



Missouri Department of dnr.mo.gov

# NATURAL RESOURCES

Michael L. Parson, Governor

Carol S. Comer, Director

January 7, 2021

Steve Finkey  
Safety and Environmental Manager  
Seaboard Energy Missouri, LLC  
5701 Stockyards Expressway  
St. Joseph, MO 64504

RE: New Source Review Permit - Project Number: 2019-09-052

Dear Steve Finkey:

Enclosed with this letter is your permit to construct. Please study it carefully and refer to Appendix A for a list of common abbreviations and acronyms used in the permit. Also, note the special conditions on the accompanying pages. The document entitled, "Review of Application for Authority to Construct," is part of the permit and should be kept with this permit in your files. Operation in accordance with these conditions and your new source review permit application is necessary for continued compliance. The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

This permit may include requirements with which you may not be familiar. If you would like the department to meet with you to discuss how to understand and satisfy the requirements contained in this permit, an appointment referred to as a Compliance Assistance Visit (CAV) can be set up with you. To request a CAV, please contact your local regional office or fill out an online request. The regional office contact information can be found at the following website: <http://dnr.mo.gov/regions/>. The online CAV request can be found at <http://dnr.mo.gov/cav/compliance.htm>.

If you were adversely affected by this permit decision, you may be entitled to pursue an appeal before the administrative hearing commission pursuant to Sections 621.250 and 643.075.6 RSMo. To appeal, you must file a petition with the administrative hearing commission within thirty days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the administrative hearing commission, whose contact information is: Administrative Hearing Commission, United States Post Office Building, 131 West High Street, Third Floor, P.O. Box 1557, Jefferson City, Missouri 65102, phone: 573-751-2422, fax: 573-751-5018, website: [www.oa.mo.gov/ahc](http://www.oa.mo.gov/ahc).



Steve Finkey  
Page Two

If you have any questions regarding this permit, please contact the Department of Natural Resources' Air Pollution Control Program at P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

A handwritten signature in blue ink, appearing to read "S Heckenkamp".

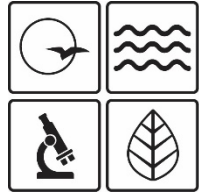
Susan Heckenkamp  
New Source Review Unit Chief

SH:rsa

Enclosures

c: Kansas City Regional Office  
PAMS File: 2019-09-052

Permit Number: 012021-003



**MISSOURI**  
DEPARTMENT OF  
NATURAL RESOURCES

**MISSOURI AIR CONSERVATION COMMISSION**

**PERMIT TO CONSTRUCT**

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: 012021-003      Project Number: 2019-09-052  
Installation Number: 021-0120

Parent Company: Seaboard Energy, LLC

Parent Company Address: 9000 West 67th Street, Suite 200, Shawnee Mission, KS 66202

Installation Name: Seaboard Energy Missouri, LLC


Installation Address: 5701 Stockyards Expressway, St. Joseph, MO 64504

Location Information: Buchanan County (S31, T57N, R35W)

Application for Authority to Construct was made for:

The installation of a wastewater treatment system and associated biogas collection/control system. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

- 
- Standard Conditions (on reverse) are applicable to this permit.
- Standard Conditions (on reverse) and Special Conditions are applicable to this permit.

  
\_\_\_\_\_  
Director or Designee  
Department of Natural Resources

\_\_\_\_\_  
January 7, 2021  
Effective Date

## STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Enforcement and Compliance Section of the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Enforcement and Compliance Section of the Department's Air Pollution Control Program of the anticipated date of startup of this (these) air contaminant source(s). The information must be made available within 30 days of actual startup. Also, you must notify the Department's regional office responsible for the area within which you are located within 15 days after the actual startup of this (these) air contaminant source(s).

A copy of the permit application and this permit and permit review shall be kept at the installation address and shall be made available to Department's personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant source(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit using the contact information below.

