

217/782-2113

CONSTRUCTION PERMIT

PERMITTEE

Leading Edge Enterprises, LLC
Attn: John Wagner
2195 East Garfield
Decatur, Illinois 62526

Application No.: 06050060
Applicant's Designation:
Subject: Steel and Iron Casting
Date Issued: DRAFT
Location: 690 East Kenwood, Decatur

I.D. No.: 115015APQ
Date Received: May 15, 2006

Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission source(s) and/or air pollution control equipment consisting of:

Induction Furnace (Steel & Iron Production) controlled by Baghouse BH-1
Magnesium Treatment controlled by Baghouse BH-1
Pouring and Cooling Area (Manganese Steel)
Mold Production (Chemically Bonded/No Bake) controlled by Baghouse BH-5
Sand Reclaim (Steel) controlled by Baghouse BH-5
Natural Gas-Fired Heat Treating Furnace (Steel)
Greensand Mold and Sand System (bond silo, virgin sand silo, and bond silo) controlled by bin vent filters and Baghouse BH-8
Pouring and Cooling Area (Ductile Iron)
Shakeout (Iron) controlled by Baghouse BH-8
Fabricated Metal Paint Booth controlled by dry filters

as described in the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

- 1a. This permit is issued based on the Steel and Iron Casting project not constituting a new major source or major modification pursuant to Title I of the Clean Air Act, specifically the federal rules for Prevention of Significant Deterioration (PSD), 40 CFR 52.21. The source has requested that the Illinois EPA establish emission limitations and other appropriate terms and conditions in this permit that limit the potential of HAP emissions to below major source threshold levels defined in 40 CFR 63.2.
- b. The emissions of Hazardous Air Pollutants (HAP) as listed in Section 112(b) of the Clean Air Act shall be less than 10 tons/year of any single HAP and 25 tons/year of any combination of such HAPs. As a result of this condition, this permit is issued based on the emissions of all HAPs from this source not triggering the requirements of Section 112(g) of the Clean Air Act.

- c. This permit is issued based on the source not being subject to the requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Iron and Steel Foundries, 40 CFR Part 63, Subpart EEEEE. This is a consequence of the federally enforceable production and operating limitations established in this permit, which restrict potential to emit to less than 10 tons/year for any individual Hazardous Air Pollutant (HAP), and 25 tons/year of any combination of such HAPs.
- 2. This permit is issued based upon the coating operations being exempt from emission limitations of 35 Ill. Adm. Code Part 215, Subpart F: Coating Operations, because the total coating usage does not exceed 2,500 gal/yr as established by Section 215.206(a)(2).
- 3a. No person shall cause or allow the emission of smoke or other particulate matter, with an opacity greater than 30 percent, into the atmosphere from any emission unit other than those emission units subject to the requirements of 35 Ill. Adm. Code 212.122, pursuant to 35 Ill. Adm. Code 212.123(a), except as allowed by 35 Ill. Adm. Code 212.123(b) and 212.124
 - b. No person shall cause or allow the emission of fugitive particulate matter from any process, including any material handling or storage activity, that is visible by an observer looking generally overhead at a point beyond the property line of the source unless the wind speed is greater than 40.2 kilometers per hour (25 miles per hour), pursuant to 35 Ill. Adm. Code 212.301 and 212.314.
 - c. Pursuant to 35 Ill. Adm. Code 212.309(a), the emission units described in Conditions 3(c)(i) (see also 35 Ill. Adm. Code 212.304 through 212.308) shall be operated under the provisions of an operating program, consistent with the requirements set forth in 35 Ill. Adm. Code 212.310 and 212.312, and prepared by the owner or operator and submitted to the Illinois EPA for its review. Such operating program shall be designed to significantly reduce fugitive particulate matter emissions.
 - i. Materials Collected by Pollution Control Equipment: All unloading and transporting operations of materials collected by pollution control equipment shall be enclosed or shall utilize spraying, pelletizing, screw conveying or other equivalent methods, pursuant to 35 Ill. Adm. Code 212.307.
 - d. Pursuant to 35 Ill. Adm. Code 212.321(a), no person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any new process emission unit which, either alone or in combination with the emission of particulate matter from all other similar process emission units for which construction or modification commenced on or after April 14, 1972, at a source or premises, exceeds the allowable emission rates specified in 35 Ill. Adm. Code 212.321(c).

4. No person shall cause or allow the emission of sulfur dioxide into the atmosphere from any process emission unit to exceed 2000 ppm, pursuant to 35 Ill. Adm. Code 214.301.
- 5a. The dust collectors shall be in operation at all times when the associated emission units are in operation and emitting air contaminants.
- b. The Permittee shall follow good operating practices for the baghouse, including periodic inspection, routine maintenance and prompt repair of defects.
- 6a. No person shall cause or allow the discharge of more than 3.6 kg/hour (8 lbs/hour) of organic material into the atmosphere from any emission unit, except as provided in Sections 215.302, 215.303, 215.304 of this Part and the following exception: If no odor nuisance exists the limitation of this Subpart shall apply only to photochemically reactive material.
- b. In the event that the operation of this source results in an odor nuisance, the Permittee shall take appropriate and necessary actions to minimize odors, including but not limited to, changes in raw material or installation of controls, in order to eliminate the nuisance.
7. Pursuant to 35 Ill. Adm. Code 215.204(k)(1), the coating applied in the spray booths shall not exceed a VOM content of 3.5 lbs/gallon as applied (minus water and any compounds which are specifically exempted from the definition of VOM).
8. Emissions and operation from the iron and steel Foundry shall not exceed the following limits:

<u>Equipment</u>	<u>Metal Throughput</u>		<u>Pollutant</u>	<u>Emission Factor (lb/ton)</u>	<u>Emissions</u>	
	<u>(Ton/Mo)</u>	<u>(Ton/Yr)</u>			<u>(Ton/Mo)</u>	<u>(Ton/Yr)</u>
Induction Furnace	3,504	35,040	PM*	0.045	0.08	0.79
			PM ₁₀	0.043	0.08	0.75
			Pb	0.0005	0.001	0.01
Magnesium Treatment (Ductile Iron)	1,504	15,040	PM	0.09	0.07	0.68
			PM ₁₀	0.09	0.07	0.68
Mold Pouring, Cooling and Shakeout (Steel)	1,900	19,000	PM	4.20	3.99	39.90
			PM ₁₀	2.06	1.96	19.57
			VOM	5.04	4.79	47.88
			CO	5.44	5.17	51.68
			NO _x	0.01	0.01	0.10
			SO ₂	0.02	0.02	0.19
Mold Pouring, and	1,504	15,040	Phenol	0.843	0.80	8.01
			PM	4.20	3.16	31.58

<u>Equipment</u>	<u>Metal Throughput</u>		<u>Pollutant</u>	<u>Emission Factor</u> (lb/ton)	<u>Emissions</u>			
	<u>(Ton/Mo)</u>	<u>(Ton/Yr)</u>			<u>(Ton/Mo)</u>	<u>(Ton/Yr)</u>		
Cooling (Iron)			PM ₁₀	2.06	1.55	15.49		
			NO _x	0.01	0.008	0.08		
			SO ₂	0.02	0.02	0.15		
Mold Shakeout (Iron)	1,504	15,040	PM	0.160	0.12	1.20		
			PM ₁₀	0.112	0.08	0.84		
Mold Pouring, Cooling and Shakeout (Iron)	1,504	15,040	VOM	1.34	1.01	10.08		
			CO	4.50	3.38	33.84		
			Phenol	0.0642	0.05	0.48		
Sand Reclaim (Steel)	6,000	60,000	PM	0.036	0.11	1.08		
			PM ₁₀	0.027	0.08	0.81		
Sand System (Iron)	4,512	45,120	PM	0.036	0.08	0.81		
			PM ₁₀	0.027	0.06	0.61		
PUNB Mold Production (Steel)	6,000	60,000	VOM	0.48	1.44	14.40		
			Phenol	0.0127	0.04	0.38		
Sand Silo(s) (Iron)	4,512	45,120	PM	0.005	0.011	0.113		
			PM ₁₀	0.005	0.011	0.113		
Bond Silo(s) (Iron)	677	6,768	PM	0.005	0.002	0.017		
			PM ₁₀	0.005	0.002	0.017		
Sand Silo (Steel)	6,000	60,000	PM	0.005	0.015	0.15		
			PM ₁₀	0.005	0.015	0.15		
Paint Booth	Paint Usage In lbs 1,000	10,000	PM	0.08	0.04	0.40		
			PM ₁₀	0.08	0.04	0.40		
			VOM	0.44	0.22	2.20		
Heat Treat (Steel)	Natural Gas Usage In mmscf		<u>Pollutant</u>	<u>Emission Factor</u> (Lb/mmscf)	<u>Emissions</u>			
	<u>Month</u>	<u>Year</u>			<u>(Ton/Mo)</u>	<u>(Ton/Yr)</u>		
	5.3	53			PM	1.90	0.005	0.05
					PM ₁₀	7.60	0.020	0.20
					VOM	5.50	0.01	0.14
					CO	84.00	0.22	2.21
NO _x			100.00	0.26	2.63			

SO₂ 0.60 0.002 0.02

Annual Emissions (Tons/Year)						
<u>PM</u>	<u>PM₁₀</u>	<u>VOM</u>	<u>CO</u>	<u>NO_x</u>	<u>SO₂</u>	<u>Phenol</u>
76.77	39.63	74.70	87.73	2.81	0.36	8.87

These limits are based on representations of the limited production rates, the use of standard emission factors (FIRE, Version 6.25), Casting Emission Reduction Program (CERP) and manufacturer's control efficiencies for the dust collectors. Compliance with annual limits shall be determined from a running total of 12 months of data.

9. This permit is issued based on negligible emissions of volatile organic material particulate matter from each paint spray booth with dry filter. For this purpose, emissions from each emission unit shall not exceed nominal emission rates of 0.1 lb/hour and 0.44 tons/year.
- 10a. Pursuant to 35 Ill. Adm. Code 212.107, 212.109, and 212.110, testing for particulate matter emissions shall be performed as follows:
 - i. For both fugitive and nonfugitive particulate matter emissions, a determination as to the presence or absence of visible emissions from emission units shall be conducted in accordance with Method 22, 40 CFR part 60, Appendix A, incorporated by reference in 35 Ill. Adm. Code 212.113, except that the length of the observing period shall be at the discretion of the observer, but not less than one minute. This Condition shall not apply to 35 Ill. Adm. Code 212.301, pursuant to 35 Ill. Adm. Code 212.107.
 - ii. Except as otherwise provided in 35 Ill. Adm. Code Part 212, and except for the methods of data reduction when applied to 35 Ill. Adm. Code 212.122 and 212.123, measurements of opacity shall be conducted in accordance with Method 9, 40 CFR Part 60, Appendix A, and the procedures in 40 CFR 60.675(c) and (d), if applicable, incorporated by reference in 35 Ill. Adm. Code 212.113, except that for roadways and parking areas the number of readings required for each vehicle pass will be three taken at 5-second intervals. The first reading shall be at the point of maximum opacity and second and third readings shall be made at the same point, the observer standing at right angles to the plume at least 15 feet away from the plume and observing 4 feet above the surface of the roadway or parking area. After four vehicles have passed, the 12 readings will be averaged, pursuant to 35 Ill. Adm. Code 212.109.
 - iii. Measurement of particulate matter emissions from stationary emission units subject to 35 Ill. Adm. Code Part 212 shall be conducted in accordance with 40 CFR part 60, Appendix A, Methods 5, 5A, 5D, or 5E, pursuant to 35 Ill. Adm. Code 212.110(a).

- iv. The volumetric flow rate and gas velocity shall be determined in accordance with 40 CFR part 60, Appendix A, Methods 1, 1A, 2, 2A, 2C, 2D, 3, and 4, pursuant to 35 Ill. Adm. Code 212.110(b).
 - v. Upon a written notification by the Illinois EPA, the owner or operator of a particulate matter emission unit subject to 35 Ill. Adm. Code Part 212 shall conduct the applicable testing for particulate matter emissions, opacity, or visible emissions at such person's own expense, to demonstrate compliance. Such test results shall be submitted to the Illinois EPA within thirty (30) days after conducting the test unless an alternative time for submittal is agreed to by the Illinois EPA, pursuant to 35 Ill. Adm. Code 212.110(c).
- b. Testing required by Condition 10(a) shall be performed by a qualified independent testing service.
11. Inspections of the steel and iron foundry and dust collection systems equipment and operations shall be performed as necessary but at least once per week when the emission units associated with the dust collectors are in operation to confirm compliance with the requirements of this permit.
- 12a. Pursuant to 40 CFR 63.10(b)(3), if an owner or operator determines that his or her stationary source that emits (or has the potential to emit, without considering controls) one or more hazardous air pollutants regulated by any standard established pursuant to section 112(d) or (f) of the Clean Air Act, and that stationary source is in the source category regulated by the relevant standard, but that source is not subject to the relevant standard (or other requirement established under 40 CFR Part 63) because of limitations on the source's potential to emit or an exclusion, the owner or operator must keep a record of the applicability determination on site at the source for a period of 5 years after the determination, or until the source changes its operations to become an affected source, whichever comes first. The record of the applicability determination must be signed by the person making the determination and include an analysis (or other information) that demonstrates why the owner or operator believes the source is unaffected (e.g., because the source is an area source). The analysis (or other information) must be sufficiently detailed to allow the USEPA and/or Illinois EPA to make a finding about the source's applicability status with regard to the relevant standard or other requirement. If relevant, the analysis must be performed in accordance with requirements established in relevant subparts of 40 CFR Part 63 for this purpose for particular categories of stationary sources. If relevant, the analysis should be performed in accordance with USEPA guidance materials published to assist sources in making applicability determinations under Section 112 of the Clean Air Act, if any. The requirements to determine applicability of a standard under 40 CFR 63.1(b)(3) and to record the results of that determination under 40 CFR 63.10(b)(3) shall not by themselves create an obligation for the owner or operator to obtain a Title V permit.

- b. Pursuant to 35 Ill. Adm. Code 212.110(e), the owner or operator of an emission unit subject to 35 IAC Part 212 shall retain records of all tests which are performed. These records shall be retained for at least three (3) years after the date a test is performed.
- c. The Permittee shall maintain records of the following items, and such other items as may be appropriate to allow the Illinois EPA to review compliance with the limits in this permit.
 - i. Records addressing the application of control measures taken pursuant to the operating program required by Condition 3(c) which are used to reduce fugitive particulate matter emissions.
 - ii. Records addressing use of good operating practices for the dust collectors:
 - A. Operating logs for the dust collectors, including operating data (pressure drop or stack condition), daily upon startup;
 - B. Records for periodic inspection of the dust collectors with date, individual performing the inspection, and nature of inspection; and
 - C. Records for prompt repair of defects, with identification and description of defect, effect on emissions, date identified, date repaired, and nature of repair.
 - iii. Steel and Iron casting production (tons/month and tons/year);
 - iv. Sand additions (tons/month and tons/year);
 - v. The amount of coating and cleaning solvent usage (gallons/month and gallons/year).
 - vi. The VOM and HAP contents of each coating and cleaning solvent (% by weight);
 - vii. The density of the coatings and cleaning solvents (lbs/gallon); and
 - viii. Monthly and annual single HAPs and combined HAPs emissions from no-bake, green-sand, mold make, paint booth, induction and heat treatment (tons/month, and tons/year with supporting calculations); and
 - ix. Monthly and annual NO_x, PM, PM₁₀, SO₂, lead, single HAPs and combined HAPs emissions from the steel and Iron foundry shall be maintained, based on steel and iron casting and the applicable emission factors, with supporting calculations (tons/month and tons/year).
- d. All records and logs required by this permit shall be retained at a readily accessible location at the source for at least five (5) years

from the date of entry and shall be made available for inspection and copying by the Illinois EPA or USEPA upon request. Any records retained in an electronic format (e.g., computer) shall be capable of being retrieved and printed on paper during normal source office hours so as to be able to respond to an Illinois EPA or USEPA request for records during the course of a source inspection.

- 13a. Pursuant to 35 Ill. Adm. Code 212.11(d), a person planning to conduct testing for particulate matter emissions to demonstrate compliance shall give written notice to the Illinois EPA of that intent. Such notification shall be given at least thirty (30) days prior to the initiation of the test unless a shorter period is agreed to by the Illinois EPA. Such notification shall state the specific test methods from 35 Ill. Adm. Code 212.110 that will be used.
- b. If there is an exceedance of or deviation from the requirements of this permit as determined by the records required by this permit, the Permittee shall submit a report to the Illinois EPA's Compliance Section in Springfield, Illinois within 30 days after the exceedance/deviation. The report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the exceedance or deviation and efforts to reduce emissions and future occurrences.
14. The Permittee shall notify the Illinois EPA Any record showing violation of 35 Ill. Adm. Code 215.204 shall be reported by sending a copy of such record to the Illinois EPA within 30 days following the occurrence of the violation.
15. Two (2) copies of required reports and notifications shall be sent to:

Illinois Environmental Protection Agency
Division of Air Pollution Control
Compliance Section (#40)
P.O. Box 19276
Springfield, Illinois 62794-9276

and one (1) copy shall be sent to the Illinois EPA's regional office at the following address unless otherwise indicated:

Illinois Environmental Protection Agency
Division of Air Pollution Control - Region 3
2009 Mall Street
Collinsville, Illinois 62234

It should be noted that the sand blasting, manual shakeout, water quench, tool making, plastic injection molding, finishing and salvage grinding workstations controlled by baghouses are exempt from permitted pursuant to 35 Ill. Adm. Code 201.146(aa) and (jj).

It should also be noted that pursuant to 35 Ill. Adm. Code Part 201 Subpart F, the classification of emission units and activities to be considered as insignificant activities is only applicable to sources subject to and

applying for a Clean Air Act Permit Program (CAAPP) permit. These emission units and activities may still require construction permitting pursuant to 35 Ill. Adm. Code 201.142. If you have any questions on this, please call Dwayne Booker at 217/782-2113.

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution Control

DES:DLB:psj

cc: Region 3