor (lbs/MMCF)	AP-42 Table 1.4-3	2.80E-06	2.80E-06	2.80E-06	2.80E-06
Fluorene Emissions (lbs/yr)		**2.04E-04**	**7.00E-05**	**6.19E-04**	**7.34E-04**
Formaldehyde Emission Factor (lbs/MMCF)	AP-42 Table 1.4-3	7.50E-02	7.50E-02	7.50E-02	7.50E-02
Formaldehyde Emissions (lbs/yr)		**5.48E+00**	**1.88E+00**	**1.66E+01**	**1.97E+01**
Hexane Emission Factor (lbs/MMCF)	AP-42 Table 1.4-3	1.80E+00	1.80E+00	1.80E+00	1.80E+00
Hexane Emissions (lbs/yr)		**1.31E+02**	**4.50E+01**	**3.98E+02**	**4.72E+02**
Indeno[1,2,3-c,d] Pyrene Emission Factor (lbs/MMCF)	AP-42 Table 1.4-3	1.80E-06	1.80E-06	1.80E-06	1.80E-06
Indeno[1,2,3-c,d] Pyrene Emissions (lbs/yr)		**1.31E-04**	**4.50E-05**	**3.98E-04**	**4.72E-04**
Naphthalene Emission Factor (lbs/MMCF)	AP-42 Table 1.4-3	6.10E-04	6.10E-04	6.10E-04	6.10E-04
Naphthalene Emissions (lbs/yr)		**4.45E-02**	**1.53E-02**	**1.35E-01**	**1.60E-01**
Pentane Emission Factor (lbs/MMCF)	AP-42 Table 1.4-3	2.60E+00	2.60E+00	2.60E+00	2.60E+00
Pentane Emissions (lbs/yr)		**1.90E+02**	**6.50E+01**	**5.75E+02**	**6.81E+02**
Phenanthrene Emission Factor (lbs/MMCF)	AP-42 Table 1.4-3	1.70E-05	1.70E-05	1.70E-05	1.70E-05
Phenanthrene Emissions (lbs/yr)		**1.24E-03**	**4.25E-04**	**3.76E-03**	**4.45E-03**
Propane Emission Factor (lbs/MMCF)	AP-42 Table 1.4-3	1.60E+00	1.60E+00	1.60E+00	1.60E+00
Propane Emissions (lbs/yr)		**1.17E+02**	**4.00E+01**	**3.54E+02**	**4.19E+02**
Pyrene Emission Factor (lbs/MMCF)	AP-42 Table 1.4-3	5.00E-06	5.00E-06	5.00E-06	5.00E-06
Pyrene Emissions (lbs/yr)		**3.65E-04**	**1.25E-04**	**1.11E-03**	**1.31E-03**
Toluene Emission Factor (lbs/MMCF)	AP-42 Table 1.4-3	3.40E-03	3.40E-03	3.40E-03	3.40E-03
Toluene Emissions (lbs/yr)		**2.48E-01**	**8.50E-02**	**7.51E-01**	**8.91E-01**
Arsenic Emission Factor (lbs/MMCF)	AP-42 Table 1.4-4	2.00E-04	2.00E-04	2.00E-04	2.00E-04
Arsenic Emissions (lbs/yr)		**1.46E-02**	**5.00E-03**	**4.42E-02**	**5.24E-02**
Barium Emission Factor (lbs/MMCF)	AP-42 Table 1.4-4	4.40E-03	4.40E-03	4.40E-03	4.40E-03
Barium Emissions (lbs/yr)		**3.21E-01**	**1.10E-01**	**9.72E-01**	**1.15E+00**
Beryllium Emission Factor (lbs/MMCF)	AP-42 Table 1.4-4	1.20E-05	1.20E-05	1.20E-05	1.20E-05
Beryllium Emissions (lbs/yr)		**8.76E-04**	**3.00E-04**	**2.65E-03**	**3.14E-03**
Cadmium Emission Factor (lbs/MMCF)	AP-42 Table 1.4-4	1.10E-03	3.40E-03	3.40E-03	3.40E-03
Cadmium Emissions (lbs/yr)		**8.03E-02**	**8.50E-02**	**7.51E-01**	**8.91E-01**
Chromium Emission Factor (lbs/MMCF)	AP-42 Table 1.4-4	1.40E-03	1.40E-03	1.40E-03	1.40E-03
Chromium Emissions (lbs/yr)		**1.02E-01**	**3.50E-02**	**3.09E-01**	**3.67E-01**
Cobalt Emission Factor (lbs/MMCF)	AP-42 Table 1.4-4	8.40E-05	8.40E-05	8.40E-05	8.40E-05
Cobalt Emissions (lbs/yr)		**6.13E-03**	**2.10E-03**	**1.86E-02**	**2.20E-02**
Copper Emission Factor (lbs/MMCF)	AP-42 Table 1.4-4	8.50E-04	8.50E-04	8.50E-04	8.50E-04
Copper Emissions (lbs/yr)		**6.21E-02**	**2.13E-02**	**1.88E-01**	**2.23E-01**
Manganese Emission Factor (lbs/MMCF)	AP-42 Table 1.4-4	3.80E-04	3.80E-04	3.80E-04	3.80E-04
Manganese Emissions (lbs/yr)		**2.77E-02**	**9.50E-03**	**8.40E-02**	**9.96E-02**
Mercury Emission Factor (lbs/MMCF)	AP-42 Table 1.4-4	2.60E-04	2.60E-04	2.60E-04	2.60E-04
Mercury Emissions (lbs/yr)		**1.90E-02**	**6.50E-03**	**5.75E-02**	**6.81E-02**
Molybdenum Emission Factor (lbs/MMCF)	AP-42 Table 1.4-4	1.10E-03	1.10E-03	1.10E-03	1.10E-03
Molybdenum Emissions (lbs/yr)		**8.03E-02**	**2.75E-02**	**2.43E-01**	**2.88E-01**
Nickel Emission Factor (lbs/MMCF)	AP-42 Table 1.4-4	2.10E-03	2.10E-03	2.10E-03	2.10E-03
Nickel Emissions (lbs/yr)		**1.53E-01**	**5.25E-02**	**4.64E-01**	**5.50E-01**
Selenium Emission Factor (lbs/MMCF)	AP-42 Table 1.4-4	2.40E-05	2.40E-05	2.40E-05	2.40E-05
Selenium Emissions (lbs/yr)		**1.75E-03**	**6.00E-04**	**5.30E-03**	**6.29E-03**
Vanadium Emission Factor (lbs/MMCF)	AP-42 Table 1.4-4	2.30E-03	2.30E-03	2.30E-03	2.30E-03
Vanadium Emissions (lbs/yr)		**1.68E-01**	**5.75E-02**	**5.08E-01**	**6.03E-01**
Zinc Emission Factor (lbs/MMCF)	AP-42 Table 1.4-4	2.90E-02	2.90E-02	2.90E-02	2.90E-02
Zinc Emissions (lbs/yr)		**2.12E+00**	**7.25E-01**	**6.41E+00**	**7.60E+00**

4.71E+04
4.69E+04

U1,U2,U3,U4 - Coal Bunkers		E2	E-4	E-6	E-8
		Boiler #1 Coal Bunker	Boiler #2 Coal Bunker	Boiler #3 Coal Bunker	Boiler #4 Coal Bunker
Coal Throughput (tons)		1,171,801	1,171,801	1,596,840	1,908,688
Heat Input from CEMS (MMBtu/yr)					
% Ash					
% Sulphur					
Operating Hours					
PM Filterable Emission Factor (lb/ton)	AP-42 13.2.4	1.32E-04	1.32E-04	1.32E-04	1.32E-04
Control Efficiency	90% for PM 2.5	90.00	90.00	90.00	90.00
PM Filterable Emissions (tons/yr)		**0.0077**	**0.0077**	**0.0105**	**0.0126**
PM10 Emission Factor (lb/ton)	AP-42 13.2.4	6.25E-05	6.25E-05	6.25E-05	6.25E-05
PM10 Emissions (tons/yr)		**0.0037**	**0.0037**	**0.0050**	**0.0060**
PM2.5 Emission Factor (lb/ton)	AP-42 13.2.4	9.46E-06	9.46E-06	9.46E-06	9.46E-06
PM2.5 Emissions (tons/yr)		**0.0011**	**0.0011**	**0.0015**	**0.0018**
Antimony Emission Factor (lb/ton)	PM X Coal Metal Data	1.14E-10	1.14E-10	1.14E-10	1.14E-10
Antimony Emissions (lbs/yr)		**1.33E-05**	**1.33E-05**	**1.81E-05**	**2.17E-05**
Arsenic Emission Factor (lb/ton)	PM X Coal Metal Data	8.49E-10	8.49E-10	8.49E-10	8.49E-10
Arsenic Emissions (lbs/yr)		**9.95E-05**	**9.95E-05**	**1.36E-04**	**1.62E-04**
Cadmium Emission Factor (lb/ton)	PM X Coal Metal Data	3.96E-11	3.96E-11	3.96E-11	3.96E-11
Cadmium Emissions (lbs/yr)		**4.64E-06**	**4.64E-06**	**6.33E-06**	**7.56E-06**
Chromium Emission Factor (lb/ton)	PM X Coal Metal Data	2.79E-09	2.79E-09	2.79E-09	2.79E-09
Chromium Emissions (lbs/yr)		**3.27E-04**	**3.27E-04**	**4.46E-04**	**5.33E-04**
Nickel Emission Factor (lb/ton)	PM X Coal Metal Data	2.01E-09	2.01E-09	2.01E-09	2.01E-09
Nickel Emissions (lbs/yr)		**2.36E-04**	**2.36E-04**	**3.22E-04**	**3.84E-04**
Cobalt Emission Factor (lb/ton)	PM X Coal Metal Data	8.98E-10	8.98E-10	8.98E-10	8.98E-10
Cobalt Emissions (lbs/yr)		**1.05E-04**	**1.05E-04**	**1.43E-04**	**1.71E-04**
Lead Emission Factor (lb/ton)	PM X Coal Metal Data	1.07E-09	1.07E-09	1.07E-09	1.07E-09
Lead Emissions (lbs/yr)		**1.25E-04**	**1.25E-04**	**1.71E-04**	**2.04E-04**
Manganese Emission Factor (lb/ton)	PM X Coal Metal Data	7.12E-08	7.12E-08	7.12E-08	7.12E-08
Manganese Emissions (lbs/yr)		**8.34E-03**	**8.34E-03**	**1.14E-02**	**1.36E-02**
Mercury Emission Factor (lb/ton)	PM X Coal Metal Data	1.19E-11	1.19E-11	1.19E-11	1.19E-11
Mercury Emissions (lbs/yr)		**1.39E-06**	**1.39E-06**	**1.90E-06**	**2.27E-06**
Selenium Emission Factor (lb/ton)	PM X Coal Metal Data	2.92E-10	2.92E-10	2.92E-10	2.92E-10
Selenium Emissions (lbs/yr)		**3.42E-05**	**3.42E-05**	**4.66E-05**	**5.57E-05**

Notes:

2017 Average Date (LIMS)		Average %
Constituents	Average PPM	
Antimony	0.860	#########
Arsenic	6.430	#########
Beryllium	2.900	#########
Cadmium	0.300	#########
Chromium	21.130	#########
Nickel	15.250	#########
Cobalt*	6.800	#########
Lead	8.090	#########
Manganese	539.000	#########
Mercury	0.090	#########
Selenium	2.210	#########

* EPRI data

Drop point AP-42, 13.2.4-1, Aggregate Handling & Storage Piles

Drop point emissions calculation						
Process	U (mph)	M (%)	PM (lb/ton)	PM_{10} (lb/ton)	$PM_{2.5}$ (lb/ton)	
Coal (indoor/enclosed	1.30	4.5	1.32E-04	6.25E-05	9.46E-06	Coal Bunkers
Coal (outdoor)	8.40	4.5	1.49E-03	7.06E-04	1.07E-04	
Coal Conveyor	1.3	4.5	1.32E-04	6.25E-05	9.46E-06	
Limestone handling	8.40	0.7	2.02E-02	9.56E-03	1.45E-03	
Gypsum handling	8.40	4.8	1.36E-03	6.45E-04	9.77E-05	

U8 - Fly Ash Handling & Storage (GPP)	E-13	E-31	E-32	E-33
	Gypsum Processing Plant Flyash Silo (2)	Unit 8 Flyash handling & storage -Silo A/B dry loadout fugitives	Unit 8 Flyash handling & storage -Railcar A/B Loadout	Unit 8 Flyash handling & storage - Flyash silo A/B wet loadout
Throughput (tons)	705,180	705,180	529,980	2,628,000
Control Type	Bin Vent	Filter	Bin Vent	Wet Process
Vendor Efficiency	95%	95%	95%	95%
Operating Hours	8,760	8,760	8,760	8,760
PM Filterable Emission Factor (lb/ton)	0.34930	0.1244	0.1244	0.0123
PM Filterable Emissions (tons/yr)	**6.1580**	**2.1925**	**1.6478**	**0.8108**
PM10 Emission Factor (lb/ton)	0.12240	0.0345	0.0345	0.0034
PM10 Emissions (tons/yr)	**2.1579**	**0.6079**	**0.4569**	**0.2248**
PM2.5 Emission Factor (lb/ton)	0.12240	0.0345	0.0345	0.0034
PM2.5 Emissions (tons/yr)	**2.1579**	**0.6079**	**0.4569**	**0.2248**
Antimony Emission Factor (lb/ton)	1.11E-06	3.95E-07	3.95E-07	3.92E-08
Antimony Emissions (lbs/yr)	**0.0391**	**0.0139**	**0.0105**	**0.0052**
Arsenic Emission Factor (lb/ton)	2.24E-05	7.99E-06	7.99E-06	7.93E-07
Arsenic Emissions (lbs/yr)	**0.7913**	**0.2817**	**0.2117**	**0.1042**
Cadmium Emission Factor (lb/ton)	1.42E-06	5.07E-07	5.07E-07	5.03E-08
Cadmium Emissions (lbs/yr)	**0.0502**	**0.0179**	**0.0134**	**0.0066**
Chromium Emission Factor (lb/ton)	1.15E-05	4.10E-06	4.10E-06	4.07E-07
Chromium Emissions (lbs/yr)	**0.4064**	**0.1447**	**0.1088**	**0.0535**
Chromium VI Emission Factor (lb/ton)	7.07E-07	2.52E-07	2.52E-07	2.50E-08
Chromium VI Emissions (lbs/yr)	**0.0249**	**0.0089**	**0.0067**	**0.0033**
Nickel Emission Factor (lb/ton)	6.29E-06	2.24E-06	2.24E-06	2.22E-07
Nickel Emissions (lbs/yr)	**0.2217**	**0.0789**	**0.0593**	**0.0292**
Cobalt Emission Factor (lb/ton)	2.09E-06	7.43E-07	7.43E-07	7.37E-08
Cobalt Emissions (lbs/yr)	**0.0736**	**0.0262**	**0.0197**	**0.0097**
Lead Emission Factor (lb/ton)	6.46E-06	2.30E-06	2.30E-06	2.28E-07
Lead Emissions (lbs/yr)	**0.2278**	**0.0811**	**0.0610**	**0.0300**
Manganese Emission Factor (lb/ton)	1.87E-05	6.65E-06	6.65E-06	6.60E-07
Manganese Emissions (lbs/yr)	**0.6589**	**0.2346**	**0.1763**	**0.0868**
Mercury Emission Factor (lb/ton)	2.35E-07	8.36E-08	8.36E-08	8.30E-09
Mercury Emissions (lbs/yr)	**8.28E-03**	**0.0029**	**0.0022**	**0.001090**
Selenium Emission Factor (lb/ton)	4.84E-06	1.72E-06	1.72E-06	1.71E-07
Selenium Emissions (lbs/yr)	**0.1706**	**0.0607**	**0.0456**	**0.0225**

revise EF using 25% moisture content

Notes:

Notes:
E-13 - AP-42 Section 13.2.4, Eq.1

E-31, E-32
AP-42 Batch Concrete Table 11.12-2 for supplement loading
Moisture content adjusted to 4.8% by AP-42 13.2.4 Equation 1
Adjustment Factor: ((M1)^1.4)/((M2/2)^1.4)
M1 = 1% original cement supplement moisture content
M2 = 4.8% Raw flyash moisture content

E-33
AP-42 Batch Concrete Table 11.17-4

Flyash silo truck loadout emission factor	PM	PM10/PM2.5	U8-E33
Cement truck loading	1.12	0.31	lb/ton
Cement moisture content	1.00	1.00	%
Dry Flyash moisture content	25.00	25.00	%
AP-42, 13.2.4, Eq (1): E = k(0.0032)(U/5)^1.3/(M/2)^1.4			
Adjust factor: (1/2)^1.4/(4.8/2)^1.4	0.011	0.011	
Adjusted factor:	0.0123	0.0034	lb/ton

U9 - Flyash Transfer Bin System	E-16 Flyash Transfer Bin, Units 1 & 2	E-17 Flyash Transfer Bin, Unit 3	E-18 Flyash Transfer Bin, Unit 4
Coal Throughput (tons)	173,614	118,422	141,701
Control Type	Baghouse	Baghouse	Baghouse
Control Efficiency	95%	95%	95%
PM Filterable Emission Factor (lb/ton)	0.3493	0.3493	0.3493
PM Filterable Emissions (tons/yr)	**1.5161**	**1.0341**	**1.2374**
PM10 Emission Factor (lb/ton)	0.1224	0.1224	0.1224
PM10 Emissions (tons/yr)	**0.5313**	**0.3624**	**0.4336**
PM2.5 Emission Factor (lb/ton)	0.1224	0.1224	0.1224
PM2.5 Emissions (tons/yr)	**0.5313**	**0.3624**	**0.4336**
Antimony Emission Factor (lb/ton)	1.11E-06	1.11E-06	1.11E-06
Antimony Emissions (lbs/yr)	**1.93E-01**	**1.31E-01**	**1.57E-01**
Arsenic Emission Factor (lb/ton)	2.24E-05	2.24E-05	2.24E-05
Arsenic Emissions (lbs/yr)	**3.90E+00**	**2.66E+00**	**3.18E+00**
Cadmium Emission Factor (lb/ton)	1.42E-06	1.42E-06	1.42E-06
Cadmium Emissions (lbs/yr)	**2.47E-01**	**1.69E-01**	**2.02E-01**
Chromium Emission Factor (lb/ton)	1.15E-05	1.15E-05	1.15E-05
Chromium Emissions (lbs/yr)	**2.00E+00**	**1.37E+00**	**1.63E+00**
Chromium VI Emission Factor (lb/ton)	1.15E-05	1.15E-05	1.15E-05
Chromium VI Emissions (lbs/yr)	**2.00E+00**	**1.37E+00**	**1.63E+00**
Nickel Emission Factor (lb/ton)	6.29E-06	6.29E-06	6.29E-06
Nickel Emissions (lbs/yr)	**1.09E+00**	**7.45E-01**	**8.91E-01**
Cobalt Emission Factor (lb/ton)	2.09E-06	2.09E-06	2.09E-06
Cobalt Emissions (lbs/yr)	**3.62E-01**	**2.47E-01**	**2.96E-01**
Lead Emission Factor (lb/ton)	6.46E-06	6.46E-06	6.46E-06
Lead Emissions (lbs/yr)	**1.12E+00**	**7.65E-01**	**9.16E-01**
Manganese Emission Factor (lb/ton)	1.87E-05	1.87E-05	1.87E-05
Manganese Emissions (lbs/yr)	**3.24E+00**	**2.21E+00**	**2.65E+00**
Mercury Emission Factor (lb/ton)	2.35E-07	2.35E-07	2.35E-07
Mercury Emissions (lbs/yr)	**4.08E-02**	**2.78E-02**	**3.33E-02**
Selenium Emission Factor (lb/ton)	4.84E-06	4.84E-06	4.84E-06
Selenium Emissions (lbs/yr)	**8.40E-01**	**5.73E-01**	**6.86E-01**

Notes:

AP-42 Batch Concrete Table 11.12-2 for supplement loading

Moisture content adjusted to 4.8% by AP-42 13.2.4 Equation 1
Adjustment Factor: ((M1)^1.4)/((M2/2)^1.4)

M1 =	1%	original cement supplement moisture
M2 =	4.8%	Raw flyash moisture content

U12 - Limestone Processing Operation	E-24 Limestone Clamshell/ barge unloading to Hopper	E-25 Limestone Hopper to Feeder Belt LA	E-26 Limestone Feeder Belt LA to Conveyor LB	E-27 Limestone Conveyor LB to Limestone Storage Pile	E-28 Limestone Ball Mill & Crusher & Conveyor
Coal Throughput (tons)	6,570,000	8,760,000	8,760,000	8,760,000	1,270,200
PM Filterable Emission Factor (lb/ton)	0.02021	0.02021	0.02021	0.02021	0.0012
PM Filterable Emissions (tons/yr)	**66.3932**	**88.5243**	**88.5243**	**88.5243**	**0.7621**
PM10 Emission Factor (lb/ton)	0.00956	0.00956	0.00956	0.00956	0.00054
PM10 Emissions (tons/yr)	**31.4022**	**41.8696**	**41.8696**	**41.8696**	**0.3430**
PM2.5 Emission Factor (lb/ton)	0.00145	0.00145	0.00145	0.00145	0.0001
PM2.5 Emissions (tons/yr)	**4.7552**	**6.3403**	**6.3403**	**6.3403**	**0.0635**

Notes:

E24-E27: AP-42 Section 13.2.4 Equation 1
Emission Factor = E(lbton) = k (0.0032) ((U/5)^1.3) / ((M/2)^1.4)
k = 0.74 0.35 0.053
U = 8.4 mph
M = 0.70 % moisture content **PM, PM10, PM2.5**

E28: AP-42 Section 11.19.2-2 for Tertiary Crusher

U14 - Cooling Towers	E-38a Unit 4 Cooling Tower (gal/day)	E-38b Unit 3 Cooling Tower (gal/day)	E-38c Unit 2 Cooling Tower (gal/day)	Total
Throughput (gallons/day)	53,000,000	70,000,000	91,000,000	#########
Operating Hours	8,760	8,760	8,760	8,760
PM Filterable Emissions Factor (lbs/1000 gal)				
PM Filterable Emissions (tons/yr)	**9.32**	**3.35**	**3.15**	**15.82**
PM Emissions Factor (lbs/1000 gal)				
PM10 Emissions (tons/yr)	**9.32**	**3.35**	**3.15**	**15.82**
PM Emissions Factor (lbs/1000 gal)				
PM2.5 Emissions (tons/yr)	**9.32**	**3.35**	**3.15**	**15.82**

U15 - Haul Roads	E-39 Haul Road Fugitives
Material Hauled Throughput (tons)	3,863,160
Vehicle Average Capacity (tons)	40
Average Miles per Trip	1.8
Vehicle Miles Traveled (VMT)	173842.2
PM Filterable Emission Factor (lb/VMT)	5.5061
Control Efficiency	70.00
PM Filterable Emissions (tons/yr)	**143.5801**
PM10 Emission Factor (lb/ton)	1.3503
PM10 Emissions (tons/yr)	**35.2121**
PM2.5 Emission Factor (lb/ton)	0.1350
PM2.5 Emissions (tons/yr)	**3.5212**

Notes:

Reference: AP-42, 13.2.2, Unpaved Road, Eqn. 1a

E (lb/VMT) = K(s/12)a/(W/3)b(365-P)/365

The current dump trucks used at Mill Creek are Volvo Articulated Trucks Model A40D.
TOTAL EMPTY **68938.5 lb**
TOTAL LOADED **150509.6 lb**
The silt content was based on the poz-o-tec analysis by RJ Lee. The Pozotec tab on the spreadsheet has the particle size break out. AP-42 considers silt as 200 mesh or ~74 microns. The 3.96% silt is the 80 microns and below fraction from the particle size testing. The density and characteristics of the poz-o-tec is very similar to that of clay. This also corresponds to the background data in AP-42. Under the "Related Information" link to AP-42 13.2.2 (http://www.epa.gov/ttn/chief/ap42/ch13/related/c13s02-2.html), there is a spreadsheet of default industrial road silt contents (r13s0202_dec03.xls) and the default of

CE based upon speed control, limit of traffic to area and watering of roads.

K=	**4.9**	**1.5**	**0.15**	**PM, PM10, PM2.5**
s=	3.96 %			
a=	**0.7**	**0.9**	**0.9**	**PM, PM10, PM2.5**
W=	54.86 tons			
b=	**0.45**	**0.45**	**0.45**	**PM, PM10, PM2.5**
P=	124 days			

U16 - Sorbent Storage Silos	E-40
	Sorbent Silos
Throughput (tons)	350,400
Control Type	Bin Vent
Vendor Efficiency	99%
Operating Hours	8,760
PM Filterable Emission Factor (lb/ton)	0.61000
PM Filterable Emissions (tons/yr)	**1.0687**
PM10 Emission Factor (lb/ton)	0.61000
PM10 Emissions (tons/yr)	**1.0687**
PM2.5 Emission Factor (lb/ton)	0.61000
PM2.5 Emissions (tons/yr)	**1.0687**

Notes:

E-40 - AP-42 Section 11.17-4, D

U17 - PAC Storage Silos	E-41
	PAC Silos
Throughput (tons)	350,400.00
Control Type	Bin Vent
Vendor Efficiency	99%
Operating Hours	8,760
PM Filterable Emission Factor (lb/ton)	0.61000
PM Filterable Emissions (tons/yr)	**1.0687**
PM10 Emission Factor (lb/ton)	0.61000
PM10 Emissions (tons/yr)	**1.0687**
PM2.5 Emission Factor (lb/ton)	0.61000
PM2.5 Emissions (tons/yr)	**1.0687**

Notes:
E-41 - AP-42 Section 11.17-4, D

U18 - Fly Ash Storage Silos	E-42
	Fly Ash Silos
Throughput (tons)	696,420
Control Type	Bin Vent
Vendor Efficiency	99%
Operating Hours	8,760
PM Filterable Emission Factor (lb/ton)	0.34930
PM Filterable Emissions (tons/yr)	**1.2163**
PM10 Emission Factor (lb/ton)	0.12240
PM10 Emissions (tons/yr)	**0.4262**
PM2.5 Emission Factor (lb/ton)	0.12240
PM2.5 Emissions (tons/yr)	**0.4262**
Antimony Emission Factor (lb/ton)	1.11E-06
Antimony Emissions (lbs/yr)	**0.0077**
Arsenic Emission Factor (lb/ton)	2.24E-05
Arsenic Emissions (lbs/yr)	**0.1563**
Cadmium Emission Factor (lb/ton)	1.42E-06
Cadmium Emissions (lbs/yr)	**0.0099**
Chromium Emission Factor (lb/ton)	1.15E-05
Chromium Emissions (lbs/yr)	**0.0803**
Chromium VI Emission Factor (lb/ton)	7.07E-07
Chromium VI Emissions (lbs/yr)	**0.0049**
Nickel Emission Factor (lb/ton)	6.29E-06
Nickel Emissions (lbs/yr)	**0.0438**
Cobalt Emission Factor (lb/ton)	2.09E-06
Cobalt Emissions (lbs/yr)	**0.0145**
Lead Emission Factor (lb/ton)	6.46E-06
Lead Emissions (lbs/yr)	**0.0450**
Manganese Emission Factor (lb/ton)	1.87E-05
Manganese Emissions (lbs/yr)	**0.1301**
Mercury Emission Factor (lb/ton)	2.35E-07
Mercury Emissions (lbs/yr)	**1.64E-03**
Selenium Emission Factor (lb/ton)	4.84E-06
Selenium Emissions (lbs/yr)	**0.0337**

Notes:
E-42 - AP-42 Section 11.12-2

U20: Gypsum Pelletizing Plant

Operation hours (hrs) 8,760

	Equipment	Processes Description	Process Throughput	Conditions	PM Factor	PM10 Factor	PM2.5 Factor	Emission Factor	Control Effic.	PM	PM10	PM2.5
			(tons/yr)		(lb/ton)	(lb/ton)	(lb/ton)	Source & Rate		(tpy)	(tpy)	(tpy)
E44a	Load Hopper		438,000	open, 13%	0.0003	0.0002	0.00002	AP-42, 13.2.4, Eq(1)	0.0%	0.074	0.035	0.005
E44b	Conveyor-1	Hopper to belt conveyor	438,000	enclosed, 13%	0.000030	0.000014	0.000002	AP-42, 13.2.4, Eq(1)		0.007	0.003	0.000
E44c	Disp Dryer	Belt-1 to dispersion dryer	438,000	enclosed, 13%	0.000030	0.000014	0.000002	AP-42, 13.2.4, Eq(1)		0.007	0.003	0.000
E44d	Pneumatic con	dust collector as separator	438,000	indoor, 1%	0.00034	0.00016	0.00002	AP-42, 13.2.4, Eq(1)		0.074	0.035	0.005
E44e	Mixer Load	separator cyclone to hopper	438,000	indoor, 1%	0.00108	0.00051	0.00008	AP-42, 13.2.4, Eq(1)		0.238	0.112	0.017
E44f	Rotray airlock		438,000	enclosed, 1%	0.00108	0.00051	0.00008	AP-42, 13.2.4, Eq(1)		0.238	0.112	0.017
E44g	Pin Mixer	Airlock to mixer	438,000	enclosed, 1%	0.00108	0.00051	0.00008	AP-42, 13.2.4, Eq(1)		0.238	0.112	0.017
E44h	Conveyor-3	mixer to belt conveyor	438,000	enclosed, 7%	0.00007	0.00003	0.00001	AP-42, 13.2.4, Eq(1)		0.016	0.007	0.001
E44i	Pelletizer	belt to pelletizer	438,000	enclosed, 7%	7.1E-05	3.4E-05	5.1E-06	AP-42, 13.2.4, Eq(1)		0.016	0.007	0.001
E44j	Conveyor-4	pelletizer to belt conveyor	438,000	enclosed, 7%	0.00007	0.00003	0.00001	AP-42, 13.2.4, Eq(1)		0.016	0.007	0.001
E44k	FB Dryer	belt to FB dryer	438,000	enclosed, 7%	7.1E-05	3.4E-05	5.1E-06	AP-42, 13.2.4, Eq(1)		0.016	0.007	0.001
E44l	Screener	Screening operation	438,000		0.0022	0.0007	0.0001	AP-42, 11.19.2-2		0.482	0.162	0.011
E44m	Belt conveyor	belt conveyor to product pile	438,000	enclosed, 1%	0.0011	0.0005	0.0001	AP-42, 13.2.4, Eq(1)		0.238	0.112	0.017
E44n	Hammermill	grinding	40,208		0.0404	0.0339	0.0121	AP-42, 11.19.2-4	0.0%	0.812	0.682	0.243
E44o	Silo	Limestone Silo	438,000		0.6100	0.6100	0.6100		99.0%	1.336	1.336	1.336
									Total	**3.80**	**2.73**	**1.67**

References:

AP-42, 11.12: Concrete Batching

AP-42, 11.16: Gypsum Manufacturing

AP-42, 11.19: Crushed Stone Processing and Pulverized Mineral Processing

Gypsum drop point emissions calculation, AP-42, 13.2.4, Eq(1)					
Process	U (mph)	M (%)	PM	PM_{10}	$PM_{2.5}$
Enclosed, moist	1.3	13.00	2.99E-05	1.41E-05	2.14E-06
Indoor, moist	3.0	13.00	8.87E-05	4.20E-05	6.35E-06
Open, moist	8.4	13.00	3.38E-04	1.60E-04	2.42E-05
Enclosed, dry	1.3	1.00	1.08E-03	5.13E-04	7.77E-05
Indoor, dry	3.0	1.00	3.22E-03	1.52E-03	2.30E-04
Open, dry	8.4	1.00	1.23E-02	5.80E-03	8.79E-04
Enclosed, 0.5dry	1.3	7.00	7.11E-05	3.37E-05	5.10E-06
Indoor, 0.5dry	3.0	7.00	2.11E-04	9.98E-05	1.51E-05
Open, 0.5dry	8.4	7.00	8.05E-04	3.81E-04	5.76E-05

NG Usage	MMBtu/hr	42.00
Operation time	hr/yr	8760
Fuels Energy Density	MMBtu/mmcf	1,020
Fuel Usage	mmcf	360.71

Criteria Pollutant	Factor (lb/mmcf)	EF Source	Emissions (tpy)
NOx	100.00	AP-42, 1.4-1	18.04
CO	84.00	AP-42, 1.4-1	15.15
PM	0.32	**EPA's Emission Inventory and Analysis Group Guidance, 3/30/2012**	5.77E-02
PM10	0.20	**EPA's Emission Inventory and Analysis Group Guidance, 3/30/2012**	3.61E-02
PM2.5	0.11	**EPA's Emission Inventory and Analysis Group Guidance, 3/30/2012**	1.98E-02
SO2	0.60	AP-42, 1.4-2	1.08E-01
VOC	5.50	AP-42, 1.4-2	9.92E-01
Lead	0.00		9.02E-05
Ammonia (NH3)	3.20		5.77E-01
Total HAP	1.89		0.340
Single VOC HAP			
2-Methylnaphthalene	2.40E-05	AP-42, 1.4-3	8.66E-03
3-Methylchloranthrene	1.80E-06	AP-42, 1.4-3	6.49E-04
DMBA	1.60E-05	AP-42, 1.4-3	5.77E-03
Acenaphthene	1.80E-06	AP-42, 1.4-3	6.49E-04
Acenaphthylene	1.80E-06	AP-42, 1.4-3	6.49E-04
Anthracene	2.40E-06	AP-42, 1.4-3	8.66E-04
Benz(a)anthracene	1.80E-06	AP-42, 1.4-3	6.49E-04
Benzene	2.10E-03	AP-42, 1.4-3	7.57E-01
Benzo(a)pyrene	1.20E-06	AP-42, 1.4-3	4.33E-04
Benzo(b)fluoranthene	1.80E-06	AP-42, 1.4-3	6.49E-04
Benzo(g,h,i)perylene	1.20E-06	AP-42, 1.4-3	4.33E-04
Benzo(k)fluoranthene	1.80E-06	AP-42, 1.4-3	6.49E-04
Chrysene	1.80E-06	AP-42, 1.4-3	6.49E-04
Dibenzo(a,h)anthracene	1.20E-06	AP-42, 1.4-3	4.33E-04
Dichlorobenzene	1.20E-03	AP-42, 1.4-3	4.33E-01
Fluoranthene	3.00E-06	AP-42, 1.4-3	1.08E-03
Fluorene	2.80E-06	AP-42, 1.4-3	1.01E-03
Formaldehyde	7.50E-02	AP-42, 1.4-3	2.71E+01
Hexane	1.80E+00	AP-42, 1.4-3	6.49E+02
Indeno(1,2,3-cd)pyrene	1.80E-06	AP-42, 1.4-3	6.49E-04
Naphthalene	6.10E-04	AP-42, 1.4-3	2.20E-01
Phenanathrene	1.70E-05	AP-42, 1.4-3	6.13E-03
Pyrene	5.00E-06	AP-42, 1.4-3	1.80E-03
Toluene	3.40E-03	AP-42, 1.4-3	1.23E+00
Single Non-VOC HAP			
Arsenic	2.00E-04	AP-42, 1.4-4	7.21E-02
Beryllium	1.20E-05	AP-42, 1.4-4	4.33E-03
Cadmium	1.10E-03	AP-42, 1.4-4	3.97E-01
Chromium	1.40E-03	AP-42, 1.4-4	5.05E-01
Cobalt	8.40E-05	AP-42, 1.4-4	3.03E-02
Manganese	3.80E-04	AP-42, 1.4-4	1.37E-01
Mercury	2.60E-04	AP-42, 1.4-4	9.38E-02
Nickel	2.10E-03	AP-42, 1.4-4	7.57E-01
Selenium	2.40E-05	AP-42, 1.4-4	8.66E-03

Greenhouse Gas (GHG)				CO2e factor	CO2e
CO2	120,000	AP-42, 1.4-2	21,642	1	21642.4
N2O	0.64	AP-42, 1.4-2	0.12	310.00	35.8
Methane (CH4)	2.30	AP-42, 1.4-2	0.41	21.00	8.7
GHG Total			21,643		21,687

Coal Handling	Radial Stacker E47c	Coal Crusher E47d	Coal Conveyor Belts E47e	Barge Unloading E47a	Rail Car Unloading E47b
Throughput (tons)	13,140,000	15,768,000	126,144,000	13,140,000	21,024,000
Heat Input from CEMS (MMBtu/yr)					
% Ash					
% Sulphur					
Operating Hours					
PM Filterable Emission Factor (lb/ton)	0.00149	0.00013	0.00013	0.00149	0.00149
Control Efficiency	0.00	0.00	0.00	0.00	0.00
PM Filterable Emissions (tons/yr)	**9.8128**	**1.0412**	**8.3297**	**9.8128**	**15.7005**
PM10 Emission Factor (lb/ton)	0.00071	0.00006	0.00006	0.00071	0.00071
PM10 Emissions (tons/yr)	**4.6412**	**0.4925**	**3.9397**	**4.6412**	**7.4259**
PM2.5 Emission Factor (lb/ton)	0.000107	0.000009	0.000009	0.000107	0.000107
PM2.5 Emissions (tons/yr)	**0.7028**	**0.0746**	**0.5966**	**0.7028**	**1.1245**
Antimony Emission Factor (lb/ton)	1.28E-09	1.14E-10	1.14E-10	1.28E-09	1.28E-09
Antimony Emissions (lbs/yr)	**1.69E-02**	**1.79E-03**	**1.43E-02**	**1.69E-02**	**2.70E-02**
Arsenic Emission Factor (lb/ton)	9.60E-09	8.49E-10	8.49E-10	9.60E-09	9.60E-09
Arsenic Emissions (lbs/yr)	**1.26E-01**	**1.34E-02**	**1.07E-01**	**1.26E-01**	**2.02E-01**
Beryllium Emission Factor (lb/ton)	4.33E-09	3.83E-10	3.83E-10	4.33E-09	4.33E-09
Beryllium Emissions (lbs/yr)	**5.69E-02**	**6.04E-03**	**4.83E-02**	**5.69E-02**	**9.11E-02**
Cadmium Emission Factor (lb/ton)	4.48E-10	3.96E-11	3.96E-11	4.48E-10	4.48E-10
Cadmium Emissions (lbs/yr)	**5.89E-03**	**6.25E-04**	**5.00E-03**	**5.89E-03**	**9.42E-03**
Chromium Emission Factor (lb/ton)	3.16E-08	2.79E-09	2.79E-09	3.16E-08	3.16E-08
Chromium Emissions (lbs/yr)	**4.15E-01**	**4.40E-02**	**3.52E-01**	**4.15E-01**	**6.64E-01**
Nickel Emission Factor (lb/ton)	2.28E-08	2.01E-09	2.01E-09	2.28E-08	2.28E-08
Nickel Emissions (lbs/yr)	**2.99E-01**	**3.18E-02**	**2.54E-01**	**2.99E-01**	**4.79E-01**
Cobalt Emission Factor (lb/ton)	1.02E-08	8.98E-10	8.98E-10	1.02E-08	1.02E-08
Cobalt Emissions (lbs/yr)	**1.33E-01**	**1.42E-02**	**1.13E-01**	**1.33E-01**	**2.14E-01**
Lead Emission Factor (lb/ton)	1.21E-08	1.07E-09	1.07E-09	1.21E-08	1.21E-08
Lead Emissions (lbs/yr)	**1.59E-01**	**1.68E-02**	**1.35E-01**	**1.59E-01**	**2.54E-01**
Manganese Emission Factor (lb/ton)	8.05E-07	7.12E-08	7.12E-08	8.05E-07	8.05E-07
Manganese Emissions (lbs/yr)	**1.06E+01**	**1.12E+00**	**8.98E+00**	**1.06E+01**	**1.69E+01**
Mercury Emission Factor (lb/ton)	1.34E-10	1.19E-11	1.19E-11	1.34E-10	1.34E-10
Mercury Emissions (lbs/yr)	**1.77E-03**	**1.87E-04**	**1.50E-03**	**1.77E-03**	**2.83E-03**
Selenium Emission Factor (lb/ton)	3.30E-09	2.92E-10	2.92E-10	3.30E-09	3.30E-09
Selenium Emissions (lbs/yr)	**4.34E-02**	**4.60E-03**	**3.68E-02**	**4.34E-02**	**6.94E-02**

Notes:
Source AP-42 13.2.4 Aggregate Handling and Storage Piles -
Predictive Emission Factor Equation E=k(0.0032)(((U/5)^1.3)/((M/2)^1.4))
in lb/ton

Coal Conveyors are enclosed or indoor, wind speed assumed at 1.3 mph

M=4.5%

2017 Average Date (LIMS)		Average %
Constituents	Average PPM	
Antimony	0.860	0.000086%
Arsenic	6.430	0.000643%
Beryllium	2.900	0.000290%
Cadmium	0.300	0.000030%
Chromium	21.130	0.002113%
Nickel	15.250	0.001525%
Cobalt*	6.800	0.000680%
Lead	8.090	0.000809%
Manganese	539.000	0.053900%
Mercury	0.090	0.000009%
Selenium	2.210	0.000221%

* EPRI data

Drop point AP-42, 13.2.4-1, Aggregate Handling & Storage Piles

Drop point emissions calculation					
Process	U (mph)	M (%)	PM (lb/ton)	PM_{10} (lb/ton)	$PM_{2.5}$ (lb/ton)
Coal (indoor/enclosed)	1.30	4.5	1.32E-04	6.25E-05	9.46E-06
Coal (outdoor)	8.40	4.5	1.49E-03	7.06E-04	1.07E-04
Coal Conveyor	1.3	4.5	1.32E-04	6.25E-05	9.46E-06
Limestone handling	8.40	0.7	2.02E-02	9.56E-03	1.45E-03
Gypsum handling	8.40	4.8	1.36E-03	6.45E-04	9.77E-05

AP-42, 13.2.5

Emission Summary		
PM Emissions (tons/yr)	15.15	tpy
PM10 Emissions (tons/y	7.58	tpy
PM2.5 Emissions (tons/	1.14	tpy

Site-Pile Properties	
Threshold Friction Velocity, Ut*	1.12
Frequency of Disturbance, N	260
Total Pile Surface Area, (m2)	32368

**Based max of 1,000,000 tons and pile height of 70 ft

** Conversion Factor 1800 tons/acre

Pile B1	Percent	Area (m^2)
Us/Ur=0.2	0.36	11,652
Us/Ur=0.6	0.5	16,184
Us/Ur=0.9	0.14	4,532
Us/Ur=1.1	0	0

Particle size multiplier	
PM	1
PM10	0.5
PM2.5	0.075

Month	Day	Max Wind (Umax)	Emissions (lbs)			Max Wind (U_{max})	Fastest mile value (U^+)	FMA @ 10 m (U_{10}^+)	Equivalent friction velocity, U^* ($U^* = 0.1U_s^+$, $U_s^+=(U_s/U_r)*U_{10}^+$)				$U^* - U_t^*$ (Use "0" if $U^* < U_t^*$)				Erosion Potential, P (g/m^2)				Emissions for Each Pile Surface Area (g)				Total P*A
		mph	PM	PM10	PM2.5	m/s	m/s	m/s	U_s/U_r=0.2	U_s/U_r=0.6	U_s/U_r=0.9	U_s/U_r=1.1	U_s/U_r=0.2	U_s/U_r=0.6	U_s/U_r=0.9	U_s/U_r=1.1	U_s/U_r=0.2	U_s/U_r=0.6	U_s/U_r=0.9	U_s/U_r=1.1	U_s/U_r=0.2	U_s/U_r=0.6	U_s/U_r=0.9	U_s/U_r=1.1	grams	
Jan	1	10	0	0	0	4.5	4.5	4.8	0.10	0.29	0.43	0.53	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Jan	2	8	0	0	0	3.6	3.6	3.8	0.08	0.23	0.34	0.42	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Jan	3	24	0	0	0	10.7	10.7	11.5	0.23	0.69	1.03	1.26	0.00	0.00	0.00	0.14	0	0	0	4.7293976	0	0	0	0	0	0
Jan	4	28	25	13	2	12.5	12.5	13.4	0.27	0.80	1.20	1.47	0.00	0.00	0.08	0.35	0	0	2.5393039	16.026699	0	0	11,507	0	11,507	13.3873758
Jan	5	13	0	0	0	5.8	5.8	6.2	0.12	0.37	0.56	0.68	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Jan	6	13	0	0	0	5.8	5.8	6.2	0.12	0.37	0.56	0.68	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Jan	7	14	0	0	0	6.3	6.3	6.7	0.13	0.40	0.60	0.74	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Jan	8	12	0	0	0	5.4	5.4	5.7	0.11	0.34	0.52	0.63	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Jan	9	22	0	0	0	9.8	9.8	10.5	0.21	0.63	0.95	1.16	0.00	0.00	0.00	0.04	0	0	0	1.0059185	0	0	0	0	0	0
Jan	10	46	902	451	68	20.6	20.6	22.0	0.44	1.32	1.98	2.42	0.00	0.20	0.86	1.30	0	7.3013436	64.324351	130.39522	0	118,165	291,487	0	409,652	21.99354595
Jan	11	38	282	141	21	17.0	17.0	18.2	0.36	1.09	1.64	2.00	0.00	0.00	0.52	0.88	0	0	28.272655	66.730289	0	0	128,118	0	128,118	18.16858144
Jan	12	40	385	193	29	17.9	17.9	19.1	0.38	1.15	1.72	2.10	0.00	0.03	0.60	0.98	0	0.7310624	35.996828	80.72135	0	11,832	163,120	0	174,952	19.12482257
Jan	13	19	0	0	0	8.5	8.5	9.1	0.18	0.55	0.82	1.00	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Jan	14	11	0	0	0	4.9	4.9	5.3	0.11	0.32	0.47	0.58	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Jan	15	11	0	0	0	4.9	4.9	5.3	0.11	0.32	0.47	0.58	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Jan	16	11	0	0	0	4.9	4.9	5.3	0.11	0.32	0.47	0.58	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Jan	17	33	127	63	10	14.8	14.8	15.8	0.32	0.95	1.42	1.74	0.00	0.00	0.30	0.62	0	0	12.721081	37.36772	0	0	57,646	0	57,646	15.77797862
Jan	18	21	0	0	0	9.4	9.4	10.0	0.20	0.60	0.90	1.10	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Jan	19	20	0	0	0	8.9	8.9	9.6	0.19	0.57	0.86	1.05	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Jan	20	26	0	0	0	11.6	11.6	12.4	0.25	0.75	1.12	1.37	0.00	0.00	0.00	0.25	0	0	0	9.7363246	0	0	0	0	0	0
Jan	21	21	0	0	0	9.4	9.4	10.0	0.20	0.60	0.90	1.10	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Jan	22	29	41	21	3	13.0	13.0	13.9	0.28	0.83	1.25	1.53	0.00	0.00	0.13	0.41	0	0	4.1460755	19.65318	0	0	18,788	0	18,788	13.86549636
Jan	23	32	102	51	8	14.3	14.3	15.3	0.31	0.92	1.38	1.68	0.00	0.00	0.26	0.56	0	0	10.255142	32.457792	0	0	46,471	0	46,471	15.29985805
Jan	24	23	0	0	0	10.3	10.3	11.0	0.22	0.66	0.99	1.21	0.00	0.00	0.00	0.09	0	0	0	2.7072271	0	0	0	0	0	0
Jan	25	27	11	6	1	12.1	12.1	12.9	0.26	0.77	1.16	1.42	0.00	0.00	0.04	0.30	0	0	1.1473241	12.721081	0	0	5,199	0	5,199	12.90925523
Jan	26	36	214	107	16	16.1	16.1	17.2	0.34	1.03	1.55	1.89	0.00	0.00	0.43	0.77	0	0	21.40765	54.022676	0	0	97,009	0	97,009	17.21234031
Jan	27	29	41	21	3	13.0	13.0	13.9	0.28	0.83	1.25	1.53	0.00	0.00	0.13	0.41	0	0	4.1460755	19.65318	0	0	18,788	0	18,788	13.86549636
Jan	28	28	25	13	2	12.5	12.5	13.4	0.27	0.80	1.20	1.47	0.00	0.00	0.08	0.35	0	0	2.5393039	16.026699	0	0	11,507	0	11,507	13.3873758
Jan	29	28	25	13	2	12.5	12.5	13.4	0.27	0.80	1.20	1.47	0.00	0.00	0.08	0.35	0	0	2.5393039	16.026699	0	0	11,507	0	11,507	13.3873758
Jan	30	25	0	0	0	11.2	11.2	12.0	0.24	0.72	1.08	1.31	0.00	0.00	0.00	0.19	0	0	0	7.0724301	0	0	0	0	0	0
Jan	31	34	154	77	12	15.2	15.2	16.3	0.33	0.98	1.46	1.79	0.00	0.00	0.34	0.67	0	0	15.401812	42.59851	0	0	69,794	0	69,794	16.25609918
Feb	1	18	0	0	0	8.0	8.0	8.6	0.17	0.52	0.77	0.95	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Feb	2	19	0	0	0	8.5	8.5	9.1	0.18	0.55	0.82	1.00	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Feb	3	21	0	0	0	9.4	9.4	10.0	0.20	0.60	0.90	1.10	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Feb	4	21	0	0	0	9.4	9.4	10.0	0.20	0.60	0.90	1.10	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Feb	5	28	25	13	2	12.5	12.5	13.4	0.27	0.80	1.20	1.47	0.00	0.00	0.08	0.35	0	0	2.5393039	16.026699	0	0	11,507	0	11,507	13.3873758
Feb	6	22	0	0	0	9.8	9.8	10.5	0.21	0.63	0.95	1.16	0.00	0.00	0.00	0.04	0	0	0	1.0059185	0	0	0	0	0	0
Feb	7	43	619	309	46	19.2	19.2	20.6	0.41	1.23	1.85	2.26	0.00	0.11	0.73	1.14	0	3.5866192	49.194026	104.11441	0	58,046	222,924	0	280,970	20.55918426
Feb	8	29	41	21	3	13.0	13.0	13.9	0.28	0.83	1.25	1.53	0.00	0.00	0.13	0.41	0	0	4.1460755	19.65318	0	0	18,788	0	18,788	13.86549636
Feb	9	30	60	30	4	13.4	13.4	14.3	0.29	0.86	1.29	1.58	0.00	0.00	0.17	0.46	0	0	5.9676391	23.600522	0	0	27,042	0	27,042	14.34361692
Feb	10	31	80	40	6	13.9	13.9	14.8	0.30	0.89	1.33	1.63	0.00	0.00	0.21	0.51	0	0	8.0039945	27.868726	0	0	36,270	0	36,270	14.82173749
Feb	11	23	0	0	0	10.3	10.3	11.0	0.22	0.66	0.99	1.21	0.00	0.00	0.00	0.09	0	0	0	2.7072271	0	0	0	0	0	0
Feb	12	35	183	91	14	15.6	15.6	16.7	0.33	1.00	1.51	1.84	0.00	0.00	0.39	0.72	0	0	18.297335	48.150162	0	0	82,915	0	82,915	16.73421974
Feb	13	19	0	0	0	8.5	8.5	9.1	0.18	0.55	0.82	1.00	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Feb	14	29	41	21	3	13.0	13.0	13.9	0.28	0.83	1.25	1.53	0.00	0.00	0.13	0.41	0	0	4.1460755	19.65318	0	0	18,788	0	18,788	13.86549636
Feb	15	27	11	6	1	12.1	12.1	12.9	0.26	0.77	1.16	1.42	0.00	0.00	0.04	0.30	0	0	1.1473241	12.721081	0	0	5,199	0	5,199	12.90925523
Feb	16	27	11	6	1	12.1	12.1	12.9	0.26	0.77	1.16	1.42	0.00	0.00	0.04	0.30	0	0	1.1473241	12.721081	0	0	5,199	0	5,199	12.90925523
Feb	17	25	0	0	0	11.2	11.2	12.0	0.24	0.72	1.08	1.31	0.00	0.00	0.00	0.19	0	0	0	7.0724301	0	0	0	0	0	0
Feb	18	22	0	0	0	9.8	9.8	10.5	0.21	0.63	0.95	1.16	0.00	0.00	0.00	0.04	0	0	0	1.0059185	0	0	0	0	0	0
Feb	19	13	0	0	0	5.8	5.8	6.2	0.12	0.37	0.56	0.68	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Feb	20	14	0	0	0	6.3	6.3	6.7	0.13	0.40	0.60	0.74	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Feb	21	27	11	6	1	12.1	12.1	12.9	0.26	0.77	1.16	1.42	0.00	0.00	0.04	0.30	0	0	1.1473241	12.721081	0	0	5,199	0	5,199	12.90925523
Feb	22	20	0	0	0	8.9	8.9	9.6	0.19	0.57	0.86	1.05	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Feb	23	18	0	0	0	8.0	8.0	8.6	0.17	0.52	0.77	0.95	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Feb	24	42	535	268	40	18.8	18.8	20.1	0.40	1.20	1.81	2.21	0.00	0.08	0.69	1.09	0	2.5393039	44.580168	95.995859	0	41,096	202,016	0	243,112	20.08106369
Feb	25	35	183	91	14	15.6	15.6	16.7	0.33	1.00	1.51	1.84	0.00	0.00	0.39	0.72	0	0	18.297335	48.150162	0	0	82,915	0	82,915	16.73421974
Feb	26	17	0	0	0	7.6	7.6	8.1	0.16	0.49	0.73	0.89	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Feb	27	17	0	0	0	7.6	7.6	8.1	0.16	0.49	0.73	0.89	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Feb	28	27	11	6	1	12.1	12.1	12.9	0.26	0.77	1.16	1.42	0.00	0.00	0.04	0.30	0	0	1.1473241	12.721081	0	0	5,199	0	5,199	12.90925523
Feb	29		0	0	0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Mar	1	59	2707	1354	203	26.4	26.4	28.2	0.56	1.69	2.54	3.10	0.00	0.57	1.42	1.98	0	33.32664	152.22745	277.64839	0	539,358	689,822	0	1,229,180	28.20911328
Mar	2	33	127	63	10	14.8	14.8	15.8	0.32	0.95	1.42	1.74	0.00	0.00	0.30	0.62	0	0	12.721081	37.36772	0	0	57,646	0	57,646	15.77797862
Mar	3	25	0	0	0	11.2	11.2	12.0	0.24	0.72	1.08	1.31	0.00	0.00	0.00	0.19	0	0	0	7.0724301	0	0	0	0	0	0
Mar	4	18	0	0	0	8.0	8.0	8.6	0.17	0.52	0.77	0.95	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Mar	5	43	619	309	46	19.2	19.2	20.6	0.41	1.23	1.85	2.26	0.00	0.11	0.73	1.14	0	3.5866192	49.194026	104.11441	0	58,046	222,924	0	280,970	20.55918426
Mar	6	32	102	51	8	14.3	14.3	15.3	0.31	0.92	1.38	1.68	0.00	0.00	0.26	0.56	0	0	10.255142	32.457792	0	0	46,471	0	46,471	15.29985805
Mar	7	50	1358	679	102	22.4	22.4	23.9	0.48	1.43	2.15	2.63	0.00	0.31	1.03	1.51	0	13.590792	87.505204	169.92837	0	219,953	396,532	0	616,485	23.90602821
Mar	8	33	127	63	10	14.8	14.8	15.8	0.32	0.95	1.42	1.74	0.00	0.00	0.30	0.62	0	0	12.721081	37.36772	0	0	57,646	0	57,646	15.77797862
Mar	9	35	183	91	14	15.6	15.6	16.7	0.33	1.00	1.51	1.84	0.00	0.00	0.39	0.72	0	0	18.297335	48.150162	0	0	82,915	0	82,915	16.73421974
Mar	10	33	127	63	10	14.8	14.8	15.8	0.32	0.95	1.42	1.74	0.00	0.00	0.30	0.62	0	0	12.721081	37.36772	0	0	57,646	0	57,646	15.77797862
Mar	11	23	0	0	0	10.3	10.3	11.0	0.22	0.66	0.99	1.21	0.00	0.00	0.00	0.09	0	0	0	2.7072271	0	0	0	0	0	0

Mar	12	16	0	0	0	7.2	7.2	7.6	0.15	0.46	0.69	0.84	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Mar	13	15	0	0	0	6.7	6.7	7.2	0.14	0.43	0.65	0.79	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Mar	14	32	102	51	8	14.3	14.3	15.3	0.31	0.92	1.38	1.68	0.00	0.00	0.26	0.56	0	0	10.255142	32.457792	0	0	46,471	0	46,471	15.29985805
Mar	15	25	0	0	0	11.2	11.2	12.0	0.24	0.72	1.08	1.31	0.00	0.00	0.00	0.19	0	0	0	7.0724301	0	0	0	0	0	0
Mar	16	15	0	0	0	6.7	6.7	7.2	0.14	0.43	0.65	0.79	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Mar	17	20	0	0	0	8.9	8.9	9.6	0.19	0.57	0.86	1.05	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Mar	18	30	60	30	4	13.4	13.4	14.3	0.29	0.86	1.29	1.58	0.00	0.00	0.17	0.46	0	0	5.9676391	23.600522	0	0	27,042	0	27,042	14.34361692
Mar	19	15	0	0	0	6.7	6.7	7.2	0.14	0.43	0.65	0.79	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Mar	20	26	0	0	0	11.6	11.6	12.4	0.25	0.75	1.12	1.37	0.00	0.00	0.00	0.25	0	0	0	9.7363246	0	0	0	0	0	0
Mar	21	28	25	13	2	12.5	12.5	13.4	0.27	0.80	1.20	1.47	0.00	0.00	0.08	0.35	0	0	2.5393039	16.026699	0	0	11,507	0	11,507	13.3873758
Mar	22	32	102	51	8	14.3	14.3	15.3	0.31	0.92	1.38	1.68	0.00	0.00	0.26	0.56	0	0	10.255142	32.457792	0	0	46,471	0	46,471	15.29985805
Mar	23	20	0	0	0	8.9	8.9	9.6	0.19	0.57	0.86	1.05	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Mar	24	34	154	77	12	15.2	15.2	16.3	0.33	0.98	1.46	1.79	0.00	0.00	0.34	0.67	0	0	15.401812	42.59851	0	0	69,794	0	69,794	16.25609918
Mar	25	38	282	141	21	17.0	17.0	18.2	0.36	1.09	1.64	2.00	0.00	0.00	0.52	0.88	0	0	28.272655	66.730289	0	0	128,118	0	128,118	18.16858144
Mar	26	31	80	40	6	13.9	13.9	14.8	0.30	0.89	1.33	1.63	0.00	0.00	0.21	0.51	0	0	8.0039945	27.868726	0	0	36,270	0	36,270	14.82173749
Mar	27	25	0	0	0	11.2	11.2	12.0	0.24	0.72	1.08	1.31	0.00	0.00	0.00	0.19	0	0	0	7.0724301	0	0	0	0	0	0
Mar	28	18	0	0	0	8.0	8.0	8.6	0.17	0.52	0.77	0.95	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Mar	29	21	0	0	0	9.4	9.4	10.0	0.20	0.60	0.90	1.10	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Mar	30	43	619	309	46	19.2	19.2	20.6	0.41	1.23	1.85	2.26	0.00	0.11	0.73	1.14	0	3.5866192	49.194026	104.11441	0	58,046	222,924	0	280,970	20.55918426
Mar	31	29	41	21	3	13.0	13.0	13.9	0.28	0.83	1.25	1.53	0.00	0.00	0.13	0.41	0	0	4.1460755	19.65318	0	0	18,788	0	18,788	13.86549636
Apr	1	17	0	0	0	7.6	7.6	8.1	0.16	0.49	0.73	0.89	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Apr	2	20	0	0	0	8.9	8.9	9.6	0.19	0.57	0.86	1.05	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Apr	3	40	385	193	29	17.9	17.9	19.1	0.38	1.15	1.72	2.10	0.00	0.03	0.60	0.98	0	0.7310624	35.996828	80.72135	0	11,832	163,120	0	174,952	19.12482257
Apr	4	29	41	21	3	13.0	13.0	13.9	0.28	0.83	1.25	1.53	0.00	0.00	0.13	0.41	0	0	4.1460755	19.65318	0	0	18,788	0	18,788	13.86549636
Apr	5	41	458	229	34	18.3	18.3	19.6	0.39	1.18	1.76	2.16	0.00	0.06	0.64	1.04	0	1.5874516	40.181102	88.198174	0	25,691	182,081	0	207,773	19.60294313
Apr	6	46	902	451	68	20.6	20.6	22.0	0.44	1.32	1.98	2.42	0.00	0.20	0.86	1.30	0	7.3013436	64.324351	130.39522	0	118,165	291,487	0	409,652	21.99354595
Apr	7	31	80	40	6	13.9	13.9	14.8	0.30	0.89	1.33	1.63	0.00	0.00	0.21	0.51	0	0	8.0039945	27.868726	0	0	36,270	0	36,270	14.82173749
Apr	8	19	0	0	0	8.5	8.5	9.1	0.18	0.55	0.82	1.00	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Apr	9	37	247	123	19	16.5	16.5	17.7	0.35	1.06	1.59	1.95	0.00	0.00	0.47	0.83	0	0	24.732756	60.216051	0	0	112,077	0	112,077	17.69046087
Apr	10	36	214	107	16	16.1	16.1	17.2	0.34	1.03	1.55	1.89	0.00	0.00	0.43	0.77	0	0	21.40765	54.022676	0	0	97,009	0	97,009	17.21234031
Apr	11	19	0	0	0	8.5	8.5	9.1	0.18	0.55	0.82	1.00	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Apr	12	14	0	0	0	6.3	6.3	6.7	0.13	0.40	0.60	0.74	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Apr	13	29	41	21	3	13.0	13.0	13.9	0.28	0.83	1.25	1.53	0.00	0.00	0.13	0.41	0	0	4.1460755	19.65318	0	0	18,788	0	18,788	13.86549636
Apr	14	19	0	0	0	8.5	8.5	9.1	0.18	0.55	0.82	1.00	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Apr	15	34	154	77	12	15.2	15.2	16.3	0.33	0.98	1.46	1.79	0.00	0.00	0.34	0.67	0	0	15.401812	42.59851	0	0	69,794	0	69,794	16.25609918
Apr	16	47	1008	504	76	21.0	21.0	22.5	0.45	1.35	2.02	2.47	0.00	0.23	0.90	1.35	0	8.7305111	69.797376	139.79722	0	141,295	316,288	0	457,583	22.47166651
Apr	17	18	0	0	0	8.0	8.0	8.6	0.17	0.52	0.77	0.95	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Apr	18	31	80	40	6	13.9	13.9	14.8	0.30	0.89	1.33	1.63	0.00	0.00	0.21	0.51	0	0	8.0039945	27.868726	0	0	36,270	0	36,270	14.82173749
Apr	19	24	0	0	0	10.7	10.7	11.5	0.23	0.69	1.03	1.26	0.00	0.00	0.00	0.14	0	0	0	4.7293976	0	0	0	0	0	0
Apr	20	36	214	107	16	16.1	16.1	17.2	0.34	1.03	1.55	1.89	0.00	0.00	0.43	0.77	0	0	21.40765	54.022676	0	0	97,009	0	97,009	17.21234031
Apr	21	26	0	0	0	11.6	11.6	12.4	0.25	0.75	1.12	1.37	0.00	0.00	0.00	0.25	0	0	0	9.7363246	0	0	0	0	0	0
Apr	22	25	0	0	0	11.2	11.2	12.0	0.24	0.72	1.08	1.31	0.00	0.00	0.00	0.19	0	0	0	7.0724301	0	0	0	0	0	0
Apr	23	29	41	21	3	13.0	13.0	13.9	0.28	0.83	1.25	1.53	0.00	0.00	0.13	0.41	0	0	4.1460755	19.65318	0	0	18,788	0	18,788	13.86549636
Apr	24	22	0	0	0	9.8	9.8	10.5	0.21	0.63	0.95	1.16	0.00	0.00	0.00	0.04	0	0	0	1.0059185	0	0	0	0	0	0
Apr	25	17	0	0	0	7.6	7.6	8.1	0.16	0.49	0.73	0.89	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Apr	26	33	127	63	10	14.8	14.8	15.8	0.32	0.95	1.42	1.74	0.00	0.00	0.30	0.62	0	0	12.721081	37.36772	0	0	57,646	0	57,646	15.77797862
Apr	27	33	127	63	10	14.8	14.8	15.8	0.32	0.95	1.42	1.74	0.00	0.00	0.30	0.62	0	0	12.721081	37.36772	0	0	57,646	0	57,646	15.77797862
Apr	28	24	0	0	0	10.7	10.7	11.5	0.23	0.69	1.03	1.26	0.00	0.00	0.00	0.14	0	0	0	4.7293976	0	0	0	0	0	0
Apr	29	33	127	63	10	14.8	14.8	15.8	0.32	0.95	1.42	1.74	0.00	0.00	0.30	0.62	0	0	12.721081	37.36772	0	0	57,646	0	57,646	15.77797862
Apr	30	41	458	229	34	18.3	18.3	19.6	0.39	1.18	1.76	2.16	0.00	0.06	0.64	1.04	0	1.5874516	40.181102	88.198174	0	25,691	182,081	0	207,773	19.60294313
May	1	41	458	229	34	18.3	18.3	19.6	0.39	1.18	1.76	2.16	0.00	0.06	0.64	1.04	0	1.5874516	40.181102	88.198174	0	25,691	182,081	0	207,773	19.60294313
May	2	42	535	268	40	18.8	18.8	20.1	0.40	1.20	1.81	2.21	0.00	0.08	0.69	1.09	0	2.5393039	44.580168	95.995859	0	41,096	202,016	0	243,112	20.08106369
May	3	23	0	0	0	10.3	10.3	11.0	0.22	0.66	0.99	1.21	0.00	0.00	0.00	0.09	0	0	0	2.7072271	0	0	0	0	0	0
May	4	31	80	40	6	13.9	13.9	14.8	0.30	0.89	1.33	1.63	0.00	0.00	0.21	0.51	0	0	8.0039945	27.868726	0	0	36,270	0	36,270	14.82173749
May	5	36	214	107	16	16.1	16.1	17.2	0.34	1.03	1.55	1.89	0.00	0.00	0.43	0.77	0	0	21.40765	54.022676	0	0	97,009	0	97,009	17.21234031
May	6	26	0	0	0	11.6	11.6	12.4	0.25	0.75	1.12	1.37	0.00	0.00	0.00	0.25	0	0	0	9.7363246	0	0	0	0	0	0
May	7	30	60	30	4	13.4	13.4	14.3	0.29	0.86	1.29	1.58	0.00	0.00	0.17	0.46	0	0	5.9676391	23.600522	0	0	27,042	0	27,042	14.34361692
May	8	14	0	0	0	6.3	6.3	6.7	0.13	0.40	0.60	0.74	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
May	9	29	41	21	3	13.0	13.0	13.9	0.28	0.83	1.25	1.53	0.00	0.00	0.13	0.41	0	0	4.1460755	19.65318	0	0	18,788	0	18,788	13.86549636
May	10	25	0	0	0	11.2	11.2	12.0	0.24	0.72	1.08	1.31	0.00	0.00	0.00	0.19	0	0	0	7.0724301	0	0	0	0	0	0
May	11	23	0	0	0	10.3	10.3	11.0	0.22	0.66	0.99	1.21	0.00	0.00	0.00	0.09	0	0	0	2.7072271	0	0	0	0	0	0
May	12	18	0	0	0	8.0	8.0	8.6	0.17	0.52	0.77	0.95	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
May	13	18	0	0	0	8.0	8.0	8.6	0.17	0.52	0.77	0.95	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
May	14	23	0	0	0	10.3	10.3	11.0	0.22	0.66	0.99	1.21	0.00	0.00	0.00	0.09	0	0	0	2.7072271	0	0	0	0	0	0
May	15	17	0	0	0	7.6	7.6	8.1	0.16	0.49	0.73	0.89	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
May	16	26	0	0	0	11.6	11.6	12.4	0.25	0.75	1.12	1.37	0.00	0.00	0.00	0.25	0	0	0	9.7363246	0	0	0	0	0	0
May	17	30	60	30	4	13.4	13.4	14.3	0.29	0.86	1.29	1.58	0.00	0.00	0.17	0.46	0	0	5.9676391	23.600522	0	0	27,042	0	27,042	14.34361692
May	18	30	60	30	4	13.4	13.4	14.3	0.29	0.86	1.29	1.58	0.00	0.00	0.17	0.46	0	0	5.9676391	23.600522	0	0	27,042	0	27,042	14.34361692
May	19	31	80	40	6	13.9	13.9	14.8	0.30	0.89	1.33	1.63	0.00	0.00	0.21	0.51	0	0	8.0039945	27.868726	0	0	36,270	0	36,270	14.82173749
May	20	45	802	401	60	20.1	20.1	21.5	0.43	1.29	1.94	2.37	0.00	0.17	0.82	1.25	0	5.9676391	59.066117	121.31409	0	96,580	267,659	0	364,240	21.51542539
May	21	25	0	0	0	11.2	11.2	12.0	0.24	0.72	1.08	1.31	0.00	0.00	0.00	0.19	0	0	0	7.0724301	0	0	0	0	0	0
May	22	25	0	0	0	11.2	11.2	12.0	0.24	0.72	1.08	1.31	0.00	0.00	0.00	0.19	0	0	0	7.0724301	0	0	0	0	0	0
May	23	16	0	0	0	7.2	7.2	7.6	0.15	0.46	0.69	0.84	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
May	24	24	0	0	0	10.7	10.7	11.5	0.23	0.69	1.03	1.26	0.00	0.00	0.00	0.14	0	0	0	4.7293976	0	0	0	0	0	0
May	25	30	60	30	4	13.4	13.4	14.3	0.29	0.86	1.29	1.58	0.00	0.00	0.17	0.46	0	0	5.9676391	23.600522	0	0	27,042	0	27,042	14.34361692
May	26	22	0	0	0	9.8	9.8	10.5	0.21	0.63	0.95	1.16	0.00	0.00	0.00	0.04	0	0	0	1.0059185	0	0	0	0	0	0
May	27	34	154	77	12	15.2	15.2	16.3	0.33	0.98	1.46	1.79	0.00	0.00	0.34	0.67	0	0	15.401812	42.59851	0	0	69,794	0	69,794	16.25609918
May	28	31	80	40	6	13.9	13.9	14.8	0.30	0.89	1.33	1.63	0.00	0.00	0.21	0.51	0	0	8.0039945	27.868726	0	0	36,270	0	36,270	14.82173749
May	29	25	0	0	0	11.2	11.2	12.0	0.24	0.72	1.08	1.31	0.00	0.00	0.00	0.19	0	0	0	7.0724301	0	0	0	0	0	0
May	30	31	80	40	6	13.9	13.9	14.8	0.30	0.89	1.33	1.63	0.00	0.00	0.21	0.51	0	0	8.0039945	27.868726	0	0	36,270	0	36,270	14.82173749
May	31	25	0	0	0	11.2	11.2	12.0	0.24	0.72	1.08	1.31	0.00	0.00	0.00	0.19	0	0	0	7.0724301	0	0	0	0	0	0
Jun	1	21	0	0	0	9.4	9.4	10.0	0.20	0.60	0.90	1.10	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Jun	2	17	0	0	0	7.6	7.6	8.1	0.16	0.49	0.73	0.89	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0

Jun	3	15	0	0	0	6.7	6.7	7.2	0.14	0.43	0.65	0.79	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Jun	4	21	0	0	0	9.4	9.4	10.0	0.20	0.60	0.90	1.10	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Jun	5	30	60	30	4	13.4	13.4	14.3	0.29	0.86	1.29	1.58	0.00	0.00	0.17	0.46	0	0	5.9676391	23.600522	0	0	27,042	0	27,042	14.34361692
Jun	6	24	0	0	0	10.7	10.7	11.5	0.23	0.69	1.03	1.26	0.00	0.00	0.00	0.14	0	0	0	4.7293976	0	0	0	0	0	0
Jun	7	24	0	0	0	10.7	10.7	11.5	0.23	0.69	1.03	1.26	0.00	0.00	0.00	0.14	0	0	0	4.7293976	0	0	0	0	0	0
Jun	8	14	0	0	0	6.3	6.3	6.7	0.13	0.40	0.60	0.74	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Jun	9	25	0	0	0	11.2	11.2	12.0	0.24	0.72	1.08	1.31	0.00	0.00	0.00	0.19	0	0	0	7.0724301	0	0	0	0	0	0
Jun	10	25	0	0	0	11.2	11.2	12.0	0.24	0.72	1.08	1.31	0.00	0.00	0.00	0.19	0	0	0	7.0724301	0	0	0	0	0	0
Jun	11	28	25	13	2	12.5	12.5	13.4	0.27	0.80	1.20	1.47	0.00	0.00	0.08	0.35	0	0	2.5393039	16.026699	0	0	11,507	0	11,507	13.3873758
Jun	12	26	0	0	0	11.6	11.6	12.4	0.25	0.75	1.12	1.37	0.00	0.00	0.00	0.25	0	0	0	9.7363246	0	0	0	0	0	0
Jun	13	38	282	141	21	17.0	17.0	18.2	0.36	1.09	1.64	2.00	0.00	0.00	0.52	0.88	0	0	28.272655	66.730289	0	0	128,118	0	128,118	18.16858144
Jun	14	22	0	0	0	9.8	9.8	10.5	0.21	0.63	0.95	1.16	0.00	0.00	0.00	0.04	0	0	0	1.0059185	0	0	0	0	0	0
Jun	15	40	385	193	29	17.9	17.9	19.1	0.38	1.15	1.72	2.10	0.00	0.03	0.60	0.98	0	0.7310624	35.996828	80.72135	0	11,832	163,120	0	174,952	19.12482257
Jun	16	17	0	0	0	7.6	7.6	8.1	0.16	0.49	0.73	0.89	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Jun	17	27	11	6	1	12.1	12.1	12.9	0.26	0.77	1.16	1.42	0.00	0.00	0.04	0.30	0	0	1.1473241	12.721081	0	0	5,199	0	5,199	12.90925523
Jun	18	26	0	0	0	11.6	11.6	12.4	0.25	0.75	1.12	1.37	0.00	0.00	0.00	0.25	0	0	0	9.7363246	0	0	0	0	0	0
Jun	19	27	11	6	1	12.1	12.1	12.9	0.26	0.77	1.16	1.42	0.00	0.00	0.04	0.30	0	0	1.1473241	12.721081	0	0	5,199	0	5,199	12.90925523
Jun	20	22	0	0	0	9.8	9.8	10.5	0.21	0.63	0.95	1.16	0.00	0.00	0.00	0.04	0	0	0	1.0059185	0	0	0	0	0	0
Jun	21	29	41	21	3	13.0	13.0	13.9	0.28	0.83	1.25	1.53	0.00	0.00	0.13	0.41	0	0	4.1460755	19.65318	0	0	18,788	0	18,788	13.86549636
Jun	22	27	11	6	1	12.1	12.1	12.9	0.26	0.77	1.16	1.42	0.00	0.00	0.04	0.30	0	0	1.1473241	12.721081	0	0	5,199	0	5,199	12.90925523
Jun	23	27	11	6	1	12.1	12.1	12.9	0.26	0.77	1.16	1.42	0.00	0.00	0.04	0.30	0	0	1.1473241	12.721081	0	0	5,199	0	5,199	12.90925523
Jun	24	26	0	0	0	11.6	11.6	12.4	0.25	0.75	1.12	1.37	0.00	0.00	0.00	0.25	0	0	0	9.7363246	0	0	0	0	0	0
Jun	25	31	80	40	6	13.9	13.9	14.8	0.30	0.89	1.33	1.63	0.00	0.00	0.21	0.51	0	0	8.0039945	27.868726	0	0	36,270	0	36,270	14.82173749
Jun	26	22	0	0	0	9.8	9.8	10.5	0.21	0.63	0.95	1.16	0.00	0.00	0.00	0.04	0	0	0	1.0059185	0	0	0	0	0	0
Jun	27	24	0	0	0	10.7	10.7	11.5	0.23	0.69	1.03	1.26	0.00	0.00	0.00	0.14	0	0	0	4.7293976	0	0	0	0	0	0
Jun	28	23	0	0	0	10.3	10.3	11.0	0.22	0.66	0.99	1.21	0.00	0.00	0.00	0.09	0	0	0	2.7072271	0	0	0	0	0	0
Jun	29	33	127	63	10	14.8	14.8	15.8	0.32	0.95	1.42	1.74	0.00	0.00	0.30	0.62	0	0	12.721081	37.36772	0	0	57,646	0	57,646	15.77797862
Jun	30	49	1236	618	93	21.9	21.9	23.4	0.47	1.41	2.11	2.58	0.00	0.29	0.99	1.46	0	11.875235	81.387803	159.56379	0	192,189	368,810	0	560,999	23.42790764
Jul	1	17	0	0	0	7.6	7.6	8.1	0.16	0.49	0.73	0.89	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Jul	2	16	0	0	0	7.2	7.2	7.6	0.15	0.46	0.69	0.84	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Jul	3	15	0	0	0	6.7	6.7	7.2	0.14	0.43	0.65	0.79	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Jul	4	18	0	0	0	8.0	8.0	8.6	0.17	0.52	0.77	0.95	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Jul	5	16	0	0	0	7.2	7.2	7.6	0.15	0.46	0.69	0.84	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Jul	6	16	0	0	0	7.2	7.2	7.6	0.15	0.46	0.69	0.84	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Jul	7	42	535	268	40	18.8	18.8	20.1	0.40	1.20	1.81	2.21	0.00	0.08	0.69	1.09	0	2.5393039	44.580168	95.995859	0	41,096	202,016	0	243,112	20.08106369
Jul	8	25	0	0	0	11.2	11.2	12.0	0.24	0.72	1.08	1.31	0.00	0.00	0.00	0.19	0	0	0	7.0724301	0	0	0	0	0	0
Jul	9	18	0	0	0	8.0	8.0	8.6	0.17	0.52	0.77	0.95	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Jul	10	30	60	30	4	13.4	13.4	14.3	0.29	0.86	1.29	1.58	0.00	0.00	0.17	0.46	0	0	5.9676391	23.600522	0	0	27,042	0	27,042	14.34361692
Jul	11	22	0	0	0	9.8	9.8	10.5	0.21	0.63	0.95	1.16	0.00	0.00	0.00	0.04	0	0	0	1.0059185	0	0	0	0	0	0
Jul	12	22	0	0	0	9.8	9.8	10.5	0.21	0.63	0.95	1.16	0.00	0.00	0.00	0.04	0	0	0	1.0059185	0	0	0	0	0	0
Jul	13	24	0	0	0	10.7	10.7	11.5	0.23	0.69	1.03	1.26	0.00	0.00	0.00	0.14	0	0	0	4.7293976	0	0	0	0	0	0
Jul	14	18	0	0	0	8.0	8.0	8.6	0.17	0.52	0.77	0.95	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Jul	15	17	0	0	0	7.6	7.6	8.1	0.16	0.49	0.73	0.89	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Jul	16	16	0	0	0	7.2	7.2	7.6	0.15	0.46	0.69	0.84	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Jul	17	15	0	0	0	6.7	6.7	7.2	0.14	0.43	0.65	0.79	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Jul	18	28	25	13	2	12.5	12.5	13.4	0.27	0.80	1.20	1.47	0.00	0.00	0.08	0.35	0	0	2.5393039	16.026699	0	0	11,507	0	11,507	13.3873758
Jul	19	16	0	0	0	7.2	7.2	7.6	0.15	0.46	0.69	0.84	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Jul	20	21	0	0	0	9.4	9.4	10.0	0.20	0.60	0.90	1.10	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Jul	21	20	0	0	0	8.9	8.9	9.6	0.19	0.57	0.86	1.05	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Jul	22	36	214	107	16	16.1	16.1	17.2	0.34	1.03	1.55	1.89	0.00	0.00	0.43	0.77	0	0	21.40765	54.022676	0	0	97,009	0	97,009	17.21234031
Jul	23	47	1008	504	76	21.0	21.0	22.5	0.45	1.35	2.02	2.47	0.00	0.23	0.90	1.35	0	8.7305111	69.797376	139.79722	0	141,295	316,288	0	457,583	22.47166651
Jul	24	21	0	0	0	9.4	9.4	10.0	0.20	0.60	0.90	1.10	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Jul	25	17	0	0	0	7.6	7.6	8.1	0.16	0.49	0.73	0.89	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Jul	26	19	0	0	0	8.5	8.5	9.1	0.18	0.55	0.82	1.00	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Jul	27	15	0	0	0	6.7	6.7	7.2	0.14	0.43	0.65	0.79	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Jul	28	26	0	0	0	11.6	11.6	12.4	0.25	0.75	1.12	1.37	0.00	0.00	0.00	0.25	0	0	0	9.7363246	0	0	0	0	0	0
Jul	29	23	0	0	0	10.3	10.3	11.0	0.22	0.66	0.99	1.21	0.00	0.00	0.00	0.09	0	0	0	2.7072271	0	0	0	0	0	0
Jul	30	20	0	0	0	8.9	8.9	9.6	0.19	0.57	0.86	1.05	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Jul	31	19	0	0	0	8.5	8.5	9.1	0.18	0.55	0.82	1.00	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Aug	1	29	41	21	3	13.0	13.0	13.9	0.28	0.83	1.25	1.53	0.00	0.00	0.13	0.41	0	0	4.1460755	19.65318	0	0	18,788	0	18,788	13.86549636
Aug	2	26	0	0	0	11.6	11.6	12.4	0.25	0.75	1.12	1.37	0.00	0.00	0.00	0.25	0	0	0	9.7363246	0	0	0	0	0	0
Aug	3	32	102	51	8	14.3	14.3	15.3	0.31	0.92	1.38	1.68	0.00	0.00	0.26	0.56	0	0	10.255142	32.457792	0	0	46,471	0	46,471	15.29985805
Aug	4	31	80	40	6	13.9	13.9	14.8	0.30	0.89	1.33	1.63	0.00	0.00	0.21	0.51	0	0	8.0039945	27.868726	0	0	36,270	0	36,270	14.82173749
Aug	5	14	0	0	0	6.3	6.3	6.7	0.13	0.40	0.60	0.74	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Aug	6	13	0	0	0	5.8	5.8	6.2	0.12	0.37	0.56	0.68	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Aug	7	18	0	0	0	8.0	8.0	8.6	0.17	0.52	0.77	0.95	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Aug	8	19	0	0	0	8.5	8.5	9.1	0.18	0.55	0.82	1.00	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Aug	9	16	0	0	0	7.2	7.2	7.6	0.15	0.46	0.69	0.84	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Aug	10	18	0	0	0	8.0	8.0	8.6	0.17	0.52	0.77	0.95	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Aug	11	14	0	0	0	6.3	6.3	6.7	0.13	0.40	0.60	0.74	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Aug	12	22	0	0	0	9.8	9.8	10.5	0.21	0.63	0.95	1.16	0.00	0.00	0.00	0.04	0	0	0	1.0059185	0	0	0	0	0	0
Aug	13	17	0	0	0	7.6	7.6	8.1	0.16	0.49	0.73	0.89	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Aug	14	14	0	0	0	6.3	6.3	6.7	0.13	0.40	0.60	0.74	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Aug	15	16	0	0	0	7.2	7.2	7.6	0.15	0.46	0.69	0.84	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Aug	16	17	0	0	0	7.6	7.6	8.1	0.16	0.49	0.73	0.89	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Aug	17	33	127	63	10	14.8	14.8	15.8	0.32	0.95	1.42	1.74	0.00	0.00	0.30	0.62	0	0	12.721081	37.36772	0	0	57,646	0	57,646	15.77797862
Aug	18	27	11	6	1	12.1	12.1	12.9	0.26	0.77	1.16	1.42	0.00	0.00	0.04	0.30	0	0	1.1473241	12.721081	0	0	5,199	0	5,199	12.90925523
Aug	19	20	0	0	0	8.9	8.9	9.6	0.19	0.57	0.86	1.05	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Aug	20	17	0	0	0	7.6	7.6	8.1	0.16	0.49	0.73	0.89	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Aug	21	18	0	0	0	8.0	8.0	8.6	0.17	0.52	0.77	0.95	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Aug	22	37	247	123	19	16.5	16.5	17.7	0.35	1.06	1.59	1.95	0.00	0.00	0.47	0.83	0	0	24.732756	60.216051	0	0	112,077	0	112,077	17.69046087
Aug	23	21	0	0	0	9.4	9.4	10.0	0.20	0.60	0.90	1.10	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Aug	24	20	0	0	0	8.9	8.9	9.6	0.19	0.57	0.86	1.05	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0

Aug	25	16	0	0	0	7.2	7.2	7.6	0.15	0.46	0.69	0.84	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Aug	26	20	0	0	0	8.9	8.9	9.6	0.19	0.57	0.86	1.05	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Aug	27	14	0	0	0	6.3	6.3	6.7	0.13	0.40	0.60	0.74	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Aug	28	19	0	0	0	8.5	8.5	9.1	0.18	0.55	0.82	1.00	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Aug	29	17	0	0	0	7.6	7.6	8.1	0.16	0.49	0.73	0.89	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Aug	30	9	0	0	0	4.0	4.0	4.3	0.09	0.26	0.39	0.47	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Aug	31	24	0	0	0	10.7	10.7	11.5	0.23	0.69	1.03	1.26	0.00	0.00	0.00	0.14	0	0	0	4.7293976	0	0	0	0	0	0
Sep	1	34	154	77	12	15.2	15.2	16.3	0.33	0.98	1.46	1.79	0.00	0.00	0.34	0.67	0	0	15.401812	42.59851	0	0	69,794	0	69,794	16.25609918
Sep	2	22	0	0	0	9.8	9.8	10.5	0.21	0.63	0.95	1.16	0.00	0.00	0.00	0.04	0	0	0	1.0059185	0	0	0	0	0	0
Sep	3	19	0	0	0	8.5	8.5	9.1	0.18	0.55	0.82	1.00	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Sep	4	27	11	6	1	12.1	12.1	12.9	0.26	0.77	1.16	1.42	0.00	0.00	0.04	0.30	0	0	1.1473241	12.721081	0	0	5,199	0	5,199	12.90925523
Sep	5	23	0	0	0	10.3	10.3	11.0	0.22	0.66	0.99	1.21	0.00	0.00	0.00	0.09	0	0	0	2.7072271	0	0	0	0	0	0
Sep	6	20	0	0	0	8.9	8.9	9.6	0.19	0.57	0.86	1.05	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Sep	7	20	0	0	0	8.9	8.9	9.6	0.19	0.57	0.86	1.05	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Sep	8	14	0	0	0	6.3	6.3	6.7	0.13	0.40	0.60	0.74	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Sep	9	19	0	0	0	8.5	8.5	9.1	0.18	0.55	0.82	1.00	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Sep	10	22	0	0	0	9.8	9.8	10.5	0.21	0.63	0.95	1.16	0.00	0.00	0.00	0.04	0	0	0	1.0059185	0	0	0	0	0	0
Sep	11	26	0	0	0	11.6	11.6	12.4	0.25	0.75	1.12	1.37	0.00	0.00	0.00	0.25	0	0	0	9.7363246	0	0	0	0	0	0
Sep	12	26	0	0	0	11.6	11.6	12.4	0.25	0.75	1.12	1.37	0.00	0.00	0.00	0.25	0	0	0	9.7363246	0	0	0	0	0	0
Sep	13	18	0	0	0	8.0	8.0	8.6	0.17	0.52	0.77	0.95	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Sep	14	11	0	0	0	4.9	4.9	5.3	0.11	0.32	0.47	0.58	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Sep	15	10	0	0	0	4.5	4.5	4.8	0.10	0.29	0.43	0.53	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Sep	16	9	0	0	0	4.0	4.0	4.3	0.09	0.26	0.39	0.47	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Sep	17	14	0	0	0	6.3	6.3	6.7	0.13	0.40	0.60	0.74	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Sep	18	14	0	0	0	6.3	6.3	6.7	0.13	0.40	0.60	0.74	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Sep	19	15	0	0	0	6.7	6.7	7.2	0.14	0.43	0.65	0.79	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Sep	20	25	0	0	0	11.2	11.2	12.0	0.24	0.72	1.08	1.31	0.00	0.00	0.00	0.19	0	0	0	7.0724301	0	0	0	0	0	0
Sep	21	9	0	0	0	4.0	4.0	4.3	0.09	0.26	0.39	0.47	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Sep	22	15	0	0	0	6.7	6.7	7.2	0.14	0.43	0.65	0.79	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Sep	23	16	0	0	0	7.2	7.2	7.6	0.15	0.46	0.69	0.84	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Sep	24	16	0	0	0	7.2	7.2	7.6	0.15	0.46	0.69	0.84	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Sep	25	12	0	0	0	5.4	5.4	5.7	0.11	0.34	0.52	0.63	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Sep	26	11	0	0	0	4.9	4.9	5.3	0.11	0.32	0.47	0.58	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Sep	27	26	0	0	0	11.6	11.6	12.4	0.25	0.75	1.12	1.37	0.00	0.00	0.00	0.25	0	0	0	9.7363246	0	0	0	0	0	0
Sep	28	21	0	0	0	9.4	9.4	10.0	0.20	0.60	0.90	1.10	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Sep	29	24	0	0	0	10.7	10.7	11.5	0.23	0.69	1.03	1.26	0.00	0.00	0.00	0.14	0	0	0	4.7293976	0	0	0	0	0	0
Sep	30	23	0	0	0	10.3	10.3	11.0	0.22	0.66	0.99	1.21	0.00	0.00	0.00	0.09	0	0	0	2.7072271	0	0	0	0	0	0
Oct	1	14	0	0	0	6.3	6.3	6.7	0.13	0.40	0.60	0.74	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Oct	2	17	0	0	0	7.6	7.6	8.1	0.16	0.49	0.73	0.89	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Oct	3	20	0	0	0	8.9	8.9	9.6	0.19	0.57	0.86	1.05	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Oct	4	17	0	0	0	7.6	7.6	8.1	0.16	0.49	0.73	0.89	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Oct	5	12	0	0	0	5.4	5.4	5.7	0.11	0.34	0.52	0.63	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Oct	6	18	0	0	0	8.0	8.0	8.6	0.17	0.52	0.77	0.95	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Oct	7	29	41	21	3	13.0	13.0	13.9	0.28	0.83	1.25	1.53	0.00	0.00	0.13	0.41	0	0	4.1460755	19.65318	0	0	18,788	0	18,788	13.86549636
Oct	8	16	0	0	0	7.2	7.2	7.6	0.15	0.46	0.69	0.84	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Oct	9	11	0	0	0	4.9	4.9	5.3	0.11	0.32	0.47	0.58	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Oct	10	20	0	0	0	8.9	8.9	9.6	0.19	0.57	0.86	1.05	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Oct	11	23	0	0	0	10.3	10.3	11.0	0.22	0.66	0.99	1.21	0.00	0.00	0.00	0.09	0	0	0	2.7072271	0	0	0	0	0	0
Oct	12	8	0	0	0	3.6	3.6	3.8	0.08	0.23	0.34	0.42	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Oct	13	12	0	0	0	5.4	5.4	5.7	0.11	0.34	0.52	0.63	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Oct	14	23	0	0	0	10.3	10.3	11.0	0.22	0.66	0.99	1.21	0.00	0.00	0.00	0.09	0	0	0	2.7072271	0	0	0	0	0	0
Oct	15	45	802	401	60	20.1	20.1	21.5	0.43	1.29	1.94	2.37	0.00	0.17	0.82	1.25	0	5.9676391	59.066117	121.31409	0	96,580	267,659	0	364,240	21.51542539
Oct	16	20	0	0	0	8.9	8.9	9.6	0.19	0.57	0.86	1.05	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Oct	17	14	0	0	0	6.3	6.3	6.7	0.13	0.40	0.60	0.74	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Oct	18	17	0	0	0	7.6	7.6	8.1	0.16	0.49	0.73	0.89	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Oct	19	22	0	0	0	9.8	9.8	10.5	0.21	0.63	0.95	1.16	0.00	0.00	0.00	0.04	0	0	0	1.0059185	0	0	0	0	0	0
Oct	20	13	0	0	0	5.8	5.8	6.2	0.12	0.37	0.56	0.68	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Oct	21	15	0	0	0	6.7	6.7	7.2	0.14	0.43	0.65	0.79	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Oct	22	29	41	21	3	13.0	13.0	13.9	0.28	0.83	1.25	1.53	0.00	0.00	0.13	0.41	0	0	4.1460755	19.65318	0	0	18,788	0	18,788	13.86549636
Oct	23	27	11	6	1	12.1	12.1	12.9	0.26	0.77	1.16	1.42	0.00	0.00	0.04	0.30	0	0	1.1473241	12.721081	0	0	5,199	0	5,199	12.90925523
Oct	24	34	154	77	12	15.2	15.2	16.3	0.33	0.98	1.46	1.79	0.00	0.00	0.34	0.67	0	0	15.401812	42.59851	0	0	69,794	0	69,794	16.25609918
Oct	25	23	0	0	0	10.3	10.3	11.0	0.22	0.66	0.99	1.21	0.00	0.00	0.00	0.09	0	0	0	2.7072271	0	0	0	0	0	0
Oct	26	17	0	0	0	7.6	7.6	8.1	0.16	0.49	0.73	0.89	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Oct	27	32	102	51	8	14.3	14.3	15.3	0.31	0.92	1.38	1.68	0.00	0.00	0.26	0.56	0	0	10.255142	32.457792	0	0	46,471	0	46,471	15.29985805
Oct	28	19	0	0	0	8.5	8.5	9.1	0.18	0.55	0.82	1.00	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Oct	29	19	0	0	0	8.5	8.5	9.1	0.18	0.55	0.82	1.00	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Oct	30	25	0	0	0	11.2	11.2	12.0	0.24	0.72	1.08	1.31	0.00	0.00	0.00	0.19	0	0	0	7.0724301	0	0	0	0	0	0
Oct	31	15	0	0	0	6.7	6.7	7.2	0.14	0.43	0.65	0.79	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Nov	1	26	0	0	0	11.6	11.6	12.4	0.25	0.75	1.12	1.37	0.00	0.00	0.00	0.25	0	0	0	9.7363246	0	0	0	0	0	0
Nov	2	27	11	6	1	12.1	12.1	12.9	0.26	0.77	1.16	1.42	0.00	0.00	0.04	0.30	0	0	1.1473241	12.721081	0	0	5,199	0	5,199	12.90925523
Nov	3	24	0	0	0	10.7	10.7	11.5	0.23	0.69	1.03	1.26	0.00	0.00	0.00	0.14	0	0	0	4.7293976	0	0	0	0	0	0
Nov	4	15	0	0	0	6.7	6.7	7.2	0.14	0.43	0.65	0.79	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Nov	5	53	1758	879	132	23.7	23.7	25.3	0.51	1.52	2.28	2.79	0.00	0.40	1.16	1.67	0	19.310241	107.14616	202.94729	0	312,517	485,535	0	798,052	25.3403899
Nov	6	28	25	13	2	12.5	12.5	13.4	0.27	0.80	1.20	1.47	0.00	0.00	0.08	0.35	0	0	2.5393039	16.026699	0	0	11,507	0	11,507	13.3873758
Nov	7	23	0	0	0	10.3	10.3	11.0	0.22	0.66	0.99	1.21	0.00	0.00	0.00	0.09	0	0	0	2.7072271	0	0	0	0	0	0
Nov	8	19	0	0	0	8.5	8.5	9.1	0.18	0.55	0.82	1.00	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Nov	9	24	0	0	0	10.7	10.7	11.5	0.23	0.69	1.03	1.26	0.00	0.00	0.00	0.14	0	0	0	4.7293976	0	0	0	0	0	0
Nov	10	25	0	0	0	11.2	11.2	12.0	0.24	0.72	1.08	1.31	0.00	0.00	0.00	0.19	0	0	0	7.0724301	0	0	0	0	0	0
Nov	11	12	0	0	0	5.4	5.4	5.7	0.11	0.34	0.52	0.63	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Nov	12	21	0	0	0	9.4	9.4	10.0	0.20	0.60	0.90	1.10	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Nov	13	17	0	0	0	7.6	7.6	8.1	0.16	0.49	0.73	0.89	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Nov	14	16	0	0	0	7.2	7.2	7.6	0.15	0.46	0.69	0.84	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Nov	15	27	11	6	1	12.1	12.1	12.9	0.26	0.77	1.16	1.42	0.00	0.00	0.04	0.30	0	0	1.1473241	12.721081	0	0	5,199	0	5,199	12.90925523

Nov	16	19	0	0	0	8.5	8.5	9.1	0.18	0.55	0.82	1.00	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0
Nov	17	22	0	0	0	9.8	9.8	10.5	0.21	0.63	0.95	1.16	0.00	0.00	0.00	0.04	0	0	0	1.0059185	0	0	0	0	0	0
Nov	18	50	1358	679	102	22.4	22.4	23.9	0.48	1.43	2.15	2.63	0.00	0.31	1.03	1.51	0	13.590792	87.505204	169.92837	0	219,953	396,532	0	616,485	23.90602821
Nov	19	29	41	21	3	13.0	13.0	13.9	0.28	0.83	1.25	1.53	0.00	0.00	0.13	0.41	0	0	4.1460755	19.65318	0	0	18,788	0	18,788	13.86549636
Nov	20	19	0	0	0	8.5	8.5	9.1	0.18	0.55	0.82	1.00	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Nov	21	29	41	21	3	13.0	13.0	13.9	0.28	0.83	1.25	1.53	0.00	0.00	0.13	0.41	0	0	4.1460755	19.65318	0	0	18,788	0	18,788	13.86549636
Nov	22	25	0	0	0	11.2	11.2	12.0	0.24	0.72	1.08	1.31	0.00	0.00	0.00	0.19	0	0	0	7.0724301	0	0	0	0	0	0
Nov	23	12	0	0	0	5.4	5.4	5.7	0.11	0.34	0.52	0.63	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Nov	24	21	0	0	0	9.4	9.4	10.0	0.20	0.60	0.90	1.10	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Nov	25	28	25	13	2	12.5	12.5	13.4	0.27	0.80	1.20	1.47	0.00	0.00	0.08	0.35	0	0	2.5393039	16.026699	0	0	11,507	0	11,507	13.3873758
Nov	26	14	0	0	0	6.3	6.3	6.7	0.13	0.40	0.60	0.74	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Nov	27	21	0	0	0	9.4	9.4	10.0	0.20	0.60	0.90	1.10	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Nov	28	26	0	0	0	11.6	11.6	12.4	0.25	0.75	1.12	1.37	0.00	0.00	0.00	0.25	0	0	0	9.7363246	0	0	0	0	0	0
Nov	29	19	0	0	0	8.5	8.5	9.1	0.18	0.55	0.82	1.00	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Nov	30	15	0	0	0	6.7	6.7	7.2	0.14	0.43	0.65	0.79	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Dec	1	12	0	0	0	5.4	5.4	5.7	0.11	0.34	0.52	0.63	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Dec	2	11	0	0	0	4.9	4.9	5.3	0.11	0.32	0.47	0.58	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Dec	3	9	0	0	0	4.0	4.0	4.3	0.09	0.26	0.39	0.47	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Dec	4	39	320	160	24	17.4	17.4	18.6	0.37	1.12	1.68	2.05	0.00	0.00	0.56	0.93	0	0	32.027345	73.565389	0	0	145,133	0	145,133	18.646702
Dec	5	37	247	123	19	16.5	16.5	17.7	0.35	1.06	1.59	1.95	0.00	0.00	0.47	0.83	0	0	24.732756	60.216051	0	0	112,077	0	112,077	17.69046087
Dec	6	25	0	0	0	11.2	11.2	12.0	0.24	0.72	1.08	1.31	0.00	0.00	0.00	0.19	0	0	0	7.0724301	0	0	0	0	0	0
Dec	7	25	0	0	0	11.2	11.2	12.0	0.24	0.72	1.08	1.31	0.00	0.00	0.00	0.19	0	0	0	7.0724301	0	0	0	0	0	0
Dec	8	12	0	0	0	5.4	5.4	5.7	0.11	0.34	0.52	0.63	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Dec	9	29	41	21	3	13.0	13.0	13.9	0.28	0.83	1.25	1.53	0.00	0.00	0.13	0.41	0	0	4.1460755	19.65318	0	0	18,788	0	18,788	13.86549636
Dec	10	28	25	13	2	12.5	12.5	13.4	0.27	0.80	1.20	1.47	0.00	0.00	0.08	0.35	0	0	2.5393039	16.026699	0	0	11,507	0	11,507	13.3873758
Dec	11	42	535	268	40	18.8	18.8	20.1	0.40	1.20	1.81	2.21	0.00	0.08	0.69	1.09	0	2.5393039	44.580168	95.995859	0	41,096	202,016	0	243,112	20.08106369
Dec	12	36	214	107	16	16.1	16.1	17.2	0.34	1.03	1.55	1.89	0.00	0.00	0.43	0.77	0	0	21.40765	54.022676	0	0	97,009	0	97,009	17.21234031
Dec	13	39	320	160	24	17.4	17.4	18.6	0.37	1.12	1.68	2.05	0.00	0.00	0.56	0.93	0	0	32.027345	73.565389	0	0	145,133	0	145,133	18.646702
Dec	14	37	247	123	19	16.5	16.5	17.7	0.35	1.06	1.59	1.95	0.00	0.00	0.47	0.83	0	0	24.732756	60.216051	0	0	112,077	0	112,077	17.69046087
Dec	15	25	0	0	0	11.2	11.2	12.0	0.24	0.72	1.08	1.31	0.00	0.00	0.00	0.19	0	0	0	7.0724301	0	0	0	0	0	0
Dec	16	29	41	21	3	13.0	13.0	13.9	0.28	0.83	1.25	1.53	0.00	0.00	0.13	0.41	0	0	4.1460755	19.65318	0	0	18,788	0	18,788	13.86549636
Dec	17	15	0	0	0	6.7	6.7	7.2	0.14	0.43	0.65	0.79	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Dec	18	19	0	0	0	8.5	8.5	9.1	0.18	0.55	0.82	1.00	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Dec	19	22	0	0	0	9.8	9.8	10.5	0.21	0.63	0.95	1.16	0.00	0.00	0.00	0.04	0	0	0	1.0059185	0	0	0	0	0	0
Dec	20	21	0	0	0	9.4	9.4	10.0	0.20	0.60	0.90	1.10	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Dec	21	24	0	0	0	10.7	10.7	11.5	0.23	0.69	1.03	1.26	0.00	0.00	0.00	0.14	0	0	0	4.7293976	0	0	0	0	0	0
Dec	22	27	11	6	1	12.1	12.1	12.9	0.26	0.77	1.16	1.42	0.00	0.00	0.04	0.30	0	0	1.1473241	12.721081	0	0	5,199	0	5,199	12.90925523
Dec	23	29	41	21	3	13.0	13.0	13.9	0.28	0.83	1.25	1.53	0.00	0.00	0.13	0.41	0	0	4.1460755	19.65318	0	0	18,788	0	18,788	13.86549636
Dec	24	40	385	193	29	17.9	17.9	19.1	0.38	1.15	1.72	2.10	0.00	0.03	0.60	0.98	0	0.7310624	35.996828	80.72135	0	11,832	163,120	0	174,952	19.12482257
Dec	25	33	127	63	10	14.8	14.8	15.8	0.32	0.95	1.42	1.74	0.00	0.00	0.30	0.62	0	0	12.721081	37.36772	0	0	57,646	0	57,646	15.77797862
Dec	26	22	0	0	0	9.8	9.8	10.5	0.21	0.63	0.95	1.16	0.00	0.00	0.00	0.04	0	0	0	1.0059185	0	0	0	0	0	0
Dec	27	25	0	0	0	11.2	11.2	12.0	0.24	0.72	1.08	1.31	0.00	0.00	0.00	0.19	0	0	0	7.0724301	0	0	0	0	0	0
Dec	28	20	0	0	0	8.9	8.9	9.6	0.19	0.57	0.86	1.05	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Dec	29	16	0	0	0	7.2	7.2	7.6	0.15	0.46	0.69	0.84	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
Dec	30	25	0	0	0	11.2	11.2	12.0	0.24	0.72	1.08	1.31	0.00	0.00	0.00	0.19	0	0	0	7.0724301	0	0	0	0	0	0
Dec	31	21	0	0	0	9.4	9.4	10.0	0.20	0.60	0.90	1.10	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0
			30310	15155	2273																				2037.271724

M45PC A Handling Emissions

Silo Vent Filter

From Aggregate and Handling Storage Piles AP-42 13.2.4
E = k(.0032) * [(U/5)^1.3 / (M/2)^1.4]

E = emissions factor (lb/ton)		
k = PM particulate size multiplier	0.74	SH
k = PM_{10} particulate size multiplier	0.35	SH
k = $PM_{2.5}$ particulate size multiplier	0.053	SH
U = mean wind speed (mph)	8.3	JM
M = material moisture content (%)	3	SH

Bin Vents			Roll-up door			
99%	Efficiency	Controlled:	50%	Efficiency	Uncontrolled:	
2.59E-05	lb/ton	E_{PM}	1.30E-03	lb/ton	E_{PM}	2.59E-03 lb/ton
1.23E-05	lb/ton	$E_{PM\ 10}$	6.13E-04	lb/ton	$E_{PM\ 10}$	1.23E-03 lb/ton
1.86E-06	lb/ton	$E_{PM\ 2.5}$	9.29E-05	lb/ton	$E_{PM\ 2.5}$	1.86E-04 lb/ton

Description	Hourly Thruput (lb/hr)	Annual Thruput (tpy)	PM Emission Factor (lb/ton)	PM Emissions (lb/hr)	PM Emissions (tpy)	PM_{10} Emission Factor (lb/ton)	PM_{10} Emissions (lb/hr)	PM_{10} Emissions (tpy)	$PM_{2.5}$ Emission Factor (lb/ton)	$PM_{2.5}$ Emissions (lb/hr)	$PM_{2.5}$ Emissions (tpy)	Notes
Truck load-in to silo A1/silo venting	20,000.00	6,000.00	2.59E-05	0.000	0.000	1.23E-05	0.000	0.000	1.86E-06	0.000	0.000	Hourly Thruput = truck delivery rate
Truck load-in to silo A2/silo venting	20,000.00	12,000.00	2.59E-05	0.000	0.000	1.23E-05	0.000	0.000	1.86E-06	0.000	0.000	Hourly Thruput = truck delivery rate
Silo A1 to feed hopper	6,066.67	6,000.00	2.59E-03	0.008	0.008	1.23E-03	0.004	0.004	1.86E-04	0.001	0.001	Hourly Thruput = 1/3 hopper capacity; assume 50% control
Silo A2 to feed hopper	12,133.33	12,000.00	2.59E-03	0.016	0.016	1.23E-03	0.007	0.007	1.86E-04	0.001	0.001	Hourly Thruput = 2/3 hopper capacity; assume 50% control

Number of Hours to Unload Truck:	2	hr
	40000	lb/truck
	20000	lb/hr

Total Capacity (4 propane heaters)	1000 gal/hr	1.81	<== Input data
Operation time	hr/yr	8760	
Fuels Energy Density	MMBtu/1000 gal	92	
Fuel Usage	1000 gal	15.8	

Criteria Pollutant	Emission Factor (lb/10^3)	EF Source	PTE (tpy)
NOx	13.00	AP-42, 1.5-1	1.03E-01
CO	7.50	AP-42, 1.5-1	5.93E-02
PM	0.70	AP-42, 1.5-1	5.54E-03
PM10	0.70	AP-42, 1.5-1	5.54E-03
PM2.5	0.70	AP-42, 1.5-1	5.54E-03
SO2	0.10	AP-42, 1.5-1	7.91E-04
VOC	1.00	AP-42, 1.5-1	7.91E-03
CO2	12500.00	AP-42, 1.5-1	9.89E+01
CH4	0.20	AP-42, 1.5-1	1.58E-03

U22 - Haul Roads	E-48 Haul Road Fugitives
Landfill Throughput (tons)	2,628,000
Vehicle Average Capacity (tons)	40
Average Miles per Trip	0.5
Vehicle Miles Traveled (VMT)	32850
PM Filterable Emission Factor (lb/VMT)	5.5061
Control Efficiency	70.00
PM Filterable Emissions (tons/yr)	**27.1315**
PM10 Emission Factor (lb/VMT)	1.3503
PM10 Emissions (tons/yr)	**6.6538**
PM2.5 Emission Factor (lb/VMT)	0.1350
PM2.5 Emissions (tons/yr)	**0.6654**

Notes:

Reference: AP-42, 13.2.2, Unpaved Road, Eqn. 1a

E (lb/VMT) = K(s/12)a/(W/3)b(365-P)/365

The current dump trucks used at Mill Creek are Volvo Articulated Trucks Model A40D.
TOTAL EMPTY **68938.5 lb**
TOTAL LOADED **150509.6 lb**

analysis by RJ Lee. The Pozotec tab on the spreadsheet has the particle size break out. AP-42 considers silt as 200 mesh or ~74 microns. The 3.96% silt is the 80 microns and below fraction from the particle size testing. The density and characteristics of the poz-o-tec is very similar to that of clay. This also corresponds to the background data in AP-42. Under the “Related Information” link to AP-42 13.2.2 (http://www.epa.gov/ttn/chief/ap42/ch13/related/c13s02-2.html), there is a spreadsheet of default industrial road silt contents (r13s0202_dec03.xls) and the default of

CE based upon speed control, limit of traffic to area and watering of roads.

K=	**4.9**	**1.5**	**0.15**	**PM, PM10, PM2.5**
s=	3.96 %			
a=	**0.7**	**0.9**	**0.9**	**PM, PM10, PM2.5**
W=	54.86 tons			
b=	**0.45**	**0.45**	**0.45**	**PM, PM10, PM2.5**
P=	124 days			

Landfill Droppoint	
Landfill Throughput (tons)	2,628,000
PM Filterable Emissions (tons/yr)	0.1378
PM10 Emissions (tons/yr)	0.0652
PM2.5 Emissions (tons/yr)	0.0099

Drop Point

Reference: AP-42, 13.2.4, Aggregate Handling and Storage Piles

$EF (lb/ton) = K(0.0032)(U/5)^{1.3}/(M/2)^{1.4}$			
k	0.74		Particle size factor for PM
	0.35		Particle size factor for PM10
	0.053		Particle size factor for PM2.5
U	8.4	mph	Average wind speed
M	30	%	moisture content

http://www.wunderground.com/history/airport/KSDF/

AP-42, 13.2.5

Emission Summary		
PM	150.63	tpy
PM10	75.31	tpy
PM2.5	11.30	tpy

Site-Pile Properties	
Threshold Friction Velocity, Ut* (m/	1.33
Frequency of Disturbance, N	260
Disturbed Surface Area, (m^2)	752556

Permit footprint of landfill is 186 acres

32

Pile B1	Percent	Area (m^2)
Us/Ur=0.2	0.36	270,920
Us/Ur=0.6	0.5	376,278
Us/Ur=0.9	0.14	105,358
Us/Ur=1.1	0	0

Particle size multiplier	
PM	1
PM10	0.5
PM2.5	0.075

Month	Day	Max Wind (Umax)	Emissions (lbs)			Fastest mile value (U^+)	Fastest mile value (U^+)	FMA @ 10 m (U_{10}^+)	Equivalent friction velocity, U^* ($U^* = 0.1U_S^+$, $U_s^+=(U_s/U_r)*U_{10}^+$)				$U^* - U_t^*$ (Use "0" if $U^* < U_t^*$)				Total P*A
		mph	PM	PM10	PM2.5	m/s	m/s	m/s	U_s/U_r=0.2	U_s/U_r=0.6	U_s/U_r=0.9	U_s/U_r=1.1	U_s/U_r=0.2	U_s/U_r=0.6	U_s/U_r=0.9	U_s/U_r=1.1	grams
Jan	1	10	0	0	0	4.5	4.5	4.8	0.10	0.29	0.43	0.53	0.00	0.00	0.00	0.00	0
Jan	2	8	0	0	0	3.6	3.6	3.8	0.08	0.23	0.34	0.42	0.00	0.00	0.00	0.00	0
Jan	3	24	0	0	0	10.7	10.7	11.5	0.23	0.69	1.03	1.26	0.00	0.00	0.00	0.00	0
Jan	4	28	0	0	0	12.5	12.5	13.4	0.27	0.80	1.20	1.47	0.00	0.00	0.00	0.14	0
Jan	5	13	0	0	0	5.8	5.8	6.2	0.12	0.37	0.56	0.68	0.00	0.00	0.00	0.00	0
Jan	6	13	0	0	0	5.8	5.8	6.2	0.12	0.37	0.56	0.68	0.00	0.00	0.00	0.00	0
Jan	7	14	0	0	0	6.3	6.3	6.7	0.13	0.40	0.60	0.74	0.00	0.00	0.00	0.00	0
Jan	8	12	0	0	0	5.4	5.4	5.7	0.11	0.34	0.52	0.63	0.00	0.00	0.00	0.00	0
Jan	9	22	0	0	0	9.8	9.8	10.5	0.21	0.63	0.95	1.16	0.00	0.00	0.00	0.00	0
Jan	10	46	9444	4722	708	20.6	20.6	22.0	0.44	1.32	1.98	2.42	0.00	0.00	0.65	1.09	4,287,716
Jan	11	38	3024	1512	227	17.0	17.0	18.2	0.36	1.09	1.64	2.00	0.00	0.00	0.31	0.67	1,372,903
Jan	12	40	4330	2165	325	17.9	17.9	19.1	0.38	1.15	1.72	2.10	0.00	0.00	0.39	0.77	1,965,826
Jan	13	19	0	0	0	8.5	8.5	9.1	0.18	0.55	0.82	1.00	0.00	0.00	0.00	0.00	0
Jan	14	11	0	0	0	4.9	4.9	5.3	0.11	0.32	0.47	0.58	0.00	0.00	0.00	0.00	0
Jan	15	11	0	0	0	4.9	4.9	5.3	0.11	0.32	0.47	0.58	0.00	0.00	0.00	0.00	0
Jan	16	11	0	0	0	4.9	4.9	5.3	0.11	0.32	0.47	0.58	0.00	0.00	0.00	0.00	0
Jan	17	33	631	316	47	14.8	14.8	15.8	0.32	0.95	1.42	1.74	0.00	0.00	0.09	0.41	286,620
Jan	18	21	0	0	0	9.4	9.4	10.0	0.20	0.60	0.90	1.10	0.00	0.00	0.00	0.00	0
Jan	19	20	0	0	0	8.9	8.9	9.6	0.19	0.57	0.86	1.05	0.00	0.00	0.00	0.00	0
Jan	20	26	0	0	0	11.6	11.6	12.4	0.25	0.75	1.12	1.37	0.00	0.00	0.00	0.04	0
Jan	21	21	0	0	0	9.4	9.4	10.0	0.20	0.60	0.90	1.10	0.00	0.00	0.00	0.00	0
Jan	22	29	0	0	0	13.0	13.0	13.9	0.28	0.83	1.25	1.53	0.00	0.00	0.00	0.20	0
Jan	23	32	302	151	23	14.3	14.3	15.3	0.31	0.92	1.38	1.68	0.00	0.00	0.05	0.35	137,253
Jan	24	23	0	0	0	10.3	10.3	11.0	0.22	0.66	0.99	1.21	0.00	0.00	0.00	0.00	0
Jan	25	27	0	0	0	12.1	12.1	12.9	0.26	0.77	1.16	1.42	0.00	0.00	0.00	0.09	0
Jan	26	36	1917	959	144	16.1	16.1	17.2	0.34	1.03	1.55	1.89	0.00	0.00	0.22	0.56	870,500
Jan	27	29	0	0	0	13.0	13.0	13.9	0.28	0.83	1.25	1.53	0.00	0.00	0.00	0.20	0
Jan	28	28	0	0	0	12.5	12.5	13.4	0.27	0.80	1.20	1.47	0.00	0.00	0.00	0.14	0
Jan	29	28	0	0	0	12.5	12.5	13.4	0.27	0.80	1.20	1.47	0.00	0.00	0.00	0.14	0
Jan	30	25	0	0	0	11.2	11.2	12.0	0.24	0.72	1.08	1.31	0.00	0.00	0.00	0.00	0
Jan	31	34	1010	505	76	15.2	15.2	16.3	0.33	0.98	1.46	1.79	0.00	0.00	0.13	0.46	458,616
Feb	1	18	0	0	0	8.0	8.0	8.6	0.17	0.52	0.77	0.95	0.00	0.00	0.00	0.00	0
Feb	2	19	0	0	0	8.5	8.5	9.1	0.18	0.55	0.82	1.00	0.00	0.00	0.00	0.00	0
Feb	3	21	0	0	0	9.4	9.4	10.0	0.20	0.60	0.90	1.10	0.00	0.00	0.00	0.00	0
Feb	4	21	0	0	0	9.4	9.4	10.0	0.20	0.60	0.90	1.10	0.00	0.00	0.00	0.00	0
Feb	5	28	0	0	0	12.5	12.5	13.4	0.27	0.80	1.20	1.47	0.00	0.00	0.00	0.14	0
Feb	6	22	0	0	0	9.8	9.8	10.5	0.21	0.63	0.95	1.16	0.00	0.00	0.00	0.00	0
Feb	7	43	6663	3331	500	19.2	19.2	20.6	0.41	1.23	1.85	2.26	0.00	0.00	0.52	0.93	3,024,936
Feb	8	29	0	0	0	13.0	13.0	13.9	0.28	0.83	1.25	1.53	0.00	0.00	0.00	0.20	0
Feb	9	30	0	0	0	13.4	13.4	14.3	0.29	0.86	1.29	1.58	0.00	0.00	0.00	0.25	0
Feb	10	31	23	12	2	13.9	13.9	14.8	0.30	0.89	1.33	1.63	0.00	0.00	0.00	0.30	10,517
Feb	11	23	0	0	0	10.3	10.3	11.0	0.22	0.66	0.99	1.21	0.00	0.00	0.00	0.00	0
Feb	12	35	1439	719	108	15.6	15.6	16.7	0.33	1.00	1.51	1.84	0.00	0.00	0.18	0.51	653,243
Feb	13	19	0	0	0	8.5	8.5	9.1	0.18	0.55	0.82	1.00	0.00	0.00	0.00	0.00	0
Feb	14	29	0	0	0	13.0	13.0	13.9	0.28	0.83	1.25	1.53	0.00	0.00	0.00	0.20	0
Feb	15	27	0	0	0	12.1	12.1	12.9	0.26	0.77	1.16	1.42	0.00	0.00	0.00	0.09	0
Feb	16	27	0	0	0	12.1	12.1	12.9	0.26	0.77	1.16	1.42	0.00	0.00	0.00	0.09	0
Feb	17	25	0	0	0	11.2	11.2	12.0	0.24	0.72	1.08	1.31	0.00	0.00	0.00	0.00	0
Feb	18	22	0	0	0	9.8	9.8	10.5	0.21	0.63	0.95	1.16	0.00	0.00	0.00	0.00	0
Feb	19	13	0	0	0	5.8	5.8	6.2	0.12	0.37	0.56	0.68	0.00	0.00	0.00	0.00	0
Feb	20	14	0	0	0	6.3	6.3	6.7	0.13	0.40	0.60	0.74	0.00	0.00	0.00	0.00	0
Feb	21	27	0	0	0	12.1	12.1	12.9	0.26	0.77	1.16	1.42	0.00	0.00	0.00	0.09	0
Feb	22	20	0	0	0	8.9	8.9	9.6	0.19	0.57	0.86	1.05	0.00	0.00	0.00	0.00	0
Feb	23	18	0	0	0	8.0	8.0	8.6	0.17	0.52	0.77	0.95	0.00	0.00	0.00	0.00	0
Feb	24	42	5835	2918	438	18.8	18.8	20.1	0.40	1.20	1.81	2.21	0.00	0.00	0.48	0.88	2,649,270
Feb	25	35	1439	719	108	15.6	15.6	16.7	0.33	1.00	1.51	1.84	0.00	0.00	0.18	0.51	653,243
Feb	26	17	0	0	0	7.6	7.6	8.1	0.16	0.49	0.73	0.89	0.00	0.00	0.00	0.00	0
Feb	27	17	0	0	0	7.6	7.6	8.1	0.16	0.49	0.73	0.89	0.00	0.00	0.00	0.00	0
Feb	28	27	0	0	0	12.1	12.1	12.9	0.26	0.77	1.16	1.42	0.00	0.00	0.00	0.09	0
Feb	29		0	0	0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
Mar	1	59	40512	20256	3038	26.4	26.4	28.2	0.56	1.69	2.54	3.10	0.00	0.36	1.21	1.77	18,392,311
Mar	2	33	631	316	47	14.8	14.8	15.8	0.32	0.95	1.42	1.74	0.00	0.00	0.09	0.41	286,620
Mar	3	25	0	0	0	11.2	11.2	12.0	0.24	0.72	1.08	1.31	0.00	0.00	0.00	0.00	0
Mar	4	18	0	0	0	8.0	8.0	8.6	0.17	0.52	0.77	0.95	0.00	0.00	0.00	0.00	0
Mar	5	43	6663	3331	500	19.2	19.2	20.6	0.41	1.23	1.85	2.26	0.00	0.00	0.52	0.93	3,024,936
Mar	6	32	302	151	23	14.3	14.3	15.3	0.31	0.92	1.38	1.68	0.00	0.00	0.05	0.35	137,253
Mar	7	50	16537	8268	1240	22.4	22.4	23.9	0.48	1.43	2.15	2.63	0.00	0.10	0.82	1.30	7,507,663
Mar	8	33	631	316	47	14.8	14.8	15.8	0.32	0.95	1.42	1.74	0.00	0.00	0.09	0.41	286,620
Mar	9	35	1439	719	108	15.6	15.6	16.7	0.33	1.00	1.51	1.84	0.00	0.00	0.18	0.51	653,243
Mar	10	33	631	316	47	14.8	14.8	15.8	0.32	0.95	1.42	1.74	0.00	0.00	0.09	0.41	286,620
Mar	11	23	0	0	0	10.3	10.3	11.0	0.22	0.66	0.99	1.21	0.00	0.00	0.00	0.00	0
Mar	12	16	0	0	0	7.2	7.2	7.6	0.15	0.46	0.69	0.84	0.00	0.00	0.00	0.00	0
Mar	13	15	0	0	0	6.7	6.7	7.2	0.14	0.43	0.65	0.79	0.00	0.00	0.00	0.00	0
Mar	14	32	302	151	23	14.3	14.3	15.3	0.31	0.92	1.38	1.68	0.00	0.00	0.05	0.35	137,253
Mar	15	25	0	0	0	11.2	11.2	12.0	0.24	0.72	1.08	1.31	0.00	0.00	0.00	0.00	0
Mar	16	15	0	0	0	6.7	6.7	7.2	0.14	0.43	0.65	0.79	0.00	0.00	0.00	0.00	0
Mar	17	20	0	0	0	8.9	8.9	9.6	0.19	0.57	0.86	1.05	0.00	0.00	0.00	0.00	0
Mar	18	30	0	0	0	13.4	13.4	14.3	0.29	0.86	1.29	1.58	0.00	0.00	0.00	0.25	0
Mar	19	15	0	0	0	6.7	6.7	7.2	0.14	0.43	0.65	0.79	0.00	0.00	0.00	0.00	0
Mar	20	26	0	0	0	11.6	11.6	12.4	0.25	0.75	1.12	1.37	0.00	0.00	0.00	0.04	0
Mar	21	28	0	0	0	12.5	12.5	13.4	0.27	0.80	1.20	1.47	0.00	0.00	0.00	0.14	0
Mar	22	32	302	151	23	14.3	14.3	15.3	0.31	0.92	1.38	1.68	0.00	0.00	0.05	0.35	137,253

Mar	23	20	0	0	0	8.9	8.9	9.6	0.19	0.57	0.86	1.05	0.00	0.00	0.00	0.00	0
Mar	24	34	1010	505	76	15.2	15.2	16.3	0.33	0.98	1.46	1.79	0.00	0.00	0.13	0.46	458,616
Mar	25	38	3024	1512	227	17.0	17.0	18.2	0.36	1.09	1.64	2.00	0.00	0.00	0.31	0.67	1,372,903
Mar	26	31	23	12	2	13.9	13.9	14.8	0.30	0.89	1.33	1.63	0.00	0.00	0.00	0.30	10,517
Mar	27	25	0	0	0	11.2	11.2	12.0	0.24	0.72	1.08	1.31	0.00	0.00	0.00	0.00	0
Mar	28	18	0	0	0	8.0	8.0	8.6	0.17	0.52	0.77	0.95	0.00	0.00	0.00	0.00	0
Mar	29	21	0	0	0	9.4	9.4	10.0	0.20	0.60	0.90	1.10	0.00	0.00	0.00	0.00	0
Mar	30	43	6663	3331	500	19.2	19.2	20.6	0.41	1.23	1.85	2.26	0.00	0.00	0.52	0.93	3,024,936
Mar	31	29	0	0	0	13.0	13.0	13.9	0.28	0.83	1.25	1.53	0.00	0.00	0.00	0.20	0
Apr	1	17	0	0	0	7.6	7.6	8.1	0.16	0.49	0.73	0.89	0.00	0.00	0.00	0.00	0
Apr	2	20	0	0	0	8.9	8.9	9.6	0.19	0.57	0.86	1.05	0.00	0.00	0.00	0.00	0
Apr	3	40	4330	2165	325	17.9	17.9	19.1	0.38	1.15	1.72	2.10	0.00	0.00	0.39	0.77	1,965,826
Apr	4	29	0	0	0	13.0	13.0	13.9	0.28	0.83	1.25	1.53	0.00	0.00	0.00	0.20	0
Apr	5	41	5058	2529	379	18.3	18.3	19.6	0.39	1.18	1.76	2.16	0.00	0.00	0.43	0.83	2,296,233
Apr	6	46	9444	4722	708	20.6	20.6	22.0	0.44	1.32	1.98	2.42	0.00	0.00	0.65	1.09	4,287,716
Apr	7	31	23	12	2	13.9	13.9	14.8	0.30	0.89	1.33	1.63	0.00	0.00	0.00	0.30	10,517
Apr	8	19	0	0	0	8.5	8.5	9.1	0.18	0.55	0.82	1.00	0.00	0.00	0.00	0.00	0
Apr	9	37	2446	1223	183	16.5	16.5	17.7	0.35	1.06	1.59	1.95	0.00	0.00	0.26	0.62	1,110,386
Apr	10	36	1917	959	144	16.1	16.1	17.2	0.34	1.03	1.55	1.89	0.00	0.00	0.22	0.56	870,500
Apr	11	19	0	0	0	8.5	8.5	9.1	0.18	0.55	0.82	1.00	0.00	0.00	0.00	0.00	0
Apr	12	14	0	0	0	6.3	6.3	6.7	0.13	0.40	0.60	0.74	0.00	0.00	0.00	0.00	0
Apr	13	29	0	0	0	13.0	13.0	13.9	0.28	0.83	1.25	1.53	0.00	0.00	0.00	0.20	0
Apr	14	19	0	0	0	8.5	8.5	9.1	0.18	0.55	0.82	1.00	0.00	0.00	0.00	0.00	0
Apr	15	34	1010	505	76	15.2	15.2	16.3	0.33	0.98	1.46	1.79	0.00	0.00	0.13	0.46	458,616
Apr	16	47	10866	5433	815	21.0	21.0	22.5	0.45	1.35	2.02	2.47	0.00	0.02	0.69	1.14	4,933,359
Apr	17	18	0	0	0	8.0	8.0	8.6	0.17	0.52	0.77	0.95	0.00	0.00	0.00	0.00	0
Apr	18	31	23	12	2	13.9	13.9	14.8	0.30	0.89	1.33	1.63	0.00	0.00	0.00	0.30	10,517
Apr	19	24	0	0	0	10.7	10.7	11.5	0.23	0.69	1.03	1.26	0.00	0.00	0.00	0.00	0
Apr	20	36	1917	959	144	16.1	16.1	17.2	0.34	1.03	1.55	1.89	0.00	0.00	0.22	0.56	870,500
Apr	21	26	0	0	0	11.6	11.6	12.4	0.25	0.75	1.12	1.37	0.00	0.00	0.00	0.04	0
Apr	22	25	0	0	0	11.2	11.2	12.0	0.24	0.72	1.08	1.31	0.00	0.00	0.00	0.00	0
Apr	23	29	0	0	0	13.0	13.0	13.9	0.28	0.83	1.25	1.53	0.00	0.00	0.00	0.20	0
Apr	24	22	0	0	0	9.8	9.8	10.5	0.21	0.63	0.95	1.16	0.00	0.00	0.00	0.00	0
Apr	25	17	0	0	0	7.6	7.6	8.1	0.16	0.49	0.73	0.89	0.00	0.00	0.00	0.00	0
Apr	26	33	631	316	47	14.8	14.8	15.8	0.32	0.95	1.42	1.74	0.00	0.00	0.09	0.41	286,620
Apr	27	33	631	316	47	14.8	14.8	15.8	0.32	0.95	1.42	1.74	0.00	0.00	0.09	0.41	286,620
Apr	28	24	0	0	0	10.7	10.7	11.5	0.23	0.69	1.03	1.26	0.00	0.00	0.00	0.00	0
Apr	29	33	631	316	47	14.8	14.8	15.8	0.32	0.95	1.42	1.74	0.00	0.00	0.09	0.41	286,620
Apr	30	41	5058	2529	379	18.3	18.3	19.6	0.39	1.18	1.76	2.16	0.00	0.00	0.43	0.83	2,296,233
May	1	41	5058	2529	379	18.3	18.3	19.6	0.39	1.18	1.76	2.16	0.00	0.00	0.43	0.83	2,296,233
May	2	42	5835	2918	438	18.8	18.8	20.1	0.40	1.20	1.81	2.21	0.00	0.00	0.48	0.88	2,649,270
May	3	23	0	0	0	10.3	10.3	11.0	0.22	0.66	0.99	1.21	0.00	0.00	0.00	0.00	0
May	4	31	23	12	2	13.9	13.9	14.8	0.30	0.89	1.33	1.63	0.00	0.00	0.00	0.30	10,517
May	5	36	1917	959	144	16.1	16.1	17.2	0.34	1.03	1.55	1.89	0.00	0.00	0.22	0.56	870,500
May	6	26	0	0	0	11.6	11.6	12.4	0.25	0.75	1.12	1.37	0.00	0.00	0.00	0.04	0
May	7	30	0	0	0	13.4	13.4	14.3	0.29	0.86	1.29	1.58	0.00	0.00	0.00	0.25	0
May	8	14	0	0	0	6.3	6.3	6.7	0.13	0.40	0.60	0.74	0.00	0.00	0.00	0.00	0
May	9	29	0	0	0	13.0	13.0	13.9	0.28	0.83	1.25	1.53	0.00	0.00	0.00	0.20	0
May	10	25	0	0	0	11.2	11.2	12.0	0.24	0.72	1.08	1.31	0.00	0.00	0.00	0.00	0
May	11	23	0	0	0	10.3	10.3	11.0	0.22	0.66	0.99	1.21	0.00	0.00	0.00	0.00	0
May	12	18	0	0	0	8.0	8.0	8.6	0.17	0.52	0.77	0.95	0.00	0.00	0.00	0.00	0
May	13	18	0	0	0	8.0	8.0	8.6	0.17	0.52	0.77	0.95	0.00	0.00	0.00	0.00	0
May	14	23	0	0	0	10.3	10.3	11.0	0.22	0.66	0.99	1.21	0.00	0.00	0.00	0.00	0
May	15	17	0	0	0	7.6	7.6	8.1	0.16	0.49	0.73	0.89	0.00	0.00	0.00	0.00	0
May	16	26	0	0	0	11.6	11.6	12.4	0.25	0.75	1.12	1.37	0.00	0.00	0.00	0.04	0
May	17	30	0	0	0	13.4	13.4	14.3	0.29	0.86	1.29	1.58	0.00	0.00	0.00	0.25	0
May	18	30	0	0	0	13.4	13.4	14.3	0.29	0.86	1.29	1.58	0.00	0.00	0.00	0.25	0
May	19	31	23	12	2	13.9	13.9	14.8	0.30	0.89	1.33	1.63	0.00	0.00	0.00	0.30	10,517
May	20	45	8467	4234	635	20.1	20.1	21.5	0.43	1.29	1.94	2.37	0.00	0.00	0.61	1.04	3,844,160
May	21	25	0	0	0	11.2	11.2	12.0	0.24	0.72	1.08	1.31	0.00	0.00	0.00	0.00	0
May	22	25	0	0	0	11.2	11.2	12.0	0.24	0.72	1.08	1.31	0.00	0.00	0.00	0.00	0
May	23	16	0	0	0	7.2	7.2	7.6	0.15	0.46	0.69	0.84	0.00	0.00	0.00	0.00	0
May	24	24	0	0	0	10.7	10.7	11.5	0.23	0.69	1.03	1.26	0.00	0.00	0.00	0.00	0
May	25	30	0	0	0	13.4	13.4	14.3	0.29	0.86	1.29	1.58	0.00	0.00	0.00	0.25	0
May	26	22	0	0	0	9.8	9.8	10.5	0.21	0.63	0.95	1.16	0.00	0.00	0.00	0.00	0
May	27	34	1010	505	76	15.2	15.2	16.3	0.33	0.98	1.46	1.79	0.00	0.00	0.13	0.46	458,616
May	28	31	23	12	2	13.9	13.9	14.8	0.30	0.89	1.33	1.63	0.00	0.00	0.00	0.30	10,517
May	29	25	0	0	0	11.2	11.2	12.0	0.24	0.72	1.08	1.31	0.00	0.00	0.00	0.00	0
May	30	31	23	12	2	13.9	13.9	14.8	0.30	0.89	1.33	1.63	0.00	0.00	0.00	0.30	10,517
May	31	25	0	0	0	11.2	11.2	12.0	0.24	0.72	1.08	1.31	0.00	0.00	0.00	0.00	0
Jun	1	21	0	0	0	9.4	9.4	10.0	0.20	0.60	0.90	1.10	0.00	0.00	0.00	0.00	0
Jun	2	17	0	0	0	7.6	7.6	8.1	0.16	0.49	0.73	0.89	0.00	0.00	0.00	0.00	0
Jun	3	15	0	0	0	6.7	6.7	7.2	0.14	0.43	0.65	0.79	0.00	0.00	0.00	0.00	0
Jun	4	21	0	0	0	9.4	9.4	10.0	0.20	0.60	0.90	1.10	0.00	0.00	0.00	0.00	0
Jun	5	30	0	0	0	13.4	13.4	14.3	0.29	0.86	1.29	1.58	0.00	0.00	0.00	0.25	0
Jun	6	24	0	0	0	10.7	10.7	11.5	0.23	0.69	1.03	1.26	0.00	0.00	0.00	0.00	0
Jun	7	24	0	0	0	10.7	10.7	11.5	0.23	0.69	1.03	1.26	0.00	0.00	0.00	0.00	0
Jun	8	14	0	0	0	6.3	6.3	6.7	0.13	0.40	0.60	0.74	0.00	0.00	0.00	0.00	0
Jun	9	25	0	0	0	11.2	11.2	12.0	0.24	0.72	1.08	1.31	0.00	0.00	0.00	0.00	0
Jun	10	25	0	0	0	11.2	11.2	12.0	0.24	0.72	1.08	1.31	0.00	0.00	0.00	0.00	0
Jun	11	28	0	0	0	12.5	12.5	13.4	0.27	0.80	1.20	1.47	0.00	0.00	0.00	0.14	0
Jun	12	26	0	0	0	11.6	11.6	12.4	0.25	0.75	1.12	1.37	0.00	0.00	0.00	0.04	0
Jun	13	38	3024	1512	227	17.0	17.0	18.2	0.36	1.09	1.64	2.00	0.00	0.00	0.31	0.67	1,372,903
Jun	14	22	0	0	0	9.8	9.8	10.5	0.21	0.63	0.95	1.16	0.00	0.00	0.00	0.00	0
Jun	15	40	4330	2165	325	17.9	17.9	19.1	0.38	1.15	1.72	2.10	0.00	0.00	0.39	0.77	1,965,826
Jun	16	17	0	0	0	7.6	7.6	8.1	0.16	0.49	0.73	0.89	0.00	0.00	0.00	0.00	0
Jun	17	27	0	0	0	12.1	12.1	12.9	0.26	0.77	1.16	1.42	0.00	0.00	0.00	0.09	0
Jun	18	26	0	0	0	11.6	11.6	12.4	0.25	0.75	1.12	1.37	0.00	0.00	0.00	0.04	0
Jun	19	27	0	0	0	12.1	12.1	12.9	0.26	0.77	1.16	1.42	0.00	0.00	0.00	0.09	0
Jun	20	22	0	0	0	9.8	9.8	10.5	0.21	0.63	0.95	1.16	0.00	0.00	0.00	0.00	0
Jun	21	29	0	0	0	13.0	13.0	13.9	0.28	0.83	1.25	1.53	0.00	0.00	0.00	0.20	0
Jun	22	27	0	0	0	12.1	12.1	12.9	0.26	0.77	1.16	1.42	0.00	0.00	0.00	0.09	0
Jun	23	27	0	0	0	12.1	12.1	12.9	0.26	0.77	1.16	1.42	0.00	0.00	0.00	0.09	0
Jun	24	26	0	0	0	11.6	11.6	12.4	0.25	0.75	1.12	1.37	0.00	0.00	0.00	0.04	0

Jun	25	31	23	12	2	13.9	13.9	14.8	0.30	0.89	1.33	1.63	0.00	0.00	0.00	0.30	10,517
Jun	26	22	0	0	0	9.8	9.8	10.5	0.21	0.63	0.95	1.16	0.00	0.00	0.00	0.00	0
Jun	27	24	0	0	0	10.7	10.7	11.5	0.23	0.69	1.03	1.26	0.00	0.00	0.00	0.00	0
Jun	28	23	0	0	0	10.3	10.3	11.0	0.22	0.66	0.99	1.21	0.00	0.00	0.00	0.00	0
Jun	29	33	631	316	47	14.8	14.8	15.8	0.32	0.95	1.42	1.74	0.00	0.00	0.09	0.41	286,620
Jun	30	49	14518	7259	1089	21.9	21.9	23.4	0.47	1.41	2.11	2.58	0.00	0.08	0.78	1.25	6,591,011
Jul	1	17	0	0	0	7.6	7.6	8.1	0.16	0.49	0.73	0.89	0.00	0.00	0.00	0.00	0
Jul	2	16	0	0	0	7.2	7.2	7.6	0.15	0.46	0.69	0.84	0.00	0.00	0.00	0.00	0
Jul	3	15	0	0	0	6.7	6.7	7.2	0.14	0.43	0.65	0.79	0.00	0.00	0.00	0.00	0
Jul	4	18	0	0	0	8.0	8.0	8.6	0.17	0.52	0.77	0.95	0.00	0.00	0.00	0.00	0
Jul	5	16	0	0	0	7.2	7.2	7.6	0.15	0.46	0.69	0.84	0.00	0.00	0.00	0.00	0
Jul	6	16	0	0	0	7.2	7.2	7.6	0.15	0.46	0.69	0.84	0.00	0.00	0.00	0.00	0
Jul	7	42	5835	2918	438	18.8	18.8	20.1	0.40	1.20	1.81	2.21	0.00	0.00	0.48	0.88	2,649,270
Jul	8	25	0	0	0	11.2	11.2	12.0	0.24	0.72	1.08	1.31	0.00	0.00	0.00	0.00	0
Jul	9	18	0	0	0	8.0	8.0	8.6	0.17	0.52	0.77	0.95	0.00	0.00	0.00	0.00	0
Jul	10	30	0	0	0	13.4	13.4	14.3	0.29	0.86	1.29	1.58	0.00	0.00	0.00	0.25	0
Jul	11	22	0	0	0	9.8	9.8	10.5	0.21	0.63	0.95	1.16	0.00	0.00	0.00	0.00	0
Jul	12	22	0	0	0	9.8	9.8	10.5	0.21	0.63	0.95	1.16	0.00	0.00	0.00	0.00	0
Jul	13	24	0	0	0	10.7	10.7	11.5	0.23	0.69	1.03	1.26	0.00	0.00	0.00	0.00	0
Jul	14	18	0	0	0	8.0	8.0	8.6	0.17	0.52	0.77	0.95	0.00	0.00	0.00	0.00	0
Jul	15	17	0	0	0	7.6	7.6	8.1	0.16	0.49	0.73	0.89	0.00	0.00	0.00	0.00	0
Jul	16	16	0	0	0	7.2	7.2	7.6	0.15	0.46	0.69	0.84	0.00	0.00	0.00	0.00	0
Jul	17	15	0	0	0	6.7	6.7	7.2	0.14	0.43	0.65	0.79	0.00	0.00	0.00	0.00	0
Jul	18	28	0	0	0	12.5	12.5	13.4	0.27	0.80	1.20	1.47	0.00	0.00	0.00	0.14	0
Jul	19	16	0	0	0	7.2	7.2	7.6	0.15	0.46	0.69	0.84	0.00	0.00	0.00	0.00	0
Jul	20	21	0	0	0	9.4	9.4	10.0	0.20	0.60	0.90	1.10	0.00	0.00	0.00	0.00	0
Jul	21	20	0	0	0	8.9	8.9	9.6	0.19	0.57	0.86	1.05	0.00	0.00	0.00	0.00	0
Jul	22	36	1917	959	144	16.1	16.1	17.2	0.34	1.03	1.55	1.89	0.00	0.00	0.22	0.56	870,500
Jul	23	47	10866	5433	815	21.0	21.0	22.5	0.45	1.35	2.02	2.47	0.00	0.02	0.69	1.14	4,933,359
Jul	24	21	0	0	0	9.4	9.4	10.0	0.20	0.60	0.90	1.10	0.00	0.00	0.00	0.00	0
Jul	25	17	0	0	0	7.6	7.6	8.1	0.16	0.49	0.73	0.89	0.00	0.00	0.00	0.00	0
Jul	26	19	0	0	0	8.5	8.5	9.1	0.18	0.55	0.82	1.00	0.00	0.00	0.00	0.00	0
Jul	27	15	0	0	0	6.7	6.7	7.2	0.14	0.43	0.65	0.79	0.00	0.00	0.00	0.00	0
Jul	28	26	0	0	0	11.6	11.6	12.4	0.25	0.75	1.12	1.37	0.00	0.00	0.00	0.04	0
Jul	29	23	0	0	0	10.3	10.3	11.0	0.22	0.66	0.99	1.21	0.00	0.00	0.00	0.00	0
Jul	30	20	0	0	0	8.9	8.9	9.6	0.19	0.57	0.86	1.05	0.00	0.00	0.00	0.00	0
Jul	31	19	0	0	0	8.5	8.5	9.1	0.18	0.55	0.82	1.00	0.00	0.00	0.00	0.00	0
Aug	1	29	0	0	0	13.0	13.0	13.9	0.28	0.83	1.25	1.53	0.00	0.00	0.00	0.20	0
Aug	2	26	0	0	0	11.6	11.6	12.4	0.25	0.75	1.12	1.37	0.00	0.00	0.00	0.04	0
Aug	3	32	302	151	23	14.3	14.3	15.3	0.31	0.92	1.38	1.68	0.00	0.00	0.05	0.35	137,253
Aug	4	31	23	12	2	13.9	13.9	14.8	0.30	0.89	1.33	1.63	0.00	0.00	0.00	0.30	10,517
Aug	5	14	0	0	0	6.3	6.3	6.7	0.13	0.40	0.60	0.74	0.00	0.00	0.00	0.00	0
Aug	6	13	0	0	0	5.8	5.8	6.2	0.12	0.37	0.56	0.68	0.00	0.00	0.00	0.00	0
Aug	7	18	0	0	0	8.0	8.0	8.6	0.17	0.52	0.77	0.95	0.00	0.00	0.00	0.00	0
Aug	8	19	0	0	0	8.5	8.5	9.1	0.18	0.55	0.82	1.00	0.00	0.00	0.00	0.00	0
Aug	9	16	0	0	0	7.2	7.2	7.6	0.15	0.46	0.69	0.84	0.00	0.00	0.00	0.00	0
Aug	10	18	0	0	0	8.0	8.0	8.6	0.17	0.52	0.77	0.95	0.00	0.00	0.00	0.00	0
Aug	11	14	0	0	0	6.3	6.3	6.7	0.13	0.40	0.60	0.74	0.00	0.00	0.00	0.00	0
Aug	12	22	0	0	0	9.8	9.8	10.5	0.21	0.63	0.95	1.16	0.00	0.00	0.00	0.00	0
Aug	13	17	0	0	0	7.6	7.6	8.1	0.16	0.49	0.73	0.89	0.00	0.00	0.00	0.00	0
Aug	14	14	0	0	0	6.3	6.3	6.7	0.13	0.40	0.60	0.74	0.00	0.00	0.00	0.00	0
Aug	15	16	0	0	0	7.2	7.2	7.6	0.15	0.46	0.69	0.84	0.00	0.00	0.00	0.00	0
Aug	16	17	0	0	0	7.6	7.6	8.1	0.16	0.49	0.73	0.89	0.00	0.00	0.00	0.00	0
Aug	17	33	631	316	47	14.8	14.8	15.8	0.32	0.95	1.42	1.74	0.00	0.00	0.09	0.41	286,620
Aug	18	27	0	0	0	12.1	12.1	12.9	0.26	0.77	1.16	1.42	0.00	0.00	0.00	0.09	0
Aug	19	20	0	0	0	8.9	8.9	9.6	0.19	0.57	0.86	1.05	0.00	0.00	0.00	0.00	0
Aug	20	17	0	0	0	7.6	7.6	8.1	0.16	0.49	0.73	0.89	0.00	0.00	0.00	0.00	0
Aug	21	18	0	0	0	8.0	8.0	8.6	0.17	0.52	0.77	0.95	0.00	0.00	0.00	0.00	0
Aug	22	37	2446	1223	183	16.5	16.5	17.7	0.35	1.06	1.59	1.95	0.00	0.00	0.26	0.62	1,110,386
Aug	23	21	0	0	0	9.4	9.4	10.0	0.20	0.60	0.90	1.10	0.00	0.00	0.00	0.00	0
Aug	24	20	0	0	0	8.9	8.9	9.6	0.19	0.57	0.86	1.05	0.00	0.00	0.00	0.00	0
Aug	25	16	0	0	0	7.2	7.2	7.6	0.15	0.46	0.69	0.84	0.00	0.00	0.00	0.00	0
Aug	26	20	0	0	0	8.9	8.9	9.6	0.19	0.57	0.86	1.05	0.00	0.00	0.00	0.00	0
Aug	27	14	0	0	0	6.3	6.3	6.7	0.13	0.40	0.60	0.74	0.00	0.00	0.00	0.00	0
Aug	28	19	0	0	0	8.5	8.5	9.1	0.18	0.55	0.82	1.00	0.00	0.00	0.00	0.00	0
Aug	29	17	0	0	0	7.6	7.6	8.1	0.16	0.49	0.73	0.89	0.00	0.00	0.00	0.00	0
Aug	30	9	0	0	0	4.0	4.0	4.3	0.09	0.26	0.39	0.47	0.00	0.00	0.00	0.00	0
Aug	31	24	0	0	0	10.7	10.7	11.5	0.23	0.69	1.03	1.26	0.00	0.00	0.00	0.00	0
Sep	1	34	1010	505	76	15.2	15.2	16.3	0.33	0.98	1.46	1.79	0.00	0.00	0.13	0.46	458,616
Sep	2	22	0	0	0	9.8	9.8	10.5	0.21	0.63	0.95	1.16	0.00	0.00	0.00	0.00	0
Sep	3	19	0	0	0	8.5	8.5	9.1	0.18	0.55	0.82	1.00	0.00	0.00	0.00	0.00	0
Sep	4	27	0	0	0	12.1	12.1	12.9	0.26	0.77	1.16	1.42	0.00	0.00	0.00	0.09	0
Sep	5	23	0	0	0	10.3	10.3	11.0	0.22	0.66	0.99	1.21	0.00	0.00	0.00	0.00	0
Sep	6	20	0	0	0	8.9	8.9	9.6	0.19	0.57	0.86	1.05	0.00	0.00	0.00	0.00	0
Sep	7	20	0	0	0	8.9	8.9	9.6	0.19	0.57	0.86	1.05	0.00	0.00	0.00	0.00	0
Sep	8	14	0	0	0	6.3	6.3	6.7	0.13	0.40	0.60	0.74	0.00	0.00	0.00	0.00	0
Sep	9	19	0	0	0	8.5	8.5	9.1	0.18	0.55	0.82	1.00	0.00	0.00	0.00	0.00	0
Sep	10	22	0	0	0	9.8	9.8	10.5	0.21	0.63	0.95	1.16	0.00	0.00	0.00	0.00	0
Sep	11	26	0	0	0	11.6	11.6	12.4	0.25	0.75	1.12	1.37	0.00	0.00	0.00	0.04	0
Sep	12	26	0	0	0	11.6	11.6	12.4	0.25	0.75	1.12	1.37	0.00	0.00	0.00	0.04	0
Sep	13	18	0	0	0	8.0	8.0	8.6	0.17	0.52	0.77	0.95	0.00	0.00	0.00	0.00	0
Sep	14	11	0	0	0	4.9	4.9	5.3	0.11	0.32	0.47	0.58	0.00	0.00	0.00	0.00	0
Sep	15	10	0	0	0	4.5	4.5	4.8	0.10	0.29	0.43	0.53	0.00	0.00	0.00	0.00	0
Sep	16	9	0	0	0	4.0	4.0	4.3	0.09	0.26	0.39	0.47	0.00	0.00	0.00	0.00	0
Sep	17	14	0	0	0	6.3	6.3	6.7	0.13	0.40	0.60	0.74	0.00	0.00	0.00	0.00	0
Sep	18	14	0	0	0	6.3	6.3	6.7	0.13	0.40	0.60	0.74	0.00	0.00	0.00	0.00	0
Sep	19	15	0	0	0	6.7	6.7	7.2	0.14	0.43	0.65	0.79	0.00	0.00	0.00	0.00	0
Sep	20	25	0	0	0	11.2	11.2	12.0	0.24	0.72	1.08	1.31	0.00	0.00	0.00	0.00	0
Sep	21	9	0	0	0	4.0	4.0	4.3	0.09	0.26	0.39	0.47	0.00	0.00	0.00	0.00	0
Sep	22	15	0	0	0	6.7	6.7	7.2	0.14	0.43	0.65	0.79	0.00	0.00	0.00	0.00	0
Sep	23	16	0	0	0	7.2	7.2	7.6	0.15	0.46	0.69	0.84	0.00	0.00	0.00	0.00	0
Sep	24	16	0	0	0	7.2	7.2	7.6	0.15	0.46	0.69	0.84	0.00	0.00	0.00	0.00	0
Sep	25	12	0	0	0	5.4	5.4	5.7	0.11	0.34	0.52	0.63	0.00	0.00	0.00	0.00	0
Sep	26	11	0	0	0	4.9	4.9	5.3	0.11	0.32	0.47	0.58	0.00	0.00	0.00	0.00	0

Sep	27	26	0	0	0	11.6	11.6	12.4	0.25	0.75	1.12	1.37	0.00	0.00	0.00	0.04	0
Sep	28	21	0	0	0	9.4	9.4	10.0	0.20	0.60	0.90	1.10	0.00	0.00	0.00	0.00	0
Sep	29	24	0	0	0	10.7	10.7	11.5	0.23	0.69	1.03	1.26	0.00	0.00	0.00	0.00	0
Sep	30	23	0	0	0	10.3	10.3	11.0	0.22	0.66	0.99	1.21	0.00	0.00	0.00	0.00	0
Oct	1	14	0	0	0	6.3	6.3	6.7	0.13	0.40	0.60	0.74	0.00	0.00	0.00	0.00	0
Oct	2	17	0	0	0	7.6	7.6	8.1	0.16	0.49	0.73	0.89	0.00	0.00	0.00	0.00	0
Oct	3	20	0	0	0	8.9	8.9	9.6	0.19	0.57	0.86	1.05	0.00	0.00	0.00	0.00	0
Oct	4	17	0	0	0	7.6	7.6	8.1	0.16	0.49	0.73	0.89	0.00	0.00	0.00	0.00	0
Oct	5	12	0	0	0	5.4	5.4	5.7	0.11	0.34	0.52	0.63	0.00	0.00	0.00	0.00	0
Oct	6	18	0	0	0	8.0	8.0	8.6	0.17	0.52	0.77	0.95	0.00	0.00	0.00	0.00	0
Oct	7	29	0	0	0	13.0	13.0	13.9	0.28	0.83	1.25	1.53	0.00	0.00	0.00	0.20	0
Oct	8	16	0	0	0	7.2	7.2	7.6	0.15	0.46	0.69	0.84	0.00	0.00	0.00	0.00	0
Oct	9	11	0	0	0	4.9	4.9	5.3	0.11	0.32	0.47	0.58	0.00	0.00	0.00	0.00	0
Oct	10	20	0	0	0	8.9	8.9	9.6	0.19	0.57	0.86	1.05	0.00	0.00	0.00	0.00	0
Oct	11	23	0	0	0	10.3	10.3	11.0	0.22	0.66	0.99	1.21	0.00	0.00	0.00	0.00	0
Oct	12	8	0	0	0	3.6	3.6	3.8	0.08	0.23	0.34	0.42	0.00	0.00	0.00	0.00	0
Oct	13	12	0	0	0	5.4	5.4	5.7	0.11	0.34	0.52	0.63	0.00	0.00	0.00	0.00	0
Oct	14	23	0	0	0	10.3	10.3	11.0	0.22	0.66	0.99	1.21	0.00	0.00	0.00	0.00	0
Oct	15	45	8467	4234	635	20.1	20.1	21.5	0.43	1.29	1.94	2.37	0.00	0.00	0.61	1.04	3,844,160
Oct	16	20	0	0	0	8.9	8.9	9.6	0.19	0.57	0.86	1.05	0.00	0.00	0.00	0.00	0
Oct	17	14	0	0	0	6.3	6.3	6.7	0.13	0.40	0.60	0.74	0.00	0.00	0.00	0.00	0
Oct	18	17	0	0	0	7.6	7.6	8.1	0.16	0.49	0.73	0.89	0.00	0.00	0.00	0.00	0
Oct	19	22	0	0	0	9.8	9.8	10.5	0.21	0.63	0.95	1.16	0.00	0.00	0.00	0.00	0
Oct	20	13	0	0	0	5.8	5.8	6.2	0.12	0.37	0.56	0.68	0.00	0.00	0.00	0.00	0
Oct	21	15	0	0	0	6.7	6.7	7.2	0.14	0.43	0.65	0.79	0.00	0.00	0.00	0.00	0
Oct	22	29	0	0	0	13.0	13.0	13.9	0.28	0.83	1.25	1.53	0.00	0.00	0.00	0.20	0
Oct	23	27	0	0	0	12.1	12.1	12.9	0.26	0.77	1.16	1.42	0.00	0.00	0.00	0.09	0
Oct	24	34	1010	505	76	15.2	15.2	16.3	0.33	0.98	1.46	1.79	0.00	0.00	0.13	0.46	458,616
Oct	25	23	0	0	0	10.3	10.3	11.0	0.22	0.66	0.99	1.21	0.00	0.00	0.00	0.00	0
Oct	26	17	0	0	0	7.6	7.6	8.1	0.16	0.49	0.73	0.89	0.00	0.00	0.00	0.00	0
Oct	27	32	302	151	23	14.3	14.3	15.3	0.31	0.92	1.38	1.68	0.00	0.00	0.05	0.35	137,253
Oct	28	19	0	0	0	8.5	8.5	9.1	0.18	0.55	0.82	1.00	0.00	0.00	0.00	0.00	0
Oct	29	19	0	0	0	8.5	8.5	9.1	0.18	0.55	0.82	1.00	0.00	0.00	0.00	0.00	0
Oct	30	25	0	0	0	11.2	11.2	12.0	0.24	0.72	1.08	1.31	0.00	0.00	0.00	0.00	0
Oct	31	15	0	0	0	6.7	6.7	7.2	0.14	0.43	0.65	0.79	0.00	0.00	0.00	0.00	0
Nov	1	26	0	0	0	11.6	11.6	12.4	0.25	0.75	1.12	1.37	0.00	0.00	0.00	0.04	0
Nov	2	27	0	0	0	12.1	12.1	12.9	0.26	0.77	1.16	1.42	0.00	0.00	0.00	0.09	0
Nov	3	24	0	0	0	10.7	10.7	11.5	0.23	0.69	1.03	1.26	0.00	0.00	0.00	0.00	0
Nov	4	15	0	0	0	6.7	6.7	7.2	0.14	0.43	0.65	0.79	0.00	0.00	0.00	0.00	0
Nov	5	53	23368	11684	1753	23.7	23.7	25.3	0.51	1.52	2.28	2.79	0.00	0.19	0.95	1.46	10,608,923
Nov	6	28	0	0	0	12.5	12.5	13.4	0.27	0.80	1.20	1.47	0.00	0.00	0.00	0.14	0
Nov	7	23	0	0	0	10.3	10.3	11.0	0.22	0.66	0.99	1.21	0.00	0.00	0.00	0.00	0
Nov	8	19	0	0	0	8.5	8.5	9.1	0.18	0.55	0.82	1.00	0.00	0.00	0.00	0.00	0
Nov	9	24	0	0	0	10.7	10.7	11.5	0.23	0.69	1.03	1.26	0.00	0.00	0.00	0.00	0
Nov	10	25	0	0	0	11.2	11.2	12.0	0.24	0.72	1.08	1.31	0.00	0.00	0.00	0.00	0
Nov	11	12	0	0	0	5.4	5.4	5.7	0.11	0.34	0.52	0.63	0.00	0.00	0.00	0.00	0
Nov	12	21	0	0	0	9.4	9.4	10.0	0.20	0.60	0.90	1.10	0.00	0.00	0.00	0.00	0
Nov	13	17	0	0	0	7.6	7.6	8.1	0.16	0.49	0.73	0.89	0.00	0.00	0.00	0.00	0
Nov	14	16	0	0	0	7.2	7.2	7.6	0.15	0.46	0.69	0.84	0.00	0.00	0.00	0.00	0
Nov	15	27	0	0	0	12.1	12.1	12.9	0.26	0.77	1.16	1.42	0.00	0.00	0.00	0.09	0
Nov	16	19	0	0	0	8.5	8.5	9.1	0.18	0.55	0.82	1.00	0.00	0.00	0.00	0.00	0
Nov	17	22	0	0	0	9.8	9.8	10.5	0.21	0.63	0.95	1.16	0.00	0.00	0.00	0.00	0
Nov	18	50	16537	8268	1240	22.4	22.4	23.9	0.48	1.43	2.15	2.63	0.00	0.10	0.82	1.30	7,507,663
Nov	19	29	0	0	0	13.0	13.0	13.9	0.28	0.83	1.25	1.53	0.00	0.00	0.00	0.20	0
Nov	20	19	0	0	0	8.5	8.5	9.1	0.18	0.55	0.82	1.00	0.00	0.00	0.00	0.00	0
Nov	21	29	0	0	0	13.0	13.0	13.9	0.28	0.83	1.25	1.53	0.00	0.00	0.00	0.20	0
Nov	22	25	0	0	0	11.2	11.2	12.0	0.24	0.72	1.08	1.31	0.00	0.00	0.00	0.00	0
Nov	23	12	0	0	0	5.4	5.4	5.7	0.11	0.34	0.52	0.63	0.00	0.00	0.00	0.00	0
Nov	24	21	0	0	0	9.4	9.4	10.0	0.20	0.60	0.90	1.10	0.00	0.00	0.00	0.00	0
Nov	25	28	0	0	0	12.5	12.5	13.4	0.27	0.80	1.20	1.47	0.00	0.00	0.00	0.14	0
Nov	26	14	0	0	0	6.3	6.3	6.7	0.13	0.40	0.60	0.74	0.00	0.00	0.00	0.00	0
Nov	27	21	0	0	0	9.4	9.4	10.0	0.20	0.60	0.90	1.10	0.00	0.00	0.00	0.00	0
Nov	28	26	0	0	0	11.6	11.6	12.4	0.25	0.75	1.12	1.37	0.00	0.00	0.00	0.04	0
Nov	29	19	0	0	0	8.5	8.5	9.1	0.18	0.55	0.82	1.00	0.00	0.00	0.00	0.00	0
Nov	30	15	0	0	0	6.7	6.7	7.2	0.14	0.43	0.65	0.79	0.00	0.00	0.00	0.00	0
Dec	1	12	0	0	0	5.4	5.4	5.7	0.11	0.34	0.52	0.63	0.00	0.00	0.00	0.00	0
Dec	2	11	0	0	0	4.9	4.9	5.3	0.11	0.32	0.47	0.58	0.00	0.00	0.00	0.00	0
Dec	3	9	0	0	0	4.0	4.0	4.3	0.09	0.26	0.39	0.47	0.00	0.00	0.00	0.00	0
Dec	4	39	3652	1826	274	17.4	17.4	18.6	0.37	1.12	1.68	2.05	0.00	0.00	0.35	0.72	1,658,050
Dec	5	37	2446	1223	183	16.5	16.5	17.7	0.35	1.06	1.59	1.95	0.00	0.00	0.26	0.62	1,110,386
Dec	6	25	0	0	0	11.2	11.2	12.0	0.24	0.72	1.08	1.31	0.00	0.00	0.00	0.00	0
Dec	7	25	0	0	0	11.2	11.2	12.0	0.24	0.72	1.08	1.31	0.00	0.00	0.00	0.00	0
Dec	8	12	0	0	0	5.4	5.4	5.7	0.11	0.34	0.52	0.63	0.00	0.00	0.00	0.00	0
Dec	9	29	0	0	0	13.0	13.0	13.9	0.28	0.83	1.25	1.53	0.00	0.00	0.00	0.20	0
Dec	10	28	0	0	0	12.5	12.5	13.4	0.27	0.80	1.20	1.47	0.00	0.00	0.00	0.14	0
Dec	11	42	5835	2918	438	18.8	18.8	20.1	0.40	1.20	1.81	2.21	0.00	0.00	0.48	0.88	2,649,270
Dec	12	36	1917	959	144	16.1	16.1	17.2	0.34	1.03	1.55	1.89	0.00	0.00	0.22	0.56	870,500
Dec	13	39	3652	1826	274	17.4	17.4	18.6	0.37	1.12	1.68	2.05	0.00	0.00	0.35	0.72	1,658,050
Dec	14	37	2446	1223	183	16.5	16.5	17.7	0.35	1.06	1.59	1.95	0.00	0.00	0.26	0.62	1,110,386
Dec	15	25	0	0	0	11.2	11.2	12.0	0.24	0.72	1.08	1.31	0.00	0.00	0.00	0.00	0
Dec	16	29	0	0	0	13.0	13.0	13.9	0.28	0.83	1.25	1.53	0.00	0.00	0.00	0.20	0
Dec	17	15	0	0	0	6.7	6.7	7.2	0.14	0.43	0.65	0.79	0.00	0.00	0.00	0.00	0
Dec	18	19	0	0	0	8.5	8.5	9.1	0.18	0.55	0.82	1.00	0.00	0.00	0.00	0.00	0
Dec	19	22	0	0	0	9.8	9.8	10.5	0.21	0.63	0.95	1.16	0.00	0.00	0.00	0.00	0
Dec	20	21	0	0	0	9.4	9.4	10.0	0.20	0.60	0.90	1.10	0.00	0.00	0.00	0.00	0
Dec	21	24	0	0	0	10.7	10.7	11.5	0.23	0.69	1.03	1.26	0.00	0.00	0.00	0.00	0
Dec	22	27	0	0	0	12.1	12.1	12.9	0.26	0.77	1.16	1.42	0.00	0.00	0.00	0.09	0
Dec	23	29	0	0	0	13.0	13.0	13.9	0.28	0.83	1.25	1.53	0.00	0.00	0.00	0.20	0
Dec	24	40	4330	2165	325	17.9	17.9	19.1	0.38	1.15	1.72	2.10	0.00	0.00	0.39	0.77	1,965,826
Dec	25	33	631	316	47	14.8	14.8	15.8	0.32	0.95	1.42	1.74	0.00	0.00	0.09	0.41	286,620
Dec	26	22	0	0	0	9.8	9.8	10.5	0.21	0.63	0.95	1.16	0.00	0.00	0.00	0.00	0
Dec	27	25	0	0	0	11.2	11.2	12.0	0.24	0.72	1.08	1.31	0.00	0.00	0.00	0.00	0
Dec	28	20	0	0	0	8.9	8.9	9.6	0.19	0.57	0.86	1.05	0.00	0.00	0.00	0.00	0
Dec	29	16	0	0	0	7.2	7.2	7.6	0.15	0.46	0.69	0.84	0.00	0.00	0.00	0.00	0

U10 - Stage I Gasoline Fueling Station	Source	E-20 U-10 Gas Tank (AGT-1)
January	Facility Data	3000
February		3000
March		3000
April		3000
May		3000
June		3000
July		3000
August		3000
September		3000
October		3000
November		3000
December		3000
Total		**36000**
Tank Breathing and Emptying Emission Factor (lb/gallon)	AP-42 Table 5.2-7	**0.001**
Tank Breathing and Emptying Emissions (tons/yr)		**0.018**
VOC Emission Factor (lb/gallon)	AP-42 Table 5.2-7	0.0115
VOC Refueling Emissions (tons/yr)		**0.207**
VOC Emissions (tons/yr)		**0.225**
% Benzene	APCD*	5%
Benzene Emissions (lbs/yr)		**22.50**
% Ethylbenzene	APCD*	4%
Ethyl Benzene Emissions (lbs/yr)		**18.00**
% Hexane	APCD*	8%
Hexane Emissions (lbs/yr)		**36.00**
% MTBE	APCD*	15%
Methyl Tert-Butyl Ether Emissions (lbs/yr)		**67.50**
% Naphthalene	APCD*	2%
Naphthalene Emissions (lbs/yr)		**9.00**
% Toluene	APCD*	20%
Toluene Emissions (lbs/yr)		**90.00**
% Xylene-m	APCD*	18%
Xylene Emissions (lbs/yr)		**81.00**

Notes:

* E-mail from Chris Gerstle on 08/12/11
Gasoline contains HAPs, here is the breakdown we use which we use to estimate emissions based on VOC emitted:

Benzene	71-43-2	5%
Ethylbenzene	100-41-4	4%
Hexane	110-54-3	8%
MTBE	1634-04-4	15%
Naphthalene	91-20-3	2%
Toluene	108-88-3	20%
Xylene-m	1330-20-7	18%

U11 - Non-halogenated Cold Solvent Parts Cleaners	E-35a-i Parts Washer (ZEP Dyna-170)
January	320.00
February	320.00
March	320.00
April	320.00
May	320.00
June	320.00
July	320.00
August	320.00
September	320.00
October	320.00
November	320.00
December	320.00
Total	**3,840**
VOC Emission Factor (lb/gallon)	6.75
VOC Emissions (tons/yr)	12.96

U13 - Diesel Generators	Source	E-36 Turning Gear Emergency Diesel Generator	E-37 FGD Quench Water Emergency Diesel Generator
Engine Rating (hp)		800	800
Heat Input (MMBtu/yr)		2,800.00	2,800.00
As Fired MMBTU/gallon		0.132	0.132
Operating Hours		500	500
PM Filterable Emission Factor (lb/hp-hr)	Vendor Data	7.70E-05	9.98E-04
PM Filterable Emissions (tons/yr)		**1.54E-02**	**2.00E-01**
PM10 Emission Factor (lb/hp-hr)	Vendor Data	7.70E-05	9.98E-04
PM10 Emissions (tons/yr)		**1.54E-02**	**2.00E-01**
PM2.5 Emission Factor (lb/hp-hr)	Vendor Data	7.70E-05	9.98E-04
PM2.5 Emissions (tons/yr)		**1.54E-02**	**2.00E-01**
SO2 Emission Factor (lb/hp-hr)	Vendor Data	1.38E-03	1.38E-03
SO2 Emissions (tons/yr)		**2.75E-01**	**2.75E-01**
NOx Emission Factor (lb/hp-hr)	Vendor Data	1.29E-02	1.42E-02
NOx Emissions (tons/yr)		**2.57E+00**	**2.84E+00**
CO Emission Factor (lb/hp-hr)	Vendor Data	1.06E-03	6.70E-03
CO Emissions (tons/yr)		**2.12E-01**	**1.34E+00**
VOC Emission Factor (lb/hp-hr)	Vendor Data	2.20E-05	6.70E-03
VOC Emissions (tons/yr)		**4.40E-03**	**1.34E+00**
Benzene Emission Factor (lb/mmBtu)	AP-42 Table 3.4-3	7.76E-04	7.76E-04
Benzene Emissions (lbs/yr)		**2.17E+00**	**2.17E+00**
Toluene Emission Factor (lb/mmBtu)	AP-42 Table 3.4-3	2.81E-04	2.81E-04
Toluene Emissions (lbs/yr)		**7.87E-01**	**7.87E-01**
Xylene Emission Factor (lb/mmBtu)	AP-42 Table 3.4-3	1.93E-04	1.93E-04
Xylene Emissions (lbs/yr)		**5.40E-01**	**5.40E-01**
Propylene Emission Factor (lb/mmBtu)	AP-42 Table 3.4-3	2.79E-03	2.79E-03
Propylene Emissions (lbs/yr)		**7.81E+00**	**7.81E+00**
Formaldehyde Emission Factor (lb/mmBtu)	AP-42 Table 3.4-3	7.89E-05	7.89E-05
Formaldehyde Emissions (lbs/yr)		**2.21E-01**	**2.21E-01**
Acetaldehyde Emission Factor (lb/mmBtu)	AP-42 Table 3.4-3	2.52E-05	2.52E-05
Acetaldehyde Emissions (lbs/yr)		**7.06E-02**	**7.06E-02**
Acrolein Emission Factor (lb/mmBtu)	AP-42 Table 3.4-3	7.88E-06	7.88E-06
Acrolein Emissions (lbs/yr)		**2.21E-02**	**2.21E-02**
Naphthalene Emission Factor (lbs/mmBtu)	AP-42 Table 3.4-4	1.30E-04	1.30E-04
Naphthalene Emissions (lbs/yr)		**3.64E-01**	**3.64E-01**
Acenaphthylene Emission Factor (lbs/mmBtu)	AP-42 Table 3.4-4	9.23E-06	9.23E-06
Acenaphthylene Emissions (lbs/yr)		**2.58E-02**	**2.58E-02**
Acenaphthene Emission Factor (lbs/mmBtu)	AP-42 Table 3.4-4	4.68E-06	4.68E-06
Acenaphthene Emissions (lbs/yr)		**1.31E-02**	**1.31E-02**
Fluorene Emission Factor (lbs/mmBtu)	AP-42 Table 3.4-4	1.28E-05	1.28E-05
Fluorene Emissions (lbs/yr)		**3.58E-02**	**3.58E-02**
Phenanthrene Emission Factor (lbs/mmBtu)	AP-42 Table 3.4-4	4.08E-05	4.08E-05
Phenanthrene Emissions (lbs/yr)		**1.14E-01**	**1.14E-01**
Anthracene Emission Factor (lbs/mmBtu)	AP-42 Table 3.4-4	1.23E-06	1.23E-06
Anthracene Emissions (lbs/yr)		**3.44E-03**	**3.44E-03**
Fluoranthene Emission Factor (lbs/mmBtu)	AP-42 Table 3.4-4	4.03E-06	4.03E-06
Fluoranthene Emissions (lbs/yr)		**1.13E-02**	**1.13E-02**
Pyrene Emission Factor (lbs/mmBtu)	AP-42 Table 3.4-4	3.71E-06	3.71E-06
Pyrene Emissions (lbs/yr)		**1.04E-02**	**1.04E-02**
Benz[a] Anthracene Emission Factor (lbs/mmBtu)	AP-42 Table 3.4-4	6.22E-07	6.22E-07
Benz[a] Anthracene Emissions (lbs/yr)		**1.74E-03**	**1.74E-03**
Chrysene Emission Factor (lbs/mmBtu)	AP-42 Table 3.4-4	1.53E-06	1.53E-06
Chrysene Emissions (lbs/yr)		**4.28E-03**	**4.28E-03**
Benzo[b] Fluoranthene Emission Factor (lbs/mmBtu)	AP-42 Table 3.4-4	1.11E-06	1.11E-06
Benzo[b] Fluoranthene Emissions (lbs/yr)		**3.11E-03**	**3.11E-03**
Benzo[k] Fluoranthene Emission Factor (lbs/mmBtu)	AP-42 Table 3.4-4	2.18E-07	2.18E-07
Benzo[k] Fluoranthene Emissions (lbs/yr)		**6.10E-04**	**6.10E-04**
Benzo[a] Pyrene Emission Factor (lbs/mmBtu)	AP-42 Table 3.4-4	2.57E-07	2.57E-07
Benzo[a] Pyrene Emissions (lbs/yr)		**7.20E-04**	**7.20E-04**
Indeno[1,2,3-c,d] Pyrene Emission Factor (lbs/mmBtu)	AP-42 Table 3.4-4	4.14E-07	4.14E-07
Indeno[1,2,3-c,d] Pyrene Emissions (lbs/yr)		**1.16E-03**	**1.16E-03**
Dibenzo[a,h] Anthracene Emission Factor (lbs/mmBtu)	AP-42 Table 3.4-4	3.46E-07	3.46E-07
Dibenzo[a,h] Anthracene Emissions (lbs/yr)		**9.69E-04**	**9.69E-04**
Benzo(g,h,l) Perylene Emission Factor (lbs/mmBtu)	AP-42 Table 3.4-4	5.56E-07	5.56E-07
Benzo(g,h,l) Perylene Emissions (lbs/yr)		**1.56E-03**	**1.56E-03**

Notes:

Name of Unit or Group: Emergency Generator
Description: 78.3 KW Emergency NG Generator
SCC Code: 2-02-002-53
SCC Units: hp-hr

Installation Date: August 2018
Max. Capacity: 78.3 kW, 105 hp, 790 cfh

Notes: NG Generator

Permit EU # (Application #): / Description:	Max Capacity (Heat Content = 1000 Btu/cu.ft)	Units	Emission factor lb/MMBtu	Emission Factor Source	Pollutant	Maximum Uncontrolled Emissions (Tons per Year)
78.3 kW Emergency NG Generator	0.079	MMBtu/hr	2.21E+00	AP -42 Table 3.2.3	NOx	0.04
	0.079	MMBtu/hr	3.72E+00	AP -42 Table 3.2.3	CO	0.07
	0.079	MMBtu/hr	5.88E-04	AP -42 Table 3.2.3	SO2	1.16E-05
	0.079	MMBtu/hr	1.10E+02	AP -42 Table 3.2.3	CO2	2.17
	0.079	MMBtu/hr	3.58E-01	AP -42 Table 3.2.3	TOC	0.01
	0.079	MMBtu/hr	9.91E-03	AP -42 Table 3.2.3	PM	1.96E-04
	0.079	MMBtu/hr	9.50E-03	AP -42 Table 3.2.3	PM10	1.88E-04
	0.079	MMBtu/hr	9.50E-03	AP -42 Table 3.2.3	PM2.5	1.88E-04
	0.079	MMBtu/hr	2.30E-01	AP -42 Table 3.2.3	Methane	4.54E-03
	0.079	MMBtu/hr	2.96E-02	AP -42 Table 3.2.3	VOC	5.85E-04
	0.079	MMBtu/hr	2.53E-05	AP -42 Table 3.2.3	1,1,2,2-Tetrachloroethane	5.00E-07
	0.079	MMBtu/hr	1.53E-05	AP -42 Table 3.2.3	1,1,2-Trichloroethane	3.02E-07
	0.079	MMBtu/hr	1.13E-05	AP -42 Table 3.2.3	1,1-Dichloroethane	2.23E-07
	0.079	MMBtu/hr	1.13E-05	AP -42 Table 3.2.3	1,2-Dichloroethane	2.23E-07
	0.079	MMBtu/hr	1.30E-05	AP -42 Table 3.2.3	1,2-Dichloropropane	2.57E-07
	0.079	MMBtu/hr	6.63E-04	AP -42 Table 3.2.3	1,3-Butadiene	1.31E-05
	0.079	MMBtu/hr	1.27E-05	AP -42 Table 3.2.3	1,3-Dichloropropene	2.51E-07
	0.079	MMBtu/hr	2.79E-03	AP -42 Table 3.2.3	Acetaldehyde	5.51E-05
	0.079	MMBtu/hr	2.63E-03	AP -42 Table 3.2.3	Acrolein	5.19E-05

	0.079	MMBtu/hr	1.58E-03	AP -42 Table 3.2.3	Benzene	3.12E-05
	0.079	MMBtu/hr	4.86E-05	AP -42 Table 3.2.3	Butyr/isobutyraldehyde	9.60E-07
	0.079	MMBtu/hr	1.77E-05	AP -42 Table 3.2.3	Carbon Tetrachloride	3.50E-07
	0.079	MMBtu/hr	1.29E-05	AP -42 Table 3.2.3	Chlorobenzene	2.55E-07
	0.079	MMBtu/hr	1.37E-05	AP -42 Table 3.2.3	Chloroform	2.71E-07
	0.079	MMBtu/hr	7.04E-02	AP -42 Table 3.2.3	Ethane	1.39E-03
	0.079	MMBtu/hr	2.48E-05	AP -42 Table 3.2.3	Ethylbenzene	4.90E-07
	0.079	MMBtu/hr	2.13E-05	AP -42 Table 3.2.3	Ethylene Dibromide	4.21E-07
	0.079	MMBtu/hr	2.05E-02	AP -42 Table 3.2.3	Formaldehyde	4.05E-04
	0.079	MMBtu/hr	3.06E-03	AP -42 Table 3.2.3	Methanol	6.04E-05
	0.079	MMBtu/hr	4.12E-04	AP -42 Table 3.2.3	Methylene Chloride	8.14E-06
	0.079	MMBtu/hr	9.71E-05	AP -42 Table 3.2.3	Naphthalene	1.92E-06
	0.079	MMBtu/hr	1.41E-04	AP -42 Table 3.2.3	PAH	2.78E-06
	0.079	MMBtu/hr	1.19E-05	AP -42 Table 3.2.3	Styrene	2.35E-07
	0.079	MMBtu/hr	5.58E-04	AP -42 Table 3.2.3	Toluene	1.10E-05
	0.079	MMBtu/hr	7.18E-06	AP -42 Table 3.2.3	Vinyl Chloride	1.42E-07
	0.079	MMBtu/hr	1.95E-04	AP -42 Table 3.2.3	Xylenes	3.85E-06

IA4	Source	MC1/2 Fire Pump Engine	MC 3/4 Fire Pump Engine	Total
Engine Rating (hp)		157	183	
Heat Input (MMBtu/yr)		726.26	664.60	
As Fired MMBTU/gallon		0.132	0.132	
Operating Hours		8,760.0	8,760.0	17,520.0
PM Filterable Emission Factor (lb/MMBtu)	AP-42 Table 3.3-1	2.20E-03	2.20E-03	
PM Filterable Emissions (tons/yr)		**7.99E-04**	**7.31E-04**	**1.53E-03**
PM10 Emission Factor (lb/MMBtu)	AP-42 Table 3.3-1	2.20E-03	2.20E-03	
PM10 Emissions (tons/yr)		**7.99E-04**	**7.31E-04**	**1.53E-03**
PM2.5 Emission Factor (lb/MMBtu)	AP-42 Table 3.3-1	2.20E-03	2.20E-03	
PM2.5 Emissions (tons/yr)		**7.99E-04**	**7.31E-04**	**1.53E-03**
SO2 Emission Factor (lb/hp-hr)	AP-42 Table 3.3-1	2.05E-03	2.05E-03	
SO2 Emissions (tons/yr)		**1.41E+00**	**1.64E+00**	**3.05E+00**
NOx Emission Factor (lb/hp-hr)	AP-42 Table 3.3-1	3.10E-02	3.10E-02	
NOx Emissions (tons/yr)		**2.13E+01**	**2.48E+01**	**4.62E+01**
CO Emission Factor (lb/hp-hr)	AP-42 Table 3.3-1	6.68E-03	6.68E-03	
CO Emissions (tons/yr)		**4.59E+00**	**5.35E+00**	**9.95E+00**
VOC Emission Factor (lb/hp-hr)	AP-42 Table 3.3-1	2.47E-03	2.47E-03	
VOC Emissions (tons/yr)		**1.70E+00**	**1.98E+00**	**3.68E+00**
Benzene Emission Factor (lb/mmBtu)	AP-42 Table 3.3-2	9.33E-04	9.33E-04	
Benzene Emissions (lbs/yr)		**6.78E-01**	**6.20E-01**	**1.30E+00**
Toluene Emission Factor (lb/mmBtu)	AP-42 Table 3.3-2	4.09E-04	4.09E-04	
Toluene Emissions (lbs/yr)		**2.97E-01**	**2.72E-01**	**5.69E-01**
Xylene Emission Factor (lb/mmBtu)	AP-42 Table 3.3-2	2.85E-04	2.85E-04	
Xylene Emissions (lbs/yr)		**2.07E-01**	**1.89E-01**	**3.96E-01**
Propylene Emission Factor (lb/mmBtu)	AP-42 Table 3.3-2	2.58E-03	2.58E-03	
Propylene Emissions (lbs/yr)		**1.87E+00**	**1.71E+00**	**3.59E+00**
Formaldehyde Emission Factor (lb/mmBtu)	AP-42 Table 3.3-2	1.18E-03	1.18E-03	
Formaldehyde Emissions (lbs/yr)		**8.57E-01**	**7.84E-01**	**1.64E+00**
Acetaldehyde Emission Factor (lb/mmBtu)	AP-42 Table 3.3-2	7.67E-04	7.67E-04	
Acetaldehyde Emissions (lbs/yr)		**5.57E-01**	**5.10E-01**	**1.07E+00**
Acrolein Emission Factor (lb/mmBtu)	AP-42 Table 3.3-2	9.25E-05	9.25E-05	
Acrolein Emissions (lbs/yr)		**6.72E-02**	**6.15E-02**	**1.29E-01**
PAH Emission Factor (lbs/mmBtu)	AP-42 Table 3.3-2	1.68E-04	1.68E-04	
PAH Emissions (lbs/yr)		**1.22E-01**	**1.12E-01**	**2.34E-01**

Notes:

IA - Fuel Oil Tanks	T-1 Coal Handling Fuel Tank	T-2 Maintenace Garage Fuel Tank - Gasoline	T-3 Maintenace Garage Fuel Tank - Diesel	T-4 FO Tank - Space Heaters (Kerosene)	T-5 Gypsum Load Out Fuel Tank - Diesel	T-6 Gypsum Pelletizing Plant- Gasoline	T-7 Gypsum Pelletizing Plant- Diesel	T-8 Ash Pond Operations - Diesel	T-9 Ash Pond Operations - Gasoline	T-10 Ash Pond Operations - Diesel	Total
Tank Capacity (gallons)	10,000	3,000	3,000	1000	2,000	250	1,000	1,000	500	2,000	23,750
# of Units	1	1	1	1	1	1	1	1	1	1	10
Turnover	1	1	1	1	1	1	1	1	1	1	10
AP-42 Section 7.1 Working Losses (lbs/yr)	**4.47**	**1,109.88**	**2.05**	**1.13**	**1.36**	**269.06**	**0.91**	**0.91**	**269.06**	**1.36**	**1,660.20**
AP-42 Section 7.1 Breathing Losses (lbs/yr)	**0.22**	**23.45**	**0.07**	**0.03**	**0.04**	**1.95**	**0.02**	**0.02**	**3.91**	**0.04**	**29.77**
VOC Emissions (tons/yr)	2.34E-03	5.67E-01	1.06E-03	5.81E-04	7.05E-04	1.36E-01	4.66E-04	4.66E-04	1.36E-01	7.05E-04	8.45E-01

IA - Fuel Oil Tanks	T-12 Railroad WYE Area Fuel Tank-Diesel	T-13 Railroad WYE Area Fuel Tank-Gasoline	T-87 Railroad WYE Area Fuel Tank-Diesel	T-14 Turning Gear Em. Engine Fuel Tank-Diesel	T-15,16,17 Unit 1/2 Oil Tanks	T-18,19 Unit 3/4 Oil Tanks	T-20 FGD Quench Em. Generator Fuel Tank-Diesel	T-21 Fire Pump Engine Fuel Tank - Diesel	T-25 Maintenance Garage Storage Tank-Used oil	Total
Tank Capacity (gallons)	150	150	250	404	6,000	12000	450	500	250	20,154
# of Units	1	1	1	1	3	2	1	1	1	12
Turnover	1	1	1	1	1	1	1	1	1	9
Tanks 4.09 Working Losses (lbs/yr)	**0.50**	**269.06**	**0.50**	**0.50**	**11.72**	**15.61**	**0.50**	**0.50**	**0.50**	**299.37**
Tanks 4.09 Breathing Losses (lbs/yr)	**0.00**	**1.17**	**0.01**	**0.01**	**0.40**	**0.53**	**0.01**	**0.01**	**0.01**	**2.15**
VOC Emissions (tons/yr)	2.50E-04	1.35E-01	2.51E-04	2.53E-04	6.06E-03	8.07E-03	2.53E-04	2.54E-04	2.51E-04	1.51E-01

IA - Fuel Oil Tanks	Totals
Total Tanks Capacity (gallons)	43,904
# of Units	22
VOC Emissions (tons/yr)	9.96E-01

Insignificant Activities - Natural Gas Combustion	Source	IA 37 Torpedo heaters	
Natural Gas (MCF/yr) per Unit		2.43	
Total Natural Gas (MCF/yr)		89.84	
Heat Input (MMBtu/yr)		2477	
As Fired BTU/CF		1,020	
Number of units		37	
Operating Hours		2,880	*** 4 months out of the year during cold weather
PM Condensible Emission Factor (lb/MCF)	AP-42 Table 1.4-2	5.70	
PM Condensible Emissions (tons/yr)		**0.2561**	
PM Filterable Emission Factor (lb/MCF)	AP-42 Table 1.4-2	1.90	7.60
PM Filterable Emissions (tons/yr)		**0.0854**	
PM10 Emission Factor (lb/MCF)	AP-42 Table 1.4-2	1.90	
PM10 Emissions (tons/yr)		**0.0854**	
PM2.5 Emission Factor (lb/MCF)	AP-42 Table 1.4-2	1.90	
PM2.5 Emissions (tons/yr)		**0.0854**	
SO2 Emission Factor (lb/MCF)	AP-42 Table 1.4-2	0.60	
SO2 Emissions (tons/yr)		**0.0270**	
NOx Emission Factor (lb/MCF)	AP-42 Table 1.4-1	100.00	
Nox Emissions (tons/yr)		**4.4922**	
CO2 Emission Factor (lb/MCF)	AP-42 Table 1.4-2	120,000	
CO2 Emissions (tons/yr)		**5,390.68**	
CO Emission Factor (lb/MCF)	AP-42 Table 1.4-1	84.0	
CO Emissions (tons/yr)		**3.7735**	
VOC Emission Factor (lb/MCF)	AP-42 Table 1.4-2	5.50	
VOC Emissions (tons/yr)		**0.2471**	
Ammonia Emission Factor (lb/MCF)	EPA	3.2	
Ammonia Emissions (tons/yr)		**0.1438**	
Methane Emission Factor (lb/MCF)	AP-42 Table 1.4-2	2.30	
Methane Emissions (tons/yr)		**0.1033**	
2-Methylnaphthalene Emission Factor (lbs/MCF)	AP-42 Table 1.4-3	2.40E-05	
2-Methylnaphthalene Emissions (lbs/yr)		**2.16E-03**	
3-Methylchloranthrene Emission Factor (lbs/MCF)	AP-42 Table 1.4-3	1.80E-06	
3-Methylchloranthrene Emissions (lbs/yr)		**1.62E-04**	
7,12 - Dimethylbenz[a] Anthracene Emission Factor (lbs/MCF)	AP-42 Table 1.4-3	1.60E-05	
7,12 - Dimethylbenz[a] Anthracene Emissions (lbs/yr)		**1.44E-03**	
Acenaphthene Emission Factor (lbs/MCF)	AP-42 Table 1.4-3	1.80E-06	
Acenaphthene Emissions (lbs/yr)		**1.62E-04**	
Acenaphthylene Emission Factor (lbs/MCF)	AP-42 Table 1.4-3	1.80E-06	
Acenaphthylene Emissions (lbs/yr)		**1.62E-04**	
Anthracene Emission Factor (lbs/MCF)	AP-42 Table 1.4-3	2.40E-06	
Anthracene Emissions (lbs/yr)		**2.16E-04**	
Benz[a] Anthracene Emission Factor (lbs/MCF)	AP-42 Table 1.4-3	1.80E-06	
Benz[a] Anthracene Emissions (lbs/yr)		**1.62E-04**	
Benzene Emission Factor (lb/MCF)	AP-42 Table 1.4-3	2.10E-03	
Benzene Emissions (lbs/yr)		**1.89E-01**	
Benzo[a] Pyrene Emission Factor (lbs/MCF)	AP-42 Table 1.4-3	1.20E-06	
Benzo[a] Pyrene Emissions (lbs/yr)		**1.08E-04**	
Benzo[b] Fluoranthene Emission Factor (lbs/MCF)	AP-42 Table 1.4-3	1.80E-06	
Benzo[b] Fluoranthene Emissions (lbs/yr)		**1.62E-04**	
Benzo(g,h,i) Fluoranthene Emission Factor (lbs/MCF)	AP-42 Table 1.4-3	1.20E-06	
Benzo(g,h,i) Fluoranthene Emissions (lbs/yr)		**1.08E-04**	
Butane Emission Factor (lbs/MCF)	AP-42 Table 1.4-3	2.10E+00	
Butane Emissions (lbs/yr)		**1.89E+02**	
Chrysene Emission Factor (lbs/MCF)	AP-42 Table 1.4-3	1.80E-06	
Chrysene Emissions (lbs/yr)		**1.62E-04**	
Dibenzo[a,h] Anthracene Emission Factor (lbs/MCF)	AP-42 Table 1.4-3	1.20E-06	
Dibenzo[a,h] Anthracene Emissions (lbs/yr)		**1.08E-04**	
Dichlorobenzene Emission Factor (lbs/MCF)	AP-42 Table 1.4-3	1.20E-03	
Dichlorobenzene Emissions (lbs/yr)		**1.08E-01**	
Ethane Emission Factor (lbs/MCF)	AP-42 Table 1.4-3	3.10E+00	
Ethane Emissions (lbs/yr)		**2.79E+02**	
Fluoranthene Emission Factor (lbs/MCF)	AP-42 Table 1.4-3	3.00E-06	
Fluoranthene Emissions (lbs/yr)		**2.70E-04**	
Fluorene Emission Factor (lbs/MCF)	AP-42 Table 1.4-3	2.80E-06	
Fluorene Emissions (lbs/yr)		**2.52E-04**	
Formaldehyde Emission Factor (lbs/MCF)	AP-42 Table 1.4-3	7.50E-02	
Formaldehyde Emissions (lbs/yr)		**6.74E+00**	
Hexane Emission Factor (lbs/MCF)	AP-42 Table 1.4-3	1.80E+00	
Hexane Emissions (lbs/yr)		**1.62E+02**	
Indeno[1,2,3-c,d] Pyrene Emission Factor (lbs/MCF)	AP-42 Table 1.4-3	1.80E-06	
Indeno[1,2,3-c,d] Pyrene Emissions (lbs/yr)		**1.62E-04**	

Naphthalene Emission Factor (lbs/MCF)	AP-42 Table 1.4-3	6.10E-04
Naphthalene Emissions (lbs/yr)		**5.48E-02**
Pentane Emission Factor (lbs/MCF)	AP-42 Table 1.4-3	2.60E+00
Pentane Emissions (lbs/yr)		**2.34E+02**
Phenanthrene Emission Factor (lbs/MCF)	AP-42 Table 1.4-3	1.70E-05
Phenanthrene Emissions (lbs/yr)		**1.53E-03**
Propane Emission Factor (lbs/MCF)	AP-42 Table 1.4-3	1.60E+00
Propane Emissions (lbs/yr)		**1.44E+02**
Pyrene Emission Factor (lbs/MCF)	AP-42 Table 1.4-3	5.00E-06
Pyrene Emissions (lbs/yr)		**4.49E-04**
Toluene Emission Factor (lbs/MCF)	AP-42 Table 1.4-3	3.40E-03
Toluene Emissions (lbs/yr)		**3.05E-01**
Arsenic Emission Factor (lbs/MCF)	AP-42 Table 1.4-4	2.00E-04
Arsenic Emissions (lbs/yr)		**1.80E-02**
Barium Emission Factor (lbs/MCF)	AP-42 Table 1.4-4	4.40E-03
Barium Emissions (lbs/yr)		**3.95E-01**
Beryllium Emission Factor (lbs/MCF)	AP-42 Table 1.4-4	1.20E-05
Beryllium Emissions (lbs/yr)		**1.08E-03**
Cadmium Emission Factor (lbs/MCF)	AP-42 Table 1.4-4	1.10E-03
Cadmium Emissions (lbs/yr)		**9.88E-02**
Chromium Emission Factor (lbs/MCF)	AP-42 Table 1.4-4	1.40E-03
Chromium Emissions (lbs/yr)		**1.26E-01**
Cobalt Emission Factor (lbs/MCF)	AP-42 Table 1.4-4	8.40E-05
Cobalt Emissions (lbs/yr)		**7.55E-03**
Copper Emission Factor (lbs/MCF)	AP-42 Table 1.4-4	8.50E-04
Copper Emissions (lbs/yr)		**7.64E-02**
Manganese Emission Factor (lbs/MCF)	AP-42 Table 1.4-4	3.80E-04
Manganese Emissions (lbs/yr)		**3.41E-02**
Mercury Emission Factor (lbs/MCF)	AP-42 Table 1.4-4	2.60E-04
Mercury Emissions (lbs/yr)		**2.34E-02**
Molybdenum Emission Factor (lbs/MCF)	AP-42 Table 1.4-4	1.10E-03
Molybdenum Emissions (lbs/yr)		**9.88E-02**
Nickel Emission Factor (lbs/MCF)	AP-42 Table 1.4-4	2.10E-03
Nickel Emissions (lbs/yr)		**1.89E-01**
Selenium Emission Factor (lbs/MCF)	AP-42 Table 1.4-4	2.40E-05
Selenium Emissions (lbs/yr)		**2.16E-03**
Vanadium Emission Factor (lbs/MCF)	AP-42 Table 1.4-4	2.30E-03
Vanadium Emissions (lbs/yr)		**2.07E-01**
Zinc Emission Factor (lbs/MCF)	AP-42 Table 1.4-4	2.90E-02
Zinc Emissions (lbs/yr)		**2.61E+00**

Insignificant Activities - Fuel Oil Combustion	Source	IA #1 FO Tank - Space Heaters (FOT-9)
Fuel Oil (kgal/yr)	Facility Info	1.00
Heat Input (MMBtu/yr)		150
As Fired MMBTU/kgal		150
Number of units		1
PM Condensible Emission Factor (lb/kgal)	AP-42 Table 1.3-2	1.50
PM Condensible Emissions (tons/yr)		**0.000750**
PM Filterable Emission Factor (lb/kgal)	AP-42 Table 1.3-1	2.00
PM Filterable Emissions (tons/yr)		**0.001000**
PM10 Emission Factor (lb/kgal)	AP-42 Table 1.3-5	1.72
PM10 Emissions (tons/yr)		**0.000860**
PM2.5 Emission Factor (lb/kgal)	AP-42 Table 1.3-5	1.12
PM2.5 Emissions (tons/yr)		**0.000560**
SO2 Emission Factor (lb/kgal)	AP-42 Table 1.3-1	142.00
SO2 Emissions (tons/yr)		**0.071000**
NOx Emission Factor (lb/kgal)	AP-42 Table 1.3-1	20.00
Nox Emissions (tons/yr)		**0.010000**
CO2 Emission Factor (lb/kgal)	AP-42 Table 1.3-12	25,000
CO2 Emissions (tons/yr)		**12.50**
CO Emission Factor (lb/kgal)	AP-42 Table 1.3-1	5.0
CO Emissions (tons/yr)		**0.002500**
VOC Emission Factor (lb/kgal)	AP-42 Table 1.3-3	0.56
VOC Emissions (tons/yr)		**0.000278**
Sulfuric Acid Mist Emission Factor (lb/kgal)	AP-42 Table 1.3-1	2
Sulfuric Acid Mist Emissions (tons/yr)		**0.001000**
Methane Emission Factor (lb/kgal)	AP-42 Table 1.3-3	0.22
Methane Emissions (tons/yr)		**0.000108**
Benzene Emission Factor (lb/kgal)	AP-42 Table 1.3-9	2.14E-04
Benzene Emissions (lbs/yr)		**0.000214**
Ethylbenzene Emission Factor (lb/kgal)	AP-42 Table 1.3-9	6.36E-05
Ethylbenzene Emissions (lbs/yr)		**0.000064**
Formaldehyde Emission Factor (lbs/kgal)	AP-42 Table 1.3-9	3.30E-02
Formaldehyde Emissions (lbs/yr)		**0.0330**
Naphthalene Emission Factor (lbs/kgal)	AP-42 Table 1.3-9	1.13E-03
Naphthalene Emissions (lbs/yr)		**0.0011**
1,1,1-Trichloroethane Emission Factor (lbs/kgal)	AP-42 Table 1.3-9	2.36E-04
1,1,1-Trichloroethane Emissions (lbs/yr)		**2.36E-04**
Toluene Emission Factor (lbs/kgal)	AP-42 Table 1.3-9	6.20E-03
Toluene Emissions (lbs/yr)		**6.20E-03**
Xylene Emission Factor (lbs/kgal)	AP-42 Table 1.3-9	1.09E-04
Xylene Emissions (lbs/yr)		**1.09E-04**
Acenaphthene Emission Factor (lbs/kgal)	AP-42 Table 1.3-9	2.11E-05
Acenaphthene Emissions (lbs/yr)		**2.11E-05**
Acenaphthylene Emission Factor (lbs/kgal)	AP-42 Table 1.3-9	2.53E-07
Acenaphthylene Emissions (lbs/yr)		**2.53E-07**
Anthracene Emission Factor (lbs/kgal)	AP-42 Table 1.3-9	1.22E-06
Anthracene Emissions (lbs/yr)		**1.22E-06**
Benz[a] Anthracene Emission Factor (lbs/kgal)	AP-42 Table 1.3-9	4.01E-06
Benz[a] Anthracene Emissions (lbs/yr)		**4.01E-06**
Benzo[b,k] Fluoranthene Emission Factor (lbs/kgal)	AP-42 Table 1.3-9	1.48E-06
Benzo[b,k] Fluoranthene Emissions (lbs/yr)		**1.48E-06**
Benzo(g,h,i) perylene Emission Factor (lbs/kgal)	AP-42 Table 1.3-9	2.26E-06
Benzo(g,h,i) perylene Emissions (lbs/yr)		**2.26E-06**
Chrysene Emission Factor (lbs/kgal)	AP-42 Table 1.3-9	2.38E-06
Chrysene Emissions (lbs/yr)		**2.38E-06**
Dibenzo[a,h] Anthracene Emission Factor (lbs/kgal)	AP-42 Table 1.3-9	1.67E-06
Dibenzo[a,h] Anthracene Emissions (lbs/yr)		**1.67E-06**
Fluoranthene Emission Factor (lbs/kgal)	AP-42 Table 1.3-9	4.84E-06
Fluoranthene Emissions (lbs/yr)		**4.84E-06**
Fluorene Emission Factor (lbs/kgal)	AP-42 Table 1.3-9	4.47E-06
Fluorene Emissions (lbs/yr)		**4.47E-06**
Indeno[1,2,3-c,d] Pyrene Emission Factor (lbs/kgal)	AP-42 Table 1.3-9	2.14E-06
Indeno[1,2,3-c,d] Pyrene Emissions (lbs/yr)		**2.14E-06**
Phenanthrene Emission Factor (lbs/kgal)	AP-42 Table 1.3-9	1.05E-05
Phenanthrene Emissions (lbs/yr)		**1.05E-05**
Pyrene Emission Factor (lbs/kgal)	AP-42 Table 1.3-9	4.26E-06
Pyrene Emissions (lbs/yr)		**4.26E-06**
Arsenic Emission Factor (lbs/kgal)	AP-42 Table 1.3-10	4
Arsenic Emissions (lbs/yr)		**4.0000**
Beryllium Emission Factor (lbs/kgal)	AP-42 Table 1.3-10	3
Beryllium Emissions (lbs/yr)		**3.0000**
Cadmium Emission Factor (lbs/kgal)	AP-42 Table 1.3-10	3
Cadmium Emissions (lbs/yr)		**3.0000**
Chromium Emission Factor (lbs/kgal)	AP-42 Table 1.3-10	3
Chromium Emissions (lbs/yr)		**3.0000**
Copper Emission Factor (lbs/kgal)	AP-42 Table 1.3-10	6
Copper Emissions (lbs/yr)		**6.0000**
Lead Emission Factor (lbs/kgal)	AP-42 Table 1.3-10	9
Lead Emissions (lbs/yr)		**9.0000**
Manganese Emission Factor (lbs/kgal)	AP-42 Table 1.3-10	6
Manganese Emissions (lbs/yr)		**6.0000**
Mercury Emission Factor (lbs/kgal)	AP-42 Table 1.3-10	3
Mercury Emissions (lbs/yr)		**3.0000**
Nickel Emission Factor (lbs/kgal)	AP-42 Table 1.3-10	3
Nickel Emissions (lbs/yr)		**3.0000**
Selenium Emission Factor (lbs/kgal)	AP-42 Table 1.3-10	15
Selenium Emissions (lbs/yr)		**15.0000**
Zinc Emission Factor (lbs/kgal)	AP-42 Table 1.3-10	4
Zinc Emissions (lbs/yr)		**4.0000**

Gypsum Dewatering Systems

Operation hours (hrs) 8,760

	Equipment	Processes Description	Process Throughput (tons/yr)	Conditions	PM Factor (lb/ton)	PM10 Factor (lb/ton)	PM2.5 Factor (lb/ton)	Emission Factor Source & Rate	Control Effic.	PM (tpy)	PM10 (tpy)	PM2.5 (tpy)
	Belt filter	dewatering systems 1	280,320	open, 13%	0.0003	0.0002	0.00002	AP-42, 13.2.4, Eq(1)	0.0%	0.047	0.022	0.003
	Belt filter	dewatering systems 2	280,320	open, 13%	0.00034	0.00016	0.00002	AP-42, 13.2.4, Eq(1)		0.047	0.022	0.003
	Belt Conveyor - 1	dewatering system 2 to B hopper	280,320	open, 9%	0.000566	0.000268	0.000041	AP-42, 13.2.4, Eq(1)		0.079	0.038	0.006
	Belt Conveyor - 2	dewatering system 1 to B hopper	280,320	open, 9%	0.00057	0.00027	0.00004	AP-42, 13.2.4, Eq(1)		0.079	0.038	0.006
	Belt Conveyor - 3	dewatering system 1 to A hopper	280,320	open, 9%	0.00057	0.00027	0.00004	AP-42, 13.2.4, Eq(1)		0.079	0.038	0.006
	Radial Stacker A (already permitted points at GPP)	belt conveyor to product pile	280,320	open, 9%	0.0006	0.0003	0.0000	AP-42, 13.2.4, Eq(1)		0.079	0.038	0.006
	Radial Stacker B (already permitted points at GPP)	belt conveyor to product pile	280,320	open, 9%	0.0006	0.0003	0.0000	AP-42, 13.2.4, Eq(1)	0.0%	0.079	0.038	0.006
									Total	**0.49**	**0.23**	**0.04**

References:

AP-42, 11.12: Concrete Batching

AP-42, 11.16: Gypsum Manufacturing

AP-42, 11.19: Crushed Stone Processing and Pulverized Mineral Processing

Gypsum drop point emissions calculation, AP-42, 13.2.4, Eq(1)					
Process	U (mph)	M (%)	PM	PM_{10}	$PM_{2.5}$
Enclosed, moist	1.3	13.00	2.99E-05	1.41E-05	2.14E-06
Indoor, moist	3.0	13.00	8.87E-05	4.20E-05	6.35E-06
Open, moist	8.4	13.00	3.38E-04	1.60E-04	2.42E-05
Enclosed, dry	1.3	9.00	5.00E-05	2.37E-05	3.58E-06
Indoor, dry	3.0	9.00	1.48E-04	7.02E-05	1.06E-05
Open, dry	8.4	9.00	5.66E-04	2.68E-04	4.05E-05

New - Bottom Ash Storage Silos	E-IA(silos)
	BA Silos (2 units)
Maximum Hourly Design Rate (tph)	325
# of Units	2
Total Maximum Hourly Design Rate (tph)	650
Control Type	Bin Vent
Flow Capacity of Bin Vent Filter(acfm)	6,220
Maximum exit grain loading (gr/dscf)	0.005
Vendor Efficiency	95%
Operating Hours	8,760
PM Filterable Emission Factor (lb/hr)	2.67E-01
PM Filterable Emissions (tons/yr)	**2.3352**
PM10 Emission Factor (lb/hr)	0.26657
PM10 Emissions (tons/yr)	**2.3352**
PM2.5 Emission Factor (lb/hr)	0.26657
PM2.5 Emissions (tons/yr)	**2.3352**
Antimony Emission Factor (lb/hr)	1.52E-06
Antimony Emissions (lbs/yr)	**0.0266**
Arsenic Emission Factor (lb/hr)	6.41E-05
Arsenic Emissions (lbs/yr)	**1.1235**
Cadmium Emission Factor (lb/hr)	1.85E-06
Cadmium Emissions (lbs/yr)	**0.0325**
Chromium Emission Factor (lb/hr)	3.04E-05
Chromium Emissions (lbs/yr)	**0.5326**
Chromium VI Emission Factor (lb/hr)	5.45E-03
Chromium VI Emissions (lbs/yr)	**95.4256**
Nickel Emission Factor (lb/hr)	1.62E-05
Nickel Emissions (lbs/yr)	**0.2829**
Cobalt Emission Factor (lb/hr)	5.27E-06
Cobalt Emissions (lbs/yr)	**0.0924**
Lead Emission Factor (lb/hr)	1.81E-05
Lead Emissions (lbs/yr)	**0.3162**
Manganese Emission Factor (lb/hr)	5.23E-05
Manganese Emissions (lbs/yr)	**0.9154**
Mercury Emission Factor (lb/hr)	5.98E-07
Mercury Emissions (lbs/yr)	**1.05E-02**
Selenium Emission Factor (lb/hr)	1.24E-05
Selenium Emissions (lbs/yr)	**2.16E-01**

$$E\left(\frac{lb}{hr}\right) = (L \times Q \times \frac{1lb}{7{,}000}gr \times 60\frac{min}{hr})$$

Where,

E = PM/PM10 Emissions (lb/hr)
L = Maximum exit grain loading (gr/dscf)
Q = flow capacity of bin vent filters

Constituents	September 2016 PPM Conc. (lab analysis)	March 2016 PPM Conc. (lab analysis)	Average %
Antimony	1.1	2.1	0.000160%
Arsenic	56	79	0.006750%
Beryllium	2.1	3.5	0.000280%
Cadmium	1.5	2.4	0.000195%
Chromium	28	36	0.003200%
Chromium VI	1.9	3.5	0.000270%
Nickel	14	20	0.001700%
Cobalt*	4.2	6.9	0.000555%
Lead	13	25	0.001900%
Manganese	43	67	0.005500%
Mercury	0.059	1.2	0.000063%
Selenium	3	23	0.001300%

New - Bottom Ash Storage Silos	E-IA(mixers) Unit 4 & 5 Pug Mill Mixer
Maximum Hourly Design Rate (tph)	200
# of Units	4
Total Maximum Hourly Design Rate (tph)	800
Maximum Annual Process Rate (tons)	90,000
Control Type	Conditoned/Wet Process
Operating Hours	8760.00
PM Filterable Emission Factor (lb/ton)	1.21E-01
PM Filterable Emissions (tons/yr)	**5.4**
PM10 Emission Factor (lb/ton)	4.02E-02
PM10 Emissions (tons/yr)	**1.8**
PM2.5 Emission Factor (lb/ton)	4.04E-03
PM2.5 Emissions (tons/yr)	**0.18**
Antimony Emission Factor (lb/ton)	1.93E-07
Antimony Emissions (lbs/yr)	**0.02**
Arsenic Emission Factor (lb/ton)	8.14E-06
Arsenic Emissions (lbs/yr)	**0.73**
Cadmium Emission Factor (lb/ton)	2.35E-07
Cadmium Emissions (lbs/yr)	**0.02**
Chromium Emission Factor (lb/ton)	3.86E-06
Chromium Emissions (lbs/yr)	**0.35**
Chromium VI Emission Factor (lb/ton)	6.92E-04
Chromium VI Emissions (lbs/yr)	**62.26**
Nickel Emission Factor (lb/ton)	2.05E-06
Nickel Emissions (lbs/yr)	**0.18**
Cobalt Emission Factor (lb/ton)	6.70E-07
Cobalt Emissions (lbs/yr)	**0.06**
Lead Emission Factor (lb/ton)	2.29E-06
Lead Emissions (lbs/yr)	**0.21**
Manganese Emission Factor (lb/ton)	6.64E-06
Manganese Emissions (lbs/yr)	**0.60**
Mercury Emission Factor (lb/ton)	7.60E-08
Mercury Emissions (lbs/yr)	**6.84E-03**
Selenium Emission Factor (lb/ton)	1.57E-06
Selenium Emissions (lbs/yr)	**1.41E-01**

Notes:

Max Coal onsite 4.5 million tons; 10% of that is ash, with 20% of that being bottom ash

Maximum Annual Process Rate (tons) 90,000

AP-42 Section 11.12.2 **M = 15%**

	PM	PM10	PM2.5
k =	5.9	1.92	0.38
a	0.6	0.4	0.4
b	1.3	1.3	1.3
c	0.12	0.04	0.004
U (indoor) =	1.3	1.3	1.3
M =	15	15	15
EF(Mixer)	1.21E-01	4.02E-02	4.04E-03

Constituents	September 2016 PPM Conc. (lab analysis)	March 2016 PPM Conc. (lab analysis)	Average %
Antimony	1.1	2.1	0.000160%
Arsenic	56	79	0.006750%
Beryllium	2.1	3.5	0.000280%
Cadmium	1.5	2.4	0.000195%
Chromium	28	36	0.003200%
Chromium VI	1.9	3.5	0.000270%
Nickel	14	20	0.001700%
Cobalt*	4.2	6.9	0.000555%
Lead	13	25	0.001900%
Manganese	43	67	0.005500%
Mercury	0.059	1.2	0.000063%
Selenium	3	23	0.001300%

PM emissions from the Mill Creek PWS Lime Storage Silo are documented in this section.

1.1 Emission Unit Nomenclature and Process Rates

Dry hydrated lime will be delivered from delivery trucks via pneumatic conveyance to the Mill Creek PWS Lime Storage Silos. The silos are equipped with an integrated passive filter system to capture and retain lime in the silo. The silo filter exhaust vent is a PM emission point.

The maximum process rates for the silos is listed below.

1.11 Maximum Short-Term Process Rates

Filter/Vent Description	Process Rate (ton/hr)
Mill Creek Process Water System	
Hydrated Lime Storage Silo	0.21

1.12 Maximum Annual Process Rates

Estimated maximum total quantity of lime used in the Mill Creek PWS per year: 1,800 tons/yr

1.2 PM Emission Calculation Methodology and Summary of PM/PM10 Emissions

1.21 Maximum Short-Term PM/PM10 Emissions

PM that may be generated at the Mill Creek PWS storage silo is minimized through the presence of integrated passive filter systems associated with this equipment. The filter is an integral part of the pneumatic conveyance system. The short-term PM emissions are calculated based on a maximum exit grain loading and exhaust fan flow rate as shown in the sample calculation below.

E (lb/hr) = (L x Q x 1 lb/7,000 gr x 60 min/hr)

Where:
E = PM/PM10 emissions (lb/hr)
L = maximum exit grain loading (gr/acf)
Q = flow capacity of fabric filter system (acfm)

Standard filter bags will be used in the Ghent PWS Hydrated Lime silo filter system. Based on historical information, standard filter systems will achieve an exit grain loading of 0.01 gr/acf or less.

Filter/Vent Description	Blower Design Flowrate (acfm)	PM/PM10 Exit Grain Loading (gr/acf)	PM/PM10 Maximum Emission Rate (lb/hr)
Mill Creek Process Water System			
Hydrated Lime Storage Silo	1,491	0.01	0.13

Sample Calculations: (For Mill Creek PWS Hydrated Lime silo)
PM/PM10 Maximum Emission Rate (lb/hr) = 1491 acfm x 0.01 gr/cf x 60 min/hr / 7000 gr/lb = 0.13 lb/hr

1.22 Potential Annual Emissions of PM/PM10

The Mill Creek PWS Hydrated Lime Silo is designed to receive up to 0.21 tph at a time from the pneumatic conveying system. The silo's bin vent exhaust fan design flow rate of 1491 acfm is the flow rate corresponding to the conveyance of the full 0.21 tph. Since the flow rate is proportional to the process rate, and the emissions are proportional to the flow rate, the emissions can be expressed directly as a function of process rate.

The potential annual PM emissions from the Mill Creek PWS Hydrated Lime Silo is inherently limited by the maximum amount of hydrated lime expected to be delivered to the station per year. This calculation is shown below.

PM/PM10 emission factor for Mill Creek PWS Hydrated Lime Silo:	6.22E-01 lb/ton	= 0.13 lb/hr / 0.21 tph
Potential annual PM/PM10 emissions from Mill Creek PWS Hydrated Lin	0.55976 tpy	= 0.622 lb/ton x 1800 tons lime/year / 2000 lb/ton

1.3 Summary of PM2.5 Emissions from Mill Creek PWS Hydrated Lime Silo

In the absence of specific test data, a reasonable but conservative assumption is made that PM2.5 will be 70% of the PM/PM10 emissions. This corresponds to an exit loading of 0.007 gr/cf.

1.31 Maximum Short-Term PM2.5 Emissions

Filter/Vent Descriptio0n	Design Fan Exhaust Rate (acfm)	PM2.5 Exit Grain Loading (gr/acf)	PM2.5 Maximum Emission Rate (lb/hr)
Mill Creek Process Water System			
Hydrated Lime Storage Silo	1,491	0.007	0.09

1.32 Potential Annual Emissions of PM2.5

PM2.5 emission factor for Mill Creek PWS Hydrated Lime Silo:	4.35E-01	lb/ton	= 0.09 lb/hr / 0.21 tph
Potential annual PM2.5 emissions from Mill Creek PWS Hydrated Lime S	0.39	tpy	= 0.4354 lb/ton x 1800 tons fly ash/year / 2000 lb/ton

2. Material Handling Operations of Process Water System to Landfill

PM emissions due to conveying, truck loading, and truck dumping of solid materials from PWS to on-site landfill are documented in this section.

2.1 Emission Unit Nomenclature and Process Rates

Coal Combustion Residual Soilds from the Process Water System (i.e., solids that have settled out from processing facility process waters through the PWS) will be sent through a filter press to remove some moisture before being disposed of in the on-site landfill. After the filter presses bring the moisture level of the solids to about 50%, the material will be deposited in a pile at the end of the conveyor. The material will be pick up and placed in trucks. The trucks will haul the material to the on-site landfill for storage/disposal.

There is potential for PM emissions to be generated at each material transfer point. Each transfer activity associated with the PWS solids management operation is encompassed in the list below.

The maximum expected process rates for each transfer activity is listed in the table below. Short-term emission estimates are tied to these process rates. Estimates of annual emissions are tied to the maximum amount of PWS solid material that is anticipated to be generated at Mill Creek Station.

2.11 Maximum Short-Term Process Rates

Emission Unit / Transfer Point Description	Process Rate (ton/hr)	Transfer Location and Controls
Drop points for Ghent Process Water System		
Drop from Fliter Press to Ground	20	Outside building
Filter Cake Pile to Truck via Front-end Loader	20	Transfer from loader to trucks outside.
Truck Unloading to Active Landfill Site	20	Unloading from trucks at landfill in open.

2.12 Maximum Annual Process Rates

Estimated maximum amount of PWS solid material passing through this material handling proc	50,000	tons/yr

2.2 PM Emission Calculation Methodology

PM emissions for conveyor transfer and drop points can be estimated using Equation 1 from AP42 Section 13.2.4, Aggregate Handling and Storage Piles. Under this methodology, PM emissions are calculated as a function of the mean wind speed and material moisture content.

E (lb/ton) = 0.0032 * *k* * (*U* /5)^1.3 / (*M* /2)^1.4

where:		PM	PM10	PM2.5	
k =	Particle Size Multiplier (lb/VMT):	0.74	0.35	0.053	AP42 13.2.4
U =	Mean Wind Speed (mph)	7.9			
M =	Material Moisture Content (%)	50			

Conveyor and other transfer points that are enclosed or partially enclosed are less influenced by wind. For transfer points that occur out in the open, the mean wind speed based on meteorological data from the nearest NWS station is used. For transfer points that are inside an enclosure (e.g., transfer towers), a reduced wind speed of 1.0 mph is used. For shrouded or partially enclosed transfer points, the wind speed is set to half the ambient wind speed.

Emission Unit / Transfer Point Description	Material Moisture (%)	Wind Speed (mph)	PM Factor (lb/ton)	PM10 Factor (lb/ton)	PM2.5 Factor (lb/ton)
Drop points for Ghent Process Water System					
Drop from Fliter Press to Ground	50	7.9	4.74E-05	2.24E-05	3.39E-06
Filter Cake Pile to Truck via Front-end Loader	50	7.9	4.74E-05	2.24E-05	3.39E-06
Truck Unloading to Active Landfill Site	50	7.9	4.74E-05	2.24E-05	3.39E-06

2.3 Summary of PM/PM10/PM2.5 Emissions from Landfill Material Transfer Operations

Based on the PM emission factors derived above, the maximum short-term and annual emission estimates for PM are tabulated below.

2.31 PM Emissions Table

Transfer Point Description	Process Rate (ton/hr)	Annual Process Rate (ton/yr)	PM Factor (lb/ton)	PM Hourly Emissions (lb/hr)	PM Annual Emissions (tpy)
Drop points for Ghent Process Water System					
Drop from Fliter Press to Ground	20	50,000	4.74E-05	0.00095	0.00118
Filter Cake Pile to Truck via Front-end Loader	20	50,000	4.74E-05	0.00095	0.00118
Truck Unloading to Active Landfill Site	20	50,000	4.74E-05	0.00095	0.00118
TOTAL				0.00284	0.00355

2.32 PM10 Emissions Table

Transfer Point Description	Process Rate (ton/hr)	Annual Process Rate (ton/yr)	PM10 Factor (lb/ton)	PM10 Hourly Emissions (lb/hr)	PM10 Annual Emissions (tpy)
Drop points for Ghent Process Water System					
Drop from Fliter Press to Ground	20	50,000	2.24E-05	0.00045	0.00056
Filter Cake Pile to Truck via Front-end Loader	20	50,000	2.24E-05	0.00045	0.00056
Truck Unloading to Active Landfill Site	20	50,000	2.24E-05	0.00045	0.00056
TOTAL				0.00134	0.00168

2.33 PM2.5 Emissions Table

Transfer Point Description	Process Rate (ton/hr)	Annual Process Rate (ton/yr)	PM2.5 Factor (lb/ton)	PM2.5 Hourly Emissions (lb/hr)	PM2.5 Annual Emissions (tpy)
Drop points for Ghent Process Water System					
Drop from Fliter Press to Ground	20	50,000	3.39E-06	0.00007	0.00008
Filter Cake Pile to Truck via Front-end Loader	20	50,000	3.39E-06	0.00007	0.00008
Truck Unloading to Active Landfill Site	20	50,000	3.39E-06	0.00007	0.00008
TOTAL				0.00020	0.00025

3. Fugitive PM Emissions From Haul Trucks and Heavy Equipment

PM emissions due to transporting PWS soild material, from the site to the landfill, are documented in this section.

Fugitive PM emissions due to vehicle movement on plant roads are estimated using methodologies of AP42 Section 13.2.1 for paved roads (1/2011 Edition) and AP42 Section 13.2.2 for unpaved roads (11/2006 Edition).

3.1 Weights for Transport Equipment Used in Emission Calculations

Transport Vehicle Type	Empty Weight (tons)	Full Weight (tons)	Material Carried per Load (tons)
Haul Trucks for Moving Material	15.5	35.5	20
Front End Loader	27.7	33.7	6

3.2 Maximum Volume of Material Transported

	Maximum Volume (ton/yr)	Basis
Estimated maximum quantify of lime used in the Mill Creek PWS per year:	50,000	

3.3 Vehicle Miles Traveled Per Year for Each Truck/Vehicle Route

Transport Operation	Maximum Annual Volume (ton/yr)	Annual Trips (trips/yr)	Paved Distance Per Trip (mi)	Unpaved Distance Per Trip (mi)	Paved Distance Traveled (VMT/yr)	Unpaved Distance Traveled (VMT/yr)
Loading and Hauling Operations for PWS Solids						
Travel of FrontEnd Loader In/Around PWS solids to load trucks		8,333	0.02	0.0	158	0
Full PWS Solids Trucks from PWS Solids pile to Active Area of Landfill	50,000	2,500	0.0	0.2	0	521
Empty PWS Solids Trucks from Active Area of Landfill to PWS Solids pile		2,500	0.0	0.2	0	521

3.4 Unpaved Road Emission Factors

The methodology presented in AP-42 Section 13.2.2 (11/2006) is used to derive fugitive PM emission factors for truck traffic on unpaved road surfaces within the plant.

The following emission factor equation applies: (Equations 1a and 2 in AP42 13.2.2)
$E\ (lb/VMT) = [(k)(s/12)^{a}(W/3)^{b}]((365-P)/365)$

where:		PM	PM10	PM2.5	
k =	Particle Size Multiplier (lb/VMT)	4.9	1.5	0.15	AP42 Table 13.2.2-2
a =	Constant	0.7	0.9	0.9	AP42 Table 13.2.2-2
b =	Constant	0.45	0.45	0.45	AP42 Table 13.2.2-2

s =	Surface Material Silt Content (%)	3.9	Value used by EPA in the 1999 National Emissions Inventory for unpaved roads in Kentucky.
P =	Days with Precipitation	129	

A control efficiency is applied to account for road maintenance and dust suppression methods such as periodic watering.

Transport Operation	Truck Weight (tons)	Control Efficiency (%)	PM Factor (lb/VMT)	PM10 Factor (lb/VMT)	PM2.5 Factor (lb/VMT)
Loading and Hauling Operations for PWS Solids					
Travel of FrontEnd Loader In/Around PWS solids to load trucks	33.7	70%	1.285	0.314	0.031
Full PWS Solids Trucks from PWS Solids pile to Active Area of Landfill	35.5	70%	1.316	0.322	0.032
Empty PWS Solids Trucks from Active Area of Landfill to PWS Solids pile	15.5	70%	0.906	0.222	0.022

3.5 Paved Road Emission Factors

The methodology presented in AP-42 Section 13.2.1 (1/2011) was used to derive fugitive PM emission factors for truck traffic on paved road surfaces within the plant. The following emission factor equation applies: (Equation 2 in AP43 13.2.1)

$E\ (lb/VMT) = (k)(sL/2)^{0.91}(W)^{1.02}(1-P/4N)$

where:		PM	PM10	PM2.5	
k =	Particle Size Multiplier (lb/VMT)	0.011	0.0022	0.00054	AP42 Table 13.2.1-1
sL =	Silt Loading (g/m2)	3			AP42 Table 13.2.1-3 (1/2011); Selected based on range of values for quarries in Table 13.2.1-3.
P =	Days with Precipitation	129			
N =	Number of days in averaging period	365			Days per year

A control efficiency is applied to account for road maintenance and dust suppression methods such as periodic watering.

Transport Operation	Truck Weight (tons)	Control Efficiency (%)	PM Factor (lb/VMT)	PM10 Factor (lb/VMT)	PM2.5 Factor (lb/VMT)
Loading and Hauling Operations for PWS Solids					
Travel of FrontEnd Loader In/Around PWS solids to load trucks	33.7	70%	0.157	0.031	0.008
Full PWS Solids Trucks from PWS Solids pile to Active Area of Landfill	35.5	70%	0.166	0.033	0.008
Empty PWS Solids Trucks from Active Area of Landfill to PWS Solids pile	15.5	70%	0.071	0.014	0.003

3.6 Annual Fugitive PM Emissions Per Route Segment

Transport Operation	Paved Distance Traveled (VMT/yr)	Unpaved Distance Traveled (VMT/yr)	PM (tpy)	PM10 (tpy)	PM2.5 (tpy)
Loading and Hauling Operations for PWS Solids					
Travel of FrontEnd Loader In/Around PWS solids to load trucks	158	0	0.0124	0.0025	0.0006
Full PWS Solids Trucks from PWS Solids pile to Active Area of Landfill	0	521	0.3426	0.0838	0.0084
Empty PWS Solids Trucks from Active Area of Landfill to PWS Solids pile	0	521	0.2360	0.0577	0.0058

3.7 Consolidated Annual Fugitive PM Emissions Per Category

Emission Unit	PM (tpy)	PM10 (tpy)	PM2.5 (tpy)	Total Material Processed	PM Factor (lb/ 1000ton)	PM10 Factor (lb/ 1000ton)	PM2.5 Factor (lb/ 1000ton)
Loading and Hauling Operations for PWS Solids	0.59	0.14	0.01	50,000	23.64071	5.75796	0.59024

4. Storage Piles and Landfills - Emissions From Wind Erosion

PM emissions from the PWS soilds storage pile and active area of the landfill due to wind erosion are documented in this section.

4.1 Annual Process Rates for Piles as Basis for Wind Erosion Emission Factors

To derive emission factors for the wind erosion sources in terms of "lb/ton", annual emissions are divided by the total mass of material expected to pass through the storage pile. For the wind erosion from the active area of the landfill, the annual emissions are divided by the total mass of material expected to be placed in the landfill each year. These annual quantities are listed below.

Maximum quantity of material expected to pass through PWS Solids Storage Pile:	50,000	ton/yr
Maximum quantity to material expected to be placed in the Landfill:	50,000	ton/yr

4.2 PM Emission Calculation Methodology

Fugitive PM emissions can result from wind erosion when gusts of wind cause loose material on the surface of a pile or the active working area of the landfill to become airborne. The annual quantity of emissions is assumed to be dependent on the silt content of the material stored, the moisture of the pile (predicted by the number of days per year with measureable precipitation), and the percentage of hours per year that the wind speed exceeds a threshold speed of 12 miles per hour. Emissions are calculated on a pounds per day per acre basis using the method from the EPA Document "Control of Open Fugitive Dust Sources".

Emission rates are converted to mass per time (lb/hr) based on the maximum estimated surface area of the pile/landfill. Then, so that a single SCC unit based emission factor can be used for the process, the emission rate is divided by the amount of material expected to pass through the pile.

To account for dust suppression techniques to be employed, such as periodic pile watering or treating of exposed areas with dust suppressing materials, a control efficiency of 70% is applied.

E (lb/day/acre) = 1.7 * (*s* /1.5) * (365-*p*)/235 * *f* /15
Control of Open Fugitive Dust Sources; EPA-450/3-88-008, September 1988, Page 4-17, Equation 2:

where:

s	Silt content (%)	15	%	Silt content of exposed ground from AP42 Table 13.2.4-1.
p	Number of days with >0.01 in precipitation per year	129	days	
f	% of time unobstructed wind speed > 12 mph at mean pile hei	18.92	%	
E	PM Emission Factor (lb/day/acre)	21.53	lb/day/acre	

Control efficiency applied for dust suppression techniques:	70%	
Adjusted PM Emission Factor (lb/day/acre)	6.46	lb/day/acre

Storage Pile Description	Emission Factor (lb/day/acre)	Typical Active Work Area (acres)	Emission Rate (tpy)	Annual Process Rate (ton/yr)	SCC Based Emission Factor (lb/ton)
PWS Soilds Storage Pile (Wind Erosion)	6.46	0.041	0.05	50,000	1.92E-03
PWS Solids at Landfill (Wind Erosion)	6.46	2.0	2.36	50,000	9.43E-02

4.3 Summary of PM/PM10/PM2.5 Emissions from Wind Erosion at Landfills/Storage Piles

Based on the PM emission factors derived above, the annual and hourly average emission estimates for PM are tabulated below. Based on the particle size multipliers used in AP42 13.2.5-2, which outlines an alternate methodology for estimating wind erosion emissions from aggregate storage piles, PM10 is assumed to be 50% of PM and PM2.5 is assumed to be 7.5% of PM.

4.31 PM Emissions Table

Storage Pile Description	Annual Process Rate (ton/yr)	PM Factor (lb/ton)	PM Annual Emissions (tpy)	PM Hourly Emissions (lb/hr)
PWS Soilds Storage Pile (Wind Erosion)	50,000	1.92E-03	0.05	0.01
PWS Solids at Landfill (Wind Erosion)	50,000	9.43E-02	2.36	0.54
TOTAL			2.41	0.55

4.32 PM10 Emissions Table

Storage Pile Description	Annual Process Rate (ton/yr)	PM10 Factor (lb/ton)	PM10 Annual Emissions (tpy)	PM10 Hourly Emissions (lb/hr)
PWS Soilds Storage Pile (Wind Erosion)	50,000	9.62E-04	0.02	0.01
PWS Solids at Landfill (Wind Erosion)	50,000	4.72E-02	1.18	0.27
TOTAL			1.20	0.27

4.33 PM2.5 Emissions Table

Storage Pile Description	Annual Process Rate (ton/yr)	PM2.5 Factor (lb/ton)	PM2.5 Annual Emissions (tpy)	PM2.5 Hourly Emissions (lb/hr)
PWS Soilds Storage Pile (Wind Erosion)	50,000	1.44E-04	0.004	0.001
PWS Solids at Landfill (Wind Erosion)	50,000	7.07E-03	0.177	0.040
TOTAL			0.18	0.04

Emissions	E-1	E-1 Gas	E-2	E-3	E-3 Gas	E-4	E-5	E-5 Gas	E-6	E-7	E-7 Gas	E-8	E-13	E-16	E-17	E-18	E-20
PM Condensible Emissions (tons/yr)	30850.00	0.21	#N/A	30850.00	0.07	#N/A	42040.00	0.63	#N/A	50250.00	0.75	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
PM Filterable Emissions (tons/yr)	542.54	0.07	0.00774	542.54	0.02	0.00774	740.14	0.21	0.01054	885.63	0.25	0.01260	6.1580	1.52	1.03	1.24	#N/A
PM10 Emissions (tons/yr)	124.79	0.07	0.00366	124.79	0.02	0.00366	170.23	0.21	0.00499	203.70	0.25	0.00596	2.1579	0.53	0.36	0.43	#N/A
PM2.5 Emissions (tons/yr)	325.53	0.07	0.00111	325.53	0.02	0.00111	444.08	0.21	0.00151	531.38	0.25	0.00181	2.1579	0.53	0.36	0.43	#N/A
SO2 Emissions (tons/yr)	68351.15	0.02	#N/A	68573.79	0.01	#N/A	93143.68	0.07	#N/A	111696.42	0.08	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
NOx Emissions (tons/yr)	8788.51	10.22	#N/A	8788.51	3.50	#N/A	9581.04	21.00	#N/A	11452.13	24.89	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
CO2 Emissions (tons/yr)	2818181.41	4380.00	#N/A	########	1500.00	#N/A	########	13260.00	#N/A	########	#######	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
CO Emissions (tons/yr)	292.95	3.07	#N/A	292.95	1.05	#N/A	399.21	9.28	#N/A	477.17	11.00	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
VOC Emissions (tons/yr)	35.15	0.20	#N/A	35.15	0.07	#N/A	47.91	0.61	#N/A	57.26	0.72	#N/A	#N/A	#N/A	#N/A	#N/A	0.23
Ammonia Emissions (tons/yr)	0.33	0.12	#N/A	0.33	0.04	#N/A	24.75	0.35	#N/A	29.58	0.42	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Antimony Emissions (lbs/yr)	1301.87	#N/A	0.00001	1301.87	#N/A	0.00001	1774.09	#N/A	0.00002	2120.55	#N/A	0.00002	0.0391	0.19	0.13	0.16	#N/A
Arsenic Emissions (lbs/yr)	7774.20	0.01	0.00010	7774.20	0.01	0.00010	10594.08	0.04	0.00014	12663.00	0.05	0.00016	0.7913	3.90	2.66	3.18	#N/A
Beryllium Emissions (lbs/yr)	364.03	0.00	#N/A	364.03	0.00	#N/A	496.07	0.00	#N/A	592.95	0.00	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Cadmium Emissions (lbs/yr)	678.70	0.08	0.00000	678.70	0.09	0.00000	924.88	0.75	0.00001	1105.50	0.89	0.00001	0.0502	0.25	0.17	0.20	#N/A
Chromium Emissions (lbs/yr)	#N/A	0.10	0.00033	#N/A	0.04	0.00033	#N/A	0.31	0.00045	#N/A	0.37	0.00053	0.4064	2.00	1.37	1.63	#N/A
Chromium III Emissions (lbs/yr)	12895.30	#N/A	#N/A	12895.30	#N/A	#N/A	17572.72	#N/A	#N/A	21004.50	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Chromium VI Emissions (lbs/yr)	1758.45	#N/A	#N/A	1758.45	#N/A	#N/A	2396.28	#N/A	#N/A	2864.25	#N/A	#N/A	0.0249	2.00	1.37	1.63	#N/A
Cobalt Emissions (lbs/yr)	1573.35	0.01	0.00011	1573.35	0.00	0.00011	2144.04	0.02	0.00014	2562.75	0.02	0.00017	0.0736	0.36	0.25	0.30	#N/A
Cyanide Emissions (lbs/yr)	2929.50	#N/A	#N/A	2929.50	#N/A	#N/A	3992.10	#N/A	#N/A	4771.72	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Lead Emissions (lbs/yr)	6941.25	#N/A	0.00013	6941.25	#N/A	0.00013	9459.00	#N/A	0.00017	11306.25	#N/A	0.00020	0.2278	1.12	0.77	0.92	#N/A
Manganese Emissions (lbs/yr)	31158.50	0.03	0.00834	31158.50	0.01	0.00834	42460.40	0.08	0.01137	50752.50	0.10	0.01359	0.6589	3.24	2.21	2.65	#N/A
Mercury Emissions (lbs/yr)	20.32	0.02	0.00000	20.32	0.01	0.00000	9.02	0.06	0.00000	8.50	0.07	0.00000	0.0083	0.04	0.03	0.03	#N/A
Nickel Emissions (lbs/yr)	84529.00	0.15	0.00024	84529.00	0.05	0.00024	115189.60	0.46	0.00032	137685.00	0.55	0.00038	0.2217	1.09	0.74	0.89	#N/A
Selenium Emissions (lbs/yr)	28505.40	0.00	0.00003	28505.40	0.00	0.00003	38844.96	0.01	0.00005	46431.00	0.01	0.00006	0.1706	0.84	0.57	0.69	#N/A
Sulfuric Acid Mist Emissions (tons/yr)	1046.63	#N/A	#N/A	1050.04	#N/A	#N/A	1426.26	#N/A	#N/A	1710.35	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Acetaldehyde Emissions (lbs/yr)	9872.00	#N/A	#N/A	9872.00	#N/A	#N/A	13452.80	#N/A	#N/A	16080.00	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Acetophenone Emissions (lbs/yr)	3702.00	#N/A	#N/A	3702.00	#N/A	#N/A	5044.80	#N/A	#N/A	6030.00	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Acrolein Emissions (lbs/yr)	5861.50	#N/A	#N/A	5861.50	#N/A	#N/A	7987.60	#N/A	#N/A	9547.50	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Benzene Emissions (lbs/yr)	12031.50	0.15	#N/A	12031.50	0.05	#N/A	16395.60	0.46	#N/A	19597.50	0.55	#N/A	#N/A	#N/A	#N/A	#N/A	22.50
Benzyl Chloride Emissions (lbs/yr)	863.80	#N/A	#N/A	863.80	#N/A	#N/A	1177.12	#N/A	#N/A	1407.00	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Biphenyl Emissions (lbs/yr)	493.60	#N/A	#N/A	493.60	#N/A	#N/A	672.64	#N/A	#N/A	804.00	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Bis(2-Ethylhexyl) Phthalate Emissions (lbs/yr)	11106.00	#N/A	#N/A	11106.00	#N/A	#N/A	15134.40	#N/A	#N/A	18090.00	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Bromoform Emissions (lbs/yr)	0.00	#N/A	#N/A	0.00	#N/A	#N/A	0.00	#N/A	#N/A	0.00	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Carbon Disulfide Emissions (lbs/yr)	3393.50	#N/A	#N/A	3393.50	#N/A	#N/A	4624.40	#N/A	#N/A	5527.50	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
2-Chloroacetophenone Emissions (lbs/yr)	8.20	#N/A	#N/A	8.20	#N/A	#N/A	11.18	#N/A	#N/A	13.36	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Chlorobenzene Emissions (lbs/yr)	493.60	#N/A	#N/A	493.60	#N/A	#N/A	672.64	#N/A	#N/A	804.00	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Chloroform Emissions (lbs/yr)	2468.00	#N/A	#N/A	2468.00	#N/A	#N/A	3363.20	#N/A	#N/A	4020.00	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
p-Cresol Emissions (lbs/yr)	4010.50	#N/A	#N/A	4010.50	#N/A	#N/A	5465.20	#N/A	#N/A	6532.50	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Cumene Emissions (lbs/yr)	6.21	#N/A	#N/A	6.21	#N/A	#N/A	8.46	#N/A	#N/A	10.12	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Dibenzofuran Emissions (lbs/yr)	1789.30	#N/A	#N/A	1789.30	#N/A	#N/A	2438.32	#N/A	#N/A	2914.50	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Dibutyl Phthalate Emissions (lbs/yr)	339.35	#N/A	#N/A	339.35	#N/A	#N/A	462.44	#N/A	#N/A	552.75	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
1,4 - Dichlorobenzene Emissions (lbs/yr)	3393.50	#N/A	#N/A	3393.50	#N/A	#N/A	4624.40	#N/A	#N/A	5527.50	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Dimethyl Phthalate Emissions (lbs/yr)	277.65	#N/A	#N/A	277.65	#N/A	#N/A	378.36	#N/A	#N/A	452.25	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Dimethyl Sulfate Emissions (lbs/yr)	56.25	#N/A	#N/A	56.25	#N/A	#N/A	76.65	#N/A	#N/A	91.62	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
2,4 - Dinitrotoluene Emissions (lbs/yr)	617.00	#N/A	#N/A	617.00	#N/A	#N/A	840.80	#N/A	#N/A	1005.00	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Ethyl Benzene Emissions (lbs/yr)	2468.00	#N/A	#N/A	2468.00	#N/A	#N/A	3363.20	#N/A	#N/A	4020.00	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	18.00
Ethyl Chloride Emissions (lbs/yr)	1635.05	#N/A	#N/A	1635.05	#N/A	#N/A	2228.12	#N/A	#N/A	2663.25	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Ethylene Dibromide Emissions (lbs/yr)	8021.00	#N/A	#N/A	8021.00	#N/A	#N/A	10930.40	#N/A	#N/A	13065.00	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Formaldehyde Emissions (lbs/yr)	8021.00	5.48	#N/A	8021.00	1.88	#N/A	10930.40	16.58	#N/A	13065.00	19.65	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Hexane Emissions (lbs/yr)	1511.65	131.40	#N/A	1511.65	45.00	#N/A	2059.96	397.80	#N/A	2462.25	471.60	#N/A	#N/A	#N/A	#N/A	#N/A	36.00
Hydrochloric Acid Emissions (lbs/yr)	**1798555.00**	**#N/A**	**#N/A**	**########**	**#N/A**	**#N/A**	**########**	**#N/A**	**#N/A**	**########**	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**#N/A**	#N/A
Hydrogen Fluoride Emissions (lbs/yr)	**555300.00**	**#N/A**	**#N/A**	**555300.00**	**#N/A**	**#N/A**	**756720.00**	**#N/A**	**#N/A**	**904500.00**	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**#N/A**	#N/A
Isophorone Emissions (lbs/yr)	3702.00	#N/A	#N/A	3702.00	#N/A	#N/A	5044.80	#N/A	#N/A	6030.00	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Methyl Bromide Emissions (lbs/yr)	2745.65	#N/A	#N/A	2745.65	#N/A	#N/A	3741.56	#N/A	#N/A	4472.25	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Methyl Chloride Emissions (lbs/yr)	**3393.50**	**#N/A**	**#N/A**	**3393.50**	**#N/A**	**#N/A**	**4624.40**	**#N/A**	**#N/A**	**5527.50**	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**#N/A**	#N/A
Methyl Chloroform Emissions (lbs/yr)	**1881.85**	**#N/A**	**#N/A**	**1881.85**	**#N/A**	**#N/A**	**2564.44**	**#N/A**	**#N/A**	**3065.25**	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**#N/A**	#N/A
Methylhydrazine Emissions (lbs/yr)	199.21	#N/A	#N/A	199.21	#N/A	#N/A	271.46	#N/A	#N/A	324.48	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Methyl Iodide Emissions (lbs/yr)	6170.00	#N/A	#N/A	6170.00	#N/A	#N/A	8408.00	#N/A	#N/A	10050.00	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Methyl Isobutyl Ketone Emissions (lbs/yr)	7095.50	#N/A	#N/A	7095.50	#N/A	#N/A	9669.20	#N/A	#N/A	11557.50	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Methyl Methacrylate Emissions (lbs/yr)	3393.50	#N/A	#N/A	3393.50	#N/A	#N/A	4624.40	#N/A	#N/A	5527.50	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Methyl Tert-Butyl Ether Emissions (lbs/yr)	41.01	#N/A	#N/A	41.01	#N/A	#N/A	55.89	#N/A	#N/A	66.80	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	67.50
Methylene Chloride Emissions (lbs/yr)	8329.50	#N/A	#N/A	8329.50	#N/A	#N/A	11350.80	#N/A	#N/A	13567.50	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Naphthalene Emissions (lbs/yr)	1912.70	0.04	#N/A	1912.70	0.02	#N/A	2606.48	0.13	#N/A	3115.50	0.16	#N/A	#N/A	#N/A	#N/A	#N/A	9.00
Phenol Emissions (lbs/yr)	10180.50	#N/A	#N/A	10180.50	#N/A	#N/A	13873.20	#N/A	#N/A	16582.50	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Propionaldehyde Emissions (lbs/yr)	5861.50	#N/A	#N/A	5861.50	#N/A	#N/A	7987.60	#N/A	#N/A	9547.50	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Styrene Emissions (lbs/yr)	2159.50	#N/A	#N/A	2159.50	#N/A	#N/A	2942.80	#N/A	#N/A	3517.50	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Tetrachloroethylene Emissions (lbs/yr)	**1295.70**	**#N/A**	**#N/A**	**1295.70**	**#N/A**	**#N/A**	**1765.68**	**#N/A**	**#N/A**	**2110.50**	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**#N/A**	#N/A
Toluene Emissions (lbs/yr)	5244.50	0.25	#N/A	5244.50	0.09	#N/A	7146.80	0.75	#N/A	8542.50	0.89	#N/A	#N/A	#N/A	#N/A	#N/A	90.00
1,2,4 - Trichlorobenzene Emissions (lbs/yr)	4627.50	#N/A	#N/A	4627.50	#N/A	#N/A	6306.00	#N/A	#N/A	7537.50	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Vinyl Acetate Emissions (lbs/yr)	956.35	#N/A	#N/A	956.35	#N/A	#N/A	1303.24	#N/A	#N/A	1557.75	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Vinyl Chloride Emissions (lbs/yr)	2252.05	#N/A	#N/A	2252.05	#N/A	#N/A	3068.92	#N/A	#N/A	3668.25	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Xylene Emissions (lbs/yr)	3887.10	#N/A	#N/A	3887.10	#N/A	#N/A	5297.04	#N/A	#N/A	6331.50	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	81.00
2-Methylnaphthalene Emissions (lbs/yr)	#N/A	0.00	#N/A	#N/A	0.00	#N/A	#N/A	0.01	#N/A	#N/A	0.01	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
3-Methylchloranthrene Emissions (lbs/yr)	#N/A	0.00	#N/A	#N/A	0.00	#N/A	#N/A	0.00	#N/A	#N/A	0.00	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
7,12 - Dimethylbenz[a] Anthracene Emissions (lbs/y	#N/A	0.00	#N/A	#N/A	0.00	#N/A	#N/A	0.00	#N/A	#N/A	0.00	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Acenaphthene Emissions (lbs/yr)	#N/A	0.00	#N/A	#N/A	0.00	#N/A	#N/A	0.00	#N/A	#N/A	0.00	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Acenaphthylene Emissions (lbs/yr)	#N/A	0.00	#N/A	#N/A	0.00	#N/A	#N/A	0.00	#N/A	#N/A	0.00	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Anthracene Emissions (lbs/yr)	#N/A	0.00	#N/A	#N/A	0.00	#N/A	#N/A	0.00	#N/A	#N/A	0.00	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Benz[a] Anthracene Emissions (lbs/yr)	#N/A	0.00	#N/A	#N/A	0.00	#N/A	#N/A	0.00	#N/A	#N/A	0.00	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Benzo[a] Pyrene Emissions (lbs/yr)	#N/A	0.00	#N/A	#N/A	0.00	#N/A	#N/A	0.00	#N/A	#N/A	0.00	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Benzo[b] Fluoranthene Emissions (lbs/yr)	#N/A	0.00	#N/A	#N/A	0.00	#N/A	#N/A	0.00	#N/A	#N/A	0.00	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Benzo(g,h,i) Fluoranthene Emissions (lbs/yr)	#N/A	0.00	#N/A	#N/A	0.00	#N/A	#N/A	0.00	#N/A	#N/A	0.00	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Chrysene Emissions (lbs/yr)	#N/A	0.00	#N/A	#N/A	0.00	#N/A	#N/A	0.00	#N/A	#N/A	0.00	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Dibenzo[a,h] Anthracene Emissions (lbs/yr)	#N/A	0.00	#N/A	#N/A	0.00	#N/A	#N/A	0.00	#N/A	#N/A	0.00	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Fluoranthene Emissions (lbs/yr)	#N/A	0.00	#N/A	#N/A	0.00	#N/A	#N/A	0.00	#N/A	#N/A	0.00	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Fluorene Emissions (lbs/yr)	#N/A	0.00	#N/A	#N/A	0.00	#N/A	#N/A	0.00	#N/A	#N/A	0.00	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Indeno[1,2,3-c,d] Pyrene Emissions (lbs/yr)	#N/A	0.00	#N/A	#N/A	0.00	#N/A	#N/A	0.00	#N/A	#N/A	0.00	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Phenanthrene Emissions (lbs/yr)	#N/A	0.00	#N/A	#N/A	0.00	#N/A	#N/A	0.00	#N/A	#N/A	0.00	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
1,3 - Butadiene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
PAH Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Propylene Oxide Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Total HAPS																	

Emissions	E-24	E-25	E-26	E-27	E-28	E-31	E-32	E-33	E-35	E-36	E-37	E-38	E-39	E-40	E-41	E-42	E44	E45/46	E48	IA-Fire Pump	IA - FO Tanks	IA - FO Heaters	IA - NG Heaters
PM Condensible Emissions (tons/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.00	0.26
PM Filterable Emissions (tons/yr)	66.39	88.52	88.52	88.52	0.76	2.1925	1.6478	0.8108	#N/A	0.01540	0.19960	15.82	143.58	1.07	1.07	1.22	3.80	0.06	27.13	0.00	#N/A	0.00	0.09
PM10 Emissions (tons/yr)	31.40	41.87	41.87	41.87	0.34	0.6079	0.4569	0.2248	#N/A	0.01540	0.19960	15.82	35.21	1.07	1.07	0.43	2.73	0.04	6.65	0.00	#N/A	0.00	0.09
PM2.5 Emissions (tons/yr)	4.76	6.34	6.34	6.34	0.06	0.6079	0.4569	0.2248	#N/A	0.01540	0.19960	15.82	3.52	1.07	1.07	0.43	1.67	0.02	0.67	0.00	#N/A	0.00	0.09
SO2 Emissions (tons/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.27500	0.27500	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	3.05	#N/A	0.07	0.03
NOx Emissions (tons/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	2.57400	2.84000	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	46.17	#N/A	0.01	4.49
CO2 Emissions (tons/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	12.50	5390.68
CO Emissions (tons/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.21160	1.34000	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	9.95	#N/A	0.00	3.77
VOC Emissions (tons/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	12.96	0.00440	1.34000	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	3.68	0.00	0.00	0.25
Ammonia Emissions (tons/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.14
Antimony Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	0.0139	0.0105	0.0052	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.01	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Arsenic Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	0.2817	0.2117	0.1042	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.16	#N/A	#N/A	#N/A	#N/A	#N/A	4.00	0.02
Beryllium Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	3.00	0.00
Cadmium Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	0.0179	0.0134	0.0066	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.01	#N/A	#N/A	#N/A	#N/A	#N/A	3.00	0.10
Chromium Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	0.1447	0.1088	0.0535	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.08	#N/A	#N/A	#N/A	#N/A	#N/A	3.00	0.13
Chromium III Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Chromium VI Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	0.0089	0.0067	0.0033	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.00	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Cobalt Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	0.0262	0.0197	0.0097	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.01	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.01
Cyanide Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Lead Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	0.0811	0.0610	0.0300	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.05	#N/A	#N/A	#N/A	#N/A	#N/A	9.00	#N/A
Manganese Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	0.2346	0.1763	0.0868	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.13	#N/A	#N/A	#N/A	#N/A	#N/A	6.00	0.03
Mercury Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	0.0029	0.0022	0.0011	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.00	#N/A	#N/A	#N/A	#N/A	#N/A	3.00	0.02
Nickel Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	0.0789	0.0593	0.0292	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.04	#N/A	#N/A	#N/A	#N/A	#N/A	3.00	0.19
Selenium Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	0.0607	0.0456	0.0225	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.03	#N/A	#N/A	#N/A	#N/A	#N/A	15.00	0.00
Sulfuric Acid Mist Emissions (tons/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.00	#N/A
Acetaldehyde Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.07056	0.07056	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1.07	#N/A	#N/A	#N/A
Acetophenone Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Acrolein Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.02206	0.02206	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.13	#N/A	#N/A	#N/A
Benzene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	2.17280	2.17280	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1.30	#N/A	0.00	0.19
Benzyl Chloride Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Biphenyl Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Bis(2-Ethylhexyl) Phthalate Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Bromoform Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Carbon Disulfide Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
2-Chloroacetophenone Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Chlorobenzene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Chloroform Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
p-Cresol Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Cumene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Dibenzofuran Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Dibutyl Phthalate Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
1,4 - Dichlorobenzene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Dimethyl Phthalate Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Dimethyl Sulfate Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
2,4 - Dinitrotoluene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Ethyl Benzene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Ethyl Chloride Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Ethylene Dibromide Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Formaldehyde Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.22092	0.22092	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1.64	#N/A	0.03	6.74
Hexane Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	161.72
Hydrochloric Acid Emissions (lbs/yr)	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**#N/A**	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	**#N/A**	#N/A	**#N/A**
Hydrogen Fluoride Emissions (lbs/yr)	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**#N/A**	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	**#N/A**	#N/A	**#N/A**
Isophorone Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Methyl Bromide Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Methyl Chloride Emissions (lbs/yr)	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**#N/A**	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	**#N/A**	#N/A	**#N/A**
Methyl Chloroform Emissions (lbs/yr)	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**#N/A**	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	**#N/A**	#N/A	**#N/A**
Methylhydrazine Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Methyl Iodide Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Methyl Isobutyl Ketone Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Methyl Methacrylate Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Methyl Tert-Butyl Ether Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Methylene Chloride Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Naphthalene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.36400	0.36400	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.00	0.05
Phenol Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Propionaldehyde Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Styrene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Tetrachloroethylene Emissions (lbs/yr)	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**#N/A**	**#N/A**	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	**#N/A**	#N/A	**#N/A**
Toluene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.78680	0.78680	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.57	#N/A	0.01	0.31
1,2,4 - Trichlorobenzene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Vinyl Acetate Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Vinyl Chloride Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Xylene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.54040	0.54040	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.40	#N/A	0.00	#N/A
2-Methylnaphthalene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.00
3-Methylchloranthrene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.00
7,12 - Dimethylbenz[a] Anthracene Emissions (lbs/y	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.00
Acenaphthene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.01310	0.01310	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.00	0.00
Acenaphthylene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.02584	0.02584	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.00	0.00
Anthracene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.00344	0.00344	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.00	0.00
Benz[a] Anthracene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.00174	0.00174	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.00	0.00
Benzo[a] Pyrene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.00072	0.00072	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.00
Benzo[b] Fluoranthene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.00311	0.00311	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.00
Benzo(g,h,i) Fluoranthene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.00
Chrysene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.00428	0.00428	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.00	0.00
Dibenzo[a,h] Anthracene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.00097	0.00097	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.00	0.00
Fluoranthene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.01128	0.01128	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.00	0.00
Fluorene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.03584	0.03584	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.00	0.00
Indeno[1,2,3-c,d] Pyrene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.00116	0.00116	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.00	0.00
Phenanthrene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.11424	0.11424	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.00	0.00
1,3 - Butadiene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
PAH Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.23	#N/A	#N/A	#N/A
Propylene Oxide Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Total HAPS																		0.34007					

Emissions	*U22 - Landfill Drop Point*	*U21 - Coal Pile Wind Erosion*	*U22 - Landfill Wind Erosion*	*Coal Handling*	*IA3 (Frost)*	*IA-OT (Gyp DW)*	*IA-OT (BA Silos)*	*IA-OT (Mixers)*	*IA-OT (PWS Lime)*	*IA-OT (PWS MH)*	*IA-OT (PWS RF)*	*IA-OT (PWS WE)*	Total	STAR TAC Level	STAR TACs (lbs)
PM Condensible Emissions (tons/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	153,992		
PM Filterable Emissions (tons/yr)	0.14	15.15	150.63	44.70	0.00	0.49	2.34	5.43	0.39	0.00	0.59	0.55	3,463		
PM10 Emissions (tons/yr)	0.07	7.58	75.31	21.14	0.00	0.23	2.34	1.81	0.39	0.00	0.14	0.27	954		
PM2.5 Emissions (tons/yr)	0.01	1.14	11.30	3.20	0.00	0.04	2.34	0.18	0.39	0.00	0.01	0.04	1,696		
SO2 Emissions (tons/yr)	#N/A	#N/A	#N/A	#N/A	0.00	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	341,769		
NOx Emissions (tons/yr)	#N/A	#N/A	#N/A	#N/A	0.04	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	38,726		
CO2 Emissions (tons/yr)	#N/A	#N/A	#N/A	#N/A	2.17	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	14,107,421		
CO Emissions (tons/yr)	#N/A	#N/A	#N/A	#N/A	0.07	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1,502		
VOC Emissions (tons/yr)	#N/A	#N/A	#N/A	#N/A	0.00	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	196		
Ammonia Emissions (tons/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	56.0711		**56.0711**
Antimony Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	6498.9359	4	**6498.9359**
Arsenic Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	38820.8941	1	**38820.8941**
Beryllium Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1820.0901	3	**1820.0901**
Cadmium Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	3393.4017	1	**3393.4017**
Chromium Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	9.7341	1	**9.7341**
Chromium III Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	64367.8200	2	**64367.8200**
Chromium VI Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	8782.4783	3	**8782.4783**
Cobalt Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	7854.5958	2	**7854.5958**
Cyanide Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	14622.8250	4	**14622.8250**
Lead Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	34659.9984	2	**34659.9984**
Manganese Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	155545.5887	2	**155545.5887**
Mercury Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	61.4588	3	**61.4588**
Nickel Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	421940.1699	1	**421940.1699**
Selenium Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	142304.2077	4	**142304.2077**
Sulfuric Acid Mist Emissions (tons/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	5233.2783	2	**5233.2783**
Acetaldehyde Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	49278.0079	3	**49278.0079**
Acetophenone Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	18478.8000	4	**18478.8000**
Acrolein Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	29258.2728	3	**29258.2728**
Benzene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	60085.6523	1	**60085.6523**
Benzyl Chloride Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	4311.7200	4	**4311.7200**
Biphenyl Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	2463.8400	4	**2463.8400**
Bis(2-Ethylhexyl) Phthalate Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	55436.4000	4	**55436.4000**
Bromoform Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.0000	1	**0.0000**
Carbon Disulfide Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	16938.9000	4	**16938.9000**
2-Chloroacetophenone Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	40.9439	4	**40.9439**
Chlorobenzene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	2463.8400	4	**2463.8400**
Chloroform Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	12319.2000	1	**12319.2000**
p-Cresol Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	20018.7000	4	**20018.7000**
Cumene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	31.0004	4	**31.0004**
Dibenzofuran Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	8931.4200	4	**8931.4200**
Dibutyl Phthalate Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1693.8900	4	**1693.8900**
1,4 - Dichlorobenzene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	16938.9000	1	**16938.9000**
Dimethyl Phthalate Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1385.9100	4	**1385.9100**
Dimethyl Sulfate Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	280.7582	4	**280.7582**
2,4 - Dinitrotoluene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	3079.8000	4	**3079.8000**
Ethyl Benzene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	12337.2000	4	**12337.2000**
Ethyl Chloride Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	8161.4700	4	**8161.4700**
Ethylene Dibromide Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	40037.4000	3	**40037.4000**
Formaldehyde Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	40089.8294	1	**40089.8294**
Hexane Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	8789.0305	4	**8789.0305**
Hydrochloric Acid Emissions (lbs/yr)	**#N/A**	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	###########	**2**	**##########**
Hydrogen Fluoride Emissions (lbs/yr)	**#N/A**	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	###########	**2**	**##########**
Isophorone Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	18478.8000	4	**18478.8000**
Methyl Bromide Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	13705.1100	4	**13705.1100**
Methyl Chloride Emissions (lbs/yr)	**#N/A**	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	16938.9000	**4**	**16938.9000**
Methyl Chloroform Emissions (lbs/yr)	**#N/A**	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	9393.3900	**4**	**9393.3900**
Methylhydrazine Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	994.3521	4	**994.3521**
Methyl Iodide Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	30798.0000	4	**30798.0000**
Methyl Isobutyl Ketone Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	35417.7000	4	**35417.7000**
Methyl Methacrylate Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	16938.9000	4	**16938.9000**
Methyl Tert-Butyl Ether Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	272.2196	4	**272.2196**
Methylene Chloride Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	41577.3000	1	**41577.3000**
Naphthalene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	9557.5183	2	**9557.5183**
Phenol Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	50816.7000	4	**50816.7000**
Propionaldehyde Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	29258.1000	4	**29258.1000**
Styrene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	10779.3000	4	**10779.3000**
Tetrachloroethylene Emissions (lbs/yr)	**#N/A**	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	6467.5800	**1**	**6467.5800**
Toluene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	26272.7295	2	**26272.7295**
1,2,4 - Trichlorobenzene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	23098.5000	4	**23098.5000**
Vinyl Acetate Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	4773.6900	4	**4773.6900**
Vinyl Chloride Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	11241.2700	1	**11241.2700**
Xylene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	19485.2173	2	**19485.2173**
2-Methylnaphthalene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.0161		
3-Methylchloranthrene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.0012	3	**0.0012**
7,12 - Dimethylbenz[a] Anthracene Emissions (lbs/y	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.0107	3	**0.0107**
Acenaphthene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.0274		
Acenaphthylene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.0529		
Anthracene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.0085		
Benz[a] Anthracene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.0047	3	**0.0047**
Benzo[a] Pyrene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.0022	3	**0.0022**
Benzo[b] Fluoranthene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.0074	3	**0.0074**
Benzo(g,h,i) Fluoranthene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.0008		**0.0008**
Chrysene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.0098	3	**0.0098**
Dibenzo[a,h] Anthracene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.0027	3	**0.0027**
Fluoranthene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.0246		
Fluorene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.0736		
Indeno[1,2,3-c,d] Pyrene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.0035	3	**0.0035**
Phenanthrene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.2399		
1,3 - Butadiene Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.0000	1	**0.0000**
PAH Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.2337		
Propylene Oxide Emissions (lbs/yr)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.0000		
Total HAPS													**6719.62**		**6722.26**

Louisville Metro Air Pollution Control District

Permit Application and Renewal
Form AP-100G

Alternative Operating Scenarios

Deliver application to:
701 W. Ormsby Ave.Suite 303
Louisville, KY 40203

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of submission:	1/24/2019		

Alternative Operating Scenario

Emission Unit Name:	Emission Unit:	Emission Process/Point:

Provide a brief description of any potential alternative operating scenarios associated with this emission unit, and indicate the methods that will be used to demonstrate compliance with regulatory requirements.

None

Alternative Operating Scenario

Emission Unit Name:	Emission Unit:	Emission Process/Point:

Provide a brief description of any potential alternative operating scenarios associated with this emission unit, and indicate the methods that will be used to demonstrate compliance with regulatory requirements.

Alternative Operating Scenario

Emission Unit Name:	Emission Unit:	Emission Process/Point:

Provide a brief description of any potential alternative operating scenarios associated with this emission unit, and indicate the methods that will be used to demonstrate compliance with regulatory requirements.

Louisville Metro Air Pollution Control District

Permit Application and Renewal
Form AP-100J

Compliance Monitoring

Deliver application to:
701 W. Ormsby Ave.Suite 303
Louisville, KY 40203

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Emission Process/Point Name:	IA1	Emission Process/Point:	E20
Date of submission:	1/24/2019		

Monitoring Definition

List the operational parameters that are monitored and the frequency of monitoring

Parameter	Frequency	Method of measurement	Method of recording
Throughput	monthly	Operating reports	Manual

Describe any monitors in use, including manufacturer, model #, frequency of calibration, and location

Monitor Identification	Manufacturer	Model	Calibration Frequency	Location	Other Info

Are any of these Continuous Emission monitors? ☐ Yes ☒ No

Pollutants monitored (check all that apply):
☐ Particulates (PM) ☐ Metals (specify:)
☐ Volatiles (VOC) ☐ HAP/TAC (specify:)
☐ Nitrogen oxides (NO_x) ☐ Sulfur dioxide (SO_2)
☐ Other:

Attach manufacturer's specification sheets, or complete the following**:**

Will multiple emission processes be monitored at the same location? ☐ Yes ☒ No

Which emission processes are monitored?

Will more than one emission process be emitting from the combined stack at any time? ☐ Yes ☒ No

Which emission processes emit simultaneously?

Monitoring and Alarm Information

Describe the System Alarm(s):

If there are more than three alarms, attach additional copies of this page as needed.

Operating Parameter Monitored	Describe Alarm Trigger	Monitoring Device or Alarm Type	Does the Alarm Initiate an Automated Response?
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:

Emission Tests

List any emission measurement tests (stack tests) that have been performed in the past and attach a copy of the test reports:

Test Purpose:	Test date:
Test Purpose:	Test date:

Louisville Metro Air Pollution Control District

Permit Application and Renewal
Form AP-100J

Compliance Monitoring

Deliver application to:
701 W. Ormsby Ave.Suite 303
Louisville, KY 40203

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Emission Process/Point Name:	IA2	Emission Process/Point:	IE1-8
Date of submission:	1/24/2019		

Monitoring Definition

List the operational parameters that are monitored and the frequency of monitoring

Parameter	Frequency	Method of measurement	Method of recording
Throughput	monthly	Operating reports	Manual

Describe any monitors in use, including manufacturer, model #, frequency of calibration, and location

Monitor Identification	Manufacturer	Model	Calibration Frequency	Location	Other Info

Are any of these Continuous Emission monitors? ☐ Yes ☒ No

Pollutants monitored (check all that apply):

☐ Particulates (PM) ☐ Metals (specify:)
☐ Volatiles (VOC) ☐ HAP/TAC (specify:)
☐ Nitrogen oxides (NO_x) ☐ Sulfur dioxide (SO_2)
☐ Other:

Attach manufacturer's specification sheets, or complete the following**:**

Will multiple emission processes be monitored at the same location? ☐ Yes ☒ No

Which emission processes are monitored?

Will more than one emission process be emitting from the combined stack at any time? ☐ Yes ☒ No

Which emission processes emit simultaneously?

Monitoring and Alarm Information

Describe the System Alarm(s):

If there are more than three alarms, attach additional copies of this page as needed.

Operating Parameter Monitored	Describe Alarm Trigger	Monitoring Device or Alarm Type	Does the Alarm Initiate an Automated Response?
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:

Emission Tests

List any emission measurement tests (stack tests) that have been performed in the past and attach a copy of the test reports:

Test Purpose:	Test date:
Test Purpose:	Test date:

Louisville Metro Air Pollution Control District

Permit Application and Renewal
Form AP-100J

Compliance Monitoring

Deliver application to:
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Louisville, KY 40203

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Emission Process/Point Name:	IA3	Emission Process/Point:	IE24,E36-37
Date of submission:	1/24/2019		

Monitoring Definition

List the operational parameters that are monitored and the frequency of monitoring

Parameter	Frequency	Method of measurement	Method of recording
Throughput	monthly	Operating reports	Manual
Hours	continuous	Non resettable meter	manual

Describe any monitors in use, including manufacturer, model #, frequency of calibration, and location

Monitor Identification	Manufacturer	Model	Calibration Frequency	Location	Other Info

Are any of these Continuous Emission monitors? ☐ Yes ☒ No

Pollutants monitored (check all that apply):
☐ Particulates (PM) ☐ Metals (specify:)
☐ Volatiles (VOC) ☐ HAP/TAC (specify:)
☐ Nitrogen oxides (NO_x) ☐ Sulfur dioxide (SO_2)
☐ Other:

Attach manufacturer's specification sheets, or complete the following**:**

Will multiple emission processes be monitored at the same location? ☐ Yes ☒ No

Which emission processes are monitored?

Will more than one emission process be emitting from the combined stack at any time? ☐ Yes ☒ No

Which emission processes emit simultaneously?

Monitoring and Alarm Information

Describe the System Alarm(s):

If there are more than three alarms, attach additional copies of this page as needed.

Operating Parameter Monitored	Describe Alarm Trigger	Monitoring Device or Alarm Type	Does the Alarm Initiate an Automated Response?
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:

Emission Tests

List any emission measurement tests (stack tests) that have been performed in the past and attach a copy of the test reports:

Test Purpose:	Test date:
Test Purpose:	Test date:

Louisville Metro Air Pollution Control District

Permit Application and Renewal
Form AP-100J

Compliance Monitoring

Deliver application to:
701 W. Ormsby Ave.Suite 303
Louisville, KY 40203

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Emission Process/Point Name:	IA4	Emission Process/Point:	IE9-10
Date of submission:	1/24/2019		

Monitoring Definition

List the operational parameters that are monitored and the frequency of monitoring

Parameter	Frequency	Method of measurement	Method of recording
Throughput	monthly	Operating reports	Manual
Hours	continuous	Non resettable meter	manual

Describe any monitors in use, including manufacturer, model #, frequency of calibration, and location

Monitor Identification	Manufacturer	Model	Calibration Frequency	Location	Other Info

Are any of these Continuous Emission monitors? ☐ Yes ☒ No

Pollutants monitored (check all that apply):

☐ Particulates (PM) ☐ Metals (specify:)
☐ Volatiles (VOC) ☐ HAP/TAC (specify:)
☐ Nitrogen oxides (NO_x) ☐ Sulfur dioxide (SO_2)
☐ Other:

Attach manufacturer's specification sheets, or complete the following**:**

Will multiple emission processes be monitored at the same location? ☐ Yes ☒ No

Which emission processes are monitored?

Will more than one emission process be emitting from the combined stack at any time? ☐ Yes ☒ No

Which emission processes emit simultaneously?

Monitoring and Alarm Information

Describe the System Alarm(s):

If there are more than three alarms, attach additional copies of this page as needed.

Operating Parameter Monitored	Describe Alarm Trigger	Monitoring Device or Alarm Type	Does the Alarm Initiate an Automated Response?
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:

Emission Tests

List any emission measurement tests (stack tests) that have been performed in the past and attach a copy of the test reports:

Test Purpose:	Test date:
Test Purpose:	Test date:

Louisville Metro Air Pollution Control District

Permit Application and Renewal
Form AP-100J

Compliance Monitoring

Deliver application to:
701 W. Ormsby Ave.Suite 303
Louisville, KY 40203

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Emission Process/Point Name:	IA-OT	Emission Process/Point:	IE11-23
Date of submission:	1/24/2019		

Monitoring Definition

List the operational parameters that are monitored and the frequency of monitoring

Parameter	Frequency	Method of measurement	Method of recording
Throughput	monthly	Operating reports	Manual
Hours	continuous	Non resettable meter	Manual
Equipment Integrity	monthly	Operating reports	Manual
Filters in Tact	daily	Operating reports	Manual

Describe any monitors in use, including manufacturer, model #, frequency of calibration, and location

Monitor Identification	Manufacturer	Model	Calibration Frequency	Location	Other Info

Are any of these Continuous Emission monitors? ☐ Yes ☒ No

Pollutants monitored (check all that apply):
☐ Particulates (PM) ☐ Metals (specify:)
☐ Volatiles (VOC) ☐ HAP/TAC (specify:)
☐ Nitrogen oxides (NO_x) ☐ Sulfur dioxide (SO_2)
☐ Other:

Attach manufacturer's specification sheets, or complete the following**:**

Will multiple emission processes be monitored at the same location? ☐ Yes ☒ No

Which emission processes are monitored?

Will more than one emission process be emitting from the combined stack at any time? ☐ Yes ☒ No

Which emission processes emit simultaneously?

Monitoring and Alarm Information

Describe the System Alarm(s):

If there are more than three alarms, attach additional copies of this page as needed.

Operating Parameter Monitored	Describe Alarm Trigger	Monitoring Device or Alarm Type	Does the Alarm Initiate an Automated Response?
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:

Emission Tests

List any emission measurement tests (stack tests) that have been performed in the past and attach a copy of the test reports:

Test Purpose:	Test date:
Test Purpose:	Test date:

Louisville Metro Air Pollution Control District

Permit Application and Renewal
Form AP-100J

Compliance Monitoring

Deliver application to:
701 W. Ormsby Ave.Suite 303
Louisville, KY 40203

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Emission Process/Point Name:	EGU – Unit1 and Unit 2	Emission Process/Point:	E1,E2,E3,E4
Date of submission:	1/24/2019		

Monitoring Definition

List the operational parameters that are monitored and the frequency of monitoring

Parameter	Frequency	Method of measurement	Method of recording
NOx (lb/MMBtu)	continuous	CEMs	Data Acquisition and Handling System
NOx (lb/hr)	continuous	CEMs	Data Acquisition and Handling System
SO2 (lb/MMBtu_	continuous	CEMs	Data Acquisition and Handling System
SO2 (lb/hr)	continuous	CEMs	Data Acquisition and Handling System
Hg	weekly	Sorbent Trap System	Data Acquisition and Handling System
Particulate	continuous	CEMs	Data Acquisition and Handling System
CO2	continuous	CEMs	Data Acquisition and Handling System
Heat Input	continuous	CEMs	Data Acquisition and Handling System
Opacity	weekly	Method 9	Manual
Flow	continuous	CEMs	Data Acquisition and Handling System
Moisture	continuous	Moisture Lookup Table	Data Acquisition and Handling System

Describe any monitors in use, including manufacturer, model #, frequency of calibration, and location

Monitor Identification	Manufacturer	Model	Calibration Frequency	Location	Other Info
201	Thermo	410I	Daily	S33	
203	Thermo	42I	Daily	S33	
209	Cemtek	EPM	Daily	S33	
206	Thermo	43I	Daily	S33	
251	M&C	STS-051SS	Weekly	S33	
252	M&C	STS-051SS	Weekly	S33	
207	Sick	100PR	Daily	S33	
281	Sick-Maihak	FWE200DH	Daily	S33	

Are any of these Continuous Emission monitors? ☒ Yes ☐ No

Pollutants monitored (check all that apply):

- ☒ Particulates (PM)
- ☐ Metals (specify:)
- ☐ Volatiles (VOC)
- ☐ HAP/TAC (specify:)
- ☒ Nitrogen oxides (NO_x)
- ☒ Sulfur dioxide (SO_2)
- ☒ Other: Hg

Attach manufacturer's specification sheets, or complete the following**:**	
Will multiple emission processes be monitored at the same location?	☒ Yes ☐ No
Which emission processes are monitored?	E1,E3
Will more than one emission process be emitting from the combined stack at any time?	☒ Yes ☐ No
Which emission processes emit simultaneously?	EU1,EU2

Monitoring and Alarm Information

Describe the System Alarm(s): See Attached "System Exceptions" Sheer

If there are more than three alarms, attach additional copies of this page as needed.

Operating Parameter Monitored	Describe Alarm Trigger	Monitoring Device or Alarm Type	Does the Alarm Initiate an Automated Response?
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:

Emission Tests

List any emission measurement tests (stack tests) that have been performed in the past and attach a copy of the test reports:

Test Purpose: MC12 Control Efficiency Test	Test date: 6/4-8/2015
Test Purpose:	Test date:

Louisville Metro Air Pollution Control District

Permit Application and Renewal
Form AP-100J

Compliance Monitoring

Deliver application to:
701 W. Ormsby Ave.Suite 303
Louisville, KY 40203

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Emission Process/Point Name:	EGU – Unit 3	Emission Process/Point:	E5,E6
Date of submission:	1/24/2019		

Monitoring Definition

List the operational parameters that are monitored and the frequency of monitoring

Parameter	Frequency	Method of measurement	Method of recording
NOx (lb/MMBtu)	continuous	CEMs	Data Acquisition and Handling System
NOx (lb/hr)	continuous	CEMs	Data Acquisition and Handling System
SO2 (lb/MMBtu_	continuous	CEMs	Data Acquisition and Handling System
SO2 (lb/hr)	continuous	CEMs	Data Acquisition and Handling System
Hg	weekly	Sorbent Trap System	Data Acquisition and Handling System
Particulate	continuous	CEMs	Data Acquisition and Handling System
CO2	continuous	CEMs	Data Acquisition and Handling System
Heat Input	continuous	CEMs	Data Acquisition and Handling System
Opacity	weekly	Method 9	Manual
Flow	continuous	CEMs	Data Acquisition and Handling System
Moisture	continuous	Moisture Lookup Table	Data Acquisition and Handling System

Describe any monitors in use, including manufacturer, model #, frequency of calibration, and location

Monitor Identification	Manufacturer	Model	Calibration Frequency	Location	Other Info
301	Thermo	410I	Daily	S4	
303	Thermo	42I	Daily	S4	
309	Cemtek	EPM	Daily	S4	
306	Thermo	43I	Daily	S4	
351	M&C	STS-051SS	Weekly	S4	
352	M&C	STS-051SS	Weekly	S4	
307	Sick	100PR	Daily	S4	
381	Sick-Maihak	FWE200DH	Daily	S4	

Are any of these Continuous Emission monitors? ☒ Yes ☐ No

Pollutants monitored (check all that apply):

- ☒ Particulates (PM)
- ☐ Metals (specify:)
- ☐ Volatiles (VOC)
- ☐ HAP/TAC (specify:)
- ☒ Nitrogen oxides (NO_x)
- ☒ Sulfur dioxide (SO_2)
- ☒ Other: Hg

Attach manufacturer's specification sheets, or complete the following**:**		
Will multiple emission processes be monitored at the same location?	☐ Yes	☒ No
Which emission processes are monitored?		
Will more than one emission process be emitting from the combined stack at any time?	☐ Yes	☒ No
Which emission processes emit simultaneously?		

Monitoring and Alarm Information

Describe the System Alarm(s): See Attached "System Exceptions" Sheer

If there are more than three alarms, attach additional copies of this page as needed.

Operating Parameter Monitored	Describe Alarm Trigger	Monitoring Device or Alarm Type	Does the Alarm Initiate an Automated Response?
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:

Emission Tests

List any emission measurement tests (stack tests) that have been performed in the past and attach a copy of the test reports:

Test Purpose:	MC3 SAM test	Test date:	9/3/16
Test Purpose:	MC3 Control Efficiency Test	Test date:	6/29-30/2016; 7/1-2/2016

Louisville Metro Air Pollution Control District

Permit Application and Renewal
Form AP-100J

Compliance Monitoring

Deliver application to:
701 W. Ormsby Ave.Suite 303
Louisville, KY 40203

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Emission Process/Point Name:	EGU – Unit 4	Emission Process/Point:	E7,E8
Date of submission:	1/24/2019		

Monitoring Definition

List the operational parameters that are monitored and the frequency of monitoring

Parameter	Frequency	Method of measurement	Method of recording
NOx (lb/MMBtu)	continuous	CEMs	Data Acquisition and Handling System
NOx (lb/hr)	continuous	CEMs	Data Acquisition and Handling System
SO2 (lb/MMBtu_	continuous	CEMs	Data Acquisition and Handling System
SO2 (lb/hr)	continuous	CEMs	Data Acquisition and Handling System
Hg	weekly	Sorbent Trap System	Data Acquisition and Handling System
Particulate	continuous	CEMs	Data Acquisition and Handling System
CO2	continuous	CEMs	Data Acquisition and Handling System
Heat Input	continuous	CEMs	Data Acquisition and Handling System
Opacity	weekly	Method 9	Manual
Flow	continuous	CEMs	Data Acquisition and Handling System
Moisture	continuous	Moisture Lookup Table	Data Acquisition and Handling System

Describe any monitors in use, including manufacturer, model #, frequency of calibration, and location

Monitor Identification	Manufacturer	Model	Calibration Frequency	Location	Other Info
401	Thermo	410I	Daily	S34	
403	Thermo	42I	Daily	S34	
409	Cemtek	EPM	Daily	S34	
406	Thermo	43I	Daily	S34	
451	M&C	STS-051SS	Weekly	S34	
452	M&C	STS-051SS	Weekly	S34	
407	Sick	100PR	Daily	S34	
481	Sick-Maihak	FWE200DH	Daily	S34	

Are any of these Continuous Emission monitors? ☒ Yes ☐ No

Pollutants monitored (check all that apply):

- ☒ Particulates (PM)
- ☐ Metals (specify:)
- ☐ Volatiles (VOC)
- ☐ HAP/TAC (specify:)
- ☒ Nitrogen oxides (NO_x)
- ☒ Sulfur dioxide (SO_2)
- ☒ Other: Hg

Attach manufacturer's specification sheets, or complete the following**:**		
Will multiple emission processes be monitored at the same location?	☐ Yes	☒ No
Which emission processes are monitored?		
Will more than one emission process be emitting from the combined stack at any time?	☐ Yes	☒ No
Which emission processes emit simultaneously?		

Monitoring and Alarm Information

Describe the System Alarm(s): See Attached "System Exceptions" Sheer

If there are more than three alarms, attach additional copies of this page as needed.

Operating Parameter Monitored	Describe Alarm Trigger	Monitoring Device or Alarm Type	Does the Alarm Initiate an Automated Response?
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:

Emission Tests

List any emission measurement tests (stack tests) that have been performed in the past and attach a copy of the test reports:

Test Purpose:	MC4 SAM Test	Test date:	7/22/2015
Test Purpose:	MC4 Control Efficiency Test	Test date:	1/20-22/2015; 2/5-6/2015

ECMPS Client Tool

Version 1.0 2018 Q1

Monitoring Plan Printout Report

June 15, 2018 01:48 PM

Facility Name: Mill Creek

Facility Details

Facility ID (ORISPL):	1364
Monitoring Plan Location IDs:	CS12, 1, 2
State:	KY
County:	Jefferson County
Latitude:	38.0531
Longitude:	-85.9100

Reporting Frequency

Monitoring Plan Location IDs	Reporting Frequency	Begin Quarter	End Quarter
CS12, 1, 2	Q - Quarterly	2015 QTR 2	

Stacks and Pipes

Stack/Pipe Identifier	Activation Date	Retirement Date	Bypass Stack	Unit to Stack/Pipe Relationship		
				Associated Units	Begin Date	End Date
CS12	04/01/2015			1	04/01/2015	
				2	04/01/2015	

Monitoring Location Attributes

Unit/Stack/Pipe Identifier	Duct Indicator	Ground Elevation	Stack Height	Cross Area Exit	Cross Area Flow	Material Code	Shape Code	Begin Date	End Date
CS12		447	615	616	616	OTHER	ROUND	04/01/2015	

Unit Operation Information

Unit Identifier	Non-Load Based Ind	Commence Commercial Operation Date	Commence Operation Date	Boiler/Turbine Type			Max Heat Input		
				Code	Begin Date	End Date	Value (mmBtu)	Begin Date	End Date
1		07/11/1972	07/11/1972	T	07/11/1972		3700.0	04/01/2015	
2		06/11/1974	06/11/1974	T	06/11/1974		3700.0	04/01/2015	

Unit Type Codes: T - Tangentially-fired

Facility Name: Mill Creek

Facility ID (ORISPL): 1364

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Unit Program Information

Unit Identifier	Program Code	Unit Class	Unit Monitor Certification Begin Date	Unit Monitor Certification Deadline
1	ARP	P2	01/01/1995	01/01/1995
	CSNOX	A	01/01/2015	01/01/2015
	CSOSG2	A	05/01/2017	05/01/2017
	CSSO2G1	A	01/01/2015	01/01/2015
	MATS	A	01/01/2015	09/13/2016
2	ARP	P2	01/01/1995	01/01/1995
	CSNOX	A	01/01/2015	01/01/2015
	CSOSG2	A	05/01/2017	05/01/2017
	CSSO2G1	A	01/01/2015	01/01/2015
	MATS	A	01/01/2015	09/13/2016

Unit Fuel

Unit Identifier	Fuel Type	Fuel Indicator	Demonstration Method for GCV	Demonstration Method for Daily Sulfur	Ozone Season Indicator	Begin Date	End Date
1	C	P				11/15/1993	
	PNG	I				11/15/1993	
2	C	P				11/15/1993	
	PNG	I				11/15/1993	

Fuel Type Codes: PNG - Pipeline Natural Gas
C - Coal

Fuel Indicator Codes: P - Primary
I - Ignition (Startup)

Facility Name: Mill Creek

Facility ID (ORISPL): 1364

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Unit Controls

Unit Identifier	Parameter	Control Equipment	Original Ind	Seasonal Ind	Installation Date	Optimization Date	Retirement Date
1	HG	APAC			04/16/2016		
	PART	B			05/15/2015		
	PART	ESP	Y				
	NOX	LNC2			04/01/1996		
	HG	UPAC			04/16/2016		
	SO2	WLS	Y				
2	HG	APAC			04/16/2016		
	PART	B			04/01/2015		
	PART	ESP	Y				
	NOX	LNC2			04/01/1997		
	HG	UPAC			04/16/2016		
	SO2	WLS	Y				

Control Equipment Descriptions:

WLS - Wet Limestone
UPAC - Untreated PAC Sorbent Injection
LNC2 - Low NOx Burner Technology w/ Separated OFA
ESP - Electrostatic Precipitator
B - Baghouse
APAC - Additives to Enhance PAC and Existing Equipment Performance

Facility Name: Mill Creek

Facility ID (ORISPL): 1364

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Monitoring Method

Unit/Stack/Pipe Identifier	Parameter	Methodology	Substitute Data Approach	Bypass Approach Code	Begin Date/Hour	End Date/Hour
CS12	CO2	CEM	SPTS		04/01/2015 00	
	H2O	MTB	REV75		08/02/2016 14	
	HGRE	ST			08/02/2016 14	
	HI	CEM	SPTS		04/01/2015 00	
	NOX	NOXR			04/01/2015 00	
	NOXR	CEM	SPTS		04/01/2015 00	
	SO2	CEM	SPTS		04/01/2015 00	
	SO2RH	CEM			04/16/2016 00	
1	HI	CALC			04/01/2015 00	
	OP	EXP			01/01/2007 00	
2	HI	CALC			04/01/2015 00	
	OP	EXP			01/01/2007 00	

Parameter Codes:
SO2RH - SO2 Heat Input Based Hourly Emission Rate (lb/mmBtu)
SO2 - SO2 Hourly Mass Rate (lb/hr)
OP - Opacity
NOXR - NOx Emission Rate (lb/mmBtu)
NOX - NOx Hourly Mass Rate (lb/hr)
HI - Heat Input Rate (mmBtu/hr)
HGRE - Hg Electrical Output Based Emission Rate
H2O - Moisture Percentage (pct)
CO2 - CO2 Hourly Mass Rate (ton/hr)

Methodology Codes:
ST - Sorbent Trap Monitoring System
NOXR - NOx Mass Calculated from NOx Emission Rate
MTB - Moisture Lookup Table
EXP - Exempt
CEM - Continuous Emission Monitor
CALC - Apportioned or Summed Value

Substitute Data Codes:
SPTS - Standard Part 75 for Missing Data
REV75 - Inverse Part 75 for H2O or O2 Missing Data

Facility Name: Mill Creek

Facility ID (ORISPL): 1364

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MATS Supplemental Monitoring Method

Unit/Stack/Pipe Identifier	Parameter	Methodology	Begin Date/Hour	End Date/Hour
CS12	TNHGM	PMCEMS	04/16/2016 00	

Parameter Codes: TNHGM - Total non-Hg HAP Metals

Methodology Codes: PMCEMS - Particulate Matter Continuous Monitoring System

Monitoring System / Analytical Components

Unit/Stack /Pipe Identifier	System					Component									
	ID	Type	Des	Begin Date/Hour	End Date/Hour	ID	Type	SAM	BAS	Manufacturer	Model or Version	Serial Number	Begin Date/Hour	End Date/Hour	Hg Converter Indicator
CS12	210	NOX	P	04/01/2015 00		008	DAHS			ESC	STACKVISION		04/01/2015 00		
						201	CO2	DIN	W	THERMO	410I	1417161682	04/01/2015 00		
						203	NOX	DIN	W	THERMO	42I	141662358	04/01/2015 00		
						209	PRB	DIN		CEMTEK	EPM	NA	04/01/2015 00		
	230	CO2	P	04/01/2015 00		008	DAHS			ESC	STACKVISION		04/01/2015 00		
						201	CO2	DIN	W	THERMO	410I	1417161682	04/01/2015 00		
						209	PRB	DIN		CEMTEK	EPM	NA	04/01/2015 00		
	240	SO2	P	04/01/2015 00		008	DAHS			ESC	STACKVISION		04/01/2015 00		
						209	PRB	DIN		CEMTEK	EPM	NA	04/01/2015 00		
						216	SO2	DIN	W	THERMO	43I	1150930034	05/23/2015 09		
	250	ST	P	08/02/2016 14		008	DAHS			ESC	STACKVISION		08/02/2016 14		
						251	STRAIN	ADSP	D	M&C	STS-051SS	106592	08/02/2016 14		
						252	STRAIN	ADSP	D	M&C	STS-051SS	106593	08/02/2016 14		
	270	FLOW	P	04/01/2015 00		008	DAHS			ESC	STACKVISION		04/01/2015 00		
						207	FLOW	U	W	SICK	100PR	14108307	04/01/2015 00		
	280	PM	P	07/21/2016 16		008	DAHS			ESC	STACKVISION		07/21/2016 16		
						281	PM	O		SICK-MAIHAK	FWE200DH	14408511	07/21/2016 16		
	290	H2OT	P	04/16/2016 00		008	DAHS			ESC	STACKVISION		04/16/2016 00		

Facility Name: Mill Creek

Facility ID (ORISPL): 1364

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System Types Descriptions:
NOX - NOx Emission Rate
CO2 - CO2 Concentration
SO2 - SO2 Concentration
ST - Sorbent Trap Monitoring System
FLOW - Stack Flow
PM - Particulate Matter
H2OT - Moisture Table

System Designations Descriptions:
P - Primary

Sample Acquisition Method (SAM):
U - Ultrasonic
O - Other
DIN - Dilution In-Stack
ADSP - Hg Adsorption on Sorbent Medium

Component Types Descriptions:
DAHS - Data Acquisition and Handling System
CO2 - CO2 Concentration
NOX - NOx Concentration
PRB - Probe
SO2 - SO2 Concentration
STRAIN - Sorbent Trap Sampling Train Component, consisting of a sample gas flow meter and the associated sorbent trap
FLOW - Stack Flow Analyzer
PM - Particulate Matter

Analyzer Range Data

Unit/Stack/Pipe Identifier	Component Type	Component ID	Range Code	Dual Range Indicator	Begin Date/Hour	End Date/Hour
CS12	CO2	201	High Range		04/01/2015 00	
	NOX	203	High Range		04/01/2015 00	
	SO2	216	Auto Ranging	Y	05/23/2015 09	

Component Types Descriptions:
CO2 - CO2 Concentration
NOX - NOx Concentration
SO2 - SO2 Concentration

Facility Name: Mill Creek

Facility ID (ORISPL): 1364

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Emissions Formulas

Unit/Stack/Pipe Identifier	Parameter	Formula ID	Formula Code	Formula	Begin Date/Hour	End Date/Hour
1	HI	502	F-21A		04/01/2015 00	
2	HI	502	F-21A		04/01/2015 00	
CS12	NOX	064	F-24A		04/01/2015 00	
	SO2	101	F-1		04/01/2015 00	
	HGRE	107	A-3		08/02/2016 14	
	SO2RH	108	19-7		04/16/2016 00	
	NOXR	201	F-6		04/01/2015 00	
	CO2	307	F-11		04/01/2015 00	
	HI	501	F-15		04/01/2015 00	

Parameter Codes Descriptions:

HI - Heat Input Rate (mmBtu/hr)
NOX - NOx Hourly Mass Rate (lb/hr)
SO2 - SO2 Hourly Mass Rate (lb/hr)
HGRE - Hg Electrical Output Based Emission Rate
SO2RH - SO2 Heat Input Based Hourly Emission Rate (lb/mmBtu)
NOXR - NOx Emission Rate (lb/mmBtu)
CO2 - CO2 Hourly Mass Rate (ton/hr)

Formula Codes Descriptions:

F-6 - NOXR/SO2R (from NOX or SO2 wet, CO2 wet, Fc)
F-24A - NOX (from NOX rate, HI)
F-21A - HI (apportioned from HI for common stack/pipe by MWe)
F-15 - HI (from wet CO2, flow, Fc)
F-11 - CO2 (from CO2 wet, flow)
F-1 - SO2 (from SO2 wet, flow)
A-3 - HGRE (lb/hr dry)
19-7 - NOXR/SO2R (same as F-6)

Facility Name: Mill Creek

Facility ID (ORISPL): 1364

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Span Values

Unit/Stack /Pipe Identifier	Comp Type	Scale	Method	MPC/ MPF	MEC	Span Value	Full-Scale Range	Units of Measure	Scale Transition Point	Def. High Range Value	Flow Full Range (SCFH)	Flow Span Value (SCFH)	Begin Date/Hour	End Date/Hour
CS12	CO2	H	TB	14.0		20.000	20.000	PCT					04/01/2015 00	
	FLOW		HD	120000000		120000000.000	120000000.000	SCFH			120000000	120000000	04/01/2015 00	
	NOX	H	HD	258.0		400.000	400.000	PPM					05/14/2018 09	
	SO2	H	HD	2265.0	38.0	2300.000	2300.000	PPM	95.0				05/14/2018 09	
	SO2	L	HD		38.0	100.000	100.000	PPM	95.0				06/29/2016 08	

Component Types Descriptions:
CO2 - CO2 Concentration
FLOW - Stack Flow Analyzer
NOX - NOx Concentration
SO2 - SO2 Concentration

Span Method Codes Descriptions:
TB - Table Defaults from Part 75 or 40 CFR Part 63, Subpart UUUUU, Appendix A
HD - Historical Data

Units of Measure Descriptions:
SCFH - Standard Cubic Feet / Hour
PPM - Parts per Million
PCT - Percentage

Unit/Stack/Pipe Load or Operating Level Information

Unit/Stack/Pipe Identifier	Maximum Hourly Load	Units of Measure	Upper Bound of Range of Operation	Lower Bound of Range of Operation	Designated Normal Op. Level	Second Most Frequently Used Op. Level	Second Normal Indicator	Load Analysis Date	Begin Date/Hour	End Date/Hour
1	356	MW	356	100	High	Mid	No	01/01/2000	01/01/1995 00	
2	356	MW	356	100	High	Mid	No	01/01/2000	01/01/1995 00	
CS12	712	MW	712	100	High	Mid	No	01/01/2016	01/01/2016 00	

Units of Measure Descriptions:
MW - Megawatt

Facility Name: Mill Creek

Facility ID (ORISPL): 1364

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Monitoring Defaults

Unit/Stack/Pipe Identifier	Parameter	Value	Units of Measure	Purpose Code	Fuel Type	Operating Condition	Source of Value	Begin Date/Hour	End Date/Hour
CS12	CO2N	5.0000	PCT	DC	NFS	A	DEF	04/01/2015 00	
	H2ON	6.0000	PCT	MD	NFS	A	DATA	04/16/2016 00	
	NORX	0.6930	LBMMBTU	MD	NFS	A	DATA	01/01/2018 00	
	SO2X	2265.0000	PPM	MD	NFS	A	SAMP	01/01/2018 00	

Parameter Codes Descriptions:
SO2X - Maximum SO2 Concentration (ppm)
NORX - Maximum NOx Emission Rate (lb/mmBtu)
H2ON - Minimum Moisture (pct)
CO2N - CO2 Minimum Concentration (pct)

Units of Measure Descriptions:
PPM - Parts per Million
PCT - Percentage
LBMMBTU - Pounds / mmBtu

Purpose Codes Descriptions:
MD - Missing Data (or Unmonitored Bypass Stack or Emergency Fuel) Default
DC - Diluent Cap

Fuel Type Codes Descriptions:
NFS - Non-Fuel Specific

Operating Conditions Descriptions:
A - Any Hour

Source Codes Descriptions:
SAMP - Fuel Sampling
DEF - Default Value from Part 75
DATA - Historical or Other Relevant Data

ECMPS Client Tool

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Facility Name: Mill Creek

Facility Details

Facility ID (ORISPL):	1364
Monitoring Plan Location IDs:	3
State:	KY
County:	Jefferson County
Latitude:	38.0531
Longitude:	-85.9100

Reporting Frequency

Monitoring Plan Location IDs	Reporting Frequency	Begin Quarter	End Quarter
3	Q - Quarterly	1995 QTR 1	

Monitoring Location Attributes

Unit/Stack/Pipe Identifier	Duct Indicator	Ground Elevation	Stack Height	Cross Area Exit	Cross Area Flow	Material Code	Shape Code	Begin Date	End Date
3		460	600	299	299	OTHER	ROUND	06/04/2016	

Unit Operation Information

Unit Identifier	Non-Load Based Ind	Commence Commercial Operation Date	Commence Operation Date	Boiler/Turbine Type			Max Heat Input		
				Code	Begin Date	End Date	Value (mmBtu)	Begin Date	End Date
3		06/28/1978	06/28/1978	DB	06/28/1978		4400.0	07/01/2011	

Unit Type Codes: DB - Dry bottom wall-fired boiler

Unit Program Information

Unit Identifier	Program Code	Unit Class	Unit Monitor Certification Begin Date	Unit Monitor Certification Deadline
3	ARP	P2	01/01/1995	01/01/1995
	CSNOX	A	01/01/2015	01/01/2015
	CSOSG2	A	05/01/2017	05/01/2017
	CSSO2G1	A	01/01/2015	01/01/2015
	MATS	A	01/01/2015	09/13/2016

Facility Name: Mill Creek

Facility ID (ORISPL): 1364

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Unit Fuel

Unit Identifier	Fuel Type	Fuel Indicator	Demonstration Method for GCV	Demonstration Method for Daily Sulfur	Ozone Season Indicator	Begin Date	End Date
3	C	P				11/15/1993	
	PNG	I				04/01/2002	

Fuel Type Codes:
PNG - Pipeline Natural Gas
C - Coal

Fuel Indicator Codes:
P - Primary
I - Ignition (Startup)

Unit Controls

Unit Identifier	Parameter	Control Equipment	Original Ind	Seasonal Ind	Installation Date	Optimization Date	Retirement Date
3	HG	APAC			06/04/2016		
	PART	B	Y				
	PART	ESP	Y				
	NOX	LNB			04/01/2002		
	NOX	SCR			06/26/2003	05/28/2004	
	HG	UPAC			06/04/2016		
	SO2	WLS	Y				
	PART	WS	Y				

Control Equipment Descriptions:
WS - Wet Scrubber
WLS - Wet Limestone
UPAC - Untreated PAC Sorbent Injection
SCR - Selective Catalytic Reduction
LNB - Low NOx Burner Technology (Dry Bottom only)
ESP - Electrostatic Precipitator
B - Baghouse
APAC - Additives to Enhance PAC and Existing Equipment Performance

Facility Name: Mill Creek

Facility ID (ORISPL): 1364

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Monitoring Method

Unit/Stack/Pipe Identifier	Parameter	Methodology	Substitute Data Approach	Bypass Approach Code	Begin Date/Hour	End Date/Hour
3	CO2	CEM	SPTS		01/01/1995 00	
	H2O	MTB	REV75		08/03/2016 18	
	HGRE	ST			08/03/2016 18	
	HI	CEM	SPTS		01/01/1995 00	
	NOX	NOXR			04/01/2003 00	
	NOXR	CEM	OZN75		01/01/1995 00	
	OP	EXP			01/01/2007 00	
	SO2	CEM	SPTS		01/01/1995 00	
	SO2RH	CEM			04/16/2016 00	

Parameter Codes:
SO2RH - SO2 Heat Input Based Hourly Emission Rate (lb/mmBtu)
SO2 - SO2 Hourly Mass Rate (lb/hr)
OP - Opacity
NOXR - NOx Emission Rate (lb/mmBtu)
NOX - NOx Hourly Mass Rate (lb/hr)
HI - Heat Input Rate (mmBtu/hr)
HGRE - Hg Electrical Output Based Emission Rate
H2O - Moisture Percentage (pct)
CO2 - CO2 Hourly Mass Rate (ton/hr)

Methodology Codes:
ST - Sorbent Trap Monitoring System
NOXR - NOx Mass Calculated from NOx Emission Rate
MTB - Moisture Lookup Table
EXP - Exempt
CEM - Continuous Emission Monitor

Substitute Data Codes:
SPTS - Standard Part 75 for Missing Data
REV75 - Inverse Part 75 for H2O or O2 Missing Data
OZN75 - Ozone vs Non-Ozone NOX Missing Data

MATS Supplemental Monitoring Method

Unit/Stack/Pipe Identifier	Parameter	Methodology	Begin Date/Hour	End Date/Hour
3	TNHGM	PMCEMS	04/16/2016 00	

Parameter Codes: TNHGM - Total non-Hg HAP Metals

Methodology Codes: PMCEMS - Particulate Matter Continuous Monitoring System

Facility Name: Mill Creek

Facility ID (ORISPL): 1364

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Monitoring System / Analytical Components

Unit/Stack /Pipe Identifier	System					Component									
	ID	Type	Des	Begin Date/Hour	End Date/Hour	ID	Type	SAM	BAS	Manufacturer	Model or Version	Serial Number	Begin Date/Hour	End Date/Hour	Hg Converter Indicator
3	310	NOX	P	06/03/2016 19		008	DAHS			ESC	STACKVISION	7977AC1-KQLYR95	06/03/2016 19		
						301	CO2	DIN	W	THERMO	410I	1150930036	06/03/2016 19		
						303	NOX	DIN	W	THERMO	42I	1150930033	06/03/2016 19		
						309	PRB	DIN		CEMTEK	EPM	TBD	06/03/2016 19		
	330	CO2	P	06/03/2016 19		008	DAHS			ESC	STACKVISION	7977AC1-KQLYR95	06/03/2016 19		
						301	CO2	DIN	W	THERMO	410I	1150930036	06/03/2016 19		
						309	PRB	DIN		CEMTEK	EPM	TBD	06/03/2016 19		
	340	SO2	P	06/03/2016 19		008	DAHS			ESC	STACKVISION	7977AC1-KQLYR95	06/03/2016 19		
						306	SO2	DIN	W	THERMO	43I	1150930035	06/03/2016 19		
						309	PRB	DIN		CEMTEK	EPM	TBD	06/03/2016 19		
	350	ST	P	08/03/2016 18		008	DAHS			ESC	STACKVISION	7977AC1-KQLYR95	08/03/2016 18		
						351	STRAIN	ADSP	D	M&C	STS-051SS	115725	08/03/2016 18		
						352	STRAIN	ADSP	D	M&C	STS-051SS	115730	08/03/2016 18		
	370	FLOW	P	06/03/2016 19		008	DAHS			ESC	STACKVISION	7977AC1-KQLYR95	06/03/2016 19		
						307	FLOW	U	W	SICK	100PR	15188425	06/03/2016 19		
	380	PM	P	08/11/2016 12		008	DAHS			ESC	STACKVISION	7977AC1-KQLYR95	08/11/2016 12		
						381	PM	O		SICK-MAIHAK	FWE200DH	15128414	08/11/2016 12		
	390	H2OT	P	04/16/2016 00		008	DAHS			ESC	STACKVISION	7977AC1-KQLYR95	04/16/2016 00		

Facility Name: Mill Creek

Facility ID (ORISPL): 1364

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System Types Descriptions:
NOX - NOx Emission Rate
CO2 - CO2 Concentration
SO2 - SO2 Concentration
ST - Sorbent Trap Monitoring System
FLOW - Stack Flow
PM - Particulate Matter
H2OT - Moisture Table

System Designations Descriptions:
P - Primary

Sample Acquisition Method (SAM):
U - Ultrasonic
O - Other
DIN - Dilution In-Stack
ADSP - Hg Adsorption on Sorbent Medium

Component Types Descriptions:
DAHS - Data Acquisition and Handling System
CO2 - CO2 Concentration
NOX - NOx Concentration
PRB - Probe
SO2 - SO2 Concentration
STRAIN - Sorbent Trap Sampling Train Component, consisting of a sample gas flow meter and the associated sorbent trap
FLOW - Stack Flow Analyzer
PM - Particulate Matter

Analyzer Range Data

Unit/Stack/Pipe Identifier	Component Type	Component ID	Range Code	Dual Range Indicator	Begin Date/Hour	End Date/Hour
3	CO2	301	High Range		06/03/2016 19	
	NOX	303	Auto Ranging	Y	06/03/2016 19	
	SO2	306	Auto Ranging	Y	06/03/2016 19	

Component Types Descriptions:
CO2 - CO2 Concentration
NOX - NOx Concentration
SO2 - SO2 Concentration

Facility Name: **Mill Creek**

Facility ID (ORISPL): **1364**

Monitoring Plan Printout Report

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Emissions Formulas

Unit/Stack/Pipe Identifier	Parameter	Formula ID	Formula Code	Formula	Begin Date/Hour	End Date/Hour
3	NOX	064	F-24A	F#(201) X F#(501) X T_3	04/01/2003 00	
	SO2	101	F-1	(1.66 X 10e-7) TIMES (S#006-140) TIMES (S#007-170)	01/01/1995 00	
	HGRE	107	A-3		08/03/2016 18	
	SO2RH	108	19-7		04/16/2016 00	
	NOXR	201	F-6		01/01/1995 00	
	CO2	307	F-11	(5.7 X 10e-7) TIMES (S#001-130) TIMES (S#007-170)	01/01/1995 00	
	HI	501	F-15	(S#007-170) TIMES (1/1800) TIMES ((S#001-130) / 100)	01/01/1995 00	

Parameter Codes Descriptions:

NOX - NOx Hourly Mass Rate (lb/hr)
SO2 - SO2 Hourly Mass Rate (lb/hr)
HGRE - Hg Electrical Output Based Emission Rate
SO2RH - SO2 Heat Input Based Hourly Emission Rate (lb/mmBtu)
NOXR - NOx Emission Rate (lb/mmBtu)
CO2 - CO2 Hourly Mass Rate (ton/hr)
HI - Heat Input Rate (mmBtu/hr)

Formula Codes Descriptions:

F-6 - NOXR/SO2R (from NOX or SO2 wet, CO2 wet, Fc)
F-24A - NOX (from NOX rate, HI)
F-15 - HI (from wet CO2, flow, Fc)
F-11 - CO2 (from CO2 wet, flow)
F-1 - SO2 (from SO2 wet, flow)
A-3 - HGRE (lb/hr dry)
19-7 - NOXR/SO2R (same as F-6)

Facility Name: Mill Creek

Facility ID (ORISPL): 1364

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Span Values

Unit/Stack /Pipe Identifier	Comp Type	Scale	Method	MPC/ MPF	MEC	Span Value	Full-Scale Range	Units of Measure	Scale Transition Point	Def. High Range Value	Flow Full Range (SCFH)	Flow Span Value (SCFH)	Begin Date/Hour	End Date/Hour
3	CO2	H	TB	14.0		20.000	20.000	PCT					01/01/1995 00	
	FLOW		HD	75000000		90000000.000	90000000.000	SCFH			90000000	90000000	04/01/2013 00	
	NOX	H	HD	258.0	50.0	400.000	400.000	PPM	95.0				05/14/2018 11	
	NOX	L	HD		50.0	100.000	100.000	PPM	95.0				05/12/2016 00	
	SO2	H	HD	2155.0	38.0	2300.000	2300.000	PPM	95.0				05/14/2018 11	
	SO2	L	HD		38.0	100.000	100.000	PPM	95.0				05/12/2016 00	

Component Types Descriptions:
CO2 - CO2 Concentration
FLOW - Stack Flow Analyzer
NOX - NOx Concentration
SO2 - SO2 Concentration

Span Method Codes Descriptions:
TB - Table Defaults from Part 75 or 40 CFR Part 63, Subpart UUUUU, Appendix A
HD - Historical Data

Units of Measure Descriptions:
SCFH - Standard Cubic Feet / Hour
PPM - Parts per Million
PCT - Percentage

Unit/Stack/Pipe Load or Operating Level Information

Unit/Stack/Pipe Identifier	Maximum Hourly Load	Units of Measure	Upper Bound of Range of Operation	Lower Bound of Range of Operation	Designated Normal Op. Level	Second Most Frequently Used Op. Level	Second Normal Indicator	Load Analysis Date	Begin Date/Hour	End Date/Hour
3	470	MW	470	200	High	Mid	No	01/01/2000	01/01/1995 00	

Units of Measure Descriptions: MW - Megawatt

Facility Name: Mill Creek

Facility ID (ORISPL): 1364

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Monitoring Defaults

Unit/Stack/Pipe Identifier	Parameter	Value	Units of Measure	Purpose Code	Fuel Type	Operating Condition	Source of Value	Begin Date/Hour	End Date/Hour
3	CO2N	5.0000	PCT	DC	NFS	A	DEF	04/01/2000 00	
	H2ON	6.0000	PCT	MD	NFS	A	DATA	04/16/2016 00	
	NORX	0.3330	LBMMBTU	MD	NFS	C	DATA	01/01/2018 00	
	NORX	0.5530	LBMMBTU	MD	NFS	U	DATA	01/01/2018 00	
	SO2X	2155.0000	PPM	MD	NFS	A	SAMP	01/01/2018 00	

Parameter Codes Descriptions:
SO2X - Maximum SO2 Concentration (ppm)
NORX - Maximum NOx Emission Rate (lb/mmBtu)
H2ON - Minimum Moisture (pct)
CO2N - CO2 Minimum Concentration (pct)

Units of Measure Descriptions:
PPM - Parts per Million
PCT - Percentage
LBMMBTU - Pounds / mmBtu

Purpose Codes Descriptions:
MD - Missing Data (or Unmonitored Bypass Stack or Emergency Fuel) Default
DC - Diluent Cap

Fuel Type Codes Descriptions:
NFS - Non-Fuel Specific

Operating Conditions Descriptions:
U - Uncontrolled Hour
C - Controlled Hour
A - Any Hour

Source Codes Descriptions:
SAMP - Fuel Sampling
DEF - Default Value from Part 75
DATA - Historical or Other Relevant Data

ECMPS Client Tool

Version 1.0 2018 Q1

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Facility Name: Mill Creek

Facility Details

Facility ID (ORISPL):	1364
Monitoring Plan Location IDs:	4
State:	KY
County:	Jefferson County
Latitude:	38.0531
Longitude:	-85.9100

Reporting Frequency

Monitoring Plan Location IDs	Reporting Frequency	Begin Quarter	End Quarter
4	Q - Quarterly	1995 QTR 1	

Monitoring Location Attributes

Unit/Stack/Pipe Identifier	Duct Indicator	Ground Elevation	Stack Height	Cross Area Exit	Cross Area Flow	Material Code	Shape Code	Begin Date	End Date
4		447	600	491	491	OTHER	ROUND	10/01/2014	

Unit Operation Information

Unit Identifier	Non-Load Based Ind	Commence Commercial Operation Date	Commence Operation Date	Boiler/Turbine Type			Max Heat Input		
				Code	Begin Date	End Date	Value (mmBtu)	Begin Date	End Date
4		07/15/1982	07/15/1982	DB	07/15/1982		5500.0	07/01/2011	

Unit Type Codes: DB - Dry bottom wall-fired boiler

Unit Program Information

Unit Identifier	Program Code	Unit Class	Unit Monitor Certification Begin Date	Unit Monitor Certification Deadline
4	ARP	P2	01/01/1995	01/01/1995
	CSNOX	A	01/01/2015	01/01/2015
	CSOSG2	A	05/01/2017	05/01/2017
	CSSO2G1	A	01/01/2015	01/01/2015
	MATS	A	01/01/2015	09/13/2016

Facility Name: Mill Creek

Facility ID (ORISPL): 1364

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Unit Fuel

Unit Identifier	Fuel Type	Fuel Indicator	Demonstration Method for GCV	Demonstration Method for Daily Sulfur	Ozone Season Indicator	Begin Date	End Date
4	C	P				09/15/1982	
	PNG	I				12/01/2001	

Fuel Type Codes:
PNG - Pipeline Natural Gas
C - Coal

Fuel Indicator Codes:
P - Primary
I - Ignition (Startup)

Unit Controls

Unit Identifier	Parameter	Control Equipment	Original Ind	Seasonal Ind	Installation Date	Optimization Date	Retirement Date
4	HG	APAC			04/16/2016		
	PART	B			12/19/2014		
	PART	ESP	Y				
	NOX	LNB			12/01/2001		
	NOX	SCR			08/06/2003	10/15/2003	
	HG	UPAC			04/16/2016		
	SO2	WLS	Y				
	PART	WS	Y				

Control Equipment Descriptions:
WS - Wet Scrubber
WLS - Wet Limestone
UPAC - Untreated PAC Sorbent Injection
SCR - Selective Catalytic Reduction
LNB - Low NOx Burner Technology (Dry Bottom only)
ESP - Electrostatic Precipitator
B - Baghouse
APAC - Additives to Enhance PAC and Existing Equipment Performance

Facility Name: Mill Creek

Facility ID (ORISPL): 1364

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Monitoring Method

Unit/Stack/Pipe Identifier	Parameter	Methodology	Substitute Data Approach	Bypass Approach Code	Begin Date/Hour	End Date/Hour
4	CO2	CEM	SPTS		01/01/1995 00	
	H2O	MTB	REV75		08/02/2016 17	
	HGRE	ST			08/04/2016 17	
	HI	CEM	SPTS		01/01/1995 00	
	NOX	NOXR			04/01/2003 00	
	NOXR	CEM	OZN75		01/01/1995 00	
	OP	EXP			01/01/2007 00	
	SO2	CEM	SPTS		01/01/1995 00	
	SO2RH	CEM			04/16/2016 00	

Parameter Codes:
SO2RH - SO2 Heat Input Based Hourly Emission Rate (lb/mmBtu)
SO2 - SO2 Hourly Mass Rate (lb/hr)
OP - Opacity
NOXR - NOx Emission Rate (lb/mmBtu)
NOX - NOx Hourly Mass Rate (lb/hr)
HI - Heat Input Rate (mmBtu/hr)
HGRE - Hg Electrical Output Based Emission Rate
H2O - Moisture Percentage (pct)
CO2 - CO2 Hourly Mass Rate (ton/hr)

Methodology Codes:
ST - Sorbent Trap Monitoring System
NOXR - NOx Mass Calculated from NOx Emission Rate
MTB - Moisture Lookup Table
EXP - Exempt
CEM - Continuous Emission Monitor

Substitute Data Codes:
SPTS - Standard Part 75 for Missing Data
REV75 - Inverse Part 75 for H2O or O2 Missing Data
OZN75 - Ozone vs Non-Ozone NOX Missing Data

MATS Supplemental Monitoring Method

Unit/Stack/Pipe Identifier	Parameter	Methodology	Begin Date/Hour	End Date/Hour
4	TNHGM	PMCEMS	04/16/2016 00	

Parameter Codes: TNHGM - Total non-Hg HAP Metals

Methodology Codes: PMCEMS - Particulate Matter Continuous Monitoring System

Facility Name: Mill Creek

Facility ID (ORISPL): 1364

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Monitoring System / Analytical Components

Unit/Stack /Pipe Identifier	System					Component									
	ID	Type	Des	Begin Date/Hour	End Date/Hour	ID	Type	SAM	BAS	Manufacturer	Model or Version	Serial Number	Begin Date/Hour	End Date/Hour	Hg Converter Indicator
4	410	NOX	P	10/01/2014 00		008	DAHS			ESC	STACKVISION	7977AC1-KQLYR95	10/01/2014 00		
						401	CO2	DIN	W	THERMO	410I	1336159840	10/01/2014 00		
						403	NOX	DIN	W	THERMO	42I	1336159823	10/01/2014 00		
						409	PRB	DIN		CEMTEK	EPM	NA	10/01/2014 00		
	430	CO2	P	10/01/2014 00		008	DAHS			ESC	STACKVISION	7977AC1-KQLYR95	10/01/2014 00		
						401	CO2	DIN	W	THERMO	410I	1336159840	10/01/2014 00		
						409	PRB	DIN		CEMTEK	EPM	NA	10/01/2014 00		
	440	SO2	P	10/01/2014 00		008	DAHS			ESC	STACKVISION	7977AC1-KQLYR95	10/01/2014 00		
						406	SO2	DIN	W	THERMO	43I	JC1324500917	10/01/2014 00		
						409	PRB	DIN		CEMTEK	EPM	NA	10/01/2014 00		
	450	ST	P	08/04/2016 17		008	DAHS			ESC	STACKVISION	7977AC1-KQLYR95	08/04/2016 17		
						451	STRAIN	ADSP	D	M&C	STS-051SS	106585	08/04/2016 17		
						452	STRAIN	ADSP	D	M&C	STS-051SS	106586	08/04/2016 17		
	470	FLOW	P	10/01/2014 00		008	DAHS			ESC	STACKVISION	7977AC1-KQLYR95	10/01/2014 00		
						407	FLOW	U	W	SICK	100PR	13238557	10/01/2014 00		
	480	PM	P	07/28/2016 12		008	DAHS			ESC	STACKVISION	7977AC1-KQLYR95	07/28/2016 12		
						481	PM	O		SICK-MAIHAK	FWE200DH	14408510	07/28/2016 12		
	490	H2OT	P	04/16/2016 00		008	DAHS			ESC	STACKVISION	7977AC1-KQLYR95	04/16/2016 00		

Facility Name: Mill Creek

Facility ID (ORISPL): 1364

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System Types Descriptions:
NOX - NOx Emission Rate
CO2 - CO2 Concentration
SO2 - SO2 Concentration
ST - Sorbent Trap Monitoring System
FLOW - Stack Flow
PM - Particulate Matter
H2OT - Moisture Table

System Designations Descriptions:
P - Primary

Sample Acquisition Method (SAM):
U - Ultrasonic
O - Other
DIN - Dilution In-Stack
ADSP - Hg Adsorption on Sorbent Medium

Component Types Descriptions:
DAHS - Data Acquisition and Handling System
CO2 - CO2 Concentration
NOX - NOx Concentration
PRB - Probe
SO2 - SO2 Concentration
STRAIN - Sorbent Trap Sampling Train Component, consisting of a sample gas flow meter and the associated sorbent trap
FLOW - Stack Flow Analyzer
PM - Particulate Matter

Analyzer Range Data

Unit/Stack/Pipe Identifier	Component Type	Component ID	Range Code	Dual Range Indicator	Begin Date/Hour	End Date/Hour
4	CO2	401	High Range		10/01/2014 00	
	NOX	403	Auto Ranging	Y	10/01/2014 00	
	SO2	406	Auto Ranging	Y	10/01/2014 00	

Component Types Descriptions:
CO2 - CO2 Concentration
NOX - NOx Concentration
SO2 - SO2 Concentration

Facility Name: **Mill Creek**

Facility ID (ORISPL): **1364**

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Emissions Formulas

Unit/Stack/Pipe Identifier	Parameter	Formula ID	Formula Code	Formula	Begin Date/Hour	End Date/Hour
4	NOX	064	F-24A	F#(201) X F#(501) X T_4	04/01/2003 00	
	SO2	101	F-1	(1.66 X 10e-7) TIMES (S#006-140) TIMES (S#007-170)	01/01/1995 00	
	HGRE	107	A-3		08/04/2016 17	
	SO2RH	108	19-7		04/16/2016 00	
	NOXR	201	F-6	(1.194 X 10e-7) TIMES (S#003-110) TIMES (1800) TIMES (100 / (S#001-110))	01/01/1995 00	
	CO2	307	F-11	(5.7 X 10e-7) TIMES (S#001-130) TIMES (S#007-170)	01/01/1995 00	
	HI	501	F-15	(S#007-170) TIMES (1/1800) TIMES ((S#001-130) / 100)	01/01/1995 00	

Parameter Codes Descriptions:

NOX - NOx Hourly Mass Rate (lb/hr)
SO2 - SO2 Hourly Mass Rate (lb/hr)
HGRE - Hg Electrical Output Based Emission Rate
SO2RH - SO2 Heat Input Based Hourly Emission Rate (lb/mmBtu)
NOXR - NOx Emission Rate (lb/mmBtu)
CO2 - CO2 Hourly Mass Rate (ton/hr)
HI - Heat Input Rate (mmBtu/hr)

Formula Codes Descriptions:

F-6 - NOXR/SO2R (from NOX or SO2 wet, CO2 wet, Fc)
F-24A - NOX (from NOX rate, HI)
F-15 - HI (from wet CO2, flow, Fc)
F-11 - CO2 (from CO2 wet, flow)
F-1 - SO2 (from SO2 wet, flow)
A-3 - HGRE (lb/hr dry)
19-7 - NOXR/SO2R (same as F-6)

Facility Name: Mill Creek

Facility ID (ORISPL): 1364

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Span Values

Unit/Stack /Pipe Identifier	Comp Type	Scale	Method	MPC/ MPF	MEC	Span Value	Full-Scale Range	Units of Measure	Scale Transition Point	Def. High Range Value	Flow Full Range (SCFH)	Flow Span Value (SCFH)	Begin Date/Hour	End Date/Hour
4	CO2	H	TB	14.0		20.000	20.000	PCT					01/01/1995 00	
	FLOW		HD	96000000		120000000.000	120000000.000	SCFH			120000000	120000000	12/16/2008 14	
	NOX	H	HD	258.0	80.0	400.000	400.000	PPM	95.0				05/22/2018 09	
	NOX	L	HD		80.0	100.000	100.000	PPM	95.0				10/01/2014 00	
	SO2	H	HD	2080.0	38.0	2300.000	2300.000	PPM	95.0				05/22/2018 09	
	SO2	L	HD		38.0	100.000	100.000	PPM	95.0				06/29/2016 09	

Component Types Descriptions:
CO2 - CO2 Concentration
FLOW - Stack Flow Analyzer
NOX - NOx Concentration
SO2 - SO2 Concentration

Span Method Codes Descriptions:
TB - Table Defaults from Part 75 or 40 CFR Part 63, Subpart UUUUU, Appendix A
HD - Historical Data

Units of Measure Descriptions:
SCFH - Standard Cubic Feet / Hour
PPM - Parts per Million
PCT - Percentage

Unit/Stack/Pipe Load or Operating Level Information

Unit/Stack/Pipe Identifier	Maximum Hourly Load	Units of Measure	Upper Bound of Range of Operation	Lower Bound of Range of Operation	Designated Normal Op. Level	Second Most Frequently Used Op. Level	Second Normal Indicator	Load Analysis Date	Begin Date/Hour	End Date/Hour
4	540	MW	540	200	High	Mid	No	01/01/2000	01/01/1995 00	

Units of Measure Descriptions: MW - Megawatt

Facility Name: Mill Creek

Facility ID (ORISPL): 1364

Monitoring Plan Printout Report

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Monitoring Defaults

Unit/Stack/Pipe Identifier	Parameter	Value	Units of Measure	Purpose Code	Fuel Type	Operating Condition	Source of Value	Begin Date/Hour	End Date/Hour
4	CO2N	5.0000	PCT	DC	NFS	A	DEF	01/01/2000 00	
	H2ON	6.0000	PCT	MD	NFS	A	DATA	04/16/2016 00	
	NORX	0.3630	LBMMBTU	MD	NFS	C	DATA	01/01/2018 00	
	NORX	0.5340	LBMMBTU	MD	NFS	U	DATA	01/01/2018 00	
	SO2X	2080.0000	PPM	MD	NFS	A	SAMP	01/01/2018 00	

Parameter Codes Descriptions:
SO2X - Maximum SO2 Concentration (ppm)
NORX - Maximum NOx Emission Rate (lb/mmBtu)
H2ON - Minimum Moisture (pct)
CO2N - CO2 Minimum Concentration (pct)

Units of Measure Descriptions:
PPM - Parts per Million
PCT - Percentage
LBMMBTU - Pounds / mmBtu

Purpose Codes Descriptions:
MD - Missing Data (or Unmonitored Bypass Stack or Emergency Fuel) Default
DC - Diluent Cap

Fuel Type Codes Descriptions:
NFS - Non-Fuel Specific

Operating Conditions Descriptions:
U - Uncontrolled Hour
C - Controlled Hour
A - Any Hour

Source Codes Descriptions:
SAMP - Fuel Sampling
DEF - Default Value from Part 75
DATA - Historical or Other Relevant Data

Alarm System Design

Plant: MCRK

System Exceptions

Exception Name	Enabled?	Message	Require Reason Code with Acknowledge?
AIRLOW	Yes	Air pressure low	No
AIRONBUP	Yes	Shelter on Backup Air	No
AIRPREIH	Yes	Inlet Air Pressure High	No
AIRPREIL	Yes	Inlet Air Pressure Low	No
AIRPRESH	Yes	Stack Air Pressure High	No
AIRPRESL	Yes	Stack Air Pressure Low	No
AMBO2LOW	Yes	Ambient O2 Low in Shelter	No
APATHVAL	Yes	A path opacity invalid	No
CEMFLT	Yes	CEM fault - Call CEMS Group	No
CO2OOS	Yes	CO2 cal out of control	No
COMALM	Yes	Communications error occurred.	No
DILAIRIH	Yes	High Inlet dilution air	No
DILAIRIL	Yes	Low Inlet dilution air	No
DILAIRSH	Yes	High Stack dilution air	No
DILAIRSL	Yes	Low Stack dilution air	No
DISKSPAC	Yes	Disk free space is below config limit	No
EXCEALM	Yes	Exceedance limit reached.	No
EXITOPAC	Yes	Exit opacity invalid	No
FLOWCAL	Yes	Flow cal in progress	No
FLOWFAIL	Yes	Flow cal failed	No
FLOWINT	Yes	Flow interference check failed	No
FLOWOOS	Yes	Flow cal out of control	No
FRFAIL	Yes	Flow recal failed	No
FULSCALE	Yes	Analyzer Full Scale Range Exceeded	No
GAS1LO	Yes	Cal Gas 1 Low PSI (Stk Lo Tri-Blend)	No
GAS1XLO	Yes	Change out Cal Gas Bottle 1	No
GAS2LO	Yes	Cal Gas 2 Low PSI (Stk Hi)	No
GAS2XLO	Yes	Change out Cal Gas Bottle 2	No
GAS3LO	Yes	Cal Gas 3 Low PSI (Inlet)	No
GAS3XLO	Yes	Change out Cal Gas Bottle 3	No
GASFAIL	Yes	Gas cal failed	No
GASFLOW	Yes	Analyzer gas flow alarm	No
GASLOW	Yes	Cal gas bottle pressure low	No

Alarm System Design

Plant: MCRK

System Exceptions

Exception Name	Enabled?	Message	Require Reason Code with Acknowledge?
GHR_HIGH	Yes	GHR Higher Than Expected	No
GHR_LOW	Yes	GHR Lower Than Expected	No
GRFAIL	Yes	Gas recal failed	No
ILCALM01	Yes	Stack Probe Tmp H/L	No
ILCALM02	Yes	Inl Prb Fltr Tmp H/L	No
ILCALM03	Yes	Inl Prb Stg Tmp H/L	No
ILCALM04	Yes	Primary Air Pres Low	No
ILCALM05	Yes	Smoke in Shelter	No
ILCALM06	Yes	Stack Flow Malf.	No
ILCALM07	Yes	Stack PM in Maint.	No
ILCALM08	Yes	Stack PM Warning	No
ILCALM09	Yes	Stack PM Fault	No
INTKOOC	Yes	Interference Check Out of control	No
INVALM	Yes	Invalid data	No
LOWDATA	Yes	Data below 0 while operating	No
MNTEALM	Yes	CEMS in Maintenance	No
NOXMAINT	Yes	NOX in maintenance	No
NOXOOS	Yes	NOX cal out of spec	No
OPACFILT	Yes	Opacity Filter Alarm	No
PMCNTA	Yes	PM CONTAMINATION WARNING 30%	No
PMFAIL	Yes	PM Failure	No
PMMNREQ	Yes	PM Maintenance Req/Warning	No
PMOOS	Yes	PM cal out of control	No
PRBVACIH	Yes	Inlet Probe Vacuum High	No
PRBVACIL	Yes	Inlet Probe Vacuum Low	No
PRBVACSH	Yes	Probe vacuum flow alarm	No
PRBVACSL	Yes	Probe vacuum Low	No
PROBHEAT	Yes	Probe heater filter alarm	No
SAMPFLIH	Yes	Inlet Sample Flow High	No
SAMPFLIL	Yes	Inlet Sample Flow Low	No
SAMPFLSH	Yes	Stack Sample Flow High	No
SAMPFLSL	Yes	Stack Sample Flow Low	No
SHELTMPH	Yes	Sheler Temperature High	No

Alarm System Design

Plant: MCRK

System Exceptions

Exception Name	Enabled?	Message	Require Reason Code with Acknowledge?
SHELTMPL	Yes	Sheler Temperature Low	No
SO2-CTEM	Yes	SO2 CHAMBER TEMP	No
SO2-I/O	Yes	SO2 ANALYZER I/O EXP BD STATUS	No
SO2-ITEM	Yes	SO2 ANALYZER INTERNAL TEMP	No
SO2-LINT	Yes	SO2 ANALYZER LAMP INTENSITY (FLASH REF)	No
SO2-LVOL	Yes	SO2 ANALYZER LAMP VOLTAGE	No
SO2-MIFB	Yes	SO2 ANALYZER MEASUREMENT INTFC BD STATUS	No
SO2-PRES	Yes	SO2 ANALYZER PRESSURE	No
SO2-SFLO	Yes	SO2 SAMPLE FLOW	No
SO2HIGH	Yes	SO2 in high range	No
SO2INOOS	Yes	SO2 Inlet cal out of control	No
SO2MAINT	Yes	SO2 in maintenance	No
SO2MOBD	Yes	SO2 ANALYZER MOTHERBOARD STATUS	No
SO2OOS	Yes	SO2 cal out of control	No
STSAERR	Yes	STS A % ERROR > 25	No
STSALM	Yes	STS General Alarm	No
STSASCB	Yes	STS A SCRUBBER VACUUM HIGH	No
STSATRP	Yes	STS A TRAP VACUUM HIGH	No
STSATTN	Yes	Sorbent Trap Sys Attention Required	No
STSBERR	Yes	STS B % ERROR > 25	No
STSBSCB	Yes	STS B SCRUBBER VACUUM HIGH	No
STSBTRP	Yes	STS B TRAP VACUUM HIGH	No
STSCAB	Yes	STS CABINET TEMP	No
STSCHILL	Yes	STS CHILLER TEMP DEVIATION	No
STSCOMM	Yes	STS Modbus Communication or Pwr Loss	No
STSHSL	Yes	STS HEATED LINE TEMP	No
STSPRB	Yes	STS PROBE TEMP	No
UPSDOWN	Yes	UPS power failure	No
EXCEMAIL	No	3-HR Exceedance alarm, for email only	No
ZNOALM	No	ESC temp fix so DI 50 alarm will work	No

Alarm System Design

Plant: MCRK

Digital Input Alarms

Exception Name	Data Controller	Digital Input Line			Associated Channel	
		Line #	Description	Normal State	Source	Parameter
AIRONBUP						
	MC12					
		50	Air Press Latch	Open		
	MC3					
		50	Air Press Latch	Open		
	MC4					
		50	Air Press Latch	Open		
PMFAIL						
	MC12					
		280	PM FAILURE	Open		
PMMNREQ						
	MC12					
		282	PM MAINTENANCE REQ	Open		
SO2-CTEM						
	MC12					
		301	SO2 CHAMBER TEMP	Open		
	MC4					
		301	SO2 CHAMBER TEMP	Open		
SO2-I/O						
	MC12					
		310	SO2 I/O EXP BD STAT	Open		
	MC4					
		310	SO2 I/O EXP BD STAT	Open		
SO2-ITEM						
	MC12					
		300	SO2 INTERNAL TEMP	Open		
	MC4					
		300	SO2 INTERNAL TEMP	Open		
SO2-LINT						
	MC12					
		306	SO2 LAMP INTENSITY	Open		
	MC4					
		306	SO2 LAMP INTENSITY	Open		

Alarm System Design

Plant: MCRK

Digital Input Alarms

Exception Name	Data Controller	Digital Input Line			Associated Channel	
		Line #	Description	Normal State	Source	Parameter
SO2-LVOL						
	MC12					
		307	SO2 LAMP VOLTAGE	Open		
	MC4					
		307	SO2 LAMP VOLTAGE	Open		
SO2-MIFB						
	MC12					
		309	SO2 MEAS INTRFC STAT	Open		
	MC4					
		309	SO2 MEAS INTRFC STAT	Open		
SO2-PRES						
	MC12					
		304	SO2 PRESSURE	Open		
	MC4					
		304	SO2 PRESSURE	Open		
SO2-SFLO						
	MC12					
		305	SO2 SAMPLE FLOW	Open		
	MC4					
		305	SO2 SAMPLE FLOW	Open		
SO2MOBD						
	MC12					
		308	SO2 MOTHERBOARD STAT	Open		
	MC4					
		308	SO2 MOTHERBOARD STAT	Open		
STSAERR						
	MC12					
		138	STS A % ERR>25	Open		
	MC3					
		138	STS A % ERR>25	Open		
	MC4					
		138	STS A % ERR>25	Open		

Alarm System Design

Plant: MCRK

Digital Input Alarms

Exception Name	Data Controller	Digital Input Line			Associated Channel	
		Line #	Description	Normal State	Source	Parameter
STSASCB						
	MC12					
		134	STS A SCB VAC ALM	Open		
	MC3					
		134	STS A SCB VAC ALM	Open		
	MC4					
		134	STS A SCB VAC ALM	Open		
STSATRP						
	MC12					
		133	STS A TRP VAC ALM	Open		
	MC3					
		133	STS A TRP VAC ALM	Open		
	MC4					
		133	STS A TRP VAC ALM	Open		
STSBERR						
	MC12					
		139	STS B % ERR>25	Open		
	MC3					
		139	STS B % ERR>25	Open		
	MC4					
		139	STS B % ERR>25	Open		
STSBSCB						
	MC12					
		136	STS B SCB VAC ALM	Open		
	MC3					
		136	STS B SCB VAC ALM	Open		
	MC4					
		136	STS B SCB VAC ALM	Open		
STSBTRP						
	MC12					
		135	STS B TRP VAC ALM	Open		
	MC3					
		135	STS B TRP VAC ALM	Open		

Alarm System Design

Plant: MCRK

Digital Input Alarms

Exception Name	Data Controller	Digital Input Line			Associated Channel	
		Line #	Description	Normal State	Source	Parameter
STSBTRP						
	MC4					
		135	STS B TRP VAC ALM	Open		
STSCAB						
	MC12					
		131	STS CAB TEMP ALM	Open		
	MC3					
		131	STS CAB TEMP ALM	Open		
	MC4					
		131	STS CAB TEMP ALM	Open		
STSCHILL						
	MC12					
		132	STS CHILL TEMP ALM	Open		
	MC3					
		132	STS CHILL TEMP ALM	Open		
	MC4					
		132	STS CHILL TEMP ALM	Open		
STSHSL						
	MC12					
		130	STS HSL TEMP ALM	Open		
	MC3					
		130	STS HSL TEMP ALM	Open		
	MC4					
		130	STS HSL TEMP ALM	Open		
STSPRB						
	MC12					
		129	STS PRB TEMP ALM	Open		
	MC3					
		129	STS PRB TEMP ALM	Open		
	MC4					
		129	STS PRB TEMP ALM	Open		

Alarm System Design

Plant: MCRK

Digital Input Alarms

Exception Name	Data Controller	Digital Input Line			Associated Channel	
		Line #	Description	Normal State	Source	Parameter
ZNOALM						
	MC12					
		15	Stack Probe Tmp H/L	Open		
		16	Inl Prb Fltr Tmp H/L	Open		
		17	Inl Prb Stg Tmp H/L	Open		
		18	Primary Air Pres Low	Open		
		19	Smoke in Shelter	Open		
		20	Stack Flow Fault	Open		
		23	Stack PM in Maint.	Open		
		24	Stack PM Warning	Open		
		25	Stack PM Fault	Open		
		51	SPARE	Open		
		106	Dilution Air Fail	Open		
	MC3					
		15	Stack Probe Tmp H/L	Open		
		16	Inl Prb Fltr Tmp H/L	Open		
		17	Inl Prb Stg Tmp H/L	Open		
		18	Primary Air Pres Low	Open		
		19	Smoke in Shelter	Open		
		20	Stack Flow Fault	Open		
		23	Stack PM in Maint.	Open		
		24	Stack PM Warning	Open		
		25	Stack PM Fault	Open		
		51	SPARE	Open		
		106	Dilution Air Fail	Open		
	MC4					
		15	Stack Probe Tmp H/L	Open		
		16	Inl Prb Fltr Tmp H/L	Open		
		17	Inl Prb Stg Tmp H/L	Open		
		18	Primary Air Pres Low	Open		
		19	Smoke in Shelter	Open		
		20	Stack Flow Fault	Open		
		23	Stack PM in Maint.	Open		

Alarm System Design

Plant: MCRK

Digital Input Alarms

Exception Name	Data Controller	Digital Input Line			Associated Channel	
		Line #	Description	Normal State	Source	Parameter
ZNOALM						
	MC4					
		24	Stack PM Warning	Open		
		25	Stack PM Fault	Open		
		51	SPARE	Open		
		106	Dilution Air Fail	Open		

Polled Average Alarms

Exception Name	Source	Parameter	Interval	Comments	Alarm Trigger			Database Masks									
					Flags	Op	Value	MIS	OOC	EXC	INV	SUS	MNT	STRT	SHUT	RC	AC
AMBO2LOW																	
	MC12																
		AMB_O2	001M	Ambient O2 Low in Shelter	l												
	MC3																
		AMB_O2	001M	Ambient O2 Low in Shelter	l												
	MC4																
		AMB_O2	001M	Ambient O2 Low in Shelter	l												
CO2OOS																	
	MC12																
		CO2	001M	CO2 cal out of spec	T				X								
		CO2_IN	001M	CO2 Inlet cal out of spec	T				X								
	MC3																
		CO2	001M	CO2 cal out of spec	T				X								
		CO2_IN	001M	CO2 Inlet cal out of spec	T				X								
	MC4																
		CO2	001M	CO2 cal out of spec	T				X								
		CO2_IN	001M	CO2 Inlet cal out of spec	T				X								
DILAIRIH																	
	MC12																
		DAIRPRSI	001M	Inlet Dil Air Pressure High	h												
	MC3																
		DAIRPRSI	001M	Inlet Dil Air Pressure High	h												

Alarm System Design

Plant: MCRK

Polled Average Alarms

Exception Name	Source	Parameter	Interval	Comments	Alarm Trigger			Database Masks									
					Flags	Op	Value	MIS	OOC	EXC	INV	SUS	MNT	STRT	SHUT	RC	AC
DILAIRIH																	
	MC4																
		DAIRPRSI	001M	Inlet Dil Air Pressure High	h												
DILAIRIL																	
	MC12																
		DAIRPRSI	001M	Inlet Dil Air Pressure Low	l												
	MC3																
		DAIRPRSI	001M	Inlet Dil Air Pressure Low	l												
	MC4																
		DAIRPRSI	001M	Inlet Dil Air Pressure Low	l												
DILAIRSH																	
	MC12																
		DAIRPRES	001M	Stack Dil Air Pressure High	h												
	MC3																
		DAIRPRES	001M	Stack Dil Air Pressure High	h												
	MC4																
		DAIRPRES	001M	Stack Dil Air Pressure High	h												
DILAIRSL																	
	MC12																
		DAIRPRES	001M	Stack Dil Air Pressure Low	l												
	MC3																
		DAIRPRES	001M	Stack Dil Air Pressure Low	l												
	MC4																
		DAIRPRES	001M	Stack Dil Air Pressure Low	l												
EXCEMAIL																	
	MC12																
		NOX#60	001M	3HR NO#60 alarm, for email	X												
		PM#/MM	001M	3HR PM#/MM alarm, for email	X												
		SO2#60	001M	3HR SO2#60 alarm, for email	X												
	MC3																
		NOX#60	001M	3HR NOX#60 alarm, for email	X												
		PM#/MM	001M	3HR PM#/MM alarm, for email	X												
		SO2#60	001M	3HR SO2#60 alarm, for email	X												

Alarm System Design

Plant: MCRK

Polled Average Alarms

Exception Name	Source	Parameter	Interval	Comments	Alarm Trigger			Database Masks									
					Flags	Op	Value	MIS	OOC	EXC	INV	SUS	MNT	STRT	SHUT	RC	AC
EXCEMAIL																	
	MC4																
		NOX#60	001M	3HR NOX#60 alarm, for email	X												
		PM#/MM	001M	3HR PM#/MM alarm, for email	X												
		SO2#60	001M	3HR SO2#60 alarm, for email	X												
FLOWOOS																	
	MC12																
		FLOWSCFH	001M	Flow cal out of spec	T				X								
	MC3																
		FLOWSCFH	001M	Flow cal out of spec	T				X								
	MC4																
		FLOWSCFH	001M	Flow cal out of spec	T				X								
FULSCALE																	
	MC12																
		FLOWSCFH	001M	Analyzer Full Scale Range Exceeded	G												
		NOXPPM	001M	Analyzer Full Scale Range Exceeded	G												
		SO2PPM	001M	Analyzer Full Scale Range Exceeded	G												
	MC3																
		FLOWSCFH	001M	Analyzer Full Scale Range Exceeded	G												
		NOXPPM	001M	Analyzer Full Scale Range Exceeded	G												
		SO2PPM	001M	Analyzer Full Scale Range Exceeded	G												
	MC4																
		FLOWSCFH	001M	Analyzer Full Scale Range Exceeded	G												
		NOXPPM	001M	Analyzer Full Scale Range Exceeded	G												
		SO2PPM	001M	Analyzer Full Scale Range Exceeded	G												
GAS1LO																	
	MC12																
		GASPRES1	001M	Cal Gas 1 Low PSI (Stk Lo Tri-Blend)	I												
	MC3																
		GASPRES1	001M	Cal Gas 1 Low PSI (Stk Lo Tri-Blend)	I												
	MC4																
		GASPRES1	001M	Cal Gas 1 Low PSI (Stk Lo Tri-Blend)	I												

Alarm System Design

Plant: MCRK

Polled Average Alarms

Exception Name	Source	Parameter	Interval	Comments	Alarm Trigger			Database Masks									
					Flags	Op	Value	MIS	OOC	EXC	INV	SUS	MNT	STRT	SHUT	RC	AC
GAS1XLO																	
	MC12																
		GASPRES1	001M		L												
	MC3																
		GASPRES1	001M		L												
	MC4																
		GASPRES1	001M		L												
GAS2LO																	
	MC12																
		GASPRES2	001M	Cal Gas 2 Low PSI (Stk Hi)	I												
	MC3																
		GASPRES2	001M	Cal Gas 2 Low PSI (Stk Hi)	I												
	MC4																
		GASPRES2	001M	Cal Gas 2 Low PSI (Stk Hi)	I												
GAS2XLO																	
	MC12																
		GASPRES2	001M		L												
	MC3																
		GASPRES2	001M		L												
	MC4																
		GASPRES2	001M		L												
GAS3LO																	
	MC12																
		GASPRES3	001M	Cal Gas 3 Low PSI (Inlet)	I												
	MC3																
		GASPRES3	001M	Cal Gas 3 Low PSI (Inlet)	I												
	MC4																
		GASPRES3	001M	Cal Gas 3 Low PSI (Inlet)	I												
GAS3XLO																	
	MC12																
		GASPRES3	001M		L												
	MC3																
		GASPRES3	001M		L												

Alarm System Design

Plant: MCRK

Polled Average Alarms

Exception Name	Source	Parameter	Interval	Comments	Alarm Trigger			Database Masks									
					Flags	Op	Value	MIS	OOC	EXC	INV	SUS	MNT	STRT	SHUT	RC	AC
GAS3XLO																	
	MC4																
		GASPRES3	001M		L												
INTKOOC																	
	MC12																
		INTCHKV	001M	Interference Check Out of Spec	T				X								
	MC3																
		INTCHKV	001M	Interference Check Out of Spec	T				X								
	MC4																
		INTCHKV	001M	Interference Check Out of Spec	T				X								
INVALM																	
	MC12																
		CO2	001H	Invalid data	<&!(F|C|M)												
		FLOWSCFH	001H	Invalid data	<&!(F|C|M)												
		NOXPPM	001H	Invalid data	<&!(F|C|M)												
		PM_RAW	001H	Invalid data	<&!(F|C|M)												
		SO2PPM	001H	Invalid Data	<&!(F|C|M)												
	MC3																
		CO2	001H	Invalid Data	<&!(F|C|M)												
		FLOWSCFH	001H	Invalid Data	<&!(F|C|M)												
		NOXPPM	001H	Invalid Data	<&!(F|C|M)												
		PM_RAW	001H	Invalid Data	<&!(F|C|M)												
		SO2PPM	001H	Invalid Data	<&!(F|C|M)												
	MC4																
		CO2	001H	Invalid data	<&!(F|C|M)												
		FLOWSCFH	001H	Invalid Data	<&!(F|C|M)												
		NOXPPM	001H	Invalid Data	<&!(F|C|M)												
		PM_RAW	001H	Invalid Data	<&!(F|C|M)												
		SO2PPM	001H	Invalid Data	<&!(F|C|M)												
LOWDATA																	
	MC12																
		FUELFACT	001M	FUEL FACT invalid	<&!F												
		HG_CM	001M	Negative MerCEM data	(L|-)&!(F|<p|<)												

Alarm System Design

Plant: MCRK

Polled Average Alarms

Exception Name	Source	Parameter	Interval	Comments	Alarm Trigger			Database Masks									
					Flags	Op	Value	MIS	OOC	EXC	INV	SUS	MNT	STRT	SHUT	RC	AC
LOWDATA																	
	MC12																
		PM_RAW	001M	PM way below zero while operating	(L|-)&!(F|<p|<)												
	MC3																
		FUELFACT	001M	FUEL FACT invalid	<&!F												
		HG_CM	001M	Negative MerCEM data	(L|-)&!(F|<p|<)												
		PM_RAW	001M	PM way below zero while operating	(L|-)&!(F|<p|<)												
	MC4																
		FUELFACT	001M	FUEL FACT invalid	<&!F												
		HG_CM	001M	Negative MerCEM data	(L|-)&!(F|<p|<)												
		PM_RAW	001M	PM way below zero while operating	(L|-)&!(F|<p|<)												
MNTEALM																	
	MC12																
		CO2	001M	CEMS in Maintenance	M								X				
		CO2_IN	001M	CEMS in Maintenance	M								X				
		FLOWSCFH	001M	CEMS in Maintenance	M								X				
		INTCHKV	001M	CEMS in Maintenance	M								X				
		NOXPPM	001M	CEMS in Maintenance	M								X				
		PM_RAW	001M	CEMS in Maintenance	M								X				
		SO2_IN	001M	CEMS in Maintenance	M								X				
		SO2HI	001M	CEMS in Maintenance	M								X				
		SO2LO	001M	CEMS in Maintenance	M								X				
	MC3																
		CO2	001M	CEMS in Maintenance	M								X				
		CO2_IN	001M	CEMS in Maintenance	M								X				
		FLOWSCFH	001M	CEMS in Maintenance	M								X				
		INTCHKV	001M	CEMS in Maintenance	M								X				
		NOXHI	001M	CEMS in Maintenance	M								X				
		NOXLO	001M	CEMS in Maintenance	M								X				
		PM_RAW	001M	CEMS in Maintenance	M								X				
		SO2_IN	001M	CEMS in Maintenance	M								X				
		SO2HI	001M	CEMS in Maintenance	M								X				
		SO2LO	001M	CEMS in Maintenance	M								X				

Alarm System Design

Plant: MCRK

Polled Average Alarms

Exception Name	Source	Parameter	Interval	Comments	Alarm Trigger			Database Masks									
					Flags	Op	Value	MIS	OOC	EXC	INV	SUS	MNT	STRT	SHUT	RC	AC
MNTEALM																	
	MC4																
		CO2	001M	CEMS in Maintenance	M								X				
		CO2_IN	001M	CEMS in Maintenance	M								X				
		FLOWSCFH	001M	CEMS in Maintenance	M								X				
		INTCHKV	001M	CEMS in Maintenance	M								X				
		NOXHI	001M	CEMS in Maintenance	M								X				
		NOXLO	001M	CEMS in Maintenance	M								X				
		PM_RAW	001M	CEMS in Maintenance	M								X				
		SO2_IN	001M	CEMS in Maintenance	M								X				
		SO2HI	001M	CEMS in Maintenance	M								X				
		SO2LO	001M	CEMS in Maintenance	M								X				
NOXOOS																	
	MC12																
		NOXPPM	001M	NOX cal out of spec	T				X								
	MC3																
		NOXHI	001M	NOX cal out of spec	T				X								
		NOXLO	001M	NOX cal out of spec	T				X								
	MC4																
		NOXHI	001M	NOX cal out of spec	T				X								
		NOXLO	001M	NOX cal out of spec	T				X								
PMCNTA																	
	MC12																
		PM_CNTAM	001M	PM CONTAMINATION WARNING 30%	h												
PMOOS																	
	MC12																
		PM_RAW	001M	PM cal out of spec	T				X								
	MC3																
		PM_RAW	001M	PM cal out of spec	T				X								
	MC4																
		PM_RAW	001M	PM cal out of spec	T				X								

Alarm System Design

Plant: MCRK

Polled Average Alarms

Exception Name	Source	Parameter	Interval	Comments	Alarm Trigger			Database Masks									
					Flags	Op	Value	MIS	OOC	EXC	INV	SUS	MNT	STRT	SHUT	RC	AC
PRBVACIH																	
	MC12																
		PROBVACI	001M	Inlet Probe Vacuum High	h												
	MC3																
		PROBVACI	001M	Inlet Probe Vacuum High	h												
	MC4																
		PROBVACI	001M	Inlet Probe Vacuum High	h												
PRBVACIL																	
	MC12																
		PROBVACI	001M	Inlet Probe Vacuum Low	l												
	MC3																
		PROBVACI	001M	Inlet Probe Vacuum Low	l												
	MC4																
		PROBVACI	001M	Inlet Probe Vacuum Low	l												
PRBVACSH																	
	MC12																
		PROBVAC	001M	Stack Probe Vacuum High	h												
	MC3																
		PROBVAC	001M	Stack Probe Vacuum High	h												
	MC4																
		PROBVAC	001M	Stack Probe Vacuum High	h												
PRBVACSL																	
	MC12																
		PROBVAC	001M	Stack Probe Vacuum Low	l												
	MC3																
		PROBVAC	001M	Stack Probe Vacuum Low	l												
	MC4																
		PROBVAC	001M	Stack Probe Vacuum Low	l												
SAMPFLIH																	
	MC12																
		SAMPFLWI	001M	Inlet Sample Flow High	h												
	MC3																
		SAMPFLWI	001M	Inlet Sample Flow High	h												

Alarm System Design

Plant: MCRK

Polled Average Alarms

Exception Name	Source	Parameter	Interval	Comments	Alarm Trigger			Database Masks									
					Flags	Op	Value	MIS	OOC	EXC	INV	SUS	MNT	STRT	SHUT	RC	AC
SAMPFLIH																	
	MC4																
		SAMPFLWI	001M	Inlet Sample Flow High	h												
SAMPFLIL																	
	MC12																
		SAMPFLWI	001M	Inlet Sample Flow Low	l												
	MC3																
		SAMPFLWI	001M	Inlet Sample Flow Low	l												
	MC4																
		SAMPFLWI	001M	Inlet Sample Flow Low	l												
SAMPFLSH																	
	MC12																
		SAMPFLWS	001M	Stack Sample Flow Low	l												
	MC3																
		SAMPFLWS	001M	Stack Sample Flow Low	l												
	MC4																
		SAMPFLWS	001M	Stack Sample Flow Low	l												
SAMPFLSL																	
	MC12																
		SAMPFLWS	001M	Stack Sample Flow High	h												
	MC3																
		SAMPFLWS	001M	Stack Sample Flow High	h												
	MC4																
		SAMPFLWS	001M	Stack Sample Flow High	h												
SHELTMPH																	
	MC12																
		SHELTEMP	001M	Sheler Temperature High	h												
	MC3																
		SHELTEMP	001M	Sheler Temperature High	h												
	MC4																
		SHELTEMP	001M	Sheler Temperature High	h												

Alarm System Design

Plant: MCRK

Polled Average Alarms

Exception Name	Source	Parameter	Interval	Comments	Alarm Trigger			Database Masks									
					Flags	Op	Value	MIS	OOC	EXC	INV	SUS	MNT	STRT	SHUT	RC	AC
SHELTMPL																	
	MC12																
		SHELTEMP	001M	Sheler Temperature Low	I												
	MC3																
		SHELTEMP	001M	Sheler Temperature Low	I												
	MC4																
		SHELTEMP	001M	Sheler Temperature Low	I												
SO2INOOS																	
	MC12																
		SO2_IN	001M	SO2 Inlet cal out of spec	T				X								
	MC3																
		SO2_IN	001M	SO2 Inlet cal out of spec	T				X								
	MC4																
		SO2_IN	001M	SO2 Inlet cal out of spec	T				X								
SO2OOS																	
	MC12																
		SO2HI	001M	SO2 cal out of spec	T				X								
		SO2LO	001M	SO2 cal out of spec	T				X								
	MC3																
		SO2HI	001M	SO2 cal out of spec	T				X								
		SO2LO	001M	SO2 cal out of spec	T				X								
	MC4																
		SO2HI	001M	SO2 cal out of spec	T				X								
		SO2LO	001M	SO2 cal out of spec	T				X								
STSATTN																	
	MC12																
		ST_CTEMP	001M	Monitoring Higher Priority items for Email alarm	X												
	MC3																
		ST_CTEMP	001M	Monitoring Higher Priority items for Email alarm	X												
	MC4																
		ST_CTEMP	001M	Monitoring Higher Priority items for Email alarm	X												

Alarm System Design

Plant: MCRK

Polled Average Alarms

Exception Name	Source	Parameter	Interval	Comments	Alarm Trigger			Database Masks									
					Flags	Op	Value	MIS	OOC	EXC	INV	SUS	MNT	STRT	SHUT	RC	AC
STSCOMM																	
	MC12																
		ST_CTEMP	001M	Monitoring Cabinet Temp for Comm or Pwr Loss		<	1										
	MC3																
		ST_CTEMP	001M	Monitoring Cabinet Temp for Comm or Pwr Loss		<	1										
	MC4																
		ST_CTEMP	001M	Monitoring Cabinet Temp for Comm or Pwr Loss		<	1										

Louisville Metro Air Pollution Control District

Permit Application and Renewal
Form AP-100J

Compliance Monitoring

Deliver application to:
701 W. Ormsby Ave.Suite 303
Louisville, KY 40203

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Emission Process/Point Name:	U8	Emission Process/Point:	E13,E31-33
Date of submission:	1/24/2019		

Monitoring Definition

List the operational parameters that are monitored and the frequency of monitoring

Parameter	Frequency	Method of measurement	Method of recording
Opacity	monthly	Method 9	Manual
TAC	other: every 6 months	Sampling and lab analysis	manual
Pressure Drop	daily	Pressure gauge	manual

Describe any monitors in use, including manufacturer, model #, frequency of calibration, and location

Monitor Identification	Manufacturer	Model	Calibration Frequency	Location	Other Info

Are any of these Continuous Emission monitors? ☐ Yes ☒ No

Pollutants monitored (check all that apply):
☐ Particulates (PM) ☐ Metals (specify:)
☐ Volatiles (VOC) ☒ HAP/TAC (specify:)
☐ Nitrogen oxides (NO_x) ☐ Sulfur dioxide (SO_2)
☐ Other:

Attach manufacturer's specification sheets, or complete the following**:**

Will multiple emission processes be monitored at the same location? ☐ Yes ☒ No

Which emission processes are monitored?

Will more than one emission process be emitting from the combined stack at any time? ☐ Yes ☒ No

Which emission processes emit simultaneously?

Monitoring and Alarm Information

Describe the System Alarm(s):

If there are more than three alarms, attach additional copies of this page as needed.

Operating Parameter Monitored	Describe Alarm Trigger	Monitoring Device or Alarm Type	Does the Alarm Initiate an Automated Response?
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:

Emission Tests

List any emission measurement tests (stack tests) that have been performed in the past and attach a copy of the test reports:

Test Purpose:	Test date:
Test Purpose:	Test date:

Louisville Metro Air Pollution Control District

Permit Application and Renewal
Form AP-100J

Compliance Monitoring

Deliver application to:
701 W. Ormsby Ave.Suite 303
Louisville, KY 40203

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Emission Process/Point Name:	U9	Emission Process/Point:	E16-18
Date of submission:	1/24/2019		

Monitoring Definition

List the operational parameters that are monitored and the frequency of monitoring

Parameter	Frequency	Method of measurement	Method of recording
Opacity	monthly	Method 9	Manual
TAC	other: every 6 months	Sampling and lab analysis	manual
Pressure Drop	daily	Pressure gauge	manual

Describe any monitors in use, including manufacturer, model #, frequency of calibration, and location

Monitor Identification	Manufacturer	Model	Calibration Frequency	Location	Other Info

Are any of these Continuous Emission monitors? ☐ Yes ☒ No

Pollutants monitored (check all that apply):
- ☐ Particulates (PM)
- ☐ Metals (specify:)
- ☐ Volatiles (VOC)
- ☒ HAP/TAC (specify:)
- ☐ Nitrogen oxides (NO_x)
- ☐ Sulfur dioxide (SO_2)
- ☐ Other:

Attach manufacturer's specification sheets, or complete the following**:**

Will multiple emission processes be monitored at the same location? ☐ Yes ☒ No

Which emission processes are monitored?

Will more than one emission process be emitting from the combined stack at any time? ☐ Yes ☒ No

Which emission processes emit simultaneously?

Monitoring and Alarm Information

Describe the System Alarm(s):

If there are more than three alarms, attach additional copies of this page as needed.

Operating Parameter Monitored	Describe Alarm Trigger	Monitoring Device or Alarm Type	Does the Alarm Initiate an Automated Response?
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:

Emission Tests

List any emission measurement tests (stack tests) that have been performed in the past and attach a copy of the test reports:

Test Purpose:	Test date:
Test Purpose:	Test date:

Louisville Metro Air Pollution Control District

Permit Application and Renewal
Form AP-100J

Compliance Monitoring

Deliver application to:
701 W. Ormsby Ave.Suite 303
Louisville, KY 40203

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Emission Process/Point Name:	U12	Emission Process/Point:	E24-28
Date of submission:	1/24/2019		

Monitoring Definition

List the operational parameters that are monitored and the frequency of monitoring

Parameter	Frequency	Method of measurement	Method of recording
Opacity	monthly	Method 9	Manual

Describe any monitors in use, including manufacturer, model #, frequency of calibration, and location

Monitor Identification	Manufacturer	Model	Calibration Frequency	Location	Other Info

Are any of these Continuous Emission monitors? ☐ Yes ☒ No

Pollutants monitored (check all that apply):
☐ Particulates (PM) ☐ Metals (specify:)
☐ Volatiles (VOC) ☐ HAP/TAC (specify:)
☐ Nitrogen oxides (NO_x) ☐ Sulfur dioxide (SO_2)
☐ Other:

Attach manufacturer's specification sheets, or complete the following**:**

Will multiple emission processes be monitored at the same location? ☐ Yes ☒ No

Which emission processes are monitored?

Will more than one emission process be emitting from the combined stack at any time? ☐ Yes ☒ No

Which emission processes emit simultaneously?

Monitoring and Alarm Information

Describe the System Alarm(s):

If there are more than three alarms, attach additional copies of this page as needed.

Operating Parameter Monitored	Describe Alarm Trigger	Monitoring Device or Alarm Type	Does the Alarm Initiate an Automated Response?
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:

Emission Tests

List any emission measurement tests (stack tests) that have been performed in the past and attach a copy of the test reports:

Test Purpose:	Test date:
Test Purpose:	Test date:

Louisville Metro Air Pollution Control District

Permit Application and Renewal
Form AP-100J

Compliance Monitoring

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Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Emission Process/Point Name:	U15	Emission Process/Point:	E39
Date of submission:	1/24/2019		

Monitoring Definition

List the operational parameters that are monitored and the frequency of monitoring

Parameter	Frequency	Method of measurement	Method of recording
Opacity	monthly	Method 9	Manual
VMT	monthly	Operating Reports	Manual

Describe any monitors in use, including manufacturer, model #, frequency of calibration, and location

Monitor Identification	Manufacturer	Model	Calibration Frequency	Location	Other Info

Are any of these Continuous Emission monitors? ☐ Yes ☒ No

Pollutants monitored (check all that apply):

☐ Particulates (PM) ☐ Metals (specify:)
☐ Volatiles (VOC) ☐ HAP/TAC (specify:)
☐ Nitrogen oxides (NO_x) ☐ Sulfur dioxide (SO_2)
☐ Other:

Attach manufacturer's specification sheets, or complete the following**:**

Will multiple emission processes be monitored at the same location? ☐ Yes ☒ No

Which emission processes are monitored?

Will more than one emission process be emitting from the combined stack at any time? ☐ Yes ☒ No

Which emission processes emit simultaneously?

Monitoring and Alarm Information

Describe the System Alarm(s):

If there are more than three alarms, attach additional copies of this page as needed.

Operating Parameter Monitored	Describe Alarm Trigger	Monitoring Device or Alarm Type	Does the Alarm Initiate an Automated Response?
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:

Emission Tests

List any emission measurement tests (stack tests) that have been performed in the past and attach a copy of the test reports:

Test Purpose:	Test date:
Test Purpose:	Test date:

Louisville Metro Air Pollution Control District

Permit Application and Renewal
Form AP-100J

Compliance Monitoring

Deliver application to:
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airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Emission Process/Point Name:	U16	Emission Process/Point:	E40
Date of submission:	1/24/2019		

Monitoring Definition

List the operational parameters that are monitored and the frequency of monitoring

Parameter	Frequency	Method of measurement	Method of recording
Opacity	monthly	Method 9	Manual
Throughput	monthly	Operating Reports	Manual
Equipment Integrity	monthly	Operating Reports	Manual
Filters in Tact	daily	Operating Reports	Manual

Describe any monitors in use, including manufacturer, model #, frequency of calibration, and location

Monitor Identification	Manufacturer	Model	Calibration Frequency	Location	Other Info

Are any of these Continuous Emission monitors? ☐ Yes ☒ No

Pollutants monitored (check all that apply):
☐ Particulates (PM) ☐ Metals (specify:)
☐ Volatiles (VOC) ☐ HAP/TAC (specify:)
☐ Nitrogen oxides (NO_x) ☐ Sulfur dioxide (SO_2)
☐ Other:

Attach manufacturer's specification sheets, or complete the following**:**

Will multiple emission processes be monitored at the same location? ☐ Yes ☒ No

Which emission processes are monitored?

Will more than one emission process be emitting from the combined stack at any time? ☐ Yes ☒ No

Which emission processes emit simultaneously?

Monitoring and Alarm Information

Describe the System Alarm(s):

If there are more than three alarms, attach additional copies of this page as needed.

Operating Parameter Monitored	Describe Alarm Trigger	Monitoring Device or Alarm Type	Does the Alarm Initiate an Automated Response?
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:

Emission Tests

List any emission measurement tests (stack tests) that have been performed in the past and attach a copy of the test reports:

Test Purpose:	Test date:
Test Purpose:	Test date:

Louisville Metro Air Pollution Control District

Permit Application and Renewal
Form AP-100J

Compliance Monitoring

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Louisville, KY 40203

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FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Emission Process/Point Name:	U17	Emission Process/Point:	E41
Date of submission:	1/24/2019		

Monitoring Definition

List the operational parameters that are monitored and the frequency of monitoring

Parameter	Frequency	Method of measurement	Method of recording
Opacity	monthly	Method 9	Manual
Throughput	monthly	Operating Reports	Manual
Equipment Integrity	monthly	Operating Reports	Manual
Filters in Tact	daily	Operating Reports	Manual

Describe any monitors in use, including manufacturer, model #, frequency of calibration, and location

Monitor Identification	Manufacturer	Model	Calibration Frequency	Location	Other Info

Are any of these Continuous Emission monitors? ☐ Yes ☒ No

Pollutants monitored (check all that apply):
☐ Particulates (PM) ☐ Metals (specify:)
☐ Volatiles (VOC) ☐ HAP/TAC (specify:)
☐ Nitrogen oxides (NO_x) ☐ Sulfur dioxide (SO_2)
☐ Other:

Attach manufacturer's specification sheets, or complete the following**:**

Will multiple emission processes be monitored at the same location? ☐ Yes ☒ No

Which emission processes are monitored?

Will more than one emission process be emitting from the combined stack at any time? ☐ Yes ☒ No

Which emission processes emit simultaneously?

Monitoring and Alarm Information

Describe the System Alarm(s):

If there are more than three alarms, attach additional copies of this page as needed.

Operating Parameter Monitored	Describe Alarm Trigger	Monitoring Device or Alarm Type	Does the Alarm Initiate an Automated Response?
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:

Emission Tests

List any emission measurement tests (stack tests) that have been performed in the past and attach a copy of the test reports:

Test Purpose:	Test date:
Test Purpose:	Test date:

Louisville Metro Air Pollution Control District

Permit Application and Renewal
Form AP-100J

Compliance Monitoring

Deliver application to:
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Louisville, KY 40203

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www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Emission Process/Point Name:	U18	Emission Process/Point:	E42
Date of submission:	1/24/2019		

Monitoring Definition

List the operational parameters that are monitored and the frequency of monitoring

Parameter	Frequency	Method of measurement	Method of recording
Opacity	monthly	Method 9	Manual
Throughput	monthly	Operating Reports	Manual
Equipment Integrity	monthly	Operating Reports	Manual
Filters in Tact	daily	Operating Reports	Manual
TAC	other: every 6 months	Sampling and lab analysis	Manual

Describe any monitors in use, including manufacturer, model #, frequency of calibration, and location

Monitor Identification	Manufacturer	Model	Calibration Frequency	Location	Other Info

Are any of these Continuous Emission monitors? ☐ Yes ☒ No

Pollutants monitored (check all that apply):
☐ Particulates (PM) ☐ Metals (specify:)
☐ Volatiles (VOC) ☐ HAP/TAC (specify:)
☐ Nitrogen oxides (NO_x) ☐ Sulfur dioxide (SO_2)
☐ Other:

Attach manufacturer's specification sheets, or complete the following**:**

Will multiple emission processes be monitored at the same location? ☐ Yes ☒ No

Which emission processes are monitored?

Will more than one emission process be emitting from the combined stack at any time? ☐ Yes ☒ No

Which emission processes emit simultaneously?

Monitoring and Alarm Information

Describe the System Alarm(s):

If there are more than three alarms, attach additional copies of this page as needed.

Operating Parameter Monitored	Describe Alarm Trigger	Monitoring Device or Alarm Type	Does the Alarm Initiate an Automated Response?
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:

Emission Tests

List any emission measurement tests (stack tests) that have been performed in the past and attach a copy of the test reports:

Test Purpose:	Test date:
Test Purpose:	Test date:

Louisville Metro Air Pollution Control District

Permit Application and Renewal
Form AP-100J

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airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Emission Process/Point Name:	U20	Emission Process/Point:	E44-46
Date of submission:	1/24/2019		

Monitoring Definition

List the operational parameters that are monitored and the frequency of monitoring

Parameter	Frequency	Method of measurement	Method of recording
Opacity	monthly	Method 9	Manual
HAP	Annual	Burner Tune-up	Manual

Describe any monitors in use, including manufacturer, model #, frequency of calibration, and location

Monitor Identification	Manufacturer	Model	Calibration Frequency	Location	Other Info

Are any of these Continuous Emission monitors? ☐ Yes ☒ No

Pollutants monitored (check all that apply):

- ☐ Particulates (PM)
- ☐ Metals (specify:)
- ☐ Volatiles (VOC)
- ☒ HAP/TAC (specify:)
- ☐ Nitrogen oxides (NO_x)
- ☐ Sulfur dioxide (SO_2)
- ☐ Other:

Attach manufacturer's specification sheets, or complete the following**:**

Will multiple emission processes be monitored at the same location? ☐ Yes ☒ No

Which emission processes are monitored?

Will more than one emission process be emitting from the combined stack at any time? ☐ Yes ☒ No

Which emission processes emit simultaneously?

Monitoring and Alarm Information

Describe the System Alarm(s):

If there are more than three alarms, attach additional copies of this page as needed.

Operating Parameter Monitored	Describe Alarm Trigger	Monitoring Device or Alarm Type	Does the Alarm Initiate an Automated Response?
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:

Emission Tests

List any emission measurement tests (stack tests) that have been performed in the past and attach a copy of the test reports:

Test Purpose:	Test date:
Test Purpose:	Test date:

Louisville Metro Air Pollution Control District

Permit Application and Renewal
Form AP-100J

Compliance Monitoring

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Louisville, KY 40203

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www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Emission Process/Point Name:	U21	Emission Process/Point:	E47
Date of submission:	1/24/2019		

Monitoring Definition

List the operational parameters that are monitored and the frequency of monitoring

Parameter	Frequency	Method of measurement	Method of recording
Opacity	monthly	Method 9	Manual
Throughput	monthly	Operating reports	Manual

Describe any monitors in use, including manufacturer, model #, frequency of calibration, and location

Monitor Identification	Manufacturer	Model	Calibration Frequency	Location	Other Info

Are any of these Continuous Emission monitors? ☐ Yes ☒ No

Pollutants monitored (check all that apply):
☐ Particulates (PM) ☐ Metals (specify:)
☐ Volatiles (VOC) ☐ HAP/TAC (specify:)
☐ Nitrogen oxides (NO_x) ☐ Sulfur dioxide (SO_2)
☐ Other:

Attach manufacturer's specification sheets, or complete the following**:**

Will multiple emission processes be monitored at the same location? ☐ Yes ☒ No

Which emission processes are monitored?

Will more than one emission process be emitting from the combined stack at any time? ☐ Yes ☒ No

Which emission processes emit simultaneously?

Monitoring and Alarm Information

Describe the System Alarm(s):

If there are more than three alarms, attach additional copies of this page as needed.

Operating Parameter Monitored	Describe Alarm Trigger	Monitoring Device or Alarm Type	Does the Alarm Initiate an Automated Response?
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:

Emission Tests

List any emission measurement tests (stack tests) that have been performed in the past and attach a copy of the test reports:

Test Purpose:	Test date:
Test Purpose:	Test date:

Louisville Metro Air Pollution Control District

Permit Application and Renewal
Form AP-100J

Compliance Monitoring

Deliver application to:
701 W. Ormsby Ave.Suite 303
Louisville, KY 40203

(502) 574-6000
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airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Emission Process/Point Name:	U22	Emission Process/Point:	E48
Date of submission:	1/24/2019		

Monitoring Definition

List the operational parameters that are monitored and the frequency of monitoring

Parameter	Frequency	Method of measurement	Method of recording
Opacity	monthly	Method 9	Manual
Throughput	monthly	Operating reports	Manual
VMT	monthly	Operating reports	Manual

Describe any monitors in use, including manufacturer, model #, frequency of calibration, and location

Monitor Identification	Manufacturer	Model	Calibration Frequency	Location	Other Info

Are any of these Continuous Emission monitors? ☐ Yes ☒ No

Pollutants monitored (check all that apply):
☐ Particulates (PM) ☐ Metals (specify:)
☐ Volatiles (VOC) ☐ HAP/TAC (specify:)
☐ Nitrogen oxides (NO_x) ☐ Sulfur dioxide (SO_2)
☐ Other:

Attach manufacturer's specification sheets, or complete the following**:**

Will multiple emission processes be monitored at the same location? ☐ Yes ☒ No

Which emission processes are monitored?

Will more than one emission process be emitting from the combined stack at any time? ☐ Yes ☒ No

Which emission processes emit simultaneously?

Monitoring and Alarm Information

Describe the System Alarm(s):

If there are more than three alarms, attach additional copies of this page as needed.

Operating Parameter Monitored	Describe Alarm Trigger	Monitoring Device or Alarm Type	Does the Alarm Initiate an Automated Response?
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other	☐ YES ☐ NO Describe:

Emission Tests

List any emission measurement tests (stack tests) that have been performed in the past and attach a copy of the test reports:

Test Purpose:	Test date:
Test Purpose:	Test date:

Louisville Metro Air Pollution Control District

Permit Application and Renewal
Form AP-100K

Compliance Certification

Deliver application to:
701 W. Ormsby Ave.Suite 303
Louisville, KY 40203

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd
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Louisville Metro Air Pollution Control District regulations require that each Title V permit applicant complete a compliance status form for each emission unit, regardless of the compliance status of that emission unit. The compliance status of each emission unit must be stated, and compliance schedule Form AP-100L must be completed and submitted for emission units that are not in compliance at the time application is made.

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of submission:	1/24/2019		

Emission Units In Compliance

These emission units are in compliance with all applicable requirements (such as emission standards, emission control requirements, emission testing, record keeping, reporting, *etc*) and will continue to be so during the term of the permit, based on the compliance methods specified:

Emission Unit	Emission Process/Point	Applicable Regulation(s)	Compliance Method
Plantwide	Plantwide	2.16; 40 CFR 52 Subpart A; 40 CFR 68 Subpart G; 40 CFR 97 Subpart 5A; 40 CFR 97 Subpart 5E; 40 CFR 97 Subpart 5C; 5.00; 5.01; 5.20; 5.21; 5.22 5.23	CEMS, Monthly operations reports, Quarterly Title V Monitoring Data Summary Reports, Quarterly NOx Emission 30-Day Average Deviation Reports, Quarterly/Semi-Annual Title V Monitoring Summary Reports, Quarterly Excess Emission and Monitor Downtime Reports, EA Demos, Risk Management Plan, Allowance accounting/tracking, Annual Emissions Inventory Reports
U1	E1,E2	5.00, 5.01, 5.02, 5.14, 5.20, 5.21, 5.22, 5.23, 6.02, 6.07, 6.09, 6.42, 6.47, 40 CFR 64, 40 CFR 72-73, 40 CFR 75-78, 40 CFR 63, UUUUU	CEMS, Monthly operations reports, Quarterly Title V Monitoring Data Summary Reports, Quarterly NOx Emission 30-Day Average Deviation Reports, Quarterly/Semi-Annual Title V Monitoring Summary Reports, Quarterly Excess Emission and Monitor Downtime Reports, EA Demos, Risk Management Plan, Allowance accounting/tracking, Annual Emissions Inventory Reports
U2	E3,E4	5.00, 5.01, 5.02, 5.14, 5.20, 5.21, 5.22, 5.23, 6.02, 6.07, 6.09, 6.42, 6.47, 40 CFR 64, 40 CFR 72-73, 40 CFR 75-78, 40 CFR 63, UUUUU	CEMS, Monthly operations reports, Quarterly Title V Monitoring Data Summary Reports, Quarterly NOx Emission 30-Day Average Deviation Reports, Quarterly/Semi-Annual Title V Monitoring Summary Reports, Quarterly Excess Emission and Monitor Downtime Reports, EA Demos, Risk Management Plan, Allowance accounting/tracking, Annual Emissions Inventory Reports
U3	E5,E6	5.00, 5.01, 5.02, 5.14, 5.20, 5.21, 5.22, 5.23, 6.02, 6.42, 6.09, 6.47,7.02, 7.06 40 CFR 60, D 40 CFR 64, 40 CFR 72-73, 40 CFR 75-78, 40 CFR 63, UUUUU	CEMS, Monthly operations reports, Quarterly Title V Monitoring Data Summary Reports, Quarterly NOx Emission 30-Day Average Deviation Reports, Quarterly/Semi-Annual Title V Monitoring Summary Reports, Quarterly Excess Emission and Monitor Downtime Reports, EA Demos, Risk Management Plan, Allowance accounting/tracking, Annual Emissions Inventory Reports

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U4	E7,E8	5.00, 5.01, 5.02, 5.14, 5.20, 5.21, 5.22, 5.23, 6.02, 6.42, 6.09, 6.47,7.02, 7.06 40 CFR 60, D 40 CFR 64, 40 CFR 72-73, 40 CFR 75-78, 40 CFR 63, UUUUU	CEMS, Monthly operations reports, Quarterly Title V Monitoring Data Summary Reports, Quarterly NOx Emission 30-Day Average Deviation Reports, Quarterly/Semi-Annual Title V Monitoring Summary Reports, Quarterly Excess Emission and Monitor Downtime Reports, EA Demos, Risk Management Plan, Allowance accounting/tracking, Annual Emissions Inventory Reports
U8	E13,E31,E32,E33	5.00, 5.01, 5.20, 5.21, 5.22, 5.23, 7.08	EA Demos, CEMs, Lab Analysis, Monthly operations reports, Monthly visual inspection, Quarterly Title V Monitoring Data Summary Reports, Visual Emission Surveys
U9	E16,E17,E18	5.00, 5.01, 5.20, 5.21, 5.22, 5.23, 7.08	EA Demos, CEMs, Lab Analysis, Monthly operations reports, Monthly visual inspection, Quarterly Title V Monitoring Data Summary Reports, Visual Emission Surveys
U12	E34,E25,E26,E27,E28	7.08, 40 CFR 60 Subpart OOO	EA Demos, CEMs, Lab Analysis, Monthly operations reports, Monthly visual inspection, Quarterly Title V Monitoring Data Summary Reports, Visual Emission Surveys
U14	E38	7.08	PM compliance demonstration
U15	E39	1.14	Approved Fugitive Dust Control Plan for Paved & Unpaved Roads
U16	E40	7.08	EA Demos, CEMs, Lab Analysis, Monthly operations reports, Monthly visual inspection, Quarterly Title V Monitoring Data Summary Reports, Visual Emission Surveys
U17	E41	7.08	Quarterly Title V Monitoring Data Summary Reports, EA Demos, CEMs, Lab Analysis, Monthly operations reports, Monthly visual inspection, Quarterly Title V Monitoring Data Summary Reports, Visual Emission Surveys
U18	E42	5.00, 5.01, 5.20, 5.21, 5.22, 5.23, 7.08	Quarterly Title V Monitoring Data Summary Reports, EA Demos, CEMs, Lab Analysis, Monthly operations reports, Monthly visual inspection, Quarterly Title V Monitoring Data Summary Reports, Visual Emission Surveys
U20	E44	5.00, 5.01, 5.02, 5.14, 5.20, 5.21, 5.22, 5.23, 7.06, 7.08, 40 CFR 63 Subpart DDDDD	PM compliance demonstration, Quarterly Title V Monitoring Data Summary Reports, EA Demos, CEMs, Lab Analysis, Monthly operations reports, Monthly visual inspection, Quarterly Title V Monitoring Data Summary Reports, Visual Emission Surveys
U21	E47	5.00, 5.01, 5.20, 5.21, 5.22, 5.23, 6.09, 7.02, 7.08, 40 CFR 60, Subpart Y	Quarterly Title V Monitoring Data Summary Reports, EA Demos, CEMs, Lab Analysis, Monthly operations reports, Monthly visual inspection, Quarterly Title V Monitoring Data Summary Reports, Visual Emission Surveys
U22	E48	1.14, 5.00, 5.01, 5.20, 5.21, 5.22, 5.23	Approved Fugitive Dust Control Plan for Paved & Unpaved Roads
IA1	E20	6.40, 7.15	Monthly Records
IA2	IE1-8	6.18	Monthly inspections and records
IA3	E36,E37,IE24	40 CFR 63, Subpart ZZZZ, 40 CFR 60, Subpart IIII, 40 CFR 60, Subpart JJJJ	Monthly Records
IA4	IE9, IE10	40 CFR 63, Subpart ZZZZ, 40 CFR 60, Subpart IIII	Monthly Records
IA-OT	IE11-23	7.08,7.12	Monthly operations reports, Monthly visual inspection, Quarterly Title V Monitoring Data Summary Reports, Visual Emission Surveys

Emission Units In Compliance but Subject to Future Compliance Dates

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These emission units are currently in compliance with all applicable requirements but will become subject to new requirements during the term of this permit. Compliance with the new requirements will be achieved in a timely manner and compliance will be maintained throughout the term of the permit.

Emission Unit	Emission Process/Point	New Regulation(s) or Requirement(s)	Anticipated Compliance Date

Emission Units Not In Compliance – Compliance to be Achieved Before Permit Issuance

These emission units are not in compliance with all applicable requirements at the time of permit application. These emission units will achieve compliance with all applicable requirements prior to permit issuance and will continue to comply with these requirements during the term of the permit.

Form AP-100L (Compliance Schedule) must be submitted for all emission processes not in compliance with all applicable regulations at the time of application.

Emission Unit	Emission Process/Point	Applicable Regulation(s)	Compliance Method	Anticipated Compliance Date

Describe how compliance will be achieved for each of these items:

Emission Units Not In Compliance – Compliance Will Not Be Achieved Before Permit Issuance

These emission units are not in compliance with all applicable requirements at the time of permit application. In addition, these emission units will not achieve compliance with all applicable requirements prior to permit.

Form AP-100L (Compliance Schedule) must be submitted for all emission processes not in compliance with all applicable regulations at the time of application.

Emission Unit	Emission Process/Point	Applicable Regulation(s)	Compliance Method	Anticipated Compliance Date

Describe how compliance will be achieved for each of these items:

Insignificant Activities

Identify below all sources that are considered insignificant activities. Section 1.38 of District Regulation 1.02 identifies certain activities which may be considered insignificant and are exempt from the permit requirements. Case-by-case approval of other sources **may** be granted if potential emissions from the source do not exceed 5 tons per year of a regulated pollutant or 1000 pounds per year of a hazardous air pollutant.

Equipment Type	Description	Number in prior year	Number this year
Storage Tank	Fuel or Lubricating oils storage tanks with vapor pressure <10mm Hg @ 20 deg C	17	17
Storage Tank	1,000 gallon storage tank for #1 fuel oil with annual turnover < 2X the capacity	1	1
Combustion Source	Minor natural gas combustion sources <10 MMBtu/hr (direct heat exchangers)	24	24
Emergency vents	Emergency relief vents for boiler steam supply	24	24
Lab exhaust System	Lab exhaust systems	3	3
Storage Tank	Portable kerosene storage tanks with capacity less than 500 gallons	1	1
NA	Ash pond with wet storage	1	1
Cooling Tower	Cooling Towers for Unit 2 and Unit 3	2	2
NA	Stockpiles (coal, limestone, gypsum piles)	3	3
Storage Tank	Turbine oil reservoir vapor extractor	4	4
Storage Tank	Hydrogen seal oil tank vent	4	4
Material Handling	Gypsum handling equipment	1	1
Material Handling	Portable gypsum dewatering systems	2	2
Storage Tank	Gasoline storage tank, 3,000 gallons	1	1
Parts Washer	Non-halogenated cold solvent parts washers with secondary reservoir	8	8
Engine	Emergency generators, 800 HP each	2	2
Engine	Fire pumps, 157 HP and 183 HP	2	2
Emergency vents	Emergency vent for U1 and U2 boilers	1	1
Material Handling	Bottom/flyash silos	2	2
Material Handling	Ash pug mill mixers	4	4
Material Handling	Process water system	1	1
Engine	Emergency generator, natural gas fired, 105 HP	1	1

Responsible Official Certification

Based on information and belief formed after reasonable inquiry, I certify that the statements and information in this document are true, accurate, and complete.

BY: Ralph Bowling
Typed or Printed Name of Signatory

1/17/19
Date

Authorized Signature

VP Power Production
Title of Signatory

Louisville Metro Air Pollution Control District

Permit Application and Renewal
Form AP-100M

Risk Management Plan

Deliver application to:
701 W. Ormsby Ave.Suite 303
Louisville, KY 40203

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of submission:	1/24/2019		

Section 112(r) of the Clean Air Act Amendments of 1990 requires that any source that manufactures, processes, uses, stores, or otherwise handles regulated substances listed in 40 CFR 68 Subpart C in quantities that exceed a specified threshold must develop and implement a Risk Management Plan as specified in 40 CFR 68 Subpart B.

You must answer the following questions and this form must be made part of your Title V permit application.

CAA Section 112(r) Information

Are you required to submit a Risk Management Plan pursuant to 40 CFR 68 subpart B?	☒ Yes	☐ No	
Have you submitted the required Plan?	☒ Yes	☐ No	☐ N/A
Where was this plan submitted? 06/20/2003			

End of form

Louisville Metro Air Pollution Control District

Permit Application and Renewal
Form AP-100N

Episode Action Plan

Deliver application to:

701 W. Ormsby Ave.Suite 303
Louisville, KY 40203

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of submission:	1/24/2019		

Contact Information

Primary Contact			
Name:	Joe Didelot	Title:	General Manager Mill Creek Station
Office Telephone:	502-933-6559	e-mail:	Joe.didelot@lge-ku.com
Alternate Telephone:			
Alternate Contact #1			
Name:	Gary Revlett	Title:	Director, Environmental Affairs
Office Telephone:	502-627-4621	e-mail:	gary.revlett@lge-ku.com
Alternate Telephone:			
Alternate Contact #2			
Name:	Philip Imber	Title:	Manager, Environmental Air Section
Office Telephone:	502-627-4144	e-mail:	Philip.imber@lge-ku.com
Alternate Telephone:			

Alert Level Episode Action Plan

Emission Process/ Point	Pollutants	Description of Action	Resulting Emissions (lb/hr)	Emission Reduction (%)	Time Required
		See Attached			

Warning Level Episode Action Plan

Emission Process/ Point	Pollutants	Description of Action	Resulting Emissions (lb/hr)	Emission Reduction (%)	Time Required
		See Attached			

Emergency Level Episode Action Plan

Emission Process/ Point	Pollutants	Description of Action	Resulting Emissions (lb/hr)	Emission Reduction (%)	Time Required
		See Attached			

EPISODE STANDBY PLAN ALERT LEVEL

Upon receipt of an official declaration from the LMAPCD of an Alert, the following actions will be taken:

1. Special Construction, Electric Distribution and Gas Distribution Departments shall be notified of conditions and advised to:

a. curtail open burning of tree waste, vegetation, refuse, or debris.

b. curtail unessential motor vehicle activity.

2. Load Dispatcher and Power Production Department shall be notified of conditions and advised to:

a. re-dispatch generation among equipment in service, without necessarily adhering to normal economic dispatch procedures, so as to make the most efficient use of such generating equipment pollution control characteristics as practical for the pollutant(s) involved. (For example, during an ozone alert, maximum utilization of tangentially fired boilers is to be undertaken. During an SO2 alert, units equipped with scrubbers should be favored to the extent practical).

b. curtail sales of displacement energy to other electric utilities and divert energy generation associated with short-term or maintenance power to systems outside the alert area as practical by purchase of interchange power or schedule adjustment.

COMMENTARY:

The Company's electric supply must equal the customer's electric demand; the ability to effect reduction of emissions is limited by this constraint. Depending on actions taken by other emissions sources in the area, the Company's generation requirements could conceivably increase during an episode. For example, if the control strategies by other industries increase power requirements or persons with respiratory ailments utilize air conditioning to a greater extent.

The Company's coal fired boilers can not accommodate soot-blowing only between the hours of 12 noon and 4 pm; this is an inherent part of boiler design. However, the Company will endeavor to operate such equipment in the manner which will most effectively assist in achieving the Districts objectives.

EPISODE STANDBY PLAN WARNING LEVEL

Upon receipt of an official declaration from the LMAPCD of a Warning the following actions will be taken:

1. Reinforce advisories set forth in Item 1 of the Alert Level Plan with application of more stringent criteria.

2. In addition to the steps provided in Item 2 of the Alert Level Plan, Load Dispatcher will be advised to:

> a. make no sales to outside utilities for any purpose other than (1) bona-fide emergencies on other systems which can not be relieved by purchase, by those systems, from other sources outside the Warning area or (2) firm commitments by contract which cannot be withdrawn without breach of contract or diverted, with receiving system's cooperation, to sources outside the Warning area.
>
> b. reduce local generation to the extent practical by purchasing energy which is readily available on a reasonable basis, from sources outside the warning area.

COMMENTARY:

Same as contained in the Alert Level Plan.

EPISODE STANDBY PLAN EMERGENCY LEVEL

Upon receipt of an official declaration from the LMAPCD of an Emergency, the following actions will be taken:

1. All actions called for in paragraph 1 of the Alert and Warning Level Plans to be implemented to the maximum extent practically attainable.

2. Curtail, the extent practical, all Company operations not essential to the protection of public health, safety and welfare and protection of Company facilities. Sufficient personnel should be maintained at all locations to accommodate the onset of potential emergency operations and to accommodate the reasonable and unavoidable requirements of the Company's customers.

3. Only those vehicles essential to operations and emergency repairs shall be operated and these operations shall be minimized to extent practicable.

4. With respect to generation, all actions called for in Paragraph 2 of Alert and Warning Level Plans shall continue in effect. In addition, the following actions should be taken by the Load Dispatcher;

   a. Reduce generation by purchasing whatever emergency energy can be secured from sources outside the Emergency Area.

   b. To the extent emergency use of gas can be make available as a boiler fuel and can be accommodated by coal-fired boilers, based on a determination by the Company's management that the overall public interest is best served by such use and such use is permitted by the appropriate regulatory agencies, gas, may be used to reduce coal-fired emissions if it will contribute significantly to reduction of the troublesome pollutant(s).

COMMENTARY:

On the basis of Company's understanding of actions required by the District's regulations as they apply to Company's customers, it is anticipated that Company's load will be reduced materially during and Emergency Level Episode and that this reduction in load, itself, will reduce Company's emissions significantly. Company must maintain enough lightly loaded generation in service, however, to carry the remaining load of its customers should its transmission interconnections be interrupted, regardless of how much generation it otherwise is able to divert to sources outside of the Emergency Area.

Louisville Metro Air Pollution Control District

Permit Application and Renewal
Form AP-100P

Insignificant Activities

Deliver application to:

701 W. Ormsby Ave.Suite 303
Louisville, KY 40203

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

General Information

Plant Name: Louisville Gas and Electric - Mill Creek Generating Station Plant ID: 0127

Date of Submission: 1/24/2019

Emissions from Insignificant Activities must be reported on Emissions Inventory reports and must be included when calculating all plant-wide emission limits.

Reg 1.02 § #	Facility Type	Number of Units	PTE (each)
A.1.1	Indirect heat exchangers less than 10 MMBtu/hr, except those that burn waste oil. Size of unit(s): varies Fuel(s) burned: NG, FO	24	See 100E
A.1.2	Indirect heat exchangers for residential building heat.		
A.2	Fixed internal combustion unless regulated elsewhere. (Emergency generator emissions are calculated based on operation for 500 hrs/yr)	5	See 100E
Any of the following facilities to which no standard is applicable or which emit an air pollutant to which no standard applies:			
A.3.1	Presses for extruding metals, minerals, or wood.		
A.3.2	Dry cleaners for which there is no emission, performance, or other standard.		
A.3.3	Lint traps used in conjunction with commercial laundry and dry cleaners.		
A.3.4	Brazing, soldering or welding equipment.	Varies	NA
A.3.5	Equipment commonly used in wood-working operations, except for conveying, hogging or burning of sawdust or wood waste.		
A.3.6	Foundry core-making equipment to which no heat is applied and for which there is no emission standard.		
A.3.7	Ovens used exclusively for curing potting materials or castings made with epoxy resins.		
A.3.8	Equipment used for compression or injection molding of plastics.		
A.3.9.1	Containers, reservoirs, or tanks used exclusively for dipping operations for coating objects with oils, waxes, or greases and where no organic solvents, diluents, or thinners are used.		
A.3.9.2	Containers, reservoirs, or tanks used exclusively for storage of lubricating oils or fuel oils with a vapor pressure of less than 10 mm_{Hg} at conditions of 20°C and 760 mm_{Hg}.	17	See 100E
A.3.10	Emergency relief vents, stacks and ventilating systems.	24	NA
A.3.11	Laboratory ventilating and exhausting systems which are not used for radioactive air contaminants.	3	NA

Reg 1.02 § #	Facility Type	Number of Units	PTE (each)
A.3.12	Process, exhaust or ventilating systems in bakeries or eating establishments preparing food for human consumption.		
A.3.13	Blast cleaning equipment using a suspension of abrasives in water.	varies	NA
A.3.14	Equipment used exclusively for heat treating, soaking, case hardening or surface conditioning of metal objects ... when natural gas or LP gas is used as fuel.		
A.3.15	Equipment used for washing or drying products fabricated from metal or glass provided no volatile organic materials are used in the process and no oil or solid fuel is burned.		
A.3.16	Equipment, machines, devices, or contrivances built or installed to be used at a domestic residence for domestic use.		
A.3.17	Porcelain enameling furnaces, porcelain enameling drying ovens, vitreous enameling furnaces or vitreous enameling drying ovens.		
A.3.18	Crucible or pot furnaces with a brim full capacity of less than 450 cubic inches of any molten metal.		
A.3.19	Facilities using only peanut oil, sunflower oil, cottonseed oil or canola oil.		
A.3.20	Soil or ground water contamination remediation projects that are entirely passive or entail the total removal of the contaminated substrate for disposal in a certified landfill.		
A.3.21	Dust or particulate collectors that are located in-doors, vent directly indoors into the work space, collect no more than one ton of material per year.		
A.3.23	Portable diesel or gasoline storage tanks with a maximum capacity of less than 500 gallons.	1	See 100E
A.3.24	Storage vessels for VOCs with a maximum capacity of 250 gallons or less. List materials stored:		
A.3.25	Diesel or fuel oil storage tanks that are not used for distribution, sale or resale, and that have less than two times the capacity of the vessel in annual turnover of the fluid contained.	9	See 100E
A.2.3.26	All pressurized VOC storage vessels. List materials stored:		
A.3.27	Research and Development (R&D) facilities. Describe R&D activities carried out:		
Describe any other processes or activities that you believe should be included as insignificant, and your justification for this belief.			
Ash Pond w/ wet storage, Cooling Towers for Units 2 and Unit 3, Stockpiles, Gypsum Handling Equipment, Gypsum Dewatering System, Parts Washers, Bottom/Fly Ash Silos, Ash Pug Mill Mixers, Process Water Systems			
PTE for all these processare less than 5 tpy; see APCD Form 100E			

Louisville Metro Air Pollution Control District

Permit Application and Renewal

Form AP-150B

Definition of Raw Material Usage and Production Rate

Deliver application to:
701 W. Ormsby Ave.Suite 303
Louisville, KY 40203

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name: Louisville Gas and Electric - Mill Creek Generating Station Plant ID: 0127

Date of submission: 1/24/2019

Production Rate

		Continuous Production		Batch Production			Raw Materials
		Units/hour	Units/year	Units/batch	Hours/batch	Batches/year	(enter #s from below)
1	Product Name/CAS #:	Power(MW)					
	Actual						1
	Maximum	1,472	MW				
2	Product Name/CAS #:						
	Actual						
	Maximum						
3	Product Name/CAS #:						
	Actual						
	Maximum						
4	Product Name/CAS #:						
	Actual						
	Maximum						

Raw Material Usage Rate

	Product # (from above)	Usage per product unit		Product # (from above)	Usage per product unit
1 Raw Material Name/CAS #:	Coal		3 Raw Material Name/CAS #:		
	4.8 million	tons year			
2 Raw Material Name/CAS #:			4 Raw Material Name/CAS #:		

Louisville Metro Air Pollution Control District

Process Permit Application
Form AP-200A

Generic Process

Deliver application to:
701 W. Ormsby Ave.Suite 303
Louisville, KY 40203

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric: Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:	9/1/2016	Control equipment associated with this process equipment:	

Equipment Description

Emission Process/Point # **IE23**

Provide a brief description of the equipment or process: LG&E is adding two portable gypsum dewatering systems to supply wallboard quality gypsum for beneficial reuse. The two portable systems will be able to dewater gypsum at 32 tons/hour each and will utilize the GPP radial stackers for product stack out. One portable system will have the capability to feed the "B" Hopper Radial Stacker or the "A" Hopper Radial Stacker, but not simultaneously. The other portable system, will be only about to feed the "B" Hopper Radial Stacker. The gypsum will be dewatered to less than 12% moisture (about 9%) which is needed to meet wallboard specifications.

Describe important manufacturer's specifications or operating parameters:

Manufacturer:	SynMat	Model:	TBD	Rated capacity:	32 tph

Raw Material Information

If additional space is needed, attach a separate sheet and check here: ☐

Raw Material	CAS #	Usage Rate	Raw Material	CAS #	Usage Rate
Gypsum		32 tph			

Products Produced Information

If additional space is needed, attach a separate sheet and check here: ☐

Product Produced	CAS #	Rate	Product Produced	CAS #	Rate
Gypsum		32 tph			

Pollutants Generated or Released Information

If additional space is needed, attach a separate sheet and check here: ☐

Pollutant	CAS #	Rate	Pollutant	CAS #	Rate
PM		0.49 tpy			
PM10		0.23 tpy			

Louisville Metro Air Pollution Control District

Process Permit Application
Form AP-200A

Generic Process

Deliver application to:
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www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric: Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:	March 2017	Control equipment associated with this process equipment:	

Equipment Description

Emission Process/Point # **IE19-22**

Provide a brief description of the equipment or process: Four pug mill mixers

Describe important manufacturer's specifications or operating parameters: 2 pug mill mixers for each the two new bottom ash silos

Manufacturer: TBD	Model: TBD	Rated capacity: 200 tph

Raw Material Information

If additional space is needed, attach a separate sheet and check here: ☐

Raw Material	CAS #	Usage Rate	Raw Material	CAS #	Usage Rate
Bottom Ash/FlyAsh		200 tph			

Products Produced Information

If additional space is needed, attach a separate sheet and check here: ☐

Product Produced	CAS #	Rate	Product Produced	CAS #	Rate
NA					

Pollutants Generated or Released Information

If additional space is needed, attach a separate sheet and check here: ☐

Pollutant	CAS #	Rate	Pollutant	CAS #	Rate
PM		0.0491 tpy			
PM10		0.0163 tpy			

Louisville Metro Air Pollution Control District

Process Permit Application
Form AP-200A

Generic Process

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airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:	1999	Control equipment associated with this process equipment:	

Equipment Description

Emission Process/Point # **E24-27**

Provide a brief description of the equipment or process: Limestone Handling Process: Barge Unloading, Transfer points, Storage pile

Describe important manufacturer's specifications or operating parameters:

Manufacturer: NA	Model: NA	Rated capacity: 750 tph-1000 tph

Raw Material Information

If additional space is needed, attach a separate sheet and check here: ☐

Raw Material	CAS #	Usage Rate	Raw Material	CAS #	Usage Rate
Limestone		750 tph			

Products Produced Information

If additional space is needed, attach a separate sheet and check here: ☐

Product Produced	CAS #	Rate	Product Produced	CAS #	Rate

Pollutants Generated or Released Information

If additional space is needed, attach a separate sheet and check here: ☐

Pollutant	CAS #	Rate	Pollutant	CAS #	Rate
PM					

Louisville Metro Air Pollution Control District

Process Permit Application
Form AP-200A

Generic Process

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airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:	2002	Control equipment associated with this process equipment:	

Equipment Description

Emission Process/Point # **E28**

Provide a brief description of the equipment or process: Limestone grinding building contains three (3) limestone slurry units, Unit A, B, and C. Each unit consists of crusher, ball mill, separating tank, mill slurry classifier, and mill slurry tank. Since water is added to the crusher to make slurry, there are no emissions from ball mills, separating tanks, slurry classifiers, and mill slurry tanks.

Describe important manufacturer's specifications or operating parameters:

Manufacturer:	NA	Model:	NA	Rated capacity:	175 tph

Raw Material Information

If additional space is needed, attach a separate sheet and check here: ☐

Raw Material	CAS #	Usage Rate	Raw Material	CAS #	Usage Rate
Limestone		175 tph			

Products Produced Information

If additional space is needed, attach a separate sheet and check here: ☐

Product Produced	CAS #	Rate	Product Produced	CAS #	Rate

Pollutants Generated or Released Information

If additional space is needed, attach a separate sheet and check here: ☐

Pollutant	CAS #	Rate	Pollutant	CAS #	Rate

Louisville Metro Air Pollution Control District

Process Permit Application
Form AP-200A

Generic Process

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Louisville, KY 40203

(502) 574-6000
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www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:		Control equipment associated with this process equipment:	

Equipment Description

Emission Process/Point # **E39**

Provide a brief description of the equipment or process: Paved and Unpaved Road

Describe important manufacturer's specifications or operating parameters:

Manufacturer: NA	Model: NA	Rated capacity:

Raw Material Information

If additional space is needed, attach a separate sheet and check here: ☐

Raw Material	CAS #	Usage Rate	Raw Material	CAS #	Usage Rate

Products Produced Information

If additional space is needed, attach a separate sheet and check here: ☐

Product Produced	CAS #	Rate	Product Produced	CAS #	Rate

Pollutants Generated or Released Information

If additional space is needed, attach a separate sheet and check here: ☐

Pollutant	CAS #	Rate	Pollutant	CAS #	Rate
PM					

Louisville Metro Air Pollution Control District

Process Permit Application
Form AP-200A

Generic Process

Deliver application to:
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Louisville, KY 40203

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name: Louisville Gas and Electric - Mill Creek Generating Station	Plant ID: 0127
Date of construction, modification, installation, or operation:	Control equipment associated with this process equipment:

Equipment Description

Emission Process/Point # **E47**

Provide a brief description of the equipment or process: Coal Handling Process: Barge Unloading(1500 tph), Railcar Unloading (2400 tph), Coal Radial stacker(1500 tph), Transfer points, Coal Storage pile, 2 Coal Crushers(900 tph), Fuel Additive Facility

Describe important manufacturer's specifications or operating parameters:

Manufacturer: NA	Model: NA	Rated capacity:

Raw Material Information

If additional space is needed, attach a separate sheet and check here: ☐

Raw Material	CAS #	Usage Rate	Raw Material	CAS #	Usage Rate
Coal					

Products Produced Information

If additional space is needed, attach a separate sheet and check here: ☐

Product Produced	CAS #	Rate	Product Produced	CAS #	Rate

Pollutants Generated or Released Information

If additional space is needed, attach a separate sheet and check here: ☐

Pollutant	CAS #	Rate	Pollutant	CAS #	Rate
PM					

Louisville Metro Air Pollution Control District

Process Permit Application
Form AP-200A

Generic Process

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Louisville, KY 40203

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airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric: Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:		Control equipment associated with this process equipment:	

Equipment Description

Emission Process/Point # **E48**

Provide a brief description of the equipment or process: Landfill, landfill haul roads, landfill drop points

Describe important manufacturer's specifications or operating parameters:

Manufacturer: NA	Model: NA	Rated capacity:

Raw Material Information

If additional space is needed, attach a separate sheet and check here: ☐

Raw Material	CAS #	Usage Rate	Raw Material	CAS #	Usage Rate

Products Produced Information

If additional space is needed, attach a separate sheet and check here: ☐

Product Produced	CAS #	Rate	Product Produced	CAS #	Rate

Pollutants Generated or Released Information

If additional space is needed, attach a separate sheet and check here: ☐

Pollutant	CAS #	Rate	Pollutant	CAS #	Rate

Louisville Metro Air Pollution Control District

Process Permit Application
Form AP-200D

Silos / Storage Bins

Deliver application to:
701 W. Ormsby Ave.Suite 303
Louisville, KY 40203

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric: Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:	March 2017	Control equipment associated with this process equipment:	Bin Vent

Equipment Description

Emission Process/Point # **1A**

Manufacturer: TBD Model: TBD

Silo Type	☒ Tower ☐ Bunker ☐ Other:	Loading Method	☐ Pneumatic ☒ Vacuum ☐ Hydraulic ☐ Mechanical ☐ Other:
Number of Compartments: 1			
Diameter (or width):	Height (or length): 150 ft	Working Volume:	
Maximum Loading Rate: 350 tph		Maximum Unloading Rate: 350 tph	

Describe pressure/vacuum relief valve settings: TBD ☐ None

Describe overfill prevention system: TBD ☐ None

Describe silo level monitoring system: TBD ☐ None

Describe high level indicator/alarm: TBD ☐ None

Material Stored

Material	CAS #	Material Density	Compartment #
Bottom Ash		.05 / ton/cu ft	
Fly Ash		.0205 / ton/cu ft	
		/	

Louisville Metro Air Pollution Control District

Process Permit Application
Form AP-200D

Silos / Storage Bins

Deliver application to:
701 W. Ormsby Ave.Suite 303
Louisville, KY 40203

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:	July 2004	Control equipment associated with this process equipment:	Baghouse

Equipment Description

Emission Process/Point # **E2**

Manufacturer: Fisher-Klosterman Model: XQ340-13

Silo Type	☐ Tower ☒ Bunker ☐ Other:	Loading Method	☐ Pneumatic ☐ Vacuum ☐ Hydraulic ☒ Mechanical ☐ Other:
Number of Compartments: 1			

Diameter (or width): Height (or length): Working Volume:

Maximum Loading Rate: Maximum Unloading Rate:

Describe pressure/vacuum relief valve settings: A pressure relief valve is located on the top of the silo ☐ None

Describe overfill prevention system: Level detector ☐ None

Describe silo level monitoring system: Level detectors report information back to the DCS ☐ None

Describe high level indicator/alarm: Notifies operators of high levels ☐ None

Material Stored

Material	CAS #	Material Density	Compartment #
Coal		/	1
		/	
		/	

Louisville Metro Air Pollution Control District

Process Permit Application
Form AP-200D

Silos / Storage Bins

Deliver application to:
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Louisville, KY 40203

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:	August 1970	Control equipment associated with this process equipment:	Baghouse

Equipment Description

Emission Process/Point # **E4**

Manufacturer: American Air Filter

Model: Type D Rotoclone AAF/ No 16

Silo Type	☐ Tower ☒ Bunker ☐ Other:	Loading Method	☐ Pneumatic ☐ Vacuum ☐ Hydraulic ☒ Mechanical ☐ Other:
Number of Compartments: 1			

Diameter (or width): Height (or length): Working Volume:

Maximum Loading Rate: Maximum Unloading Rate:

Describe pressure/vacuum relief valve settings: A pressure relief valve is located on the top of the silo ☐ None

Describe overfill prevention system: Level detector ☐ None

Describe silo level monitoring system: Level detectors report information back to the DCS ☐ None

Describe high level indicator/alarm: Notifies operators of high levels ☐ None

Material Stored

Material	CAS #	Material Density	Compartment #
Coal		/	1
		/	
		/	

Louisville Metro Air Pollution Control District

Process Permit Application
Form AP-200D

Silos / Storage Bins

Deliver application to:
701 W. Ormsby Ave.Suite 303
Louisville, KY 40203

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:	May 1973	Control equipment associated with this process equipment:	Baghouse

Equipment Description

Emission Process/Point # **E6**

Manufacturer: American Air Filter

Model: Type D Rotoclone AAF/ No 16

Silo Type	☐ Tower ☒ Bunker ☐ Other:	Loading Method	☐ Pneumatic ☐ Vacuum ☐ Hydraulic ☒ Mechanical ☐ Other:
Number of Compartments: 1			

Diameter (or width):

Height (or length):

Working Volume:

Maximum Loading Rate:

Maximum Unloading Rate:

Describe pressure/vacuum relief valve settings: A pressure relief valve is located on the top of the silo ☐ None

Describe overfill prevention system: Level detector ☐ None

Describe silo level monitoring system: Level detectors report information back to the DCS ☐ None

Describe high level indicator/alarm: Notifies operators of high levels ☐ None

Material Stored

Material	CAS #	Material Density	Compartment #
Coal		/	1
		/	
		/	

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Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:	May 1975	Control equipment associated with this process equipment:	Baghouse

Equipment Description

Emission Process/Point # **E8**

Manufacturer: American Air Filter

Model: Type D Rotoclone AAF/ No 16

Silo Type	☐ Tower ☒ Bunker ☐ Other:	Loading Method	☐ Pneumatic ☐ Vacuum ☐ Hydraulic ☒ Mechanical ☐ Other:
Number of Compartments: 1			

Diameter (or width):

Height (or length):

Working Volume:

Maximum Loading Rate:

Maximum Unloading Rate:

Describe pressure/vacuum relief valve settings: A pressure relief valve is located on the top of the silo ☐ None

Describe overfill prevention system: Level detector ☐ None

Describe silo level monitoring system: Level detectors report information back to the DCS ☐ None

Describe high level indicator/alarm: Notifies operators of high levels ☐ None

Material Stored

Material	CAS #	Material Density	Compartment #
Coal		/	1
		/	
		/	

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Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station			Plant ID:	0127
Date of construction, modification, installation, or operation:	August 1978	Control equipment associated with this process equipment:	Baghouse		

Equipment Description — Emission Process/Point #: **E13 – Silo A**

Manufacturer: Flex Kleen — Model: 120

Silo Type	☒ Tower ☐ Bunker ☐ Other:	Loading Method	☐ Pneumatic ☐ Vacuum ☐ Hydraulic ☒ Mechanical ☐ Other:
Number of Compartments: 1			

Diameter (or width): — Height (or length): — Working Volume:

Maximum Loading Rate: 75 tph — Maximum Unloading Rate:

Describe pressure/vacuum relief valve settings: A pressure relief valve is located on the top of the silo ☐ None

Describe overfill prevention system: Pressure relief valves, level detector and paddle type switch alarms are located on the top of the silo ☐ None

Describe silo level monitoring system: Level detectors report information back to the DCS ☐ None

Describe high level indicator/alarm: Notifies operators of high levels ☐ None

Material Stored

Material	CAS #	Material Density	Compartment #
Fly Ash		.0205 / ton/cu ft	1
		/	
		/	

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Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station			Plant ID:	0127
Date of construction, modification, installation, or operation:	August 1978	Control equipment associated with this process equipment:	Baghouse		

Equipment Description — Emission Process/Point #: **E13 – Silo B**

Manufacturer: Wheelabrator-Fry — Model: Jet III

Silo Type	☒ Tower ☐ Bunker ☐ Other:	Loading Method	☐ Pneumatic ☐ Vacuum ☐ Hydraulic ☒ Mechanical ☐ Other:
Number of Compartments: 1			

Diameter (or width):	Height (or length):	Working Volume:
Maximum Loading Rate: 47.5 tph	Maximum Unloading Rate:	

Describe pressure/vacuum relief valve settings: A pressure relief valve is located on the top of the silo	☐ None
Describe overfill prevention system: Pressure relief valves, level detector and paddle type switch alarms are located on the top of the silo	☐ None
Describe silo level monitoring system: Level detectors report information back to the DCS	☐ None
Describe high level indicator/alarm: Notifies operators of high levels	☐ None

Material Stored

Material	CAS #	Material Density	Compartment #
Fly Ash		.0205 / ton/cu ft	1
		/	
		/	

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Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:	May 2015	Control equipment associated with this process equipment:	Baghouse

Equipment Description

Emission Process/Point # **E40**

Manufacturer: BCSI Model: BCSI-14

Silo Type	☒ Tower ☐ Bunker ☐ Other:	Loading Method	☐ Pneumatic ☐ Vacuum ☐ Hydraulic ☒ Mechanical ☐ Other:
Number of Compartments: 1			
Diameter (or width): 14feet	Height (or length): 70.25 feet	Working Volume: 120 tons	
Maximum Loading Rate: 20 tph		Maximum Unloading Rate: 1850 lb/hr	

Describe pressure/vacuum relief valve settings: Yes, Knappco 20" pressure/vacuum hatch set at 4 oz. and vacuum set at 0.5 oz ☐ None

Describe overfill prevention system: Yes, alarm notifys of overfill ☐ None

Describe silo level monitoring system: Three side mounted paddle indicators and one roof mount continuous radar ☐ None

Describe high level indicator/alarm: alarm indicates high level ☐ None

Material Stored

Material	CAS #	Material Density	Compartment #
Sorbent		/	1
		/	
		/	

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Form AP-200D

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Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:	May 2015	Control equipment associated with this process equipment:	Baghouse

Equipment Description

Emission Process/Point # **E41**

Manufacturer: BCSI Model: BCSI-14

Silo Type	☒ Tower ☐ Bunker ☐ Other:	Loading Method	☐ Pneumatic ☒ Vacuum ☐ Hydraulic ☐ Mechanical ☐ Other:
Number of Compartments: 1			

Diameter (or width): 14feet Height (or length): 70.25 feet Working Volume: 94 tons

Maximum Loading Rate: 40 tph Maximum Unloading Rate:

Describe pressure/vacuum relief valve settings: Yes, Knappco 20" pressure/vacuum hatch set at 4 oz. and vacuum set at 0.5 oz ☐ None

Describe overfill prevention system: Yes, alarm notifys of overfill ☐ None

Describe silo level monitoring system: Three side mounted paddle indicators and one roof mount continuous radar ☐ None

Describe high level indicator/alarm: alarm indicates high level ☐ None

Material Stored

Material	CAS #	Material Density	Compartment #
Powder Activated Carbon (PAC)		0.0125 / ton/cu ft	1
		/	
		/	

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Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:	May 2015	Control equipment associated with this process equipment:	Baghouse

Equipment Description

Emission Process/Point # **E42**

Manufacturer: Marietta Silos

Model: Concrete Filed Erected

Silo Type	☒ Tower ☐ Bunker ☐ Other:	Loading Method	☐ Pneumatic ☒ Vacuum ☐ Hydraulic ☐ Mechanical ☐ Other:
Number of Compartments: 1			

Diameter (or width): 46 feet Height (or length): 145 feet Working Volume: 3620 tons

Maximum Loading Rate: 175 tph Maximum Unloading Rate: 400 tph

Describe pressure/vacuum relief valve settings: A pressure relief valve is located on the top of the silo ☐ None

Describe overfill prevention system: Pressure relief valves, level detector and paddle type switch alarms are located on the top of the silo ☐ None

Describe silo level monitoring system: Level detectors report information back to the DCS ☐ None

Describe high level indicator/alarm: Notifies operators of high levels ☐ None

Material Stored

Material	CAS #	Material Density	Compartment #
Fly Ash		0.0205 / ton/cu ft	1
		/	
		/	

Louisville Metro Air Pollution Control District

Process Permit Application
Form AP-200D

Silos / Storage Bins

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Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station		Plant ID: 0127
Date of construction, modification, installation, or operation:	July 2012	Control equipment associated with this process equipment:	

Equipment Description

Emission Process/Point # **E42**

Manufacturer: Model:

Silo Type	☐ Tower ☐ Bunker ☒ Other: Commodity storage building	Loading Method	☐ Pneumatic ☐ Vacuum ☐ Hydraulic ☐ Mechanical ☒ Other: Belt Conveyor
Number of Compartments: 2			

Diameter (or width): 230 feet Height (or length): 52 feet Working Volume: 16000 cubic yards

Maximum Loading Rate: 40 tph Maximum Unloading Rate: 125 tph

Describe pressure/vacuum relief valve settings: ☒ None

Describe overfill prevention system: Tip sensors to shut off belt ☐ None

Describe silo level monitoring system: ☒ None

Describe high level indicator/alarm: ☒ None

Material Stored

Material	CAS #	Material Density	Compartment #
Pelletized Gypsum		74 / lb/cu ft	
		/	
		/	

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Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:	July 2013	Control equipment associated with this process equipment:	Baghouse

Equipment Description

Emission Process/Point # **E44**

Manufacturer: Belgrade Steel Tank

Model: 350 Bbl Round Portable

Silo Type	☒ Tower ☐ Bunker ☐ Other:	Loading Method	☐ Pneumatic ☐ Vacuum ☐ Hydraulic ☒ Mechanical ☐ Other:
Number of Compartments: 1			

Diameter (or width): 8.5 feet Height (or length): 37 feet Working Volume: 1352 cubic feet

Maximum Loading Rate: 25 tph Maximum Unloading Rate: 2.5 tph

Describe pressure/vacuum relief valve settings: 6psi ☐ None

Describe overfill prevention system: Tip sensors to shut off belt ☐ None

Describe silo level monitoring system: discrete capacitance probes ☐ None

Describe high level indicator/alarm: discrete capacitance probes ☐ None

Material Stored

Material	CAS #	Material Density	Compartment #
Limestone	72608-12-9	68 / lb/cu ft	
		/	
		/	

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Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:	August 2015	Control equipment associated with this process equipment:	Baghouse

Equipment Description

Emission Process/Point # **E47**

Manufacturer: Tank Connection

Model: 14' x 4000 CF

Silo Type	☒ Tower ☐ Bunker ☐ Other:	Loading Method	☒ Pneumatic ☐ Vacuum ☐ Hydraulic ☐ Mechanical ☐ Other:
Number of Compartments: 1			

Diameter (or width): 14 feet Height (or length): 47 feet Working Volume: 4000 cubic feet

Maximum Loading Rate: 700 lbs/min Maximum Unloading Rate: 500 lbs/min

Describe pressure/vacuum relief valve settings: Pressure vent set for 2 oz/ sq in Also, bin vent runs during loading. ☐ None

Describe overfill prevention system: Silo visually checked before filling and alarms on high level ☐ None

Describe silo level monitoring system: Radar level indication ☐ None

Describe high level indicator/alarm: Alarm sounds outside and on HMI on high level ☐ None

Material Stored

Material	CAS #	Material Density	Compartment #
Brucite Magnesium Hydroxide	1309-42-8	75 / lb/cu ft	
		/	
		/	

Louisville Metro Air Pollution Control District

Process Permit Application
Form AP-200D

Silos / Storage Bins

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airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station		Plant ID: 0127
Date of construction, modification, installation, or operation:	August 2015	Control equipment associated with this process equipment:	Baghouse

Equipment Description

Emission Process/Point # **E47**

Manufacturer: Tank Connection

Model: 14' x 4000 CF

Silo Type	☒ Tower ☐ Bunker ☐ Other:	Loading Method	☒ Pneumatic ☐ Vacuum ☐ Hydraulic ☐ Mechanical ☐ Other:
Number of Compartments: 1			

Diameter (or width): 14 feet Height (or length): 47 feet Working Volume: 4000 cubic feet

Maximum Loading Rate: 700 lbs/min Maximum Unloading Rate: 500 lbs/min

Describe pressure/vacuum relief valve settings: Pressure vent set for 2 oz/ sq in Also, bin vent runs during loading. ☐ None

Describe overfill prevention system: Silo visually checked before filling and alarms on high level ☐ None

Describe silo level monitoring system: Radar level indication ☐ None

Describe high level indicator/alarm: Alarm sounds outside and on HMI on high level ☐ None

Material Stored

Material	CAS #	Material Density	Compartment #
M-45-PC Solid Coal Additive A1		46 / lb/cu ft	
		/	
		/	

Louisville Metro Air Pollution Control District

Process Permit Application
Form AP-200D

Silos / Storage Bins

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Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station		Plant ID: 0127
Date of construction, modification, installation, or operation:	August 2017	Control equipment associated with this process equipment:	Baghouse

Equipment Description

Emission Process/Point # IA-OT

Manufacturer: TBD Model: TBD

Silo Type	☒ Tower ☐ Bunker ☐ Other:	Loading Method	☒ Pneumatic ☐ Vacuum ☐ Hydraulic ☐ Mechanical ☐ Other:
Number of Compartments: 1			

Diameter (or width): 14 feet Height (or length): 38.3 feet Working Volume: 2670 cubic feet

Maximum Loading Rate: 0.21 tph Maximum Unloading Rate: 0.21 tph

Describe pressure/vacuum relief valve settings: ☐ None

Describe overfill prevention system: ☐ None

Describe silo level monitoring system: ☐ None

Describe high level indicator/alarm: ☐ None

Material Stored

Material	CAS #	Material Density	Compartment #
Hydrated Lime		.065 / ton/cu ft	
		/	
		/	

Louisville Metro Air Pollution Control District

Process Permit Application
Form AP-200E

Combustion Source

Deliver application to:
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airpermits@louisvilleky.gov

Plant Name: Louisville Gas and Electric - Mill Creek Generating Station — Plant ID: 0127

Date of construction, modification, installation, or operation: May 1970

Control equipment associated with this process equipment: C1,C26, C27

Equipment Description

Emission Process/Point # E1

Manufacturer: Combustion Engineering — Model : Tangentially-Fired Controlled Circ.

Date of Manufacture: — Date of Installation: May 1970

Firing method: ☐ Direct ☒ Indirect — Rated Maximum Heat Input: 3085 MMBTU/hr

Fuel Information

Primary Fuel		Secondary Fuel	
☐ Natural Gas	☒ Coal	☒ Natural Gas	☐ Coal
☐ #2 Fuel Oil	☐ #6 Fuel Oil	☐ #2 Fuel Oil	☐ #6 Fuel Oil
☐ Other:		☐ Other:	
Maximum annual consumption: 1171802 tons		Maximum annual consumption: 73 MMcf	
Maximum firing rate:		Maximum firing rate:	
Is a low NO_x burner used? ☒ Yes ☐ No		Is a low NO_x burner used? ☒ Yes ☐ No	
If yes, enter rated NO_x emission rate:		If yes, enter rated NO_x emission rate:	
Is flue gas recirculation used? ☐ Yes ☐ No		Is flue gas recirculation used? ☐ Yes ☐ No	
What percentage of recirculation is used? %		What percentage of recirculation is used? %	

Ash Handling Information

Is ash handling equipment used? ☒ Yes (Attach mfg spec sheet) ☐ No

Type of ash handling system	☐ Pneumatic	☐ Hydraulic	
	☒ Mechanical	☐ Other:	
Ash storage containment system	☒ Storage silo	☒ Settling Basin	
	☒ Trucked off site	☒ Other: Landfill	
Ash generation rate:		On-site ash storage capacity:	

Soot Blowing Information

Is soot blowing conducted? ☒ Yes ☐ No *If 'Yes,' complete the following*

Frequency of soot blowing: / — Duration : — Time of day:

Louisville Metro Air Pollution Control District

Process Permit Application
Form AP-200E

Combustion Source

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Plant Name: Louisville Gas and Electric - Mill Creek Generating Station Plant ID: 0127

Date of construction, modification, installation, or operation: August 1970

Control equipment associated with this process equipment: C4,C27, C28

Equipment Description

Emission Process/Point # E3

Manufacturer: Combustion Engineering

Model : Tangentially-Fired Controlled Circ.

Date of Manufacture:

Date of Installation: August 1970

Firing method: ☐ Direct ☒ Indirect

Rated Maximum Heat Input: 3085 MMBTU/hr

Fuel Information

Primary Fuel	Secondary Fuel
☐ Natural Gas ☒ Coal	☒ Natural Gas ☐ Coal
☐ #2 Fuel Oil ☐ #6 Fuel Oil	☐ #2 Fuel Oil ☐ #6 Fuel Oil
☐ Other:	☐ Other:
Maximum annual consumption: 1171801 tons	Maximum annual consumption: 25 MMcf
Maximum firing rate:	Maximum firing rate:
Is a low NO_x burner used? ☒ Yes ☐ No	Is a low NO_x burner used? ☒ Yes ☐ No
If yes, enter rated NO_x emission rate:	If yes, enter rated NO_x emission rate:
Is flue gas recirculation used? ☐ Yes ☐ No	Is flue gas recirculation used? ☐ Yes ☐ No
What percentage of recirculation is used? %	What percentage of recirculation is used? %

Ash Handling Information

Is ash handling equipment used? ☒ Yes (Attach mfg spec sheet) ☐ No

Type of ash handling system	☐ Pneumatic	☐ Hydraulic
	☒ Mechanical	☐ Other:
Ash storage containment system	☒ Storage silo	☒ Settling Basin
	☒ Trucked off site	☒ Other: Landfill
Ash generation rate:		On-site ash storage capacity:

Soot Blowing Information

Is soot blowing conducted? ☒ Yes ☐ No *If 'Yes,' complete the following*

Frequency of soot blowing: /	Duration :	Time of day:

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Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:	May 1973	Control equipment associated with this process equipment:	C7,C22, C29, C39

Equipment Description

Emission Process/Point # E5

Manufacturer: Babcock & Wilcox

Model : Natural Circulation Wall-Fired.

Date of Manufacture:	Date of Installation: May 1973
Firing method: ☐ Direct ☒ Indirect	Rated Maximum Heat Input: 4204 MMBTU/hr

Fuel Information

Primary Fuel	Secondary Fuel
☐ Natural Gas ☒ Coal	☒ Natural Gas ☐ Coal
☐ #2 Fuel Oil ☐ #6 Fuel Oil	☐ #2 Fuel Oil ☐ #6 Fuel Oil
☐ Other:	☐ Other:
Maximum annual consumption: 1596840 tons	Maximum annual consumption: 221 MMcf
Maximum firing rate:	Maximum firing rate:
Is a low NO_x burner used? ☒ Yes ☐ No	Is a low NO_x burner used? ☒ Yes ☐ No
If yes, enter rated NO_x emission rate:	If yes, enter rated NO_x emission rate:
Is flue gas recirculation used? ☐ Yes ☐ No	Is flue gas recirculation used? ☐ Yes ☐ No
What percentage of recirculation is used? %	What percentage of recirculation is used? %

Ash Handling Information

Is ash handling equipment used?		☒ Yes (Attach mfg spec sheet)	☐ No
	Type of ash handling system	☐ Pneumatic	☐ Hydraulic
		☒ Mechanical	☐ Other:
	Ash storage containment system	☒ Storage silo	☒ Settling Basin
		☒ Trucked off site	☒ Other: Landfill
	Ash generation rate:		On-site ash storage capacity:

Soot Blowing Information

Is soot blowing conducted? ☒ Yes ☐ No *If 'Yes,' complete the following*

Frequency of soot blowing: /	Duration :	Time of day:

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Plant Number

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:	May 1973	Control equipment associated with this process equipment:	C10,C23, C30, C31

Equipment Description

Emission Process/Point # E7

Manufacturer:	Babcock & Wilcox	Model :	Natural Circulation Wall-Fired.
Date of Manufacture:		Date of Installation:	May 1975
Firing method:	☐ Direct ☒ Indirect	Rated Maximum Heat Input:	4204 MMBTU/hr

Fuel Information

Primary Fuel	Secondary Fuel
☐ Natural Gas ☒ Coal	☒ Natural Gas ☐ Coal
☐ #2 Fuel Oil ☐ #6 Fuel Oil	☐ #2 Fuel Oil ☐ #6 Fuel Oil
☐ Other:	☐ Other:
Maximum annual consumption: 1908688 tons	Maximum annual consumption: 262 MMcf
Maximum firing rate:	Maximum firing rate:
Is a low NO_x burner used? ☒ Yes ☐ No	Is a low NO_x burner used? ☒ Yes ☐ No
If yes, enter rated NO_x emission rate:	If yes, enter rated NO_x emission rate:
Is flue gas recirculation used? ☐ Yes ☐ No	Is flue gas recirculation used? ☐ Yes ☐ No
What percentage of recirculation is used? %	What percentage of recirculation is used? %

Ash Handling Information

Is ash handling equipment used?		☒ Yes (Attach mfg spec sheet)	☐ No
	Type of ash handling system	☐ Pneumatic	☐ Hydraulic
		☒ Mechanical	☐ Other:
	Ash storage containment system	☒ Storage silo	☒ Settling Basin
		☒ Trucked off site	☒ Other: Landfill
	Ash generation rate:		On-site ash storage capacity:

Soot Blowing Information

Is soot blowing conducted?	☒ Yes ☐ No	*If 'Yes,' complete the following*	
Frequency of soot blowing: /		Duration :	Time of day:

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Number

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:	July 2012	Control equipment associated with this process equipment:	

Equipment Description

Emission Process/Point # E44-45

Manufacturer:	Star Combustion	Model :	
Date of Manufacture:	July 2012	Date of Installation:	September 2012
Firing method: ☐ Direct ☒ Indirect		Rated Maximum Heat Input:	42 MMBTU/hr

Fuel Information

Primary Fuel	Secondary Fuel
☒ Natural Gas ☐ Coal	☐ Natural Gas ☐ Coal
☐ #2 Fuel Oil ☐ #6 Fuel Oil	☐ #2 Fuel Oil ☐ #6 Fuel Oil
☐ Other:	☐ Other:
Maximum annual consumption: 346,020 MMcf	Maximum annual consumption:
Maximum firing rate: 395 ccf/hr	Maximum firing rate:
Is a low NO_x burner used? ☒ Yes ☐ No	Is a low NO_x burner used? ☐ Yes ☒ No
If yes, enter rated NO_x emission rate: .027 lb/MMBTU	If yes, enter rated NO_x emission rate:
Is flue gas recirculation used? ☐ Yes ☒ No	Is flue gas recirculation used? ☐ Yes ☐ No
What percentage of recirculation is used? %	What percentage of recirculation is used? %

Ash Handling Information

Is ash handling equipment used?	☐ Yes (Attach mfg spec sheet)	☒ No	
Type of ash handling system	☐ Pneumatic	☐ Hydraulic	
	☐ Mechanical	☐ Other:	
Ash storage containment system	☐ Storage silo	☐ Settling Basin	
	☐ Trucked off site	☐ Other:	
Ash generation rate:		On-site ash storage capacity:	

Soot Blowing Information

Is soot blowing conducted?	☐ Yes ☒ No	*If 'Yes,' complete the following*	
Frequency of soot blowing: /		Duration :	Time of day:

Louisville Metro Air Pollution Control District

Process Permit Application
Form AP-200J

Engine or Generator

Deliver application to:
701 W. Ormsby Ave.Suite 303
Louisville, KY 40203

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas & Electric - Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:	2007	Control equipment associated with this process equipment:	

Equipment Description

Emission Process/Point # E36

Manufacturer: Caterpillar Model: C18

Date of: Manufacture - Installation - Modification -

Type of Engine: ☒ Reciprocating Internal Combustion ☐ Turbine ☐ Other:

Fuel: ☐ Gasoline ☐ Natural Gas ☒ Diesel ☐ Propane ☐ Other:

Rated Output: 800 ☒ HP ☐ kW

Maximum Fuel Consumption: cu ft/hr

For Reciprocating Internal Combustion Engines

Displacement:

Number of cylinders: ☐ in-line ☐ V ☐ radial

Ignition source: ☐ spark ☐ compression ☐ other: electronic

Engine Type: ☐ 2 stroke ☒ 4 stroke

Non-resettable hour meter: ☒ Yes ☐ No

Emergency use ? ☒ Yes ☐ No

Output Use	Non –Emergency Equipment	Emergency Equipment
	Describe:	☐ Flood Pump ☒ Electrical Generator ☐ Fire Pump ☐ Other:

Output device rating: 597 kW`

Fuel Storage Tank Information

☐ No fuel storage tank is required. Reason:

☐ Aboveground ☒ Underground ☐ Vertical ☐ Horizontal

Diameter: Height or Length: Working volume: 404 gallons

Tank construction: ☐ Fiberglass ☐ Plastic ☐ Aluminum ☒ Steel

Roof type: ☐ Flat, Fixed ☐ Dome ☐ Floating ☐ Other:

Does this tank have a submerged fill pipe, as defined in District regulation 7.12 ☐ Yes ☒ No

Federal Regulation Applicability	
Check any Federal regulations which may be applicable to this installation	
☒	40 CFR 60, Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines.
☐	40 CFR 60, Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines.
☐	40 CFR 60, Subpart KKKK – Standards of Performance for Stationary Combustion Turbines.
☐	40 CFR 63, Subpart YYYY – National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines.
☒	40 CFR 63, Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines.

Louisville Metro Air Pollution Control District

Process Permit Application
Form AP-200J

Engine or Generator

Deliver application to: Imber
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Louisville, KY 40203

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas & Electric - Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:	2007	Control equipment associated with this process equipment:	

Equipment Description

Emission Process/Point # E37

Manufacturer: Caterpillar Model: 3412

Date of: Manufacture - Installation - Modification -

Type of Engine: ☒ Reciprocating Internal Combustion ☐ Turbine ☐ Other:

Fuel: ☐ Gasoline ☐ Natural Gas ☒ Diesel ☐ Propane ☐ Other:

Rated Output: 800 ☒ HP ☐ kW

Maximum Fuel Consumption: cu ft/hr

For Reciprocating Internal Combustion Engines

Displacement:

Number of cylinders: ☐ in-line ☐ V ☐ radial

Ignition source: ☐ spark ☐ compression ☐ other: electronic

Engine Type: ☐ 2 stroke ☒ 4 stroke

Non-resettable hour meter: ☒ Yes ☐ No

Emergency use ? ☒ Yes ☐ No

Output Use	Non –Emergency Equipment	Emergency Equipment
	Describe:	☐ Flood Pump ☒ Electrical Generator ☐ Fire Pump ☐ Other:

Output device rating: 597 kW`

Fuel Storage Tank Information

☐ No fuel storage tank is required. Reason:

☐ Aboveground ☒ Underground ☐ Vertical ☐ Horizontal

Diameter: Height or Length: Working volume: 450 gallons

Tank construction: ☐ Fiberglass ☐ Plastic ☐ Aluminum ☒ Steel

Roof type: ☐ Flat, Fixed ☐ Dome ☐ Floating ☐ Other:

Does this tank have a submerged fill pipe, as defined in District regulation 7.12 ☐ Yes ☒ No

Federal Regulation Applicability	
Check any Federal regulations which may be applicable to this installation	
☒	40 CFR 60, Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines.
☐	40 CFR 60, Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines.
☐	40 CFR 60, Subpart KKKK – Standards of Performance for Stationary Combustion Turbines.
☐	40 CFR 63, Subpart YYYY – National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines.
☒	40 CFR 63, Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines.

Louisville Metro Air Pollution Control District

Process Permit Application
Form AP-200J

Engine or Generator

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airpermits@louisvilleky.gov

Plant Name: Louisville Gas & Electric - Mill Creek Generating Station	Plant ID: 0127
Date of construction, modification, installation, or operation:	Control equipment associated with this process equipment:

Equipment Description

Emission Process/Point # IE24

Manufacturer: Kohler Model: 60REZGB

Date of: Manufacture - Installation - August 2018 Modification -

Type of Engine: ☒ Reciprocating Internal Combustion ☐ Turbine ☐ Other:

Fuel: ☐ Gasoline ☒ Natural Gas ☐ Diesel ☐ Propane ☐ Other:

Rated Output: 105 ☒ HP ☐ kW

Maximum Fuel Consumption: 790 cu ft/hr

For Reciprocating Internal Combustion Engines

Displacement: 350 cubic inches

Number of cylinders: 8 ☐ in-line ☒ V ☐ radial

Ignition source: ☐ spark ☒ compression ☒ other: electronic

Engine Type: ☐ 2 stroke ☒ 4 stroke

Non-resettable hour meter: ☒ Yes ☐ No

Emergency use ? ☒ Yes ☐ No

Output Use	Non –Emergency Equipment	Emergency Equipment
	Describe:	☐ Flood Pump ☒ Electrical Generator ☐ Fire Pump ☐ Other:

Output device rating: 78.3 kW`

Fuel Storage Tank Information

☒ No fuel storage tank is required. Reason: Connected to natural gas pipeline

☐ Aboveground ☐ Underground ☐ Vertical ☐ Horizontal

Diameter: Height or Length: Working volume: 187 gallons

Tank construction: ☐ Fiberglass ☐ Plastic ☐ Aluminum ☐ Steel

Roof type: ☐ Flat, Fixed ☐ Dome ☐ Floating ☐ Other:

Does this tank have a submerged fill pipe, as defined in District regulation 7.12 ☐ Yes ☒ No

Federal Regulation Applicability	
Check any Federal regulations which may be applicable to this installation	
☒	40 CFR 60, Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines.
☐	40 CFR 60, Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines.
☐	40 CFR 60, Subpart KKKK – Standards of Performance for Stationary Combustion Turbines.
☐	40 CFR 63, Subpart YYYY – National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines.
☒	40 CFR 63, Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines.

Louisville Metro Air Pollution Control District

Process Permit Application
Form AP-200J

Engine or Generator

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Louisville, KY 40203

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www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name: Louisville Gas & Electric - Mill Creek Generating Station	Plant ID: 0127
Date of construction, modification, installation, or operation:	Control equipment associated with this process equipment:

Equipment Description

Emission Process/Point # IA4

Manufacturer: Clarke — Model: JU4H-UFADY8

Date of: Manufacture - 2013 — Installation - 5/6/2014 — Modification -

Type of Engine: ☒ Reciprocating Internal Combustion ☐ Turbine ☐ Other:

Fuel: ☐ Gasoline ☐ Natural Gas ☒ Diesel ☐ Propane ☐ Other:

Rated Output: 157 ☒ HP ☐ kW

Maximum Fuel Consumption: 10.6 gal/hr

For Reciprocating Internal Combustion Engines

Displacement:	275 cubic inches
Number of cylinders:	4 ☒ in-line ☐ V ☐ radial
Ignition source:	☐ spark ☒ compression ☐ other:
Engine Type:	☐ 2 stroke ☒ 4 stroke

Non-resettable hour meter: ☒ Yes ☐ No

Emergency use ? ☒ Yes ☐ No

Output Use	Non –Emergency Equipment	Emergency Equipment
	Describe:	☐ Flood Pump ☐ Electrical Generator ☒ Fire Pump ☐ Other:

Output device rating: 177 kW`

Fuel Storage Tank Information

☐ No fuel storage tank is required. Reason:

☐ Aboveground ☒ Underground — ☐ Vertical ☒ Horizontal

Diameter: — Height or Length: — Working volume: 187 gallons

Tank construction	☐ Fiberglass ☐ Plastic ☐ Aluminum ☒ Steel	Roof type	☒ Flat, Fixed ☐ Dome ☐ Floating ☐ Other:

Does this tank have a submerged fill pipe, as defined in District regulation 7.12 ☐ Yes ☒ No

Federal Regulation Applicability	
Check any Federal regulations which may be applicable to this installation	
☒	40 CFR 60, Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines.
☐	40 CFR 60, Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines.
☐	40 CFR 60, Subpart KKKK – Standards of Performance for Stationary Combustion Turbines.
☐	40 CFR 63, Subpart YYYY – National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines.
☒	40 CFR 63, Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines.

Louisville Metro Air Pollution Control District

Process Permit Application
Form AP-200J

Engine or Generator

Deliver application to: Imber
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Louisville, KY 40203

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name: Louisville Gas & Electric - Mill Creek Generating Station	Plant ID: 0127
Date of construction, modification, installation, or operation:	Control equipment associated with this process equipment:

Equipment Description

Emission Process/Point # IA4

Manufacturer: Clarke — Model: JU6H-UFAD58

Date of: Manufacture - 2013 — Installation - 4/29/2014 — Modification -

Type of Engine: ☒ Reciprocating Internal Combustion ☐ Turbine ☐ Other:

Fuel: ☐ Gasoline ☐ Natural Gas ☒ Diesel ☐ Propane ☐ Other:

Rated Output: 183 ☒ HP ☐ kW

Maximum Fuel Consumption: 9.7 gal/hr

For Reciprocating Internal Combustion Engines

Displacement:	415 cubic inches
Number of cylinders:	6 ☒ in-line ☐ V ☐ radial
Ignition source:	☐ spark ☒ compression ☐ other:
Engine Type:	☐ 2 stroke ☒ 4 stroke

Non-resettable hour meter: ☒ Yes ☐ No

Emergency use ? ☒ Yes ☐ No

Output Use	Non –Emergency Equipment	Emergency Equipment
	Describe:	☐ Flood Pump ☐ Electrical Generator ☒ Fire Pump ☐ Other:

Output device rating: 177 kW`

Fuel Storage Tank Information

☐ No fuel storage tank is required. Reason:

☐ Aboveground ☒ Underground — ☐ Vertical ☒ Horizontal

Diameter: — Height or Length: — Working volume: 300 gallons

Tank construction	☐ Fiberglass ☐ Plastic ☐ Aluminum ☒ Steel	Roof type	☒ Flat, Fixed ☐ Dome ☐ Floating ☐ Other:

Does this tank have a submerged fill pipe, as defined in District regulation 7.12 ☐ Yes ☒ No

Federal Regulation Applicability	
Check any Federal regulations which may be applicable to this installation	
☒	40 CFR 60, Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines.
☐	40 CFR 60, Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines.
☐	40 CFR 60, Subpart KKKK – Standards of Performance for Stationary Combustion Turbines.
☐	40 CFR 63, Subpart YYYY – National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines.
☒	40 CFR 63, Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines.

Louisville Metro Air Pollution Control District

Process Permit Application
Form AP-200N

VOC Storage Tank

Deliver application to:
701 W. Ormsby Ave.Suite 303
Louisville, KY 40203

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:	1993	Control equipment associated with this process equipment:	

Equipment Description

Emission Process/Point # **E20**

Tank Manufacturer: NA Model: NA

Diameter: Height: Working Volume: 3000 gallons

Location: ☐ Indoors ☒ Outdoors ☐ Underground

Surface Finish: ☐ White ☐ Bare metal-specular ☐ Bare metal-diffuse ☒ Gray/Light ☐ Gray/Dark ☐ Red/Primer

Tank Type: ☐ Vertical, Fixed Roof ☐ Vertical, External Floating Roof ☒ Horizontal ☐ Vertical, Internal Floating Roof ☐ Other:

Construction: ☒ Steel ☐ Plastic/Fiberglass ☐ Aluminum ☐ Concrete ☐ Other:

Type of Vent: ☐ Atmosphere ☐ Conservation (settings: + /-) ☐ Closed ☐ Vapor Recovery ☐ Flame Arrestor ☐ Vacuum Breaker ☐ Flare ☐ Other:

☒ Vented to atmosphere

☐ Vented to control device

Tank Contents Information

Attach Material Safety Data Sheet for this product to the application

Product stored in tank: Unleaded Gasoline CAS #

Material Properties: Density: @ ° Molecular Weight:

Vapor Pressure @ 70°F and atmospheric pressure: psia

Louisville Metro Air Pollution Control District

Process Permit Application
Form AP-200P

Solvent Metal Cleaning

Deliver application to:
701 W. Ormsby Ave.Suite 303
Louisville, KY 40203

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:		Control equipment associated with this process equipment:	

Equipment Description

Emission Process/Point # IE1-8

Manufacturer:	Various	Model:	Various

Tank type (see instructions): ☒ Cold Cleaner ☐ Open Top Vapor Degreaser ☐ Other:

Is the parts washer conveyorized? ☐ Yes ☒ No	Does the parts washer have a door or lid that is closed during cleaning? ☒ Yes ☐ No

Tank dimensions (L x W)	Tank wall height:	Normal liquid depth:

What is the volume of the secondary reservoir? ☐ None

Does the parts washer have primary freeboard condenser coils?	☐ Yes (complete Form AP-300H)	☒ No
Does the parts washer have secondary condenser coils that create a cold air layer above the vapor zone?	☐ Yes (complete form AP-300H)	☒ No
Does the parts washer have a carbon adsorption device to reduce vapors?	☐ Yes (complete form AP-300K)	☒ No

Briefly describe any method of agitation:

Solvent Manufacturer:	Safety Kleen	Solvent Name:	Safety Kleen Premium Solvent

Attach MSDS for each cleaning agent used in the parts washer

If the cleaning agent is an organic solvent, enter the vapor pressure at operating temperature:	0.2 mm Hg	@ 68 ° F	☐ N/A
If this solvent is heavier than water and insoluble, does the parts washer use a water cover?	☐ Yes	☐ No	☐ N/A
If the cleaning agent is a low-VOC material (soap or detergent), enter the mix ratio with water:	:		
If the cleaning agent is heated, to what temperature:	°		☐ N/A

Material Safety Data Sheet

Material Name: SAFETY-KLEEN PREMIUM SOLVENT (VIRGIN AND RECYCLED) **ID: 82658**

* * * Section 1 - Chemical Product and Company Identification * * *

Product Code: 6605, 6616
Product Use: Cleaning and degreasing metal parts. If this product is used in combination with other products, refer to the Material Safety Data Sheet for those products.
Synonyms: Safety-Kleen Premium Gold Solvent. Parts Washer Solvent; Petroleum Distillates; Petroleum Naphtha; Naphtha, Solvent; Stoddard Solvent; Mineral Spirits.

Safety-Kleen Systems, Inc.
2600 North Central Expressway
Suite 400
Richardson, TX 75080

Phone: 1-800-669-5740

Emergency # 1-800-468-1760
www.safety-kleen.com

Issue Date
November 8, 2012
Supersedes Issue Date
January 20, 2012
Original Issue Date
January 26, 1995
PREPARED BY: Product MSDS Coordinator APPROVED BY: MSDS Task Force

* * * Section 2 - Hazardous Identification * * *

EMERGENCY OVERVIEW
Appearance
Liquid, clear, colorless to pale yellow, mild hydrocarbon odor.
Signal Word
WARNING!
Physical Hazards
Combustible liquid and vapor.
Health Hazards
May be harmful if inhaled. May irritate the respiratory tract (nose, throat, and lungs), eyes, and skin. May be harmful if swallowed. Contains material that may cause central nervous system and kidney damage.
POTENTIAL HEALTH EFFECTS
Inhalation (Breathing)
High concentrations of vapor may be harmful if inhaled. High concentrations of vapor or mist may irritate the respiratory tract (nose, throat, and lungs). High concentrations of vapor or mist may cause nausea, vomiting, headaches, dizziness, loss of coordination, numbness, and other central nervous system effects. Massive acute overexposure may cause rapid central nervous system depression, sudden collapse, coma, and/or death.
Eyes
May cause irritation.
Skin
May cause irritation. Not likely to be absorbed in harmful amounts.
Ingestion (Swallowing)
May be harmful if swallowed. May cause throat irritation, nausea, vomiting, and central nervous system effects as noted under **INHALATION (BREATHING)**. Breathing product into the lungs during ingestion or vomiting may cause lung injury and possible death.
Medical Conditions Aggravated by Exposure
Individuals with pre-existing respiratory tract (nose, throat, and lungs), central nervous system, kidney, eye, and/or skin disorders may have increased susceptibility to the effects of exposure.

Material Safety Data Sheet

Material Name: SAFETY-KLEEN PREMIUM SOLVENT (VIRGIN AND RECYCLED) **ID: 82658**

Chronic

Prolonged or repeated inhalation may cause toxic effects as noted under **INHALATION (BREATHING)**. Prolonged or repeated exposure may cause central nervous system and kidney damage. Prolonged or repeated eye contact may cause inflammation of the membrane lining the eyelids and covering the eyeball (conjunctivitis). Prolonged or repeated skin contact may cause drying, cracking, redness, itching, swelling (dermatitis) and or burns.

Cancer Information

No known carcinogenicity. For more information, see **SECTION 11: CARCINOGENICITY**. Also see **SECTION 15: CALIFORNIA**.

Environmental Hazards

Product is not toxic to aquatic life. Also see **SECTION 12: ECOLOGICAL INFORMATION**.

* * * Section 3 - Composition / Information on Ingredients * * *

CAS	Component	Percent
64742-47-8	Distillates (petroleum), hydrotreated light	100

Component Related Regulatory Information

This product may be regulated, have exposure limits or other information identified as the following: Stoddard solvent (8052-41-3).

* * * Section 4 - First Aid Measures * * *

Inhalation (Breathing)

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Oxygen should only be administered by qualified personnel. Someone should stay with victim. Get medical attention if breathing difficulty persists.

Eyes

If irritation or redness from exposure to vapor develops, move away from exposure into fresh air. Upon contact, immediately flush eyes with plenty of lukewarm water, holding eyelids apart, for 15 minutes. Get medical attention.

Skin

Remove affected clothing and shoes. Wash skin thoroughly with soap and water. Get medical attention if irritation or pain develops or persists.

Ingestion (Swallowing)

Do NOT induce vomiting. Immediately get medical attention. Call 1-800-468-1760 for additional information. If spontaneous vomiting occurs, keep head below hips to avoid breathing the product into the lungs. Never give anything by mouth to an unconscious person.

Notes to Physicians

Treat symptomatically and supportively. Treatment may vary with condition of victim and specifics of incident. Call 1-800-468-1760 for additional information.

* * * Section 5 - Fire Fighting Measures * * *

Hazardous Combustion Products

Decomposition and combustion materials may be toxic. Burning may produce carbon monoxide and unidentified organic compounds.

Conditions of Flammability

Heat, sparks, or flame.

Extinguishing Media

Carbon dioxide, regular foam, dry chemical, water spray, or water fog.

Protective Equipment For Firefighting

Firefighters should wear full-face, self contained breathing apparatus and impervious protective clothing. Firefighters should avoid inhaling any combustion products.

Fire Fighting Equipment/Instructions

Keep storage containers cool with water spray. A positive-pressure, self-contained breathing apparatus (SCBA) and full-body protective equipment are required for fire emergencies.

Material Safety Data Sheet

Material Name: SAFETY-KLEEN PREMIUM SOLVENT (VIRGIN AND RECYCLED) **ID: 82658**

NFPA Ratings: Health: 1 **Fire:** 2 **Reactivity:** 0
Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Fire and Explosion Hazards

Vapor explosion hazard indoors, outdoors, or in sewers. Vapors may travel to ignition source and flashback. Vapors will spread along the ground and collect in low or confined areas. Run-off to sewer may create a fire hazard. Heated containers may rupture or be thrown into the air. "Empty" containers may retain residue and can be dangerous. Products are not sensitive to mechanical impact. Products may be sensitive to static discharge, which could result in fire or explosion.

* * * Section 6 - Accidental Release Measures * * *

Remove all ignition sources. Do not touch or walk through spilled product. Stop leak if you can do it without risk. Wear protective equipment and provide engineering controls as specified in **SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Ventilate area and avoid breathing vapor or mist. A vapor suppressing foam may be used to reduce vapors. Contain spill away from surface water and sewers. Contain spill as a liquid for possible recovery, or sorb with compatible sorbent material and shovel with a clean, sparkproof tool into a sealable container for disposal. Additionally, for large spills: Water spray may reduce vapor, but may not prevent ignition in closed spaces. Dike far ahead of liquid spill for collection and later disposal.

* * * Section 7 - Handling and Storage * * *

Handling Procedures

Keep away from heat, sparks, or flame. Where flammable mixtures may be present, equipment safe for such locations should be used. Use clean, sparkproof tools and explosion-proof equipment. When transferring product, metal containers, including trucks and tank cars, should be grounded and bonded. Do not breathe vapor or mist. Use in a well ventilated area. Avoid contact with eyes, skin, clothing, and shoes. Do not smoke while using this product.

Shipping and Storing

Keep container tightly closed when not in use and during transport. Store containers in a cool, dry place. Do not pressurize, cut, weld, braze, solder, drill, or grind containers. Keep containers away from heat, flame, sparks, static electricity, or other sources of ignition. Empty product containers may retain product residue and can be dangerous. See **SECTION 14: TRANSPORTATION INFORMATION** for Packing Group information.

* * * Section 8 - Exposure Controls / Personal Protection * * *

Exposure Guidelines

Component Exposure Limits

Distillates (petroleum), hydrotreated light (64742-47-8)

ACGIH:	100 ppm TWA (related to Stoddard solvent)
OSHA Final:	500 ppm TWA; 2900 mg/m3 TWA (related to Stoddard solvent)
OSHA Vacated:	100 ppm TWA; 525 mg/m3 TWA (related to Stoddard solvent)
NIOSH:	350 mg/m3 TWA (related to Stoddard solvent)
	1800 mg/m3 Ceiling (15 min, related to Stoddard solvent)

Engineering Controls

Provide general ventilation needed to maintain concentration of vapor or mist below applicable exposure limits. Where adequate general ventilation is unavailable, use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below applicable exposure limits. Where explosive mixtures may be present, equipment safe for such locations should be used.

Personal Protective Equipment: Respiratory

Use NIOSH-certified P- or R- series particulate filter and organic vapor cartridges when concentration of vapor or mist exceeds applicable exposure limits. Protection provided by air purifying respirators is limited. Do not use N-rated respirators. Selection and use of respiratory protective equipment should be in accordance in the USA with OSHA General Industry Standard 29 CFR 1910.134; or in Canada with CSA Standard Z94.4.

Personal Protective Equipment: Eyes/Face

Where eye contact is likely, wear chemical goggles; contact lens use is not recommended.

Material Safety Data Sheet

Material Name: SAFETY-KLEEN PREMIUM SOLVENT (VIRGIN AND RECYCLED) **ID: 82658**

Personal Protective Equipment: Skin

Where skin contact is likely, wear neoprene, nitrile, or equivalent protective gloves; use of natural rubber or equivalent gloves is not recommended.

To avoid prolonged or repeated contact with products where spills and splashes are likely, wear appropriate chemical-resistant faceshield, boots, apron, coveralls, long sleeve shirts, or other protective clothing.

Personal Protective Equipment: Personal Hygiene

Use good personal hygiene. Wash thoroughly with soap and water after handling product and before eating, drinking, or using tobacco products. Clean affected clothing, shoes, and protective equipment before reuse. Discard affected clothing, shoes, and/or protective equipment if they cannot be thoroughly cleaned. Discard leather articles, such as shoes, saturated with this product.

Other Personal Protective Equipment

Where spills and splashes are likely, facilities storing or using these products should be equipped with an emergency eyewash and shower, both equipped with clean water, in the immediate work area.

* * * Section 9 - Physical & Chemical Properties * * *

Appearance/Odor :	Liquid, clear, colorless to pale yellow, mild hydrocarbon odor .	**pH:**	Not applicable.
Boiling Point:	350°F (177°C) (initial)	**Melting Point:**	-45°F (-43°C) (maximum)
Solubility (H2O):	Insoluble.	**Specific Gravity:**	0.77 to 0.82 at 60°F (15.6°C) (water = 1)
Density:	6.4 to 6.7 LB/US gal (770 to 800 g/l)	**Octanol/H2O Coeff.:**	Not available.
Evaporation Rate:	<0.1 (butyl acetate = 1)	**Molecular Weight:**	Not available.
Odor Threshold:	30 ppm (based on Stoddard Solvent)	**Auto Ignition:**	480°F (249°C) (minimum)
LFL:	0.7 VOL% (minimum)	**Flash Point:**	148°F (64°C) (minimum)
UFL:	5 VOL% (maximum)		
Vapor Pressure:	0.2 mm Hg at 68°F (20°C) 0.6 mm Hg at 100°F (37°C)		

* * * Section 10 - Chemical Stability & Reactivity Information * * *

Stability

Stable under normal temperatures and pressures.

Incompatibility

Avoid acids, alkalies, oxidizing agents, reducing agents, or reactive halogens.

Reactivity

Polymerization is not known to occur under normal temperature and pressures. Not reactive with water.

Hazardous Decomposition Products

None under normal temperatures and pressures. See also **SECTION 5: HAZARDOUS COMBUSTION PRODUCTS**.

Conditions To Avoid

Avoid heat, sparks, or flame.

* * * Section 11 - Toxicological Information * * *

Toxicity Data

Component Analysis - LD50/LC50

Distillates (petroleum), hydrotreated light (64742-47-8)

Inhalation LC50 Rat >5.2 mg/L 4 h; Oral LD50 Rat >5000 mg/kg; Dermal LD50 Rabbit >2000 mg/kg

Acute Effects

May be harmful if inhaled. May irritate the respiratory tract (nose, throat, and lungs), eyes, and skin. May be harmful if swallowed. Contains material that may cause central nervous system and kidney damage. Breathing product into the lungs during ingestion or vomiting may cause lung injury and possible death.

Repeated Dose Effects

Prolonged contact may cause kidney or central nervous system damage.

Material Safety Data Sheet

Material Name: SAFETY-KLEEN PREMIUM SOLVENT (VIRGIN AND RECYCLED) **ID: 82658**

Carcinogenicity

Component Carcinogenicity

None of this product's components are listed by ACGIH, IARC, OSHA, NIOSH, or NTP.

Target Organ Effects

Product can irritate skin and eyes. Product can be aspirated into lungs.

Mutagenicity

Based on best current information, there is no known mutagenicity associated with this product.

Teratogenicity

Based on best current information, there is no known teratogenicity associated with this product.

* * * Section 12 - Ecological Information * * *

Ecotoxicity

A Static Acute Bioassay as per California Department of Fish and Game WPCL was done using fathead minnows and up to 750 ppm of the products in water. The material passed the bioassay.

Component Analysis - Ecotoxicity - Aquatic Toxicity

Distillates (petroleum), hydrotreated light (64742-47-8)

Duration/Test/Species	Concentration/Conditions/Notes
96 Hr LC50 Pimephales promelas	45 mg/L [flow-through]
96 Hr LC50 Lepomis macrochirus	2.2 mg/L [static]
96 Hr LC50 Oncorhynchus mykiss	2.4 mg/L [static]

Persistence/Degradability

Product is not expected to be readily biodegradable.

Bioaccumulation/Accumulation

Product is not expected to bioaccumulate.

Mobility in Environmental Media

Product is expected to have high soil mobility.

Other Adverse Effects

No information available for the product.

* * * Section 13 - Disposal Considerations * * *

Disposal Instructions

Dispose in accordance with federal, state, provincial, and local regulations. Regulations may also apply to empty containers. The responsibility for proper waste disposal lies with the owner of the waste. Contact Safety-Kleen regarding proper recycling or disposal.

US EPA Waste Number & Descriptions

Not regulated. Based on available data, this information applies to the product as supplied to the user. Processing, use, or contamination by the user may change the waste code applicable to the disposal of this product.

* * * Section 14 - Transportation Information * * *

Emergency Response Guide Number

128 Reference .*North American Emergency Response Guidebook*

DOT

Bulk Packages (>119 Gallons): Shipping Name: Combustible liquid, n.o.s. (petroleum naphtha) **UN/NA #:** NA1993. **Hazard Class:** Combustible liquid. **Packing Group:** III **Required Placards:** Class 3, NA1993

Non-bulk Packages (<120 Gallons): Shipping Name: Cleaning compounds (Petroleum naphtha) (Not US DOT regulated). **UN/NA #:** None. **Hazard Class:** None **Packing Group:** None **Required Label(s):** None

Shipping Name: Non-regulated goods.

TDG

Shipping Name: Not regulated as a dangerous good.

Material Safety Data Sheet

Material Name: SAFETY-KLEEN PREMIUM SOLVENT (VIRGIN AND RECYCLED) **ID: 82658**

IATAInformation

No Classification Assigned.

IMDGInformation

No Classification Assigned.

* * * Section 15 - Regulatory Information * * *

Volatile Organic Compounds (As Regulated)

100 WT%; 6.4-6.7 LB/US gal; 770-800 g/l
As per 40 CFR Part 51.100(s)
VOC Vapor Pressure Approx 0.2 mmHg @20°C
Product may or may not be considered photochemically reactive (100% by weight). Consult your state or local air district regulations for location specific information.

SARA Sections 311/312

This product poses the following health hazards as defined in 40 CFR Part 370 and are subject to the requirements of sections 311 and 312 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA):
Immediate (Acute) Health Hazard
Delayed (Chronic) Health Hazard
Fire Hazard

SARA 302/304

Component Analysis

This product does not contain any "extremely hazardous substances" listed pursuant to Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) Section 302 or Section 304 as identified in 40 CFR Part 355, Appendix A and B.

SARA Section 313

This product does not contain "toxic" chemicals subject to the requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and 40 CFR Part 372.

Component Analysis

This product does not contain any "toxic" chemical subject to the requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and 40 CFR Part 372.

CERCLA

Component Analysis

This product does not contain any "hazardous substance" listed under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) in 40 CFR Part 302, Table 302.4.

TSCA

The component of this product is listed on, or is automatically included as "naturally occurring chemical substances" on, or is exempted from the requirement to be listed on, the TSCA Inventory.

Component Analysis

Component	CAS #	TSCA
Distillates (petroleum), hydrotreated light	64742-47-8	Yes

State Regulations

This product may contain a detectable amount of benzene CAS 71-43-2,p-dichlorobenzene CAS 106-46-7, ethylbenzene CAS 100-41-4, and naphthalene CAS 91-20-3. WARNING: These chemicals are known to the State of California to cause cancer.

This product may contain a detectable amount of benzene CAS 71-43-2 and toluene CAS 108-88-3. WARNING: These chemicals are known to the State of California to cause birth defects or other reproductive harm.

U.S. State Regulations

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	MA	MN	NJ	PA	CA
Distillates (petroleum), hydrotreated light ([1]related to: Stoddard solvent)	64742-47-8	Yes[1]	Yes[1]	Yes[1]	Yes[1]	Yes[1]

Material Safety Data Sheet

Material Name: SAFETY-KLEEN PREMIUM SOLVENT (VIRGIN AND RECYCLED) **ID: 82658**

Canadian Regulations

This product have been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all information required by the CPR.

Component Analysis

Component	CAS #	CAN
Distillates (petroleum), hydrotreated light	64742-47-8	DSL

Canadian WHMIS Information

Class B3 - Combustible Liquid Class D2B - Irritating to eyes and skin.

Component Analysis - WHMIS IDL

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:
Distillates (petroleum), hydrotreated light (64742-47-8) 1 % (related to Stoddard solvent)

Canadian Environmental Protection Act (CEPA)

The component of this product is listed on, or is automatically included as "substance occurring in nature" on, or is exempted from the requirements to be listed on, the Canadian Domestic Substances List (DSL).

* * * Section 16 - Other Information * * *

Label/Other Information

These products are United States Department of Agriculture (USDA) approved and ETL classified.

Revision Information

Product name, synonyms, supplier address.

Disclaimer

User assumes all risks incident to the use of this product. To the best of our knowledge, the information contained herein is accurate. However, Safety-Kleen assumes no liability whatsoever for the accuracy or completeness of the information contained herein. No representations or warranties, either expressed or implied, or merchantability, fitness for a particular purpose or of any other nature are made hereunder with respect to the information or the product to which the information refers. The data contained on this sheet apply to the product as supplier to the user.

End of Sheet 82658

Louisville Metro Air Pollution Control District

Process Permit Application
Form AP-200R

Wet Cooling Tower

Deliver application to:
701 W. Ormsby Ave.Suite 303
Louisville, KY 40203

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:	1982	Control equipment associated with this process equipment:	

Equipment Description

Emission Process/Point # E38

Manufacturer: Zurn

Model: 12Z-3300

Number of units installed: 1

☒ Induced Draft ☐ Natural Draft

Nominal air flow: cubic feet per minute (cfm)

Water flow (per unit): 202,000 gal/min

Dissolved solids: 382 ppm
Note: If a value is not specified, 12,000ppm will be assumed

☒ Operating range
☐ Average value
☐ Control value

Cold Well volume: gallons

Enter any other information you want considered in evaluation of this application:

Louisville Metro Air Pollution Control District

Control Device Permit Application
Form AP-300A

Generic Control Equipment

Deliver application to:
701 W. Ormsby Ave.Suite 303
Louisville, KY 40203

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station			Plant ID:	0127
Date of construction, modification, installation, or operation:	April 2015	Process equipment associated with this control equipment:	U1		

Equipment Description

Control ID # **C26**

Manufacturer: Custom Model: Custom

Describe Control Equipment operation: Powdered activated carbon (PAC) and hydrated lime are injected into the pulse jet fabric filter. The hydrated lime protects the fabric filter from the corrosivity of the flue gas due to the use of low NOx burners. The PAC injection controls the mercury emissions from the flue gas. The PAC and hydrated lime injected into the system is mixed with the ash exiting the fabric filter

Airflow:	acfm	Draft: ☐ Forced	☐ Induced
Inlet temperature:	°	Outlet temperature:	°

List the contaminants in the waste stream that are removed by the reduction system:

Contaminant	CAS # (if applicable)	Gas stream concentration	% Control
Hg			89.3%
PM			99.2%
H2SO4			98.7%

Describe how the control efficiency was determined: Control Efficiency Test
(If other than Manufacturer's specification, include documentation supporting the claimed efficiency)

Describe any monitoring devices, gauges, test ports, *etc*:

Louisville Metro Air Pollution Control District

Control Device Permit Application
Form AP-300A

Generic Control Equipment

Deliver application to:
701 W. Ormsby Ave.Suite 303
Louisville, KY 40203

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:	April 2015	Process equipment associated with this control equipment:	U2

Equipment Description

Control ID # **C26**

Manufacturer: Custom Model: Custom

Describe Control Equipment operation: Powdered activated carbon (PAC) and hydrated lime are injected into the pulse jet fabric filter. The hydrated lime protects the fabric filter from the corrosivity of the flue gas due to the use of low NOx burners. The PAC injection controls the mercury emissions from the flue gas. The PAC and hydrated lime injected into the system is mixed with the ash exiting the fabric filter

Airflow:	acfm	Draft: ☐ Forced	☐ Induced
Inlet temperature:	°	Outlet temperature:	°

List the contaminants in the waste stream that are removed by the reduction system:

Contaminant	CAS # (if applicable)	Gas stream concentration	% Control
Hg			85.5%
PM			99.5%
H2SO4			99.8%

Describe how the control efficiency was determined: Control Efficiency Test
(If other than Manufacturer's specification, include documentation supporting the claimed efficiency)

Describe any monitoring devices, gauges, test ports, *etc*:

Louisville Metro Air Pollution Control District

Control Device Permit Application
Form AP-300A

Generic Control Equipment

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Louisville, KY 40203

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www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:	April 2015	Process equipment associated with this control equipment:	U3

Equipment Description

Control ID # **C29**

Manufacturer: Custom Model: Custom

Describe Control Equipment operation: Powdered activated carbon (PAC) and hydrated lime are injected into the pulse jet fabric filter. The hydrated lime protects the fabric filter from the corrosivity of the flue gas due to the use of low NOx burners. The PAC injection controls the mercury emissions from the flue gas. The PAC and hydrated lime injected into the system is mixed with the ash exiting the fabric filter

Airflow:	acfm	Draft:	☐ Forced ☐ Induced
Inlet temperature:	°	Outlet temperature:	°

List the contaminants in the waste stream that are removed by the reduction system:

Contaminant	CAS # (if applicable)	Gas stream concentration	% Control
Hg			98.9%
PM			99.6%
H2SO4			99.6%

Describe how the control efficiency was determined: Control Efficiency Test
(If other than Manufacturer's specification, include documentation supporting the claimed efficiency)

Describe any monitoring devices, gauges, test ports, *etc*:

Louisville Metro Air Pollution Control District

Control Device Permit Application
Form AP-300A

Generic Control Equipment

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Louisville, KY 40203

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www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:	April 2015	Process equipment associated with this control equipment:	U4

Equipment Description

Control ID # **C30**

Manufacturer: Custom Model: Custom

Describe Control Equipment operation: Powdered activated carbon (PAC) and hydrated lime are injected into the pulse jet fabric filter. The hydrated lime protects the fabric filter from the corrosivity of the flue gas due to the use of low NOx burners. The PAC injection controls the mercury emissions from the flue gas. The PAC and hydrated lime injected into the system is mixed with the ash exiting the fabric filter

Airflow:	acfm	Draft: ☐ Forced	☐ Induced
Inlet temperature:	°	Outlet temperature:	°

List the contaminants in the waste stream that are removed by the reduction system:

Contaminant	CAS # (if applicable)	Gas stream concentration	% Control
Hg			97.7%
PM			99.8%
H2SO4			99.4%

Describe how the control efficiency was determined: Control Efficiency Test
(If other than Manufacturer's specification, include documentation supporting the claimed efficiency)

Describe any monitoring devices, gauges, test ports, *etc*:

Louisville Metro Air Pollution Control District

Control Device Permit Application
Form AP-300A

Generic Control Equipment

Deliver application to:
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Louisville, KY 40203

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airpermits@louisvilleky.gov

Plant Name:	Louisville Gas & Electric: Mill Creek Generating Station			Plant ID:	0127
Date of construction, modification, installation, or operation:	May 2015	Process equipment associated with this control equipment:	U16		

Equipment Description

Control ID # **C32**

Manufacturer: BCSI Model: BV25-96

Describe Control Equipment operation: Polyester felt with Teflon overlay filter is located on top the silo and when unit is operating particulate material is collected and processed back into the silo or mixed with landfill waste.

Airflow:	Draft: ☐ Forced ☒ Induced
Inlet temperature: Ambient °	Outlet temperature: Ambient °

List the contaminants in the waste stream that are removed by the reduction system:

Contaminant	CAS # (if applicable)	Gas stream concentration	% Control
PM			95

Describe how the control efficiency was determined: District preapproved control efficiency
(If other than Manufacturer's specification, include documentation supporting the claimed efficiency)

Describe any monitoring devices, gauges, test ports, *etc*:

Louisville Metro Air Pollution Control District

Control Device Permit Application
Form AP-300A

Generic Control Equipment

Deliver application to:
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Louisville, KY 40203

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas & Electric: Mill Creek Generating Station			Plant ID:	0127
Date of construction, modification, installation, or operation:	May 2015	Process equipment associated with this control equipment:	U17		

Equipment Description

Control ID # **C33**

Manufacturer: BCSI Model: BV25-96

Describe Control Equipment operation: Polyester felt with Teflon overlay filter is located on top the silo and when unit is operating particulate material is collected and processed back into the silo or mixed with landfill waste.

Airflow:	Draft: ☐ Forced ☒ Induced
Inlet temperature: Ambient °	Outlet temperature: Ambient °

List the contaminants in the waste stream that are removed by the reduction system:

Contaminant	CAS # (if applicable)	Gas stream concentration	% Control
PM			99

Describe how the control efficiency was determined: Manufacturer guarantee
(If other than Manufacturer's specification, include documentation supporting the claimed efficiency)

Describe any monitoring devices, gauges, test ports, *etc*:

Louisville Metro Air Pollution Control District

Control Device Permit Application
Form AP-300A

Generic Control Equipment

Deliver application to:
701 W. Ormsby Ave.Suite 303
Louisville, KY 40203

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas & Electric: Mill Creek Generating Station			Plant ID:	0127
Date of construction, modification, installation, or operation:	May 2015	Process equipment associated with this control equipment:	U18		

Equipment Description

Control ID # **C34**

Manufacturer: BCSI Model: BV25-96

Describe Control Equipment operation: Polyester felt with Teflon overlay filter is located on top the silo and when unit is operating particulate material is collected and processed back into the silo or mixed with landfill waste.

Airflow:	Draft: ☐ Forced ☒ Induced
Inlet temperature: Ambient °	Outlet temperature: Ambient °

List the contaminants in the waste stream that are removed by the reduction system:

Contaminant	CAS # (if applicable)	Gas stream concentration	% Control
PM			99

Describe how the control efficiency was determined: Manufacturer guarantee
(If other than Manufacturer's specification, include documentation supporting the claimed efficiency)

Describe any monitoring devices, gauges, test ports, *etc*:

Louisville Metro Air Pollution Control District

Control Device Permit Application
Form AP-300A

Generic Control Equipment

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airpermits@louisvilleky.gov

Plant Name:	Louisville Gas & Electric: Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:	August 2013	Process equipment associated with this control equipment:	U8

Equipment Description

Control ID # **C37**

Manufacturer: DCL Model: VML-185

Describe Control Equipment operation: Cloth Area: 185 square ft.
Air to Cloth Ratio: 5.4:1 based on 1000 CFM of air withdrawal
Filter Access: Top removal design
Filter Media: (4) 8" dia. spun bonded polyester cartridges with "HO" finish
Filter Cleaning System: Pulse jet with prepiped solenoid valves in a NEMA 4 housing

Airflow:	1000 acfm	Draft:	☒ Forced ☐ Induced
Inlet temperature:	Ambient °	Outlet temperature:	Ambient °

List the contaminants in the waste stream that are removed by the reduction system:

Contaminant	CAS # (if applicable)	Gas stream concentration	% Control
PM			95

Describe how the control efficiency was determined: District preapproved control efficiency
(If other than Manufacturer's specification, include documentation supporting the claimed efficiency)

Describe any monitoring devices, gauges, test ports, *etc*:

Louisville Metro Air Pollution Control District

Control Device Permit Application
Form AP-300A

Generic Control Equipment

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airpermits@louisvilleky.gov

Plant Name:	Louisville Gas & Electric: Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:	August 2013	Process equipment associated with this control equipment:	U8

Equipment Description

Control ID # **C38**

Manufacturer: DCL Model: CFM-330

Describe Control Equipment operation: Cloth Area: 330 square ft.
Air to Cloth Ratio: 5.4:1 based on 1800 CFM of air withdrawal
Filter Access: Top removal design
Filter Media: (7) 8" dia. spun bonded polyester cartridges with "HO" finish
Filter Cleaning System: Pulse jet with prepiped solenoid valves in a NEMA 4 housing
Base filter media is 100% spunbond polyester (SBPE).

Airflow:	1800 acfm	Draft:	☒ Forced ☐ Induced
Inlet temperature:	Ambient °	Outlet temperature:	Ambient °

List the contaminants in the waste stream that are removed by the reduction system:

Contaminant	CAS # (if applicable)	Gas stream concentration	% Control
PM			95

Describe how the control efficiency was determined: District preapproved control efficiency
(If other than Manufacturer's specification, include documentation supporting the claimed efficiency)

Describe any monitoring devices, gauges, test ports, *etc*:

Louisville Metro Air Pollution Control District

Control Device Permit Application
Form AP-300B

Bag House/Fabric Filter

Deliver application to:
701 W. Ormsby Ave.Suite 303
Louisville, KY 40203

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:	April 2015	Process equipment associated with this control equipment:	U1

Equipment Description

Control ID # **C26**

Manufacturer: Clyde Bergemann Power Group

Model: Top Door

Baghouse airflow	☐ Forced draft	☐ Inside out	Air flow rate:	- 1,291,276 acfm (operating range)
	☒ Induced draft	☒ Outside in	Pressure drop:	0 - 6 in w.c. (operating range)

Number of baghouse compartments: 12

Number of bags per compartment: 816

Can the compartments be isolated for maintenance or repair? ☒ Yes ☐ No

Fabric type	☐ Felted	☐ Sintered metal	☐ Cartridge	Fabric material: PTFE
	☒ Woven	☐ Membrane	☒ Other: Fiberglass	Removal Efficiency: 99.2 %

Describe how the collected material is handled: The dust collected in the fabric filter discharged hoppers will be fluidized and removed by the Fly Ash Handling system. The flue gas from the outlet plenum of the fabric filter will flow through the induced draft fans in the induced draft system and then to the Wet Flue Gas Desulfuruzation System.

Attach a copy of the manufacturer's spec sheets for the baghouse unit and the filters with this application

List the contaminants in the waste stream that are removed by the baghouse:

Contaminant	CAS # (if applicable)	Collection rate
PM		99.2%

Louisville Metro Air Pollution Control District

Control Device Permit Application
Form AP-300B

Bag House/Fabric Filter

Deliver application to:
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Louisville, KY 40203

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:	April 2015	Process equipment associated with this control equipment:	U2

Equipment Description

Control ID # **C28**

Manufacturer: Clyde Bergemann Power Group

Model: Top Door

Baghouse airflow	☐ Forced draft	☐ Inside out	Air flow rate:	- 1,326,671 acfm (operating range)
	☒ Induced draft	☒ Outside in	Pressure drop:	0 - 6 in w.c. (operating range)

Number of baghouse compartments: 12

Number of bags per compartment: 816

Can the compartments be isolated for maintenance or repair? ☒ Yes ☐ No

Fabric type	☐ Felted	☐ Sintered metal	☐ Cartridge	Fabric material: PTFE
	☒ Woven	☐ Membrane	☒ Other: Fiberglass	Removal Efficiency: 99.5 %

Describe how the collected material is handled: The dust collected in the fabric filter discharged hoppers will be fluidized and removed by the Fly Ash Handling system. The flue gas from the outlet plenum of the fabric filter will flow through the induced draft fans in the induced draft system and then to the Wet Flue Gas Desulfuruzation System.

Attach a copy of the manufacturer's spec sheets for the baghouse unit and the filters with this application

List the contaminants in the waste stream that are removed by the baghouse:

Contaminant	CAS # (if applicable)	Collection rate
PM		99.5%

Louisville Metro Air Pollution Control District

Control Device Permit Application
Form AP-300B

Bag House/Fabric Filter

Deliver application to:
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Louisville, KY 40203

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:	April 2015	Process equipment associated with this control equipment:	U3

Equipment Description

Control ID # **C29**

Manufacturer: Clyde Bergemann Power Group

Model: Top Door

Baghouse airflow	☐ Forced draft	☐ Inside out	Air flow rate:	- 1,723,606 acfm (operating range)
	☒ Induced draft	☒ Outside in	Pressure drop:	0 - 6 in w.c. (operating range)

Number of baghouse compartments: 16

Number of bags per compartment: 864

Can the compartments be isolated for maintenance or repair? ☒ Yes ☐ No

Fabric type	☐ Felted	☐ Sintered metal	☐ Cartridge	Fabric material: PTFE
	☒ Woven	☐ Membrane	☒ Other: Fiberglass	Removal Efficiency: 99.6 %

Describe how the collected material is handled: The dust collected in the fabric filter discharged hoppers will be fluidized and removed by the Fly Ash Handling system. The flue gas from the outlet plenum of the fabric filter will flow through the induced draft fans in the induced draft system and then to the Wet Flue Gas Desulfuruzation System.

Attach a copy of the manufacturer's spec sheets for the baghouse unit and the filters with this application

List the contaminants in the waste stream that are removed by the baghouse:

Contaminant	CAS # (if applicable)	Collection rate
PM		99.6%

Louisville Metro Air Pollution Control District

Control Device Permit Application
Form AP-300B

Bag House/Fabric Filter

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Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:	April 2015	Process equipment associated with this control equipment:	U4

Equipment Description

Control ID # **C30**

Manufacturer: Clyde Bergemann Power Group

Model: Top Door

Baghouse airflow	☐ Forced draft	☐ Inside out	Air flow rate:	- 2,109,283 acfm (operating range)
	☒ Induced draft	☒ Outside in	Pressure drop:	0 - 6 in w.c. (operating range)

Number of baghouse compartments: 16

Number of bags per compartment: 864

Can the compartments be isolated for maintenance or repair? ☒ Yes ☐ No

Fabric type	☐ Felted	☐ Sintered metal	☐ Cartridge	Fabric material: PTFE
	☒ Woven	☐ Membrane	☒ Other: Fiberglass	Removal Efficiency: 99.8 %

Describe how the collected material is handled: The dust collected in the fabric filter discharged hoppers will be fluidized and removed by the Fly Ash Handling system. The flue gas from the outlet plenum of the fabric filter will flow through the induced draft fans in the induced draft system and then to the Wet Flue Gas Desulfuruzation System.

Attach a copy of the manufacturer's spec sheets for the baghouse unit and the filters with this application

List the contaminants in the waste stream that are removed by the baghouse:

Contaminant	CAS # (if applicable)	Collection rate
PM		99.8%

Louisville Metro Air Pollution Control District

Control Device Permit Application
Form AP-300B

Bag House/Fabric Filter

Deliver application to:
701 W. Ormsby Ave.Suite 303
Louisville, KY 40203

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:	August 1978	Process equipment associated with this control equipment:	U8

Equipment Description

Control ID # **C15**

Manufacturer: Flex Kleen Model: 120

Baghouse airflow	☐ Forced draft	☐ Inside out	Air flow rate:	0 - 13,500 acfm (operating range)
	☒ Induced draft	☒ Outside in	Pressure drop:	0 - 5 in w.c. (operating range)

Number of baghouse compartments: Number of bags per compartment:

Can the compartments be isolated for maintenance or repair? ☒ Yes ☐ No

Fabric type	☐ Felted	☐ Sintered metal	☐ Cartridge	Fabric material:
	☒ Woven	☐ Membrane	☐ Other:	Removal Efficiency: 95%

Describe how the collected material is handled: Recycled into process

Attach a copy of the manufacturer's spec sheets for the baghouse unit and the filters with this application

List the contaminants in the waste stream that are removed by the baghouse:

Contaminant	CAS # (if applicable)	Collection rate
PM		95%

Louisville Metro Air Pollution Control District

Control Device Permit Application
Form AP-300B

Bag House/Fabric Filter

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Louisville, KY 40203

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:	August 1978	Process equipment associated with this control equipment:	U8

Equipment Description

Control ID # **C16**

Manufacturer: Flex Kleen Model: 120

Baghouse airflow	☐ Forced draft	☐ Inside out	Air flow rate:	0 - 13,500 acfm (operating range)
	☒ Induced draft	☒ Outside in	Pressure drop:	0 - 5 in w.c. (operating range)

Number of baghouse compartments: Number of bags per compartment:

Can the compartments be isolated for maintenance or repair? ☒ Yes ☐ No

Fabric type	☐ Felted	☐ Sintered metal	☐ Cartridge	Fabric material:
	☒ Woven	☐ Membrane	☐ Other:	Removal Efficiency: 95%

Describe how the collected material is handled: Recycled into process

Attach a copy of the manufacturer's spec sheets for the baghouse unit and the filters with this application

List the contaminants in the waste stream that are removed by the baghouse:

Contaminant	CAS # (if applicable)	Collection rate
PM		95%

Louisville Metro Air Pollution Control District

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Form AP-300B

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airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:	April 2005	Process equipment associated with this control equipment:	U8

Equipment Description

Control ID # **C24**

Manufacturer: Stephens Mfg. Co. Inc. Model: SV-265

Baghouse airflow	☐ Forced draft	☐ Inside out	Air flow rate:	0 - 1600 acfm (operating range)
	☒ Induced draft	☒ Outside in	Pressure drop:	0 - 5 in w.c. (operating range)

Number of baghouse compartments: Number of bags per compartment:

Can the compartments be isolated for maintenance or repair? ☒ Yes ☐ No

Fabric type	☐ Felted	☐ Sintered metal	☐ Cartridge	Fabric material:
	☒ Woven	☐ Membrane	☐ Other:	Removal Efficiency: 95%

Describe how the collected material is handled: Periodically emptied into the railcar or disposed onsite at the existing landfill

Attach a copy of the manufacturer's spec sheets for the baghouse unit and the filters with this application

List the contaminants in the waste stream that are removed by the baghouse:

Contaminant	CAS # (if applicable)	Collection rate
PM		95%

Louisville Metro Air Pollution Control District

Control Device Permit Application
Form AP-300B

Bag House/Fabric Filter

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Louisville, KY 40203

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:	February 2007	Process equipment associated with this control equipment:	U8

Equipment Description

Control ID # **C25**

Manufacturer: Stephens Mfg. Co. Inc. Model: SV-170

Baghouse airflow	☐ Forced draft	☐ Inside out	Air flow rate:	0 - 1600 acfm (operating range)
	☒ Induced draft	☒ Outside in	Pressure drop:	0 - 5 in w.c. (operating range)

Number of baghouse compartments: Number of bags per compartment:

Can the compartments be isolated for maintenance or repair? ☒ Yes ☐ No

Fabric type	☐ Felted	☐ Sintered metal	☐ Cartridge	Fabric material:
	☒ Woven	☐ Membrane	☐ Other:	Removal Efficiency: 95%

Describe how the collected material is handled: Periodically emptied into the railcar or disposed onsite at the existing landfill

Attach a copy of the manufacturer's spec sheets for the baghouse unit and the filters with this application

List the contaminants in the waste stream that are removed by the baghouse:

Contaminant	CAS # (if applicable)	Collection rate
PM		95%

Louisville Metro Air Pollution Control District

Control Device Permit Application
Form AP-300B

Bag House/Fabric Filter

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FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:	2000	Process equipment associated with this control equipment:	U8

Equipment Description

Control ID # **C37**

Manufacturer: DCL Model: VSG-11121

Baghouse airflow	☐ Forced draft	☐ Inside out	Air flow rate:	0 - 13,500 acfm (operating range)
	☒ Induced draft	☒ Outside in	Pressure drop:	0 - (operating range)

Number of baghouse compartments: Number of bags per compartment:

Can the compartments be isolated for maintenance or repair? ☒ Yes ☐ No

Fabric type	☐ Felted	☐ Sintered metal	☒ Cartridge	Fabric material:
	☐ Woven	☐ Membrane	☐ Other:	Removal Efficiency: 95%

Describe how the collected material is handled: Recycled into process

Attach a copy of the manufacturer's spec sheets for the baghouse unit and the filters with this application

List the contaminants in the waste stream that are removed by the baghouse:

Contaminant	CAS # (if applicable)	Collection rate
PM		95%

Louisville Metro Air Pollution Control District

Control Device Permit Application
Form AP-300B

Bag House/Fabric Filter

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Louisville, KY 40203

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airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:	1979	Process equipment associated with this control equipment:	U9

Equipment Description

Control ID # **C19**

Manufacturer: Mikro-Pulsaire

Model:

Baghouse airflow: ☐ Forced draft ☐ Inside out ☒ Induced draft ☒ Outside in

Air flow rate: - (operating range)

Pressure drop: 1 - 6 in w.c. (operating range)

Number of baghouse compartments:

Number of bags per compartment:

Can the compartments be isolated for maintenance or repair? ☒ Yes ☐ No

Fabric type: ☐ Felted ☐ Sintered metal ☐ Cartridge ☒ Woven ☐ Membrane ☐ Other:

Fabric material:

Removal Efficiency: 95%

Describe how the collected material is handled: Recycled into process

Attach a copy of the manufacturer's spec sheets for the baghouse unit and the filters with this application

List the contaminants in the waste stream that are removed by the baghouse:

Contaminant	CAS # (if applicable)	Collection rate
PM		95%

Louisville Metro Air Pollution Control District

Control Device Permit Application
Form AP-300B

Bag House/Fabric Filter

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Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:	1979	Process equipment associated with this control equipment:	U9

Equipment Description

Control ID # **C20**

Manufacturer: Mikro-Pulsaire

Model:

Baghouse airflow	☐ Forced draft	☐ Inside out	Air flow rate: - (operating range)	
	☒ Induced draft	☒ Outside in	Pressure drop: 1 - 6 in w.c. (operating range)	
Number of baghouse compartments:			Number of bags per compartment:	
Can the compartments be isolated for maintenance or repair?			☒ Yes	☐ No
Fabric type	☐ Felted	☐ Sintered metal	☐ Cartridge	Fabric material:
	☒ Woven	☐ Membrane	☐ Other:	Removal Efficiency: 95%

Describe how the collected material is handled: Recycled into process

Attach a copy of the manufacturer's spec sheets for the baghouse unit and the filters with this application

List the contaminants in the waste stream that are removed by the baghouse:

Contaminant	CAS # (if applicable)	Collection rate
PM		95%

Louisville Metro Air Pollution Control District

Control Device Permit Application
Form AP-300B

Bag House/Fabric Filter

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airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:	1979	Process equipment associated with this control equipment:	U9

Equipment Description

Control ID # **C21**

Manufacturer: Mikro-Pulsaire

Model:

Baghouse airflow	☐ Forced draft	☐ Inside out	Air flow rate: - (operating range)	
	☒ Induced draft	☒ Outside in	Pressure drop: 1 - 6 in w.c. (operating range)	
Number of baghouse compartments:			Number of bags per compartment:	
Can the compartments be isolated for maintenance or repair?			☒ Yes	☐ No
Fabric type	☐ Felted	☐ Sintered metal	☐ Cartridge	Fabric material:
	☒ Woven	☐ Membrane	☐ Other:	Removal Efficiency: 95%

Describe how the collected material is handled: Recycled into process

Attach a copy of the manufacturer's spec sheets for the baghouse unit and the filters with this application

List the contaminants in the waste stream that are removed by the baghouse:

Contaminant	CAS # (if applicable)	Collection rate
PM		95%

Louisville Metro Air Pollution Control District

Control Device Permit Application
Form AP-300B

Bag House/Fabric Filter

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airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:	July 2012	Process equipment associated with this control equipment:	U20

Equipment Description

Control ID # **C36**

Manufacturer: Donaldson Torit Model: DuraLife

Baghouse airflow	☒ Forced draft	☐ Inside out	Air flow rate:	0-35400 acfm (operating range)
	☐ Induced draft	☐ Outside in	Pressure drop:	2 - 6 in w.c. (operating range)

Number of baghouse compartments: 1

Number of bags per compartment: 484

Can the compartments be isolated for maintenance or repair? ☐ Yes ☒ No

Fabric type	☐ Felted	☐ Sintered metal	☐ Cartridge	Fabric material: Fiber
	☐ Woven	☐ Membrane	☒ Other: Polyester	Removal Efficiency: NA

Describe how the collected material is handled: Collected in bottom valley and screwed out. It is reused in the process.

Attach a copy of the manufacturer's spec sheets for the baghouse unit and the filters with this application

List the contaminants in the waste stream that are removed by the baghouse:

Contaminant	CAS # (if applicable)	Collection rate
PM		0.0024 kg/hr

Louisville Metro Air Pollution Control District

Control Device Permit Application
Form AP-300B

Bag House/Fabric Filter

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Louisville, KY 40203

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:	July 2014	Process equipment associated with this control equipment:	U20

Equipment Description

Control ID # **C36**

Manufacturer: ARS Model: DC-20

Baghouse airflow	☒ Forced draft	☐ Inside out	Air flow rate:	0-20000 acfm (operating range)
	☐ Induced draft	☐ Outside in	Pressure drop:	2 - 6 in w.c. (operating range)

Number of baghouse compartments: 1 Number of bags per compartment:

Can the compartments be isolated for maintenance or repair? ☐ Yes ☒ No

Fabric type	☐ Felted	☐ Sintered metal	☒ Cartridge	Fabric material: Fiber
	☐ Woven	☐ Membrane	☐ Other:	Removal Efficiency: 99.9

Describe how the collected material is handled: Collected in bottom valley and screwed out. It is reused in the process.

Attach a copy of the manufacturer's spec sheets for the baghouse unit and the filters with this application

List the contaminants in the waste stream that are removed by the baghouse:

Contaminant	CAS # (if applicable)	Collection rate
PM		0.0024 kg/hr

Louisville Metro Air Pollution Control District

Control Device Permit Application
Form AP-300C

Cyclone

Deliver application to:
701 W. Ormsby Ave.Suite 303
Louisville, KY 40203

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:	July 2004	Process equipment associated with this control equipment:	U1

Equipment Description

Control ID # **C3**

Manufacturer: Fisher-Klosterman Model: XQ340-13

Are outlet straightening vanes used? ☐ Yes ☐ No Draft: ☐ Forced ☐ Induced

Inlet air flow: Velocity - Volumetric - 2700 acfm @ ambient° Pressure drop - 8.5 in w.c.

Collection Method: ☒ Single cyclone ☐ Series cyclones ☐ Multi-cyclone: # cylinders

Collection Efficiency: PM 90 % PM_{10} 90 % $PM_{2.5}$ 90 %

Describe how the collection efficiency was determined: District pre-approved control efficiency
(If other than Manufacturer's specification, include documentation supporting the claimed efficiency)

Cylinder Dimensions

	Primary Cylinder	Secondary Cylinder
Length of cyclone cylinder		
Diameter of cyclone cylinder		
Length of cyclone cone		
Cyclone inlet size		
Cyclone outlet size		
Cyclone cone outlet size		

List the contaminants in the waste stream that are removed by the cyclone

Contaminant	CAS # (if applicable)	Gas stream concentration
PM		

Describe how the contaminant material is collected and the ultimate disposition of this material. Particles are separated from the sir volume and deposited back into fossil fuel silo.

Louisville Metro Air Pollution Control District

Control Device Permit Application
Form AP-300C

Cyclone

Deliver application to:
701 W. Ormsby Ave.Suite 303
Louisville, KY 40203

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:	August 1970	Process equipment associated with this control equipment:	U2

Equipment Description

Control ID # **C6**

Manufacturer: American Air Filter

Model: Type D Rotoclone, AAF/No 16

Are outlet straightening vanes used? ☐ Yes ☐ No

Draft: ☐ Forced ☐ Induced

Inlet air flow: Velocity -

Volumetric - 6000 acfm @ ambient°

Pressure drop - 8.5 in w.c.

Collection Method: ☒ Single cyclone ☐ Series cyclones ☐ Multi-cyclone: # cylinders

Collection Efficiency: PM 90 % | PM_{10} 90 % | $PM_{2.5}$ 90 %

Describe how the collection efficiency was determined: District pre-approved control efficiency
(If other than Manufacturer's specification, include documentation supporting the claimed efficiency)

Cylinder Dimensions

	Primary Cylinder	Secondary Cylinder
Length of cyclone cylinder		
Diameter of cyclone cylinder		
Length of cyclone cone		
Cyclone inlet size		
Cyclone outlet size		
Cyclone cone outlet size		

List the contaminants in the waste stream that are removed by the cyclone

Contaminant	CAS # (if applicable)	Gas stream concentration
PM		

Describe how the contaminant material is collected and the ultimate disposition of this material. Particles are separated from the sir volume and deposited back into fossil fuel silo.

Louisville Metro Air Pollution Control District

Control Device Permit Application
Form AP-300C

Cyclone

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Louisville, KY 40203

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airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:	May 1973	Process equipment associated with this control equipment:	U3

Equipment Description

Control ID # **C9**

Manufacturer: American Air Filter

Model: Type D Rotoclone, AAF/No 16

Are outlet straightening vanes used? ☐ Yes ☐ No

Draft: ☐ Forced ☐ Induced

Inlet air flow: Velocity -

Volumetric - 6000 acfm @ ambient°

Pressure drop - 8.5 in w.c.

Collection Method: ☒ Single cyclone ☐ Series cyclones ☐ Multi-cyclone: # cylinders

Collection Efficiency: PM 90 % | PM_{10} 90 % | $PM_{2.5}$ 90 %

Describe how the collection efficiency was determined: District pre-approved control efficiency
(If other than Manufacturer's specification, include documentation supporting the claimed efficiency)

Cylinder Dimensions

	Primary Cylinder	Secondary Cylinder
Length of cyclone cylinder		
Diameter of cyclone cylinder		
Length of cyclone cone		
Cyclone inlet size		
Cyclone outlet size		
Cyclone cone outlet size		

List the contaminants in the waste stream that are removed by the cyclone

Contaminant	CAS # (if applicable)	Gas stream concentration
PM		

Describe how the contaminant material is collected and the ultimate disposition of this material. Particles are separated from the sir volume and deposited back into fossil fuel silo.

Louisville Metro Air Pollution Control District

Control Device Permit Application
Form AP-300C

Cyclone

Deliver application to:
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Louisville, KY 40203

(502) 574-6000
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airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:	May 1975	Process equipment associated with this control equipment:	U4

Equipment Description

Control ID # **C12**

Manufacturer: American Air Filter

Model: Type D Rotoclone, AAF/No 16

Are outlet straightening vanes used? ☐ Yes ☐ No

Draft: ☐ Forced ☐ Induced

Inlet air flow: Velocity -

Volumetric - 6000 acfm @ ambient°

Pressure drop - 8.5 in w.c.

Collection Method: ☒ Single cyclone ☐ Series cyclones ☐ Multi-cyclone: # cylinders

Collection Efficiency: PM 90 % | PM_{10} 90 % | $PM_{2.5}$ 90 %

Describe how the collection efficiency was determined: District pre-approved control efficiency
(If other than Manufacturer's specification, include documentation supporting the claimed efficiency)

Cylinder Dimensions

	Primary Cylinder	Secondary Cylinder
Length of cyclone cylinder		
Diameter of cyclone cylinder		
Length of cyclone cone		
Cyclone inlet size		
Cyclone outlet size		
Cyclone cone outlet size		

List the contaminants in the waste stream that are removed by the cyclone

Contaminant	CAS # (if applicable)	Gas stream concentration
PM		

Describe how the contaminant material is collected and the ultimate disposition of this material. Particles are separated from the sir volume and deposited back into fossil fuel silo.

Louisville Metro Air Pollution Control District

Control Device Permit Application
Form AP-300E

Electrostatic Precipitator

Deliver application to:
701 W. Ormsby Ave.Suite 303
Louisville, KY 40203

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:		Process equipment associated with this control equipment:	U1

Equipment Description

Control ID # **C1**

Manufacturer: Western Precipitator Division Model: Custom Built

Precipitator Type: ☐ Wet, single stage ☐ Dry, single stage ☐ Wet, two-stage ☐ Dry, two-stage

Air flow rate: 1,150,000 acfm

Pressure drop:

Gas velocity: Residence time: seconds Draft: ☐ Forced ☐ Induced

Pollutant removal efficiency: NA %

Describe how the removal efficiency was determined: NA
(If other than Manufacturer's specification, include documentation supporting the claimed efficiency)

Attach a copy of the manufacturer's spec sheets for the electrostatic precipitator with this application

List the contaminants in the waste stream that are removed by the precipitator

Contaminant	CAS # (if applicable)	Gas Stream Concentration
PM		

Describe how the contaminant material is collected and the ultimate disposition of this material. Particles are collected using a collection hopper where it is then either landfilled, beefically reused, or other approved methods.

Louisville Metro Air Pollution Control District

Control Device Permit Application
Form AP-300E

Electrostatic Precipitator

Deliver application to:
701 W. Ormsby Ave.Suite 303
Louisville, KY 40203

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:		Process equipment associated with this control equipment:	U2

Equipment Description

Control ID # **C4**

Manufacturer: Western Precipitator Division Model: Custom Built

Precipitator Type: ☐ Wet, single stage ☐ Dry, single stage ☐ Wet, two-stage ☐ Dry, two-stage

Air flow rate: 1,150,000 acfm

Pressure drop:

Gas velocity: Residence time: seconds Draft: ☐ Forced ☐ Induced

Pollutant removal efficiency: NA %

Describe how the removal efficiency was determined: NA
(If other than Manufacturer's specification, include documentation supporting the claimed efficiency)

Attach a copy of the manufacturer's spec sheets for the electrostatic precipitator with this application

List the contaminants in the waste stream that are removed by the precipitator

Contaminant	CAS # (if applicable)	Gas Stream Concentration
PM		

Describe how the contaminant material is collected and the ultimate disposition of this material. Particles are collected using a collection hopper where it is then either landfilled, beefically reused, or other approved methods.

Louisville Metro Air Pollution Control District

Control Device Permit Application
Form AP-300E

Electrostatic Precipitator

Deliver application to:
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Louisville, KY 40203

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www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:		Process equipment associated with this control equipment:	U3

Equipment Description

Control ID # **C7**

Manufacturer: Western Precipitator Division Model: Custom Built

Precipitator Type: ☐ Wet, single stage ☐ Dry, single stage ☐ Wet, two-stage ☐ Dry, two-stage

Air flow rate: 1,150,000 acfm

Pressure drop:

Gas velocity: Residence time: seconds Draft: ☐ Forced ☐ Induced

Pollutant removal efficiency: NA %

Describe how the removal efficiency was determined: NA
(If other than Manufacturer's specification, include documentation supporting the claimed efficiency)

Attach a copy of the manufacturer's spec sheets for the electrostatic precipitator with this application

List the contaminants in the waste stream that are removed by the precipitator

Contaminant	CAS # (if applicable)	Gas Stream Concentration
PM		

Describe how the contaminant material is collected and the ultimate disposition of this material. Particles are collected using a collection hopper where it is then either landfilled, beefically reused, or other approved methods.

Louisville Metro Air Pollution Control District

Control Device Permit Application
Form AP-300E

Electrostatic Precipitator

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FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:		Process equipment associated with this control equipment:	U4

Equipment Description

Control ID # **C10**

Manufacturer: Western Precipitator Division Model: Custom Built

Precipitator Type: ☐ Wet, single stage ☐ Dry, single stage ☐ Wet, two-stage ☐ Dry, two-stage

Air flow rate: 1,150,000 acfm

Pressure drop:

Gas velocity: Residence time: seconds Draft: ☐ Forced ☐ Induced

Pollutant removal efficiency: NA %

Describe how the removal efficiency was determined: NA
(If other than Manufacturer's specification, include documentation supporting the claimed efficiency)

Attach a copy of the manufacturer's spec sheets for the electrostatic precipitator with this application

List the contaminants in the waste stream that are removed by the precipitator

Contaminant	CAS # (if applicable)	Gas Stream Concentration
PM		

Describe how the contaminant material is collected and the ultimate disposition of this material. Particles are collected using a collection hopper where it is then either landfilled, beefically reused, or other approved methods.

Louisville Metro Air Pollution Control District

Control Device Permit Application
Form AP-300F

Chemical Scrubber

Deliver application to:
701 W. Ormsby Ave.Suite 303
Louisville, KY 40203

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:	April 2015	Process equipment associated with this control equipment:	U1,U2

Equipment Description

Control ID # **C27**

Manufacturer: Babcock Power Environmental Inc Model: Custom Built

Inlet air flow	Velocity -	Volumetric - 2,565,074 acfm @ 362.55° F	Pressure drop - 8.75 in w.c.
	Draft: ☐ Forced ☐ Induced		

Scrubber Type: ☒ Spray Tower ☐ Tray Tower ☐ Venturi ☐ Packed Bed ☐ Fluidized Bed ☐ Other:

Scrubber column length: Cross section:

Describe packing: ☒ None

Describe trays, plates, or baffles: rays are used in the scrubber and are located 60 inches apart. Trays are perforated by holes. ☐ None

Describe mist eliminator: ME shall be of vertical flow design and incorporate at least two (2) removable levels and have multiple passes (minimum of three) at each level ☐ None

Scrubbing liquid flow rate: 19,400 gal/min pH range 4.8 – 6.4 Is liquid recirculated? ☐ Yes ☒ No

List the components of the scrubbing liquid:

Component	CAS # (if applicable)	Working solution concentration
Limestone		14-16 %

Exhaust Stream Components

List the contaminants in the waste stream that are removed by the reduction system:

Contaminant	CAS # (if applicable)	Gas stream concentration	Removal Efficiency
SO2		3-3.5% by wgt	
Hg			
PM		65 lb/hr	
HCL		2158 lb/hr	

Describe how the removal efficiency was determined: CEMs used for compliance demostration
(If other than Manufacturer's specification, include documentation supporting the claimed efficiency)

Describe how the depleted scrubber liquid waste is collected, the state of the pollutant(s) in the liquid, and the ultimate disposition of this material. In the Mill Creek FGD systems, air is bubbled through the reaction tank to practically convert all of the scrubber slurry into calcium sulfate dihydrate (CaSO4●2H2O), which is commonly known as gypsum. Mill Creek produces a commercial grade of gypsum that is beneficially reused as a by-product for the production of portland cement or wallboard

Louisville Metro Air Pollution Control District

Control Device Permit Application
Form AP-300F

Chemical Scrubber

Deliver application to:
701 W. Ormsby Ave.Suite 303
Louisville, KY 40203

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:	April 2015	Process equipment associated with this control equipment:	U3

Equipment Description

Control ID # **C39**

Manufacturer: Babcock Power Environmental Inc Model: Custom Built

Inlet air flow: Velocity - ; Volumetric - 2,037676 acfm @ 362.55° F ; Pressure drop - 8.75 in w.c.

Draft: ☐ Forced ☐ Induced

Scrubber Type: ☒ Spray Tower ☐ Tray Tower ☐ Venturi ☐ Packed Bed ☐ Fluidized Bed ☐ Other:

Scrubber column length: Cross section:

Describe packing: ☒ None

Describe trays, plates, or baffles: rays are used in the scrubber and are located 60 inches apart. Trays are perforated by holes. ☐ None

Describe mist eliminator: ME shall be of vertical flow design and incorporate at least two (2) removable levels and have multiple passes (minimum of three) at each level ☐ None

Scrubbing liquid flow rate: 19,400 gal/min pH range 5 -- 6 Is liquid recirculated? ☒ Yes ☐ No

List the components of the scrubbing liquid:

Component	CAS # (if applicable)	Working solution concentration
Limestone		14-16 %

Exhaust Stream Components

List the contaminants in the waste stream that are removed by the reduction system:

Contaminant	CAS # (if applicable)	Gas stream concentration	Removal Efficiency
SO2		3-3.5% by wgt	
Hg			
PM		51 lb/hr	
HCL		1691 lb/hr	

Describe how the removal efficiency was determined: CEMs used for compliance demostration
(If other than Manufacturer's specification, include documentation supporting the claimed efficiency)

Describe how the depleted scrubber liquid waste is collected, the state of the pollutant(s) in the liquid, and the ultimate disposition of this material. In the Mill Creek FGD systems, air is bubbled through the reaction tank to practically convert all of the scrubber slurry into calcium sulfate dihydrate (CaSO4●2H2O), which is commonly known as gypsum. Mill Creek produces a commercial grade of gypsum that is beneficially reused as a by-product for the production of portland cement or wallboard

Louisville Metro Air Pollution Control District

Control Device Permit Application
Form AP-300F

Chemical Scrubber

Deliver application to:
701 W. Ormsby Ave.Suite 303
Louisville, KY 40203

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:	April 2015	Process equipment associated with this control equipment:	U4

Equipment Description

Control ID # **C31**

Manufacturer: Babcock Power Environmental Inc Model: Custom Built

Inlet air flow: Velocity - ; Volumetric - 2,037676 acfm @ 362.55° F ; Pressure drop - 8.75 in w.c.

Draft: ☐ Forced ☐ Induced

Scrubber Type: ☒ Spray Tower ☐ Tray Tower ☐ Venturi ☐ Packed Bed ☐ Fluidized Bed ☐ Other:

Scrubber column length: Cross section:

Describe packing: ☒ None

Describe trays, plates, or baffles: rays are used in the scrubber and are located 60 inches apart. Trays are perforated by holes. ☐ None

Describe mist eliminator: ME shall be of vertical flow design and incorporate at least two (2) removable levels and have multiple passes (minimum of three) at each level ☐ None

Scrubbing liquid flow rate: 19,400 gal/min pH range 5 -- 6 Is liquid recirculated? ☒ Yes ☐ No

List the components of the scrubbing liquid:

Component	CAS # (if applicable)	Working solution concentration
Limestone		14-16 %

Exhaust Stream Components

List the contaminants in the waste stream that are removed by the reduction system:

Contaminant	CAS # (if applicable)	Gas stream concentration	Removal Efficiency
SO2		3-3.5% by wgt	
Hg			
PM		51 lb/hr	
HCL		1691 lb/hr	

Describe how the removal efficiency was determined: CEMs used for compliance demostration
(If other than Manufacturer's specification, include documentation supporting the claimed efficiency)

Describe how the depleted scrubber liquid waste is collected, the state of the pollutant(s) in the liquid, and the ultimate disposition of this material. In the Mill Creek FGD systems, air is bubbled through the reaction tank to practically convert all of the scrubber slurry into calcium sulfate dihydrate (CaSO4●2H2O), which is commonly known as gypsum. Mill Creek produces a commercial grade of gypsum that is beneficially reused as a by-product for the production of portland cement or wallboard

Louisville Metro Air Pollution Control District

Control Device Permit Application
Form AP-300G

Reducing System

Deliver application to:
850 Barret Avenue
Louisville, KY 40204

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:	Process equipment associated with this control equipment:	U3	

Equipment Description

Control ID #

Manufacturer: Babcock Borsig Power

Model: Custom

Type of system:
- ☒ Selective catalytic
- ☐ Selective non-catalytic
- ☒ Ammonia injection
- ☐ Non-selective catalytic
- ☐ Other:

Exhaust gas flow rate: Minimum - / | Maximum - 1150000 / acfm | Pressure drop -

Attach a copy of the manufacturer's spec sheets for the reduction system with this application

List the contaminants in the waste stream that are removed by the reduction system:

Contaminant	CAS # (if applicable)	Gas stream concentration	% Destruction
NOx			

Describe how the destruction efficiency was determined: CEMs used for compliance demostration
(If other than Manufacturer's specification, include documentation supporting the claimed efficiency)

Operational Information

Ammonia/Urea Injection:	Operating Temperature - °	Allowable ammonia slip - ppm
	Describe how slip is determined:	
	Describe how ammonia injection rate is monitored and controlled: operational monitoring devices	
Catalytic Reduction	Operating temperature range -- °	
	Catalyst used:	
	Reducing agent used:	
	Reducing agent usage rate:	
	Describe how waste from this operation is handled:	

Louisville Metro Air Pollution Control District

Control Device Permit Application
Form AP-300G

Reducing System

Deliver application to:
850 Barret Avenue
Louisville, KY 40204

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd
airpermits@louisvilleky.gov

Plant Name:	Louisville Gas and Electric - Mill Creek Generating Station	Plant ID:	0127
Date of construction, modification, installation, or operation:	Process equipment associated with this control equipment:	U4	

Equipment Description

Control ID #

Manufacturer: Babcock Borsig Power Model: Custom

Type of system:
- ☒ Selective catalytic
- ☐ Selective non-catalytic
- ☒ Ammonia injection
- ☐ Non-selective catalytic
- ☐ Other:

Exhaust gas flow rate: Minimum - / | Maximum - 1150000 / acfm | Pressure drop -

Attach a copy of the manufacturer's spec sheets for the reduction system with this application

List the contaminants in the waste stream that are removed by the reduction system:

Contaminant	CAS # (if applicable)	Gas stream concentration	% Destruction
NOx			

Describe how the destruction efficiency was determined: CEMs used for compliance demostration
(If other than Manufacturer's specification, include documentation supporting the claimed efficiency)

Operational Information

Ammonia/Urea Injection:	Operating Temperature - °	Allowable ammonia slip - ppm
	Describe how slip is determined:	
	Describe how ammonia injection rate is monitored and controlled: operational monitoring devices	
Catalytic Reduction	Operating temperature range -- °	
	Catalyst used:	
	Reducing agent used:	
	Reducing agent usage rate:	
	Describe how waste from this operation is handled:	

VENDOR NO: 10281

ENDORSEMENT OF ATTACHED CHECK WILL ACKNOWLEDGE PAYMENT IN FULL OF ITEMS SET FORTH BELOW
LOUISVILLE GAS & ELECTRIC CO.

NO: 452633
DATE: 22-Jan-19

INVOICE NUMBER	INVOICE DATE	DESCRIPTION	DISCOUNT	NET AMOUNT
LOUISV011719	17-Jan-2019	RTN TO PATTY ROSE LGE 4	0.00	1,072.19
TOTALS			0.00	1,072.19

PLEASE DETACH BEFORE PRESENTING CHECK

REMOVE DOCUMENT ALONG THIS PERFORATION

THIS DOCUMENT IS PRINTED IN TWO COLORS. DO NOT ACCEPT UNLESS BLUE AND GREEN ARE PRESENT.

LOUISVILLE GAS & ELECTRIC CO.
P.O. Box 32030
Louisville, KY 40232

CHECK DATE: 22-Jan-19
VOID 6 MONTHS AFTER THIS DATE

BANK OF AMERICA, N.A.
Controlled Disbursement
Atlanta, Dekalb County , Georgia

NO: 452633
64-1278
611 GA

PAY One Thousand Seventy-Two and 19/100 Dollars

CHECK AMOUNT
****$1,072.19

TO THE ORDER OF:
LOUISVILLE METRO AIR POLLUTION
CONTROL DISTRICT
701 WEST ORMSBY AVENUE
SUITE 303
LOUISVILLE KY 40203

MANUAL COUNTER SIGNATURE REQUIRED OVER $300,000

⑈00452633⑈ ⑆061112788⑆ 329 902 7609⑈

LOUISVILLE GAS & ELECTRIC CO.
P.O. Box 32030
Louisville, KY 40232

SEE REVERSE SIDE FOR OPENING INSTRUCTIONS

LOUISVILLE METRO AIR POLLUTION
CONTROL DISTRICT
701 WEST ORMSBY AVENUE SUITE 303
LOUISVILLE KY US 40203

SEE REVERSE SIDE FOR OPENING INSTRUCTIONS