Permit Renewal Application
Air Quality Permit Number 58973

Prepared for:

Potters Industries, LLC
4665 Finance Way
Kingman, AZ 86401

Prepared by:

Bear Creek Consultants
1320 E. 9th Street
Edmond, OK 73034
405-531-0600

TABLE OF CONTENTS

LIST OF APPENDICES

1.0 EXECUTIVE SUMMARY

Potters Industries, L.L.C. (Potters) owns and operates a glass bead manufacturing facility in Kingman, Arizona. The facility currently operates under Air Permit Number 73578, which expires February 22, 2024). Potters is submitting this application to renew the current permit. The only changes to the facility since the previous application are:

- Potters replaced the baghouse on Air Transport #2 (AT2 ID 108) with a cartridge dust collector. While the new equipment has better collection efficiency (and therefore, less emissions), Potters is electing to keep the current emissions limits on AT2.
- Potters is expecting increased usage of coating chemicals is requesting a 0.92 TPY increase in VOC for bead coating.

No other changes to existing equipment and no new equipment are being proposed in this application. The following table and detailed emissions calculations (Appendix C) provide the facility's Potential to Emit (PTE).

Table 1-1. Facility Potential to Emit

Permit ID	Description	NOx		CO		SO2		VOC		PM10		PM2.5	
		lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
A	Cullet Dryer	0.35	1.53	0.29	1.29	0.00	0.01	0.02	0.08	0.68	2.98	0.03	0.12
B	Grind/Sift									1.62	7.10		
C	Furnace 1	2.75	12.05	2.31	10.12	0.02	0.07	0.15	0.66	1.83	8.01	0.21	0.92
D	Sift/Coating /Package							0.35	1.53	1.40	6.12		
E	Packaging									0.13			
F	Air Trans 1									0.27			
G	Furnace 2	2.75	12.05	2.31	10.12	0.02	0.07	0.15	0.66	1.84	8.04	0.21	0.92
H	Air Trans 2									0.36	1.58		
	Total	**5.85**	**25.62**	**4.91**	**21.52**	**0.04**	**0.15**	**0.67**	**2.94**	**8.12**	**35.55**	**0.44**	**1.95**

2.0 PROCESS DESCRIPTION

The Kingman plant manufactures glass beads for marking paved roads, runways and industrial applications such as in metal finishing. The following paragraphs provide a detailed description of the process, equipment, and emissions. A site map and a process flow diagram are included in the Appendix B.

2.1 Process A – Cullet Crushing and Storage

The plant receives recycled, broken, or waste glass (known as cullet). The cullet is crushed and then sent to storage.

2.2 Process B – Cullet Drying and Storage

From storage, the crushed cullet is sent through a natural gas-fired dryer, then onto storage. Particulate from the dryer, storage, and pack line are sent to Baghouse A. Collected baghouse fines are sent to the bulk- loading area or reintroduced into the process.

2.3 Process C – Milling and Grinding

From dry cullet storage, the cullet is sent to the milling and grinding area so the glass is sized before it is sent to the furnace. The milling and grinding equipment is controlled by Baghouse B. Collected baghouse fines are sent to the bulk-loading area or reintroduced into the process.

2.4 Process D – Sifting and Regrind

From milling and grinding areas the ground glass is sifted (i.e., sized) and sent to storage. Some of the product is reground and sent back to sifting, remaining material is sent to the bulk ground glass storage area. The sifting and regrind equipment is controlled by Baghouse B. Collected baghouse fines are sent to the bulk-loading area or reintroduced into the process.

2.5 Processes E & G – Glass Furnaces

From the sifting storage area, the sized-glass particles are sent to one of two natural gas-fired furnaces where the glass is suspended in the furnace with a vacuum. The furnace melts the glass into round spheres. The furnaces and material transfer equipment are controlled by Baghouses C, G, F, and H. Collected baghouse fines bulk-loading area or reintroduced into the process.

2.6 Process I – Sifting and Chemical Coating

From the furnace bead storage area, the glass beads are sifted for size. Some of the beads are coated with chemicals for improved finished product attributes (flowability and adhesion). The beads are then sent to storage prior to packaging. The bead sifting area is controlled by Baghouse D. Collected baghouse fines are sent to the bulk-loading area or reintroduced into the process.

2.7 Process J – Glass Bead Packaging

From the sifting and coating storage area, the glass beads are packaged in sacks, totes, or other containers. Particulate from the bead packaging area is controlled by Baghouse D. Collected baghouse fines are sent to the bulk- loading area or reintroduced into the process.

3.0 EMISSIONS CALCULATIONS

3.1 Particulate Matter Emissions

Particulate emissions from the dust collections systems (i.e. baghouses and cartridge dust collectors) are calculated assuming an outlet grain loading of 0.01 grains per dry standard cubic feet and using actual flow rates (from previous stack tests) or flow rates provided by the equipment manufacturers. Fines collected in the baghouse are returned to the process, sold to other glass manufacturers, or sent offsite as a waste product. Since the baghouses are used for product recovery, they are considered an inherent part of the process and therefore can be considered in "potential to emit" calculations. Emissions are calculated with the equipment operating 8,760 hours per year. Specific calculations for each baghouse are shown in the attached spreadsheets. For baghouses that control combustion equipment (i.e., dryers and furnaces), the process particulate is added to the combustion particulate for a total particulate from that stack. Refer to Appendix C, Table C-2

3.2 Combustion Emissions

Emissions for the natural gas-fired cullet dryer and furnaces were calculated using emissions factors found in AP-42 Section 1.4 – Natural Gas Combustion. Emissions are calculated with the equipment operating 8,760 hours per year. Specific emissions factors and other details are shown in Appendix C, Table C-3.

3.3 Coating Emissions

Emissions from the bead-coating process are based on the percentage of volatile organic compounds (VOCs) in the coating product. The coatings used are a complex mixture of siloxanes (i.e., organosilicon compounds). Fully methylated siloxanes are not considered VOCs. Since some of the compounds used at the Kingman Plant are exempt and some are not, Potters Industries has chosen to use the manufacturer's determination of VOC content. Emissions are calculated assuming 100% of the VOC content of the coatings is volatilized. Potential usage was calculated based on 2.0 times the 2022 actual usage. While specific chemicals were used in the calculation, Potters reserves the right to substitute similar products without notice as long as the total VOC does not exceed the totals outlined Table C-4 in Appendix C.

3.4 Hazardous Air Pollutants (HAPs)

Some of the coatings (like Dow OFS-6020) contain HAPs, like methanol. Emissions are calculated assuming 100% of the HAP content of the coatings is volatilized. The total quantity of HAPs is estimated at 0.005 lb/hr and 0.02 TPY. Potters reserves the right to substitute similar products without notice as long as the total HAPs do not exceed these numbers. Refer to Table C-4 in Appendix C.

4.0 FEDERAL REGULATIONS

This section provides a summary demonstration that this facility meets all of the applicable Federal Regulations.

Prevention of Significant Deterioration (PSD), 40 CFR Part 52 [Not Applicable]
Since the facility emits less than major source thresholds, this application is not considered a modification per 40 CFR 52.21. Therefore, this subpart does not apply.

Standards of Performance for New Stationary Sources (NSPS), 40 CFR Part 60 [Not Applicable]
Subpart A requires the submittal of several notifications for NSPS-affected sources. For example, a notification of the commencement of operations is required within 15 days of startup. The facility is not subject to any NSPS, so this part does not apply.

Subpart CC - Standards of Performance for Glass Manufacturing Plants regulates particulate matter from glass-melting furnaces. While the Kingman facility produces glass beads, it does not have "furnaces" (i.e., units that produce molten glass) as defined in §60.291. Therefore, this subpart does not apply.

Subpart OOO - Standards of Performance for Nonmetallic Mineral Processing Plants regulates particulate matter from fixed or portable nonmetallic mineral processing plants, including crushers, grinding mills, screening operations, and conveyors. While the Kingman facility has equipment that could be regulated by NSPS OOO, it does not process nonmetallic minerals as defined in §60.671. Therefore, this subpart does not apply.

National Emission Standards for Hazardous Air Pollutants (NESHAPs), 40 CFR Part 61 [Not Applicable]
There are no emissions of the regulated pollutants: arsenic, asbestos, beryllium, coke oven emissions, radionuclides, or vinyl chloride. There are no production activities which produce or use any of these materials.

NESHAP, 40 CFR Part 63 [Not Applicable]
Potential HAP emissions from the facility are below the 10/25 TPY major source thresholds as shown in the emissions section. Based on emission calculations this facility is not a major source of HAPs and no applicable area source MACT standards have been promulgated. As a result, the regulations of 40 CFR, Part 63 do not apply.

Compliance Assurance Monitoring (CAM), 40 CFR Part 64 [Not Applicable]
CAM applies to any pollutant-specific emission unit at a major source that is required to obtain a Title V permit, if it meets all of the following criteria:

- It is subject to an emission limit or standard for an applicable regulated air pollutant.
- It uses a control device to achieve compliance with the applicable emission limit or standard.
- It has potential emissions, prior to the control device, of the applicable regulated air pollutant of greater than 100 TPY.

The facility is not a major source, so CAM does not apply.

Title V Air Operating Permit, 40 CFR Part 70 **[Not Applicable]**
Major sources of air pollution (i.e., more than 100 TPY of any single criteria pollutant or more than 10 TPY of any single, 25 TPY of any combination of HAPs) are required to obtain a Title V operating permit. Based on the PTE calculations shown in Table C-1, this facility is not a major source of criteria pollutants or HAPs. As a result, the Title V permitting regulations do not apply.

Chemical Accident Prevention Provisions, 40 CFR Part 68 **[Not Applicable]**
The facility does not store or manage any extremely hazardous substance (EHS) in quantities greater than the threshold quantities defined in this part. Therefore, the chemical accident release provision of 40 CFR Part 68 does not apply.

Stratospheric Ozone Protection, 40 CFR Part 82 **[Not Applicable]**
The facility does not produce, consume, recycle, import, or export any of the controlled substances or controlled products as defined in this part, nor will service on motor (fleet) vehicles, which involves ozone-depleting substances, be performed. Therefore, as currently operated, the facility is not subject to these requirements.

5.0 ARIZONA AIR POLLUTION CONTROL RULES

This section provides a summary demonstration that this facility meets all of the applicable State Regulations.

AAC Title 18, Chapter 2, Article 1 (Common Provisions) [Applicable]
Article1 includes definitions but there are no regulatory requirements.

AAC Title 18, Chapter 2, Article 2 (Ambient Standards) [Applicable]
Article 2 enumerates the primary and secondary ambient air quality standards and the prevention of significant deterioration increments. National Ambient Air Quality Standards (NAAQS) are established by the U.S. EPA. The actual ambient air concentrations of criteria pollutants are monitored within the State of Arizona by ADEQ. The conditions of this permit will assure that the facility will remain in "attainment" of these standards.

AAC Title 18, Chapter 2, Article 3 (Permitting Requirements) [Applicable]
Article 3, Section 322 requires minor sources of air contaminants to submit a permit renewal at least six months before the permit expiration date. Permit No. 46895 expires on June 9, 2014, so this application satisfies the renewal requirement. The facility will also comply with the other applicable requirements (i.e., emissions inventory, testing, etc.) under Article 3.

AAC Title 18, Chapter 2, Article 4 (Major Source Permitting) [Not Applicable]
The Kingman facility is a true minor source of criteria and HAPs, so Article 4 does not apply.

AAC Title 18, Chapter 2, Article 5 (General Permits) [Not Applicable]
The facility does not have a General Permit, so Article 5 does not apply.

AAC Title 18, Chapter 2, Article 6 (Nonpoint Sources) [Applicable]
Article 6 regulates emissions from open burning, roadways, material handling, storage piles, and other non-point sources. The facility will comply with the applicable requirements.

AAC Title 18, Chapter 2, Article 7 (Existing Source Standards) [Applicable]
Article 7 contains state performance standards for specific types of existing emission sources. The emissions sources associated with the Kingman facility include a natural gas-fired dryer, two natural-gas fired furnaces, and unclassified sources. Based on the equations given in R18-2-724 and R18-2-730, the equipment at the facility complies with the emission standards outlined in Article 7.

AAC Title 18, Chapter 2, Article 8 (Mobile Sources) [Not Applicable]
Article 8 establishes regulations specific to mobile source equipment. The Kingman facility does not utilize the types of mobile equipment specified in Article 8, so this rule does not apply.

AAC Title 18, Chapter 2, Article 9 (New Source Standards) [Not Applicable]
Article 9 contains state performance standards for specific types of new emission sources. The facility does not utilize the types of equipment specified in Article 9, so this rule does not apply.

AAC Title 18, Chapter 2, Article11 (HAPs) [Potentially Applicable]
Article11 incorporates the requirements of the Federal HAP Programs. The facility is a minor source of HAPs, but is potentially subject to asbestos notification and emission control requirements should their presence be confirmed prior to removal of certain materials from the facility.

AAC Title 18, Chapter 2, Article12 (Emissions Banking) [Not Applicable]
Article 12 establishes an emissions trading program for any source of criteria pollutants. The facility has not generated, nor is it planning to generate, any emissions credits. Therefore, Article 12 does not apply.

AAC Title 18, Chapter 2, Article16 (Regional Haze) [Not Applicable]
Article 16 applies to any existing stationary source that may reasonably be anticipated to cause or contribute to visibility impairment in any mandatory Federal Class I area. The ADEQ is responsible for identifying each existing stationary source that may be reasonably anticipated to cause or contribute to visibility impairment. The ADEQ is also responsible for notifying the affected source. The facility is a true minor source and has not been notified by the ADEQ that it causes or contributes to visibility impairment, so this Article does not apply.

AAC Title 18, Chapter 2, Article17 (Arizona HAPs) [Applicable]
Article 17 establishes regulations for the emissions of HAPs from certain minor and all major sources. The Article requires the source to provide ADEQ with notice, in a permit application, of the types and amounts of HAPs emitted by the source. This application identifies known types and amounts of HAPs emitted from the facility. The facility complies with the provisions of Article 17.

Appendix A
ADEQ Class II Permit Application Form

APPLICATION PACKET
FOR
CLASS II PERMIT

Arizona Department of Environmental Quality

Air Quality Division

1110 W. Washington St. • Phoenix, AZ 85007
Phone: 602-771-2338 • Email: airpermits@azdeq.gov

Table of Contents

*Definitions for all terms that are **bolded and italicized** can be found starting on page 20*

SECTION 1.0 - GENERAL INFORMATION

1.1 HOW TO SUBMIT AN APPLICATION

Submit your application and any supporting documents by e-mail to **airpermits@azdeq.gov** or by mail to 1110 W. Washington St., Phoenix, AZ 85007.

1.2 PRE-APPLICATION MEETINGS

For complex and time-sensitive projects, it is strongly recommended that applicants request a meeting prior to submission of an application. During such meetings, discussions may focus on application requirements and timeline expectations, and may involve reviewing application content and identifying missing pieces of information. Such meetings may result in decreases in the time necessary to process an application. ***A pre-application meeting with the Department may be requested at 602-771-2338 or airpermits@azdeq.gov.***

1.3 ADEQ TIMEFRAME FOR ADMINISTRATIVE COMPLETENESS REVIEW

ADEQ will determine if the permit application is administratively complete within 10 calendar days after a permit application is received.

1.4 ADEQ TIMEFRAME FOR PROCESSING CLASS II PERMITS

After receiving a complete application, ADEQ will strive to take final action on the application within:

Class II Permit:	120 calendar days
Significant Permit Revision:	100 calendar days
Minor Permit Revision:	15 calendar days

1.5 PROHIBITED LICENSING DECISIONS

1. The Department shall not base a licensing decision in whole or in part on a licensing requirement or condition that is not specifically authorized by statute, rule or state tribal gaming compact. A general grant of authority in statute does not constitute a basis for imposing a licensing requirement or condition unless a rule is made pursuant to that general grant of authority that specifically authorizes the requirement or condition.

2. A.R.S. §41-1030 may be enforced in a private civil action and relief may be awarded against the state. The court may award reasonable attorney fees, damages and all fees associated with the license application to a party that prevails in an action against the state for a violation of this section.

3. A state employee may not intentionally or knowingly violate A.R.S. §41-1030. A violation of A.R.S. §41-1030 is cause for disciplinary action or dismissal pursuant to the agency's adopted personnel policy.

4. A.R.S. §41-1030 does not abrogate the immunity provided by A.R.S. §12-820.01 or A.R.S. §12-820.02.

1.6 PERMIT FEE SCHEDULE

The current permit fee schedule can be accessed at the following website: https://static.azdeq.gov/aqd/aqd_class_fees.pdf.

SECTION 2.0
IS A CLASS II PERMIT APPROPRIATE FOR YOUR SOURCE?

2.1 Does Your Source Require a Registration or a Permit?

A. Listed below are four categories of sources that do not need a registration or a permit.

1. A stationary source that consists solely of a single ***categorically exempt activity*** plus any combination of ***trivial activities***;

2. Agricultural equipment used in normal farm operations;

3. A source that is not subject to an NSPS or NESHAP and meets all of the criteria below:

   a. ***Maximum Capacity to Emit*** of regulated air pollutants excluding ***regulated minor NSR pollutants*** is less than ***significant*** thresholds;

   b. ***Maximum Capacity to Emit*** of HAPs is less than 10 tons per year for an individual HAP and 25 tons per year for all HAPs combined;

   c. ***Maximum Capacity to Emit*** of ***Minor NSR Pollutants*** is less than ***permitting exemption thresholds***.

4. A source subject to any combination of NSPS and NESHAPs on the ***Excluded NSPS/NESHAP List*** and meets all of the criteria below:

   a. ***Maximum Capacity to Emit*** of regulated air pollutants excluding ***regulated minor NSR pollutants*** is less than ***significant*** thresholds;

   b. ***Maximum Capacity to Emit*** of HAPs is less than 10 tons per year for an individual HAP and 25 tons per year for all HAPs combined;

   c. ***Maximum Capacity to Emit*** of ***Minor NSR Pollutants*** is less than ***permitting exemption thresholds***.

B. If your source falls into one of the four categories listed above in Section A, it does not need a registration or a permit. However, your source will need to comply with all applicable regulations to which it is subject.

C. If your source does not fall into any of the four categories listed above in Section A, proceed to Section 2.2 to determine if your source could qualify for a registration.

2.2 Can Your Source Qualify for a Registration?

A. Listed below are three categories of sources that require registration.

1. A source that is subject to any NSPS and/or NESHAP other than those included in the E***xcluded NSPS/NESHAP list*** and meets all of the criteria below:

    a. ***Maximum Capacity to Emit*** of regulated air pollutants is less than ***significant*** levels;

    b. ***Maximum Capacity to Emit*** of HAPs is less than 10 tons per year for an individual HAP and 25 tons per year for all HAPs combined.

2. A source that does not employ ***elective limits*** and meets all of the criteria below:

    a. ***Maximum Capacity to Emit*** of regulated air pollutants is less than ***significant*** levels;

    b. ***Maximum Capacity to Emit*** of HAPs is less than 10 tons per year for an individual HAP and 25 tons per year for all HAPs combined;

    c. ***Maximum Capacity to Emit*** of ***Regulated Minor NSR Pollutants*** is greater than or equal to the ***permitting exemption thresholds***.

3. A source that employs ***elective limits*** and meets all of the criteria below:

    a. ***Maximum Capacity to Emit*** of regulated air pollutants is less than ***significant*** levels;

    b. ***Maximum Capacity to Emit*** of HAPs is less than 10 tons per year for an individual HAP and 25 tons per year for all HAPs combined.

B. If your source falls into one of the three categories listed above in Section A, it qualifies for a registration. Please complete the Registration Application Packet.

C. If your source does not fall into any of the three categories listed above in Section A, proceed to Section 2.3 to determine if your source requires a Class II permit.

Note: Through the use of ***elective limits or controls***, a new source or a previously permitted source can qualify for registration if the facility's ***maximum capacity to emit with elective limits*** is less than ***significant.***

2.3 Does Your Source Require a Class II Permit?

A. A source will require a Class II permit if any of the following criteria are met:

1. ***Potential to Emit*** of ***Regulated NSR Pollutants*** are less than 100 ton per year for attainment pollutants;

2. ***Potential to Emit*** is less than the ***Article 4 Major Source Thresholds*** for nonattainment pollutants;

3. ***Maximum capacity to emit*** HAPs is greater than 10 tons per year for an individual HAP and 25 tons per year for all HAPs combined and ***Potential to Emit*** of HAPs of is less than 10 tons per year for an individual HAP and 25 tons per year for all HAPs combined.

B. If your source satisfies the criteria above in Section A, proceed to Section 3, Class II Permit Application Package.

C. If your source does not qualify for a Class II permit, then it will require a Class I permit. You should complete the Class I Permit Application Packet.

SECTION 3.0

CLASS II PERMIT APPLICATION PACKAGE

SECTION 3.1

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

Air Quality Division

1110 West Washington • Phoenix, AZ 85007 • Phone: (602) 771-2338

STANDARD CLASS II PERMIT APPLICATION FORM

(As required by A.R.S. § 49-426, and Chapter 2, Article 3, Arizona Administrative Code)

1. Permit to be issued to (Business license name of organization that is to receive permit):

   Potters Industries, LLC

2. Mailing Address: 4655 Finance Way

   City: Kingman State: AZ ZIP: 86401

3. Name (or names) of Responsible Official: Frederick S. Thompson

   Phone: (928) 352-8412 Email: fred.thompson@pottersindustries.com

   Facility Manager/Contact Person and Title: Frederick S. Thompson - Plant Manager

   Phone: See above Fax: Email:

4. Facility Name: Kingman Plant

   Facility Location/Address (Current/Proposed): 4655 Finance Way

   City: Kingman County Mohave ZIP: 86401

   Indian Reservation (if applicable, which one): Not Applicable

   Latitude/Longitude, Elevation: 35.262628, -113.944205 3,330 ft

5. General Nature of Business: Glass Bead Manufacturing

7. Type of Organization:

   ☐ Corporation ☐ Individual Owner ☐ Partnership ☐ Government Entity X ☐ LLC

   ☐ Other

8. Permit Application Basis: ☐ New Source ☐ Revision ☒ Renewal of Existing Permit

   For renewal or modification, include existing permit number (and exp. date): 73578 2/22/24

   Date of Commencement of Construction or Modification:

   Primary Standard Industrial Classification Code: 32310302

9. I certify that I have knowledge of the facts herein set forth, that the same are true, accurate and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by ADEQ as public record. I also attest that I am in compliance with the applicable requirements of the Permit and will continue to comply with such requirements and any future requirements that become effective during the life of the Permit. I will present a certification of compliance to ADEQ no less than annually and more frequently if specified by ADEQ. I further state that

I will assume responsibility for the construction, modification, or operation of the source in accordance with Arizona Administrative Code, Title 18, Chapter 2 and any permit issued thereof.

Signature of Responsible Official: Frederick A. Thompson

Printed Name of Signer/Official Title: Frederick S. Thompson

Date: August 31, 2022 Telephone Number: (928) 352-8412

Instructions for Standard Class II Permit Application Form

ADEQ requires all applicants to submit a completed Standard Permit Application Form.

Item #1: Business license name that is to receive the permit. This business name must be registered with the Arizona Corporation Commission.

***Item #2*:** Mailing address. This is the address where the permit will be mailed.

***Item #3*:** Name(s) of Responsible Official

Item #4*:* Facility Manager/Contact Person - This should be the person who is responsible for implementing the permit at the facility and the person ADEQ may contact for additional information

Item #5: Facility Name and Address: This is the address of the current or proposed location of the facility.

Item #6: General Nature of Business - This should be in terms of what is produced at the facility.

***Item #7*:** Type of Organization. If the "other" box is checked, specify what the organization is.

***Item #8*:** Permit Application Basis. Indicate what type of permit is being applied for. If the facility is already permitted and is applying for a revision or renewal, then the current permit number must be included. The Date of Commencement of Construction/ Modification is the expected date that construction or modification will begin. This date need not be definite.

Item #9*:** Signature and Printed Name of ***Responsible Official. If unsure who the responsible official is for your company, refer to the definition in Section 4, Definitions.

3.2 Standard Class II Permit Application Components

No application shall be considered properly filed until the Director has determined that all information required by this application form and the applicable statutes and regulations have been submitted. For permit revisions, the applicant need only supply information which directly pertains to the revision.

In addition to the information required on the standard application form, the applicant shall supply the following:

A. A detailed description of each process at the facility;

B. A flow diagram for all processes;

C. A description of alternate operating scenarios, if applicable;

D. Emissions Calculations

1. New Sources

   Emission calculations for new sources shall include:

   a. The facility-wide ***Potential to Emit*** for ***criteria pollutants*** and hazardous air pollutants; and

   b. A detailed breakdown of emissions from each process.

2. Modifications

   Emission calculations for modifications shall include:

   a. The increase in ***Potential to Emit*** for the modified source;

   b. A detailed breakdown of emissions from each process;

   c. If new emission source(s) are being added, the ***Potential to Emit*** for each new source; and

   d. The facility-wide ***Potential to Emit*** before the modification and the facility-wide ***Potential to Emit*** after the modification.

3. Emissions shall be expressed in pounds per hour and tons per year.

4. Emission factors must be clearly documented. If manufacturer specifications or site-specific testing is being utilized to develop the emission factors, appropriate documentation should be provided. The Department may impose permit limits based on such emission factors with associated testing and monitoring provisions.

5. An electronic copy of the emission calculations should be included in the application.

E. Minor NSR Applicability Determination

If a new stationary source has the ***Potential to Emit*** of a ***regulated minor NSR pollutant***, or a modified source has an increase in the ***Potential to Emit*** of a ***regulated minor NSR pollutant***, greater than or equal to the ***permitting exemption threshold***, then that ***regulated minor NSR pollutant*** is subject to minor NSR requirements. In that event, the applicant must either:

a. Elect to have the Director perform a screening model of its emissions; or

b. Implement ***Reasonably Available Control Technology (RACT)***.

A detailed explanation on how to select ***RACT*** can be found in the Department's Minor NSR Guidance document available online at:

http://www.azdeq.gov/environ/air/permits/permitapplications.html

F. An explanation of any proposed exemptions from otherwise applicable requirements.

G. Facilities that wish to accept voluntary limitations in order to avoid classification as a major source or a major modification, shall propose such limitations. If such limitations are acceptable to the Department, they will be incorporated into the permit and made enforceable by means of monitoring, recordkeeping, and/or performance testing.

H. A comprehensive equipment list which includes the make, model, serial number, equipment identification (ID) number, and date of manufacture of all process and control equipment (equipment other than those identified as insignificant activities). The date of manufacture must be included in order to determine applicability of regulations.

I. A listing of all insignificant activities.

J. Any application component that is identified as confidential shall follow the notice obligations in A.R.S. 49-432 and A.A.C. R18-2-305.

K. For existing sources that are not currently in compliance with an applicable requirement, a compliance schedule should be attached which documents how the facility will achieve compliance with such requirement(s). The compliance schedule should include a time line of remedial measures, including an enforceable sequence of actions with milestones leading to compliance with the applicable requirement(s).

L. Suggested draft permit language must be included in minor permit revision applications.

3.3 Minor New Source Review Applicability (Emission Calculations)

A. Emission Calculations for determining Minor NSR Applicability

1. New Sources

   a. For each emission unit, determine the ***potential to emit (PTE)*** for each ***regulated minor NSR pollutant***.

   b. Determine facility-wide ***PTE*** for each ***regulated minor NSR pollutant***.

   c. Minor NSR requirements apply to each ***regulated minor NSR pollutant*** for which the facility-wide ***PTE*** emissions are greater than or equal to the ***permitting exemption threshold.***

2. Modifications

   a. Follow the steps below to determine if Minor NSR requirements apply to the modification:

      (1) For each ***regulated minor NSR pollutant*** previously emitted, determine the emission increase for each emission unit that is modified.

      (2) For each ***regulated minor NSR pollutant*** not previously emitted, determine the ***PTE*** for each emission unit that is modified.

      (3) For each new emissions unit that is added, determine the ***PTE*** for each ***regulated minor NSR pollutant***.

      (4) Determine the facility-wide emission increase for each ***regulated minor NSR pollutant***.

      (5) Minor NSR requirements apply to each ***regulated minor NSR pollutant*** *for which* the facility-wide ***PTE*** increase is greater than or equal to the corresponding ***permitting exemption threshold***.

      Note: A change constitutes a ***minor NSR modification*** regardless of whether there will be a net decrease in total source emissions or a net increase in total source emissions that is less than the ***permitting exemption thresholds*** as a result of decreases in the PTE of other emission units at the same stationary source.

3. A modeling analysis or a ***Reasonably Available Control Technology (RACT)*** determination is required only if a pollutant triggers Minor NSR requirements.

3.4 Modeling or RACT Determination
(If subject to Minor New Source Review Requirements)

A. For each ***regulated minor NSR pollutant*** that is subject to Minor NSR requirements, there are two options from which an applicant has to choose: Modeling or ***Reasonably Available Control Technology (RACT)***. Details for each option are listed below:

1. Modeling

a. If the applicant requests that ADEQ perform screen modeling, the applicant must provide the following:

(1) Facility Information

(a) Detailed facility layout;

(b) Location of the facility's fence line;

(c) Locations of emission points;

(d) Location of process equipment (i.e. storage tanks, silos, conveyors, etc.), lay down areas, parking lots, haul roads, maintenance roads, storage piles, etc.; and

(e) Location and dimensions of all buildings at the facility.

(f) If a site plan becomes too crowded, a table listing all the above information can be provided instead, with the ID traceable on the plot.

(2) Emission Profiles

(a) Maximum hourly emission rates (lb/hr); and

(b) Maximum annual emission rate (tons/year)

(3) Stack Parameters

(a) UTM coordinates;

(b) Stack inside diameter;

(c) Stack height above ground;

(d) Stack gas exit velocity;

(e) Stack gas exit temperature;

(f) Indicate if the stack is non-vertical or vertical with obstructed emissions (such as a raincap); and

(g) If the stack is a non-round stack, provide length and width for a rectangular stack.

ADEQ will perform screen modeling for each pollutant subject to Minor NSR requirements. If screen modeling indicates possible interference with the NAAQS or maintenance of the NAAQS, ADEQ will inform the applicant that refined modeling is necessary to be conducted by the

applicant. Refined modeling should be performed in accordance with ADEQ's modeling guidelines that are available online at:

http://www.azdeq.gov/environ/air/permits/airdispersionmodeling.html

ADEQ strongly recommends that the applicant submit a modeling protocol for ADEQ's review and approval. A detailed modeling report, including all modeling files and associated information, must be included in the application.

For expedited permit processing, instead of requesting ADEQ to perform screen modeling, the Permittee may choose to perform screen modeling or refined modeling to demonstrate that the new source or modification will not interfere with the NAAQS.

2. RACT

a. If the applicant chooses to implement RACT, the following steps should be followed:

(1) For each ***regulated minor NSR pollutant*** subject to minor NSR, evaluate each emission unit for RACT applicability.

(2) If for any emission unit, the emissions or increase in emissions of a pollutant subject to Minor NSR requirements is greater than 20% of the ***permitting exemption threshold*** for that pollutant, ***RACT*** will be required for that pollutant and emission unit.

(3) The application should contain the RACT determinations for all pollutants subject to minor NSR program. The application should contain the RACT determinations for all pollutants subject to minor NSR program based on the case by case analysis performed by the applicant. The applicant may use one of the following to determine RACT for the affected emission units:

(a) EPA RACT/BACT/LAER clearinghouse

http://cfpub.epa.gov/RBLC/

(b) An emissions standard established or revised by the Administrator for the same type of source under section 111 or 112 of the Act after November 15, 1990. (NSPS/NESHAP)

Link for NSPS (40 CFR 60.1-60.5499)/NESHAP (40 CFR 63.1 to 63.12099)

http://www.ecfr.gov/cgi-bin/text-idx?SID=7716bad8c76b30368044a215ff74fdbe&mc=true&tpl=/ecfrbrowse/Title40/40tab_02.tpl

(c) An applicable requirement of A.A.C. R18-2 or of air quality control regulations adopted by a County under A.R.S. § 49-479 that has been specifically identified as constituting RACT. As per the following guidance document, the 300 series Maricopa County Rules under Regulation III are considered to be ***RACT*** requirements.

http://maricopa.gov/aq/divisions/permit_engineering/docs/pdf/BACT%20Guidance.pdf

These rules (Rule 300 through Rule 372) are available at:

http://www.maricopa.gov/aq/divisions/planning_analysis/AdoptedRules.aspx

(d) A RACT standard imposed on the same type of source by a general permit.

(e) A *RACT* standard imposed on the same type of source no more than 10 years before the date of application submittal. (ADEQ will develop database).

(4) Notwithstanding a Permittee's election to conduct a RACT evaluation for a ***regulated minor NSR Pollutant***, ADEQ may choose to use its discretion to request dispersion modeling, on case by case basis, to ensure that the NAAQS are not violated.

(5) An application for a permit revision subject to minor NSR shall be processed as a significant permit revision, except that the application may be processed as a minor permit revision if one of the following conditions is satisfied for each pollutant subject to minor NSR requirements:

(a) A RACT standard under (3)(a) through (e) above is imposed on each emissions unit that requires such a standard; or

(b) The results of the SCREEN model for a ***regulated minor NSR pollutant*** show that expected concentrations, including background concentrations, are less than 75% of the applicable standard imposed in Article 2 of A.A.C.

Section 3.5 - Equipment List

Type of Equipment	Maximum Rated Capacity	Make	Model	Serial Number	Date of Manufacture	Equipment ID Number
Fabric Filter BH	7,625 cfm	Northwest	81-10		1989	Baghouse A
Fabric Filter BH	10,035 cfm	Northwest	28955-10-TR		1989	Baghouse B
Fabric Filter BH	16,578 cfm	Northwest	294-12TRW1		1992	Baghouse C
Fabric Filter BH	8,150 cfm	Northwest	81-10		1992	Baghouse D
Fabric Filter BH	1,500 cfm	Torit	2DF4		1989	Baghouse E
Fabric Filter BH	3,100 cfm	Flex-Kleen	84WSB4911G		1992	Baghouse F
Fabric Filter BH	16,332 cfm	Northwest	28955-10-TR		1995	Baghouse G
Fabric Filter BH	4,200 cfm	Micro-Pul	645-6-10-TRH-C		1995	Baghouse H
Cullet Storage	87,000 TPY	Pil Design	CU1		1989	ID 101
Cullet Dryer	87,000 TPY	Pil Design	DR1		1989	ID 102
Cullet Grinding	87,000 TPY	Pil Design	GR1		1989	ID 103
Ground Glass Sifting	87,000 TPY	Pil Design	GS1		1989	ID 104
Furnace 1	43,500 TPY	Pil Design	F1		1989	ID 105
Air Transport 1	43,500 TPY	Pil Design	AT1		1992	ID 106
Furnace 2	43,500 TPY	Pil Design	F2		1995	ID 107
Air Transport 2	43,500 TPY	Pil Design	AT2		1995	ID 108
Bead Sifting	87,000 TPY	Pil Design	BS1		1989	ID 109
Bead Packaging	87,000 TPY	Pil Design	PA1		1989	ID 110

[1} For generator sets, enter the maximum rated capacity of the engine rather than the maximum rated capacity of the generator.

All relevant equipment utilized at the facility should be included in the equipment list. Please complete all fields.
The date of manufacture must be included in order to determine applicability of regulations.
Indicate the units (tons/hour, horsepower, etc.) when recording the maximum rated capacity.
Make additional copies of this form if necessary.
***Submit photographs of the faceplates for all engines listed above.**
***If an engine is certified, please also include a copy of the engine certification with the application.**
***For any newly added equipment, include a copy of the specification sheet.**
***These documents will be used to verify equipment information and determine applicable regulations.**

SECTION 3.6 - EMISSION SOURCE FORM

					USE THIS SECTION FOR MODIFICATIONS ONLY		
Emission Point		Regulated Air Pollutant Name	PTE		PTE AFTER MODIFICATION		CHANGE IN PTE
Number	Name		lbs/hr	tons/yr	lbs/hr	tons/yr	tons/yr
	Refer to Appendix C Tables						

Submit emission calculations spreadsheet with your application

SECTION 4.0 - DEFINITIONS

Attainment area means any area in the state that has been identified in regulations promulgated by the Administrator as being in compliance with national ambient air quality standards.

Categorical Sources mean the following classes of sources:

1. Coal cleaning plants with thermal dryers;
2. Kraft pulp mills;
3. Portland cement plants;
4. Primary zinc smelters;
5. Iron and steel mills;
6. Primary aluminum ore reduction plants;
7. Primary copper smelters;
8. Municipal incinerators capable of charging more than 250 tons of refuse per day;
9. Hydrofluoric, sulfuric, or nitric acid plants;
10. Petroleum refineries;
11. Lime plants;
12. Phosphate rock processing plants;
13. Coke oven batteries;
14. Sulfur recovery plants;
15. Carbon black plants using the furnace process;
16. Primary lead smelters;
17. Fuel conversion plants;
18. Sintering plants;
19. Secondary metal production plants;
20. Chemical process plants, which shall not include ethanol production facilities that produce ethanol by natural fermentation included in North American Industry Classification System codes 325193 or 312140;
21. Fossil-fuel boilers, combinations thereof, totaling more than 250 million Btus per hour heat input;
22. Petroleum storage and transfer units with a total storage capacity more than 300,000 barrels;
23. Taconite preprocessing plants;
24. Glass fiber processing plants;
25. Charcoal production plants;
26. Fossil-fuel-fired steam electric plants and combined cycle gas turbines of more than 250 million Btus per hour heat input

Categorical Exempt Activities mean:

1. Any combination of diesel-, natural gas- or gasoline fired engines with cumulative power equal to or less

than 145 horsepower

2. Natural gas-fired engines with cumulative power equal to or less than 155 horsepower

3. Gasoline-fired engines with cumulative power equal to or less than 200 horsepower

4. Any of the following emergency or stand-by engines used for less than 500 hours in each calendar year, provided the permittee keeps records documenting the hours of operation of the engines:

    a. Any combination of diesel-, natural gas- or gasoline-fired emergency engines with cumulative power equal to or less than 2,500 horsepower.

    b. Natural gas-fired emergency engines with cumulative power equal to or less than 2,700 horsepower.

    c. Gasoline-fired emergency engines with cumulative power equal to or less than 3,700 horsepower.

    d. Any combination of boilers with a cumulative maximum design heat input capacity of less than 10 million Btu/hr

Construction means any physical change or change in the method of operation, including fabrication, erection, installation, demolition, or modification of an emissions unit, which would result in a change in actual emissions**.**

Elective Limits or Controls means the owner/operator of a source that requires a registration may elect to include any of the following emission limitations in the registration, provided the registration also includes the operating, maintenance, monitoring, and recordkeeping requirements specified below for the limitation:

1. hours of operation for any process or combination of processes (requires owner/ operator to log hours operated daily)

2. production rate for any process or combination of processes (requires owner/ operator to log production rate daily)

3. fabric filter to control particulate matter emissions (requires owner/ operator to: operate and maintain the fabric filter in accordance with manufacturer's recommendations; operate the fabric filter at all times the emission unit is operated; inspect fabric filter once per month for tears or leaks and promptly repair any tears and leaks identified; and record all inspections and any maintenance activities required as a result of the inspection)

4. VOC or HAP limit on process materials (requires owner/ operator to maintain a log of the VOC or HAP concentrations in each material used during the current calendar year)

Excluded NSPS/NESHAPS List includes:

1. 40 CFR 60, Subpart AAA (Residential Wood Heaters)

2. 40 CFR 60, Subpart IIII (Stationary Compression Ignition Internal Combustion Engines)

3. 40 CFR 60, Subpart JJJJ (Stationary Spark Ignition Internal Combustion Engines)

4. 40 CFR 61.145 (Asbestos - Standard for Demolition and Renovation)

5. 40 CFR 63, Subpart ZZZZ (Reciprocating Internal Combustion Engines)

6. 40 CFR 63, Subpart WWWWW (Ethylene Oxide Sterilizers)

7. 40 CFR 63, Subpart CCCCCC (Gasoline Distribution)

8. 40 CFR 63, Subpart HHHHHH (Paint Stripping and Miscellaneous Surface Coating Operations)

9. 40 CFR 63, Subpart JJJJJJ (Industrial, Commercial, and Institutional Boilers Area Sources)

10. 112(r) (Guide to the Accidental Release Prevention Requirements)

Insignificant Activities mean:

1. Liquid Storage and Piping Liquid Storage and Piping

    a. Petroleum product storage tanks containing the following substances, provided the applicant lists and identifies the contents of each tank with a volume of 350 gallons or more and provides threshold values for throughput or capacity or both for each such tank: diesel fuels and fuel oil in storage tanks with capacity of 40,000 gallons or less, lubricating oil, transformer oil, and used oil.

    b. Gasoline storage tanks with capacity of 10,000 gallons or less.

    c. Storage and piping of natural gas, butane, propane, or liquefied petroleum gas, provided the applicant lists and identifies the contents of each stationary storage vessel with a volume of 350 gallons or more and provides threshold values for throughput or capacity or both for each such vessel.

    d. Piping of fuel oils, used oil and transformer oil, provided the applicant includes a system description.

    e. Storage and handling of drums or other transportable containers where the containers are sealed during storage, and covered during loading and unloading, including containers of waste and used oil regulated under the federal Resource Conservation and Recovery Act, 42 U.S.C. 6901-6992k. Permit applicants must provide a description of material in the containers and the approximate amount stored.

    f. Storage tanks of any size containing exclusively soaps, detergents, waxes, greases, aqueous salt solutions, aqueous solutions of acids that are not regulated air pollutants, or aqueous caustic solutions, provided the permit applicant specifies the contents of each storage tank with a volume of 350 gallons or more.

    g. Electrical transformer oil pumping, cleaning, filtering, drying and the re-installation of oil back into transformers.

2. Internal combustion engine-driven electrical generator sets, and internal combustion engine-driven water pumps used for less than 500 hours per calendar year for emergency replacement or standby service, provided the permittee keeps records documenting the hours of operation of this equipment.

3. Low Emitting Processes

a. Batch mixers with rated capacity of 5 cubic feet or less.

b. Wet sand and gravel production facilities that obtain material from subterranean and subaqueous beds, whose production rate is 200 tons/hour or less, and whose permanent in-plant roads are paved and cleaned to control dust. This does not include activities in emissions units which are used to crush or grind any nonmetallic minerals.

c. Powder coating operations.

d. Equipment using water, water and soap or detergent, or a suspension of abrasives in water for purposes of cleaning or finishing.

e. Blast-cleaning equipment using a suspension of abrasive in water and any exhaust system or collector serving them exclusively.

f. Plastic pipe welding.

4. Site Maintenance

a. Housekeeping activities and associated products used for cleaning purposes, including collecting spilled and accumulated materials at the source, including operation of fixed vacuum cleaning systems specifically for such purposes.

b. Sanding of streets and roads to abate traffic hazards caused by ice and snow.

c. Street and parking lot striping.

d. Architectural painting and associated surface preparation for maintenance purposes at industrial or commercial facilities.

5. Sampling and Testing

a. Noncommercial (in-house) experimental, analytical laboratory equipment which is bench scale in nature, including quality control/quality assurance laboratories supporting a stationary source and research and development laboratories.

b. Individual sampling points, analyzers, and process instrumentation, whose operation may result in emissions but that are not regulated as emission units.

6. Ancillary Non-Industrial Activities

a. General office activities, such as paper shredding, copying, photographic activities, and blueprinting, but not to include incineration.

b. Use of consumer products, including hazardous substances as that term is defined in the Federal Hazardous Substances Act (15 U.S.C. 1261 et seq.) where the product is used at a source in the same manner as normal consumer use.

c. Activities directly used in the diagnosis and treatment of disease, injury or other medical condition.

7. Miscellaneous Activities

   a. Installation and operation of potable, process and waste water observation wells, including drilling, pumping, filtering apparatus.

   b. Transformer vents.

Maintenance Area means any geographic region of the United States that the EPA previously designated as a nonattainment area for one or more pollutants pursuant to the Clean Air Act Amendments of 1990, and subsequently redesignated as an attainment area subject to the requirement to develop a maintenance plan under section 175A of the Clean Air Act, as amended.

Major Modification is defined as follows:

1. A major modification is any physical change in or change in the method of operation of a major source that would result in both a significant emissions increase of any regulated NSR pollutant and a significant net emissions increase of that pollutant from the stationary source.

2. Any emissions increase or net emissions increase that is significant for nitrogen oxides or volatile organic compounds is significant for ozone.

Major Source means:

1. A major source as defined in A.A.C R18-2-401.

   a. For purposes of determining the applicability of A.A.C. R18-2-403 through A.A.C. R18-2-405 or A.A.C. R18-2-411, major source means any stationary source that emits, or has the potential to emit, 100 tons per year or more of any regulated NSR pollutant, except that the following thresholds shall apply in areas subject to subpart 2, subpart 3 or subpart 4 of part D, Title I of the Act:

Pollutant Emitted	Nonattainment Pollutant and Classification	Quantity Threshold (tons/year or more)
Carbon Monoxide (CO)	CO, Serious, if stationary sources contribute significantly to CO levels in the area as determined under rules issued by the Administrator	50
VOC	Ozone, Serious	50
VOC	Ozone, Severe	25
PM_{10}	PM_{10}, Serious	70
$PM_{2.5}$	$PM_{2.5}$ Serious	70
$PM_{2.5}$ precursors identified in	$PM_{2.5}$ Serious	70

A.A.C. R18-2-101(124)(a)		
NO_x	Ozone, Serious	50
NO_x	Ozone, Severe	25

b. For purposes of determining the applicability of A.A.C. R18-2-406 through A.A.C. R18-2-408 or A.A.C. R18-2-410, major source means any stationary source that emits, or has the potential to emit, 100 tons per year or more of any regulated NSR pollutant if the source is classified as a categorical source**,** or 250 tons per year or more of any regulated NSR pollutant if the source is not classified as a categorical source;

c. Any stationary source that emits, or has the potential to emit, five or more tons of lead per year;

d. A major source that is major for VOC or nitrogen oxides shall be considered major for ozone;

e. The fugitive emissions of a stationary source shall not be included in determining whether it is a major source, unless the source belongs to a section 302(j) category.

2. A major source under section 112 of the Act:

a. For pollutants other than radionuclides, any stationary source that emits or has the potential to emit, in the aggregate, including fugitive emission 10 tons per year or more of any hazardous air pollutant which has been listed pursuant to section 112(b) of the Act, 25 tons per year or more of any combination of such hazardous air pollutants, or such lesser quantity as described in Article 11 of this Chapter. Notwithstanding the preceding sentence, emissions from any oil or gas exploration or production well (with its associated equipment) and emissions from any pipeline compressor or pump station shall not be aggregated with emissions from other similar units, whether or not such units are in a contiguous area or under common control, to determine whether such units or stations are major sources; or

b. For radionuclides, "major source" shall have the meaning specified by the Administrator by rule.

3. A major stationary source, as defined in section 302 of the Act, that directly emits or has the potential to emit, 100 tons per year or more of any air pollutant including any major source of fugitive emissions of any such pollutant. The fugitive emissions of a stationary source shall not be considered in determining whether it is a major stationary source for the purposes of section 302(j) of the Act, unless the source belongs to a section 302(j) category.

Maximum Capacity to Emit means the maximum capacity of a stationary source to emit a pollutant excluding secondary emissions, under its physical and operational design

Maximum Capacity to Emit with Elective Controls means the maximum capacity of a stationary source to emit a pollutant, excluding secondary emissions, under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design only if the limitation or the effect it would have on emissions is subject to an elective limit under R18-2-302.01.F. Maximum capacity to emit with elective limits is currently referred to as uncontrolled potential to emit.

Minor NSR Modification means any of the following changes that do not qualify as a major source or major modification:

4. Any physical change in or change in the method of operation of an emission unit or a stationary source that either:

   a. Increases the potential to emit of a regulated minor NSR pollutant by an amount greater than the permitting exemption thresholds, or

   b. Results in emissions of a regulated minor NSR pollutant not previously emitted by such emission unit or stationary source in an amount greater than the permitting exemption thresholds.

5. The following do not constitute a physical change or change in the method of operation:

   a. A change consisting solely of the construction of, or changes to, a combination of emissions units qualifying as a categorically exempt activity.

   b. For a stationary source that is required to obtain a Class II permit under R18-2-302 and that is subject to source-wide emissions caps under R18-2-306.01 or R18-2-306.02, a change that will not result in the violation of the existing emissions cap for that regulated minor NSR pollutant.

   c. Replacement of an emission unit by a unit with a potential to emit regulated minor NSR pollutants that is less than or equal to the potential to emit of the existing unit, provided the replacement does not cause an increase in emissions at other emission units at the stationary source. A unit installed under this provision is subject to any limits applicable to the unit it replaced.

   d. Routine maintenance, repair, and replacement.

   e. Use of an alternative fuel or raw material by reason of an order under Sections 2(a) and (b) of the Energy Supply and Environmental Coordination Act of 1974, 15 U.S.C. 792, or by reason of a natural gas curtailment plan under the Federal Power Act, 16 U.S.C. 792 to 825r.

   f. Use of an alternative fuel by reason of an order or rule under Section 125 of the Act.

   g. Use of an alternative fuel at a steam generating unit to the extent that the fuel is generated from municipal solid waste.

   h. Use of an alternative fuel or raw material by a stationary source that either:

      (1) The source was capable of accommodating before December 12, 1976, unless the change would be prohibited under any federally enforceable permit condition established after December 12, 1976, under 40 CFR 52.21, or under Articles 3 or 4 of A.A.C R18-2; or

      (2) The source is approved to use under any permit issued under 40 CFR 52.21, or under Articles 3 or 4 of A.A.C R18-2.

   i. An increase in the hours of operation or in the production rate, unless the change would be prohibited under any federally enforceable permit condition established after December 12, 1976, under 40 CFR 52.21, or under Articles 3 or 4 of this Chapter.

   j. Any change in ownership at a stationary source

k. The installation, operation, cessation, or removal of a temporary clean coal technology demonstration project, if the project complies with:

(1) The SIP, and

(2) Other requirements necessary to attain and maintain the national ambient air quality standards during the project and after it is terminated.

l. For electric utility steam generating units located in attainment and unclassifiable areas only, the installation or operation of a permanent clean coal technology demonstration project that constitutes repowering, if the project does not result in an increase in the potential to emit any regulated pollutant emitted by the unit. This exemption applies on a pollutant-by-pollutant basis.

m. For electric utility steam generating units located in attainment and unclassifiable areas only, the reactivation of a very clean coal-fired electric utility steam generating unit.

6. Construction of one or more new emissions units that have the potential to emit regulated minor NSR pollutants at an amount greater than the permitting exemption threshold.

7. A change constitutes a minor NSR modification regardless of whether there will be a net decrease in total source emissions or a net increase in total source emissions that is less than the permitting exemption threshold as a result of decreases in the potential to emit of other emission units at the same stationary source.

8. For purposes of this subsection:

a. "Potential to emit" means the lower of a source's or emission unit's potential to emit or its allowable emissions.

b. In determining potential to emit, the fugitive emissions of a stationary source shall not be considered unless the source belongs to a section 302(j) category.

c. All of the roadways located at a stationary source constitute a single emissions unit

Minor Source means a source of air pollution which is not a major source for the purposes of Article 4 and over which the Director, acting pursuant to A.R.S. § 49-402(B), has asserted jurisdiction.

Modification or Modify means a physical change in or change in the method of operation of a source that increases the emissions of any regulated air pollutant emitted by such source by more than any relevant de minimis amount or which results in the emission of any regulated air pollutant not previously emitted by more than such de minimis amount. An increase in emissions at a minor source shall be determined by comparing the source's potential to emit before and after the modification[6]. The following exemptions apply:

1. A physical or operational change does not include routine maintenance, repair or replacement.

2. An increase in the hours of operation or if the production rate is not considered an operational change unless such increase is prohibited under any permit condition that is legally and practically enforceable by the department.

3. A change in ownership at a source is not considered a modification.

National Ambient Air Quality Standards (NAAQS) means the ambient air pollutant concentration limits established by the Administrator pursuant to section 109 of the Act.

Permitting Exemption Thresholds means the following:

Pollutant	Emissions Rate
$PM_{2.5}$ (primary emissions only)	5 tons per year
PM_{10}	7.5 tons per year
SO_2	20 tons per year
NO_X	20 tons per year
VOCs	20 tons per year
CO	50 tons per year
Lead	0.3 tons per year

Potential to Emit or Potential Emission Rate means the maximum capacity of a stationary source to emit a pollutant, excluding secondary emissions, under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is legally and practically enforceable by the Department.

Regulated Air Pollutant means any of the following:

1. Any conventional air pollutant.
2. Nitrogen oxides and volatile organic compounds.
3. Any air contaminant that is subject to a standard contained in Article 9 of A.A.C. R18-2.
4. Any hazardous air pollutant as defined in Article 17 of A.A.C. R18-2.
5. Any Class I or II substance listed in section 602 of the Clean Air Act.

Regulated NSR Pollutant means any of the following:

1. Any pollutant for which a national ambient air quality standard has been promulgated and any pollutant identified under this subsection as a constituent or precursor to such pollutant. Precursors for purposes of NSR are the following:
    a. Volatile organic compounds and nitrogen oxides are precursors to ozone in all areas.
    b. Sulfur dioxide is a precursor to $PM_{2.5}$ in all areas.

c. Nitrogen oxides are precursors to $PM_{2.5}$ in all areas.

2. Any pollutant that is subject to any standard promulgated under Article 9 of this A.A.C R18-2.

3. Any Class I or II substance subject to a standard promulgated under or established by Title VI of the Act as of July 1, 2011.

4. Notwithstanding the above three, the term regulated NSR pollutant shall not include any or all hazardous air pollutants listed under A.A.C. R18-2-1101, unless the listed hazardous air pollutant is also regulated as a constituent or precursor of a general pollutant listed under section 108 of the Act as of July 1, 2010.

5. Particulate matter emissions, $PM_{2.5}$ emissions, and PM_{10} emissions shall include gaseous emissions from a source or activity which condense to form particulate matter at ambient temperatures. On and after January 1, 2011, condensable particulate matter shall be accounted for in applicability determinations and in establishing emissions limitations for particulate matter, $PM_{2.5}$ and PM_{10} in permits issued under Article 4.

Regulated Minor NSR Pollutant means any pollutant for which a national ambient air quality standard has been promulgated and the following precursors for such pollutants:

1. VOC and nitrogen oxides as precursors to ozone

2. Nitrogen oxides and sulfur dioxide as precursors to $PM_{2..5}$

Reasonably Available Control Technology (RACT) means devices, systems, process modifications, work practices or other apparatus or techniques that are determined by the Director to be reasonably available taking into account:

1. The necessity of imposing the controls in order to attain and maintain a national ambient air quality standard;

2. The social, environmental, energy and economic impact of the controls;

3. Control technology in use by similar sources; and

4. The capital and operating costs and technical feasibility of the controls.

Responsible Official means one of the following:

1. For a corporation: a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either:

   a. The facilities employ more than 250 persons or have gross annual sales or expenditures exceeding $25 million (in second quarter 1980 dollars); or

   b. The delegation of authority to such representatives is approved in advance by the permitting authority;

2. For a partnership or sole proprietorship: a general partner or the proprietor, respectively;

3. For a municipality, state, federal, or other public agency: either a principal executive officer or ranking elected official. A principal executive officer of a federal agency includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., a Regional Administrator of EPA).

4. For affected sources:

   a. The designated representative in so far as actions, standards, requirements, or prohibitions under Title IV of the Act or the regulations promulgated thereunder are concerned; and

   b. The designated representative for any other purposes under 40 CFR 70.

Significant means, in reference to a significant emissions increase, a net emissions increase or a stationary source's potential to emit or uncontrolled potential to emit a regulated NSR pollutant:

5. A rate of emissions of conventional pollutants that would equal or exceed any of the following:

Pollutant	**Emissions Rate**
Carbon monoxide	100 tons per year (tpy)
Nitrogen oxides	40 tpy
Sulfur dioxide	40 tpy
Particulate matter	25 tpy
PM_{10}	15 tpy
$PM_{2.5}$	10 tpy of direct $PM_{2.5}$ emissions; 40 tpy of sulfur dioxide emissions; 40 tpy of nitrogen oxide emissions.
VOCs	40 tpy
Lead	0.6 tpy
Fluorides	3 tpy
Sulfuric acid mist	7 tpy
Hydrogen sulfide (H_2S)	10 tpy
Total reduced sulfur (including H_2S)	10 tpy
Reduced sulfur compounds (including H_2S)	10 tpy
Municipal waste combustor organics (measured as total tetra-through octa-chlorinated dibenzo-p-dioxins and dibenzofurans)	3.5×10^{-6} tpy

Pollutant	Emissions Rate
Municipal waste combustor metals (measured as particulate matter)	15 tpy
Municipal waste combustor acid gases (measured as sulfur dioxide and hydrogen chloride)	40 tpy
Municipal solid waste landfill emissions (measured as nonmethane organic compounds)	50 tpy
Any regulated NSR pollutant not specifically listed in this above	Any emission rate

2. In ozone nonattainment areas classified as serious or severe, the emission rate for nitrogen oxides or VOC determined under A.A.C. R18-2-405.

3. In a carbon monoxide nonattainment area classified as serious, a rate of emissions that would equal or exceed 50 tons per year, if the Administrator has determined that stationary sources contribute significantly to carbon monoxide levels in that area.

4. Notwithstanding the emission rates listed in 1 and 2 above, for purposes of determining the applicability of A.A.C. R18-2-406, **a**ny emissions rate or any net emissions increase associated with a major source or major modification, which would be constructed within 10 kilometers of a Class I area and have an impact on the ambient air quality of such area equal to or greater than 1 μg/m^3 (24-hour average).

Stationary Source means any building, structure, facility or installation subject to regulation pursuant to A.R.S.§ 49-426(A) which emits or may emit any air pollutant. “Building,” “structure,” “facility,” or “installation” means all of the pollutant-emitting activities which belong to the same industrial grouping, are located on one or more contiguous or adjacent properties, and are under the control of the same person or persons under common control. Pollutant-emitting activities shall be considered as part of the same industrial grouping if they belong to the same “Major Group” as described in the “Standard Industrial Classification Manual, 1987.”

Trivial activities means activities and emissions units ,such as the following, that may be omitted from a permit or registration application. Certain of the following listed activities include qualifying statements intended to exclude similar activities:

1. Low-Emitting Combustion
   a. Combustion emissions from propulsion of mobile sources;
   b. Emergency or backup electrical generators at residential locations;
   c. Portable electrical generators that can be moved by hand from one location to another. “Moved by hand” means capable of being moved without the assistance of any motorized or non-motorized vehicle, conveyance, or device;

2. Low- Or Non-Emitting Industrial Activities
   a. Blacksmith forges;
   b. Hand-held or manually operated equipment used for buffing, polishing, carving, cutting, drilling,

sawing, grinding, turning, routing or machining of ceramic art work, precision parts, leather, metals, plastics, fiberboard, masonry, carbon, glass, or wood;

c. Brazing, soldering, and welding equipment, and cutting torches related to manufacturing and construction activities that do not result in emission of HAP metals. Brazing, soldering, and welding equipment, and cutting torches related to manufacturing and construction activities that emit HAP metals are insignificant activities based on size or production level thresholds. Brazing, soldering, and welding equipment, and cutting torches directly related to plant maintenance and upkeep and repair or maintenance shop activities that emit HAP metals are treated as trivial and listed separately in this definition;

d. Drop hammers or hydraulic presses for forging or metalworking;

e. Air compressors and pneumatically operated equipment, including hand tools;

f. Batteries and battery charging stations, except at battery manufacturing plants;

g. Drop hammers or hydraulic presses for forging or metalworking;

h. Equipment used exclusively to slaughter animals, not including other equipment at slaughterhouses, such as rendering cookers, boilers, heating plants, incinerators, and electrical power generating equipment;

i. Hand-held applicator equipment for hot melt adhesives with no VOC in the adhesive formulation;

j. Equipment used for surface coating, painting, dipping, or spraying operations, except those that will emit VOC or HAP;

k. CO2 lasers used only on metals and other materials that do not emit HAP in the process;

l. Electric or steam-heated drying ovens and autoclaves, but not the emissions from the articles or substances being processed in the ovens or autoclaves or the boilers delivering the steam;

m. Salt baths using nonvolatile salts that do not result in emissions of any regulated air pollutants;

n. Laser trimmers using dust collection to prevent fugitive emissions;

o. Process water filtration systems and demineralizers;

p. Demineralized water tanks and demineralizer vents;

q. Oxygen scavenging or de-aeration of water;

r. Ozone generators;

s. Steam vents and safety relief valves;

t. Steam leaks; and

u. Steam cleaning operations and steam sterilizers;

v. Use of vacuum trucks and high pressure washer/cleaning equipment within the stationary source boundaries for cleanup and insource transfer of liquids and slurried solids to waste water treatment units or conveyances;

w. Equipment using water, water and soap or detergent, or a suspension of abrasives in water for purposes of cleaning or finishing.

x. Electric motors.

3. Building and Site Maintenance Activities

a. Plant and building maintenance and upkeep activities, including grounds-keeping, general repairs, cleaning, painting, welding, plumbing, re-tarring roofs, installing insulation, and paving parking lots, if these activities are not conducted as part of a manufacturing process, are not related to the source's primary business activity, and do not otherwise trigger a permit revision. Cleaning and painting activities qualify as trivial activities if they are not subject to VOC or hazardous air pollutant control requirements;

b. Repair or maintenance shop activities not related to the source's primary business activity, not including emissions from surface coating, de-greasing, or solvent metal cleaning activities, and not otherwise triggering a permit revision;

c. Janitorial services and consumer use of janitorial products;

d. Landscaping activities;

e. Routine calibration and maintenance of laboratory equipment or other analytical instruments;

f. Sanding of streets and roads to abate traffic hazards caused by ice and snow;

g. Street and parking lot striping;

h. Caulking operations which are not part of a production process.

4. Incidental, Non-Industrial Activities

a. Air-conditioning units used for human comfort that do not have applicable requirements under Title VI of the Act;

b. Ventilating units used for human comfort that do not exhaust air pollutants into the ambient air from any manufacturing, industrial or commercial process;

c. Tobacco smoking rooms and areas;

d. Non-commercial food preparation;

e. General office activities, such as paper shredding, copying, photographic activities, pencil sharpening and blueprinting, but not including incineration;

f. Laundry activities, except for dry-cleaning and steam boilers;

g. Bathroom and toilet vent emissions;

h. Fugitive emissions related to movement of passenger vehicles, if the emissions are not counted for applicability purposes under subsection (144)(c) of the definition of major source in this Section and any required fugitive dust control plan or its equivalent is submitted with the application;

i. Use of consumer products, including hazardous substances as that term is defined in the Federal Hazardous Substances Act (15 U.S.C. 1261 et seq.) where the product is used at a source in the same manner as normal consumer use;

j. Activities directly used in the diagnosis and treatment of disease, injury or other medical condition;

k. Circuit breakers;

l. Adhesive use which is not related to production.

5. Storage, Piping and Packaging

a. Storage tanks, vessels, and containers holding or storing liquid substances that will not emit any

VOC or HAP;

b. Storage tanks, reservoirs, and pumping and handling equipment of any size containing soaps, vegetable oil, grease, animal fat, and nonvolatile aqueous salt solutions, if appropriate lids and covers are used;

c. Chemical storage associated with water and wastewater treatment where the water is treated for consumption and/or use within the permitted facility;

d. Chemical storage associated with water and wastewater treatment where the water is treated for consumption and/or use within the permitted facility;

e. Storage cabinets for flammable products;

f. Natural gas pressure regulator vents, excluding venting at oil and gas production facilities;

g. Equipment used to mix and package soaps, vegetable oil, grease, animal fat, and nonvolatile aqueous salt solutions, if appropriate lids and covers are used;

h. Sampling and Testing

i. Vents from continuous emissions monitors and other analyzers;

j. Bench-scale laboratory equipment used for physical or chemical analysis, but not laboratory fume hoods or vents;

k. Equipment used for quality control, quality assurance, or inspection purposes, including sampling equipment used to withdraw materials for analysis;

l. Hydraulic and hydrostatic testing equipment;

m. Environmental chambers not using HAP gases;

n. Soil gas sampling;

o. Individual sampling points, analyzers, and process instrumentation, whose operation may result in emissions but that are not regulated as emission units;

6. Safety Activities

a. Fire suppression systems;

b. Emergency road flares;

c. Miscellaneous Activities

d. Shock chambers;

e. Humidity chambers;

f. Solar simulators;

g. Cathodic protection systems;

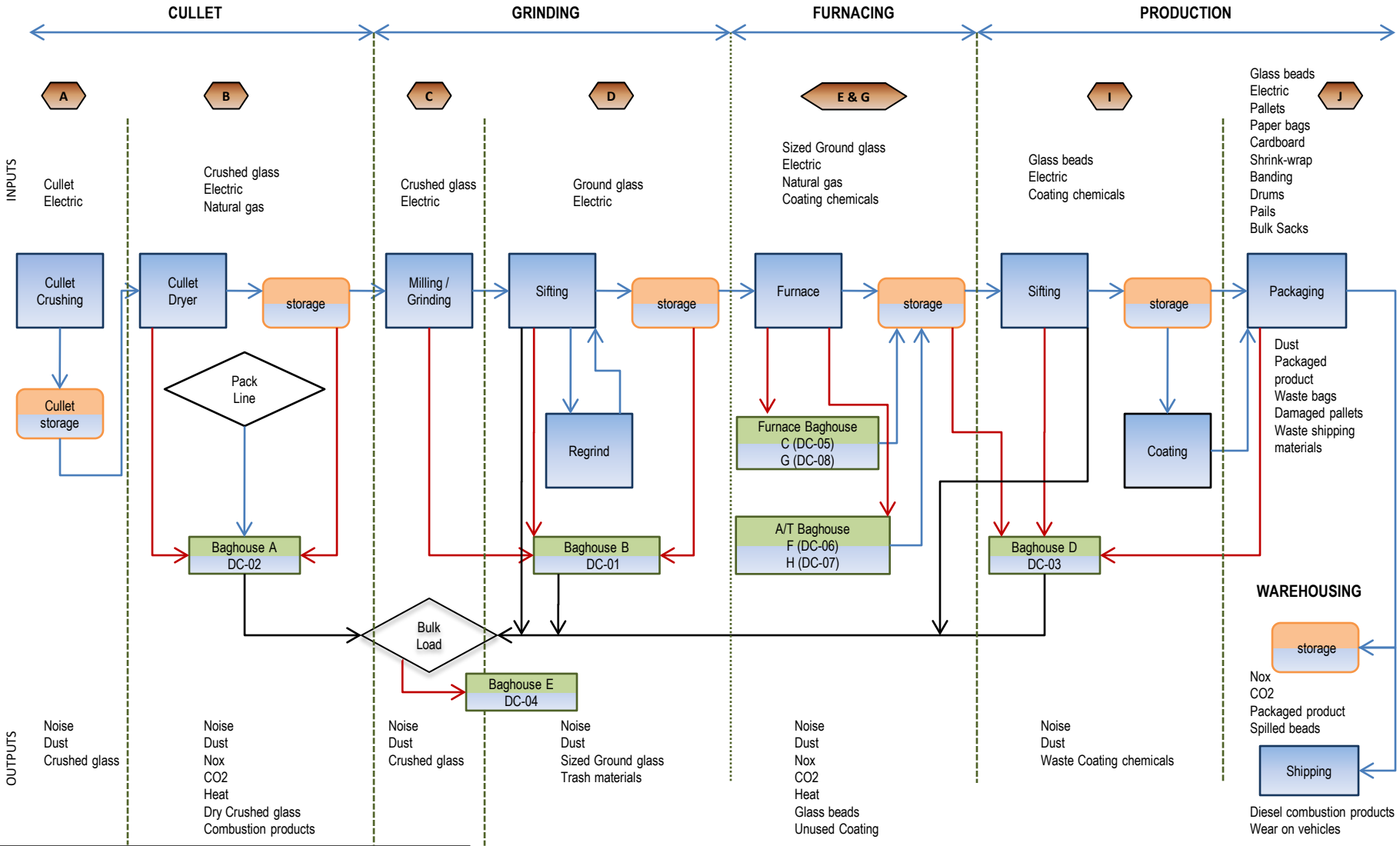
h. High voltage induced corona; and

i. Filter.

SECTION 5.0 -APPLICATION ADMINISTRATIVE COMPLETENESS CHECKLIST

	REQUIREMENT	MEETS REQUIREMENTS			COMMENT
		YES	NO	N/A	
1	Has the standard application form been completed?	X			
2	Has the responsible official signed the standard application form?	X			
3	Has a process description been provided?	X			
4	Are the facility's emissions documented with all appropriate supporting information?	X			
5	Is the facility subject to Minor NSR requirements? If the answer is "YES" , answer 6a, 6b and 6c as applicable. If the answer is "NO", skip to 7.		X		
6.a	If the facility chooses to implement RACT, is the RACT determination included for the affected pollutants for all affected emission units?				
6.b	If the facility chooses to demonstrate compliance with NAAQS by screen modeling, is the modeling analysis included?				
6.c	If refined modeling has been conducted, is a comprehensive modeling report along with all modeling files included?				
7	Does the application include an equipment list with the type, name, make, model, serial number, maximum rated capacity, and date of manufacture?	X			
8	Does the application include an identification and description of Pollution Controls? (if applicable)	X			
9	For any application component claimed as confidential, are the requirements of AR.S. 49-432 and A.A.C. R18-2-305 addressed?		X		
10	For any current non-compliance issue, is a compliance schedule attached?			X	
11	For minor permit revision that will make a modification upon submittal of application, has a suggested draft permit been attached?		X		

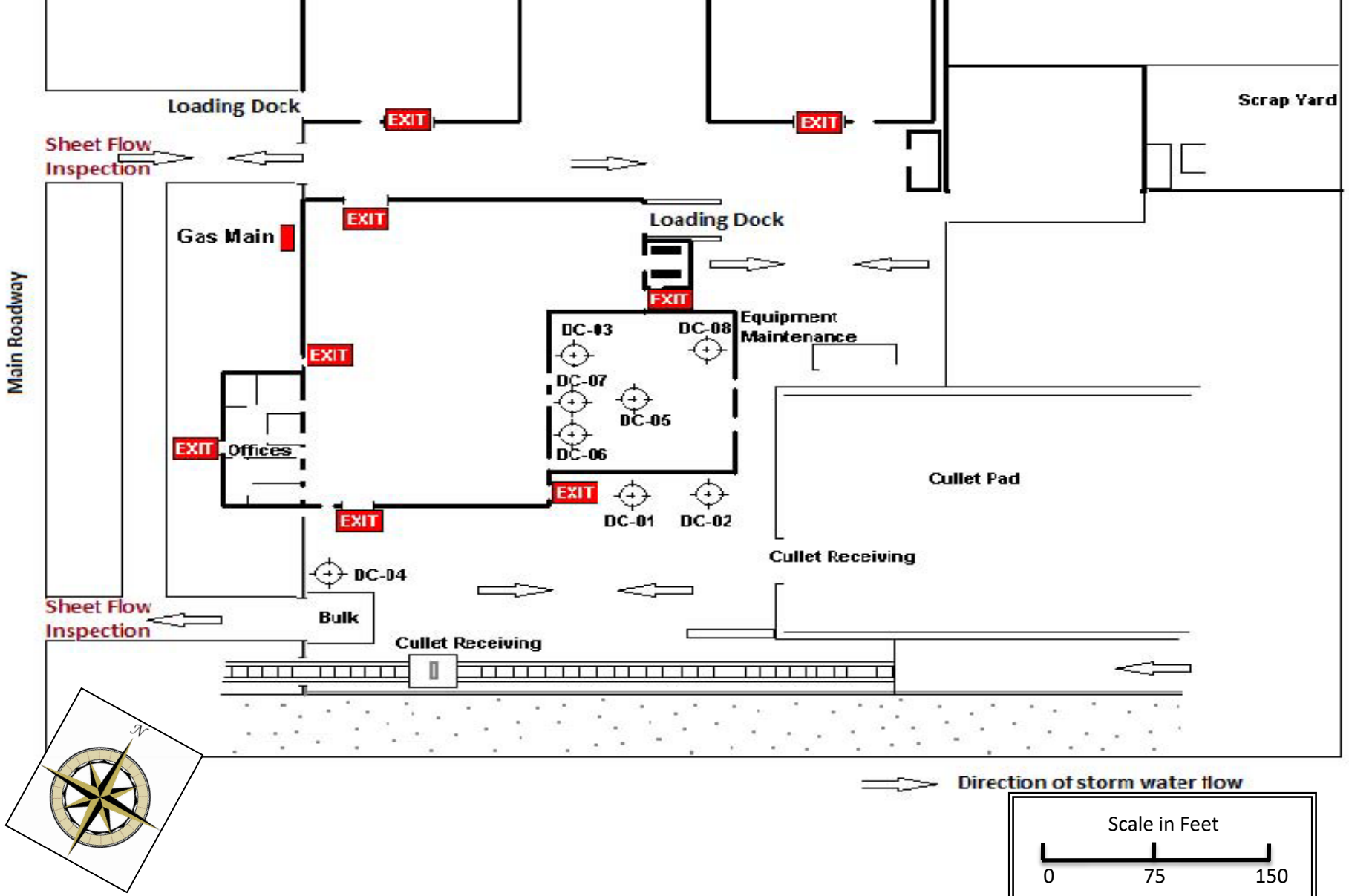
Appendix B
Site Map, Process Flow Diagram



Process Flow Diagram
Potters Industries, L.L.C.
Kingman Facility (Mohave County)

BEAR CREEK CONSULTANTS
1320 E. 9th Street, Suite 2
Edmond, OK 73034
405-531-0600

FIGURE 1
Process Flow Diagram



Site Diagram
Potters Industries, L.L.C.
Kingman Facility (Mohave County)

BEAR CREEK CONSULTANTS
1320 E. 9th Street, Suite 2
Edmond, OK 73034
405-531-0600

FIGURE 2
Site Diagram

Appendix C
Air Emissions Calculations

Potters Industries - Kingman Plant
Permit Renewal

Table C-1 Kingman Air Emissions Summary

Permit ID	Equipment ID	Description	NOx		CO		SO2		VOC[1]		PM_{10}[2]		$PM_{2.5}$[3]	
			lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
A	102	Cullet Dryer	0.35	1.53	0.29	1.29	0.00	0.01	0.02	0.08	0.68	2.98	0.03	0.12
B	103	Grind/Sift									1.62	7.10		
C	105	Furnace 1	2.75	12.05	2.31	10.12	0.02	0.07	0.15	0.66	1.83	8.01	0.21	0.92
D	109	Sift/Coating/ Package							0.35	1.53	1.40	6.12		
E	110	Bulk Load									0.13	0.56		
F	106	Air Trans 1									0.27	1.16		
G	107	Furnace 2	2.75	12.05	2.31	10.12	0.02	0.07	0.15	0.66	1.84	8.04	0.21	0.92
H	108	Air Trans 2									0.36	1.58		
		Total	5.85	25.62	4.91	21.52	0.04	0.15	0.67	2.94	8.12	35.55	0.44	1.95

Notes
1. Coating VOCs attributed to nearest outlet. Methanol emissions are less than 1% by weight of Dow OFS-6020 coating -- 0.005 lb/hr and 0.02 tpy.

2. For combustion sources, PM_{10} emissions are the sum of process PM and combustion PM.

3. All particulate from combustion assumed to be $PM_{2.5}$

Potters Industries - Kingman Plant
Permit Renewal

Table C-2 Process Particulate Emissions

Permit ID	Equipment ID	Control ID	Description	acfm[1]	gr/scf	lb/gr	min/hr	lb/hr	TPY
A	102	DC-02	Cullet Dryer	7,625	0.01	7,000	60	0.65	2.86
B	103	DC-01	Grinding	18,900	0.01	7,000	60	1.62	7.10
C	105	DC-05	Furnace 1	18,900	0.01	7,000	60	1.62	7.10
D	109	DC-03	Sift/Pkg	8,150	0.02	7,000	60	1.40	6.12
E	110	DC-04	Bulk Load	1,500	0.01	7,000	60	0.13	0.56
F	106	DC-06	Air Trans 1	3,100	0.01	7,000	60	0.27	1.16
G	107	DC-08	Furnace 2	18,990	0.01	7,000	60	1.63	7.13
H	108	DC-07	Air Trans 2	4,200	0.01	7,000	60	0.36	1.58
			Total					7.67	33.61

1. Process flow rates based on 2010 and 2013 stack test data.

Calculations performed using the following equation:

$$PM = Q_a \times C_s \times \frac{1}{7000} \times 60$$

Where:
PM = Particulate Emissions (lb/hr)
Qa = Volumetric Flow (acfm)
Cs = PM concentration (gr/scf)

Potters Industries - Kingman Plant
Permit Renewal

Table C-3 Combustion Emissions[1]

Permit ID	Equipment ID	Control ID	Description	Gas Usage mm ft3/hr	NOx		CO		SO2		VOC		$PM_{10/2.5}$	
					lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
A	102	DC-02	Cullet Dryer	0.0035	0.35	1.53	0.29	1.29	0.0021	0.009	0.0193	0.08	0.03	0.12
C	105	DC-05	Furnace 1	0.0275	2.75	12.05	2.31	10.12	0.0165	0.072	0.1513	0.66	0.21	0.92
G	107	DC-08	Furnace 2	0.0275	2.75	12.05	2.31	10.12	0.0165	0.072	0.1513	0.66	0.21	0.92
			Total	0.0550	5.50	24.09	4.62	20.24	0.0330	0.145	0.30	1.32	0.42	1.83

1. Potential emissions calculated on 8,760 hours per year of operation.

Emission Factors lb/mm ft3 Nat Gas	100	84	0.6	5.5	7.6

Note: Emission factors from AP-42, Section 1.4, July 1998
Tables 1.4-1 and 1.4-2

$$E = Q_{fuel} \times EF$$

Where:
E = Emissions (lb/hr)
Qfuel = Volumetric Flow (scfm)
EF = AP-42 Emission Factor

Greenhouse Gas Emissions

Description	Gas Usage mm ft3/hr	CO_2		Methane		N_2O		CO2e	
		lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
Cullet Dryer	0.0035	420	1840	0.01	0.04	0.01	0.03	422	1851
Furnace 1	0.0275	3300	14454	0.06	0.28	0.06	0.26	3320	14540
Furnace 2	0.0275	3300	14454	0.06	0.28	0.06	0.26	3320	14540
Total	0.0550	6600	28908	0.13	0.55	0.12	0.53	6639	29080

Emission Factors lb/mm ft3 Nat Gas	120000	2.3	2.2

Potters Industries - Kingman Plant
Permit Renewal

Table C-4 VOC Emissions

Note: The products used in this process are a complex mixture of siloxanes. Fully methylated siloxanes are exempt compounds (non-VOC's). Since some of the compounds used at the Kingman Plant are exempt and some are not, we feel it is more accurate to rely on the manufacturer's determination of VOC content. That is how this data is presented.

Example Product	VOC content lb/gallon	Potential[1] gallons/yr	VOC Emissions		HAP Emissions	
			lb/hr	TPY	lb/hr	TPY
Dow OFS 6020	0.77	470	0.04	0.18	0.005	0.02
Dow MHX-1107	0.28	645	0.021	0.09	0.000	0.00
SF-99	1.00	91	0.01	0.05	0.00	0.00
772	0.67	15	0.00	0.01	0.00	0.00
IPA	6.53	369	0.28	1.20	0.00	0.00
		Total VOC	**0.35**	**1.53**	**0.005**	**0.02**

$$E_{voc} = \frac{C_{lb/gal} \times U_{gal/yr}}{2000}$$

Where:
Evoc = VOC Emissions (tons/yr)
C lb/gal = VOC content of coating
U gal/yr = Annual usage

1. Product usage based on 2022 actual usage with a 2.0 times multiplier.
   Minimum usage set at 15 gallons.

Example OFS-6020 VOCs based on the information from the SDS:

70 to 90% N-(3-(Trimethoxysilyl)propyl)ethylenediamine - **completely methylated siloxane, exclude from VOC calculations***

5 to 10% N, N-Bis(3-(Trimethoxysilyl)propyl)-1,2-ethanediamine - **completely methylated siloxane, exclude from VOC calculations***

5 to 10% N, N'-bis(3-(trimethoxysilyl)propyl)-1,2-ethanediamine - **completely methylated siloxane, exclude from VOC calculations***

3 to 7 Oligomers of aminoalkylmethoxysilanes - **we are unable to determine if these are completely methylated siloxanes, they are considered VOC**

<1.0% Methyl alcohol - **VOC**

<1.0% Ethylenediamine - **VOC**

* Note: 40 CFR Part 51.100, the term "VOC" excludes "...cyclic, branched, or linear completely methylated siloxanes"

OFS-6020 is (at worst case) 9% VOC, Specific Gravity = 1.03 X 8.34 lb/gal (water) X 0.09 (%) = 0.77 lb/gal VOC