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: 112017-015  Project Number: 2017-08-009  Installation Number: 047-0197

Parent Company: Paint Removal Systems, Inc.
Parent Company Address: 3810 N. Mulberry Dr. Unit 203, North Kansas City, MO 64116
Installation Name: Paint Removal Systems, Inc.
Installation Address: 1544 Howell St., North Kansas City, MO 64116
Location Information: Clay County, S23, T50N/S, R33E/W

Application for Authority to Construct was made for:
Pyrolysis burn-off oven for OEM automotive parts. 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.

Prepared by
Jordan Hull
New Source Review Unit

Director or Designee
Department of Natural Resources

NOV 29 2017
Effective Date
STANDARD CONDITIONS:

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

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

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

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

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

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

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

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

The regional office information can be found at the following website:
http://dnr.mo.gov/regions/
SPECIAL CONDITIONS:
The permittee is authorized to construct and operate subject to the following special conditions:

The special conditions listed in this permit were included based on the authority granted 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."

Paint Removal Systems, Inc.
Clay County, S23 T50N/S, R33E/W

1. Operational Requirements of the Burn-off Oven (EP-02)
   A. Paint Removal Systems, Inc. shall only remove non-chlorinated, non-hazardous coatings from metal parts with the burn-off oven.
   
   
   C. Paint Removal Systems, Inc. shall use a direct-flame afterburner to control emissions from the burn-off oven. The afterburner shall be operated at a temperature of at least 1,400 degrees with more than a one-half (1/2) second residence time to ensure a minimum combustion efficiency of 99.9%.
   
   D. The burn-off oven shall be equipped with a continuous recorder, with digital readout, which is able to monitor, display, and record the temperature in the afterburner to an accuracy of plus or minus two percent (2%).

2. Record Keeping and Reporting Requirements
   
   A. Paint Removal Systems, Inc. shall maintain all records required by this permit for not less than five years and shall make them available to any Missouri Department of Natural Resources' personnel upon request.
   
   B. Paint Removal Systems, 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 show an exceedance of a limitation imposed by this permit.
REVIEW SUMMARY

- Paint Removal Systems, Inc. has applied to permit a Pyrolysis burn-off oven for OEM automotive parts.
- The application was deemed complete on September 22, 2017.
- HAP emissions are expected from combustion of natural gas and coating decomposition.
- None of the New Source Performance Standards (NSPS) apply to the installation.
  - Subpart E, Standards of Performance for Incinerators, does not apply to the burn-off oven because the oven does not burn solid wastes as defined in this subpart.
  - Subpart CCCC, Standards of Performance for Commercial and Industrial Solid Waste Incineration Units for Which Construction is Commenced After November 30, 1999 or for Which Modification or Reconstruction is Commenced After June 1, 2001, does not apply to the burn-off oven because a burn-off oven is not considered an incinerator in this subpart.
  - Subpart EEEE, Standards for Performance for Other Solid Waste Incineration Units for Which Construction is Commenced After December 9, 2004, or for Which Modification or Reconstruction is Commenced on or After June 16, 2006, does not apply to the burn-off oven because it is not considered an "other solid waste incineration unit" as defined in this subpart.
- None of the NESHAPs apply to this installation.
- The following MACT regulations do not apply to the proposed equipment.
  - Subpart HHHHHH, National Emission Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources, of the MACT does not apply to the installation because
the installation does not use any paint strippers containing methylene chloride.

- An afterburner is being used to control the emissions from the burn-off oven. However, it is also an emissions source.

- 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 de minimis levels. However, the burn-off oven is considered an incinerator for CSR purposes only and is required to obtain a construction permit in accordance with 10 CSR 10-6.060(1)(B).

- This installation is located in Clay County, a maintenance area for ozone 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.

- Ambient air quality modeling was not performed since potential emissions of the application are below de minimis levels.

- Emissions testing is not required for the equipment as a part of this permit. Testing may be required as part of other state, federal or applicable rules.

- No Operating Permit is required for this installation.

- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Paint Removal Systems, Inc. (FEIN # 46-0835843; MO tax ID # 2520141170) was incorporated in August of 2012. The business provides cleaning services to painting facilities, and is currently exclusive to OEM's (Original Equipment Manufacturer), such as Ford Motor Company and Harley Davidson. Paint Removal Systems, Inc. (PRS) currently utilizes subcontracted services from vendors with burn-off ovens to convert cured paint on painting fixtures/tools/aids, or perform an abrasive blasting process to remove any residual ash. PRS handles all the transportation, documentation, sorting, quality assurance, and dimensional gauging of the subcontracted services for burn-off purposes.

The following New Source Review permits have been issued to Paint Removal Systems, Inc. from the Air Pollution Control Program.
PROJECT DESCRIPTION

Paint Removal Systems, Inc. plans to install a Controlled Pyrolysis™ Cleaning Furnace (Burn-Off Furnace) for removing small amounts of cured organic material such as cured paint, cured varnish, polymer, grease, etc., from metal parts such as paint hangers, electric motor stators, dies, breaker plates, extrusion screws, etc. Cured/baked painted fixtures/tools/aids get processed within the oven converting the coatings into ash. The furnace will have an afterburner. The burn-off oven, Model PRC-4119L, is rated at 4.0 MMBtu/hr and combusts natural gas as fuel. Afterburners will control emissions from the oven. It will be used in the same manner as the initial pyrolysis furnace.

EMISSIONS/CONTROLS EVALUATION

The facility submitted emissions data from the manufacturer for SOx, NOx, CO, VOC and PM10. However, the manufacturer was not able to provide the stack test report and the emissions data could not be verified. The emissions for a burn-off oven are generally calculated assuming that the significant emissions are from the natural gas combustion. Emissions factors for natural gas combustion are in EPA document AP-42, Compilation of Air Pollutant Emission Factors, Fifth Edition, Chapter 1.4, Natural Gas Combustion, (7/98). To be conservative, the SOx, NOx, CO, VOC and PM10 emissions were calculated using both the manufacturer's data and emission factor from AP-42 and the highest value was used for this permit. All of the PM10 emissions were also considered PM2.5.

The burn-off oven might produce some particulate matter from the volatilization of the coatings. However, these emissions are expected to be insignificant compared to emissions from natural combustion. Due to the already low level of particulate emissions from natural gas combustion, the emissions from volatilization are not expected to increase the PM2.5, PM10 and PM emissions above their respective de minimis levels. Therefore, the particulate emissions from volatilization were not calculated for this review.

The following table provides an emissions summary for this project. Existing potential emissions were taken from permit number 102014-011. Existing actual emissions were taken from the installation's 2016 EIQ. Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8760 hours per year).

<table>
<thead>
<tr>
<th>Permit Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>102014-011</td>
<td>Pyrolysis furnace</td>
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Table 1: Permit History
PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, Construction Permits Required. Potential emissions of all pollutants are conditioned below de minimis levels. However, the burn-off oven is considered an incinerator and required to obtain a construction permit in accordance with 10 CSR 10-6.060(1)(B).

APPLICABLE REQUIREMENTS

Paint Removal Systems, 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.

GENERAL REQUIREMENTS

- *Start-Up, Shutdown, and Malfunction Conditions, 10 CSR 10-6.050*
- No Operating Permit is required for this installation.
- *Submission of Emission Data, Emission Fees and Process Information, 10 CSR 10-6.110*
Per 10 CSR 10-6.110(4)(B)2.B(II) and (4)(B)2.C(II) a full ELQ is required for the first full calendar year the equipment (or modifications) approved by this permit are in operation.

- 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

STAFF RECOMMENDATION

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

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated August 31, 2017, received August 3, 2017, designating Paint Removal Systems, Inc. as the owner and operator of the installation.
APPENDIX A

Abbreviations and Acronyms

% .............. percent
°F .............. 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
CO₂ .......... carbon dioxide
CO₂e ....... 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
μg/m³ ......... 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
NO₂ .......... nitrogen oxides
NSPS ...... New Source Performance Standards
NSR .......... New Source Review
PM .......... particulate matter
PM₂.₅ ....... particulate matter less than 2.5 microns in aerodynamic diameter
PM₁₀ ...... 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
SDS .......... Safety Data Sheet
SIC .......... Standard Industrial Classification
SIP .......... State Implementation Plan
SMAL .......... Screening Model Action Levels
SO₃ .......... sulfur oxides
SO₂ .......... sulfur dioxide
SSM .......... Startup, Shutdown & Malfunction
tph .......... tons per hour
tpy .......... tons per year
VMT .......... vehicle miles traveled
VOC .......... Volatile Organic Compound
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<th>Description</th>
<th>Installation's Designation</th>
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<th>MHDOR (MMBtu/hr) Pollutant</th>
<th>CAS</th>
<th>Emission Factor (lb/ MMBtu/hr)</th>
<th>Emission Factor Source (SCC)</th>
<th>Available Pollutant (lb/hr)</th>
<th>Control Device (lb/hr)</th>
<th>PTE (lb/hr)</th>
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</table>

**Natural Gas HHV (Btu/kf)**

1,020

100yr GWP 40 CFR 98

Table A-1, Jan 2014

CO2 1
CH4 25
N2O 288

Natural gas HHV of 1,020 Btu/kf cited from AP-42 Section 1.4, July 1998.

Dichlorobenzene group CAS 25521-23-6 conservatively assumed as 100% 1,4-dichlorobenzene CAS 106-46-7.

HAPs updated per "Air Pollution Control Program Table of Hazardous Air Pollutants, Screening Model Action Levels, and Risk Assessment Levels" Revision 10, 5/3/2012.
NOV 29 2017

Mr. Michael Blank
CEO
Paint Removal Systems, Inc.
3810 N. Mulberry Dr. Unit 203
North Kansas City, MO 64116

RE: New Source Review Permit - Project Number: 2017-08-009

Dear Mr. Blank:

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 is necessary for continued compliance. The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

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

If you were adversely affected by this permit decision, you may be entitled to pursue an appeal before the administrative hearing commission pursuant to Sections 621.250 and 643.075.6 RSMo. To appeal, you must file a petition with the administrative hearing commission within thirty days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the administrative hearing commission, whose contact information is: Administrative Hearing Commission, United States Post Office Building, 131 West High Street, Third Floor, P.O. Box 1557, Jefferson City, Missouri 65102, phone: 573-751-2422, fax: 573-751-5018, website: www.oa.mo.gov/ahc.
If you have any questions regarding this permit, please do not hesitate to contact Jordan Hull, 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

Enclosures

c: Kansas City Regional Office
   PAMS File: 2017-08-009

Permit Number: 112017-015