

Missouri Department of dnr.mo.gov

NATURAL RESOURCES

Michael L. Parson, Governor

Carol S. Comer, Director

APR 01 2019

Mr. Bryon Mason
Director of Quality, Safety, Health & Environment
Brenntag Mid-South, Inc.
1405 Highway 136 West
Henderson, KY 42420

RE: New Source Review Permit – Project Number: 2018-10-007

Dear Mr. Mason:

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, your new source review permit application and your operating permit 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.



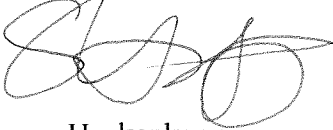
Recycled paper

Mr. Bryon Mason
Page Two

If you have any questions regarding this permit, please do not hesitate to contact Ryan Schott, at the Department of Natural Resources' Air Pollution Control Program, 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



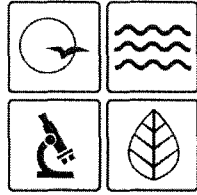
Susan Heckenkamp
New Source Review Unit Chief

SH:rsj

Enclosures

c: St. Louis Regional Office
PAMS File: 2018-10-007

Permit Number: 042019-002



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: 042019-002

Project Number: 2018-10-007
Installation Number: 510-1093

Parent Company: Brenntag Mid-South, Inc.

Parent Company Address: 1405 Highway 136 West, Henderson, KY 42420

Installation Name: Brenntag Mid-South, Inc.

Installation Address: 139 East Soper Street, St. Louis, MO 63111

Location Information: St. Louis City (Landgrant 00000)

Application for Authority to Construct was made for:

The ability to store and handle various new bulk liquid materials in existing equipment at the installation. 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.

Sanford B. Hale

Director or Designee
Department of Natural Resources

APR 01 2019

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 (12)(A)10. "Conditions required by permitting authority."

Brenntag Mid-South, Inc.
St. Louis City (Landgrant 00000)

1. Superseding Condition

The conditions of this permit supersede Special Condition 1 of Construction Permit No. 072017-019, previously issued by the Air Pollution Control Program.

2. HAP Emission Limitations

- A. Brenntag Mid-South, Inc. shall emit less than 9.0 tons of individual HAPs or less than the Screening Model Action Level (see Appendix B) of each HAP (whichever is lower) in any consecutive 12-month period from the entire installation. Brenntag Mid-South, Inc. shall emit less than 24.0 tons of combined HAPs in any consecutive 12-month period from the entire installation. A list of installation emission points is provided in Table 1.

Table 1: Installation Emission Points

Emission Point	Description
EP-01	310,000 gallon storage tank
EP-02	310,000 gallon storage tank
EP-03	221,000 gallon storage tank
EP-05	380,000 gallon storage tank
EP-06	380,000 gallon storage tank
EP-07	620,000 gallon storage tank
EP-08	620,000 gallon storage tank
EP-09	210,000 gallon storage tank
EP-10	20,000 gallon storage tank
EP-16	450,000 gallon storage tank
EP-27	815,000 gallon storage tank
EP-29	630,000 gallon storage tank
EP-30	450,000 gallon storage tank
EP-31	30,000 gallon storage tank
EP-32	30,000 gallon storage tank
EP-33	30,000 gallon storage tank
EP-34	30,000 gallon storage tank
EP-35	30,000 gallon storage tank
EP-36	20,000 gallon storage tank
EP-37	20,000 gallon storage tank
EP-38	20,000 gallon storage tank
EP-39	20,000 gallon storage tank
EP-40	20,000 gallon storage tank
EP-41	20,000 gallon storage tank

SPECIAL CONDITIONS:

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

Emission Point	Description
EP-42	20,000 gallon storage tank
EP-43	20,000 gallon storage tank
EP-44	20,000 gallon storage tank
EP-45	20,000 gallon storage tank
EP-46	20,000 gallon storage tank
EP-47	20,000 gallon storage tank
EP-48	20,000 gallon storage tank
EP-49	20,000 gallon storage tank
EP-50	20,000 gallon storage tank
EP-51	20,000 gallon storage tank
EP-52	20,000 gallon storage tank
EP-53	20,000 gallon storage tank
EP-54	20,000 gallon storage tank
EP-55	20,000 gallon storage tank
EP-56	11,600 gallon storage tank
EP-57	20,000 gallon storage tank
EP-59	12,000 gallon storage tank
EP-60	5,000 gallon storage tank
EP-64	8,500 gallon storage tank
EP-65	10,000 gallon storage tank
EP-85	12,000 gallon storage tank
EP-86	6,000 gallon storage tank
EP-88	12,000 gallon storage tank
EP-90	11,800 gallon storage tank
EP-92	5,700 gallon storage tank
EP-B01	10.5 MMBtu/hr natural gas boiler
EP-B02	Barge Loading Pumps – 600 gpm total
EP-D01	Container Filling Pumps – 930 gpm total
EP-R01	Railcar Loading Pumps – 600 gpm total
EP-T01	Truck Loading Pumps – 2,290 gpm total

B. Brenntag Mid-South, Inc. shall develop and use forms to demonstrate compliance with Special Condition 2.A. These forms shall contain, at a minimum, the following information:

- 1) Installation name & ID number
- 2) Permit number
- 3) Current month & 12-month date range
- 4) Storage tank contents and properties, on a monthly basis
 - a) Name and ingredients of each product
 - b) Identification of any and all HAPs in each product
 - c) Weight percentage of each constituent HAP in all products
 - d) Screening Model Action Level of each HAP
 - e) Throughput of each product (gal)
 - f) Density of each product (lb/gal)
 - g) Molecular weight of each product (lb/lbmol)
 - h) Vapor pressure of each product (psia)

SPECIAL CONDITIONS:

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

- 5) Monthly emission rate for each individual HAP (tons)
 - a) Tank emissions shall be calculated using the method provided in AP-42 Section 5.2 (May 1995), Equation (1)
 - b) A control efficiency of 90% shall be used on Tanks EP-3, EP-27 & EP-29 because each has an internal floating roof
 - c) Fugitive emissions from pumps are considered insignificant and are not required to be calculated
 - 6) Monthly emission rate for combined HAPs (tons)
 - a) Tank emissions shall be calculated by adding all individual HAP emission rates from tanks
 - b) Boiler emissions shall be calculated using an emission factor of 1.89 lb/MMscf of natural gas
 - 7) 12-month rolling total for each individual HAP (tons)
 - a) Emissions shall be calculated by adding the current monthly individual HAP emissions to the sum of the previous 11 months' individual HAP emissions
 - 8) 12-month rolling total for combined HAPs (tons)
 - a) Emissions shall be calculated by adding the current monthly combined HAP emissions to the sum of the previous 11 months' combined HAP emissions
 - 9) Indication of compliance with Special Condition 2.A
3. Tank-Specific Bulk Liquid Limitations
- A. Brenntag Mid-South, Inc. may store/handle any material in existing installation equipment without the need for prior notification or approval from the Air Pollution Control Program, as long as the material has a true vapor pressure within the required parameters provided in Table 2.

Table 2: Tank-Specific Bulk Liquid Parameters

Emission Point	Storage Capacity (gal)	Maximum Allowed Vapor Pressure (psia at 90°F)
EP-01	310,000	0.5
EP-02	310,000	0.5
EP-03	221,000	11.1
EP-05	380,000	0.5
EP-06	380,000	0.5
EP-07	620,000	0.5
EP-08	620,000	0.5
EP-09	210,000	0.5
EP-10	20,000	4.0
EP-16	450,000	0.5
EP-27	815,000	11.1
EP-29	630,000	11.1
EP-30	450,000	0.5
EP-31	30,000	4.0
EP-32	30,000	4.0
EP-33	30,000	4.0

SPECIAL CONDITIONS:

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

Emission Point	Storage Capacity (gal)	Maximum Allowed Vapor Pressure (psia at 90°F)
EP-34	30,000	4.0
EP-35	30,000	4.0
EP-36	20,000	4.0
EP-37	20,000	4.0
EP-38	20,000	4.0
EP-39	20,000	4.0
EP-40	20,000	4.0
EP-41	20,000	4.0
EP-42	20,000	4.0
EP-43	20,000	4.0
EP-44	20,000	4.0
EP-45	20,000	4.0
EP-46	20,000	4.0
EP-47	20,000	4.0
EP-48	20,000	4.0
EP-49	20,000	4.0
EP-50	20,000	4.0
EP-51	20,000	4.0
EP-52	20,000	4.0
EP-53	20,000	4.0
EP-54	20,000	4.0
EP-55	20,000	4.0
EP-56	11,600	4.0
EP-57	20,000	4.0
EP-59	12,000	4.0
EP-60	5,000	4.0
EP-64	8,500	4.0
EP-65	10,000	4.0
EP-85	12,000	4.0
EP-86	6,000	4.0
EP-88	12,000	4.0
EP-90	11,800	4.0
EP-92	5,700	4.0

B. Brenntag Mid-South, Inc. shall demonstrate compliance with Special Condition 3.A by keeping a monthly record of the vapor pressure of each material stored/handled.

4. Record Keeping and Reporting Requirements

A. Brenntag Mid-South, Inc. shall maintain all records required by this permit for not less than five years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request. These records shall include SDS for all materials used.

SPECIAL CONDITIONS:

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

- B. Brenntag Mid-South, Inc. shall report to the Air Pollution Control Program's Compliance/Enforcement Section at P.O. Box 176, Jefferson City, MO 65102 or by e-mail at 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: 2018-10-007
Installation ID Number: 510-1093
Permit Number: 042019-002

Installation Address:
Brenntag Mid-South, Inc.
139 East Soper Street
St. Louis, MO 63111
St. Louis City (Landgrant 00000)

Parent Company:
Brenntag Mid-South, Inc.
1405 Highway 136 West
Henderson, KY 42420

REVIEW SUMMARY

- Brenntag Mid-South, Inc. has applied for authority to store and handle various new bulk liquid materials in existing equipment at the installation.
- The application was deemed complete on October 29, 2018.
- HAP emissions are expected from the proposed equipment. HAPs of concern from this process potentially include numerous and variable volatile organic liquids.
- None of the NSPS or NESHAPs apply to this installation. None of the currently promulgated MACT regulations apply to the equipment.
- No new air pollution control equipment is being used with the equipment.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of all pollutants are conditioned below de minimis levels.
- This installation is located in St. Louis City, a nonattainment area for the 8-hour ozone standard and an attainment/unclassifiable area for all other criteria pollutants.
- This installation is not 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 for NO_x & VOC and 250 tons per year for all other pollutants. Fugitive emissions are not counted toward major source applicability.
- 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.

- Submittal of an amendment to your Part 70 Operating Permit is required within 1 year of equipment startup.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Brenntag Mid-South, Inc. operates a chemical distribution facility in St. Louis, Missouri. The installation receives a variety of solvents, caustics, and acids in bulk. The chemicals are unloaded and stored in tanks. Custom solvent mixtures are blended onsite. Chemicals are distributed into containers, trucks, rail cars, and barges. The installation is a major source for VOCs and a synthetic minor source for HAPs. Brenntag Mid-South, Inc. currently has a Part 70 Operating Permit (OP2015-005) that expires April 7, 2020.

The following New Source Review permits have been issued to Brenntag Mid-South, Inc. from the Air Pollution Control Program.

Table 3: Permit History

Permit Number	Description
95-07-083	Four storage tanks (Local CP) [revoked]
97-05-051	Rail car loading/unloading station (Local CP)
97-08-082	Aviation gasoline storage (Local CP)
99-08-063	Hexane storage (Local CP) [revoked]
092012-005	Soil vapor extraction (Temporary Permit)
072017-019	Storage of xylene in Storage Tanks #35 & #40
072017-019A	Update methanol emission calculations

PROJECT DESCRIPTION

Brenntag Mid-South, Inc. has historically stored/handled all its various bulk liquids in dedicated tanks that would only contain a single, specific material. The facility was only allowed to store a number of HAP-containing compounds that were permitted in a list and individually tracked; any change in material required submission of a new construction permit application. Brenntag Mid-South, Inc. is proposing to increase the flexibility of what materials can be stored/handled in each of the existing tanks, as to prepare for any future facility operational changes. Brenntag Mid-South, Inc. is requesting the ability to store any material in any of their tanks, without the need for prior notification or approval from the Air Pollution Control Program. The installation is being granted this freedom of operation, as long as several parameters are met. These parameters are as follows:

1. The change in stored/handled material does not change the applicability of any NSPS or MACT regulations (e.g. 40 CFR 60, Subpart VVa)
2. Individual and combined HAP emissions from the installation will remain below major source levels

3. Individual HAP emissions will not exceed their respective Screening Model Action Levels (SMAL)

Brenntag Mid-South, Inc. will not be installing any additional equipment for this project. All tanks listed in Table 2 will have the ability to change what materials they contain at any time, without notification having to be made to the Air Pollution Control Program. Brenntag Mid-South, Inc. will keep records, as required by Special Conditions 2 & 3, in order to remain in compliance with the aforementioned parameters.

EMISSIONS/CONTROLS EVALUATION

Although the methods for calculating emissions from storage tanks provided in AP-42 Section 7.1 *Organic Liquid Storage Tanks* (November 2006) would be most appropriate for this project, these methods are intricate and overly specific, which would be unduly difficult for calculating and tracking the emissions of potentially a wide variety of compounds. It was discovered during a previous review of tank operations at the installation (Construction Permit No. 072017-019) that Equation (1) from AP-42 Section 5.2 *Transportation and Marketing of Petroleum Liquids* (July 2008) yielded potential emission values that were nearly identical to the AP-42 Section 7.1 method; therefore, for the sake of simplicity and ease of calculation, emissions from all tanks were calculated in the AP-42 Section 5.2 fashion.

Fugitive HAP emissions from equipment leaks, including pumps, were not evaluated as part of this project. Although changing the bulk liquids that are pumped in/out of the tanks and transport vessels may potentially increase these fugitive emissions, the changes would be insignificant. However; in order to indirectly account for these emissions, as well as any other insignificant increases, annual HAP emissions were limited to 9.0 tons individually and 24.0 tons combined, rather than 10.0 tons and 25.0 tons, respectively. This will ensure that any emissions not explicitly included in the potential to emit of this project will not cause the installation to become a major source for HAPs.

Table 4 provides an emissions summary for this project. Existing potential emissions were taken from the installation's previous construction permit (072017-019). Existing actual emissions were taken from the installation's most recent EIQ. Potential emissions of the project represent the potential of the equipment while operating with the worst-case polluting materials and accounting for a voluntary HAP limit below major source levels. Individual HAP emissions were not calculated because Brenntag Mid-South, Inc. will have the ability to store/handle potentially any HAP. It would not be feasible to calculate the potential emissions for every HAP compound; however, each HAP is limited below its respective SMAL. By limiting HAP emissions below the major source level/SMAL, VOC emissions are subsequently limited below the de minimis level.

Table 4: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (2017 EIQ)	Potential Emissions of the Project	New Installation Conditioned Potential
PM	25.0	N/D	N/D	N/D	N/D
PM ₁₀	15.0	0.34	N/D	N/A	0.34
PM _{2.5}	10.0	0.34	N/D	N/A	0.34
SO _x	40.0	0.03	N/D	N/A	0.03
NO _x	40.0	4.47	N/D	N/A	4.47
VOC	40.0	Major	4.31	<40.0	Major
CO	100.0	3.76	N/D	N/A	3.76
Total HAPs	25.0	24.0	N/D	<24.0	<24.0

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 emissions of all pollutants are conditioned below de minimis levels.

APPLICABLE REQUIREMENTS

Brenntag Mid-South, Inc. 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. For a complete list of applicable requirements for your installation, please consult your operating permit.

GENERAL REQUIREMENTS

- *Start-Up, Shutdown, and Malfunction Conditions*, 10 CSR 10-6.050
- *Operating Permits*, 10 CSR 10-6.065
- *Submission of Emission Data, Emission Fees, and Process Information*, 10 CSR 10-6.110
 - Per 10 CSR 10-6.110(4)(B)2.A, a full EIQ is required annually
- *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

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 4, 2018, received October 2, 2018, designating Brenntag Mid-South, Inc. as the owner and operator of the installation.

APPENDIX A

Abbreviations and Acronyms

%	percent	Mgal	1,000 gallons
°F	degrees Fahrenheit	MW	megawatt
acfm	actual cubic feet per minute	MHDR	maximum hourly design rate
BACT	Best Available Control Technology	MMBtu	Million British thermal units
BMPs	Best Management Practices	MMCF	million cubic feet
Btu	British thermal unit	MSDS	Material Safety Data Sheet
CAM	Compliance Assurance Monitoring	NAAQS	National Ambient Air Quality Standards
CAS	Chemical Abstracts Service	NESHAPs	National Emissions Standards for Hazardous Air Pollutants
CEMS	Continuous Emission Monitor System	NO_x	nitrogen oxides
CFR	Code of Federal Regulations	NSPS	New Source Performance Standards
CO	carbon monoxide	NSR	New Source Review
CO₂	carbon dioxide	PM	particulate matter
CO_{2e}	carbon dioxide equivalent	PM_{2.5}	particulate matter less than 2.5 microns in aerodynamic diameter
COMS	Continuous Opacity Monitoring System	PM₁₀	particulate matter less than 10 microns in aerodynamic diameter
CSR	Code of State Regulations	ppm	parts per million
dscf	dry standard cubic feet	PSD	Prevention of Significant Deterioration
EIQ	Emission Inventory Questionnaire	PTE	potential to emit
EP	Emission Point	RACT	Reasonable Available Control Technology
EPA	Environmental Protection Agency	RAL	Risk Assessment Level
EU	Emission Unit	SCC	Source Classification Code
fps	feet per second	scfm	standard cubic feet per minute
ft	feet	SDS	Safety Data Sheet
GACT	Generally Available Control Technology	SIC	Standard Industrial Classification
GHG	Greenhouse Gas	SIP	State Implementation Plan
gpm	gallons per minute	SMAL	Screening Model Action Levels
gr	grains	SO_x	sulfur oxides
GWP	Global Warming Potential	SO₂	sulfur dioxide
HAP	Hazardous Air Pollutant	SSM	Startup, Shutdown & Malfunction
hr	hour	tph	tons per hour
hp	horsepower	tpy	tons per year
lb	pound	VMT	vehicle miles traveled
lbs/hr	pounds per hour	VOC	Volatile Organic Compound
MACT	Maximum Achievable Control Technology		
µg/m³	micrograms per cubic meter		
m/s	meters per second		

Appendix B: Air Pollution Control Program

Table of Hazardous Air Pollutants and Screening Model Action Levels

Chemical	CAS #	SMAL tons/yr	Group ID	VOC	PM	Chemical	CAS #	SMAL tons/yr	Group ID	VOC	PM
ACETALDEHYDE	75-07-0	9		Y	N	CHLOROMETHYL METHYL ETHER	107-30-2	0.1		Y	N
ACETAMIDE	60-35-5	1		Y	N	CHLOROPRENE	126-99-8	1		Y	N
ACETONITRILE	75-05-8	4		Y	N	CHROMIUM (VI) COMPOUNDS		0.002	L	N	Y
ACETOPHENONE	98-86-2	1		Y	N	CHROMIUM COMPOUNDS		5	L	N	Y
ACETYLAMINOFLUORINE, [2-]	53-96-3	0.005	V	Y	Y	CHRYSENE	218-01-9	0.01	V	Y	N
ACROLEIN	107-02-8	0.04		Y	N	COBALT COMPOUNDS		0.1	M	N	Y
ACRYLAMIDE	79-06-1	0.02		Y	N	COKE OVEN EMISSIONS	8007-45-2	0.03	N	Y	N
ACRYLIC ACID	79-10-7	0.6		Y	N	CRESOL, [META-]	108-39-4	1	B	Y	N
ACRYLONITRILE	107-13-1	0.3		Y	N	CRESOL, [ORTHO-]	95-48-7	1	B	Y	N
ALLYL CHLORIDE	107-05-1	1		Y	N	CRESOL, [PARA-]	106-44-5	1	B	Y	N
AMINOBIIPHENYL, [4-]	92-67-1	1	V	Y	N	CRESOLS (MIXED ISOMERS)	1319-77-3	1	B	Y	N
ANILINE	62-53-3	1		Y	N	CUMENE	98-82-8	10		Y	N
ANISIDINE, [ORTHO-]	90-04-0	1		Y	N	CYANIDE COMPOUNDS		0.1	O	Y	N
ANTHRACENE	120-12-7	0.01	V	Y	N	DDE	72-55-9	0.01	V	Y	Y
ANTIMONY COMPOUNDS		5	H	N	Y	DI(2-ETHYLHEXYL) PHTHALATE, (DEHP)	117-81-7	5		Y	N
ANTIMONY PENTAFLUORIDE	7783-70-2	0.1	H	N	Y	DIAMINOTOLUENE, [2,4-]	95-80-7	0.02		Y	N
ANTIMONY POTASSIUM TARTRATE	28300-74-5	1	H	N	Y	DIAZOMETHANE	334-88-3	1		Y	N
ANTIMONY TRIOXIDE	1309-64-4	1	H	N	Y	DIBENZ(A,H)ANTHRACENE	53-70-3	0.01	V	Y	N
ANTIMONY TRISULFIDE	1345-04-6	0.1	H	N	Y	DIOXINS/FURANS		6E-07	D,V	Y	N
ARSENIC COMPOUNDS		0.005	I	N	Y	DIBENZOFURAN	132-64-9	5	V	Y	N
ASBESTOS	1332-21-4	0	A	N	Y	DIBROMO-3-CHLOROPROPANE, [1,2-]	96-12-8	0.01		Y	N
BENZ(A)ANTHRACENE	56-55-3	0.01	V	Y	N	DIBROMOETHANE, [1,2-]	106-93-4	0.1		Y	N
BENZENE	71-43-2	2		Y	N	DIBUTYL PHTHALATE	84-74-2	10		Y	Y
BENZIDINE	92-87-5	0.0003	V	Y	N	DICHLOROENZENE, [1,4-]	106-46-7	3		Y	N
BENZO(A)PYRENE	50-32-8	0.01	V	Y	N	DICHLOROENZIDENE, [3,3-]	91-94-1	0.2	V	Y	Y
BENZO(B)FLUORANTHENE	205-99-2	0.01	V	Y	N	DICHLOROETHANE, [1,1-]	75-34-3	1		Y	N
BENZO(K)FLUORANTHENE	207-08-9	0.01	V	Y	N	DICHLOROETHANE, [1,2-]	107-06-2	0.8		Y	N
BENZOTRICHLORIDE	98-07-7	0.006		Y	N	DICHLOROETHYLENE, [1,1-]	75-35-4	0.4		Y	N
BENZYL CHLORIDE	100-44-7	0.1		Y	N	DICHLOROMETHANE	75-09-2	10		N	N
BERYLLIUM COMPOUNDS		0.008	J	N	Y	DICHLOROPHENOXY ACETIC ACID, [2,4-]	94-75-7	10	C	Y	Y
BERYLLIUM SALTS		2E-05	J	N	Y	DICHLOROPROPANE, [1,2-]	78-87-5	1		Y	N
BIPHENYL, [1,1-]	92-52-4	10	V	Y	N	DICHLOROPROPENE, [1,3-]	542-75-6	1		Y	N
BIS(CHLOROETHYL)ETHER	111-44-4	0.06		Y	N	DICHLORVOS	62-73-7	0.2		Y	N
BIS(CHLOROMETHYL)ETHER	542-88-1	0.0003		Y	N	DIETHANOLAMINE	111-42-2	5		Y	N
BROMOFORM	75-25-2	10		Y	N	DIETHYL SULFATE	64-67-5	1		Y	N
BROMOMETHANE	74-83-9	10		Y	N	DIETHYLENE GLYCOL MONOBUTYL ETHER	112-34-5	5	P	Y	N
BUTADIENE, [1,3-]	106-99-0	0.07		Y	N	DIMETHOXYBENZIDINE, [3,3-]	119-90-4	0.1	V	Y	Y
BUTOXYETHANOL ACETATE, [2-]	112-07-2	5	P	Y	N	DIMETHYL BENZIDINE, [3,3-]	119-93-7	0.008	V	Y	Y
BUTYLENE OXIDE, [1,2-]	106-88-7	1		Y	N	DIMETHYL CARBAMOYL CHLORIDE	79-44-7	0.02		Y	N
CADMIUM COMPOUNDS		0.01	K	N	Y	DIMETHYL FORMAMIDE	68-12-2	1		Y	N
CALCIUM CYANAMIDE	156-62-7	10		Y	Y	DIMETHYL HYDRAZINE, [1,1-]	57-14-7	0.008		Y	N
CAPROLACTAM (Delisted)	105-60-2					DIMETHYL PHTHALATE	131-11-3	10		Y	N
CAPTAN	133-06-2	10		Y	Y	DIMETHYL SULFATE	77-78-1	0.1		Y	N
CARBARYL	63-25-2	10	V	Y	Y	DIMETHYLAMINOAZOBENZENE, [4-]	60-11-7	1		Y	N
CARBON DISULFIDE	75-15-0	1		Y	N	DIMETHYLANILINE, [N,N-]	121-69-7	1		Y	N
CARBON TETRACHLORIDE	56-23-5	1		Y	N	DINITRO-O-CRESOL, [4,6-] (Note 6)	534-52-1	0.1	E	Y	Y
CARBONYL SULFIDE	463-58-1	5		Y	N	DINITROPHENOL, [2,4-]	51-28-5	1		Y	N
CATECHOL	120-80-9	5		Y	N	DINITROTOLUENE, [2,4-]	121-14-2	0.02		Y	N
CHLORAMBEN	133-90-4	1		Y	Y	DIOXANE, [1,4-]	123-91-1	6		Y	N
CHLORDANE	57-74-9	0.01		Y	Y	DIPHENYLHYDRAZINE, [1,2-]	122-66-7	0.09	V	Y	Y
CHLORINE	7782-50-5	0.1		N	N	DIPHENYLMETHANE DIISOCYANATE, [4,4-]	101-68-8	0.1	V	Y	N
CHLOROACETIC ACID	79-11-8	0.1		Y	N	EPICHLOROHYDRIN	106-89-8	2		Y	N
CHLOROACETOPHENONE, [2-]	532-27-4	0.06		Y	N	ETHOXYETHANOL, [2-]	110-80-5	10	P	Y	N
CHLOROBENZENE	108-90-7	10		Y	N	ETHOXYETHYL ACETATE, [2-]	111-15-9	5	P	Y	N
CHLOROBENZILATE	510-15-6	0.4	V	Y	Y	ETHYL ACRYLATE	140-88-5	1		Y	N
CHLOROFORM	67-66-3	0.9		Y	N	ETHYL BENZENE	100-41-4	10		Y	N

**Appendix B: Air Pollution Control Program
Table of Hazardous Air Pollutants and Screening Model Action Levels**

Chemical	CAS #	SMAL tons/yr	Group ID	VOC	PM	Chemical	CAS #	SMAL tons/yr	Group ID	VOC	PM
ETHYL CHLORIDE	75-00-3	10		Y	N	NITROBENZENE	98-95-3	1		Y	N
ETHYLENE GLYCOL	107-21-1	10		Y	N	NITROBIPHENYL, [4-]	92-93-3	1	V	Y	N
ETHYLENE GLYCOL MONOBUTYL ETHER (Delisted)	111-76-2					NITROPHENOL, [4-]	100-02-7	5		Y	N
ETHYLENE GLYCOL MONOHEXYL ETHER	112-25-4	5	P	Y	N	NITROPROPANE, [2-]	79-46-9	1		Y	N
ETHYLENE IMINE [AZIRIDINE]	151-56-4	0.003		Y	N	NITROSODIMETHYLAMINE, [N-]	62-75-9	0.001		Y	N
ETHYLENE OXIDE	75-21-8	0.1		Y	N	NITROSOMORPHOLINE, [N-]	59-89-2	1		Y	N
ETHYLENE THIOUREA	96-45-7	0.6		Y	Y	NITROSO-N-METHYLUREA, [N-]	684-93-5	0.0002		Y	N
FORMALDEHYDE	50-00-0	2		Y	N	OCTACHLORONAPHTHALENE	2234-13-1	0.01	V	Y	N
GLYCOL ETHER (ETHYLENE GLYCOL ETHERS)		5	P	Y	N	PARATHION	56-38-2	0.1		Y	Y
GLYCOL ETHER (DIETHYLENE GLYCOL ETHERS)		5	P	Y	N	PCB [POLYCHLORINATED BIPHENYLS]	1336-36-3	0.009	X	Y	Y
HEPTACHLOR	76-44-8	0.02		Y	N	PENTACHLORONITROBENZENE	82-68-8	0.3		Y	N
HEXACHLORO BENZENE	118-74-1	0.01		Y	N	PENTACHLOROPHENOL	87-86-5	0.7		Y	N
HEXACHLOROBUTADIENE	87-68-3	0.9		Y	N	PHENOL	108-95-2	0.1		Y	N
HEXACHLOROCYCLOHEXANE, [ALPHA-]	319-84-6	0.01	F	Y	N	PHENYLENEDIAMINE, [PARA-]	106-50-3	10		Y	N
HEXACHLOROCYCLOHEXANE, [BETA-]	319-85-7	0.01	F	Y	N	PHOSGENE	75-44-5	0.1		Y	N
HEXACHLOROCYCLOHEXANE, [DELTA-]	319-86-8	0.01	F	Y	N	PHOSPHINE	7803-51-2	5		N	N
HEXACHLOROCYCLOHEXANE, [TECHNICAL]	608-73-1	0.01	F	Y	N	PHOSPHOROUS (YELLOW OR WHITE)	7723-14-0	0.1		N	N
HEXACHLOROCYCLOPENTADIENE	77-47-4	0.1		Y	N	PTHALIC ANHYDRIDE	85-44-9	5		Y	N
HEXACHLOROETHANE	67-72-1	5		Y	N	POLYCYCLIC ORGANIC MATTER		0.01	V	Y	N
HEXAMETHYLENE,-1,6-DIISOCYANATE	822-06-0	0.02		Y	N	PROPANE SULTONE, [1,3-]	1120-71-4	0.03		Y	Y
HEXAMETHYLPHOSPHORAMIDE	680-31-9	0.01		Y	N	PROPIOLACTONE, [BETA-]	57-57-8	0.1		Y	N
HEXANE, [N-]	110-54-3	10		Y	N	PROPIONALDEHYDE	123-38-6	5		Y	N
HYDRAZINE	302-01-2	0.004		N	N	PROPOXUR [BAYGON]	114-26-1	10		Y	Y
HYDROGEN CHLORIDE	7647-01-0	10		N	N	PROPYLENE OXIDE	75-56-9	5		Y	N
HYDROGEN FLUORIDE	7664-39-3	0.1		N	N	PROPYLENEIMINE, [1,2-]	75-55-8	0.003		Y	N
HYDROQUINONE	123-31-9	1		Y	N	QUINOLINE	91-22-5	0.006		Y	N
INDENO(1,2,3CD)PYRENE	193-39-5	0.01	V	Y	N	QUINONE	106-51-4	5		Y	N
ISOPHORONE	78-59-1	10		Y	N	RADIONUCLIDES		Note 1	Y	N	Y
LEAD COMPOUNDS		0.01	Q	N	Y	SELENIUM COMPOUNDS		0.1	W	N	Y
LINDANE [GAMMA-HEXACHLOROCYCLOHEXANE]	58-89-9	0.01	F	Y	N	STYRENE	100-42-5	1		Y	N
MALEIC ANHYDRIDE	108-31-6	1		Y	N	STYRENE OXIDE	96-09-3	1		Y	N
MANGANESE COMPOUNDS		0.8	R	N	Y	TETRACHLORODIBENZO-P-DIOXIN,[2,3,7,8]	1746-01-6	6E-07	D,V	Y	Y
MERCURY COMPOUNDS		0.01	S	N	N	TETRACHLOROETHANE, [1,1,2,2-]	79-34-5	0.3		Y	N
METHANOL	67-56-1	10		Y	N	TETRACHLOROETHYLENE	127-18-4	10		N	N
METHOXYCHLOR	72-43-5	10	V	Y	Y	TITANIUM TETRACHLORIDE	7550-45-0	0.1		N	N
METHOXYETHANOL, [2-]	109-86-4	10	P	Y	N	TOLUENE	108-88-3	10		Y	N
METHYL CHLORIDE	74-87-3	10		Y	N	TOLUENE DIISOCYANATE, [2,4-]	584-84-9	0.1		Y	N
METHYL ETHYL KETONE (Delisted)	78-93-3					TOLUIDINE, [ORTHO-]	95-53-4	4		Y	N
METHYL HYDRAZINE	60-34-4	0.06		Y	N	TOXAPHENE	8001-35-2	0.01		Y	N
METHYL IODIDE	74-88-4	1		Y	N	TRICHLORO BENZENE, [1,2,4-]	120-82-1	10		Y	N
METHYL ISOBUTYL KETONE	108-10-1	10		Y	N	TRICHLOROETHANE, [1,1,1-]	71-55-6	10		N	N
METHYL ISOCYANATE	624-83-9	0.1		Y	N	TRICHLOROETHANE, [1,1,2-]	79-00-5	1		Y	N
METHYL METHACRYLATE	80-62-6	10		Y	N	TRICHLOROETHYLENE	79-01-6	10		Y	N
METHYL TERT-BUTYL ETHER	1634-04-4	10		Y	N	TRICHLOROPHENOL, [2,4,5-]	95-95-4	1		Y	N
METHYLCYCLOPENTADIENYL MANGANESE	12108-13-3	0.1	R	N	Y	TRICHLOROPHENOL, [2,4,6-]	88-06-2	6		Y	N
METHYLENE BIS(2-CHLOROANILINE), [4,4-]	101-14-4	0.2	V	Y	Y	TRITHYLAMINE	121-44-8	10		Y	N
METHYLENEDIANILINE, [4,4-]	101-77-9	1	V	Y	N	TRIFLURALIN	1582-09-8	9		Y	Y
METHYLNAPHTHALENE, [2-]	91-57-6	0.01	V	Y	N	TRIMETHYLPENTANE, [2,2,4-]	540-84-1	5		Y	N
MINERAL FIBERS		0	T	N	Y	URETHANE [ETHYL CARBAMATE]	51-79-6	0.8		Y	N
NAPHTHALENE	91-20-3	10	V	Y	N	VINYL ACETATE	108-05-4	1		Y	N
NAPHTHYLAMINE, [ALPHA-]	134-32-7	0.01	V	Y	N	VINYL BROMIDE	593-60-2	0.6		Y	N
NAPHTHYLAMINE, [BETA-]	91-59-8	0.01	V	Y	N	VINYL CHLORIDE	75-01-4	0.2		Y	N
NICKEL CARBONYL	13463-39-3	0.1	U	N	Y	XYLENE, [META-]	108-38-3	10	G	Y	N
NICKEL COMPOUNDS		1	U	N	Y	XYLENES (MIXED ISOMERS)	1330-20-7	10	G	Y	N
NICKEL REFINERY DUST		0.08	U	N	Y						
NICKEL SUBSULFIDE	12035-72-2	0.04	U	N	Y						

**Appendix B: Air Pollution Control Program
Table of Hazardous Air Pollutants and Screening Model Action Levels**

Chemical	CAS #	SMAL tons/yr	Group ID	VOC	PM	Chemical	CAS #	SMAL tons/yr	Group ID	VOC	PM
----------	-------	-----------------	-------------	-----	----	----------	-------	-----------------	-------------	-----	----

Legend	
Group ID	
A	Asbestos
B	Cresols/Cresylic Acid (isomers and mixtures)
C	2,4 - D, Salts and Esters
D	Dibenzofurans, Dibenzodioxins
E	4, 6 Dinitro-o-cresol, and Salts
F	Lindane (all isomers)
G	Xylenes (all isomers and mixtures)
H	Antimony Compounds
I	Arsenic Compounds
J	Beryllium Compounds
K	Cadmium Compounds
L	Chromium Compounds
M	Cobalt Compounds
N	Coke Oven Emissions
O	Cyanide Compounds
P	Glycol Ethers
Q	Lead Compounds (except elemental Lead)
R	Manganese Compounds
S	Mercury Compounds
T	Fine Mineral Fibers
U	Nickel Compounds
V	Polycyclic Organic Matter
W	Selenium Compounds
X	Polychlorinated Biphenyls (Aroclors)
Y	Radionuclides
Notes	The SMAL for radionuclides is defined as the effective dose equivalent to 0.3 millirems per year for 7 years exposure associated with a cancer risk of 1 in 1 million