Contact Information:  
Missouri Department of Natural Resources  
Air Pollution Control Program  
P.O. Box 176  
Jefferson City, MO 65102-0176  
(573) 751-4817

The regional office information can be found at the following website:  
<http://dnr.mo.gov/regions/>

**SPECIAL CONDITIONS:**

The permittee is authorized to construct and operate subject to the following special conditions:

*The special conditions listed in this permit were included based on the authority granted to the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (3)(E). "Conditions required by permitting authority."*

Seaboard Energy Missouri, LLC  
Buchanan County (S31, T57N, R35W)

1. **SO<sub>x</sub> Emission Limitation**
  - A. Seaboard Energy Missouri, LLC shall emit less than 90.0 tons of SO<sub>x</sub> in any consecutive 12-month period from the wastewater system biogas flare (EU-18). All actual emissions, including startup, shutdown, and malfunction (SSM) emissions shall be included in this limit.
  - B. Attachment A or an equivalent form approved by the Air Pollution Control Program shall be used to demonstrate compliance with Special Condition 1.A.
2. **H<sub>2</sub>S Emission Limitation**
  - A. Seaboard Energy Missouri, LLC shall emit less than 10.0 tons of H<sub>2</sub>S in any consecutive 12-month period from the wastewater system (EU-19). All actual emissions, including startup, shutdown, and malfunction (SSM) emissions shall be included in this limit.
  - B. Attachment B or an equivalent form approved by the Air Pollution Control Program shall be used to demonstrate compliance with Special Condition 2.A.
3. **Control Device Requirement – Scrubbers**
  - A. Seaboard Energy Missouri, LLC shall control H<sub>2</sub>S emissions from the wastewater system (EU-19) using biogas scrubbers, as specified in the permit application.
  - B. The scrubbers shall be operated and maintained in accordance with the manufacturer's specifications, which shall be kept on site.
  - C. To determine the efficacy of the *Thiobacillus* bacteria and the proper operation of the scrubbers, Seaboard Energy Missouri, LLC shall monitor and record the H<sub>2</sub>S concentration and the flow rate of the biogas prior to the flare, in accordance with Special Condition 5.

**SPECIAL CONDITIONS:**

The permittee is authorized to construct and operate subject to the following special conditions:

- D. Seaboard Energy Missouri, LLC shall maintain an operating and maintenance log for the scrubber, which shall include the following:
  - 1) Incidents of malfunction with impact on emissions, duration of event, probable cause, and corrective actions;
  - 2) Maintenance activities with inspection schedule, repair actions, replacements, etc.
  
- 4. Control Device Requirement – Biogas Flare
  - A. Seaboard Energy Missouri, LLC shall control biogas emissions from the wastewater system (EU-19) using a flare (EU-18), as specified in the permit application.
  
  - B. The flare shall be operated and maintained in accordance with the manufacturer's specifications, which shall be kept on site.
  
  - C. Seaboard Energy Missouri, LLC shall maintain an operating and maintenance log for the flare, which shall include the following:
    - 1) Incidents of malfunction with impact on emissions, duration of event, probable cause, and corrective actions;
    - 2) Maintenance activities with inspection schedule, repair actions, replacements, etc.
  
- 5. H<sub>2</sub>S Monitoring Requirement
  - A. The H<sub>2</sub>S concentration in the biogas prior to the flare shall not exceed 7,000 ppmv.
  
  - B. Seaboard Energy Missouri, LLC shall test the biogas in the common pipe prior to the flare.
  
  - C. Sampling shall be performed using an approved EPA method or a method approved by the Air Pollution Control Program, including a portable biogas meter or equivalent measurement device.
  
  - D. Initial testing shall be performed within 90 days after initial startup of the wastewater system (EU-19). Subsequent testing shall be performed according to the following schedule:
    - 1) If the test results indicate a concentration not exceeding 75% of the 7,000 ppmv limit (5,250 ppmv), testing shall be performed quarterly. No two tests shall be performed within 30 days of one another.
    - 2) If the test results indicate a concentration exceeding 75% of the 7,000 ppmv limit (5,250 ppmv), testing shall be performed monthly. If three consecutive tests indicate a concentration not exceeding 5,250 ppmv, the testing frequency may be reduced to the frequency specified in Special Condition 5.D.1).

**SPECIAL CONDITIONS:**

The permittee is authorized to construct and operate subject to the following special conditions:

- E. Seaboard Energy Missouri, LLC shall continuously monitor and record the flow rate of the biogas being sent to the flare. The recorded flow rate shall be used to calculate monthly SO<sub>2</sub> emissions from the flare. An emission factor of  $8.170 \times 10^{-5}$  ton/MMcf (0.1634 lb/MMcf) multiplied by the most current measured H<sub>2</sub>S ppmv concentration shall be used to calculate the SO<sub>2</sub> emissions, as provided in Attachment A.
6. **Modification to Release Parameters Requirement**  
Seaboard Energy Missouri, LLC shall notify the Air Pollution Control Program prior to making any modifications to the facility that impact the release parameters and/or emission rates listed in the memo: *Ambient Air Quality Impact Analysis for Seaboard Energy Missouri, LLC* (January 28, 2020). In the event that the Air Pollution Control Program determines the changes are significant, Seaboard Energy Missouri, LLC shall submit an updated AAQIA indicating compliance with the NAAQS.
7. **Record Keeping and Reporting Requirements**
  - A. Seaboard Energy Missouri, LLC shall maintain all records required by this permit for not less than five years and shall make them available to any Missouri Department of Natural Resources' personnel upon request.
  - B. Seaboard Energy Missouri, LLC shall report to the Air Pollution Control Program's Compliance/Enforcement Section at P.O. Box 176, Jefferson City, MO 65102 or by email at [AirComplianceReporting@dnr.mo.gov](mailto:AirComplianceReporting@dnr.mo.gov), no later than 10 days after the end of the month during which any record required by this permit shows an exceedance of a limitation imposed by this permit.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE  
SECTION (5) REVIEW

Project Number: 2019-09-052  
Installation ID Number: 021-0120  
Permit Number: 012021-003

Installation Address:

Seaboard Energy Missouri, LLC  
5701 Stockyards Expressway  
St. Joseph, MO 64504  
Buchanan County (S31, T57N, R35W)

Parent Company:

Seaboard Energy, LLC  
9000 West 67th Street, Suite 200  
Shawnee Mission, KS 66202

REVIEW SUMMARY

- Seaboard Energy Missouri, LLC has applied for authority to install a wastewater treatment system and associated biogas collection/control system.
- The application was deemed complete on October 10, 2019.
- HAP emissions are expected from the proposed equipment. HAPs of concern from this process include the products of biogas and natural gas combustion.
- None of the NSPS, NESHAPs, or MACT regulations apply to the new wastewater system or biogas collection/control system.
- Biogas scrubbers and a flare are being used to control H<sub>2</sub>S emissions from the wastewater system.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential SO<sub>x</sub> emissions are above the de minimis level but conditioned below the major source level. Potential H<sub>2</sub>S emissions are conditioned below the de minimis level. Potential emissions of all other pollutants are below de minimis levels.
- This installation is located in Buchanan County, an attainment/unclassifiable area for all criteria pollutants.
- This installation is classified as item #20 (Chemical Process Plants) on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2. The installation's major source level is 100 tons per year, and fugitive emissions are counted toward major source applicability.
- Ambient air quality modeling was performed to determine the ambient impact of SO<sub>x</sub>.
- Emissions testing is not required for the equipment as a part of this permit. Testing may be required as part of other state, federal, or applicable rules.



- No Operating Permit is required for this installation.
- Approval of this permit is recommended with special conditions.

## INSTALLATION DESCRIPTION

Seaboard Energy Missouri, LLC operates a biodiesel production plant in St. Joseph, Missouri. The plant was purchased by Seaboard Energy, LLC in 2016, having previously been owned by Terra Bioenergy, LLC and Blue Sun Advanced Fuels, LLC. The installation produces biodiesel from the base-catalyzed transesterification of raw, non-petroleum oil (vegetable oil, animal fat, etc.) with methanol. Seaboard Energy Missouri, LLC is capable of producing up to 32.85 million gallons of biodiesel per year. The installation is a de minimis source and does not require an operating permit. The following NSR permits have been issued to Seaboard Energy Missouri, LLC from the Air Pollution Control Program.

Table 1: NSR Permit History

Permit Number	Description
042007-016	Installation of a 20 million gallon per year biodiesel plant (Terra Bioenergy, LLC)
032009-010	Increase biodiesel production to 32.85 million gallons per year (Terra Bioenergy, LLC)
122013-008	Installation of a temporary jet fuel pilot plant (Blue Sun Advanced Fuels, LLC)
122013-008A	Modification of the jet fuel pilot plant (Blue Sun Advanced Fuels, LLC)

## PROJECT DESCRIPTION

When Seaboard Energy, LLC acquired the plant in 2016, there were already issues with the wastewater that was being discharged to the local publically owned treatment works. Seaboard Energy Missouri, LLC has since been working with the City of St. Joseph to address these issues. In March 2019, the City of St. Joseph issued a wastewater pretreatment permit that significantly lowered the allowable discharge from the plant, starting in October 2020. In response, Seaboard Energy Missouri, LLC has been working to implement a wastewater treatment system capable of meeting these lower limits. The system includes an anaerobic digestion process that will reduce the amount of organic matter in the wastewater; however, this will subsequently generate biogas, which contains hydrogen sulfide (H<sub>2</sub>S). The H<sub>2</sub>S could be dealt with by combusting the biogas in a flare; however, the combustion of H<sub>2</sub>S was found to generate sulfur oxide (SO<sub>x</sub>) emissions in excess of the de minimis level. This construction permit will address the biogas collection/control system that the wastewater treatment system requires.

Process wastewater from the biodiesel plant collects in an equalization tank prior to being processed in an anaerobic continuously-stirred tank reactor (CSTR). The anaerobic microorganisms in the CSTR digest the bulk of the biologically degradable organic load in the wastewater, while continuously generating biogas. CSTR effluent will flow by gravity to anaerobic membrane tanks that provide solid-liquid separation. Liquid

from the membrane tanks are then pumped into a sulfur oxide (SO) tank, where the anaerobic effluent is continuously aerated to oxidize the dissolved sulfides. SO tank effluent is then pumped through a heat exchanger where it is cooled prior to discharge into the sewer.

The anaerobic CSTR and membrane tanks will have geomembrane covers that collect generated biogas. The biogas will be continuously recirculated through the membrane tanks to scour the membrane surfaces, which will reduce the rate of membrane fouling. Excess biogas generated in the CSTR and membrane tanks will be treated in a scrubbing system to reduce H<sub>2</sub>S.

The biogas treatment system consists of four biogas scrubber tanks filled with packing media coated with *Thiobacillus* bacteria. The bacteria will oxidize the H<sub>2</sub>S in the biogas to sulfate, which will dissolve in the scrubber liquid and be discharged from the scrubbing system. A new 0.75 MMBtu/hr natural gas fired boiler (EU-20) will heat a glycol recirculation cycle that regulates the temperature of the scrubber tanks. Treated biogas and a portion of untreated biogas from the headspace of the CSTR and membrane tanks will be routed to the flare (EU-18) for combustion or used as a fuel in the existing 14 MMBtu/hr hot oil heater (EU-16).

## EMISSIONS/CONTROLS EVALUATION

The wastewater system (EU-19) has the capacity to generate up to 562,000 cubic feet of biogas per day, with an average generation rate of 353,000 cubic feet per day. The maximum H<sub>2</sub>S concentration in the startup phase was estimated to be 2.5% by volume, which is the upper limit of the process that is able to maintain biological stability in the anaerobic system. After startup, the maximum H<sub>2</sub>S concentration in the biogas was conservatively estimated to be 7,000 ppmv, with the average concentration being approximately 5,370 ppmv. These values were calculated using years of wastewater flow data and constituent loading parameters measured at the installation, as well as a pilot treatment system run for around six months to establish design parameters. A 36% safety factor was even incorporated into the maximum estimated values to ensure these values were conservative. Worst-case SO<sub>x</sub> emissions occur when all of the biogas is flared in EU-18 and EU-16 is simultaneously fired by natural gas.

Based on the previous wastewater and pilot system data, as well as generation data provided by the wastewater system design company, the biogas is expected to contain negligible amounts of non-H<sub>2</sub>S reduced sulfur compounds (<10 ppmv); therefore, these emissions were not evaluated for this project.

Combustion emissions from flaring the biogas were calculated using emission factors obtained from AP-42 Section 2.4 *Municipal Solid Waste Landfills* (Draft, October 2008) and Section 13.5 *Industrial Flares* (February 2018). Combustion emissions from natural gas were calculated using emission factors obtained from AP-42 Section 1.4 *Natural Gas Combustion* (July 1998).

The following table provides an emissions summary for this project. Existing potential emissions were taken from Construction Permit No. 032009-010. Existing actual emissions were taken from the installation's most recent EIQ. Potential emissions of the project represent the potential of the new equipment, assuming continuous operation (8,760 hours per year). Emissions from EU-16 were not included because it is an existing unit whose worst-case scenario for emissions is not changing. Conditioned potential emissions account for a SO<sub>x</sub> limit below the major source level and an H<sub>2</sub>S limit below the de minimis level. The SO<sub>x</sub> limit being at 90 tons per year will allow for small future increases in SO<sub>x</sub> emissions without causing the installation to exceed 100 tons per year and become a major source.

Table 2: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (2018 EIQ)	Potential Emissions of the Project	Conditioned Potential Emissions of the Project
PM	25.0	N/D	N/D	0.89	0.89
PM <sub>10</sub>	15.0	3.5	0.62	0.89	0.89
PM <sub>2.5</sub>	10.0	N/D	0.62	0.89	0.89
SO <sub>x</sub>	40.0	0.4	0.04	117.31	<90.0
NO <sub>x</sub>	40.0	9.1	8.17	3.81	3.81
VOC	40.0	19.7	8.47	33.86	33.86
CO	100.0	10.1	6.86	16.17	16.17
H <sub>2</sub> S	10.0	N/D	N/D	68.85	<10.0
Total HAPs	25.0	16.2	N/D	0.20	0.20
Methanol	10.0	6.9	N/D	N/A	N/A

N/A = Not Applicable; N/D = Not Determined

### PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential SO<sub>x</sub> emissions are above the de minimis level but conditioned below the major source level. Potential H<sub>2</sub>S emissions are conditioned below the de minimis level. Potential emissions of all other pollutants are below de minimis levels.

### APPLICABLE REQUIREMENTS

Seaboard Energy Missouri, LLC shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved.

## GENERAL REQUIREMENTS

- *Start-Up, Shutdown, and Malfunction Conditions*, 10 CSR 10-6.050
- *Submission of Emission Data, Emission Fees, and Process Information*, 10 CSR 10-6.110
  - Per 10 CSR 10-6.110(4)(B)2.B(II), a full EIQ is required for the first full calendar year the new equipment is in operation
- *Restriction of Emission of Odors*, 10 CSR 10-6.165
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*, 10 CSR 10-6.170
- *Restriction of Emission of Visible Air Contaminants*, 10 CSR 10-6.220

## SPECIFIC REQUIREMENTS

- *Restriction of Emission of Sulfur Compounds*, 10 CSR 10-6.260
- *Control of Sulfur Dioxide Emissions*, 10 CSR 10-6.261

## AMBIENT AIR QUALITY IMPACT ANALYSIS

Ambient air quality modeling was performed to determine the ambient impact of SO<sub>x</sub>. Due to the facility being able to either flare the biogas or combust it in the hot oil heater, two scenarios were modeled. Scenario 1 modeled the flare combusting 100% of the biogas, and Scenario 2 modeled the hot oil heater combusting 100% of the biogas.

Results of the preliminary model analysis showed that the maximum SO<sub>x</sub> concentrations exceeded the significance levels of all averaging periods for both scenarios, thereby triggering a full impact analysis. Tables 3 & 4 provide a summary of the modeling results.

Table 3: Modeling Summary – Scenario 1

Pollutant	Averaging Period	Significance Level (µg/m <sup>3</sup> )	Maximum Concentration (µg/m <sup>3</sup> )	NAAQS Standard (µg/m <sup>3</sup> )	Worst Case Impact (µg/m <sup>3</sup> )
SO <sub>x</sub>	1-Hour	7.84	133.795	196	139.473
	3-Hour	25.0	79.618	1,300	1,071.134
	24-Hour	5.0	37.383	365	264.426
	Annual	1.0	3.156	80	33.278

Table 4: Modeling Summary – Scenario 2

Pollutant	Averaging Period	Significance Level ( $\mu\text{g}/\text{m}^3$ )	Maximum Concentration ( $\mu\text{g}/\text{m}^3$ )	NAAQS Standard ( $\mu\text{g}/\text{m}^3$ )	Worst Case Impact ( $\mu\text{g}/\text{m}^3$ )
SO <sub>x</sub>	1-Hour	7.84	193.168	196	194.484
	3-Hour	25.0	110.316	1,300	1,071.222
	24-Hour	5.0	62.291	365	264.429
	Annual	1.0	6.883	80	33.323

### STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, it is recommended that this permit be granted with special conditions.

### PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated September 27, 2019, received September 30, 2019, designating Seaboard Energy, LLC as the owner and operator of the installation.





## APPENDIX A

### Abbreviations and Acronyms

<b>%</b> ..... percent	<b>Mgal</b> ..... 1,000 gallons
<b>°F</b> ..... degrees Fahrenheit	<b>MW</b> ..... megawatt
<b>acfm</b> ..... actual cubic feet per minute	<b>MHDR</b> ..... maximum hourly design rate
<b>BACT</b> ..... Best Available Control Technology	<b>MMBtu</b> .... Million British thermal units
<b>BMPs</b> ..... Best Management Practices	<b>MMCF</b> ..... million cubic feet
<b>Btu</b> ..... British thermal unit	<b>MSDS</b> ..... Material Safety Data Sheet
<b>CAM</b> ..... Compliance Assurance Monitoring	<b>NAAQS</b> .... National Ambient Air Quality Standards
<b>CAS</b> ..... Chemical Abstracts Service	<b>NESHAPs</b> National Emissions Standards for Hazardous Air Pollutants
<b>CEMS</b> ..... Continuous Emission Monitor System	<b>NO<sub>x</sub></b> .....nitrogen oxides
<b>CFR</b> ..... Code of Federal Regulations	<b>NSPS</b> ..... New Source Performance Standards
<b>CO</b> ..... carbon monoxide	<b>NSR</b> ..... New Source Review
<b>CO<sub>2</sub></b> ..... carbon dioxide	<b>PM</b> .....particulate matter
<b>CO<sub>2e</sub></b> ..... carbon dioxide equivalent	<b>PM<sub>2.5</sub></b> ..... particulate matter less than 2.5 microns in aerodynamic diameter
<b>COMS</b> ..... Continuous Opacity Monitoring System	<b>PM<sub>10</sub></b> ..... particulate matter less than 10 microns in aerodynamic diameter
<b>CSR</b> ..... Code of State Regulations	<b>ppm</b> ..... parts per million
<b>dscf</b> ..... dry standard cubic feet	<b>PSD</b> ..... Prevention of Significant Deterioration
<b>EIQ</b> ..... Emission Inventory Questionnaire	<b>PTE</b> ..... potential to emit
<b>EP</b> ..... Emission Point	<b>RACT</b> ..... Reasonable Available Control Technology
<b>EPA</b> ..... Environmental Protection Agency	<b>RAL</b> ..... Risk Assessment Level
<b>EU</b> ..... Emission Unit	<b>SCC</b> ..... Source Classification Code
<b>fps</b> ..... feet per second	<b>scfm</b> ..... standard cubic feet per minute
<b>ft</b> ..... feet	<b>SDS</b> ..... Safety Data Sheet
<b>GACT</b> ..... Generally Available Control Technology	<b>SIC</b> ..... Standard Industrial Classification
<b>GHG</b> ..... Greenhouse Gas	<b>SIP</b> ..... State Implementation Plan
<b>gpm</b> ..... gallons per minute	<b>SMAL</b> ..... Screening Model Action Levels
<b>gr</b> ..... grains	<b>SO<sub>x</sub></b> ..... sulfur oxides
<b>GWP</b> ..... Global Warming Potential	<b>SO<sub>2</sub></b> ..... sulfur dioxide
<b>HAP</b> ..... Hazardous Air Pollutant	<b>SSM</b> ..... Startup, Shutdown & Malfunction
<b>hr</b> ..... hour	<b>tph</b> ..... tons per hour
<b>hp</b> ..... horsepower	<b>tpy</b> ..... tons per year
<b>lb</b> ..... pound	<b>VMT</b> ..... vehicle miles traveled
<b>lbs/hr</b> ..... pounds per hour	<b>VOC</b> ..... Volatile Organic Compound
<b>MACT</b> ..... Maximum Achievable Control Technology	
<b>µg/m<sup>3</sup></b> ..... micrograms per cubic meter	
<b>m/s</b> ..... meters per second	