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: January 11, 2013

RE: Advantage Engineering / 081-32452-00029

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

Advantage Engineering
525 East Stop 18 Road
Greenwood, Indiana 46142

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. 081-32452-00029	
Issued by: Iryn Calilung, Section Chief Permits Branch Office of Air Quality	Issuance Date: January 11, 2013

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 source which produces assembled refrigerated machinery and related products.

Source Address:	525 East Stop 18 Road, Greenwood, IN 46142
General Source Phone Number:	317-887-0729
SIC Code:	5084 (Industrial Machinery and Equipment)
County Location:	Johnson County
Source Location Status:	Nonattainment for PM 2.5 standard Attainment for all other 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) Two (2) paint booths, identified as PB-1 and PB-2, constructed in 1977, using electrostatic air atomized spraying, with a total maximum capacity of 500 pounds of gray iron castings and weldments per hour, using dry filters as control, and exhausting to stack PB-1 and PB-2.

(b) One (1) totally enclosed sand blast booth, identified as SB-1, constructed in 1985, with a maximum capacity of 400 pounds of metal parts per hour and a maximum sand abrasive usage of 14.28 pounds per hour, using a baghouse as control and exhausting to stack SB-1.

(c) Four (4) MIG welding stations, identified as Weld 1-4, constructed in 1985, each with a maximum capacity of 100 pounds of metal parts per hour for a total of 400 pounds of metal parts per hour, using no control and exhausting to the outdoors.

(d) Twenty-seven (27) natural gas fired heaters, constructed from 1977 through 2000, with a maximum capacity of 2.7 MMBtu per hour total.

(e) Paved Roads

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. 081-32452-00029 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 no later than March 1 of each year to:

Indiana Department of Environmental Management
Compliance and Enforcement 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.

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.

B.8 Preventive Maintenance Plan [326 IAC 1-6-3]

(a) If required by specific condition(s) in Section D of this registration, the Registrant shall prepare and maintain Preventive Maintenance Plans (PMPs) no later than ninety (90) days after issuance of this registration or ninety (90) days after initial start-up, whichever is later, including the following information on each facility:

(1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;

(2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and

(3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

If, due to circumstances beyond the Registrant's control, the PMPs cannot be prepared and maintained within the above time frame, the Registrant may extend the date an additional ninety (90) days provided the Registrant notifies:

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

The Registrant shall implement the PMPs.

(b) A copy of the PMPs shall be submitted to IDEM, OAQ upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ may require the Registrant to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions.

(c) To the extent the Registrant is required by 40 CFR Part 60 or 40 CFR Part 63 to have an Operation Maintenance, and Monitoring (OMM) Plan for a unit, such OMM Plan is deemed to satisfy the PMP requirements of 326 IAC 1-6-3 for that unit.

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) Two (2) paint booths, identified as PB-1 and PB-2, constructed in 1977, using electrostatic air atomized spraying, with a total maximum capacity of 500 pounds of gray iron castings and weldments per hour, using dry filters as control, and exhausting to stack PB-1 and PB-2.

(b) One (1) totally enclosed sand blast booth, identified as SB-1, constructed in 1985, with a maximum capacity of 400 pounds of metal parts per hour and a maximum sand abrasive usage of 14.28 pounds per hour, using a baghouse as control and exhausting to stack SB-1.

(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), the particulate emission rate from the sand blast booth (SB-1) shall not exceed 1.42 pounds per hour when operating at a process weight rate of 0.207 tons per hour.

The pound per hour limitation was calculated with the following equation:

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

$E = 4.10\ P^{0.67}$

Where E = rate of emission in pounds per hour; and
P = process weight rate in tons per hour
P = 400 lb/hr of metal + 14.28 lbs/hr of abrasive = 414.28 lbs/hr
P = 0.207 tons/hr

D.1.2 Particulate [326 IAC 6-3-2]

(a) Pursuant to 326 IAC 6-3-2(d), particulate from the two paint booths (PB-1 and PB-2) shall be controlled by dry particulate filters, waterwash, or an equivalent control device, and the Registrant shall operate each control device in accordance with manufacturer's specifications.

(b) If overspray is visibly detected at the exhaust or accumulates on the ground, the Registrant shall inspect the control device and do either of the following no later than four (4) hours after such observation:

(1) Repair control device so that no overspray is visibly detectable at the exhaust or accumulates on the ground.

(2) Operate equipment so that no overspray is visibly detectable at the exhaust or accumulates on the ground.

(c) If overspray is visibly detected, the Registrant shall maintain a record of the action taken as a result of the inspection, any repairs of the control device, or change in operations, so that overspray is not visibly detected at the exhaust or accumulates on the ground. These records must be maintained for five (5) years.

D.1.3 Preventive Maintenance Plan [326 IAC 1-6-3]

A Preventive Maintenance Plan is required for the paint booths and the sand blast booth and their control devices. Section B - Preventive Maintenance Plan contains the Registrant's obligation with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements [326 IAC 2-5.1-2(g)] [326 IAC 2-5.5-4(b)]

D.1.4 Particulate Control

In order to comply with Condition D.1.1, the dry filters for particulate control shall be in operation at all times when the surface coating booth (SB-1) is in operation.

Record Keeping and Reporting Requirements [326 IAC 2-5.1-2(g)] [326 IAC 2-5.5-4(b)]

D.1.5 Record Keeping Requirements

To document the compliance status with Condition D.1.1, the Registrant shall maintain a record of any actions taken if overspray is visibly detected.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT 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:	**Advantage Engineering**
Address:	**525 East Stop 18 Road**
City:	**Greenwood, Indiana 46142**
Phone Number:	**317-877-0729**
Registration No.:	**081-32462-00029**

I hereby certify that Advantage Engineering is:
- ☐ still in operation.
- ☐ no longer in operation.

I hereby certify that Advantage Engineering is:
- ☐ in compliance with the requirements of Registration No. 081-32462-00029.
- ☐ not in compliance with the requirements of Registration No. 081-32462-00029.

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

If there are any conditions or requirements for which the source is not in compliance, provide a narrative description of how the source did or will achieve compliance and the date compliance was, or 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:	**Advantage Engineering**
Source Location:	**525 East Stop 18 Road, Greenwood, IN 46142**
County:	**Johnson**
SIC Code:	**5084 (Industrial Machinery and Equipment)**
Registration No.:	**081-32452-00029**
Permit Reviewer:	**Deborah Cole**

On October 26, 2012, the Office of Air Quality (OAQ) received an application from Advantage Engineering related to the operation of an existing stationary source which produces assembled refrigerated machinery and related products.

Existing Approvals

The source was issued a Construction and Registration Permit No.: 081-3420-000290 on April 22, 1994.

Due to this application, the source is transitioning from a Construction Permit to a Registration.

County Attainment Status

The source is located in Johnson County.

Pollutant	Designation
SO_2	Better than national standards.
CO	Unclassifiable or attainment effective November 15, 1990.
O_3	Attainment effective October 19, 2007, 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.
Basic nonattainment designation effective federally April 5, 2005, for PM2.5.

(a) Ozone Standards
Volatile organic compounds (VOC) and Nitrogen Oxides (NOx) 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 NOx emissions are considered when evaluating the rule applicability relating to ozone. Johnson County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(b) $PM_{2.5}$
U.S. EPA, in the Federal Register Notice 70 FR 943 dated January 5, 2005, has designated Johnson County as nonattainment for $PM_{2.5}$. On March 7, 2005 the Indiana Attorney General's Office, on behalf of IDEM, filed a lawsuit with the Court of Appeals for the District of Columbia Circuit challenging U.S. EPA's designation of nonattainment areas without sufficient data. However, in order to ensure that sources are not potentially liable for a violation of the Clean Air Act, the OAQ is following the U.S. EPA's New Source Review Rule for $PM_{2.5}$ promulgated on May 8, 2008. These rules became effective on July 15, 2008. Therefore, direct $PM_{2.5}$ and SO_2

emissions were reviewed pursuant to the requirements of Nonattainment New Source Review, 326 IAC 2-1.1-5. See the State Rule Applicability – Entire Source section.

(c) Other Criteria Pollutants
Johnson 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, hazardous air pollutants, and greenhouse gases are counted toward the determination of 326 IAC 2-5.5 (Registrations) applicability.

Background and Description of Emission Units and Pollution Control Equipment

The Office of Air Quality (OAQ) has reviewed an application, submitted on October 26, 2012, by Advantage Engineering, relating to the transition of this source from a Construction Permit issued on April 22, 1994 to a Registration. As the result of a commitment inspection by IDEM, the source was required to submit a permit application to determine permit level applicability. Calculations submitted by the source indicate that the PTE is at Registration levels. Therefore, the source will be issued a Registration.

The source consists of the following existing emission units:

(a) Two (2) paint booths, identified as PB-1 and PB-2, constructed in 1977, using electrostatic air atomized spraying, with a total maximum capacity of 500 pounds of gray iron castings and weldments per hour, using dry filters as control, and exhausting to stack PB-1 and PB-2.

(b) One (1) totally enclosed sand blast booth, identified as SB-1, constructed in 1985, with a maximum capacity of 400 pounds of metal parts per hour and a maximum sand abrasive usage of 14.28 pounds per hour, using a baghouse as control and exhausting to stack SB-1.

(c) Four (4)MIG welding stations, identified as Weld 1-4, constructed in 1985, each with a maximum capacity of 100 pounds of metal parts per hour for a total of 400 pounds of metal parts per hour, using no control and exhausting to the outdoors.

(d) Twenty-seven (27) natural gas fired heaters, constructed from 1977 through 2000, with a maximum capacity of 2.7 MMBtu per hour total.

(e) Paved Roads

Enforcement Issues

Advantage Engineering was issued a Registered Construction and Operation permit No.081-3420-00029 on April 22, 1994, for a stationary finished refrigerated machinery and related products source. Pursuant to 326 IAC 2-5.5-2(b), the source was required to apply for a Re-Registration by December 25, 2000. On October 26, 2012, IDEM, OAQ received an application from Advantage Engineering. IDEM is reviewing this matter and will take the appropriate action. This proposed approval is intended to satisfy the requirements of the operating permit rules.

Emission Calculations

See Appendix A of this TSD for detailed emission calculations.

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	NOx	VOC	CO	GHGs as CO_2e**	Total HAPs	Worst Single HAP
Painting	0.31	0.31	0.31	-	-	11.77	-	-	2.32	1.67
Abrasive Blasting	6.14	5.28	5.28	-	-	-	-	-	-	-
Welding	0.54	0.54	0.54	-	-	-	-	-	0.05	0.01
Natural Gas Combustion	0.02	0.09	0.06	0.01	1.16	0.06	0.97	1,399.76	0.02	0.02
Paved Roads	0.05	0.01	0.00	-	-	-	-	-	-	-
Total PTE of Entire Source	**7.06**	**6.23**	**6.22**	**0.01**	**1.16**	**11.83**	**0.97**	**1,399.76**	**2.39**	
Exemptions Levels**	5	5	5	10	10	10	25	100,000	25	10
Registration Levels**	25	25	25	25	25	25	100	100,000	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".
**The 100,000 CO_2e threshold represents the Title V and PSD subject to regulation thresholds for GHGs in order to determine whether a source's emissions are a regulated NSR pollutant under Title V and PSD.

Criteria Pollutants (PM10, PM2.5, SO2, NOx, VOC, and CO)

(a) The potential to emit (PTE) (as defined in 326 IAC 2-1.1-1) of PM, PM10, PM2.5 and VOC are within the ranges listed in 326 IAC 2-5.5-1(b)(1). The PTE of all other regulated criteria pollutants are less than the ranges listed in 326 IAC 2-5.5-1(b)(1). Therefore, the source is subject to the provisions of 326 IAC 2-5.5 (Registrations). A Registration will be issued.

Hazardous Air Pollutants

(b) The potential to emit (PTE) (as defined in 326 IAC 2-1.1-1) 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.

Greenhouse Gases

(c) The potential to emit (PTE) (as defined in 326 IAC 2-1.1-1) greenhouse gases (GHGs) is less than the Title V subject to regulation threshold of one hundred thousand (100,000) tons of CO_2 equivalent emissions (CO_2e) per year. Therefore, the source is not subject to the provisions of 326 IAC 2-7.

Federal Rule Applicability Determination

New Source Performance Standards (NSPS)

There are no New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) included in the permit.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

(a) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Surface Coating of Miscellaneous Metal Parts and Products, 40 CFR 63.388, Subpart MMMM, are not included in the permit, since this source is not a major source of HAPs.

(b) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Paint Stripping and Surface Coating at Area Sources, 40 CFR 63.1116, Subpart HHHHHH, are not included in the permit, since the source does not use chemical strippers containing methylene chloride, does not perform spray application of coatings, as defined in §63.11180, to motor vehicles and mobile equipment, and does not perform spray application of coatings that contain the target HAP, as defined in §63.11180, to a plastic and/or metal substrate on a part or product.

(c) This source is subject to the National Emission Standards for Hazardous Air Pollutants for Nine Metal Fabrication and Finishing Source Categories (40 CFR 63.11514, Subpart XXXXXX), because this source is primarily engaged in operations of manufacturing fabricated plate work. The abrasive blasting operation and welding stations are subject to the requirements of Subpart XXXXXX because they use materials that contain finishing metal HAPs (compounds of cadmium, chromium, lead, manganese and nickel).

(d) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) Area Source Standards for Nine Metal Fabrication and Finishing Source Categories, Subpart XXXXXX are not included in the permit because this source is not primarily engaged in an operations which is included in one of the nine source categories listed in paragraphs (a)(1) through (9) of 40 CFR 63.11514. In addition, this source operates under SIC code 5084 "Industrial Machinery and Equipment" which is not identified in the list of Standard Industrial Classification (SIC) codes included in Table 1 of the Federal Register (FR) publication of the final rule; therefore, the requirements of NESHAP Subpart XXXXXX are not applicable to the source.

(e) There are no other National Emission Standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14, 326 IAC 20 and 40 CFR Part 63) included in the permit.

Compliance Assurance Monitoring (CAM)

(f) Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is not included in the permit, 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:

(a) 326 IAC 2-5.5 (Registrations)
Registration applicability is discussed under the Permit Level Determination – Registration section above.

(b) 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.

(c) 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.

(d) 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.

(e) 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.

(f) 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.

Individual Processes

Paint Booths

(a) 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)
Pursuant to 326 IAC 6-3-2(d), particulate from the two paint booths, identified as PB-1 and PB-2, shall be controlled by a dry particulate filters, and the Registrant shall operate the control devices in accordance with manufacturer's specifications.

If overspray is visibly detected at the exhaust of accumulates on the ground the Registrant shall inspect the control device and do either of the following no later than four (4) hours after such an observation:

(1) Repair the control device so that no overspray is visibly detectable at the exhaust or accumulates on the ground.

(2) Operate equipment so that no overspray is visibly detectable at the exhaust or accumulates on the ground.

If overspray is visibly detected, the Registrant shall maintain a record of the action taken as a result of the inspection, any repairs of the control device, or change in operations, so that overspray is not visible detected at the exhaust or accumulates on the ground. These records must be maintained for five (5) years.

(b) 326 IAC 8-2-1 (Surface Coating Emission Limitations)
Pursuant to 326 IAC 8-2-1(a)(1), facilities existing before January 1, 1980, and located in applicable counties are subject to this rule. The paint booths located at this source were constructed before the January 1, 1980 applicability date but are located in Johnson County, which is not one of the subject counties listed in the rule; are not engaged in one of the types described in 326 IAC 8- 2-11 of the rule and do not have greater than 100 tons of VOC per year. Therefore, 326 IAC 8-2-1 is not applicable.

(c) 326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities)
The paint booths, identified as PB-1 and PB- 2 are 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.

Sand Blast Booth

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)
Pursuant to 326 IAC 6-3-2, the particulate matter (PM) from the sand blast booth shall not exceed 1.42 pounds per hour when operating at a process weight rate of 0.207 tons per hour.

The pound per hour limitation was calculated with the following equation:

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

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour and
P = process weight rate in tons per hour
P = 400 lb/hr of metal + 14.28 lbs/hr of abrasive = 414.28 lbs/hr
P = 0.207 tons/hr

Based on calculations in Appendix A, the uncontrolled potential PM emissions rate for the shot blast booth is 1.40 pounds per hour which is less than the allowable rate of 1.42 pounds per hour. Therefore the source can comply with this limit without the use of control. However, this sand blast booth is a completely enclosed unit and the baghouse operates at all times the sand blast booth is operating.

Welding Stations

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)
Pursuant to 326 IAC 6-3-1(b)(9), the four (4) metal inert gas (MIG) welding stations are exempt from the requirements of 326 IAC 6-3 because each station consumes less than 625 pounds of rod or wire per day.

Natural Gas Fired Heaters

(a) 326 IAC 6-2 (Particulate Emission Limitations for Sources of Indirect Heating)
The natural gas fired heaters are not subject to 326 IAC 6-2 (Particulate Emission Limitations for Sources of Indirect Heating), because, pursuant to 326 IAC 1-2-19, these emission units do not meet the definition of an indirect heating unit.

(b) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)
The natural gas fired heaters are exempt from the requirements of 326 IAC 6-3, because, pursuant to 326 IAC 1-2-59, liquid and gaseous fuels and combustion air are not considered as part of the process weight.

(c) 326 IAC 7-1.1-1 (Sulfur Dioxide Emission Limitations)
This source is not subject to 326 IAC 7-1.1-1 (Sulfur Dioxide Emission Limitations) because the potential to emit sulfur dioxide from each natural gas-fired heater unit is less than twenty-five (25) tons per year and ten (10) pounds per hour.

(d) 326 IAC 8-1-6 (New Facilities; General Reduction Requirements)
The natural gas-fired heaters are not subject to 326 IAC 8-1-6 (New Facilities; General Reduction Requirements), because they each have the potential to emit VOC of less than twenty-five (25) tons per year.

(e) 326 IAC 9-1-1 (Carbon Monoxide Emission Limits)
The natural gas-fired heaters are not subject to 326 IAC 9-1-1 (Carbon Monoxide Emission Limits) because there is no applicable emission limits for the source under 326 IAC 9-1-2.

(f) 326 IAC 10-1-1 (Nitrogen Oxides Control)
The natural gas-fired heaters are not subject to 326 IAC 10-1-1 (Nitrogen Oxides Control) because the source is not located in Clark or Floyd counties.

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 October 26, 2012. Additional information was received on November 20, 28 and 30, 2012 and December 3, 2012.

The operation of this source shall be subject to the conditions of the attached proposed Registration No. 081-32452-00029. The staff recommends to the Commissioner that this Registration be approved.

IDEM Contact

(a) Questions regarding this proposed permit can be directed to Deborah Cole 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) *234-5377* or toll free at 1-800-451-6027 extension 4-5377.

(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.in.gov/idem

Appendix A: Emission Calculations
Summary

Company Name: **Advantage Engineering**
Address City IN Zip: **525 East Stop 18 Road, Greenwood, IN 46142**
Registration Number: **081-32452-00029**
Reviewer: **Deborah Cole**

Uncontrolled Potential to Emit

	PM	PM10	PM2.5*	SO2	NOx	VOC	CO	GHG as CO2e	Combined HAPs	Single HAP
Surface Coating	0.31	0.31	0.31	-	-	11.77	-	-	2.32	1.67
Abrasive Blasting	6.14	5.28	5.28	-	-		-	-	0.00	0.00
Welding	0.54	0.54	0.54	-	-	-	-	-	0.05	0.01
Natural Gas Combustion	0.02	0.09	0.09	0.01	1.16	0.06	0.97	1,399.76	0.02	0.02
Paved Roads	0.05	0.01	0.00							
Total	**7.06**	**6.23**	**6.22**	**0.01**	**1.16**	**11.83**	**0.97**	**1,399.76**	**2.39**	

* Before control
*Assume PM = PM10 = PM2.5
**Assume PM10 = PM2.5

Controlled Potential to Emit

	PM	PM10	PM2.5*	SO2	NOx	VOC	CO	GHG as CO2e	Combined HAPs	Single HAP
Surface Coating	0.31	0.31	0.31	-	-	11.77	-	-	2.32	1.67
Abrasive Blasting	0.01	0.01	0.01	-	-		-	-	0.00	0.00
Welding	0.54	0.54	0.54	-	-	-	-	-	0.05	0.01
Natural Gas Combustion	0.02	0.09	0.09	0.01	1.16	0.06	0.97	1,399.76	0.02	0.02
Paved Roads	0.05	0.01	0.00							
Total	**0.93**	**0.95**	**0.95**	**0.01**	**1.16**	**11.83**	**0.97**	**1,399.76**	**2.39**	

Appendix A: Emissions Calculations
VOC and Particulate
From Surface Coating Operations

Company Name: Advantage Engineering
Address City IN Zip: 525 East Stop 18 Road, Greenwood, IN 46142
Registration Number: 081-32452-00029
Reviewer: Deborah Cole

Material	Density (Lb/Gal)	Weight % Volatile (H20 & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Gal of Mat. (gal/unit)	Maximum (unit/hour)*	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential (ton/yr)	lb VOC/gal solids	Transfer Efficiency
Clear Waterbase Tint Base	8.2	65.45%	0.0%	65.5%	0.0%	65.72%	0.50000	1.00	5.37	5.37	2.69	64.48	11.77	0.31	8.18	95%
State Potential Emissions			**Add worst case coating to all solvents**								**2.69**	**64.48**	**11.77**	**0.31**		

METHODOLOGY

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)
Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)
Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr)
Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (24 hr/day)
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (8760 hr/yr) * (1 ton/2000 lbs)
Particulate Potential Tons per Year = (units/hour) * (gal/unit) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) *(8760 hrs/yr) *(1 ton/2000 lbs)
Pounds VOC per Gallon of Solids = (Density (lbs/gal) * Weight % organics) / (Volume % solids)
Total = Worst Coating + Sum of all solvents used

surcoat.xls 9/95

*Per source, it takes about .50 gallons of coating to coat 85 motor adapters and each adapter weighs about 5.85 pounds each for a total weigh of 497.25 pounds of metal per hour. In order to keep the math simple, the source defined this as one (1) unit.

Appendix A: Emission Calculations
HAP Emission Calculations
for Surface Coating

Company Name: **Advantage Engineering**
Address City IN Zip: **525 East Stop 18 Road, Greenwood, IN 46142**
Registration Number: **081-32452-00029**
Reviewer: **Deborah Cole**

Material	Density (Lb/Gal)	Gallons of Material (gal/unit)	Maximum (unit/hour)*	Weight % Xylene	Weight % Toluene	Weight % Formaldehyde	Weight % Benzene	Weight % Hexane	Weight % Glycol Ethers	Weight % Methanol	Xylene Emissions (ton/yr)	Toluene Emissions (ton/yr)	Formaldehyde Emissions (ton/yr)	Benzene Emissions (ton/yr)	Hexane Emissions (ton/yr)	Glycol Ethers Emissions (ton/yr)	Methanol Emissions (ton/yr)	TOTALS
Clear Waterbase Tint Base	8.20	0.50000	1.00	0.00%	0.00%	0.00%	0.00%	0.00%	3.60%	0.00%	0.00	0.00	0.00	0.00	0.00	0.65	0.00	0.65
Clear Waterbase Tint Base	8.20	0.50000	1.00	0.00%	0.00%	0.00%	0.00%	0.00%	9.30%	0.00%	0.00	0.00	0.00	0.00	0.00	1.67	0.00	1.67
																		2.32
										"Worst Case" Individual HAP	**0.0**	**0.0**	**0.0**	**0.0**	**0.00**	**1.67**	**0.00**	
										"Worst Case" Total HAPs	**1.67**							

METHODOLOGY

Total State Potential Emissions

METHODOLOGY

HAPS emission rate (tons/yr) = Density (lb/gal) * Gal of Material (gal/unit) * Maximum (unit/hr) * Weight % HAP * 8760 hrs/yr * 1 ton/2000 lbs

Hapcalc.xls 9/95

*Per source, it takes about .50 gallons of coating to coat 85 motor adapters and each adapter weighs about 5.85 pounds each for a total weigh of 497.25 pounds of metal per hour. In order to keep the math simple, the source defined this as one (1) unit.

Appendix A: Emission Calculations
Abrasive Blasting - Confined

Company Name: **Advantage Engineering**
Address City IN Zip: **525 East Stop 18 Road, Greenwood, IN 46142**
Registration Number: **081-32452-00029**
Reviewer: **Deborah Cole**

Table 1 - Emission Factors for Abrasives

	Emission Factor (EF)	
Abrasive	lb PM / lb abrasive	lb PM10 / lb PM
Sand	0.041	0.70
Grit	0.010	0.70
Steel Shot	0.004	0.86
Other	0.010	

Table 2 - Density of Abrasives (lb/ft3)

Abrasive	Density (lb/ft3)
Al oxides	160
Sand	99
Steel	487

Table 3 - Sand Flow Rate (FR1) Through Nozzle (lb/hr)

Flow rate (FR1) of sand through a blasting nozzle as a function of nozzle pressure and internal diameter (ID1)

		Nozzle Pressure (psig)							
Nozzle Type (diameter)	Internal diameter, in	30	40	50	60	70	80	90	100
No. 2 (1/8 inch)	0.125	28	35	42	49	55	63	70	77
No. 3 (3/16 inch)	0.1875	65	80	94	107	122	135	149	165
No. 4 (1/4 inch)	0.25	109	138	168	195	221	255	280	309
No. 5 (5/16 inch)	0.3125	205	247	292	354	377	420	462	507
No. 6 (3/8 inch)	0.375	285	355	417	477	540	600	657	720
No. 7 (7/16 inch)	0.4375	385	472	560	645	755	820	905	940
No. 8 (1/2 inch)	0.5	503	615	725	835	945	1050	1160	1265
No. 10 (5/8 inch)	0.625	820	990	1170	1336	1510	1680	1850	2030
No. 12 (3/4 inch)	0.75	1140	1420	1670	1915	2160	2400	2630	2880
No. 16 (1 inch)	1	2030	2460	2900	3340	3780	4200	4640	5060

CALCULATIONS

Adjusting Flow Rates for Different Abrasives and Nozzle Diameters
Flow Rate (FR) = Abrasive flow rate (lb/hr) of abrasive at nozzle pressure and internal nozzle diameter (ID)

D1 = Density of sand from Table 2 =	99	lb/ft3
ID1 = Internal diameter of nozzle for sand blasting from Table 3 =	0.3125	inch
FR1 = Sand flow rate at nozzle pressure and internal diameter (ID1) from Table 3 =	462	lb/hr
D = Density of actual abrasive =	75.1	lb/ft3
ID = internal diameter of actual nozzle =	0.3125	inch
FR = Flow rate of actual abrasive (lb/hr) =	350.5	lb/hr (per nozzle)

Potential to Emit Before Control

FR = Flow rate of actual abrasive (lb/hr) =	350.5		lb/hr (per nozzle)
w = fraction of time of wet blasting =	0		%
N = number of nozzles =	1		
EF = PM emission factor for actual abrasive from Table 1 =	0.004		lb PM/ lb abrasive
PM10 emission factor ratio for actual abrasive from Table 1 =	0.86		lb PM10 / lb PM
	PM	**PM10**	
Potential to Emit (before control) =	**1.402**	**1.206**	**lb/hr**
=	**33.64**	**28.93**	**lb/day**
=	**6.14**	**5.28**	**ton/yr**

Potential to Emit After Control

	PM	PM10	
Emission Control Device Efficiency =	**99.9%**	**99.9%**	
Potential to Emit (after control) =	**1.4E-03**	**1.2E-03**	**lb/hr**
=	**0.034**	**0.029**	**lb/day**
=	**0.01**	**0.01**	**ton/yr**

METHODOLOGY

Emission Factors from STAPPA/ALAPCO "Air Quality Permits", Vol. I, Section 3 "Abrasive Blasting" (1991 edition)
Flow rate of actual abrasive (FR) (lb/hr) = FR1 x (ID/ID1)^2 x (D/D1)
Potential to Emit (before control) = EF x FR x (1 - w/200) x N (where w should be entered in as a whole number (if w is 50%, enter 50))
Potential to Emit (after control) = [Potential to Emit (before control)] * [1 - control efficiency]
Potential to Emit (tons/year) = [Potential to Emit (lbs/hour)] x [8760 hours/year] x [ton/2000 lbs]

326 IAC 6-3-2(e) Allowable Rate of Emissions

Abrasive Blasting Booth	Process Rate (materials throughput)* (lbs/hr)	Process Weight Rate (tons/hr)	Allowable PM Emissions (lbs/hr)	Allowable PM Emissions (tons/yr)
	414.28	0.207	1.428	6.254

Methodology
* This number represents 400 pounds of metal parts per hour plus 14.28 pounds of sand per hour
Allowable Emissions (E) (lb/hr) = 4.10(Process Weight Rate)^0.67
Allowable Emissions (tons/yr) = (Allowable Emissions (lb/hr)*8760)/2000

Appendix A: Emissions Calculations
Welding and Thermal Cutting

Company Name: **Advantage Engineering**
Address City IN Zip: **525 East Stop 18 Road, Greenwood, IN 46142**
Registration Number: **081-32452-00029**
Reviewer: **Deborah Cole**

PROCESS	Number of Stations	Max. electrode consumption per station (lbs/hr)		EMISSION FACTORS* (lb pollutant/lb electrode)				EMISSIONS (lbs/hr)				HAPS (lbs/hr)
WELDING				PM = PM10	Mn	Ni	Cr	PM = PM10	Mn	Ni	Cr	
Submerged Arc				0.036	0.011			0.000	0.000	0.000	0	0.000
Metal Inert Gas (MIG)(carbon steel)	4	5.6		0.0055	0.0005			0.123	0.011	0.000	0	0.011
Stick (E7018 electrode)				0.0211	0.0009			0.000	0.000	0.000	0	0.000
Tungsten Inert Gas (TIG)(carbon steel)				0.0055	0.0005			0.000	0.000	0.000	0	0.000
Oxyacetylene(carbon steel)				0.0055	0.0005			0.000	0.000	0.000	0	0.000
	Number of Stations	Max. Metal Thickness Cut (in.)	Max. Metal Cutting Rate (in./minute)	EMISSION FACTORS (lb pollutant/1,000 inches cut, 1" thick)**				EMISSIONS (lbs/hr)				HAPS (lbs/hr)
FLAME CUTTING				PM = PM10	Mn	Ni	Cr	PM = PM10	Mn	Ni	Cr	
Oxyacetylene	0	0	0	0.1622	0.0005	0.0001	0.0003	0.000	0.000	0.000	0.000	0.000
Oxymethane	0	0	0	0.0815	0.0002		0.0002	0.000	0.000	0.000	0.000	0.000
Plasma**	0	0	0	0.0039				0.000	0.000	0.000	0.000	0.000
EMISSION TOTALS												
Potential Emissions lbs/hr								0.12				0.01
Potential Emissions lbs/day								2.96				0.27
Potential Emissions tons/year								0.54				0.05

Methodology:

*Emission Factors are default values for carbon steel unless a specific electrode type is noted in the Process column.

**Emission Factor for plasma cutting from American Welding Society (AWS). Trials reported for wet cutting of 8 mm thick mild steel with 3.5 m/min cutting speed (at 0.2 g/min emitted). Therefore, the emission factor for plasma cutting is for 8 mm thick rather than 1 inch, and the maximum metal thickness is not used in calculting the emissions.

Using AWS average values: (0.25 g/min)/(3.6 m/min) x (0.0022 lb/g)/(39.37 in./m) x (1,000 in.) = 0.0039 lb/1,000 in. cut, 8 mm thick

Plasma cutting emissions, lb/hr: (# of stations)(max. cutting rate, in./min.)(60 min./hr.)(emission factor, lb. pollutant/1,000 in. cut, 8 mm thick)

Cutting emissions, lb/hr: (# of stations)(max. metal thickness, in.)(max. cutting rate, in./min.)(60 min./hr.)(emission factor, lb. pollutant/1,000 in. cut, 1" thick)

Welding emissions, lb/hr: (# of stations)(max. lbs of electrode used/hr/station)(emission factor, lb. pollutant/lb. of electrode used)

Emissions, lbs/day = emissions, lbs/hr x 24 hrs/day

Emissions, tons/yr = emissions, lb/hr x 8,760 hrs/year x 1 ton/2,000 lbs.

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

Company Name: **Advantage Engineering**
Address City IN Zip: **525 East Stop 18 Road, Greenwood, IN 46142**
Registration Number: **081-32452-00029**
Reviewer: **Deborah Cole**

Heat Input Capacity MMBtu/hr	HHV mmBtu / mmscf	Potential Throughput MMCF/yr
2.7	1020	23.2

	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	7.6	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	0.02	0.09	0.09	0.01	1.16	0.06	0.97

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.
PM2.5 emission factor is filterable and condensable PM2.5 combined.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
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
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,020 MMBtu
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

See page 2 for HAPs emissions calculations.

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

Company Name: **Advantage Engineering**
Address City IN Zip: **525 East Stop 18 Road, Greenwood, IN 46142**
Registration Number: **081-32452-00029**
Reviewer: **Deborah Cole**

	HAPs - Organics				
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	0.00002	0.00001	0.00087	0.02087	0.00004

	HAPs - Metals				
	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	0.00001	0.00001	0.00002	0.00000	0.00002

Methodology is the same as page 1.

Total HAPs: 0.022

The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.
See Page 3 for Greenhouse Gas calculations.

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

Company Name: **Advantage Engineering**
Address City IN Zip: **525 East Stop 18 Road, Greenwood, IN 46142**
Registration Number: **081-32452-00029**
Reviewer: **Deborah Cole**

	Greenhouse Gas		
	CO2	CH4	N2O
Emission Factor in lb/MMcf	120,000	2.3	2.2
Potential Emission in tons/yr	1,391	0.0	0.0
Summed Potential Emissions in tons/yr	1,391		
CO2e Total in tons/yr	1,400		

Methodology

The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low Nox burner is 0.64.
Emission Factors are from AP 42, Table 1.4-2 SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

Appendix A: Emission Calculations
Fugitive Dust Emissions - Paved Roads

Company Name: **Advantage Engineering**
Address City IN Zip: **525 East Stop 18 Road, Greenwood, IN 46142**
Registration Number: **081-32452-00029**
Reviewer: **Deborah Cole**

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, Ch 13.2.1 (1/2011).

Vehicle Informtation (provided by source)

Type	Maximum number of vehicles per day	Number of one-way trips per day per vehicle	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)
Cars entering	87.0	1.0	87.0	1.0	87.0	400	0.076	6.6	2405.7
Cars leaving	87.0	1.0	87.0	1.0	87.0	400	0.076	6.6	2405.7
trucks	20.0	1.0	20.0	15.0	300.0	100	0.019	0.4	138.3
fork lift	50.0	1.0	50.0	2.0	100.0	400	0.076	3.8	1382.6
		Totals	**244.0**		**574.0**			**17.3**	**6332.2**

Average Vehicle Weight Per Trip = 2.4 tons/trip
Average Miles Per Trip = 0.07 miles/trip

Unmitigated Emission Factor, Ef = [k * (sL)^0.91 * (W)^1.02] (Equation 1 from AP-42 13.2.1)

	PM	PM10	PM2.5	
where k =	0.011	0.0022	0.00054	lb/VMT = particle size multiplier (AP-42 Table 13.2.1-1)
W =	2.4	2.4	2.4	tons = average vehicle weight (provided by source)
sL =	0.6	0.6	0.6	g/m^2 = Ubiquitous Baseline Silt Loading Values of Paved Roads AP- 42 - Table 13.2.1-3)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, Eext = E * [1 - (p/4N)] (Equation 2 from AP-42 13.2.1)
Mitigated Emission Factor, Eext = Ef * [1 - (p/4N)]
where p = 125 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, Ef =	0.017	0.003	0.0008	lb/mile
Mitigated Emission Factor, Eext =	0.015	0.003	0.0007	lb/mile
Dust Control Efficiency =				

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)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Vehicle (entering plant) (one-way trip)	0.02	0.00	0.00	0.02	0.00	0.00	0.02	0.00	0.00
Vehicle (leaving plant) (one-way trip)	0.02	0.00	0.00	0.02	0.00	0.00	0.02	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.01	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00
Totals	**0.05**	**0.01**	**0.00**	**0.05**	**0.01**	**0.00**	**0.05**	**0.01**	**0.00**

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)
Controlled PTE (tons/yr) = [Mitigated PTE (tons/yr)] * [1 - Dust Control Efficiency]

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

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

SENT VIA U.S. MAIL: CONFIRMED DELIVERY AND SIGNATURE REQUESTED

TO: Ron Wolf
Advantage Engineering, Inc
525 E. Stop 18 Rd
Greenwood, IN 46142

DATE: January 11, 2013

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

SUBJECT: Final Decision
Registration
081-32452-00029

Enclosed is the final decision and supporting materials for the air permit application referenced above. Please note that this packet contains the original, signed, permit documents.

The final decision is being sent to you because our records indicate that you are the contact person for this application. However, if you are not the appropriate person within your company to receive this document, please forward it to the correct person.

A copy of the final decision and supporting materials has also been sent via standard mail to:
OAQ Permits Branch Interested Parties List

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178, or toll-free at 1-800-451-6027 (ext. 3-0178), and ask to speak to the permit reviewer who prepared the permit. If you think you have received this document in error, please contact Joanne Smiddie-Brush of my staff at 1-800-451-6027 (ext 3-0185), or via e-mail at jbrush@idem.IN.gov.

Mail Code 61-53

IDEM Staff	MIDENNEY 1/11/2013 Advantage Engineering, Inc. 081-32452-00029 (final)		AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING
Name and address of Sender	▶	Indiana Department of Environmental Management Office of Air Quality – Permits Branch 100 N. Senate Indianapolis, IN 46204	Type of Mail: **CERTIFICATE OF MAILING ONLY**

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1		Ron Wolf Advantage Engineering, Inc. 525 E Stop 18 Rd Greenwood IN 46142 (Source CAATS) via confirm delivery									
2		Johnson County Commissioners 5 East Jefferson Franklin IN 46131 *(Local Official)*									
3		Johnson County Health Department 86 W. Court St, Courthouse Annex Franklin IN 46131-2345 *(Health Department)*									
4		Frederick & Iva Moore 6019 W 650 N Ligonier IN 46767 *(Affected Party)*									
5		Larry and Becky Bischoff 10979 North Smokey Row Road Mooresville IN 46158 *(Affected Party)*									
6		Greenwood City Council and Mayors Office 2 N. Madison Ave. Greenwood IN 46142 *(Local Official)*									
7		Franklin City Council & Mayors Office 701 E Monroe St Franklin IN 46131 *(Local Official)*									
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