

**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: **012017-001**

Project Number: 2016-02-030  
Installation Number: 099-0179

Parent Company: H-J Enterprises, Inc.

Parent Company Address: 3010 High Ridge Blvd, High Ridge, MO 63049

Installation Name: H-J Enterprises, Inc.

Installation Address: 6217 Highway PP, High Ridge, MO 63049

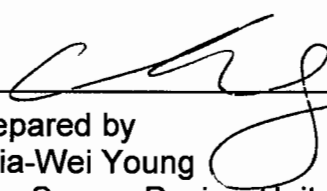
Location Information: Jefferson County, S22, T43N, R4E

Application for Authority to Construct was made for:

The permitting of an existing copper and aluminum electrical connector manufacturing installation. This source was constructed prior to receipt of a permit from the Missouri Department of Natural Resources. Obtaining this permit is part of a remedial action required by the Missouri Air Pollution Control Program. 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  
Chia-Wei Young  
New Source Review Unit

  
Director or Designee  
Department of Natural Resources

**JAN 03 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."*

H-J Enterprises, Inc.  
Jefferson County, S22, T43N, R4E

1. Control Device Requirement-Baghouse
  - A. H-J Enterprises, Inc. shall control particulate emissions from solids loading (EP-01), Blend Tank No. 1 (EP-02), and two sawing stations (EP-08) using baghouses as specified in the permit application.
  - B. The baghouses shall be operated and maintained in accordance with the manufacturer's specifications. The baghouse 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 Department of Natural Resources' employees may easily observe them.
  - C. Replacement filters for the baghouses shall be kept on hand at all times. The bags shall be made of fibers appropriate for operating conditions expected to occur (i.e. temperature limits, acidic and alkali resistance, and abrasion resistance).
  - D. H-J Enterprises, Inc. shall monitor and record the operating pressure drop across the baghouses at least once every 24 hours. The operating pressure drop shall be maintained within the design conditions specified by the manufacturer's performance warranty.
  - E. H-J Enterprises, Inc. shall maintain a copy of the baghouse manufacturer's performance warranty on site.
  - F. H-J Enterprises, Inc. shall maintain an operating and maintenance log for the baghouses 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.

**SPECIAL CONDITIONS:**

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

**2. Operational Requirement - Solvent/Ink Cloths**

A. H-J Enterprises, Inc. shall keep the all chemical solutions (e.g. resins, hardeners, catalysts, etc.) in sealed containers whenever the materials are not in use. H-J Enterprises, Inc. shall provide and maintain suitable, easily read, permanent markings on all inks, solvent and cleaning solution containers used with this equipment.

**3. Record Keeping and Reporting Requirements**

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

B. H-J Enterprises, 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: 2016-02-030

Installation ID Number: 099-0179

Permit Number:

012017-001

Installation Address:

H-J Enterprises, Inc.  
6217 Highway PP  
High Ridge, MO 63049

Parent Company:

H-J Enterprises, Inc.  
3010 High Ridge Blvd  
High Ridge, MO 63049

Jefferson County, S22, T43N, R4E

REVIEW SUMMARY

- H-J Enterprises, Inc. has applied to permit an existing copper and aluminum electrical connectors manufacturing installation.
- The application was deemed complete on February 17, 2016.
- HAP emissions are expected from the fuel combustion and from the use of various chemicals, but only in amounts less than the SMAL.
- None of the NSPS applies to this installation.
- None of the NESHAPs apply to this installation. None of the currently promulgated MACT regulations apply to the proposed equipment.
- A baghouse is being used to control particulate emissions from solids loading (EP-01), blend tank no. 1 (EP-02), and two sawing stations (EP-08).
- 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 less than de minimis levels.
- This installation is located in Jefferson County. Part of Jefferson County is a nonattainment area for Lead (1978 and 2008) and sulfur dioxide (2010). This installation is not located in the Jefferson County nonattainment areas.
- 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 AND PROJECT DESCRIPTION

The installation manufactures copper and aluminum electrical connectors. Equipment and activities located at this installation include solids loading (EP-01), three (3) blending tanks (EP-02), eleven (11) injection molding machines and six (6) electrical curing ovens (EP-03), six (6) brazing stations (EP-04), eight (8) tanks for copper electroplating operation (EP-05), eleven (11) tanks for silver electroplating operation (EP-06), propane combustion for brazing (EP-07), and finishing equipment that includes two (2) sawing stations (EP-08) and various hand grinders.

A baghouse is used to control emissions from solids loading (EP-01), the two sawing stations (EP-08), and one of the blending tanks (EP-02). Emissions from the rest of the blending tanks are not controlled. The facility was constructed without first obtaining a permit from the Department of Natural Resources. Obtaining this permit is part of the remedial action required by the Missouri Air Pollution Control Program.

H-J Enterprise facility operates two facilities in High Ridge. The facility being permitted is located at 6217 Highway PP in High Ridge, while the other facility is located at 3010 High Ridge Blvd. Three criterion must be met if the two facilities are to be considered part of the same installation. The facility must be in the same industrial grouping (i.e. have the same 2-digit SIC code), be on contiguous or adjacent properties, or be under common control. The two facilities are not considered the same installation because they are in different industrial groupings. The SIC code for the facility at 6217 Highway PP is 3643 for "current-carrying wiring devices," while the facility at 3010 High Ridge has SIC code 3363 for "aluminum die-casting." Two facilities can still be considered part of the same installation if one can be considered a "support facility" for another, regardless of the SIC code. However, that is not the case here. The two facilities make different types of products using different methods. At 6217 Highway PP, the facility fabricates the part from copper or aluminum rods, before a two-part epoxy is formed around the metal stud creating the part. The High Ridge facility performs melting and casting of metals. No materials are being exchanged between the facilities. Each functions as an independent source. If one facility is shut down, the other can still function without disruption in manufacturing.

## EMISSIONS/CONTROLS EVALUATION

Particulate emissions ( $PM_{2.5}$ ,  $PM_{10}$ , and PM) are expected from the solids loading (EP-01), Blending Tanks (EP-02), Brazing (EP-04), Copper Plating (EP-05), Silver Plating (EP-05), and finishing (EP-08). For solids loading (EP-01), the material being loaded include silica sand ( $SiO_2$ ), Aluminum hydroxide ( $Al(OH)_3$ ), and ammonium treated clay. Particulate emissions were calculated using emission factors from EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, Chapter 11.12, *Concrete Batching*, (6/2006), Table 11.12-2. The emission factor is based on aggregates which have a silt content of 1.6%. The material being loaded is expected to have a higher silt content, so the emission factor was scaled up by a factor of 80/1.6 to take this into account. The silt content of 80% is from fly ash, which should give a very conservative estimate of emissions.

For the blending tanks (EP-02), particulate emissions were calculated using equation 11.12-1 from AP-42, Chapter 11.12. The equation is based on wind speed and moisture content. Since the facility is located indoors, the wind speed should be minimal, so a value of 1 mph was used in the equation. A value of 0.1% was used for moisture content because this is a common value found in literature as the minimum value for  $SiO_2$ . For the loading and blending tank with baghouse, a device control efficiency of 99% was used. The capture efficiency was assumed to be 100% because the equipment is completely enclosed.

Particulate emissions from brazing (EP-04) were calculated using an emission factor from AP-42, Chapter 12.19, *Electric Arc Welding*, Table 12.19-1. Particulate emissions from copper plating and silver plating were calculated from AP-42, Table 12.20-1. There are no emission factors in the table for either copper (EP-05) or silver (EP-06) plating, so the emission factor for hard chromium electroplating was used. Particulate emissions from the saws used in the finishing operation (EP-08) were calculated using emission factor for webfire, scc code 3-04-003-60, casting and finishing for grey iron foundries. The facility did not provide information regarding the hood that is used to capture particulate emissions from the sawing operations. Therefore, a low value of 20% capture was used. 99% was used for the efficiency of the baghouse. Because emissions from the finishing operation were already so low, using a low capture efficiency did not affect the type of permit that should be issued for this facility. Particulate emissions from the hand grinders were calculated using the same emission factor but the emissions are not controlled by any baghouses, so no device control efficiency was used.

VOC and HAPs emissions from the use of the resins, hardeners, and catalysts were calculated using the VOC and HAPs content as given in the SDS and assuming that all are emitted. If a range is given in the SDS, the higher value was used.  $PM_{2.5}$ ,  $PM_{10}$ , PM,  $SO_x$ ,  $NO_x$ , VOC, CO,  $N_2O$ ,  $CO_2$ , and  $CH_4$  emissions from propane combustion during the brazing operation were calculated using emission factors from AP-42, Chapter 1.5, *Liquefied Petroleum Gas Combustion*, (7/2008).  $CO_2e$  emissions were calculated by multiplying the  $N_2O$ ,  $CO_2$ , and  $CH_4$  emissions by the global warming potential given in 40 CFR 98, Subpart A, Table A-1 and summing the results. AP-42,

Chapter 1.5 does not give HAPs emission factors for propane combustion, so the HAPs emission factors from AP-42, Chapter 1.4, *Natural Gas Combustion*, (7/1998), were used to estimate the HAPs emissions. The brazing operation use a maximum of 4 gallons of propane per hour.

The facility dips parts in sulfuric acid. There are no known emission factors for a sulfuric acid dipping tank, and therefore its emissions were not calculated. However, due to the low volatility of sulfuric acid and the fact that there is no air flow or mechanical agitation of the tanks, the sulfuric acid mist emissions are not expected to be greater than the de minimis level of 7.0 tpy.

All of the emission factors used should yield conservative estimate of emissions. The following table provides an emissions summary for this project. There are no existing potential emissions or actual emissions since this facility has never been permitted. Potential emissions of the application represent the potential of the new equipment assuming continuous operation (8760 hours per year).

**Table 1: Emissions Summary (tpy)**

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions	Potential Emissions of the Project	New Installation Conditioned Potential
PM	25.0	N/D	N/D	13.48	N/A
PM <sub>10</sub>	15.0	N/D	N/D	4.60	N/A
PM <sub>2.5</sub>	10.0	N/D	N/D	4.60	N/A
SOx	40.0	N/D	N/D	0.03	N/A
NOx	40.0	N/D	N/D	0.23	N/A
VOC	40.0	N/D	N/D	9.03	N/A
CO	100.0	N/D	N/D	0.13	N/A
GHG (CO <sub>2</sub> e)	N/A	N/D	N/D	223.79	N/A
GHG (mass)	N/A	N/D	N/D	219.02	N/A
HAPs	10.0/25.0	N/D	N/D	7.48	N/A
Sulfuric Acid Mist	7.0	N/D	N/D	Negligible	N/A

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

#### PERMIT RULE APPLICABILITY

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



## APPLICABLE REQUIREMENTS

H-J Enterprises, 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
- *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 EIQ 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 February 4, 2016, received February 17, 2016, designating H-J Enterprises, Inc. as the owner and operator of the installation.
- E-mail correspondence from H-J Enterprises, Inc.

## APPENDIX A

### Abbreviations and Acronyms

<b>%</b> .....	percent	<b>m/s</b> .....	meters per second
<b>°F</b> .....	degrees Fahrenheit	<b>Mgal</b> .....	1,000 gallons
<b>acfm</b> .....	actual cubic feet per minute	<b>MW</b> .....	megawatt
<b>BACT</b> .....	Best Available Control Technology	<b>MHDR</b> .....	maximum hourly design rate
<b>BMPs</b> .....	Best Management Practices	<b>MMBtu</b> ..	Million British thermal units
<b>Btu</b> .....	British thermal unit	<b>MMCF</b> .....	million cubic feet
<b>CAM</b> .....	Compliance Assurance Monitoring	<b>MSDS</b> .....	Material Safety Data Sheet
<b>CAS</b> .....	Chemical Abstracts Service	<b>NAAQS</b> ..	National Ambient Air Quality Standards
<b>CEMS</b> .....	Continuous Emission Monitor System	<b>NESHAPs</b>	National Emissions Standards for Hazardous Air Pollutants
<b>CFR</b> .....	Code of Federal Regulations	<b>NO<sub>x</sub></b> .....	nitrogen oxides
<b>CO</b> .....	carbon monoxide	<b>NSPS</b> .....	New Source Performance Standards
<b>CO<sub>2</sub></b> .....	carbon dioxide	<b>NSR</b> .....	New Source Review
<b>CO<sub>2e</sub></b> .....	carbon dioxide equivalent	<b>PM</b> .....	particulate matter
<b>COMS</b> .....	Continuous Opacity Monitoring System	<b>PM<sub>2.5</sub></b> .....	particulate matter less than 2.5 microns in aerodynamic diameter
<b>CSR</b> .....	Code of State Regulations	<b>PM<sub>10</sub></b> .....	particulate matter less than 10 microns in aerodynamic diameter
<b>dscf</b> .....	dry standard cubic feet	<b>ppm</b> .....	parts per million
<b>EIQ</b> .....	Emission Inventory Questionnaire	<b>PSD</b> .....	Prevention of Significant Deterioration
<b>EP</b> .....	Emission Point	<b>PTE</b> .....	potential to emit
<b>EPA</b> .....	Environmental Protection Agency	<b>RACT</b> .....	Reasonable Available Control Technology
<b>EU</b> .....	Emission Unit	<b>RAL</b> .....	Risk Assessment Level
<b>fps</b> .....	feet per second	<b>SCC</b> .....	Source Classification Code
<b>ft</b> .....	feet	<b>scfm</b> .....	standard cubic feet per minute
<b>GACT</b> .....	Generally Available Control Technology	<b>SDS</b> .....	Safety Data Sheet
<b>GHG</b> .....	Greenhouse Gas	<b>SIC</b> .....	Standard Industrial Classification
<b>gpm</b> .....	gallons per minute	<b>SIP</b> .....	State Implementation Plan
<b>gr</b> .....	grains	<b>SMAL</b> .....	Screening Model Action Levels
<b>GWP</b> .....	Global Warming Potential	<b>SO<sub>x</sub></b> .....	sulfur oxides
<b>HAP</b> .....	Hazardous Air Pollutant	<b>SO<sub>2</sub></b> .....	sulfur dioxide
<b>hr</b> .....	hour	<b>tph</b> .....	tons per hour
<b>hp</b> .....	horsepower	<b>tpy</b> .....	tons per year
<b>lb</b> .....	pound	<b>VMT</b> .....	vehicle miles traveled
<b>lbs/hr</b> .....	pounds per hour	<b>VOC</b> .....	Volatile Organic Compound
<b>MACT</b> .....	Maximum Achievable Control Technology		
<b>µg/m<sup>3</sup></b> .....	micrograms per cubic meter		



Jeremiah W. (Jay) Nixon, Governor • Harry D. Bozoian, Director

## DEPARTMENT OF NATURAL RESOURCES

dnr.mo.gov

**JAN 03 2017**

Mr. Rudy May  
Safety Director  
H-J Enterprises, Inc.  
3010 High Ridge Blvd  
High Ridge, MO 63049

RE: New Source Review Permit - Project Number: 2016-02-030

Dear Mr. May:

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, if any, 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.

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.oh.mo.gov/ahc](http://www.oh.mo.gov/ahc).



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Mr. Rudy May  
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If you have any questions regarding this permit, please do not hesitate to contact Young, Chia-Wei, 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:cj

Enclosures

c: St. Louis Regional Office  
PAMS File: 2016-02-030

Permit Number: 01 2017 - 001