

STATE OF 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: **092013-016** Project Number: 2013-07-054
Installation Number: 099-0174

Parent Company: Superior Oil Company, Inc.

Parent Company Address: 1402 North Capitol Avenue, Suite 100,
Indianapolis, Indiana, 46040

Installation Name: Superior Solvents & Chemicals

Installation Address: 3023 Arnold Tenbrook Road,
Arnold, Missouri 63010

Location Information: Jefferson County, LG2991

Application for Authority to Construct was made for:
Construction of a new chemical distribution facility. This review was conducted in
accordance with Section (6) of 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.

SEP 23 2013

EFFECTIVE DATE

Kyra L. Moore
DIRECTOR OR DESIGNEE
DEPARTMENT OF NATURAL RESOURCES

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 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 Department's Air Pollution Control Program of the anticipated date of start up of these air contaminant sources. The information must be made available within 30 days of actual startup. Also, you must notify the Department of Natural Resources Regional office responsible for the area within which you are located within 15 days after the actual start up of these air contaminant sources.

A copy of this permit and permit review shall be kept at the installation address and shall be made available to Department of Natural Resources' 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 sources(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 at (573) 751-4817. If you prefer to write, please address your correspondence to the Missouri Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, attention: Construction Permit Unit.

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

Superior Solvents & Chemicals
Jefferson County, LG2991

1. VOC and HAPs Emission Limitations
 - A. Superior Solvents & Chemicals shall emit less than 100.0 tons of VOCs in any consecutive 12-month period from the entire installation as listed Table 1.
 - B. Superior Solvents & Chemicals shall emit less than 25.0 tons combined of HAPs in any consecutive 12-month period from the entire installation as listed in Table 1.
 - C. Superior Solvents & Chemicals shall emit less than the Screening Model Action Level (SMAL) of each individual HAP in any consecutive 12-month period from the entire installation as listed in Table 1. The permittee shall obtain SMALs for each individual HAP emitted from the Air Pollution Control Program's *Table of Hazardous Air Pollutants and Screening Model Action Levels* available in Appendix C, for the most up-to-date version available: <http://www.dnr.mo.gov/env/apcp/docs/cp-hapsmaltbl6.pdf>.
 - D. Superior Solvents & Chemicals may handle/process chemicals containing individuals HAPs not stated within the Application for Authority to Construct provided the permittee maintains records of the 12-month rolling total emissions of the individual HAP and 12-month rolling total emissions of the individual HAP are below the individual HAP's SMAL.

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SPECIAL CONDITIONS:

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

Table 1: Installation Equipment List

Emission Unit	Description
EP-01	Railcar Loading/Unloading Rack – (2) 195 gpm pumps
EP-02	Container Filling – (2) 60 gpm pumps
EP-03	Blending Tanks: B-1 1,200 gallons B-2 550 gallons B-3 5,200 gallons B-4 550 gallon tote
EP-04	Storage Tanks – (2) 100 gpm pumps Chemical Tanks 1 – 6 30,000 gallons each Chemical Tanks 7 – 26 10,000 gallons each Chemical Tanks A1 – A3 6,000 gallons each, heated Chemical Tanks H1 & H4 5,200 gallons each Chemical Tanks H2 & H3 6,200 gallons each Diesel Tank D1 2,000 gallons
EP-05	Cargo Tank/Tote Drying
EP-06	Tote Washing
EP-07	Natural Gas Combustion
EP-08	Haul Road

- E. The permittee shall retain data sufficient to demonstrate compliance with Special Conditions 1.A, 1.B, and 1.C. This data shall include at a minimum:
- 1) The date (month and year)
 - 2) The amount of VOC material and HAP material handled by each emission unit during the month
 - 3) MSDS for each material containing VOC and/or HAP
 - 4) Emission calculations and/or spreadsheets using the calculation methods/formulas in Appendix B.
 - 5) Monthly VOC, combined HAP, and individual HAP emissions totals
 - 6) 12-Month rolling VOC, combined HAP, and individual HAP emissions totals
2. Operational Requirement – Chemicals, solvents, and cleaning materials
Superior Solvents & Chemicals shall keep all chemicals, solvents, and cleaning materials in sealed containers whenever the materials are not in use. Superior Solvents & Chemicals shall provide and maintain suitable, easily read, permanent markings on all chemicals, solvents, and cleaning materials.

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SPECIAL CONDITIONS:

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

3. **Paved Haul Road (EP-08)**
Superior Solvents & Chemicals shall maintain and/or repair EP-08 Paved Haul Road. Maintenance of the surface shall be conducted as necessary to ensure the physical integrity of the pavement is adequate to achieve control of fugitive emissions while the plant is in operation.
4. **Record Keeping and Reporting Requirements**
 - A. Superior Solvents & Chemicals 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 MSDS for all materials used.
 - B. Superior Solvents & Chemicals shall report to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than 10 days after the end of the month during which any record required by this permit show an exceedance of a limitation imposed by this permit.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (6) REVIEW

Project Number: 2013-07-054
Installation ID Number: 099-0174
Permit Number:

Superior Solvents & Chemicals
3023 Arnold Tenbrook Road
Arnold, Missouri 63010

Complete: August 2, 2013

Parent Company:
Superior Oil Company, Inc.
1402 North Capitol Avenue, Suite 100
Indianapolis, Indiana, 46040

Jefferson County, LG2991

REVIEW SUMMARY

- Superior Solvents & Chemicals has applied for authority to construct a new chemical distribution facility in Arnold, Missouri.
- HAP emissions are expected from the proposed equipment. The installation will be handling a number of different HAPs. HAPs evaluated include dichloromethane (75-09-2), hexane (110-54-3), trichloroethylene (79-01-6), methanol (67-56-1), tetrachloroethylene (127-18-4), toluene (108-88-3), methyl isobutyl ketone (108-10-1), xylene (1330-20-7), styrene (100-42-5), and ethylene glycol (107-21-1). The installation may emit additional HAPs in the future provided they maintain all new HAP sources below their respective Screening Model Action Level (SMAL) per Special Condition 1.C.
- 40 CFR Part 60, Subpart Kb - *Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984* applies to EP-04 Storage Tanks 1 – 6. The remaining tanks are too small in capacity to be subject to this regulation. Storage Tanks 1 – 6 are fixed roof storage tanks and may only store volatile organic liquids with a maximum true vapor pressure of less than 27.6 kPa (4.0 psia) per the requirements of 40 CFR Part 63, Subpart Kb. [In order to store volatile organic liquids with a maximum true vapor pressure of greater than or equal to 27.6 kPa (4.0 psia) the tanks will need to be equipped with floating roofs and/or a control device.]
- No air pollution control equipment is being used in association with the new equipment.
- This review was conducted in accordance with Section (6) of Missouri State Rule 10 CSR 10-6.060 *Construction Permits Required*. Potential emissions of VOC are above de minimis levels.

- This installation is located in Jefferson County, a nonattainment area for the eight-hour ozone standard and the PM_{2.5} standard and an attainment area for all other criteria pollutants. Part Jefferson County is a nonattainment area for lead. The installation is not located in the Jefferson County lead nonattainment area. As the installation is located in an ozone nonattainment area; the installation's major source level for VOC and NO_x is 100 tons per year.
- 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 250 tons per year and fugitive emissions are not counted toward major source applicability.
- Ambient air quality modeling was not performed for this review. No model is currently available which can accurately predict ambient ozone concentrations caused by this installation's VOC emissions.
- Emissions testing is not required for the equipment.
- An Intermediate Operating Permit application is required for this installation within 90 days of equipment startup.
- Approval of this permit is recommended with special conditions.

INSTALLATION/PROJECT DESCRIPTION

Superior Solvents & Chemicals has requested to construct a new chemical distribution plant in Arnold, Missouri. As this is a new facility, the installation has no previously issued permits.

The new facility will consist of the emission units listed in Table 1. Chemicals will enter the installation by rail or truck. The chemicals will be stored in storage tanks. Chemicals can be blended. Chemicals are loaded into drums, pails, totes, or rail/truck cargo tanks for product distribution.

The maximum hourly design rates (MHDRs) for EP-01 Railcar Loading/Unloading Rack, EP-02 Container Filling, EP-03 Blending Tanks, and EP-04 Storage Tanks are all based upon their associated pumps. EP-01 Railcar Loading/Unloading Rack is served by two 195 gpm pumps for an MHDR of 23,400 gal/hr. EP-02 Container Filling is served by two 60 gpm pumps for an MHDR of 7,200 gal/hr. The MHDR of EP-03 Blending Tanks is based on the fill time, the blend time, and the quality control analysis time. These tanks are served by two 100 gpm pumps. The actual blend time is product specific and may vary. The quality control analysis for each blend typically takes about 30 minutes. EP-04 Storage Tanks are loaded by a 195 gpm pump and unloaded by a 100 gpm pump.

The storage tanks will store different chemicals depending on customer demand. Potential emissions of these tanks are based on hexane (110-54-3) to represent the worst-case chemical contents. Based on EPA's Tanks 4.0.9d, Hexane has a maximum true vapor pressure of 2.7934 psia (19.26 kPa).

None of the six 30,000 gallon vertical fixed roof storage tanks (Storage Tanks 1 – 6) operate a control device; therefore, these tanks are not permitted to store dichloromethane (75-09-2) per the requirements of 40 CFR Part 60, Subpart Kb.

Natural gas combustion consists of three office space heaters rated at 0.076 MMBtu/hr each, four warehouse space heaters rated at 0.225 MMBtu/hr each, and one ground forced air unit rated at 1.25 MMBtu/hr.

EMISSIONS/CONTROLS EVALUATION

Emissions from EP-01 Railcar Loading/Unloading Rack and EP-02 Container Filling were calculated using the loading loss equation (Eq. 1) from EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, Section 5.2 “Transportation and Marketing of Petroleum Liquids” (July 2008). A conservative saturation factor of 1.45 for splash loading was used. The worst-case HAP evaluated was dichloromethane (75-09-2). The worst-case VOC evaluated was hexane (110-54-3).

Tank loading emissions from EP-03 Blending Tanks were calculated using the loading loss equation (Eq. 1) from AP-42, Section 5.2 “Transportation and Marketing of Petroleum Liquids” (July 2008). A conservative saturation factor of 1.45 for splash loading was used. Tank blending emissions from EP-03 Blending Tanks were calculated using the surface evaporation equation (Eq. 8.4-22) from EPA’s *Emission Inventory Improvement Program*, Chapter Eight “Methods of Estimating Air Emissions from Paint and Ink Manufacturing Facilities” (February 2005). The worst-case HAP and VOC evaluated was hexane (110-54-3).

Emissions from EP-04 Storage Tanks were calculated using EPA’s software Tanks 4.0.9d using meteorological data for St. Louis, Missouri as St. Louis, Missouri was determined to be the closest city to Arnold, Missouri contained within the Tanks 4.0.9d meteorological database. The worst-case HAP and VOC evaluated was hexane (110-54-3).

Emissions from EP-05 Cargo Tank/Tote Drying are based upon 1.095 gallons of residue remaining in each cargo tank after emptying. The 1.095 gallons of residue per cargo tank was obtained from another facility owned by Superior Oil Company, Inc. in stack testing conducted in October of 2000 using EPA Test Method 25A. All residue is assumed to evaporate during the drying process. The worst-case HAP evaluated was tetrachloroethylene (127-18-4). The worst-case VOC evaluated was trichloroethylene (79-01-6).

VOC emissions from EP-06 Tote Washing were calculated using a mass balance approach and conservatively assuming 100 percent emission. The MSDS for the cleaning material, Superclean 0164, indicated 9.52 percent VOC and a specific gravity of 1.12. Eight ounces of cleaning material is necessary per tote.

Potential emissions from EP-07 Natural Gas Combustion were calculated using emission factors taken from AP-42, Section 1.4 “Natural Gas Combustion” (July 1998) for Process SCC 10500106, and from 40 CFR Part 98 – *Mandatory Greenhouse Gas Reporting*.

Potential emissions from EP-08 Paved Haul Road were calculated using emission factors obtained from AP-42’s Section 13.2.1 “Paved Roads” (January 2011). The haul road is 1,320 feet in length and it was conservatively assumed that all chemicals handled by the plant were trucked in/out resulting in 1.2 vehicle miles traveled per hour.

The following table provides an emissions summary for this project. As the installation is new, there are no existing potential or actual emissions. Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8,760 hours per year).

Table 2: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions	Potential Emissions of the Application	New Installation Conditioned Potential
PM	25.0	N/A	N/A	1.84	N/A
PM ₁₀	15.0			0.44	
PM _{2.5}	10.0			0.17	
SO _x	40.0			0.01	
NO _x	40.0			1.01	
VOC	40.0			1,255.71	<100.0
CO	100.0			0.20	N/A
GHG (CO ₂ e)	100,000			1,218.66	
HAPs	25.0			1,345.27	<25.0
Hexane	10.0			956.15	<10.0
Dichloromethane	10.0			863.75	<10.0
Trichloroethylene	10.0			679.16	<10.0
Methanol	10.0			300.95	<10.0
Tetrachloroethylene	10.0			261.36	<10.0
Toluene	10.0			260.58	<10.0
Methyl Isobutyl Ketone	10.0			152.21	<10.0
Xylene	10.0			93.91	<10.0
Styrene	10.0			84.97	<1.0
Ethylene Glycol	10.0			55.87	<10.0
Other Ind. HAPs	10.0			N/A	<SMAL

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

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (6) of Missouri State Rule 10 CSR 10-6.060 *Construction Permits Required*. Potential emissions of VOC are above de minimis levels, but are conditioned below major source levels.

APPLICABLE REQUIREMENTS

Superior Solvents & Chemicals shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific recordkeeping, 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

- 10 CSR 10-6.065 *Operating Permits*
 - The installation is required to apply for an Intermediate operating permit within 90 days of equipment startup
- 10 CSR 10-6.110 *Submission of Emission Data, Emission Fees and Process Information*
 - The installation is required to submit a full EIQ after the first full calendar year of installation operation
- 10 CSR 10-6.165 *Restriction of Emission of Odors*
- 10 CSR 10-6.170 *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*
- 10 CSR 10-6.220 *Restriction of Emission of Visible Air Contaminants*

SPECIFIC REQUIREMENTS

- 10 CSR 10-6.070 *New Source Performance Regulations*
 - 40 CFR Part 60, Subpart Kb – *Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984*
 - The six 30,000 gallon storage tanks under EP-04 shall comply with the monitoring provisions applicable to tanks greater than 75 m³ and less than 151 m³ containing a volatile organic liquid greater than 15.0 kPa but less than 27.6 kPa. These tanks are not permitted to store volatile organic liquids with a maximum true vapor pressure greater than or equal to 27.6 kPa as they do not meet the VOC standards of §60.112b.

- 10 CSR 10-5.455 *Control of Emissions From Industrial Solvent Cleaning Operations*
 - This regulation only applies if actual VOC emissions from EP-06 Tote Washing exceed 3.0 tons in any consecutive 12-month period.

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (6) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

Alana L. Rugen, EIT
New Source Review Unit

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated July 16, 2013, received July 19, 2013, designating Superior Oil Company, Inc. as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- U.S. EPA's *Emission Inventory Improvement Program*
- U.S. EPA software Tanks 4.0.9d

APPENDIX A

Abbreviations and Acronyms

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

APPENDIX B

Approved VOC and HAP Calculation Methods

EP-01 Railcar Loading/Unloading Rack & EP-02 Container Filling

Monthly Emissions (lbs) =
 $18.067 \times \text{Actual monthly throughput of material (1,000 gallons)} \times \text{Vapor Pressure of material (psia)} \times \text{Molecular Weight of material (lb/lb-mole)} / \text{Temperature (}^\circ\text{R)}$

EP-03 Blending Tanks

Monthly Emissions (lbs) =
 Blending emissions (lbs) + Loading Emissions (lbs)

Blending Emissions (lbs) =
 $0.0012067 \times \text{Molecular Weight of material (lb/lb-mole)}^{(2/3)} \times \text{Tank Surface Area (ft}^2\text{)} \times \text{Vapor Pressure of material (psia)} \times \text{Batch Length (hours/batch)} \times \text{Number of Batches during the month (batches/month)}$

Loading Emissions (lbs) =
 $\text{Actual monthly throughput of material (1,000 gallons)} \times 12.46 \times 1.45 \times \text{Vapor Pressure of material (psia)} \times \text{Molecular Weight of material (lb/lb-mole)} / \text{Temperature (}^\circ\text{R)}$

EP-04 Storage Tanks

Put the actual monthly tank throughput into EPA's Tanks 4.0.9d

EP-05 Cargo Tank/Tote Drying

Monthly Emissions (lbs) =
 $\text{Number of tanks} \times 1.095 \text{ (gal/tank)} \times \text{Density of material (lb/gal)}$

EP-06 Tote Washing

Monthly VOC Emissions (lbs) =
 $\text{Number of totes} \times 0.625 \text{ (gal/tote)} \times \text{VOC Content (wt\%)}$

EP-07 Natural Gas Combustion

Monthly Emissions (lbs) =
 $\text{Monthly natural gas combusted (MMscf)} \times \text{Natural Gas Emission Factor (lb/MMscf)}$

Material Properties

Material	CAS #	Vapor Pressure (psia)	Molecular Weight (lb/lb-mole)	Density (lb/gal)
Dichloromethane	75-09-2	5.434	84.94	11.122
Ethylene Glycol	107-21-1	0.0005839	62.07	9.29
Hexane	110-54-3	1.876	86.17	5.527
Methanol	67-56-1	1.412	32.04	6.63
Methyl Isobutyl Ketone	108-10-1	0.212	100.20	6.693
Styrene	100-42-5	0.7182	104.15	7.586
Tetrachloroethylene	127-18-4	0.2071	165.83	13.536
Toluene	108-88-3	0.309	92.13	7.261
Trichloroethylene	79-01-6	0.889	131.4	12.272
Xylene	1330-20-7	0.09038	106.17	7.21
Other	List source in your spreadsheet for verification			

Natural Gas Emission Factors

Pollutant	Emission Factor (lb/MMscf)
VOC	5.3
HAP	1.8885
Hexane	1.8

Monthly VOC Emissions = the sum of VOC emissions from each emission point

Monthly Individual HAP Emissions = the sum of the individual HAP emissions from each emission point

Monthly Combined HAP = the sum of all individual HAP emissions from each emission point

APPENDIX C: Table of HAPs and SMALs (May 3, 2012 Revision 10)

Chemical	CAS #	SMAL (tons/yr)	Group ID	VOC	PM	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	CARBARYL	63-25-2	10	V	Y	Y	DICHLOROPROPANE, [1,2-]	78-87-5	1		Y	N
ACETAMIDE	60-35-5	1		Y	N	CARBON DISULFIDE	75-15-0	1		Y	N	DICHLOROPROPENE, [1,3-]	542-75-6	1		Y	N
ACETONITRILE	75-05-8	4		Y	N	CARBON TETRACHLORIDE	56-23-5	1		Y	N	DICHLORVOS	62-73-7	0.2		Y	N
ACETOPHENONE	98-86-2	1		Y	N	CARBONYL SULFIDE	463-58-1	5		Y	N	DIETHANOLAMINE	111-42-2	5		Y	N
ACETYLAMINOFLUORINE, [2-]	53-96-3	0.005	V	Y	Y	CATECHOL	120-80-9	5		Y	N	DIETHYL SULFATE	64-67-5	1		Y	N
ACROLEIN	107-02-8	0.04		Y	N	CHLORAMBEN	133-90-4	1		Y	Y	DIETHYLENE GLYCOL MONOBUTYL ETHER	112-34-5	5	P	Y	N
ACRYLAMIDE	79-06-1	0.02		Y	N	CHLORDANE	57-74-9	0.01		Y	Y	DIMETHOXYBENZIDINE, [3,3-]	119-90-4	0.1	V	Y	Y
ACRYLIC ACID	79-10-7	0.6		Y	N	CHLORINE	7782-50-5	0.1		N	N	DIMETHYL BENZIDINE, [3,3-]	119-93-7	0.008	V	Y	Y
ACRYLONITRILE	107-13-1	0.3		Y	N	CHLOROACETIC ACID	79-11-8	0.1		Y	N	DIMETHYL CARBAMOYL CHLORIDE	79-44-7	0.02		Y	N
ALLYL CHLORIDE	107-05-1	1		Y	N	CHLOROACETOPHENONE, [2-]	532-27-4	0.06		Y	N	DIMETHYL FORMAMIDE	68-12-2	1		Y	N
AMINOBIIPHENYL, [4-]	92-67-1	1	V	Y	N	CHLOROBENZENE	108-90-7	10		Y	N	DIMETHYL HYDRAZINE, [1,1-]	57-14-7	0.008		Y	N
ANILINE	62-53-3	1		Y	N	CHLOROBENZILATE	510-15-6	0.4	V	Y	Y	DIMETHYL PHTHALATE	131-11-3	10		Y	N
ANISIDINE, [ORTHO-]	90-04-0	1		Y	N	CHLOROFORM	67-66-3	0.9		Y	N	DIMETHYL SULFATE	77-78-1	0.1		Y	N
ANTHRACENE	120-12-7	0.01	V	Y	N	CHLOROMETHYL METHYL ETHER	107-30-2	0.1		Y	N	DIMETHYLAMINOAZOBENZENE, [4-]	60-11-7	1		Y	N
ANTIMONY COMPOUNDS		5	H	N	Y	CHLOROPRENE	126-99-8	1		Y	N	DIMETHYLANILINE, [N-N-]	121-69-7	1		Y	N
ANTIMONY PENTAFLUORIDE	7783-70-2	0.1	H	N	Y	CHROMIUM (VI) COMPOUNDS		0.002	L	N	Y	DINITRO-O-CRESOL, [4,6-] (Note 6)	534-52-1	0.1	E	Y	Y
ANTIMONY POTASSIUM TARTRATE	28300-74-5	1	H	N	Y	CHROMIUM COMPOUNDS		5	L	N	Y	DINITROPHENOL, [2,4-]	51-28-5	1		Y	N
ANTIMONY TRIOXIDE	1309-64-4	1	H	N	Y	CHRYSENE	218-01-9	0.01	V	Y	N	DINITROTOLUENE, [2,4-]	121-14-2	0.02		Y	N
ANTIMONY TRISULFIDE	1345-04-6	0.1	H	N	Y	COBALT COMPOUNDS		0.1	M	N	Y	DIOXANE, [1,4-]	123-91-1	6		Y	N
ARSENIC COMPOUNDS		0.005	I	N	Y	COKE OVEN EMISSIONS	8007-45-2	0.03	N	Y	N	DIPHENYLHYDRAZINE, [1,2-]	122-66-7	0.09	V	Y	Y
ASBESTOS	1332-21-4	0	A	N	Y	CRESOL, [META-]	108-39-4	1	B	Y	N	DIPHENYLMETHANE DIISOCYANATE, [4,4-]	101-68-8	0.1	V	Y	N
BENZ(A)ANTHRACENE	56-55-3	0.01	V	Y	N	CRESOL, [ORTHO-]	95-48-7	1	B	Y	N	EPICHLOROHYDRIN	106-89-8	2		Y	N
BENZENE	71-43-2	2		Y	N	CRESOL, [PARA-]	106-44-5	1	B	Y	N	ETHOXYETHANOL, [2-]	110-80-5	10	P	Y	N
BENZIDINE	92-87-5	0.0003	V	Y	N	CRESOLS (MIXED ISOMERS)	1319-77-3	1	B	Y	N	ETHOXYETHYL ACETATE, [2-]	111-15-9	5	P	Y	N
BENZO(A)PYRENE	50-32-8	0.01	V	Y	N	CUMENE	98-82-8	10		Y	N	ETHYL ACRYLATE	140-88-5	1		Y	N
BENZO(B)FLUORANTHENE	205-99-2	0.01	V	Y	N	CYANIDE COMPOUNDS		0.1	O	Y	N	ETHYL BENZENE	100-41-4	10		Y	N
BENZO(K)FLUORANTHENE	207-08-9	0.01	V	Y	N	DDE	72-55-9	0.01	V	Y	Y	ETHYL CHLORIDE	75-00-3	10		Y	N
BENZOTRICHLORIDE	98-07-7	0.006		Y	N	DI(2-ETHYLHEXYL) PHTHALATE, (DEHP)	117-81-7	5		Y	N	ETHYLENE GLYCOL	107-21-1	10		Y	N
BENZYL CHLORIDE	100-44-7	0.1		Y	N	DIAMINOTOLUENE, [2,4-]	95-80-7	0.02		Y	N	ETHYLENE GLYCOL MONOBUTYL ETHER (Delisted)	111-76-2				
BERYLLIUM COMPOUNDS		0.008	J	N	Y	DIAZOMETHANE	334-88-3	1		Y	N	ETHYLENE GLYCOL MONOHEXYL ETHER	112-25-4	5	P	Y	N
BERYLLIUM SALTS		2E-05	J	N	Y	DBENZ(A,H)ANTHRACENE	53-70-3	0.01	V	Y	N	ETHYLENE IMINE [AZIRIDINE]	151-56-4	0.003		Y	N
BIPHENYL, [1,1-]	92-52-4	10	V	Y	N	DIOXINS/FURANS		6E-07	D,V	Y	N	ETHYLENE OXIDE	75-21-8	0.1		Y	N
BIS(CHLOROETHYL)ETHER	111-44-4	0.06		Y	N	DIBENZOFURAN	132-64-9	5	V	Y	N	ETHYLENE THIUREA	96-45-7	0.6		Y	Y
BIS(CHLOROMETHYL)ETHER	542-88-1	0.0003		Y	N	DIBROMO-3-CHLOROPROPANE, [1,2-]	96-12-8	0.01		Y	N	FORMALDEHYDE	50-00-0	2		Y	N
BROMOFORM	75-25-2	10		Y	N	DIBROMOETHANE, [1,2-]	106-93-4	0.1		Y	N	GLYCOL ETHER (ETHYLENE GLYCOL ETHERS)		5	P	Y	N
BROMOMETHANE	74-83-9	10		Y	N	DIBUTYL PHTHALATE	84-74-2	10		Y	Y	GLYCOL ETHER (DIETHYLENE GLYCOL ETHERS)		5	P	Y	N
BUTADIENE, [1,3-]	106-99-0	0.07		Y	N	DICHLOROBENZENE, [1,4-]	106-46-7	3		Y	N	HEPTACHLOR	76-44-8	0.02		Y	N
BUTOXYETHANOL ACETATE, [2-]	112-07-2	5	P	Y	N	DICHLOROBENZIDENE, [3,3-]	91-94-1	0.2	V	Y	Y	HEXACHLOROBENZENE	118-74-1	0.01		Y	N
BUTYLENE OXIDE, [1,2-]	106-88-7	1		Y	N	DICHLOROETHANE, [1,1-]	75-34-3	1		Y	N	HEXACHLOROBUTADIENE	87-68-3	0.9		Y	N
CADMIUM COMPOUNDS		0.01	K	N	Y	DICHLOROETHANE, [1,2-]	107-06-2	0.8		Y	N	HEXACHLOROCYCLOHEXANE, [ALPHA-]	319-84-6	0.01	F	Y	N
CALCIUM CYANAMIDE	156-62-7	10		Y	Y	DICHLOROETHYLENE, [1,1-]	75-35-4	0.4		Y	N	HEXACHLOROCYCLOHEXANE, [BETA-]	319-85-7	0.01	F	Y	N
CAPROLACTAM (Delisted)	105-60-2					DICHLOROMETHANE	75-09-2	10		N	N	HEXACHLOROCYCLOHEXANE, [DELTA-]	319-86-8	0.01	F	Y	N
CAPTAN	133-06-2	10		Y	Y	DICHLOROPHENOXOXY ACETIC ACID, [2,4-]	94-75-7	10	C	Y	Y	HEXACHLOROCYCLOHEXANE, [TECHNICAL]	608-73-1	0.01	F	Y	N

Chemical	CAS #	SMAL (tons/yr)	Group ID	VOC	PM	Chemical	CAS #	SMAL (tons/yr)	Group ID	VOC	PM	Chemical	CAS #	SMAL (tons/yr)	Group ID	VOC	PM
HEXACHLOROCYCLOPENTADIENE	77-47-4	0.1		Y	N	NITROSODIMETHYLAMINE, [N-]	62-75-9	0.001		Y	N	TRIMETHYLPENTANE, [2,2,4-]	540-84-1	5		Y	N
HEXACHLOROETHANE	67-72-1	5		Y	N	NITROSOMORPHOLINE, [N-]	59-89-2	1		Y	N	URETHANE [ETHYL CARBAMATE]	51-79-6	0.8		Y	N
HEXAMETHYLENE, -1,6-DIISOCYANATE	822-06-0	0.02		Y	N	NITROSO-N-METHYLUREA, [N-]	684-93-5	0.0002		Y	N	VINYL ACETATE	108-05-4	1		Y	N
HEXAMETHYLPHOSPHORAMIDE	680-31-9	0.01		Y	N	OCTACHLORONAPHTHALENE	2234-13-1	0.01	V	Y	N	VINYL BROMIDE	593-60-2	0.6		Y	N
HEXANE, [N-]	110-54-3	10		Y	N	PARATHION	56-38-2	0.1		Y	Y	VINYL CHLORIDE	75-01-4	0.2		Y	N
HYDRAZINE	302-01-2	0.004		N	N	PCB [POLYCHLORINATED BIPHENYLS]	1336-36-3	0.009	X	Y	Y	XYLENE, [META-]	108-38-3	10	G	Y	N
HYDROGEN CHLORIDE	7647-01-0	10		N	N	PENTACHLORONITROBENZENE	82-68-8	0.3		Y	N	XYLENE, [ORTHO-]	95-47-6	10	G	Y	N
HYDROGEN FLUORIDE	7664-39-3	0.1		N	N	PENTACHLOROPHENOL	87-86-5	0.7		Y	N	XYLENE, [PARA-]	106-42-3	10	G	Y	N
HYDROQUINONE	123-31-9	1		Y	N	PHENOL	108-95-2	0.1		Y	N	XYLENES (MIXED ISOMERS)	1330-20-7	10	G	Y	N
INDENO(1,2,3CD)PYRENE	193-39-5	0.01	V	Y	N	PHENYLENEDIAMINE, [PARA-]	106-50-3	10		Y	N						
ISOPHORONE	78-59-1	10		Y	N	PHOSGENE	75-44-5	0.1		Y	N						
LEAD COMPOUNDS		0.01	Q	N	Y	PHOSPHINE	7803-51-2	5		N	N						
LINDANE [GAMMA-HEXACHLOROCYCLOHEXANE]	58-89-9	0.01	F	Y	N	PHOSPHOROUS (YELLOW OR WHITE)	7723-14-0	0.1		N	N	Legend					
MALEIC ANHYDRIDE	108-31-6	1		Y	N	PHTHALIC ANHYDRIDE	85-44-9	5		Y	N	Group ID	Aggregate Group Name				
MANGANESE COMPOUNDS		0.8	R	N	Y	POLYCYLIC ORGANIC MATTER		0.01	V	Y	N	A	Asbestos				
MERCURY COMPOUNDS		0.01	S	N	N	PROPANE SULTONE, [1,3-]	1120-71-4	0.03		Y	Y	B	Cresols/Cresylic Acid (isomers and mixtures)				
METHANOL	67-56-1	10		Y	N	PROPIOLACTONE, [BETA-]	57-57-8	0.1		Y	N	C	2,4 - D, Salts and Esters				
METHOXYCHLOR	72-43-5	10	V	Y	Y	PROPIONALDEHYDE	123-38-6	5		Y	N	D	Dibenzofurans, Dibenzodioxins				
METHOXYETHANOL, [2-]	109-86-4	10	P	Y	N	PROPOXUR [BAYGON]	114-26-1	10		Y	Y	E	4, 6 Dinitro-o-cresol, and Salts				
METHYL CHLORIDE	74-87-3	10		Y	N	PROPYLENE OXIDE	75-56-9	5		Y	N	F	Lindane (all isomers)				
METHYL ETHYL KETONE (Delisted)	78-93-3					PROPYLENIMINE, [1,2-]	75-55-8	0.003		Y	N	G	Xylenes (all isomers and mixtures)				
METHYL HYDRAZINE	60-34-4	0.06		Y	N	QUINOLINE	91-22-5	0.006		Y	N	H	Antimony Compounds				
METHYL IODIDE	74-88-4	1		Y	N	QUINONE	106-51-4	5		Y	N	I	Arsenic Compounds				
METHYL ISOBUTYL KETONE	108-10-1	10		Y	N	RADIONUCLIDES		Note 1	Y	N	Y	J	Beryllium Compounds				
METHYL ISOCYANATE	624-83-9	0.1		Y	N	SELENIUM COMPOUNDS		0.1	W	N	Y	K	Cadmium Compounds				
METHYL METHACRYLATE	80-62-6	10		Y	N	STYRENE	100-42-5	1		Y	N	L	Chromium Compounds				
METHYL TERT-BUTYL ETHER	1634-04-4	10		Y	N	STYRENE OXIDE	96-09-3	1		Y	N	M	Cobalt Compounds				
METHYLCYCLOPENTADIENYL MANGANESE	12108-13-3	0.1	R	N	Y	TETRACHLORODIBENZO-P-DIOXIN,[2,3,7,8]	1746-01-6	6E-07	D,V	Y	Y	N	Coke Oven Emissions				
METHYLENE BIS(2-CHLOROANILINE), [4,4-]	101-14-4	0.2	V	Y	Y	TETRACHLOROETHANE, [1,1,2,2-]	79-34-5	0.3		Y	N	O	Cyanide Compounds				
METHYLENEDIANILINE, [4,4-]	101-77-9	1	V	Y	N	TETRACHLOROETHYLENE	127-18-4	10		N	N	P	Glycol Ethers				
METHYLNAPHTHALENE, [2-]	91-57-6	0.01	V	Y	N	TITANIUM TETRACHLORIDE	7550-45-0	0.1		N	N	Q	Lead Compounds (except elemental Lead)				
MINERAL FIBERS		0	T	N	Y	TOLUENE	108-88-3	10		Y	N	R	Manganese Compounds				
NAPHTHALENE	91-20-3	10	V	Y	N	TOLUENE DIISOCYANATE, [2,4-]	584-84-9	0.1		Y	N	S	Mercury Compounds				
NAPHTHYLAMINE, [ALPHA-]	134-32-7	0.01	V	Y	N	TOLUDINE, [ORTHO-]	95-53-4	4		Y	N	T	Fine Mineral Fibers				
NAPHTHYLAMINE, [BETA-]	91-59-8	0.01	V	Y	N	TOXAPHENE	8001-35-2	0.01		Y	N	U	Nickel Compounds				
NICKEL CARBONYL	13463-39-3	0.1	U	N	Y	TRICHLOROBENZENE, [1,2,4-]	120-82-1	10		Y	N	V	Polycyclic Organic Matter				
NICKEL COMPOUNDS		1	U	N	Y	TRICHLOROETHANE, [1,1,1-]	71-55-6	10		N	N	W	Selenium Compounds				
NICKEL REFINERY DUST		0.08	U	N	Y	TRICHLOROETHANE, [1,1,2-]	79-00-5	1		Y	N	X	Polychlorinated Biphenyls (Aroclors)				
NICKEL SUBSULFIDE	12035-72-2	0.04	U	N	Y	TRICHLOROETHYLENE	79-01-6	10		Y	N	Y	Radionuclides				
NITROBENZENE	98-95-3	1		Y	N	TRICHLOROPHENOL, [2,4,5-]	95-95-4	1		Y	N						
NITROBIPHENYL, [4-]	92-93-3	1	V	Y	N	TRICHLOROPHENOL, [2,4,6-]	88-06-2	6		Y	N						
NITROPHENOL, [4-]	100-02-7	5		Y	N	TRIETHYLAMINE	121-44-8	10		Y	N	Note 1	Notes				
NITROPROPANE, [2-]	79-46-9	1		Y	N	TRIFLURALIN	1582-09-8	9		Y	Y		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				

Mr. Richard Paul
Environmental Specialist
Superior Solvents & Chemicals
3023 Arnold Tenbrook Road
Arnold, Missouri 63010

RE: New Source Review Permit - Project Number: 2013-07-054

Dear Mr. Paul:

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 application for an Intermediate 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.

If you have any questions regarding this permit, please do not hesitate to contact Alana Rugen, 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:arl

Enclosures

c: St. Louis Regional Office
PAMS File: 2013-07-054

Permit Number: