



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
Toll Free (800) 451-6027
www.idem.IN.gov

TO: Interested Parties / Applicant

DATE: October 1, 2008

RE: Recovery Technologies, LLC / 003-26679-00363

FROM: Matthew Stuckey, Branch Chief
Permits Branch
Office of Air Quality

Notice of Decision: Approval - Registration

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to IC 4-21.5-3-4(d) this order is effective when it is served. When served by U.S. mail, the order is effective three (3) calendar days from the mailing of this notice pursuant to IC 4-21.5-3-2(e).

If you wish to challenge this decision, IC 4-21.5-3-7 requires that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Suite N 501E, Indianapolis, IN 46204, **within eighteen (18) calendar days of the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

- (1) the date the document is delivered to the Office of Environmental Adjudication (OEA);
- (2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or
- (3) The date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

The petition must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision or otherwise entitled to review by law. Please identify the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, date of this notice and all of the following:

- (1) the name and address of the person making the request;
- (2) the interest of the person making the request;
- (3) identification of any persons represented by the person making the request;
- (4) the reasons, with particularity, for the request;
- (5) the issues, with particularity, proposed for considerations at any hearing; and
- (6) identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type issued by the Commissioner.

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178. Callers from within Indiana may call toll-free at 1-800-451-6027, ext. 3-0178.

Enclosures
FN-REGIS.dot 1/2/08



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REGISTRATION OFFICE OF AIR QUALITY

**Recovery Technologies, LLC
2001 Pontiac Street
Fort Wayne, Indiana 46803**

Pursuant to 326 IAC 2-5.1 (Construction of New Sources: Registrations) and 326 IAC 2-5.5 (Registrations), (herein known as the Registrant) is hereby authorized to construct and operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this registration.

Registration No. 003-26679-00363	
Issued by: Original signed by Alfred C. Dumauval, Ph. D., Section Chief Permits Branch Office of Air Quality	Issuance Date: October 1, 2008

SECTION A

SOURCE SUMMARY

This registration is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in conditions A.1 and A.2 is descriptive information and does not constitute enforceable conditions. However, the Registrant should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Registrant to obtain additional permits pursuant to 326 IAC 2.

A.1 General Information

The Registrant owns and operates a stationary scrap metal recycling facility.

Source Address:	2001 Pontiac Street, Fort Wayne, Indiana 46803
Mailing Address:	7575 W. Jefferson Blvd., Fort Wayne, Indiana 46804
General Source Phone Number:	(260) 423-8595
SIC Code:	5093
County Location:	Allen County
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Registration

A.2 Emission Units and Pollution Control Equipment Summary

This stationary source consists of the following emission units and pollution control devices:

- (a) one (1) scrap metal grinding and separation line, identified as GRD, approved for construction in 2008, with a maximum capacity of 60 tons per hour, using water spray for particulate matter control when necessary, and exhausting to the atmosphere. The scrap metal grinding and separation line will process metal scrap (consisting of approximately 90 to 95% metal by weight, with the metal fraction consisting of mostly 8 to 10 inches diameter metal pieces) from other scrap metal shredding operations. The scrap metal grinding and separation line includes the following equipment:
 - (1) one (1) Scrap Metal Feed Hopper, with a maximum capacity of 60 tons per hour;
 - (2) one (1) Scrap Metal Grinder, with a maximum capacity of 60 tons per hour of dry material;
 - (3) six (6) conveyor transfer points, with a maximum capacity of 60 tons per hour of dry material; and
 - (4) one (1) oscillator, with a maximum capacity of 60 tons per hour of dry material.
- (b) one (1) scrap metal separation line, identified as Heavy Media System (HMS), constructed in 1999, with a maximum capacity of 30 tons per hour, and exhausting to the atmosphere. The line includes the following equipment:
 - (1) one (1) scrap metal feed hopper, with a maximum capacity of 30 tons per hour;
 - (2) three (3) oscillators, each with a maximum capacity of 30 tons per hour of dry metal scrap;
 - (3) four (4) conveyor transfer points, each with a maximum capacity of 30 tons per hour of dry metal scrap;
 - (4) two (2) conveyor transfer points, each with a maximum capacity of 5 tons per hour of dry metal scrap;

- (5) one (1) aqueous washer;
 - (6) six (6) conveyor transfer points, each with a maximum capacity of 25 tons per hour of wet metal scrap;
 - (7) one (1) heavy media aluminum separation system; and
 - (8) one (1) natural gas-fired dryer, with a maximum heat input rate of 0.01 MMBtu/hr;
- (c) one (1) scrap metal separation line, identified as Eddy Current System (ECS), constructed in 2002, with a maximum capacity of 45 tons per hour, and exhausting to the atmosphere. The line includes the following equipment:
- (1) two (2) conveyor transfer points, each with a maximum capacity of 45 tons per hour of dry metal scrap;
 - (2) one (1) scrap metal feed hopper, with a maximum capacity of 45 tons per hour;
 - (3) one (1) water spray system for control of particulate matter emissions;
 - (4) two (2) oscillators, each with a maximum capacity of 23 tons per hour of wet metal scrap;
 - (5) two (2) oscillators, each with a maximum capacity of 22 tons per hour of wet metal scrap;
 - (6) fourteen (14) conveyor transfer points, each with a maximum capacity of 22 tons per hour of wet metal scrap; and
 - (7) seven (7) conveyor transfer points, each with a maximum capacity of 23 tons per hour of wet metal scrap;
- (e) scrap metal storage piles, loading and unloading of scrap metal storage piles, and loading of trucks with processed scrap metal;
- (f) paved roads and parking lots with public access;
- (g) a gasoline fuel dispensing operation, constructed in 1995, having a storage capacity of less than 575 gallons;
- (h) a petroleum fuel, other than gasoline, dispensing facility, having a storage capacity of less than or equal to 10,500 gallons, and dispensing less than 3,500 gallons per day.

SECTION B

GENERAL CONDITIONS

B.1 Definitions [326 IAC 2-1.1-1]

Terms in this registration shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, the applicable definitions found in the statutes or regulations (IC 13-11, 326 IAC 1-2 and 326 IAC 2-1.1-1) shall prevail.

B.2 Effective Date of Registration [IC 13-15-5-3]

Pursuant to IC 13-15-5-3, this registration is effective immediately, unless a petition for stay of effectiveness is filed and granted according to IC 13-15-6-3, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

B.3 Registration Revocation [326 IAC 2-1.1-9]

Pursuant to 326 IAC 2-1.1-9 (Revocation), this registration to operate may be revoked for any of the following causes:

- (a) Violation of any conditions of this registration.
- (b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this registration.
- (c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this registration shall not require revocation of this registration.
- (d) For any cause which establishes in the judgment of IDEM, the fact that continuance of this registration is not consistent with purposes of this article.

B.4 Prior Permits Superseded [326 IAC 2-1.1-9.5]

- (a) All terms and conditions of permits established prior to Registration No. 003-26679-00363 and issued pursuant to permitting programs approved into the state implementation plan have been either:
 - (1) incorporated as originally stated,
 - (2) revised, or
 - (3) deleted.
- (b) All previous registrations and permits are superseded by this registration.

B.5 Annual Notification [326 IAC 2-5.1-2(f)(3)] [326 IAC 2-5.5-4(a)(3)]

Pursuant to 326 IAC 2-5.1-2(f)(3) and 326 IAC 2-5.5-4(a)(3):

- (a) An annual notification shall be submitted by an authorized individual to the Office of Air Quality stating whether or not the source is in operation and in compliance with the terms and conditions contained in this registration.
- (b) The annual notice shall be submitted in the format attached (or its equivalent) no later than March 1 of each year to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, IN 46204-2251

- (c) The notification shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

B.6 Source Modification Requirement [326 IAC 2-5.5-6(a)]

Pursuant to 326 IAC 2-5.5-6(a), an application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Quality (OAQ) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source as described in 326 IAC 2-5.5-6.

B.7 Registrations [326 IAC 2-5.1-2(i)]

Pursuant to 326 IAC 2-5.1-2(i), this registration does not limit the source's potential to emit.

SECTION C

SOURCE OPERATION CONDITIONS

Entire Source

Emission Limitations and Standards [326 IAC 2-5.1-2(g)] [326 IAC 2-5.5-4(b)]

C.1 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this registration:

- (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

C.2 Fugitive Dust Emissions [326 IAC 6-4]

The Registrant shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions).

SECTION D.1

OPERATION CONDITIONS

Facility Description [326 IAC 2-5.1-2(f)(2)] [326 IAC 2-5.5-4(a)(2)]:

- (a) one (1) scrap metal grinding and separation line, identified as GRD, approved for construction in 2008, with a maximum capacity of 60 tons per hour, using water spray for particulate matter control when necessary, and exhausting to the atmosphere. The scrap metal grinding and separation line will process metal scrap (consisting of approximately 90 to 95% metal by weight, with the metal fraction consisting of mostly 8 to 10 inches diameter metal pieces) from other scrap metal shredding operations. The scrap metal grinding and separation line includes the following equipment:
- (1) one (1) Scrap Metal Feed Hopper, with a maximum capacity of 60 tons per hour;
 - (2) one (1) Scrap Metal Grinder, with a maximum capacity of 60 tons per hour of dry material;
 - (3) six (6) conveyor transfer points, with a maximum capacity of 60 tons per hour of dry material; and
 - (4) one (1) oscillator, with a maximum capacity of 60 tons per hour of dry material.
- (b) one (1) scrap metal separation line, identified as Heavy Media System (HMS), constructed in 1999, with a maximum capacity of 30 tons per hour, and exhausting to the atmosphere. The line includes the following equipment:
- (1) one (1) scrap metal feed hopper, with a maximum capacity of 30 tons per hour;
 - (2) three (3) oscillators, each with a maximum capacity of 30 tons per hour of dry metal scrap;
 - (3) four (4) conveyor transfer points, each with a maximum capacity of 30 tons per hour of dry metal scrap;
 - (4) two (2) conveyor transfer points, each with a maximum capacity of 5 tons per hour of dry metal scrap;
 - (5) one (1) aqueous washer;
 - (6) six (6) conveyor transfer points, each with a maximum capacity of 25 tons per hour of wet metal scrap;
 - (7) one (1) heavy media aluminum separation system; and
 - (8) one (1) natural gas-fired dryer, with a maximum heat input rate of 0.01 MMBtu/hr;
- (c) one (1) scrap metal separation line, identified as Eddy Current System (ECS), constructed in 2002, with a maximum capacity of 45 tons per hour, and exhausting to the atmosphere. The line includes the following equipment:
- (1) two (2) conveyor transfer points, each with a maximum capacity of 45 tons per hour of dry metal scrap;

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Facility Description [326 IAC 2-5.1-2(f)(2)] [326 IAC 2-5.5-4(a)(2)] (continued):	
(2)	one (1) scrap metal feed hopper, with a maximum capacity of 45 tons per hour;
(3)	one (1) water spray system for control of particulate matter emissions;
(4)	two (2) oscillators, each with a maximum capacity of 23 tons per hour of wet metal scrap;
(5)	two (2) oscillators, each with a maximum capacity of 22 tons per hour of wet metal scrap;
(6)	fourteen (14) conveyor transfer points, each with a maximum capacity of 22 tons per hour of wet metal scrap; and
(7)	seven (7) conveyor transfer points, each with a maximum capacity of 23 tons per hour of wet metal scrap;
(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)	

Emission Limitations and Standards [326 IAC 2-5.1-2(f)(1)] [326 IAC 2-5.5-4(a)(1)]

D.1.1 Particulate [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), particulate emissions from each of the Scrap Metal Grinding and Metal Separation Line (GRD), Scrap Metal Separation Line (ECS), and Scrap Metal Separation Line (HMS) shall not exceed the following allowable emission rates:

Process	Maximum Process Weight Rate (tons/hour)	326 IAC 6-3-2 Allowable Particulate Emission Rate (pounds/hour)
Scrap Metal Grinding and Metal Separation Line (GRD)	60	46.29
Scrap Metal Separation Line (ECS)	45	43.60
Scrap Metal Separation Line (HMS)	30	40.04

The allowable rate of emission was calculated using the following equations:

Interpolation of the data for the process weight rate up to 60,000 pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour, and} \\ P = \text{process weight rate in tons per hour}$$

Interpolation and extrapolation of the data for the process weight rate in excess of sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 55.0 P^{0.11} - 40 \quad \text{where } E = \text{rate of emission in pounds per hour; and} \\ P = \text{process weight rate in tons per hour}$$

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE BRANCH**

**REGISTRATION
ANNUAL NOTIFICATION**

This form should be used to comply with the notification requirements under 326 IAC 2-5.1-2(f)(3) and 326 IAC 2-5.5-4(a)(3).

Company Name:	Recovery Technologies, LLC
Address:	2001 Pontiac Street
City:	Fort Wayne, Indiana 46803
Phone Number:	(260) 423-8595
Registration No.:	003-26679-00363

I hereby certify that Recovery Technologies, LLC is :

- still in operation.
- no longer in operation.
- in compliance with the requirements of Registration No. 003-26679-00363.
- not in compliance with the requirements of Registration No. 003-26679-00363.

I hereby certify that Recovery Technologies, LLC is :

Authorized Individual (typed):
Title:
Signature:
Date:

If there are any conditions or requirements for which the source is not in compliance, provide a narrative description of how the source will achieve compliance and the date compliance will be achieved.

Noncompliance:

Indiana Department of Environmental Management Office of Air Quality

Technical Support Document (TSD) for a Registration

Source Description and Location

Source Name:	Recovery Technologies, LLC
Source Location:	2001 Pontiac Street, Fort Wayne, Indiana 46803
County:	Allen
SIC Code:	5093
Registration No.:	003-26679-00363
Permit Reviewer:	Gary Freeman

On June 23, 2008 the Office of Air Quality (OAQ) has received an application from Recovery Technologies, LLC related to the operation of an existing scrap metal recycling facility.

Existing Approvals

There have been no previous approvals issued to this source.

County Attainment Status

The source is located in Allen County.

Pollutant	Designation
SO ₂	Better than national standards.
CO	Unclassifiable or attainment effective November 15, 1990.
O ₃	Attainment effective February 12, 2007, for the Fort Wayne area, including Allen County, for the 8-hour ozone standard. ¹
PM ₁₀	Unclassifiable effective November 15, 1990.
NO ₂	Cannot be classified or better than national standards.
Pb	Not designated.
¹ Unclassifiable or attainment effective October 18, 2000, for the 1-hour ozone standard which was revoked effective June 15, 2005. Unclassifiable or attainment effective April 5, 2005, for PM _{2.5} .	

- (a) **Ozone Standards**
 Volatile organic compounds (VOC) and Nitrogen Oxides (NO_x) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NO_x emissions are considered when evaluating the rule applicability relating to ozone. Allen County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO_x emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.
- (b) **PM_{2.5}**
 Allen County has been classified as attainment for PM_{2.5}. On May 8, 2008 U.S. EPA promulgated the requirements for Prevention of Significant Deterioration (PSD) for PM_{2.5} emissions, and the effective date of these rules was July 15th, 2008. Indiana has three years from the publication of these rule revise its PSD rules, 326 IAC 2-2, to include those requirements. The May 8, 2008 rule revisions require IDEM to regulate PM₁₀ emissions as a surrogate for PM_{2.5} emissions until 326 IAC 2-2 is revised.

- (c) Other Criteria Pollutants
Allen County has been classified as attainment or unclassifiable in Indiana for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

Fugitive Emissions

The fugitive emissions of criteria pollutants and hazardous air pollutants are counted toward the determination of 326 IAC 2-5.1-2 (Registrations) applicability.

Background and Description of Emission Units and Pollution Control Equipment

The Office of Air Quality (OAQ) has reviewed an application, submitted by Recovery Technologies, LLC on June 23, 2008, relating to an existing Eddy Current System (ECS) metal separation line and a Heavy Media System (HMS) metal separation line. The potential-to-emit for particulate matter (PM and PM10) of the existing lines was below registration levels and the facility was exempt from the air permitting regulations. Recovery Technologies, LLC requested approval to modify the ECS metal separation line which will increase the throughput of the line and the potential to emit. In addition, Recovery Technologies, LLC requested approval to install a new scrap metal grinding and separation line. The changes requested, along with the diesel construction equipment (front end loaders) necessary for the operations and the increased truck traffic on paved roads, will increase the potential to emit for particulate matter (PM and PM10) to Registration levels.

The source consists of the following existing emission units:

- (a) one (1) scrap metal separation line, identified as Heavy Media System (HMS), constructed in 1999, with a maximum capacity of 30 tons per hour, and exhausting to the atmosphere. The line includes the following equipment:
- (1) one (1) scrap metal feed hopper, with a maximum capacity of 30 tons per hour;
 - (2) three (3) oscillators, each with a maximum capacity of 30 tons per hour of dry metal scrap;
 - (3) four (4) conveyor transfer points, each with a maximum capacity of 30 tons per hour of dry metal scrap;
 - (4) two (2) conveyor transfer points, each with a maximum capacity of 5 tons per hour of dry metal scrap;
 - (5) one (1) aqueous washer;
 - (6) six (6) conveyor transfer points, each with a maximum capacity of 25 tons per hour of wet metal scrap;
 - (7) one (1) heavy media aluminum separation system; and
 - (8) one (1) natural gas-fired dryer, with a maximum heat input rate of 0.01 MMBtu/hr;
- (b) one (1) scrap metal separation line, identified as Eddy Current System (ECS), constructed in 2002, with a maximum capacity of 45 tons per hour, and exhausting to the atmosphere. The line includes the following equipment:
- (1) two (2) conveyor transfer points, each with a maximum capacity of 45 tons per hour of dry metal scrap;

- (2) one (1) scrap metal feed hopper, with a maximum capacity of 45 tons per hour;
 - (3) one (1) water spray system for control of particulate matter emissions;
 - (4) two (2) oscillators, each with a maximum capacity of 23 tons per hour of wet metal scrap;
 - (5) two (2) oscillators, each with a maximum capacity of 22 tons per hour of wet metal scrap;
 - (6) fourteen (14) conveyor transfer points, each with a maximum capacity of 22 tons per hour of wet metal scrap;
 - (7) seven (7) conveyor transfer points, each with a maximum capacity of 23 tons per hour of wet metal scrap;
- (c) scrap metal storage piles, loading and unloading of scrap metal storage piles, and loading of trucks with processed scrap metal;
 - (d) paved roads and parking lots with public access;
 - (e) a gasoline fuel dispensing operation, constructed in 1995, having a storage capacity of less than 575 gallons;
 - (f) a petroleum fuel, other than gasoline, dispensing facility, having a storage capacity of less than or equal to 10,500 gallons, and dispensing less than 3,500 gallons per day.

The following is a list of the new emission unit(s) and pollution control device(s):

- (a) one (1) scrap metal grinding and separation line, identified as GRD, approved for construction in 2008, with a maximum capacity of 60 tons per hour, using water spray for particulate matter control when necessary, and exhausting to the atmosphere. The scrap metal grinding and separation line will process metal scrap (consisting of approximately 90 to 95% metal by weight, with the metal fraction consisting of mostly 8 to 10 inches diameter metal pieces) from other scrap metal shredding operations. The scrap metal grinding and separation line includes the following equipment:
 - (1) one (1) Scrap Metal Feed Hopper, with a maximum capacity of 60 tons per hour;
 - (2) one (1) Scrap Metal Grinder, with a maximum capacity of 60 tons per hour of dry material;
 - (3) six (6) conveyor transfer points, with a maximum capacity of 60 tons per hour of dry material; and
 - (4) one (1) oscillator, with a maximum capacity of 60 tons per hour of dry material.

Enforcement Issues

There are no pending enforcement actions related to this source.

Emission Calculations

- (a) See Appendix A of this TSD for detailed emission calculations (pages 1 through 5).
- (b) Based on information provided by Recovery Technologies, LLC, the Scrap Metal Grinder will process non-ferrous metal scrap (consisting of approximately 90 to 95% metal by weight, with the metal fraction consisting of mostly 8 to 10 inches diameter metal pieces) from other scrap metal shredding operations. The scrap materials will be supplied by other OmniSource and non-OmniSource facilities, but not the general public. The Scrap Metal Grinder will resize the scrap metal to approximately 0.5 inches in diameter in order to allow for more efficient processing and higher recoveries through the existing separation processes.

Based on the type of metal being processed and the metal content, Recovery Technologies, LLC, has indicated that minimal amounts of particulate emissions are expected to be emitted from the Scrap Metal Grinder. For the Scrap Metal Grinder, the source provided an emission factor of 0.00257 lbs PM per ton of metal shredded (before control), which was taken from the Institute of Scrap Recycling Industries, Inc. (ISRI) "Title V Applicability Workbook" (Appendix D, Table D-10F). Based on the information provided by the source, IDEM has determined that the emission factor of 0.00257 lbs PM per ton of metal shredded (before control) is adequate for estimating the potential to emit from the Scrap Metal Grinder.

In addition, based on the above information provided by the source, it is assumed that scrap metal storage piles, loading and unloading of scrap metal storage piles, and loading of trucks with processed scrap metal will have negligible particulate emissions.

- (c) Based on information provided by the source, truck entering and leaving the site will travel at speeds less than 10 miles per hour. As discussed in AP-42, Chapter 13.2.1, Paved Roads (12/2003), Equation 1 was developed from regression analysis of emission test data for vehicles travelling between 10 and 55 miles per hour. To account for the lower vehicle speed, potential particulate emissions from paved roads were calculated using AP-42, Chapter 13.2.1 Equation 1, assuming a road surface silt loading of 1.1 grams per square meter (g/m^2) (minimum silt loading for paved roads at a municipal solid waste landfill, AP-42 Table 13.2.1-4).

Permit Level Determination – Registration

The following table reflects the unlimited potential to emit (PTE) of the entire source before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

Process/ Emission Unit	Potential To Emit of the Entire Source (tons/year)								
	PM	PM10*	PM2.5	SO ₂	NO _x	VOC	CO	Total HAPs	Worst Single HAP
Scrap Metal Grinder and Separation Line (GRD)	6.19	2.70	2.70	0	0	0	0	0	0
Eddy Current System (ECS) Metal Separation Line	8.53	3.13	3.13	0	0	0	0	0	0
High Media System (HMS) Metal Separation Line	4.86	1.78	1.78	0	0	0	0	0	0
Natural Gas-Fired HMS Dryer	negl.	negl.	negl.	negl.	negl.	negl.	negl.	negl.	negl.
Scrap metal storage piles, and loading/unloading of storage piles and trucks	negl.	negl.	negl.	0	0	0	0	0	0
Paved Roads	3.95	0.77	0.11	0	0	0	0	0	0
Fuel Dispensing	0	0	0	0	0	0.33	0	0.085	0.029 (xylenes)
Total PTE of Entire Source	23.53	8.38	7.72	negl.	negl.	0.33	negl.	0.085	0.029 (xylenes)
Exemptions Levels	5	5	5	10	10	5 or 10	25	25	10
Registration Levels	25	25	25	25	25	25	100	25	10
negl. = negligible * Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant".									

- (a) The potential to emit (PTE) (as defined in 326 IAC 2-1.1-1(16)) of PM, PM10, and PM2.5 are within the ranges listed in 326 IAC 2-5.1-2(a)(1). The PTE of all other regulated criteria pollutants are less than the ranges listed in 326 IAC 2-5.1-2(a)(1). Therefore, the source is subject to the provisions of 326 IAC 2-5.1-2 (Registrations). A Registration will be issued.
- (b) The potential to emit (PTE) (as defined in 326 IAC 2-1.1-1(16)) of any single HAP is less than ten (10) tons per year and the PTE of a combination of HAPs is less than twenty-five (25) tons per year. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA) and not subject to the provisions of 326 IAC 2-7.

Federal Rule Applicability Determination

- (a) There are no New Source Performance Standards (NSPS)(40 CFR Part 60) included in the registration.

- (b) The requirement 40 CFR 60, Subpart Kb (60.110b through 60.117b)(326 IAC 12), Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984 (promulgated on October 15, 2003), are not included in this registration for the gasoline and other petroleum fuel storage vessels, since each storage vessel has a capacity less than seventy-five (75) cubic meters (m³) (19,813 gallons).
- (c) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14, 326 IAC 20 and 40 CFR Part 63) included in the registration.
- (d) Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is not included in the registration, because the unlimited potential to emit of the source is less than the Title V major source thresholds and the source is not required to obtain a Part 70 or Part 71 permit.

State Rule Applicability Determination

The following state rules are applicable to the source:

326 IAC 2-5.1-2 (Registrations)

Registration applicability is discussed under the Permit Level Determination – Registration section above.

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))

The potential to emit of any single HAP is less than ten (10) tons per year and the potential to emit of a combination of HAPs is less than twenty-five (25) tons per year. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA) and not subject to the provisions of 326 IAC 2-4.1.

326 IAC 2-6 (Emission Reporting)

Pursuant to 326 IAC 2-6-1, this source is not subject to this rule, because it is not required to have an operating permit under 326 IAC 2-7 (Part 70), it is not located in Lake, Porter, or LaPorte County, and it does not emit lead into the ambient air at levels equal to or greater than 5 tons per year. Therefore, 326 IAC 2-6 does not apply.

326 IAC 5-1 (Opacity Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

- (1) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (2) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

326 IAC 6-4 (Fugitive Dust Emissions Limitations)

Pursuant to 326 IAC 6-4 (Fugitive Dust Emissions Limitations), the source shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4.

326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations)

The source is not subject to the requirements of 326 IAC 6-5, because the source does not have potential fugitive particulate emissions greater than 25 tons per year. Therefore, 326 IAC 6-5

does not apply.

326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities)

Each of the emission units at this source is not subject to the requirements of 326 IAC 8-1-6, since the unlimited VOC potential emissions from each emission unit is less than twenty-five (25) tons per year.

Scrap Metal Grinder and Separation Line (GRD), Scrap Metal Separation Lines (ECS and HMS)

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), particulate emissions from each of the Scrap Metal Grinder and Separation Line (GRD), Scrap Metal Separation Line (ECS), and Scrap Metal Separation Line (HMS) shall not exceed the following allowable emission rates:

Process	Maximum Process Weight Rate (tons/hour)	326 IAC 6-3-2 Allowable Particulate Emission Rate (pounds/hour)
Scrap Metal Grinding and Separation Line (GRD)	60	46.29
Scrap Metal Separation Line (ECS)	45	43.60
Scrap Metal Separation Line (HMS)	30	40.04

The allowable rate of emission was calculated using the following equations:

Interpolation of the data for the process weight rate up to 60,000 pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour, and} \\ P = \text{process weight rate in tons per hour}$$

Interpolation and extrapolation of the data for the process weight rate in excess of sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 55.0 P^{0.11} - 40 \quad \text{where } E = \text{rate of emission in pounds per hour; and} \\ P = \text{process weight rate in tons per hour}$$

For the Scrap Metal Grinder and Separation Line (GRD), Scrap Metal Separation Line (ECS), and Scrap Metal Separation Line (HMS), the uncontrolled particulate matter (PM) emissions from each of the processes (1.41, 1.95, and 1.11 lbs/hr, respectively) are less than the respective 326 IAC 6-3-2 allowable particulate emission rates. Therefore, each of the processes is able to comply with 326 IAC 6-3-2.

Natural Gas-Fired Dryer

326 IAC 6-2 (Particulate Emissions from Indirect Heating Units)

The natural gas-fired dryer is not subject to 326 IAC 6-2, since it is not a source of indirect heating.

326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)

The natural gas-fired dryer is exempt from the requirements of 326 IAC 6-3, because it is not considered a "manufacturing process", as defined by 326 IAC 6-3-1.5. In addition, pursuant to 326 IAC 1-2-59, liquid and gaseous fuels and combustion air are not considered as part of the process weight.

326 IAC 7-1 (Sulfur dioxide emission limitations: applicability)

The natural gas-fired dryer is not subject to the requirements of 326 IAC 7-1, because the potential and the actual emissions of sulfur dioxide are less than twenty-five (25) tons per year and ten (10) pounds per hour, respectively.

Gasoline Fuel Dispensing Operation

326 IAC 8-4-6 (Petroleum Sources: Gasoline Dispensing Facilities)

Pursuant to 326 IAC 8-4-1(e) and 326 IAC 8-4-6, the gasoline fuel dispensing operation is not subject to the requirements of 326 IAC 8-4-6, since the gasoline storage tank has a capacity of less 575 gallons.

326 IAC 8-4-9 (Petroleum Sources: Leaks From Transports and Vapor Collection Systems; Records)

Pursuant to 326 IAC 8-4-9(a)(1), the gasoline fuel dispensing operation is not subject to the requirements of 326 IAC 8-4-9, since the gasoline fuel dispensing operation is not subject to 326 IAC 8-4-6.

Gasoline and Petroleum Fuel Storage Tanks

326 IAC 8-1-6 (VOC rules: General Reduction Requirements for New Facilities)

The requirements of 326 IAC 8-1-6 are not applicable to each of the gasoline and petroleum fuel storage tanks, since each of the storage tanks does not have potential VOC emissions greater than twenty-five (25) tons per year.

326 IAC 8-4-3 (Volatile Organic Compounds; Petroleum Liquid Storage Facilities)

The requirements of 326 IAC 8-4-3 are not applicable to each of the gasoline and petroleum fuel storage vessel at this source, since each storage vessel has a storage capacity less than 39,000 gallons.

326 IAC 8-9 (Volatile Organic Compounds; Volatile Organic Liquid Storage Vessels)

The requirements of 326 IAC 8-4-3 are not applicable to each of the gasoline and petroleum fuel storage vessel at this source, since this source is not located in Clark or Floyd County.

Conclusion and Recommendation

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant. An application for the purposes of this review was received on June 23, 2008. Additional information was provided by the source on September 4, 2008

The construction and operation of this source shall be subject to the conditions of the attached proposed Registration No. 003-26679-00363. The staff recommends to the Commissioner that this Registration be approved.

IDEM Contact

- (a) Questions regarding this proposed permit can be directed to Gary Freeman at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 233-5334 or toll free at 1-800-451-6027 extension 3-5334.
- (b) A copy of the findings is available on the Internet at: <http://www.in.gov/ai/appfiles/idem-caats/>

- (c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: www.idem.in.gov

**Appendix A: Emissions Calculations
Emission Summary**

Company Name: Recovery Technologies, LLC
Address: 2001 Pontiac Street, Fort Wayne, Indiana 46803
Permit Number: 003-26679-00363
Plt ID: 003-00363
Reviewer: Gary Freeman
Date: 9/30/2008

Category	Uncontrolled Potential Emissions (tons/year)					
	Pollutant	Metal Grinder and Separation Lines	Natural Gas-Fired Dryer	Paved Roads	Gasoline Transfer and Dispensing Operation	TOTAL
Criteria Pollutants	PM	19.58	8.3E-05	3.95		23.53
	PM10		3.3E-04	0.77		8.38
	PM2.5	7.61	3.3E-04	0.11		7.72
	SO2		2.6E-05			2.6E-05
	NOx		4.4E-03			4.4E-03
	VOC		2.4E-04		0.33	0.33
	CO		3.7E-03			3.7E-03
Hazardous Air Pollutants (HAPs)	Total HAPs	0	8.3E-05	0	0.085	0.085
	Worse Case HAP	0	7.9E-05	0	0.029	0.029
			(hexane)		(xylenes)	(xylenes)

Total emissions based on rated capacity at 8,760 hours/year.

Category	Controlled Potential Emissions (tons/year)					
	Pollutant	Metal Grinder and Separation Lines	Natural Gas-Fired Dryer	Paved Roads	Gasoline Transfer and Dispensing Operation	TOTAL
Criteria Pollutants	PM	10.70	8.3E-05	3.95		14.65
	PM10	4.34	3.3E-04	0.77		5.10
	PM2.5	4.23	3.3E-04	0.11		4.35
	SO2		2.6E-05			2.6E-05
	NOx		4.4E-03			4.4E-03
	VOC		2.4E-04		0.33	0.33
	CO		3.7E-03			3.7E-03
Hazardous Air Pollutants (HAPs)	Total HAPs	0	8.3E-05	0	0.085	0.085
	Worse Case HAP	0	7.9E-05	0	0.029	0.029
			(hexane)		(xylenes)	(xylenes)

Total emissions based on rated capacity at 8,760 hours/year.

Appendix A: Emission Calculations
Scrap Metal Grinding and Metal Separation Line (GRD) and Scrap Metal Separation Lines (ECS and HMS)
PM, PM10, and PM2.5

Company Name: Recovery Technologies, LLC
Address: 2001 Pontiac Street, Fort Wayne, Indiana 46803
Permit Number: 003-26679-00363
Plt ID: 003-00363
Reviewer: Gary Freeman
Date: 9/30/2008

Potential to Emit PM, PM10 and PM2.5

The following calculations determine the amount of emissions created by the Scrap Metal Grinding and Separation Line (GRD) and Scrap Metal Separation Lines (ECS and HMS), based on 8,760 hours of operation.

Process Description	Number of Emission Points	Maximum Capacity (tons/hr)	PM Emission Factor (lbs/ton)		PTE of PM (tons/year)		PM10 Emission Factor (lbs/ton)		PTE of PM10 (tons/year)		PM2.5 Emission Factor (lbs/ton)		PTE of PM2.5 (tons/year)	
			uncontrolled	controlled	uncontrolled	controlled	uncontrolled	controlled	uncontrolled	controlled	uncontrolled	controlled	uncontrolled	controlled
New Scrap Metals Grinding and Separation Line (GRD)														
Metal Grinder ^{1,3}	1	60	0.00257	0.00257	0.68	0.68	0.00257	0.00257	0.68	0.68	0.00257	0.00257	0.68	0.68
Transfer Point - dry ^{2,3}	6	60	3.00E-03	3.00E-03	4.73	4.73	1.10E-03	1.10E-03	1.73	1.73	1.10E-03	1.10E-03	1.73	1.73
Oscillator - Dry ^{2,3}	1	60	3.00E-03	3.00E-03	0.79	0.79	1.10E-03	1.10E-03	0.29	0.29	1.10E-03	1.10E-03	0.29	0.29
		60			6.19	6.19			2.70	2.70			2.70	2.70
Scrap Metal Separation Line (ECS)														
Transfer Point - dry ^{2,3}	2	45	3.00E-03	3.00E-03	1.18	1.18	1.10E-03	1.10E-03	0.43	0.43	1.10E-03	1.10E-03	0.43	0.43
Oscillator - Wet ^{2,3}	2	23	3.00E-03	1.40E-04	0.60	0.03	1.10E-03	4.60E-05	0.22	0.0093	1.10E-03	1.30E-05	0.22	0.0026
Oscillator - Wet ^{2,3}	2	22	3.00E-03	1.40E-04	0.58	0.03	1.10E-03	4.60E-05	0.21	0.0089	1.10E-03	1.30E-05	0.21	0.0025
Transfer Point - wet ^{2,3}	14	22	3.00E-03	1.40E-04	4.05	0.19	1.10E-03	4.60E-05	1.48	0.0621	1.10E-03	1.30E-05	1.48	0.0175
Transfer Point - wet ^{2,3}	7	23	3.00E-03	1.40E-04	2.12	0.10	1.10E-03	4.60E-05	0.78	0.0324	1.10E-03	1.30E-05	0.78	0.0092
		45			8.53	1.53			3.13	0.55			3.13	0.47
Scrap Metal Separation Line (HMS)														
Oscillator - Dry ^{2,3}	3	30	3.00E-03	3.00E-03	1.18	1.18	1.10E-03	1.10E-03	0.43	0.43	1.10E-03	1.10E-03	0.43	0.43
Transfer Point - dry ^{2,3}	4	30	3.00E-03	3.00E-03	1.58	1.58	1.10E-03	1.10E-03	0.58	0.58	1.10E-03	1.10E-03	0.58	0.58
Transfer Point - dry ^{2,3}	2	5	3.00E-03	3.00E-03	0.13	0.13	1.10E-03	1.10E-03	0.05	0.048	1.10E-03	1.10E-03	0.05	0.048
Transfer Point - wet ^{2,3}	6	25	3.00E-03	1.40E-04	1.97	0.092	1.10E-03	4.60E-05	0.72	0.030	1.10E-03	1.30E-05	0.72	0.0085
		30			4.86	2.96			1.78	1.09			1.78	1.07
Totals					19.58	10.70			7.61	4.34			7.61	4.23

326 IAC 6-3-2 Determination

Process Description	Maximum Capacity (tons/hr)	PTE of PM (lbs/hr)		326 IAC 6-3-2 Allowable PM Emission Rate (lbs/hr)
		uncontrolled	controlled	
Scrap Metal Grinding and Metal Separation Line (GRD)	60	1.41	1.41	46.29
Scrap Metal Separation Line (ECS)	45	1.95	0.35	43.60
Scrap Metal Separation Line (HMS)	30	1.11	0.68	40.04

Methodology

- For the scrap metal grinder, the emission factor of 0.00257 lbs PM/ton (before control) was taken from the Institute of Scrap Recycling Industries, Inc. (ISRI) "Title V Applicability Workbook" (Appendix D, Table D-10F). Assume PM10 emissions = PM emissions.
- To estimate potential PM/PM10/PM2.5 emissions from the scrap metal oscillators and conveyor transfer points, AP-42 emission factors for Crushed Stone Processing Operations, Section 11.19.2 Table 11.19.2-2 (date)
- PTE of PM/PM10/PM2.5 (tons/year) = Number of Emission Points x Maximum Capacity (tons/hour) x Emission Factor (lbs/ton) x 8760 (hrs/year) x 1 ton/2000 lbs

Abbreviations

PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
PM2.5 = Particulate Matter (<2.5 um)
PTE = Potential to Emit

**Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100**

Company Name: Recovery Technologies, LLC
Address: 2001 Pontiac Street, Fort Wayne, Indiana 46803
Permit Number: 003-26679-00363
Plt ID: 003-00363
Reviewer: Gary Freeman
Date: 9/30/2008

Emission Unit	Number of Units	Unit Heat Input Capacity MMBtu/hr	Combined Total Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr	Pollutant					
					PM*	PM10/PM2.5*	SO2	NOx**	VOC	CO
					Emission Factor (lb/MMCF)					
					1.9	7.6	0.6	100	5.5	84.0
					Potential Emission tons/yr					
					PM*	PM10/PM2.5*	SO2	NOx**	VOC	CO
Dryer	1	0.01	0.01	0.09	8.3E-05	3.3E-04	2.6E-05	4.4E-03	2.4E-04	3.7E-03
Totals	1		0.0		8.3E-05	3.3E-04	2.6E-05	4.4E-03	2.4E-04	3.7E-03

Emission Unit	Potential Emission tons/yr									
	Benzene	DCB	Formaldehyde	Hexane	Toluene	Pb	Cd	Cr	Mn	Ni
	Emission Factor (lb/MMCF)									
	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Dryer	9.2E-08	5.3E-08	3.3E-06	7.9E-05	1.5E-07	2.2E-08	4.8E-08	6.1E-08	1.7E-08	9.2E-08
Totals	9.2E-08	5.3E-08	3.3E-06	7.9E-05	1.5E-07	2.2E-08	4.8E-08	6.1E-08	1.7E-08	9.2E-08

Total PTE of Hazardous Air Pollutants (HAPs) = 8.3E-05 tons/yr

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined. PM2.5 emissions assumed to be equal to PM10

**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

The five highest organic and metal HAPs emission factors are provided above. Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Methodology

Potential Throughput (MMCF) = Combined Total Heat Input Capacity (MMBtu/hr) * 8,760 hrs/yr * 1 MMCF/1,000 MMBtu

Emission (tons/yr) = Throughput (MMCF/yr) * Emission Factor (lb/MMCF) / 2,000 lb/ton

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu, MMCF = 1,000,000 Cubic Feet of Gas

Abbreviations

PM = Particulate Matter

PM10 = Particulate Matter (<10 um)

PM2.5 = Particulate Matter (<2.5 um)

VOC - Volatile Organic Compounds

SO2 = Sulfur Dioxide

NOx = Nitrous Oxides

CO = Carbon Monoxide

DCB = Dichlorobenzene

Pb = Lead

Cd = Cadmium

Cr = Chromium

Mn = Manganese

Ni = Nickel

**Appendix A: Emission Calculations
Fugitive Dust Emissions - Paved Roads**

Company Name: Recovery Technologies, LLC
Address: 2001 Pontiac Street, Fort Wayne, Indiana 46803
Permit Number: 003-26679-00363
Plt ID: 003-00363
Reviewer: Gary Freeman
Date: 9/30/2008

Paved Roads at Industrial Site

The following calculations determine the amount of emissions created by paved roads, based on 8,760 hours of use and AP-42, Chapter 13.2.1 (12/2003). Based on information provided by the source, truck entering and leaving the site will travel at speeds less than 10 miles per hour. As discussed in AP-42, Chapter 13.2.1, Paved Roads (12/2003), Equation 1 was developed from regression analysis of emission test data for vehicles travelling between 10 and 55 miles per hour. To account for the lower vehicle speed, potential particulate emissions from paved roads were calculated using AP-42, Chapter 13.2.1 Equation 1, assuming a road surface silt loading of 1.1 grams per square meter (g/m²) (minimum silt loading for paved roads at a municipal solid waste landfill, AP-42 Table 13.2.1-4).

Vehicle Information (provided by source)

Type	Maximum trips per day (trip/day)	Maximum Weight Loaded (tons/trip)	Total Weight driven per day (ton/day)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/day)	Maximum one-way miles (miles/yr)
Trucks (entering plant) (one-way trip)	112.08	22.5	2521.8	488	0.092	10.4	3781.0
Trucks (leaving plant) (one-way trip)	112.08	22.5	2521.8	488	0.092	10.4	3781.0
Total	224.2		5043.6			20.7	7562.0

Average Vehicle Weight Per Trip = $\frac{22.5}{1}$ tons/trip
 Average Miles Per Trip = $\frac{0.09}{1}$ miles/trip

Unmitigated Emission Factor, $E_f = [k * (sL/2)^{0.65} * (W/3)^{1.5} - C]$ (Equation 1 from AP-42 13.2.1)

	PM	PM10	PM2.5	
where k =	0.082	0.016	0.0024	lb/mi = particle size multiplier (AP-42 Table 13.2.1-1)
W =	22.5	22.5	22.5	tons = average vehicle weight (provided by source)
C =	0.00047	0.00047	0.00036	lb/mi = emission factor for vehicle exhaust, brake wear, and tire wear (AP-42 Table 13.2.1-2)
sL =	1.1	1.1	1.1	g/m ² = road surface silt loading of paved roads (Table 13.2.1-4, assuming municipal solid waste)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, $E_{ext} = E * [1 - (p/4N)]$

Mitigated Emission Factor, $E_{ext} = E_f * [1 - (p/4N)]$
 where p = $\frac{125}{365}$ days of rain greater than or equal to 0.01 inches (see Fig. 13.2.1-2)
 N = 365 days per year

	PM	PM10	PM2.5	
Unmitigated Emission Factor, $E_f =$	1.14	0.22	0.03	lb/mile
Mitigated Emission Factor, $E_{ext} =$	1.04	0.20	0.03	lb/mile

Process	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)
Trucks (entering plant) (one-way trip)	2.16	0.42	0.06	1.97	0.38	0.06
Trucks (leaving plant) (one-way trip)	2.16	0.42	0.06	1.97	0.38	0.06
Total	4.32	0.84	0.13	3.95	0.77	0.11

Methodology

Total Weight driven per day (ton/day) = [Maximum Weight Loaded (tons/trip)] * [Maximum trips per day (trip/day)]
 Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip)] / [5280 ft/mile]
 Maximum one-way miles (miles/day) = [Maximum trips per year (trip/day)] * [Maximum one-way distance (mi/trip)]
 Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per day (ton/day)] / SUM[Maximum trips per day (trip/day)]
 Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/day)] / SUM[Maximum trips per year (trip/day)]
 Unmitigated PTE (tons/yr) = [Maximum one-way miles (miles/yr)] * [Unmitigated Emission Factor (lb/mile)] * (ton/2000 lbs)
 Mitigated PTE (tons/yr) = [Maximum one-way miles (miles/yr)] * [Mitigated Emission Factor (lb/mile)] * (ton/2000 lbs)

Abbreviations

PM = Particulate Matter
 PM10 = Particulate Matter (<10 um)
 PM2.5 = Particulate Matter (<2.5 um)
 PTE = Potential to Emit

**Appendix A: Emissions Calculations
Gasoline Fuel Transfer and Dispensing Operation**

Company Name: Recovery Technologies, LLC
Address: 2001 Pontiac Street, Fort Wayne, Indiana 46803
Permit Number: 003-26679-00363
Pit ID: 003-00363
Reviewer: Gary Freeman
Date: 9/30/2008

To calculate evaporative emissions from the gasoline fuel transfer and dispensing operation, emission factors from AP-42 Table 5.2-7 were used. Assuming 24 hours per day and 365 days of operation per year, the total potential emission of VOC is as follows:

Gasoline Throughput = 24 gallons/day (provided by source)
 = 576 gallons/day
 = 210.2 kgal/yr

PTE of Volatile Organic Compounds (VOC)

Emission Source	Emission Factor (lb/kgal of throughput)	PTE of VOC (tons/yr)*
Filling storage tank (balanced submerged filling)	0.3	0.03
Tank breathing and emptying	1.0	0.11
Vehicle refueling (displaced losses - controlled)	1.1	0.12
Spillage	0.7	0.07
Total		0.33

PTE of Hazardous Air Pollutants (HAPs)

Volatile Organic HAP	CAS#	HAP Content For Gasoline (% by weight)*	PTE of HAP (tons/yr)
1,3-Butadiene	106-99-0	3.70E-5%	1.2E-05
2,2,4-Trimethylpentane	540-84-1	2.40%	0.0078
Benzene	71-43-2	1.90%	0.0062
Ethylbenzene	100-41-4	1.70%	0.0055
Methyl-tert-butylether	1634-04-4	0.33%	0.0011
Naphthalene	91-20-3	2.50E-3%	8.1E-04
n-Hexane	110-54-3	2.40%	0.0078
Toluene	108-88-3	8.10%	0.0264
Total Xylenes	1330-20-7	9.00%	0.0293
Total Organic HAPs		26.08%	0.08
Worst Single HAP		9.00%	0.03
		Xylenes	Xylenes

Methodology

Gasoline Throughput (kgal/yr) = [Gasoline Throughput (lbs/day)] * [365 days/yr] * [kgal/1000 gal]
 PTE of VOC (tons/yr) = [Gasoline Throughput (kgal/yr)] * [Emission Factor (lb/kgal)] * [ton/2000 lb]
 PTE of Total HAPs (tons/yr) = [Worst Case Total HAP Content of VOC solvent (weight %)] * [PTE of VOC (tons/yr)]
 PTE of Single HAP (tons/yr) = [Worst Case Single HAP Content of VOC solvent (weight %)] * [PTE of VOC (tons/yr)]

*Source: Petroleum Liquids. Potter, T.L. and K.E. Simmons. 1998. Total Petroleum Hydrocarbon Criteria Working Group Series, Volume 2. Composition of Petroleum Mixtures. The Association for Environmental Health and Science. Available on the Internet at: <http://www.aehs.com/publications/catalog/contents/tpf.htm>