



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:

100012-001

Project Number: 2012-07-061

Installation Number: 167-0029

Parent Company: Scott Salvage Yard, LLC

Parent Company Address: 3406 South 30th Road, Humansville, MO 65674

Installation Name: Scott Salvage Yard, LLC

Installation Address: 3406 South 30th Road, Humansville, MO 65674

Location Information: Polk County, S27, T35N, R24W

Application for Authority to Construct was made for:

The installation of a secondary aluminum sweat furnace. 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.

OCT - 1 2012

EFFECTIVE DATE

DIRECTOR OR DESIGNEE
DEPARTMENT OF NATURAL RESOURCES

STANDARD CONDITIONS:

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

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

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

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

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

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

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit at (573) 751-4817. If you prefer to write, please address your correspondence to the Missouri Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, attention: Construction Permit Unit.

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Project No.	2012-07-061

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."

Scott Salvage Yard, LLC
Polk County, S27, T35N, R24W

1. **Superseding Condition**
The conditions of this permit supersede all special conditions found in the previously issued construction permit no. 0297-006 from the Air Pollution Control Program.
2. **Control Device Requirement - Afterburners**
 - A. Scott Salvage Yard, LLC shall control emissions from the new sweat furnace (EP02) and the existing sweat furnace (EP01) using afterburners as specified in the permit application. The afterburners shall be in use at all times when the furnace is in operation.
 - B. The afterburners shall be operated and maintained in accordance with the manufacturer's specifications.
 - C. The afterburner shall be operated at a minimum temperature of 1,600 °F and a minimum residence time of 0.8 seconds.
 - D. A continuous recorder that monitors, displays and records the temperature in the afterburner combustion chamber within an accuracy of $\pm 2\%$ shall be used to show compliance with Special Condition 2.C.
 - E. Scott Salvage Yard, LLC shall maintain an operating and maintenance log for the afterburner 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.

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SPECIAL CONDITIONS:

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

3. Operational Requirements
 - A. Scott Salvage Yard shall only process automotive parts and assemblies (e.g. engine parts, transmission housings, heads, intake manifolds, etc.) in the new furnace (EP02) and the existing furnace (EP01).
 - B. All non-metallic materials such as fluids, rubbers and plastics shall be removed from the metals before they are charged into the furnaces (EP01 and EP02).

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (5) REVIEW

Project Number: 2012-07-061
Installation ID Number: 167-0029
Permit Number:

Scott Salvage Yard, LLC
3406 South 30th Road
Humansville, MO 65674

Complete: July 16, 2012

Parent Company:
Scott Salvage Yard, LLC
3406 South 30th Road
Humansville, MO 65674

Polk County, S27, T35N, R24W

REVIEW SUMMARY

- Scott Salvage Yard, LLC has applied for authority to construct a secondary aluminum sweat furnace (EP02).
- HAP emissions are expected from the proposed equipment, but only in amounts less than their respective SMAL. HAPs of concern from this process are dioxins and furans.
- None of the NSPS apply to the installation.
- None of the NESHAPs apply to this installation.
- 40 CFR Part 63, Subpart RRR, *National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production*, of the MACT applies to the installation.
- Afterburners are being used to control the particulate, VOC and HAP emissions from the new sweat furnace (EP02) and an existing sweat furnace (EP01).
- 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 all pollutants are below *de minimis* levels.
- This installation is located in Polk County, an attainment area for all 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 tpy and fugitive emissions are not counted toward major source applicability.

- Ambient air quality modeling was not performed since controlled potential emissions of the application are below *de minimis* levels.
- No operating permit is required.
- Emissions testing is not required for the furnace as a condition of this permit.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Scott Salvage Yard, LLC is a salvage operation located in Humansville, MO. It currently operates an MS-500 aluminum sweat furnace (EP01) for the purpose of recovering aluminum and other metal products from iron-aluminum scrap for resale purposes. It is a minor source for construction permits. An operating permit is not required for this facility because the installation-wide potential emissions of all pollutants are below their respective *de minimis* levels. Although the facility is subject to MACT subpart RRR, *National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production*, this subpart has a provision that exempts the facility from the requirements of an operating permit if the only reason that an operating permit is required is that the facility is subject to this subpart.

The following New Source Review permits have been issued to Scott Salvage Yard, LLC from the Air Pollution Control Program.

Table 1: Permit History

Permit Number	Description
0297-006	Installation of an MS-500 aluminum sweat furnace.

PROJECT DESCRIPTION

Scott Salvage Yard, LLC proposes to install a new MAX4000 secondary aluminum sweat furnace (EP02) that will be used to recover aluminum from automotive parts and assemblies such as transmission housings, engine parts and intake manifolds. The furnace consists of two 1 MMBtu/hr primary burners, a 1 MMBtu/hr holding chamber burner and a 1 MMBtu afterburner. It can process a maximum of 1.5 tph of scraps. No fluxing process will be used in this operation.

During the review for this project, the potential emissions from the existing furnace (EP01) were also re-evaluated using results from a stack test performed on a unit that processes similar materials (i.e. automotive parts). Results from the new emissions calculations show that the facility's installation-wide potential emissions for all pollutants are below their respective *de minimis* levels. Therefore, the PM₁₀ emissions limit and tracking requirements in Permit 0297-006 are superseded. New conditions are also imposed on the existing furnace (EP01) to ensure that its operation is similar to the operation of the furnace from the stack test.

EMISSIONS/CONTROLS EVALUATION

The particulate emissions for both furnaces were calculated using results from a stack test performed in 2008 in Detroit, MI on a unit processing similar material, mainly automotive parts and assemblies. The stack test did not make a distinction between PM_{2.5}, PM₁₀ and PM, so all of the PM were also considered PM_{2.5} and PM₁₀. SO_x, NO_x, VOC, CO, CO₂ and methane emissions from combustion were calculated using emission factors from the EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, Section 1.5, *Liquefied Petroleum Gas Combustion*, (7/08). SO_x emissions emitted from the melting process were calculated using an emission factor (SCC 3-04-001-01) in WebFIRE, the online application for the EPA Factor Informational Retrieval Software (FIRE).

It is difficult to determine the HAPs emissions from a sweat furnace because they are dependent on the type of material processed and their level of contaminants (i.e. oil, paint, etc.). However, it is known that at an operating temperature greater than 1,600 °F and residence time greater than 0.8 seconds, the destruction efficiency of HAPs is high. In MACT Subpart RRR, if the facility operates above these conditions, no performance test is required to show compliance with the furan and dioxin emission rates in this subpart. Because Scott Salvage Yard, LLC will operate the furnace above these levels, the HAPs emissions were considered negligible and assumed to be below the SMAL.

The following table provides an emissions summary for this project. Existing potential emissions were calculated using AP-42, Section 1.5 emission factors. Existing actual emissions were taken from the installation's 2011 EIQ. Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8760 hours per year).

Table 2: Emissions Summary (tpy)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (2011 EIQ)	Potential Emissions of the Application	New Installation Potential Emissions
PM	25.0	0.12	N/D	0.61	0.73
PM ₁₀	15.0	0.12	0.20	0.61	0.73
PM _{2.5}	10.0	0.12	0.03	0.61	0.73
SO _x	40.0	0.21	N/D	0.42	0.63
NO _x	40.0	1.56	0.04	2.49	4.05
VOC	40.0	0.12	N/D	0.19	0.31
CO	100.0	0.90	N/D	1.44	2.34
HAPs	10.0/25.0	Negligible	N/D	Negligible	Negligible
CH ₄	N/A	0.024	N/D	0.04	0.064
CO ₂	N/A	1,495.90	N/D	2,393.44	3889.34
GHG-Mass	0/100.0/250.0	1,495.93	N/D	2,393.48	3889.41
CO ₂ e	75,000/100,000	1,496.40	N/D	2,394.25	3890.65

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

Scott Salvage Yard, 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
- *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

- *MACT Regulations*, 10 CSR 10-6.075
 - *National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production*, 40 CFR Part 63, Subpart RRR

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.

Chia-Wei Young
Environmental Engineer

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated 7/16/2012, received 7/18/2012, designating Scott Salvage Yard, LLC as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- EUFURNACE Particulate Matter Emissions Test Report, Prepared by BT Environmental Consulting, Inc. for Pita Metals, Inc. Detroit, MI, October, 2008.

APPENDIX A

Abbreviations and Acronyms

%	percent	m/s	meters per second
°F	degrees Fahrenheit	Mgal	1,000 gallons
acfm	actual cubic feet per minute	MW	megawatt
BACT	Best Available Control Technology	MHDR	maximum hourly design rate
BMPs	Best Management Practices	MMBtu	Million British thermal units
Btu	British thermal unit	MMCF	million cubic feet
CAM	Compliance Assurance Monitoring	MSDS	Material Safety Data Sheets
CAS	Chemical Abstracts Service	NAAQS ...	National Ambient Air Quality Standards
CEMS	Continuous Emission Monitor System	NESHAPs	
CFR	Code of Federal Regulations	National Emissions Standards for Hazardous Air Pollutants
CO	carbon monoxide	NO_x	nitrogen oxides
CO₂	carbon dioxide	NSPS	New Source Performance Standards
CO_{2e}	carbon dioxide equivalent	NSR	New Source Review
COMS	Continuous Opacity Monitoring System	PM	particulate matter
CSR	Code of State Regulations	PM_{2.5}	particulate matter less than 2.5 microns in aerodynamic diameter
dscf	dry standard cubic feet	PM₁₀	particulate matter less than 10 microns in aerodynamic diameter
EQ	Emission Inventory Questionnaire	ppm	parts per million
EP	Emission Point	PSD	Prevention of Significant Deterioration
EPA	Environmental Protection Agency	PTE	potential to emit
EU	Emission Unit	RACT	Reasonable Available Control Technology
fps	feet per second	RAL	Risk Assessment Level
ft	feet	SCC	Source Classification Code
GACT	Generally Available Control Technology	scfm	standard cubic feet per minute
GHG	Greenhouse Gas	SIC	Standard Industrial Classification
gpm	gallons per minute	SIP	State Implementation Plan
gr	grains	SMAL	Screening Model Action Levels
GWP	Global Warming Potential	SO_x	sulfur oxides
HAP	Hazardous Air Pollutant	SO₂	sulfur dioxide
hr	hour	tph	tons per hour
hp	horsepower	tpy	tons per year
lb	pound	VMT	vehicle miles traveled
lbs/hr	pounds per hour	VOC	Volatile Organic Compound
MACT	Maximum Achievable Control Technology		
µg/m³	micrograms per cubic meter		

Ms. Estella Scott
Member/Co-Manager
Scott Salvage Yard, LLC
3406 South 30th Road
Humansville, MO 65674

RE: New Source Review Permit - Project Number: 2012-07-061

Dear Ms. Scott:

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 Chia-Wei Young, 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:cyl

Enclosures

c: Southwest Regional Office
PAMS File: 2012-07-061

Permit Number: