

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: 102009-004 Project Number: 2009-02-033

Parent Company: Kawasaki Heavy Industries Ltd.

Parent Company Address: 1-1 Kawasaki-Cho, Akashi, Japan

Installation Name: Kawasaki Motors Manufacturing Corporation

Installation Number: 147-0023

Installation Address: 28147 Business Highway 71, Maryville, MO 64468

Location Information: Nodaway County, S31, T64N, R35E

Application for Authority to Construct was made for:

Installation of a new die casting machine, new crankcase machining line and new cylinder head machining line. 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 - 9 2009

EFFECTIVE DATE

Steven J. Jelen for JLK

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 Departments' 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 of Natural Resources 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 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 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 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."

Kawasaki Motors Manufacturing Corporation
Nodaway County, S31, T64N, R35E

1. **Superseding Condition**
The conditions of this permit supersede special conditions 2.A, 2.B and 2.C found in the previously issued construction permit 082008-007 issued by the Air Pollution Control Program.
2. **Emission Limitation**
 - A. Kawasaki Motors Manufacturing Corporation shall emit less than 0.10 tons of hydrogen fluoride in any consecutive 12-month period from the Aluminum Die Cast Machine (EU-DCF18).
 - B. Kawasaki Motors Manufacturing Corporation shall emit less than 250.0 tons of carbon monoxide (CO) in any consecutive 12-month period from the entire installation.
 - C. Kawasaki Motors Manufacturing Corporation shall emit less than 250.0 tons of volatile organic compounds (VOC) in any consecutive 12-month period from the entire installation.
 - D. Kawasaki Motors Manufacturing Corporation shall emit less than 10.0 tons individually or 25.0 tons combined of Hazardous Air Pollutants (HAPs) in any consecutive 12-month period from the entire installation.
 - E. Attachment A, Attachment B, Attachment C, Attachment D and Attachment E or equivalent forms, such as electronic forms, approved by the Air Pollution Control Program shall be used to demonstrate compliance with Special Conditions 2.A, 2.B, 2.C and 2.D.
3. **Control Device Requirement-Electrostatic Precipitators (ESP)**
 - A. Kawasaki Motors Manufacturing Corporation shall control emissions from the aluminum die cast machine (EU-DCF18) using an ESP as specified in the permit application.
 - B. The ESP shall be operated and maintained in accordance with the

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SPECIAL CONDITIONS:

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

manufacturer's specifications.

- C. Kawasaki Motors Manufacturing Corporation shall monitor and record the operating parameters specified by the manufacture to insure proper operation of the device at least once every 24 hours.
 - D. Kawasaki Motors Manufacturing Corporation shall maintain an operating and maintenance log for the ESP 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. Record Keeping and Reporting Requirements
- A. Kawasaki Motors Manufacturing Corporation shall maintain all records required by this permit for not less than five (5) years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request. These records shall include Material Safety Data Sheets (MSDS) for all materials used.
 - B. Kawasaki Motors Manufacturing Corporation shall report to the Air Pollution Control Program's Enforcement Section, P.O. Box 176, Jefferson City, Missouri 65102, no later than ten 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: 2009-02-033
Installation ID Number: 147-0023
Permit Number:

Kawasaki Motors Manufacturing Corporation
28147 Business Highway 71
Maryville, MO 64468

Complete: February 17, 2009

Parent Company:
Kawasaki Heavy Industries Ltd.
1-1 Kawasaki-Cho
Akashi, Japan

Nodaway County, S31, T64N, R35E

REVIEW SUMMARY

- Kawasaki Motors Manufacturing Corporation has applied for authority to construct a new die casting machine, new crankcase machining line and new cylinder head machining line.
- Hazardous Air Pollutant (HAP) emissions are expected from the proposed equipment. HAPs of concern from this process are hydrogen fluoride.
- None of the New Source Performance Standards (NSPS) apply to the installation.
- None of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) apply to this installation. None of the currently promulgated Maximum Achievable Control Technology (MACT) regulations apply to the proposed equipment. Specifically the MACT Subpart RRR "National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production" does not apply to installation operate aluminum die casters.
- An ESP is controlling particulate matter less than 10 micron in diameter (PM10) emissions from the die casting machine.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, Construction Permits Required. Potential emissions of hydrogen fluoride are conditioned below the screening model action level (SMAL).
- This installation is located in Nodaway 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 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.
- A Part 70 Operating Permit application is required for this installation within 1 year of equipment startup.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Kawasaki Motors Manufacturing Corporation operates a gasoline engine manufacturing installation in Maryville, Missouri, (Nodaway County). Kawasaki Motors builds engines ranging from 4.5 horsepower (hp) up to 35.0 hp. These engines are primarily used in walk-behind lawn mowers, riding lawn mowers and all-terrain vehicles.

Kawasaki Motors Manufacturing Corporation is not considered an existing major source for construction permitting because of the 250-ton limit established in Permit # 092005-001 and 062007-004. For New Source Review purposes, it is considered a minor source. The installation submitted a Part 70 State Operating Permit application (Project Number: 2006-03-047) on March 09, 2006.

The following projects for Kawasaki Motors Manufacturing Corporation have been processed by the Air Pollution Control Program.

Table 1: Previous Permit Projects

Permit Number	Description
082008-007	2008-04-002 Furnace Replacement
092007-011	2007-05-059 Endurance testing Facility
062007-004	2006-10-085: Use of aviation fuel
	2006-09-062: Use of aviation fuel-applicability determination
092005-001A	2006-04-058: Amendment remove conditions
No Permit Required	2006-03-045: Die casting and crankcase machining
	2006-03-047: Part 70 Operating Permit Amendment
	2005-10-020: Update Part 70 Operating Permit
092005-001	2005-05-106: Install four new processes
	2004-11-068: Intermediate Operating Permit Amendment
012005-002	2004-10-003: Add two small engine assembly lines
032004-006	2003-10-049: Installation of a machining operation
No Permit Required	2003-06-036: Engine testing exhaust fans
	2003-05-092: Intermediate Operating Permit Amendment
082003-011	2003-05-091: Installation of a engine assembly line
	2003-02-097: Applicability, permit required for new lines.
	2002-06-097: Intermediate Operating Permit application
	2002-05-002: Correction or amendment change retaining compound.

Permit Number	Description
No Permit Required	2001-05-090: 680cc LPG engines.
No Permit Required	2001-03-092: Installation of natural gas engines.
062001-001	2001-02-113: Installation of a wet vacuum impregnation system to seal porosity in aluminum parts
112000-010	2000-09-054: Installation of two (2) gasoline engine assembly lines
0699-024	1999-03-119: Installation of an assembly line for building internal combustion engines and installation of an electrode position paint system
	1998-05-636: major source review, closed out
0598-012	1998-02-0221: Addition of a wet paint booth and a process heater
	147-0023-020: Intermediate Operating Permit Application
0897-034	147-0023-017: Installation of a gasoline engine assembly line
0797-005	3340-0023-017: Installation of four (4) machining lines and six (6) heating/ventilation units
0494-009	3340-0023-016: Installation of an aluminum die casting machine and a machine process
0493-011	3340-0023-015: Installation of two (2) aluminum die casts and melting furnaces
0193-001	3340-0023-011: Installation of a powder paint booth
1291-004	3340-0023-009: Addition of chromate aluminum parts
	3340-0023-008: Amendment to 0791-001
0791-001	3340-0023-007: Installation of gasoline engine assembly line and aluminum scrap furnaces
1190-004	3340-0023-006: Addition of connecting rod machine line and injection molding
0890-001	3340-0023-005: Installation of aluminum die cast engines

PROJECT DESCRIPTION

According to your application, Kawasaki Motors Manufacturing Corporation will install a new die casting machine capable of casting 480 pounds of aluminum per hour. The casting machine's melting furnace is natural gas fired with a heating capacity of 1.26 million British thermal units per hour (MMBtu/hr). The furnace uses flux at the same rate as the existing die cast machines, which is 0.11 pounds of flux per hour. The crankcase machining line and the cylinder head machining line consist of several pieces of equipment used to drill and mill the parts. The machines use coolants, lubricants and cutting oils that contain volatile organic compounds (VOC). The die casting machines are controlled by electrostatic precipitators.

EMISSIONS/CONTROLS EVALUATION

Emissions from the melting furnace were calculated using emissions factors from the EPA document AP-42, *Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources*, Fifth Addition, Section 1.4 "Natural Gas Combustion," July 1998, SCC 1-02-006-02. Particulate matter less than 10 microns in diameter is emitted from the melting of aluminum. These emissions were calculated using an emissions factor from AP-42 Section 12.8, "Secondary Aluminum Operations," October 1986, SCC 3-04-001-03. Emissions from the die casting machine were calculated using emission factors from the Factor Information Retrieval (FIRE) Data System, Version 6.25, SCC 3-04-001-14. Emissions from the flux were calculated using

a mass balance approach and assuming all the fluorine in the flux is converted both fluorides and hydrogen fluoride. Even though conversion of the fluorine in the flux to both fluorides and hydrogen fluoride is not physically possible, no information about these emissions was provided by the applicant, and the assumption is conservative. Emissions from the crankcase machining line and the cylinder head machining line were also calculated using a mass balance approach and assuming all the VOC in the coolants, lubricants and cutting oils evaporate. Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8760 hours per year.) The following table provides an emissions summary for this project.

Table 2: Emissions Summary (tons per year)

Pollutant	Regulatory De Minimis/SMAL Levels	Existing Potential Emissions	Existing Actual Emissions (2008 EIQ)	Potential Emissions of the Application	Project Conditioned Potential
PM10	15.0	11.23	8.90	1.40	N/A
SO _x	40.0	N/A	0.18	0.02	N/A
NO _x	40.0	< 40	19.50	0.49	N/A
VOC	40.0	< 250	150.47	2.07	N/A
CO	100.0	< 250	84.25	0.40	N/A
Fluorides	3.0	< 3.0	N/D	0.16	N/A
Hydrogen Fluoride	0.1	N/D	N/D	0.17	< 0.1
Total HAPs	25.0	< 25.0	1.16	0.18	N/A

N/A = Not Applicable; N/D = Not Determined
SMAL = Screening Model Action Level

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 hydrogen fluoride are conditioned below the SMAL.

APPLICABLE REQUIREMENTS

Kawasaki Motors Manufacturing Corporation 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

The emission fee is the amount established by the Missouri Air Conservation Commission annually under Missouri Air Law 643.079(1). Submission of an

Emissions Inventory Questionnaire (EIQ) is required June 1 for the previous year's emissions.

- *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 10-3.090

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/without special conditions.

Michael Mittermeyer
Environmental Engineer

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated February 9, 2009, received February 17, 2009, designating Kawasaki Heavy Industries Ltd. as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- Kansas City Regional Office Site Survey, dated March 16, 2009.

Attachment A
VOC and CO Monthly Compliance Worksheet
Kawasaki Motors Manufacturing Corporation Nodaway County, S31, T64, R35
Installation ID Number: 147-0023

This form covers (Month, Year)

Emission Point	Usage Units	Usage Amt.	VOC Emission Factor	CO Emission Factor	VOC (lb)	CO (lb)
Example Gasoline Emission Point	gallons	76.5000	0.3939 lb/gal	8.151 lb/gal	30.1334	623.5515
AET1	gallons					
AET2	gallons					
AET3	gallons					
AET4	gallons					
AET5	gallons					
AET6	gallons					
AET7	gallons					
AET8	gallons					
AET9	gallons					
AET10	gallons					
AET11	gallons					
DCF01	MMCF					
DCF01	tons					
DCF03	MMCF					
DCF05	MMCF					
DCF07	MMCF					
DCF09	MMCF					
DET4	gallons					
DET5	gallons					
PE10	MMCF					
PE10B	MMCF					
ETF1	gallons					
SH1	MMCF					
ETC	gallons					
ASTC	gallons					
Some Emission Points need to be segmented for calculation	(lb/2000) Attachment A Total Tons					

Note: The VOC content of reclaimed VOC material transferred to a contract reclamation service can be subtracted from the VOC total. A 12-Month rolling CO emission total of CO of less than or equal to 250.0 tons indicates compliance.

Mr. Steve Bratt
Director/Plant Manager
Kawasaki Motors Manufacturing Corporation
28147 Business Highway 71
Maryville, MO 64468

RE: New Source Review Permit - Project Number: 2009-02-033

Dear Mr. Bratt:

Enclosed with this letter is your permit to construct. Please study it carefully. 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, your new source review permit application and with your amended 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 Michael Mittermeyer, at the Departments' 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

Kendall B. Hale
New Source Review Unit Chief

KBH:mml

Enclosures

c: Kansas City Regional Office
PAMS File: 2009-02-033

Permit Number: