

217/782-2113

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT
RENEWAL

PERMITTEE

St. Louis Auto Shredding
Attn: Roger Bowler
Post Office Box 130
National City, Illinois 62071

Application No.: 76010080 I.D. No.: 163100AAM
Applicant's Designation: AUTO SHREDDING Date Received: August 5, 2005
Subject: Metal Shredding and Recovery
Date Issued: Expiration Date:
Location: 1200 North First Street, East St. Louis, 62201, St. Clair County

This permit is hereby granted to the above-designated Permittee to OPERATE emission unit(s) and/or air pollution control equipment consisting of four (4) diesel-powered generators (2,000 hp, each); propane-fired armature furnace with cyclone and thermal afterburner (1.85 mmBtu/hour burn-off oven); natural gas-fired Coreco metal separator with cyclones, after filter, and thermal afterburner (combination sweating furnace and burn-off oven, 6.0 mmBtu/hour); auto shredding controlled by two (2) cyclones (consisting of a hammermill, rotary magnet, and two (2) sets of cascades and conveyors); trommel drum with water suppression system; and six (6) screens; natural gas-fired thermal afterburner controlling armature furnace and metal separator (6.0 mmBtu/hour) and four (4) cyclones pursuant to the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

- 1a. This federally enforceable state operating permit is issued to limit the emissions of air pollutants from the source to less than major source thresholds (i.e., 100 tons/year for nitrogen oxide (NO_x), 10 tons/year for a single hazardous air pollutant (HAP) and 25 tons/year for any combination of such HAPs). As a result, the source is excluded from the requirements to obtain a Clean Air Act Permit Program (CAAPP) permit. The maximum emissions of this source, as limited by the conditions of this permit are described in Attachment A.
- b. Prior to issuance, a draft of this permit has undergone a public notice and comment period.
- c. This permit supersedes all operating permits issued for this location.
- 2a. Pursuant to 35 Ill. Adm. Code 212.123(a), 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 35 Ill. Adm. Code 212.122.

- b. Pursuant to 35 Ill. Adm. Code 212.123(b), the emission of smoke or other particulate matter from any such emission unit may have an opacity greater than 30 percent but not greater than 60 percent for a period or periods aggregating 8 minutes in any 60 minute period provided that such opaque emissions permitted during any 60 minute period shall occur from only one such emission unit located within a 305 meters (1000 feet) radius from the center point of any other such emission unit owned or operated by such person, and provided further that such opaque emissions permitted from each such emission unit shall be limited to 3 times in any 24 hour period.
- c. Pursuant to 35 Ill. Adm. Code 212.301, 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 toward the zenith at a point beyond the property line of the source.
- 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).
- 3a. Pursuant to 35 Ill. Adm. Code 214.122(b)(2), no person shall cause or allow the emission of sulfur dioxide into the atmosphere in any one hour period from any new fuel combustion source with actual heat input smaller than, or equal to, 73.2 MW (250 mmBtu/hr), burning liquid fuel exclusively to exceed 0.46 kg of sulfur dioxide per MW-hour of actual heat input when distillate fuel oil is burned (0.3 lbs/mmBtu).
- b. Pursuant to 35 Ill. Adm. Code 214.301, no person shall cause or allow the emission of sulfur dioxide into the atmosphere from any process emission source to excess 2000 ppm.
- c. Pursuant to 35 Ill. Adm. Code 214.303(a), with the exception of fuel combustion emission sources and acid manufacturing, no person using sulfuric acid shall cause or allow the emission of sulfuric acid and/or sulfur trioxide from all other similar emission sources at a plant or premises to exceed 45.4 grams in any one hour period for sulfuric acid usage less than 1180 Mg/year (100 percent acid basis) (0.10 lbs/hour up to 1300 tons/year).
- d. Pursuant to 35 Ill. Adm. Code 214.304, the emissions from the burning of fuel at process emission sources located in the Chicago or St. Louis (Illinois) major metropolitan areas shall comply with applicable Subparts B through F (i.e., 35 Ill. Adm. Code 214.122(b)).
- 4a. Pursuant to 35 Ill. Adm. Code 219.301, no person shall cause or allow the discharge of more than 3.6 kg/hr (8 lbs/hr) of organic material into the atmosphere from any emission source, except as provided in 35

Ill. Adm. Code 219.302, 219.303, 219.304 and the following exception:
If no odor nuisance exists the limitation of 35 Ill. Adm. Code 219
Subpart G shall apply only to photochemically reactive material.

- b. Pursuant to 35 Ill. Adm. Code 219.302(a), emissions of organic material in excess of those permitted by 35 Ill. Adm. Code 219.301 are allowable if such emissions are controlled by flame, thermal or catalytic incineration so as either to reduce such emissions to 10 ppm equivalent methane (molecular weight 16) or less, or to convert 85 percent of the hydrocarbons to carbon dioxide and water.
- 5a. In the event that 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.
- b. The Permittee shall, in accordance with the manufacturer(s) and/or vendor(s) recommendations, perform periodic maintenance on the cyclones, thermal afterburners, and water suppression system such that the cyclones, thermal afterburners, and water suppression system are kept in proper working condition and not cause a violation of the Illinois Environmental Protection Act or regulations promulgated therein.
- c. The thermal afterburners' combustion chamber shall be preheated to at least the manufacturer's recommended temperature but no less than the temperature at which compliance was demonstrated in the most recent compliance test, or 1400°F in the absence of a compliance test. This temperature shall be maintained during operation.
- d. The armature furnace shall only be operated with propane as the fuel. The use of any other fuel in the armature furnace requires that the Permittee first obtain a construction permit from the Illinois EPA and then perform stack testing to verify compliance with all applicable requirements.
- e. The thermal afterburners and the Coreco metal separator shall only be operated with natural gas as the fuel. The use of any other fuel in the thermal afterburners or the Coreco metal requires that the Permittee first obtain a construction permit from the Illinois EPA and then perform stack testing to verify compliance with all applicable requirements.
- f. The generators shall only be operated with distillate fuel oil as the fuel. The use of any other fuel in the generators requires that the Permittee first obtain a construction permit from the Illinois EPA and then perform stack testing to verify compliance with all applicable requirements.
- g. The Permittee shall not keep, store or use distillate fuel oil (Grades No. 1 and 2) at this source with a sulfur content greater than the larger of the following two values:

- i. 0.28 weight percent, or
- ii. The wt. percent given by the formula: Maximum wt. percent sulfur = (0.00015) x (Gross heating value of oil, Btu/lb).
- h. Organic liquid by-products or waste materials shall not be used in any emission unit at this source without written approval from the Illinois EPA.
- i. The Illinois EPA shall be allowed to sample all fuels stored at the above location.
- j. The Permittee shall not operate the armature furnace and metal separator simultaneously.
- k. Material insulated with polyvinyl chloride or asbestos, or scrap containing the fuming metals tin, zinc, or lead shall not be charged to the armature furnace nor the Coreco metal separator.
- 6a. Emissions and operation of four diesel-fired generators shall not exceed the following limits:

<u>Item of Equipment</u>	<u>Fuel Oil Usage</u>		<u>Pollutant</u>	<u>Emission Factor</u>	<u>Emissions</u>	
	<u>(Gal/Mo)</u>	<u>(Gal/Yr)</u>		<u>(Lbs/mmBtu)</u>	<u>(Lbs/Mo)</u>	<u>(T/Yr)</u>
Four Diesel Generators (Total)	36,479	364,789	CO	0.85	4,249	21.24
			NO _x	3.20	15,996	80.00
			PM	0.10	500	2.50
			SO ₂	0.30	1,500	7.50
			VOM	0.09	450	2.25

These limits are based on a density of 7.1 lbs/gallon for No. 2 distillate fuel oil, 19,300 Btu/lb of fuel oil, a maximum sulfur content of 0.3% and standard emission factors (Table 3.4-1, AP-42, Fifth Edition, Volume I, Supplement B, October 1996).

- b. Emissions and operation of armature furnace fuel combustion shall not exceed the following limits:

<u>Item of Equipment</u>	<u>Propane</u>		<u>Pollutant</u>	<u>Emission Factor</u>	<u>Emissions</u>	
	<u>(Gal/Mo)</u>	<u>(Gal/Yr)</u>		<u>(Lbs/1000 Gal)</u>	<u>(Lbs/Mo)</u>	<u>(T/Yr)</u>
Armature Furnace	2,125	21,250	CO	7.5	15.94	0.08
			NO _x	13.0	27.63	0.14
			PM	0.7	1.49	0.01
			SO ₂	1.5	3.19	0.02
			VOM	1.0	2.13	0.01

These limits are based on a heat content of 90,500 Btu/gallons for propane 1,040 hours of operation, a maximum sulfur content of 15 gr/100 scf for commercial propane, and standard emission factors (Table 1.5-1, AP 42, Fifth Edition, Volume I, Updated, July 2008).

- c. Emissions and operation of afterburner and Coreco metal separator fuel combustion shall not exceed the following limits:

- i. Natural Gas Usage: 3 mmscf/month, 24 mmscf/year.

- ii. Emissions from the combustion of natural gas:

<u>Pollutant</u>	<u>Emission Factor</u> (lbs/mmscf)	<u>Emissions</u>	
		(Tons/Mo)	(Tons/Yr)
Carbon Monoxide (CO)	84.0	0.13	1.01
Nitrogen Oxides (NO _x)	100.0	0.15	1.20
Particulate Matter (PM)	7.6	0.01	0.09
Sulfur Dioxide (SO ₂)	0.6	0.01	0.01
Volatile Organic Material (VOM)	5.5	0.01	0.07

These limits are based on the maximum fuel usage and standard emission factors (Tables 1.4-1 and 1.4-2, AP-42, Fifth Edition, Volume I, Supplement D, July 1998).

- d. Emissions and operation of particulate emission sources shall not exceed the following limits:

<u>Item of Equipment</u>	<u>Throughput</u> (Lbs/Hr)	<u>Hours of</u> <u>Operation</u>	<u>PM Emissions</u>	
			(Lbs/Hr)	(Tons/Yr)
Armature Furnace*	825	1,040	1.58	0.82
Metal Separator*	5,000	832	4.14	1.72
Auto Shredder**	174,000	8,760	9.00	39.42
Trommel Drum*	20,000	600	8.70	2.61

* Emissions based on allowable per 35 Ill. Adm. Code 212.321

** Emissions based on performance stack test.

These limits are based on maximum process weight rates, and the maximum hours of operation.

- e. This permit is issued based on negligible emissions of volatile organic material (VOM) from armature furnace and Coreco metal separator processes both ducted through the thermal afterburner. For this purpose emissions from each emission source shall not exceed nominal emission rates of 0.1 lb/hour and 0.44 ton/year.
- f. The emissions of Hazardous Air Pollutants (HAPs) as listed in Section 112(b) of the Clean Air Act from this source shall not exceed 0.9 tons/month and 9.0 tons/year of any single HAP and 1.99 tons/month and

19.9 tons/year of any combination of such HAPs. As a result of this condition, this permit is issued based on the emissions of any HAP from this source not triggering the requirement to obtain a CAAPP permit from the Illinois EPA.

- g. Compliance with the annual limits of this permit shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).
- 7a. Pursuant to 35 Ill. Adm. Code 201.282, every emission source or air pollution control equipment shall be subject to the following testing requirements for the purpose of determining the nature and quantities of specified air contaminant emissions and for the purpose of determining ground level and ambient air concentrations of such air contaminants:
 - i. Testing by Owner or Operator. The Illinois EPA may require the owner or operator of the emission source or air pollution control equipment to conduct such tests in accordance with procedures adopted by the Illinois EPA, at such reasonable times as may be specified by the Illinois EPA and at the expense of the owner or operator of the emission source or air pollution control equipment. The Illinois EPA may adopt procedures detailing methods of testing and formats for reporting results of testing. Such procedures and revisions thereto, shall not become effective until filed with the Secretary of State, as required by the APA Act. All such tests shall be made by or under the direction of a person qualified by training and/or experience in the field of air pollution testing. The Illinois EPA shall have the right to observe all aspects of such tests.
 - ii. Testing by the Illinois EPA. The Illinois EPA shall have the right to conduct such tests at any time at its own expense. Upon request of the Illinois EPA, the owner or operator of the emission source or air pollution control equipment shall provide, without charge to the Illinois EPA, necessary holes in stacks or ducts and other safe and proper testing facilities, including scaffolding, but excluding instruments and sensing devices, as may be necessary.
- b. Testing required by Conditions 8 shall be performed upon a written request from the Illinois EPA by a qualified independent testing service.
- 8. Pursuant to 35 Ill. Adm. Code 212.110(c), 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.

- 9a. Pursuant to 35 Ill. Adm. Code 219.105(d)(2)(A)(i), an owner or operator that uses an afterburner or carbon adsorber to comply with any Section of 35 Ill. Adm. Code Part 219 shall use Illinois EPA and USEPA approved continuous monitoring equipment which is installed, calibrated, maintained, and operated according to vendor specifications at all times the control device is in use except as provided in 35 Ill. Adm. Code 219.105(d)(3). The continuous monitoring equipment must monitor for each afterburner which does not have a catalyst bed, the combustion chamber temperature of each afterburner.
- b. Pursuant to 35 Ill. Adm. Code 219.105(d)(2)(B), an owner or operator must install, calibrate, operate and maintain, in accordance with manufacturer's specifications, a continuous recorder on the temperature monitoring device, such as a strip chart, recorder or computer, having an accuracy of ± 1 percent of the temperature measured, expressed in degrees Celsius or $\pm 0.5^{\circ}\text{C}$, whichever is greater.
10. 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.
11. Pursuant to 35 Ill. Adm. Code 212.110(e), the owner or operator of an emission unit subject to 35 Ill. Adm. Code 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.

12. The Permittee shall maintain records of the following items so as to demonstrate compliance with the Conditions of this permit:
 - i. Records addressing use of good operating practices for the cyclones, thermal afterburners, and water suppression system:
 - A. Records for periodic inspection of the cyclones, thermal afterburners, and water suppression system with date, individual performing the inspection, and nature of inspection; and
 - B. Records for prompt repair of defects, with identification and description of defect, effect on emissions, date identified, date repaired, and nature of repair.
 - ii. Natural gas usage (mmscf/month and mmscf/year);
 - iii. Propane usage (gallons/month and gallons/year);
 - iv. Distillate fuel oil usage (gallons/month and gallons/year);
 - v. Amount of material processed (tons/month and tons/year) and the hours of operation for the following:
 - A. Armature furnace.
 - B. Metal Separator.
 - C. Each diesel generator.
 - D. Auto shredder.
 - E. Trommel drum.
 - vi. Sulfur content of the distillate fuel oil used in the generators (% by weight); and
 - vii. Monthly and annual emissions of CO, NO_x, PM, SO₂, VOM and HAPs (individual and combined) from the source with supporting calculations (tons/month and tons/year).
- b. 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 storage device) 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.

13. Pursuant to 35 Ill. Adm. Code 212.110(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.
- 14a. If there is an exceedance of or a 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 or 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.
- b. 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
2009 Mall Street
Collinsville, Illinois 62234

If you have any questions on this, please call David Hulskotter at 217/782-2113.

Edwin C. Bakowski, P.E.
Manager, Permit Section
Division of Air Pollution Control

Date Signed: _____

ECB:DWH:psj

cc: Illinois EPA, FOS Region 3
Lotus Notes

Attachment A - Emission Summary

This attachment provides a summary of the maximum emissions from the auto shredding operating in compliance with the requirements of this federally enforceable permit. In preparing this summary, the Illinois EPA used the annual operating scenario which results in maximum emissions from such a plant. The resulting maximum emissions are below the levels (e.g., 100 tons per year of VOM, 10 tons per year for a single HAP, and 25 tons per year for any combination of such HAP) at which this source would be considered a major source for purposes of the Clean Air Act Permit Program. Actual emissions from this source will be less than predicted in this summary to the extent that less material is handled, and control measures are more effective than required in this permit.

<u>Emission Unit</u>	E M I S S I O N S (Tons/Year)						<u>Total HAPs</u>
	<u>CO</u>	<u>NO_x</u>	<u>PM</u>	<u>SO₂</u>	<u>VOM</u>	<u>Single HAP</u>	
4 Diesel Generators	21.24	80.00	2.50	7.50	2.25		
Armature Furnace	0.08	0.14	0.83	0.02	0.45		
Afterburner & Coreco Metal Separator	1.01	1.20	1.81	0.01	0.52		
Auto Shredder			39.42				
Trommel Drum			2.61				
Totals	<u>22.33</u>	<u>81.34</u>	<u>47.17</u>	<u>7.53</u>	<u>3.22</u>	<u>9.0</u>	<u>19.9</u>

DWH:psj