

STATE OF MISSOURI



DEPARTMENT OF NATURAL RESOURCES

MISSOURI AIR CONSERVATION COMMISSION

PERMIT BOOK

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: 11 2014 - 006

Project Number: 2014-07-062
Installation Number: 183-0259

Parent Company: Ground Effects, LLC

Parent Company Address: 320 Shockdrake Road, Wentzville, MO 63385

Installation Name: Ground Effects, LLC

Installation Address: 320 Shockdrake Road, Wentzville, MO 63385

Location Information: St. Charles County, Land Grant 02670

Application for Authority to Construct was made for:

The construction of a new two booth spray-in bed liner operation. 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.

NOV 10 2014

EFFECTIVE DATE

A handwritten signature in black ink, appearing to read "Ryan 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 startup 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 startup 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 paragraph (12)(A)10. "Conditions required by permitting authority."

Ground Effects, LLC
St. Charles County, Land Grant 02670

1. Control Device Requirement-Particulate Filters
 - A. Ground Effects, LLC shall control particulate emissions from the two spray booth stacks (EP-2 and EP-3) using particulate filters, as specified in the permit application.
 - B. The filters shall be operated and maintained in accordance with the manufacturer's specifications.
 - C. Replacement filters shall be kept on hand at all times. The filters shall be made of fibers appropriate for operating conditions expected to occur (i.e. temperature limits, acidic and alkali resistance, and abrasion resistance).
 - D. Ground Effects, LLC shall maintain a copy of the filter manufacturer's performance warranty on site.
 - E. Ground Effects, LLC shall maintain an operating and maintenance log for the filters 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.
2. Operational Requirement - Solvent Cloths
 - A. Ground Effects, LLC shall keep the solvents and cleaning solutions in sealed containers whenever the materials are not in use. Ground Effects, LLC shall provide and maintain suitable, easily read, permanent markings on all solvent and cleaning solution containers used with this equipment.
3. Record Keeping and Reporting Requirements
 - A. Ground Effects, LLC shall maintain all records required by this permit for not less than five years and shall make them available immediately to any

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SPECIAL CONDITIONS:

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

Missouri Department of Natural Resources' personnel upon request.
These records shall include MSDS for all materials used.

- B. Ground Effects, LLC 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 (5) REVIEW

Project Number: 2014-07-062
Installation ID Number: 183-0259
Permit Number:

Ground Effects, LLC
320 Shockdrake Road
Wentzville, MO 63385

Complete: November 14, 2014

Parent Company:
Ground Effects, LLC
320 Shockdrake Road
Wentzville, MO 63385

St. Charles County, Land Grant 02670

REVIEW SUMMARY

- Ground Effects, LLC has applied for authority to construct a new two booth spray-in bed liner operation.
- HAP emissions are expected from the proposed equipment. HAPs of concern from this process are 4,4'-Diphenylmethane Diisocyanate (MDI), methyl isobutyl ketone, and methanol.
- None of the New Source Performance Standards (NSPS) apply to the installation.
- None of the NESHAPs apply to this installation. None of the currently promulgated MACT regulations apply to the proposed equipment.
- Particulate filters are being used to control the particulate emissions from the equipment in this permit.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Controlled potential emissions of PM₁₀ are below de minimis levels.
- This installation is located in St. Charles County, a nonattainment area for the 8-hour ozone standard and the PM_{2.5} standard and 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.
- Emissions testing is not required for the equipment.

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

PROJECT DESCRIPTION

Ground Effects, LLC will construct a new spray coating facility, which will provide protective coatings for truck bed-liners. The two-component coating consists of a urethane pre polymer, deemed Component A (UL MPL 55-COAT A), which reacts with the amines in Component B (UL MPL 55-COAT B) to form a thick coating. This facility will be capable of coating five vehicles per hour per booth, or 87,600 total vehicles per year. The process consists of several steps: First, the incoming vehicles are manually cleaned with solvent (GRO4223). Following cleaning, a coating of bonding agent (UL COS-351-QT) will be applied using the spray booth. After the bonding agent dries, Components A and B will be applied using a two-component spray gun inside the spray booth, now heated to 95°F by a direct natural gas fired burner. Following this application, the vehicles will be cleaned for overspray with denatured alcohol, if necessary. Finally, the vehicles will be air dried and the equipment cleaned with All Solve. The spray booths will vent to stacks, which are fitted with particulate filters.

EMISSIONS/CONTROLS EVALUATION

The emission factors and control efficiencies used in this analysis were obtained from the EPA document AP-42, *Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources*, Fifth Edition.

The transfer efficiency of the air atomizing electrostatic spray gun was taken to be 75%. The solids composition (PM₁₀) of each sprayed component was taken to be the remaining percentage range after subtracting the weight percent range of the respective volatile components listed in the MSDS. The lower limit of each range, for each compound was established by manufacturer's specifications which showed the lowest concentration of active ingredient required to efficiently complete a polymerization reaction. The solids percentages were 50-60% for Component A, 75-85% for Component B, and 40-62% for the Primer. To account for the range of solids versus VOC in each compound, the highest values in the range for both solids content and for VOC content were used to calculate potential emissions. Although this encompasses an overlap of content, totaling over 100%, it is the only way to truly account for any worst case scenario of particulate and VOC emissions. The emissions for MDI were calculated using the spray coating equation found in *MDI/ Polymeric MDI Emissions Reporting Guidelines for the Polyurethane Industry* (May 2012). Specific parameter values were provided by the manufacturer and the weight percent of ingredients listed in the MSDS. The GFS particulate filters on the spray booth stacks were taken to have a control efficiency of 99%, as listed in the manufacturer's specifications.

The following table provides an emissions summary for this project. Because this is a new facility, existing potential emissions and existing actual emissions do not exist. Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8,760 hours per year) and not considering control devices. The conditioned potential was calculated using control devices and applicable special conditions.

Table 1: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions	Potential Emissions of the Installation	Conditioned Potential Emissions of the Installation
PM ₁₀	15.0	N/A	N/A	313.16	3.13
SO _x	40.0	N/A	N/A	0.01	0.01
NO _x	40.0	N/A	N/A	0.86	0.86
VOC	40.0	N/A	N/A	25.04	25.04
CO	100.0	N/A	N/A	0.72	0.72
Combined HAPs	25.0	N/A	N/A	7.44	7.44
Methanol	10.0 (SMAL = 10.0)	N/A	N/A	6.52	6.52
Methyl Isobutyl Ketone	10.0 (SMAL = 10.0)	N/A	N/A	0.87	0.87
MDI	10.0 (SMAL = 0.1)	N/A	N/A	0.05	0.05

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

As shown in the table, all HAP emissions are below de minimis levels for individual and combined values. All HAP emissions are also below their respective Screening Model Action Levels (SMALs). Methanol, Methyl Isobutyl Ketone, and MDI were all considered both VOCs and HAPs.

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Controlled potential emissions of PM₁₀ are below de minimis levels.

APPLICABLE REQUIREMENTS

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

GENERAL REQUIREMENTS

- *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 Solvent Metal Cleaning*, 10 CSR 10-5.300
- *Control of Emissions from Industrial Surface Coating Operations*, 10 CSR 10-5.330
- *Control of Emissions from Solvent Cleanup Operation*, 10 CSR 10-5.455

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.

Ryan Schott
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 22, 2014, received July 24, 2014, designating Ground Effects, LLC as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- GFS Particulate Filter Specifications, <http://www.globalfinishing.com/partsfilters/wavefiltertrial>

APPENDIX A

Abbreviations and Acronyms

%percent	m/s meters per second
°Fdegrees Fahrenheit	Mgal 1,000 gallons
acfmactual 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/m³micrograms per cubic meter	

Mr. Benjamin Dollar
Vice President, Business Development
Ground Effects, LLC
15200 Commerce Drive North
Dearborn, MI 48127

RE: New Source Review Permit - Project Number: 2014-07-062

Dear Mr. Dollar:

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

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:rs1

Enclosures

c: St. Louis Regional Office
PAMS File: 2014-07-062

Permit Number: