PERMIT BOOK

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: 082014-012 Project Number: 2014-03-056

Installation Number: 071-0068

Parent Company: Meramec Group, Inc.

Parent Company Address: 338 Ramsey St., Sullivan, MO 63080

Installation Name: Meramec Industries, Inc.

Installation Address: 338 Ramsey St., Sullivan, MO 63080

Location Information: Franklin County, S17, T40N, R2W

Application for Authority to Construct was made for:
Table 22 consisting of flexible urethane foam molding and surface coating; installation-wide 100 tpy VOC limit. 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.

JUL 22 2014

EFFECTIVE DATE

Lyza 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.

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

Meramec Industries, Inc.
Franklin County, S17, T40N, R2W

1. Superseding Condition
   A. The conditions of this permit supersede the following special conditions found in the previously issued construction permits issued by the Air Pollution Control Program.
      1) Permit 042005-002, Special Condition 1
      2) Permit 072002-010A, Special Condition 2
      3) Permit 062005-003, Special Condition 1
      4) Permit 032006-009, Special Condition 1

2. VOC Emission Limitation
   A. Meramec Group, Inc. shall emit less than 100.0 tons of VOCs in any consecutive 12-month period from the entire installation as defined in Table 1.

Table 1: VOC Emission Units

Meramec Industries, Inc.	
Emission Point	Description
PROC01A	8 Molding lines – mold release
PROC01B	8 Molding lines – in-mold painting
PROC01C	8 Molding lines – blowing agent
PROC01D	8 Molding lines – foam production
PROC02A	Paint spray surface coating – monorail (Permit 052002-018)
PROC02B	Paint spray surface coating – hand spray booths (Permit 052002-018)
PROC02C	Paint spray surface coating – Loni process (Permit 042005-002)
PROC02D	Paint spray surface coating – automated paint (Permit 062005-003)
PROC03	Solvent mold cleaning
PROC04	Natural gas fired heaters
EP-29A	Table 25 – mold release
EP-29B	Table 25 – in-mold painting
EP-29C	Table 25 – blowing agent
EP-29D	Table 25 – foam production
EP-30A	Table 24 – mold release
EP-30B	Table 24 – in-mold painting

SPECIAL CONDITIONS:

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

EP-30C	Table 24 – blowing agent
EP-30D	Table 24 – foam production
EP-31A	Table 18 – mold release
EP-31B	Table 18 – in-mold painting
EP-31C	Table 18 – blowing agent
EP-31D	Table 18 – foam production
EP-32A	Table 22 – mold release
EP-32B	Table 22 – in-mold painting
EP-32C	Table 22 – blowing agent
EP-32D	Table 22 – foam production
Moldtech, Inc.	
Emission Point	Description
PROC05	Epoxy application (EP2 in Permit 052002-018)

B. Meramec Group, Inc. shall develop and use forms to demonstrate compliance with Special Condition 2.A. The forms shall contain at a minimum the following information,

1) Installation name
2) Installation ID
3) Permit number
4) Current month
5) Current 12-month date range
6) Emission units
7) Emission unit's respective current monthly throughput
8) Emission unit's respective emission factors.
    a. Mold release and blowing agents are 100% VOC.
    b. Obtain surface coating, solvent, and epoxy VOC content from respective MSDS, and verify VOC status according to 10 CSR 10-6.020 *Definitions and Common Reference Tables* (2)(V)13.
    c. The foam production VOC emission factor is 9.142E-10 lb VOC per lb isocyanate.
    d. Natural gas VOC emission factor is 5.5 lb per MMCF of natural gas.
9) VOC emissions for the current month
10) 12-month rolling total VOC emissions
11) Indication of compliance status with Special Condition 2.A

3. Capture Device Requirement – Table 22 Surface Coating (EU-32E)

A. Meramec Industries, Inc. shall capture emissions from the spray applied surface coating operation with a booth and exhaust fan(s).

SPECIAL CONDITIONS:

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

B. Negative pressure shall be demonstrated and recorded at all booth openings at least once every 24 hours using visual indication such as streamers, powder puff, smoke, or other method preapproved by the Air Pollution Control Program. 24-hour periods when spray applied surface coating is non-operational shall be recorded.

C. Meramec Industries, Inc. shall operate the surface coating booth's exhaust fan(s) at all times surface coating is spray applied.

D. No more than one spray gun shall operate at one time.

E. Meramec Industries, Inc. shall maintain an operating and maintenance log for the filter which shall include the following:
   1) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
   2) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.

4. Control Device Requirement – Table 22 Surface Coating (EU-32E)

A. Meramec Industries, Inc. shall control emissions from the spray applied surface coating operation using an exhaust filter.

B. The filter shall be operated and maintained in accordance with the manufacturer's specifications.

C. The filter shall be equipped with a gauge or meter, which indicates the pressure drop across the control device. These gauges or meters shall be located such that the Department of Natural Resources' employees may easily observe them. The pressure drop shall be measured and recorded at least once every 24 hours. 24-hour periods when spray applied surface coating is non-operational shall be recorded. The pressure drop shall be maintained within the design conditions specified by the manufacturer's performance warranty.

D. Meramec Industries, Inc. shall maintain a copy of the filter manufacturer's performance warranty on site.

E. Meramec Industries, Inc. shall maintain an operating and maintenance log for the filter which shall include the following:
   1) Incidents of malfunction, with impact on emissions, duration of

SPECIAL CONDITIONS:

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

event, probable cause, and corrective actions; and

2) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.

5. Operational Requirement – Raw Materials
Meramec Industries, Inc. shall keep all raw materials (mold release, resin, isocyanate, blowing agents, surface coating) in sealed containers whenever the materials are not in use. Meramec Industries, Inc. shall provide and maintain suitable, easily read, permanent markings on all raw materials used with this equipment.

6. Use of Alternative Material in Table 22 Surface Coating (EU-32E)

A. Before using an alternative surface coating at Table 22 that differs from a material listed in the Application for Authority to Construct, Meramec Industries, Inc. shall calculate the potential emissions of all HAPs and VOC from using the alternative material.

B. Meramec Industries, Inc. shall seek approval from the Air Pollution Control Program New Source Review Unit before use of the alternative material if the potential individual HAP emissions for the alternative material are greater than the SMAL for any HAP listed in Appendix B, if the potential combined HAP emissions for the alternative material are greater than or equal to 25.0 tons per year, or if the potential VOC emissions for the alternative material are greater than 27.40 tons per year.

C. Attachment A or equivalent forms, such as electronic forms, preapproved by the Air Pollution Control Program shall be used to show compliance with Special Conditions 6.A and 6.B.

7. Record Keeping and Reporting Requirements

A. Meramec Industries, 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 MSDS for all materials used.

B. Meramec Industries, Inc. 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 shows an exceedance of a limitation imposed by this permit.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (5) REVIEW
Project Number: 2014-03-056
Installation ID Number: 071-0068
Permit Number:

Meramec Industries, Inc.
338 Ramsey St.
Sullivan, MO 63080

Complete: May 7, 2014

Parent Company:
Meramec Group, Inc.
338 Ramsey St.
Sullivan, MO 63080

Franklin County, S17, T40N, R2W

REVIEW SUMMARY

- Meramec Industries, Inc. has applied for authority to install Table 22 consisting of flexible urethane foam molding and surface coating, and also an installation-wide 100 tpy VOC limit.

- MDI (CAS 101-68-8) HAP emissions are expected from the foam molding. All surface coatings evaluated for this project are HAP free.

- None of the NSPS under 40 CFR 60 apply to the proposed emission units. 40 CFR 60 Subpart FFF, *Standards of Performance for Flexible Vinyl and Urethane Coating and Printing*, does not apply as the foam is not rotogravure printed.

- 40 CFR 60 Subpart RRR, *Standards of Performance for Volatile Organic Compound Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes*, does not apply. Butane diol (CAS 110-63-4) and ethylene glycol (CAS 107-21-1) are listed in §60.707, but are not a product, co-product, by-product, or intermediate.

- None of the NESHAPs under 40 CFR 61 apply to the proposed emission units.

- 40 CFR 63 Subpart OOOOOO, *National Emission Standards for Hazardous Air Pollutants for Flexible Polyurethane Foam Production and Fabrication Area Sources*, applies to the proposed emission units and other processes at the installation. According to the MSDS submitted with the project, the proposed emission units do not use a material containing methylene chloride. The MACT requires a methylene chloride compliance certification to be on file. The MACT does not require a startup, shutdown, malfunction plan; and does not require performance tests or continuous monitoring. Please refer to the MACT for complete requirements. EPA Region 7 has compliance authority at the time of this permit's issuance.

- 40 CFR 63 Subpart III, *National Emission Standards for Hazardous Air Pollutants for*

Flexible Polyurethane Foam Production; 40 CFR 63 Subpart PPPP, *National Emission Standards for Hazardous Air Pollutants for Surface Coating of Plastic Parts and Products*; and 40 CFR 63 Subpart MMMMM, *National Emission Standard for Hazardous Air Pollutants: Flexible Polyurethane Foam Fabrication Operations*, do not apply because the installation is not a major HAP source.

- 40 CFR 63 Subpart VVVVVV, *National Emission Standards for Hazardous Air Pollutants for Chemical Manufacturing Area Sources*; and 40 CFR 63 Subpart BBBBBBB, *National Emission Standards for Hazardous Air Pollutants for Area Sources: Chemical Preparations Industry*, do not apply to the installation. According to the resin and isocyanate MSDS the installation is the manufacturer of these materials. The installation purchases raw materials and combines them according to different recipes to generate resin blends. It does not manufacture via a chemical reaction or process involving precursor reactants, any of the raw materials used in the blends. Also, the resin and isocyanate do not contain a MACT 6V Table 1 HAP or MACT 6B Target HAP.

- 40 CFR 63 Subpart HHHHHH, *National Emission Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources*, does not apply to the proposed surface coating because the coatings do not contain target HAPs.

- A partially enclosed booth and exhaust filter are being used to control the PM, PM_{10}, and $PM_{2.5}$ emissions from the spray applied surface coating.

- 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 below respective de minimis levels. Potential emissions of VOC exceed the insignificant emission exemption level in 10 CSR 10-6.061(3)(A)3.A., thus requiring a permit.

- This installation is located in Franklin County, a moderate nonattainment area for the 8-hour 1997 ozone standard, a marginal nonattainment area for the 8-hour 2008 ozone standard, and a nonattainment area for the 1997 $PM_{2.5}$ standard. Franklin County is an attainment 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 250 tons per year and fugitive emissions are not counted toward major source applicability.

- Ambient air quality modeling was not performed for this review. Potential emissions of the project are below respective de minimis levels.

- Emissions testing is not required for the emission units.

- Submittal of an intermediate operating permit is required for this installation within 90 days of equipment startup.

- Approval of this permit is recommended with special conditions

INSTALLATION DESCRIPTION

Meramec Industries, Inc. manufactures molded polyurethane shoe soles and industrial plastic parts. Meramec Industries, Inc. and adjacent facility Moldtech Inc. are one installation for permitting applicability under Meramec Group, Inc. The installation is located in Sullivan, Franklin County, which is part of the St. Louis metropolitan area. Isocyanate prepolymer and polyurethane polyols are mixed and poured into molds that are pre-sprayed with a mold release compound and occasionally pre-sprayed with lacquer surface coating. After removal from the molds, the products are either directly shipped or spray coated with lacquer and then shipped. The installation was previously a major source of VOC for construction and operating permit applicability. Table 2 lists the New Source Review (construction) permits that have been issued to Meramec Industries, Inc. from the Air Pollution Control Program.

Table 2: Permit History

Permit Number	Description
0195-025	Installation of a shoe sole production line
0499-008	Installation of polyurethane shoe sole mold Line 12
052002-018	Installation of two paint lines and equipment for a molding process line
072002-010	Modification to existing molding lines to include the usage of n-pentane as a blowing agent; this permit was a combination of projects 2002-02-019, 2002-02-020.
042005-002	Modification to an existing painting operation
072002-010A	MHDR correction for sandblaster and abrasive cleaner
062005-003	Installation of a new automated finishing operation
062005-003A	Amended recordkeeping requirements
032006-009	New molding operation Table 25 (EP-29)
032006-009A	Amended MACT PPPP applicability
092010-010	New molding operation Table 24 (EP-30)
082013-008	New molding operation Table 18 (EP-31)

PROJECT DESCRIPTION

Meramec Industries, Inc. proposes to install a flexible polyurethane foam manufacturing station, Table 22 (EP-32). Table 22 will manufacture one-piece floor mats. It will consist of spray applying mold release compound, then water-based paint. Isocyanate prepolymer and polyurethane polyols will be mixed with n-pentane and n-butane blowing agents and injected into the mold. The part will cure before being removed, trimmed, and packaged. The molds will be cleaned with media blasting. Only one mat will be made at a time. Only one paint spray gun will be used at a time. The largest mold produces a 5x4 feet by 0.75 inches thick mat. Up to 12 mats can be made in one hour. Paint overspray emissions will be controlled with a partially enclosed-curtain booth and fiberglass arrestor pad. Process description, MHDR, and emissions calculations are the same as Table 18 (EP-31) in permit 082013-008, and can be found there.

Table 3 provides an emissions summary for this project. Existing PM_{10}, VOC, and HAP potential emissions were cited from permit 082013-008, with HAP reductions from

delisted methyl ethyl ketone. PM and $PM_{2.5}$ were assumed equal to PM_{10} emissions. Consistent with the GHG emission calculations for this project, GHG emissions exist for other molding operations at the installation, but were not included in the existing potential emissions. n-Pentane and n-Butane are the only blowing agents in use, and their GHG (CO_2e) are low, consistent with the GHG (CO_2e) potential emissions for this project. Existing actual emissions were cited from the installation's 2013 EIQ. Potential emissions of the project represent the potential of the new molding and painting, assuming continuous operation (8,760 hours per year). The new installation conditioned potential represents a 100 tpy VOC limit. The limit makes the installation a minor VOC source and negates the possibility of nonattainment NSR circumvention from separate permitting of Table 18 and Table 22.

Table 3: Emissions Summary (tons per year)

Pollutant	Regulatory *De Minimis* Levels	Existing Potential Emissions	Existing Actual Emissions (2013 EIQ)	Potential Emissions of the Project	New Installation Conditioned Potential
PM	25.0	15.35	N/A	0.13	15.49
PM_{10}	15.0	15.56	1.71	0.13	15.69
$PM_{2.5}$	10.0	15.56	1.64	0.13	15.69
SOx	40.0	0.02	1.4 E-03	N/A	0.02
NOx	40.0	3.47	0.23	N/A	3.47
VOC	40.0	342.10	57.05	27.40	< 100.0
CO	100.0	2.91	0.05	N/A	2.91
GHG (CO_2e)	75,000 / 100,000	[2] 4,637.06	N/A	453.33	[2] 5,089.79
GHG (mass)	0.0 / 100.0 / 250.0	[2] 4,176.71	N/A	18.13	[2] 4,194.85
HAPs	10.0 / 25.0	7.66	0.28	2.05 E-07	[2] 7.66
MDI	[1] 0.1	[2] 2.05E-07	N/A	2.05 E-07	N/D

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

[1] SMAL

[2] Does not include PTE from molding operations prior to permit 082013-008.

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 below respective de minimis levels. Potential emissions of VOC exceed the insignificant emission exemption level in 10 CSR 10-6.061(3)(A)3.A., thus requiring a permit.

APPLICABLE REQUIREMENTS

Meramec Industries, 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

- *Submission of Emission Data, Emission Fees and Process Information,* 10 CSR 10-6.110

- *Operating Permits*, 10 CSR 10-6.065

- *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

- *Restriction of Emission of Odors*, 10 CSR 10-6.165

SPECIFIC REQUIREMENTS

- *Control of Emissions From Industrial Surface Coating Operations,* 10 CSR 10-5.330

- *MACT Regulations*, 10 CSR 10-6.075
    - *National Emission Standards for Hazardous Air Pollutants for Flexible Polyurethane Foam Production and Fabrication Area Sources,* 40 CFR Part 63, Subpart OOOOOO

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*, I recommend this permit be granted with special conditions.

_____ _____

David Little Date
New Source Review Unit

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated March 25, 2014, received March 28, 2014, designating Meramec Group, Inc. as the owner and operator of the installation.

- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.

Attachment A – Table 22 (EP-32) Alternative Coating Compliance Worksheet

Meramec Industries, Inc.
Franklin County, S17, T40N, R2W
Project Number: 2014-03-056
Installation ID Number: 071-0068
Permit Number: _____

Coating Name:_____ Date: _____ Copy this sheet as needed.

A	B	C	D	E	F	G	H	I
Individual HAP Name and CAS No.	HAP is also PM (yes / no)	Individual HAP Content (max weight %)	Maximum Application Rate (lbs coating per hour)	Overall PM Control Efficiency (%)	Individual HAP PTE (tons per year)	Individual HAP SMAL (tons per year)	Coating VOC (weight %)	Coating VOC PTE (tons per year)
Benzene 71-43-2	*no*	*2.0%*	*1.587*	*N/A*	*0.14*	*2.0*	*36.61%*	*2.54*
Cobalt 2-Ethylhexanoate 136-52-7	*yes*	*0.5%*		*94.925%*	*0.0018*	*0.1*		

A. Record the all individual HAPs from this single coating MSDS.
B. Compare the HAP to Appendix B for verification as particulate matter.
C. Record the maximum weight percent of each HAP from the MSDS.
D. The maximum application rate is 1.587 lbs of coating per hour. If the maximum application rate is exceeded, seek approval from the Air Pollution Control Program New Source Review Unit before using this coating.
E. The overall PM control efficiency includes the HVLP transfer efficiency (65%), booth capture efficiency (95%), and exhaust filter control efficiency (90%): 65% + (1 - 65%) x 95% x 90% = 94.925%
F. Calculate the particulate matter HAP potential to emit: F = C x D x (1 - E) x 8,760 / 2,000. Otherwise calculate the volatile HAP potential to emit: F = C x D x 8,760 / 2,000.
G. Record the individual HAP SMAL from the most recent Appendix B, also available at http://www.dnr.mo.gov/env/apcp/permits/constpmtguide.htm as *Table of Hazardous Air Pollutants, Screening Model Action Levels and Risk Assessment Levels*. If the individual HAP potential to emit is greater than the SMAL or the combined HAP potential is 25.0 tpy or more, seek approval from the Air Pollution Control Program New Source Review Unit before using this coating.
H. Record or calculate the coating's VOC weight % from the MSDS. Verify VOC status according to 10 CSR 10-6.020 *Definitions and Common Reference Tables* (2)(V)13.
I. Calculate the VOC potential to emit: I = D x H x 8,760 / 2,000. If the VOC potential to emit is greater than 27.40 tpy seek approval from the Air Pollution Control Program New Source Review Unit before using this coating.

APPENDIX A

Abbreviations and Acronyms

%.....percent
ºF .....degrees Fahrenheit
acfm.....actual cubic feet per minute
BACT.....Best Available Control Technology
BMPs.....Best Management Practices
Btu.....British thermal unit
CAM.....Compliance Assurance Monitoring
CAS .....Chemical Abstracts Service
CEMS.....Continuous Emission Monitor System
CFR.....Code of Federal Regulations
CO.....carbon monoxide
CO_2.....carbon dioxide
CO_2e.....carbon dioxide equivalent
COMS .....Continuous Opacity Monitoring System
CSR .....Code of State Regulations
dscf.....dry standard cubic feet
EIQ.....Emission Inventory Questionnaire
EP .....Emission Point
EPA.....Environmental Protection Agency
EU.....Emission Unit
fps.....feet per second
ft .....feet
GACT.....Generally Available Control Technology
GHG.....Greenhouse Gas
gpm .....gallons per minute
gr .....grains
GWP .....Global Warming Potential
HAP .....Hazardous Air Pollutant
hr .....hour
hp.....horsepower
lb.....pound
lbs/hr .....pounds per hour
MACT.....Maximum Achievable Control Technology
$\mu g/m^3$ .....micrograms per cubic meter
m/s ..... meters per second
Mgal ..... 1,000 gallons
MW ..... megawatt
MHDR..... maximum hourly design rate
MMBtu.... Million British thermal units
MMCF..... million cubic feet
MSDS ..... Material Safety Data Sheet
NAAQS... National Ambient Air Quality Standards
NESHAPs ..... National Emissions Standards for Hazardous Air Pollutants
NO_x..... nitrogen oxides
NSPS..... New Source Performance Standards
NSR ..... New Source Review
PM ..... particulate matter
$PM_{2.5}$..... particulate matter less than 2.5 microns in aerodynamic diameter
PM_{10} ..... particulate matter less than 10 microns in aerodynamic diameter
ppm ..... parts per million
PSD ..... Prevention of Significant Deterioration
PTE..... potential to emit
RACT..... Reasonable Available Control Technology
RAL ..... Risk Assessment Level
SCC ..... Source Classification Code
scfm ..... standard cubic feet per minute
SIC..... Standard Industrial Classification
SIP..... State Implementation Plan
SMAL ..... Screening Model Action Levels
SO_x..... sulfur oxides
SO_2..... sulfur dioxide
tph..... tons per hour
tpy ..... tons per year
VMT ..... vehicle miles traveled
VOC..... Volatile Organic Compound

Appendix B: Table of Hazardous Air Pollutants and Screening Model Action Levels (May 3, 2012 Revision 10)

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

Appendix B: Table of Hazardous Air Pollutants and Screening Model Action Levels (May 3, 2012 Revision 10)

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

Legend

Group ID	Aggregate Group Name
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

Note 1	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. John Offord
Chemist
Meramec Industries, Inc.
338 Ramsey St.
Sullivan, MO 63080

RE: New Source Review Permit - Project Number: 2014-03-056

Dear Mr. Offord:

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 with 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.

If you have any questions regarding this permit, please do not hesitate to contact David Little, 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:dll

Enclosures

c: St. Louis Regional Office
PAMS File: 2014-03-056

Permit Number: