

**Shasta County Department of Resource Management**  
**Air Quality Management District**  
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## **Evaluation Report**

**Regarding Proposed Issuance of a Renewed  
Title V Operating Permit to**

**Knauf Insulation, GmbH**

**for Equipment Located at:**

**3100 Ashby Road  
City of Shasta Lake, CA 96019**

**October 2020**

**Evaluation Report  
Regarding Proposed Renewal of a  
Title V Operating Permit  
Knauf Insulation, GmbH**

## **Introduction**

The District proposes to renew a Title V operating permit to Knauf Insulation, GmbH (Knauf). This evaluation, with the proposed Title V operating permit, sets forth the legal and factual basis for the conditions contained in the proposed permit.

## **Facility Description**

Knauf Insulation is a fiberglass manufacturing facility that produces both blanket insulation and blown insulation. The insulation is produced from silica sand, recycled glass, and other materials as specified in the application. The glass is initially melted in a cold top electric furnace operating at 2500°F. The insulation is produced on the forming line where the glass is formed into fine strands in spinners and laid down onto a moving conveyor. Some of the glass is diverted to the unbonded insulation forming line. The forming lines (bonded and unbonded) are heated with natural gas burners with a total heat input of 55 MMBTU/Hr. The exhaust from the forming lines feed through seven venturi scrubbers in parallel operating at a minimum of three (3) inches water across the venturi throat.

The uncured mat from the forming process enters a natural gas fired curing oven where the binder is thermally set or cured. The oven exhaust gases pass through a Regenerative Thermal Oxidizer (RTO). The cured glass fiber mat then passes over a cooling section where cool air is pulled down through the mat and conveyor. Emissions from this section are minor in comparison to the emissions of the forming section. The exhaust gases from the cooling section are fed through a scrubber and are combined with the forming exhaust and pass through the Wet Electrostatic Precipitator (WESP). The RTO and WESP exhaust gases are combined prior to being fed into the main stack.

The finished fiberglass wool mat is trimmed and backed. The volatile organic compound emissions from the application of the backing are insignificant since a water-based adhesive is used. Some of the fiberglass wool mat trimmings and other scrap is processed into Class B blowing insulation by removing the backing, and grinding the wool. The unbonded fiberglass insulation is produced by four spinners without the use of a binder.

Since the initial Title V permit was issued, Knauf has submitted two requests for modification to the Title V permit. The first was to reduce the minimum pressure drop across each of the of scrubbers from 10 inches of water column to 3 inches of water column. That modification was reviewed, approved, and incorporated into the Title V permit on April 22, 2011. The second modification request was the applicability of 40 CFR part 63, subpart NNN. When Knauf started production in 2002, the facility used a phenol-formaldehyde based binder in the fiberglass process. Using this binder the facility was subject to the requirements in subpart NNN. The facility has since switched from the phenol-formaldehyde based binder to a binder consisting of a non-toxic, renewable formulation. That modification request was reviewed, approved, and incorporated into the Title V permit on September 18, 2012. As part of the application, Knauf requested that the applicable parts of subpart NNN remain in the permit in the event that the facility reverts back to the phenol-formaldehyde based binder.

This evaluation will address the renewal of Knauf Insulation's Title V Permit.

## **EQUIPMENT DESCRIPTION**

The major equipment located at the Knauf Insulation facility includes:

### **RAW MATERIALS HANDLING AND MIXING (Permit To Operate #97-PO-26)**

- One (1) Raw Material Unloading Dust Collector (Griffen Model JV 9 F)
- Two (2) Sand Bin Dust Collectors (Griffen Model JV 9 F)
- Five (5) Consumer Cullet Bin Dust Collectors (Griffen Model JV 9 F)
- Two (2) Dolomite Bin Dust Collector (Griffen Model JV 9 F)
- One (1) Limestone Bin Dust Collector (Griffen Model JV 9 F)
- One (1) Manganese Dioxide Bin Dust Collector (Griffen Model JV 9 F)
- One (1) Borax Bin Dust Collector (Griffen Model JV 9 F)
- Two (2) Soda Ash Bin Dust Collector (Griffen Model JV 9 F)
- One (1) Knauf Cullet Dust Collector (Griffen Model JV 9 F)
- One (1) Weigh Scales/Conveyor Dust Collector (Griffen Model JV 9 F)
- One (1) Check Scale/Batch Mixer Dust Collector (Griffen Model JV 9 F)
- One (1) Distribution Conveyor Dust Collector
- One (1) Day Bin #1 Dust Collector (Griffen Model JV 9 F)
- One (1) Day Bin #2 Dust Collector (Griffen Model JV 9 F)
- One (1) Liquid Urea Tank
- Two (2) ECOSE Tanks
- Two (2) Resin Urea Premix Tanks
- One (1) Outdoor Mineral Oil Tank
- One (1) Indoor Mineral Tank
- One (1) Outdoor Aqueous Ammonia Tank
- Two (2) Ammonium Sulfate Mix Tanks
- One (1) Organosilane Weigh Tank
- One (1) Binder Mix Tank
- Two (2) Binder Supply Hold Tanks

### **GLASS MELTING (Permit To Operate #97-PO-27)**

- Electric Glass Melting Furnace
- Two (2) 15 MMBtu North American Burner Systems, (Model 8520)
- One (1) 25,800 ACFM Custom System Dual Chamber Dust Collector (Model WP238-10)
- One (1) Marley NC Series Cooling Tower, Serial No. 169921-001

### **FIBERGLASS FORMING/CURING/COOLING LINES (Permit To Operate #97-PO-28)**

- One (1) Natural Gas-Fired Forming Section
- One (1) Natural Gas-Fired Curing Oven w/ Low NOx/CO Burners (Maxon Cyclomax 3.7MM Btu/hr.)
- One (1) Volatile Organic Compound Binder Application Process
- Six (6) 10" P Venturi Scrubbers on Bonded Wool Forming Line (Fisher-Klosterman Model MS1100-H)
- One (1) 10" P Venturi Scrubber on Blowing Wool Forming Line (Fisher-Klosterman Model MS1200-H)
- One (1) 400,000 ACFM, 600 GPM Wet Electrostatic Precipitator (Research Cottrell Dual Chamber)
- Two (2) 1400°F Thermal Oxidizers w/ Low NOx/CO Burners (Maxon-Kinedizer 18M) on Curing Oven
- One (1) Fisher-Klosterman Model MS600L Venturi Scrubber on Cooling Line
- One (1) United McGill Regenerative Thermal Oxidizer

### **FIBERGLASS TRIMMING AND PACKAGING (Permit To Operate #97-PO-29)**

- One (1) 9874 ACFM Trimming-Packaging Cyclone (1) & Dust Collector Assembly (Farr 48L SPCC)
- One (1) 9874 ACFM Class B Blowing Wool Cyclones (2) & Dust Collector Assembly (Farr 48L SPCC)
  - One (1) 10,000 ACFM Class A Summit Wool Production Condenser
  - One (1) 10,000 ACFM Class A Premier Tech Refeed Condenser
- One (1) 15,708 ACFM Class A Blowing Wool North Dust Collector Assembly (Farr 378 BRF12)
- One (1) 15,708 ACFM Class A Blowing Wool Center Dust Collector Assembly (Farr 378 BRF12)
  - Five (5) High Density Filter Modules (Farr R1GA-FLOW200 Glide/Pack)
- One (1) Pacific Filtration Systems Pulse Jet Cartridge Dust Collector (Model RP-2)

### **INTERNAL COMBUSTION ENGINES (Authorization to Operate #02-PO-09)**

- One (1) Caterpillar 1108hp Diesel Engine, Model 3412 STA
- One (1) Clark Diesel 95hp, Model PDFP04YT L1212f
- One (1) Clark Diesel 160hp Diesel Engine, Model JU6H-UF30

### **INTERNAL COMBUSTION ENGINE (Authorization to Operate #02-PO-10)**

- One (1) Caterpillar 145 hp Natural Gas Engine, Model 3306

### **INSIGNIFICANT EMISSION SOURCES**

As approved by the U.S. Environmental Protection Agency (EPA), all equipment exempted from permit, pursuant to Shasta County Air Quality Management District (District) Rule 2.5, are considered an insignificant activity. These activities include the following:

- Cooling Tower
- Welding Equipment
- Propane Storage Tanks
- Fuel Oil Tank
- Minor Printing Equipment
- Laboratory Fume Hood
- Solvent Cleaning Equipment
- Portable Propane Heaters
- Aerosol Paint Cans
- Painting Operations
- Adhesive Application

## **APPLICABLE FEDERAL REQUIREMENTS**

Based upon the information submitted in the application and the District's review, the following applicable federal requirements apply to this facility:

### **SIP Requirements:**

#### **District Rule 1 – Title and Definitions**

##### **Rule 1:2**      Definitions

This rule lists the definitions used throughout the District rulebook. This rule is an administrative rule. The District believes that the environmental benefits are not such that this rule should be included in the proposed Title V permit.

#### **District Rule 2 - Permits**

##### **Rule 2.1 and 2.1A**      New Source Review, Permits Required

These are the District's requirements for preconstruction permits and permits to operate. This rule is an administrative and procedural rule that Knauf Insulation has certified in the Title V application that the facility is in compliance with these rules. This rule is applicable to this facility when new construction or modifications are commenced. The District feels that the environmental benefits are not such that this rule should be included in the proposed Title V permit.

##### **Rule 2:4**      Permits to Sell or Rent Incinerators

This rule pertains to the use of incinerators. There are no incinerators at this facility. Therefore, this requirement is not applicable to this facility and is not included in the proposed Title V operating permit.

##### **Rule 2:5**      Exemptions

This rule lists the types of devices or operations that the Air Pollution Control Officer may exempt. This rule is address in District Rule 5, Attachment 1 (insignificant activities). Therefore, the District believes that the environmental benefits are not such that this rule should be included in the proposed Title V permit.

##### **Rule 2:6**      Open Burning (2:6.a.4.c & 2:6.b)

This rule lists the regulations required to conduct open burning operations. Knauf Insulation does not conduct open burning operations at this facility, and is, therefore, not applicable to this facility. This requirement is not included in the proposed Title V permit.

##### **Rule 2:7**      Conditions for Open Burning

This rule lists the regulations required to conduct open burning operations. Knauf Insulation does not conduct open burning operations at this facility, and is, therefore, not applicable to this facility. This requirement is not included in the proposed Title V permit.

##### **Rule 2:8**      Agricultural Burning

This rule lists the regulations required to conduct open burning operations. Knauf Insulation does not conduct open burning operations at this facility, and is, therefore, not applicable to this facility. This requirement is not included in the proposed Title V permit.

**Rule 2:10**     Action on Applications

This rule requires that an application for an Authority to Construct be filed in a manner and on the forms prescribed by the Air Pollution Control Officer. This rule is an administrative rule and the District feels that the environmental benefits are not such that this rule should be included in the proposed Title V permit.

**Rule 2:12**     Expiration of Applications

This rule requires that an Authority to Construct application will expire after the Permit to Operate has been issued or eighteen (18) months after the Authority to Construct was issued unless construction has commenced on the site or at a time extension is granted by the Air Pollution Control Officer. It also states that an application Permit to Operate for existing equipment will expire two years after being issued. This rule is an administrative rule and the District believes that the environmental benefits are not such that this rule should be included in the proposed Title V permit.

**Rule 2:14**     Testing Facilities

This rule requires the operator to provide and maintain testing and sampling facilities as specified in the Authority to Construct or Permit to Operate. The provisions of this requirement are included in the proposed Title V permit.

**Rule 2:21**     Defacing Permit (formerly Rule 2:24)

This rule requires that a permit not be defaced. This requirement is included in the proposed Title V permit.

**Rule 2:23**     Posting of Permit

This rule requires that the permit be posted. This requirement is included in the proposed Title V permit.

**Rule 2:25**     Public Records

This rule adopts by reference all state and federal rules for air contaminants. This requirement is included in the proposed Title V permit.

**District Rule 3 - Prohibitions and Enforcement**

**Rule 3:1**     Applicability of State Laws

This rule adopts by reference all state and federal rules for air contaminants. This requirement is included in the proposed Title V permit.

**Rule 3:2**      Specific Air Contaminants

This rule specifies limits for emissions of:

1. Combustion particulate matter in gr/dscf;
2. Particulate matter less than or equal to 10 microns in gr/dscf;
3. All other particulate matter in gr/dscf;
4. Particulate matter process weight: maximum hourly emissions as a function of process weight in tons per hour;
5. Oxides of Sulfur (as SO<sub>2</sub>) in ppm;
6. Oxides of Nitrogen (as NO<sub>2</sub>) in ppm; and
7. Opacity.

The requirements of this rule are included in the proposed Title V permit. Other permit conditions found in this title V Permit limiting emissions from the facility are more stringent than the emission limitations of the rule and, therefore, subsume the requirements of this rule for this particulate emission unit.

**Rule 3:3**      Gasoline Loading, Transfer and Dispensing

This rule requires that for stationary storage tanks that are used for retail sales, which are larger than 1.0 cubic meters, have a California Air Resources Board (CARB) certified Phase I vapor recovery system installed and used during fuel transfer. Knauf does not have any fuel storage tanks larger than 1.0 cubic meters, therefore, this requirement is not included in the proposed Title V permit.

**Rule 3:4**      Industrial Use of Organic Solvents

This rule requires that a control device achieving 85 percent control be utilized unless listed emission limits (in pounds per day) of solvent discharge into the atmosphere are met. This requirement is included in the proposed Title V permit.

**Rule 3:6**      Circumvention

This rule requires that emissions cannot be concealed by any means that would otherwise constitute a violation. This requirement is included in the proposed title V permit.

**Rule 3:9**      Recommendations of Air Pollution Control Officer

This rule states that no recommendation of the Air Pollution Control Officer is a guarantee that the recommended device or process will result in compliance. This rule is an administrative rule, and the District believes that the environmental benefits are not such that this rule should be included in the proposed Title V permit.

**Rule 3:11**     Local Rules

This rule states that any city or public agency, having authority to do so, may enact by ordinance more restrictive rules than contained in the District's rulebook. Because this permit is a federal permit and does not concern local rules, the District believes that the environmental benefits are not such that this rule should be included in the proposed Title V permit.

**Rule 3:12**     Reduction of Matter of Animal Origin (Except Curing of Glue)

Knauf Insulation does not conduct any reduction of animal matter at this facility. This requirement is not included in the proposed Title V permit.

**Rule 3:14**     Petroleum Solvent Dry Cleaners

Knauf Insulation does not conduct any petroleum solvent dry cleaning at this facility. This requirement is not included in the proposed Title V permit.

**Rule 3:15**     Cutback Asphalt Paving Materials

Knauf Insulation does not conduct any operation that contains emulsified asphalt materials. This requirement is not included in the proposed Title V permit.

**Rule 3:17**     Organic Solvent Degreasing Operations

This rule required degreasing operations to meet both design and operating practice specifications. This rule was repealed by the District when the District adopted a revised organic solvent operations rule. The new rule has not been submitted for inclusion into the SIP. Because the District has repealed this rule, the equipment that would be regulated is listed as insignificant and is regulated by District Rule 3:4 (included as a permit condition). The District believes that the environmental benefits are not such that this rule should be included in the proposed Title V Operating Permit.

**Rule 5**             Additional Procedures for Issuing Permits to Operate for Sources Subject to Title V of the Federal Clean Air Act Amendments of 1990

District Rule 5 is an administrative rule that specifies the requirements and procedures for both the facility and District for issuing the Title V permit. All specific applicable requirements imposed by this rule are included in the proposed Title V permit.

I)     Purpose and General Requirements of Rule 5

This rule implements the requirements of Title V of the Federal Clean Air Act (CAA) as amended for permits to operate. Title V provides for the establishment of operating permit program for sources that emit regulated air pollutants. Sources subject to Rule 5 include major sources, acid rain units subject to Title IV of the CAA, solid waste incinerators subject to Section 111 or 129 of the CAA, and any other sources specifically designated by rule of the Environmental Protection Agency (EPA). Sources subject to Rule 5 shall obtain permits to operate pursuant to this rule. Each Permit to Operate issued pursuant to Rule 5 shall contain conditions and requirements adequate to ensure compliance with and the enforceability of:

- a. All applicable provision of division 26 of the *California Health and Safety Code*, commencing with Section 39000;
- b. All applicable orders, rules, and regulations of the District and the California Air Resources Board (CARB);
- c. All applicable provisions of the applicable implementation plan required by the CAA;
- d. Each applicable emission standard or limitation, rule, regulation, or requirement adopted or promulgated to implement the CAA; and
- e. The requirements of all preconstruction permits issued pursuant to Parts C and D of the CAA.



The operation of the fiberglass facility has the potential to emit more than 100 tons per year of particulate matter. Currently, the facility does not use a phenol/formaldehyde binder, but the ability for Knauf to switch back to the phenol/formaldehyde binder remains in both the District Permit to Operate and Title V Operating Permit. The potential to emit of hazardous air pollutants (HAPs) when the facility is utilizing the phenol/formaldehyde binder, is above both the threshold of 10 tons per year of a single HAP and the threshold of 25 tons per year of total HAPS. With the facility having the potential to emit either a criteria pollutant or hazardous air pollutant above the major source threshold, Knauf is classified as a major source. Knauf is subject to District Rule 5 and shall contain all the applicable conditions to satisfy Sections I.A through I.E.

## II) Definitions

This section contains the definitions for District Rule 5. The definitions are administrative and will be referred to and incorporated by reference in this evaluation and in the Title V Permit to Operate.

## III) Applicability

This section contains the type of sources that are subject to the requirements of Rule 5, and the type of sources that are exempt from Rule 5. Section A.1. lists major sources as subject to Rule 5. A major source is defined as a stationary source that has the potential to emit a regulated air pollutant equal to or exceeding 100 tons per year. The facility has a potential to emit and does emit greater than 100 tons per year of particulate matter. Section B lists the sources that are not subject to Rule 5. The manufacture of fiberglass at Knauf Insulation does not fall under any of the exemptions listed under this section, and therefore Knauf Insulation is subject to District Rule 5.

## IV) Administrative Procedures for Sources

## V) District Administrative Procedures

These two parts of Rule 5 specify the administrative procedures for both the facility and the District for the implementation of renewing the Title V Permit. The procedures shall be followed during the Title V renewal process. Applicable sections shall be included into the proposed Title V Operating Permit.

## VI) Permit Content Requirements

Section A, *Permit Content Requirements*, states the Title V permit to operate shall incorporate all applicable federal requirements as permit conditions. A permit condition that addresses an applicable federal requirement shall be specifically identified in the permit. Where an applicable federal requirement and a similar requirement that is not federally enforceable apply to the same emissions unit, both shall be incorporated as permit conditions. And, where an applicable federal requirement and a similar requirement that is not federally enforceable apply to the same emissions unit and are mutually exclusive, the requirement specified in the preconstruction permit, (or, in the case of sources without preconstruction permits) the more stringent requirement shall be incorporated as a permit condition and the requirement shall be referenced.

The current Title V permit to operate incorporates all applicable federal requirements as permit conditions and those permit conditions are identified, as such. As part of the Title V renewal process, the District reviews all the applicable federal regulations and makes the appropriate changes to the proposed Title V operating conditions. There are instances in the Title V permit that have applicable federal requirements and similar requirements that are not federally enforceable that apply to the same emissions unit. For these cases, the more stringent of the two requirements has been incorporated into the Title V operating permit.

Section B, *General Requirements*, states that all permits to operate shall contain the conditions or terms consistent with 40 CFR Part 70.6. Sections B.1. through B.22. specifies the general requirements for the permit, and the applicable sections have been incorporated into the Title V operating permit.

#### VII) Supplemental Annual Fee

This part specified that the fees collected pursuant to this section shall supplement the fee requirements in District Rule 2:11. A responsible official shall pay an annual supplemental fee for a Title V permit to operate pursuant to this rule as determined by the calculation method, as found in Section C, in order to meet the overall fee-based emissions. Fee-based emissions is defined as the actual rate of emission in tons per year of any fee pollutant emitted from the stationary source for the preceding year. A fee pollutant is defined as oxides of nitrogen, volatile organic compounds, any pollutant for which a national ambient air quality standard has been promulgated by the EPA, excluding carbon monoxide. If the total annual fee, as calculated by Rule 2:11, for the District's Permit to Operate equals or exceeds the calculated Title V emissions based fee, then there shall be no Title V supplemental fee.

Knauf Insulation is subject to District Rule 5 and possesses a Title V operating permit, therefore the facility is subject to the supplemental fee as it is related to their District's Permit to Operate annual fee. Historically, based on the actual emissions emitted from the facility results in a Title V supplemental fee that is less than the District's Rule 2:11 fee. And therefore, Knauf Insulation does not pay a Title V supplemental fee.

#### **Rule 5:1**      Rule to Limit Potential to Emit of Title V Sources

The purpose of this rule is to eliminate the need for certain stationary sources to obtain a Title V operating permit, pursuant to District Rule 5. Stationary sources subject to this rule are those whose actual emissions are equal to or less than fifty percent (50%) of those of a major stationary source, but whose potential emissions are equal to or greater than the major stationary source thresholds. These sources must comply with emission limitations specified in this rule.

Historically, the annual actual emissions emitted from Knauf Insulation are less than 100 tons per year of a regulated air pollutant and the potential to emit a criteria pollutant is above 100 tons per year. But the actual emissions are greater than 50 tons per year of a criteria pollutant. This results in the facility being classified as a major source of air contaminants. Rule 5:1 is not applicable to Knauf Insulation.

**Rule 5:2**      Request for Synthetic Minor Source Status

This rule authorizes the owners or operator of specified stationary sources that would otherwise be a major source to request federally-enforceable emissions limits sufficient to allow the sources to be considered “synthetic minor sources.” Synthetic minor sources are not subject to district Rule 5, unless it is subject to that rule for any reason other than being a major source. A synthetic minor source is subject to all applicable federal requirements for non-major stationary sources and to all federally-enforceable conditions and requirements pursuant to this rule. In addition, a synthetic minor source is subject to all applicable State and District rule, regulations, and other requirements.

Historically, the annual actual emissions emitted from Knauf Insulation are less than 100 tons per year of a regulated air pollutant. The facility submitted an application for the renewal of the Title V operating permit. The applicant did not request from the District to be reclassified as a synthetic minor. This rule is not applicable at this time.

**NON-SIP Requirements:**

**Rule 2:3**      Toxics New Source Review for Complying with Federal Clean Air Act Section 112(g)

A screening health risk analysis was previously done during the initial permitting process. There will be no increase in emissions with this application, therefore a health risk analysis was not required to be done.

**Rule 2:11**      Fees

This rule is not included in the SIP and is therefore not evaluated in this permit action.

**Prevention of Significant Deterioration (PSD) Permitting**

This regulation sets the procedures for the review of new or modifications of existing major stationary emission sources. Knauf was issued the original PSD permit as part of the District’s Authority to Construct for the facility. Subsequently, EPA has become the permitting authority for PSD permits. Any portions of 40 CFR 63, subpart NNN that is incorporated into the current PSD permit shall remain in effect and remain in the Title V permit until the time that Knauf Insulation submits an application to EPA Region IX to have subpart NNN removed from the PSD permit.

**40 CFR 60, Subpart PPP**

The requirements of 40 CFR 60 Subpart PPP, Standard of Performance for Wool Fiberglass Insulation Manufacturing Plants is applicable to an affected facility that was constructed, modified, or reconstructed after February 7, 1984. This subpart is applicable to each rotary spin line at an affected facility. Knauf Insulation meets both of these requirements, and is therefore subject to the requirements of Subpart PPP.

Section 60.682 – Standard for particulate matter

This section limits that after the performance test is completed, as required by 40 CFR 60.8, the owner/operator shall not discharge into the atmosphere any gases which contain particulate matter in excess of 11.0 lb/ton of glass pulled. This particulate matter limit is subsumed by more stringent limits in the Title V permit.

Section 60.682 – Monitoring of operations

Paragraph (a) requires that the owner/operator of an affected facility that utilized a wet scrubbing control device to comply with the mass emission standard, shall install, calibrate, maintain, and operate monitoring devices that measure the gas pressure drop across each scrubber and the scrubbing liquid flow rate to each scrubber. The installed gauges must be certified by the manufacturer for the pressure drop to be accurate within +/- 1 inch water gauge over its operating range, and the flow rate be accurate within +/- 5 percent over its range. Knauf Insulation utilizes wet scrubbing control devices to control particulate matter, and therefore has installed required instruments to meet these specifications.

Paragraph (b) requires that the owner/operator that utilizes a wet electrostatic precipitator control device to comply with the mass emission standard shall install, calibrate, maintain, and operate monitoring devices that measure the primary and secondary current, voltage in each electrical field, and the inlet water flow rate. The owner/operator shall determine the total residue (total solids) content of the water entering the control device once per day using Method 209A, *Total Residue Dried at 103-105°C*, in *Standard Methods for the Examination of Water and Wastewater*. The residue shall be reported as percent by weight.

Paragraph (c) requires that all monitoring equipment required by this section are to be recalibrated quarterly with procedures found in 40 CFR 60.13(b).

The monitoring requirements specified in this section have been incorporated as conditions in the Title V Operating Permit.

#### Section 60.684 – Recordkeeping and reporting requirements

Paragraphs (a) and (b) specifies that at 30-minute intervals during each 2-hour test run of each performance test of both the wet scrubbers and electrostatic precipitator control devices, and at least once every four hours thereafter, the facility shall record the measurement required by §60.683 (a) and (b). The concentration of total residue in the water shall be recorded once during each performance test and once per day thereafter.

#### Section 60.685 – Test method and procedures

Paragraph (a) specifies that for the required performance test, the facility shall use the reference methods and procedures as specified in appendix A of this subpart, or other methods and procedures as specified in this section.

Paragraph (b) specifies that the facility shall conduct the performance test while the product with the highest loss on ignition expected to be produced by the facility is being manufactured.

Paragraph (c) specifies the methodology for calculating the emission rate of particulate matter to show compliance.

The applicable test methods have been incorporated into the Title V permit.

### **40 CFR 60, Subpart IIII**

Knauf Insulation has a total of two diesel fired engines used during emergencies, one (1) 1108hp Caterpillar diesel fired backup generator and one (1) 100 hp Detroit-Diesel/Allison diesel fired fire-pump engine that were constructed prior to the applicability requirement date found in 40 CFR Part 60, Subpart IIII, *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*. Therefore, those engines are not subject to this NSPS subpart.

Knauf Insulation has one diesel-fired internal combustion engine that powers an emergency fire-pump that is subject to Subpart IIII. The original installed engine was replaced in 2007, with a 160hp Clark Diesel engine. This diesel engine meets the applicability requirements found in Subpart IIII. Therefore, this engine will be subject to the following emission standards as specified in Table 4:

1. NMHC + NO<sub>x</sub> = 7.8 gr/HP-hr,
2. CO = 3.7 gr/HP-hr, and
3. PM = 0.60 gr/HP-hr.

The above emission limits have been added to Title V permit. The Clark Diesel meets these emission limits.

In addition to the above emission requirements, the Clark Diesel engine will be subject to the following standards:

1. The facility must operate and maintain the 160hp Clark Diesel engine as it did when the equipment was installed and the equipment must be maintained over the entire life of the engine [60.4206],
2. The facility must use diesel fuel that meets the requirements of 40 CFR 80.510(b) for nonroad diesel fuel [60.4207(b)],
3. Testing and maintenance of the Clark Diesel engine shall be limited to no more than 50 hours per year [60.4211(f)].

The above standards are currently in the Title V permit.

### **40 CFR 60, Subpart JJJJ**

Knauf Insulation has one natural gas fired engines used during emergencies, a 145 hp Caterpillar engine, that was constructed prior to the applicability requirement date found in 40 CFR Part 60, Subpart JJJJ, *Standards of Performance for Stationary Spark Ignition Internal Combustion Engines*. Therefore, this engine is not subject to this NSPS subpart.

### **40 CFR 63, Subpart NNN**

The requirements of this subpart apply to the emissions of hazardous air pollutants from new or existing rotary spin wool fiberglass manufacturing line producing a bonded wool fiberglass insulation product. The definition of a wool fiberglass manufacturing facility is defined as "...any facility manufacturing wool fiberglass on a rotary spin manufacturing line...". A rotary spin is defined as "...a process used to produce wool fiberglass building insulation...". The definition of building insulation is "...means bonded wool fiberglass insulation...". Bonded is defined as "means wool fiberglass to which a phenol-formaldehyde binder has been applied." The phenol-formaldehyde binder has been replaced with a binder formulation that does not contain any hazardous air pollutants. Section 63.1380 (c) states the requirements of this subpart do not apply to a manufacturing facility that has demonstrated to the Administrator it is not a major source for hazardous air pollutants. Published in the Federal Register Vol. 69, No. 130 on Thursday, July 8, 2004, EPA

determined that if a facility switches from a phenol-formaldehyde binder to an acrylic binder, then the facility no longer meets the definition of a “wool fiberglass manufacturing facility” as defined in 40 CFR 63.1381, and therefore is no longer subject to Subpart NNN. The new binder formulation at Knauf Insulation is not an acrylic binder. In conversations between EPA, Region 4, and Knauf Insulation, EPA has determined that the same Applicability Determination Index, which is quoted in the Federal Register, is applicable to the binder change at Knauf Insulation. Therefore, 40 CFR 63, Subpart NNN is no longer applicable when Knauf Insulation is using a non phenol-formaldehyde binder. The Shasta County Air Quality Management District, which has delegated authority from EPA for Subpart NNN of Part 63, concurs with this determination.

In the application for the modification, Knauf Insulation had requested that subpart NNN be removed from the operating conditions, while utilizing the Ecosse binder formula. But the facility has also requested that the subpart NNN requirements remain in the Title V Permit if the facility makes the decision to change back to a phenol-formaldehyde binder formulation at some point in the future. A section will be added to the Title V Permit for when a phenol-formaldehyde binder is utilized at the facility. A new condition will be added stating the facility shall give written notification to the District and EPA Region IX at least 30 days prior to switching back to the phenol-formaldehyde binder.

The sections of subpart NNN that pertain to particulate matter are included as operating conditions in the Prevention of Significant Deterioration Permit (PSD). To ensure consistency between the PSD Permit and the Title V Permit, the sections of Subpart NNN, that have been included in the PSD Permit, shall remain as operating conditions in the Title V Permit.

#### Section 63.1380 – Applicability

The requirements of this subpart apply to the owner/operator of each wool fiberglass manufacturing facility that is a major source or is located at a facility that is a major source. The requirements of this subpart apply to emissions of hazardous air pollutants emitted from glass-melting furnaces located at wool fiberglass manufacturing facilities and rotary spin wool fiberglass manufacturing lines producing bonded wool fiberglass insulation products. When Knauf Insulation is utilizing a phenol-formaldehyde binder, the facility meets the applicability requirements of Subpart NNN.

#### Section 63.1382 – Emission standards

Paragraph (a) limits the particulate matter emissions from the furnace stack and the formaldehyde emissions from the main stack. The particulate matter emissions are limited to 0.5 lb of pm per ton of glass pulled. The particulate matter limit specified in subpart NNN is less stringent than the Best Available Control Technology (BACT) determination that was done during the permit modification to increase the fiberglass production limit from 194 tons/day to 225 tons/day. During the initial permitting of the facility, the BACT determination limits the particulate matter to 0.07 lbs per ton of glass pulled. This requirement is incorporated into the Title V permit.

The formaldehyde emissions are limited to 1.8 lb of formaldehyde per ton of glass pulled. This is less stringent than the limits specified in permit condition H2. The formaldehyde limit is based on the information that was submitted in the original PSD/Authority to Construct application in table 2.3-1, which was based on actual test results from the Knauf Lanett facility. With an emission limit of 2 lb of formaldehyde per hour and a maximum production limit of 225 tons fiberglass per day, the formaldehyde limit was calculated to be 0.21 lb of formaldehyde per ton of glass pulled.

Paragraph (b) specifies that on or after July 29, 2015 to reduce the emissions of hydrogen chloride and

hydrogen fluoride from each existing, new, or reconstructed glass-melting furnace, the facility must either:

- Require cullet providers to provide records of their inspections showing that no glass from industrial fiberglass, cathode ray tubes, computer monitors, and glass from microwave ovens, televisions or other electronics is included in the cullet, or
- Sample the raw materials and maintain records of the sampling showing that the cullet is free of glass from industrial fiberglass, cathode ray tubes, computer monitors, and glass from microwave ovens, televisions or other electronics.

This paragraph was added to Subpart NNN after the previous Title V evaluation and renewal, and is not in the current Title V permit. It has been added to the Title V permit as Condition H10.

Paragraph (c) specifies the operating limit requirements for the installed control equipment and the process controls.

The owner/operator must initiate corrective action within one-hour of an alarm from a bag leak detector, and complete the corrective actions in a timely manner. As previously mention, to stay consistent with the PSD permit, this requirement will remain in the Title V Permit.

The owner/operator must initiate corrective action within one hour when any of the following occur:

- any three-hour block average of the monitored ESP parameters is outside the limit established during the performance test,
- any three-hour block average temperature of a cold top electric furnace as measured at a location 46 to 61 centimeters above the molten glass surface that exceeds 250° F,
- any four-hour average of the glass pull rate exceeds the level established during the performance test by greater than 20 percent,
- the average pressure drop, liquid flow rate, or chemical feed rate for any three-hour block is outside the limits established during the performance test for each wet scrubbing device, or
- any monitored process parameter level(s) are outside the limit(s) established during the performance test.

After reviewing the current Title V Operating Permit the requirement to measure the average temperature above the cold top electric furnace was not included as an operating condition. This will be added as a condition to the Title V Operating Permit.

With the addition of the above-mentioned condition, all application requirements from this paragraph are included in the Title V Operating Permit.

The owner or operator must implement a Quality Improvement Plan (QIP) consistent with the compliance assurance monitoring provisions in 40CFR64, Subpart D, if the above deviations occur for more than five percent of the total operating time during a six-month period. This requirement is included in the Title V Operating Permit.

The owner or operator must operate the incinerator used to control the formaldehyde emissions so that any three-hour block average temperature in the firebox does not fall below the average established during the performance test. This requirement is included in the Title V Operating Permit.

The owner or operator must use a resin in the formulation of binder such that the free-formaldehyde content of the resin used does not exceed the free-formaldehyde range contained in the specification for the resin

used during the performance test. Also, the owner or operator must use a binder formulation that does not vary from the specification and operating range established and used during the subject performance test. These requirements are included in the Title V Operating Permit.

#### Section 63.1383 – Monitoring requirements

Paragraph (a) specifies that a written operations, maintenance, and monitoring (OM&M) plan must be prepared for the glass-melting furnace and rotary spin manufacturing line. The plan must include the elements in paragraphs (a)(1) through (a)(3). The applicable requirements from this paragraph have been included as conditions in the Title V Operating Permit.

Paragraph (b) specifies the requirements for when a baghouse is used to control particulate matter emissions from a glass-melting furnace. The owner/operator shall install, calibrate, maintain, and continuously operate a bag leak detection system. The OM&M plan must specify correction actions to be followed in the event of a bag leak detection alarm. The applicable requirements from this paragraph have been included as conditions in the Title V Operating Permit.

Paragraph (c) specifies the requirements for when an ESP is used to control particulate matter emissions from a glass-melting furnace. The owner/operator must monitor the ESP according to the procedures in the OM&M plan. The applicable requirements from this paragraph have been included as conditions in the Title V Operating Permit.

Paragraph (f) requires that if the owner/operator uses a control device to control hazardous air pollutant (HAP) emissions from a glass-melting furnace or rotary spin manufacturing line, the facility must install, calibrate, maintain, and operate a monitoring device that continuously measures an appropriate parameter for the control device. The facility utilizes a thermal oxidizer to control the HAP emissions. This requirement has been included in the Title V operating permit.

Paragraph (g) specifies that the owner/operator shall install, calibrate, maintain, and operate a monitoring device that continuously measures and records the operating temperature in the firebox of each thermal incinerator. The applicable requirements from this paragraph have been included as conditions in the Title V Operating Permit.

Paragraph (h) specifies that when a wet scrubbing device is used, the owner/operator must install, calibrate, maintain, and operate monitoring devices that continuously monitor and record the gas pressure drop across each scrubber and scrubbing liquid flow rate to each scrubber, according to the OM&M plan. The pressure drop monitor is to be certified to be accurate within  $\pm 1$ " Water Column, and the flow rate monitor is to be certified to be accurate  $\pm 5$  percent over the operating range of the gauges. The owner/operator must continuously monitor and record the feed rate of any chemical added to the scrubbing liquid. The applicable requirements from this paragraph have been included as conditions in the Title V Operating Permit.

Paragraph (i) requires the owner/operator that uses process modifications to control formaldehyde emissions must establish a correlation between formaldehyde emissions and the process parameters to be monitored. The owner/operator must monitor the established parameter(s) according to the procedures in the OM&M plan. The applicable requirements from this paragraph have been included as conditions in the Title V Operating Permit.

Paragraphs (j) and (k) requires the owner/operator to monitor and record the free-formaldehyde content of each resin shipment. Additionally, the owner/operator must monitor and record the formulation of each batch of binder used. The applicable requirements from this paragraph have been included as conditions in



the Title V Operating Permit.

Paragraph (l) requires that the owner/operator monitor and record the product LOI and product density every eight hours for each bonded wool fiberglass product manufactured. The applicable requirements from this paragraph have been included as conditions in the Title V Operating Permit.

#### Section 63.1384 – Performance test requirements

This section specifies the performance testing requirements. The facility shall conduct the performance test in accordance with 40CFR63 subpart A and the following requirements:

- the facility must monitor and record all process and emission control equipment parameters every 15 minutes. And this data shall set the minimum and maximum set points for the process and emission control equipment,
- the glass pull rate must be monitored and recorded every 15 minutes and the average must be calculated for each test run,
- testing shall be done while producing the insulation with the highest LOI content, and resin with the highest free-formaldehyde content, and
- short term experimental production runs, where the process parameters could be outside the established limits, are allowed with the proper agency notification.

All of the testing requirements of this section are currently in the existing Title V permit, and shall remain in the appropriate sections.

#### Section 63.1385 – Test methods and procedures

This section specifies the test methods to be used to show compliance:

- Test Methods 1-5,
- Test Method 316 or 318 for formaldehyde concentration,
- Test Method contained in appendix A for product LOI,
- Test Method contained in appendix B for free-formaldehyde content of the resin, and
- Test Method contained in appendix C for product density
- Test Method 318 for phenol concentration.

Alternate testing methods are allowed if approved by the administrator. For the testing of the phenol concentration, Knauf has been authorized to utilize the Bay Area Air Quality Management District test method ST-16. All of the test method requirements of this section are currently in the existing Title V permit, and shall remain in the appropriate sections

#### Section 63.1386 – Notification, recordkeeping, and reporting requirements.

Paragraph (a) specifies as required by §63.9(b) through (h) of this part, the owner/operator shall submit the initial notification requirements of the facility, listed in paragraph (a)(1) through (a)(6). The initial notifications and initial testing have been previously completed by the facility, and not part of the current Title V permit. Except, if the facility switches back to a phenol-formaldehyde based binder, then an initial testing notification would be required. The applicable requirements from this paragraph have been included as conditions in the Title V Operating Permit.

Paragraph (c) was modified since the previous Title V renewal evaluation for Knauf Insulation. In the

previous version, paragraph (c) specified the requirements for startup, shutdown, and malfunction procedures. Where in the current version, paragraph (c) specifies the requirements for records and reports for a failure to meet a standard. Paragraphs (c)(1) through (c)(4) specify the procedures the owner/operator must record and report. The applicable requirements from the rewritten paragraph (c) are currently included as conditions in the Title V Operating Permit.

Paragraph (d) specifies the recordkeeping requirements. Subparagraph 1 requires that all the records be maintained by the facility for at least 5 years. Also, the owner/operator shall maintain records on the following devices:

- Bag leak detectors,
- ESP parameters,
- Binder formulation,
- LOI,
- Product density,
- Process parameters,
- Scrubber pressure drop and liquid flow rate,
- Incinerator operating temperature, and
- Glass pull rate

These requirements are all covered in the appropriate sections of the Title V Permit.

Paragraph (e) specifies that the owner/operator shall report semi-annually if measured emissions are in excess of the applicable standard or a monitored parameter deviates from the levels established during the performance testing. This requirement is currently in the existing Title V permit, and shall remain in the appropriate sections.

#### Section 63.1387 – Compliance dates

Paragraph (a) states that the facility must comply with the emissions limits by the dates specified in Table 2 to this subpart. For a rotary spin manufacturing line that construction commenced prior to November 25, 2011, the following emissions limits must be met by December 26, 2020:

- 1.2 lb formaldehyde per ton glass pulled
- 1.1 lb methanol per ton of glass pulled

The formaldehyde limit that is currently in the Title V Operating Permit is more stringent than the limit listed in Table 2, and the more stringent limit will remain in the Title V Operating Permit. The limit for methanol is not currently in the Title V Operating Permit, and will be added to condition H2.

#### Section 63.1388 – Implementation and enforcement.

This section can be implemented and enforced by the U.S. EPA, or a delegated authority. If the U.S. EPA Administrator has delegated authority to a State, local, or Tribal agency, then that agency, in addition to the U.S. EPA, has the authority to implement and enforce this subpart.

Paragraph (c) specifies that the authorities contained in this paragraph are retained by U.S. EPA and cannot be transferred to the State, local, or Tribal agency.

#### Section 63.1389 – Startups and shutdowns.

Paragraph (a) specifies that the provisions set forth in this subpart apply at all times.

Paragraph (b) the owner/operator must not shut down equipment that are required or utilized for compliance during times when emissions are being routed to that equipment.

Paragraphs (c) and (d) are definitions of the times that are considered startup and shutdown.

Paragraph (e) specifies that during periods of startup and shut down for a cold-top furnace, the owner/operator must establish the batch cover and operate the furnace according to the following requirements during startup and shutdown:

1. The owner/operator must keep records showing natural gas or other clean fuels to heat the furnace,
2. Except after batch cover is established, the owner/operator must keep records showing that only cullet as raw material during startup of the furnace is used,
3. Once a batch cover is established and the baghouse can be safely operated, the owner/operator must keep records showing that the furnace emissions are in compliance with the parameters established by the most recent performance test,
4. During periods of shutdown, until the conditions above the glass reach a point at which the control device may be damaged if it continues to operate, the owner/operator must keep records showing furnace emissions are in compliance.

This section of Subpart NNN was added after the previous Title V renewal and therefore is not part of the current Title V Operating Permit. All of the applicable sections will be added as Condition B9.

#### **40 CFR 63, Subpart ZZZZ**

Knauf has a total of four emergency internal combustion engines located at this facility. Of the four engines, one of the diesel fired compression engines was replaced after the applicability date of June 12, 2006, and therefore the 160hp Clark Diesel is considered a new engine. The other three engines, the 1108hp Caterpillar, the 100hp Detroit Diesel, and the 145hp Caterpillar, were constructed before June 12, 2006 and are considered existing engines with respect to Subpart ZZZZ.

For the existing emergency engines, there are no emission standards. The existing engines are subject to the following operating limitations specified in Table 2d of Subpart ZZZZ:

1. Change oil & filter every 500 hours of operation or annually, whichever comes first.
2. For the Compression Ignition engines, inspect air cleaner every 1000 hours of operation or annually, whichever comes first.
3. For the Spark Ignition engine, inspect the spark plugs every 1000 hours of operation or annually, whichever comes first.
4. Inspect all hoses and belts every 500 hours or annually, whichever comes first and replace as necessary.

The above operating/maintenance requirements have been added to the Title V permit as condition E8.

The existing emergency engines are also subject to:

1. The engines must be equipped with a non-resettable hour meter.

2. The engines are limited to a maximum of 50 hours per year for maintenance and testing.
3. The engines must be operated and maintained in accordance to the operation and maintenance manuals.
4. The facility must keep records of the maintenance conducted on the engines.
5. The facility must keep records of the hours of operation, including the hours for maintenance and testing.

The above standards are currently in the Title V permit. The above engines are not subject to the fuel requirements, performance testing, initial compliance and notification requirement in Subpart ZZZZ.

For the Clark Diesel engine, since it is considered a new engine, it must meet the requirement of this part by meeting the requirements of the NSPS III for Compression Ignition engines. No further requirements apply for new emergency engines under Subpart ZZZZ.

### **Compliance Assurance Monitoring**

The purpose of the Compliance Assurance Monitoring (CAM) plan is to provide a reasonable assurance of compliance with the applicable regulations. The requirements of this part shall apply to a pollutant-specific emissions unit, at a major source that is required to obtain a Part 70 or 71 Permit, if the unit satisfies all of the following criteria:

- (1) The unit is subject to an emission limitation or standard for the applicable regulated air pollutant (or a surrogate thereof), other than an emission limitation or standard that is exempt under paragraph (b)(1) of 40 CFR Part 64.2;
- (2) The unit uses a control device to achieve compliance with any such emission limitation or standard; and
- (3) The unit has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source. For purposes of this paragraph, "potential pre-control device emissions" shall have the same meaning as "potential to emit" as defined in 40 CFR 64.1, except that emission reductions achieved by the applicable control device shall not be taken into account.

The post-control emissions for all pollutants at Knauf are less than the 100 tons per year major source threshold. But the pre-control emissions for particulate matter would be above the major source threshold. Therefore, Knauf Insulation is required to submit a Compliance Assurance Monitoring plan that provides for reasonable assurance of continuous compliance of the PM<sub>10</sub> concentration limits. Knauf has several different types of emission control equipment on the exhaust stream to control the PM<sub>10</sub> emissions. Knauf has submitted a CAM plan that will be incorporated into the Title V Permit.

### **Permit Streamlining**

The particulate matter requirements of NNN are included and are, in some instances, subsumed by other more stringent conditions in the Title V Permit. The following streamlining demonstration for 40 CFR Part 63, Subpart NNN, *National Emissions Standards for Hazardous Air Pollutants for Wool Fiberglass Manufacturing*, will compare and identify where a more stringent rule applies to this facility.

## Step 1. Side-by-Side Comparison of Applicable Requirements:

PM <sub>10</sub>			
Regulatory Basis	SIP, Rule 3:2	PSD/NSR Permit	NESHAP 40 CFR Part 63, Subpart NNN
Emission Standards	- 0.05 grains/DSCF (1.1 pounds per ton of glass pulled)	- 0.67 lb/hr and 0.07 lb/ton of glass pulled on a 3-hour rolling average; and - 2.9 tons/year, on a 12-month rolling sum. (Filterable and condensable PM)	- 0.5 pounds per ton of glass pulled (Filterable)
Monitoring	None	-Continuous bag leak detection system and corrective action requirements - Continuous glass pull rate monitor that records glass pull rate on an hourly basis - Continuous opacity monitor	- Prepare a written O&M plan for each affected glass-melting furnace and manufacturing line. - Continuously operate a bag leak detection system. - An existing glass-melting furnace equipped with a continuous glass pull rate monitors must monitor and record the glass pull rate on an hourly basis.
Recordkeeping	None	- Retain records of the hourly glass rate production averaged on a daily and weekly basis in tons of glass pulled per day -Record hours of operation of the glass melting furnace on a daily basis. - Retain records of performance test measurements. - Retain records of all calculations and measurements. - Retain records of each occurrence of the alarm for the bag leak detection system; the corrective action(s) taken for each occurrence of the alarm; and the duration for completing each correction action(s). - All records are to be retained for a minimum of 5 years.	- Retain all general records required by 40 CFR 63.10(b)(2). - Retain records of each occurrence of the alarm for the bag leak detection system; the corrective action(s) taken for each occurrence of the alarm; and the duration for completing each correction action(s). - Retain records for the glass pull rate on an hourly basis - Retain records of any period that the glass pull rate exceeds the average pull rate during the performance test by more than 20%; date and time of each occurrence and the corrective action; and when the exceedance was corrected. - All records are to be retained for a minimum of 5 years.
Testing	Approved EPA test methods.	- Annual PM testing using EPA Methods 1 through 5, and 202	- Initial performance test using EPA methods 1 through 5.
Reporting	None	- Semi-annual report of all excess emissions and monitoring systems performance. - Semi-annual written report of each occurrence of the alarm for the bag leak detection system; the corrective action(s) taken for each occurrence of the alarm; and the duration for completing each corrective action(s).	- Semi-annual report of all excess emissions and monitoring systems performance. - Semi-annual report of each occurrence of the alarm for the bag leak detection system; the corrective action(s) taken for each occurrence of the alarm; and the duration for completing each corrective action(s). - Semi-annual written report of the glass pull rate on an hourly basis. - Semi-annual written report of each occurrence when the glass pull rate exceeds the average pull rate during the performance test by more than 20%; date and time of each occurrence; the corrective action(s) taken for each occurrence; and the duration for completing each corrective action(s).

## **Step 2. Select most stringent emission limit or performance standard:**

For the PM<sub>10</sub> the limit specified in the NSR/PSD Permit is more stringent than the limit specified in either 40 CFR 63, Subpart NNN or the State SIP requirements. The facility shall be limited for PM<sub>10</sub> at the furnace stack to 0.67 lb/hr and 0.07 lb/ton of glass pulled.

## **Step 3. Conditions ensuring compliance with applicable requirements**

The facility will show compliance at the furnace stack for particulate matter by meeting the streamlined condition B2, with annual particulate testing for the filterable and condensable particulate.

The facility shall retain records for the glass pull rate on an hourly basis at all times. The glass pull rate shall be included in the semi-annual report.

The facility shall retain records of any period that the glass pull rate exceeds the average pull rate during the performance test by more than 20%, the date and time of each occurrence and the corrective action take, and when the exceedance was corrected. These records are only required when the NESHAP is applicable and shall be included in the semi-annual report.

These requirements and associated monitoring and recordkeeping requirement assure compliance.

## **SPECIFIC PERMIT ACTIONS AND MODIFICATIONS**

### **1. Update Title V Operating Permit Condition References.**

This modification is an Administrative Permit Amendment to update permit references, and add any missing references.

### **2. Administrative Permit Amendment, Added Condition H9**

Condition H9 will be added to ensure compliance with 40 CFR 63 subpart NNN, when the facility is subject to subpart NNN. Condition H9 will read as follows:

*H9. The owner/operator must operate the cold top electric furnace such that the temperature does not exceed 120 °C (250 °F) as measured at a location 46 to 61 centimeters (18 to 24 inches) above the molten glass surface, for more than 10 percent of the total operating time in a 6-month period.*

### **3. Administrative Permit Amendment, Added Condition H10**

Condition H10 will be added to ensure compliance with 40 CFR 63 subpart NNN, when the facility is subject to subpart NNN. Condition H10 will read as follows:

*H10. To reduce the emissions of hydrogen chloride and hydrogen fluoride from each existing, new, or reconstructed glass-melting furnace, the owner/operator must either:*

- *Require cullet providers to provide records of their inspections showing that no glass from industrial fiberglass, cathode ray tubes, computer monitors, and glass from microwave ovens, televisions or other electronics is included in the cullet, or*
- *Sample the raw materials and maintain records of the sampling showing that the cullet is free of glass from industrial fiberglass, cathode ray tubes, computer monitors, and glass from microwave ovens, televisions or other electronics.*

#### **4. Administrative Permit Amendment, Add Startup and Shutdown definitions**

Knauf Insulation has requested that definitions of Startup and Shutdown be included as a condition in the Title V Operating Permit. The suggested language that the facility submitted to the District, is the same definitions of Startup and Shutdown that are located in 40 CFR 63.1389. The District concurs with this modification and the definitions will be added a new Title V Operating Condition G4.

*G4. For periods of startup and shutdown, the following definitions shall apply:*

- *Startup – Startup of the glass melting furnace begins when the wool fiberglass glass-melting furnace has raw materials added and the glass temperature reaches 50 percent of the typical operating temperature. Startup ends when batch cover is established and the temperature of the glass batch cover surface is below 300 °F.*
- *Shutdown – Shutdown of the glass melting furnace begins when the heat sources to the glass melting furnace are reduced to begin the glass melting shutdown process. Shutdown ends when the glass melting furnace is empty or the contents are sufficiently viscous to preclude glass flow from the glass melting furnace.*

#### **5. Administrative Permit Amendment, Add Startup and Shutdown requirements**

With the update to 40 CFR 63, Subpart NNN on July 29, 2015, section 63.1389 was modified to define startup and shutdown conditions. Paragraph (e) specifies the requirements of the usage of the emission control devices of the cold-top electric furnace during startup and shutdown. Although, these requirements are found in Subpart NNN, for when the facility utilizes a phenol-formaldehyde binder, it is a reasonable requirement to include these requirements in the Glass Melting section. The following condition shall be added to the Title V Operating Permit as Condition B9, and the rest of the section shall be renumbered accordingly.

*B9. During periods of startup and shutdown in a cold-top furnace, the owner/operator must establish the batch cover and operate the furnace according to the following requirements during startup and shutdown:*

- *The owner/operator must keep records showing that only natural gas or other clean fuels were utilized to heat the furnace,*
- *Except after the batch cover is established, the owner/operator must keep records that only cullet was utilized as a raw material during start-up of the cold-top furnace,*
- *Once a batch cover is established and the furnace baghouses can be safely operated, the owner/operator must keep records showing that furnace emissions are within the parameters established by the most recent performance test, and*
- *During periods of shutdown of the cold-top furnace, until the conditions above the glass reach a point at which the furnace baghouses may be damaged, the owner/operator must retain records showing furnace emissions are within the parameters established by the most recent performance test.*

With the addition of Condition B9, the following conditions in this section will be renumbered accordingly.

## **6. Administrative Permit Amendment, Modify Condition E9**

Knauf Insulation has requested that condition E9 be more specific on when the records for the four emergency engines be submitted to the District. The District concurs with this modification. Currently, Condition E9 reads as follows:

*E9. The operator of any stationary internal combustion engine claiming an exemption from requirements under District Rule 3:28-Stationary Internal Combustion Engines, shall maintain engine operating records, which include hours of operation; quantity of fuel used; and date and type of all maintenance performed, and support documentation necessary to claim this exemption. The operating records shall describe the circumstances of operation (i.e. testing, maintenance, electrical utility power loss, California Independent System Operator (ISO) Stage 3 or Stage 2 Emergency declarations). The records shall be maintained for five years and shall be submitted to the APCO upon request.*

The District requests information on the diesel engines on an annual basis, and that information is due to the District office by March 1<sup>st</sup>. Condition E9 will be modified to read as follows:

*E9. The operator of any stationary internal combustion engine claiming an exemption from requirements under District Rule 3:28-Stationary Internal Combustion Engines, shall maintain engine operating records, which include hours of operation; quantity of fuel used; and date and type of all maintenance performed, and support documentation necessary to claim this exemption. The operating records shall describe the circumstances of operation (i.e. testing, maintenance, electrical utility power loss, California Independent System Operator (ISO) Stage 3 or Stage 2 Emergency declarations). The records shall be maintained for five years and shall be submitted to the District on the Annual Device Update forms by March 1<sup>st</sup>.*

## **7. Minor Modification, Update Raw Materials Handling Mixing Equipment List**

Updating the equipment list in the Raw Materials Handling Mixing section of the Title V Permit. Currently, the authorized equipment list is:

*One (1) Raw Material Unloading Dust Collector (Griffen Model JV 9 F)  
Three (3) Sand Bin Dust Collectors (Griffen Model JV 9 F)  
Two (2) Consumer Cullet Bin Dust Collectors (Griffen Model JV 9 F)  
One (1) Dolomite Bin Dust Collector (Griffen Model JV 9 F)  
One (1) Limestone Bin Dust Collector (Griffen Model JV 9 F)  
One (1) (Spare) Bin Dust Collector (Griffen Model JV 9 F)  
One (1) Borax Bin Dust Collector (Griffen Model JV 9 F)  
One (1) Soda Ash Bin Dust Collector (Griffen Model JV 9 F)  
One (1) Feldspar Bin Dust Collector (Griffen Model JV 9 F)  
One (1) Knauf Cullet Dust Collector (Griffen Model JV 9 F)  
One (1) Weigh Scales/Conveyor Dust Collector (Griffen Model JV 9 F)  
One (1) Check Scale/Batch Mixer Dust Collector (Griffen Model JV 9 F)  
One (1) Day Bin #1 Dust Collector (Griffen Model JV 9 F)  
One (1) Day Bin #2 Dust Collector (Griffen Model JV 9 F)  
One (1) Liquid Urea Tank*



Two (2) Phenolic Resin Tanks  
Two (2) Resin Urea Premix Tanks  
One (1) Outdoor Mineral Oil Tank  
One (1) Outdoor Aqueous Ammonia Tank  
Two (2) Ammonium Sulfate Mix Tanks  
One (1) Organosilane Weigh Tank  
One (1) Binder Mix Tank  
Two (2) Binder Supply Hold Tanks

The authorized equipment list will be updated as follows:

One (1) Raw Material Unloading Dust Collector (Griffen Model JV-9-F)  
Two (2) Sand Bin Dust Collectors (Griffen Model JV-9-F)  
Five (5) Consumer Cullet Bin Dust Collectors (Griffen Model JV-9-F)  
Two (2) Dolomite Bin Dust Collector (Griffen Model JV-9-F)  
One (1) Limestone Bin Dust Collector (Griffen Model JV-9-F)  
One (1) Manganese Dioxide Bin Dust Collector (Griffen Model JV-9-F)  
One (1) Borax Bin Dust Collector (Griffen Model JV-9-F)  
Two (2) Soda Ash Bin Dust Collector (Griffen Model JV-9-F)  
One (1) Knauf Cullet Dust Collector (Griffen Model JV-9-F)  
One (1) Weigh Scales/Conveyor Dust Collector (Griffen Model JV-9-F)  
One (1) Check Scale/Batch Mixer Dust Collector (Griffen Model JV-9-F)  
One (1) Distribution Conveyor Dust Collector  
One (1) Day Bin #1 Dust Collector (Griffen Model JV-9-F)  
One (1) Day Bin #2 Dust Collector (Griffen Model JV-9-F)  
One (1) Liquid Urea Tank  
Two (2) ECOSE Tanks  
Two (2) Resin-Urea Premix Tanks  
One (1) Outdoor Mineral Oil Tank  
One (1) Indoor Mineral Tank  
One (1) Outdoor Aqueous Ammonia Tank  
Two (2) Ammonium Sulfate Mix Tanks  
One (1) Organosilane Weigh Tank  
One (1) Binder Mix Tank  
Two (2) Binder Supply Hold Tanks

## **8. Minor Modification to Condition A2**

Knauf Insulation has proposed to modify Title V Operating Permit Condition A2 to reflect that the bag leak detectors be calibrated as recommended by the manufacturer, instead of on a regular basis. The District concurs with the proposed modification. Condition A2 currently reads:

*A2. ...The dust collector shall be equipped with a bag leak detectors which shall be calibrated on a regular basis to assure reliability.*

Condition A2 will be modified as follows:

*A2. ...The dust collector shall be equipped with a bag leak detectors which shall be calibrated as recommended by the manufacturer to assure reliability.*

## 9. Minor Modification to Condition A3

Knauf has request that Condition A3 be modified to more accurately describe the equipment. Condition A3 will be modified to include the term “adjustable” to the dust boot. Condition A3 will be modified as follows:

*A3. All railcar and bottom-dump hopper truck unloading of raw materials shall be done with an adjustable dust boot that seals the gap between the discharge of the hopper and the delivery system. The dust collectors on the material handling system shall be in operation whenever materials are being delivered and shall prevent any and all particulate matter emissions from escaping the batch plant.*

## 10. Minor Modification to Condition B7

Knauf has proposed on modifying condition B7 to specify that the emission limits found in conditions B2 and B3 apply at all times except for times other than startup and shutdown. The District concurs with this request, and Condition B7 will be modified as follows:

*B7. Under no circumstances shall the owner/operator be allowed to operate the system with operation parameters beyond the limits specified in Condition B2 and B3 other than startup and shutdown conditions as defined in Condition G4. The owner/operator shall take immediate action to bring the operation parameters to within the specified limits. Immediate action for the purpose of this condition shall be defined as initiating corrective action within one hour of the discovery of the operation parameter exceedance.*

## 11. Administrative Modification to Condition C23

Knauf has requested to modify Condition C23.a) to remove “for more than five percent of the total operating time in a six month block reporting period”. This phrase is in Condition C23 twice, once in subpart a) and again at the end of the condition. The District concurs with this modification to remove the duplicate phrasing. Condition C23 will be modified as follows:

*C23. The owner/operator must implement a Quality Improvement Plan (QIP) consistent with the compliance monitoring provisions of 40 CFR Part 64.8, when:*

- a) any of the monitored wet scrubber parameters is outside the above-referenced limit(s); or*
- b) the glass pull rate exceeds, by more than 20 percent, the average glass pull rate established during the performance test; or*
- c) any of the monitored process parameters are outside the above-referenced limits(s),*

*for more than 5 percent of the total operating time in a six-month block reporting period.*

## 12. Minor Modification to Condition C25.c)

Knauf Insulation has requested that Condition C25.c) be modified to specify which ESP voltage that is required to be monitored and complied with. The facility is recommending that the secondary ESP voltage be monitored. The District concurs with this requested modification. This modification remove any ambiguity on what voltage is required to be monitored, and it would be consistent with the low voltage monitoring reference later in the condition. Furthermore, in 40 CFR 63.1383(c)(1)(i), it states:

The EXP operating parameter(s), such as secondary voltage of each electrical field, to be monitored

and the minimum and/or maximum value(s) that will be used to identify any operation problems;

Condition C25.c) will be modified to read as follows:

*C25.c) wet electrostatic precipitator high secondary voltage reading exceeding +30 percent of established set point (low secondary voltage readings less than 70 percent of the lowest value established during performance testing are still required to be reported);*

### **13. Administrative Modification to Condition C26**

Knauf proposed to remove condition C26 from the Title V Operating Permit with the justification that is old 40 CFR 63, Subpart NNN language. A review of Subpart NNN, indicates that the requirement to continuously monitor and record the feed rate of any chemical(s) added to the scrubbing liquid is part of Section 63.1384 as amended in Federal Register, Volume 82, No. 246, dated December 26, 2017. Since this requirement is part of Subpart NNN, it should be removed from Section C and placed in Section H, subpart NNN requirements. Condition C26 will be removed and H21 will be added as follows:

*H21. The owner/operator must continuously monitor and record the feed rate of any chemical(s) added to the scrubbing liquid.*

### **14. Modify Emergency Standby Internal Combustion Engines Equipment List and Conditions E7 & E8**

This modification is to update the equipment list for the Emergency Standby Generator Section to reflect the equipment that is currently installed at the facility. The 100hp Detroit Diesel has been replaced with a 95hp Clark Diesel Engine. The equipment list will be modified as follows:

*One (1) Caterpillar 1108hp Diesel Engine, Model 3412 STA  
One (1) Clark Diesel 95hp, Model PDFP04YT L1212f  
One (1) Clark Diesel 160hp Diesel Engine, Model JU6H-UF30  
One (1) Caterpillar 145hp Natural Gas Engine, Model 3306*

Permit Conditions E7 and E8 shall be modified as follows:

E7. The 1108hp Caterpillar, the 95hp Clark Diesel, and the 160hp Clark Diesel engines shall be fired exclusively on CARB approved diesel fuel. Any changes in the type of fuel used shall be reviewed and approved by the District.

E8. The 1108hp Caterpillar, the 95hp Clark Diesel, and the 160hp Clark Diesel engines shall:...

### **15. Administrative Modification to Remove Condition F6**

Knauf Insulation has requested that Condition F6 be removed from the Title V Operating Permit, with the justification that Condition F6 is no longer applicable. Condition F6 currently reads as follows:

*F6. The owner/operator shall finance, up to \$14,000 annually, the District operation and maintenance, related supplies, and calibration equipment for two EPA-approved PM10 monitors and two Federal Reference Method (FRM) PM2.5 special purpose monitors until December 31, 2014. The monitors will be used as special purpose ambient air monitors by the District for measuring PM10 and PM2.5 concentration levels at locations chosen by the District to provide*

*necessary monitor security and representative sampling of ambient emission impacts from operation of the facility. The monitors will sample on the same schedule and use the identical procedures as the other District-operated PM10 and PM2.5 ambient monitors. The special purpose monitoring program shall be reconsidered upon annual permit renewal after 2014.*

The special purpose monitoring was discontinued at the end of 2014 and the samplers have been removed from the locations. The District concurs with removing condition F6 from the Title V Operating permit.

#### **16. Request to Modify condition F7.c)**

Knauf Insulation has proposed to modify Title V Operating Condition F7.c) to modify the timeframe that equipment can be operated during events of excessive emissions. They propose Condition F7.c) be modified as follows:

*F7.c) Corrective action shall be taken immediately by the operator of the emission source to correct the conditions causing excessive emissions to reduce the frequency of the occurrence of such conditions. In no event shall equipment be operated in a manner that creates excessive emissions beyond twelve (12) hours ~~the end of the work shift or twenty four (24) hours~~, whichever occurs first.*

The District does not concur with this modification. Shasta County AQMD Rule 3:10, Excess Emissions, states:

d. ...In no event shall equipment be operated in a manner that creates excessive emissions beyond the end of the work shift or twenty-four hours, whichever occurs first (except for continuous monitoring equipment, for which the period shall be ninety-six hours)...

To be compliant with District Rule 3:10, condition F7.c) will not be modified.

#### **17. Administrative Modification to Move Condition F19**

Knauf has proposed to move condition F19 from the testing and Maintenance section of the Facility-Wide Requirements to the section H, Phenol/Formaldehyde Binder – 40 CFR 63, Subpart NNN Requirements. Knauf's justification is that this requirement is from 40 CFR 63, Subpart NNN. I concur with this request, and condition F19 will be deleted, the remainder of conditions will be renumbered, and condition H22 will be added.

~~*F19. The facility may conduct short term experimental production runs using binder formulations or other process modifications. The APCO must be notified 15 days prior to commencement of experimental production runs.*~~

*H22. The facility may conduct short term experimental production runs using binder formulations or other process modifications. The APCO must be notified 15 days prior to commencement of experimental production runs.*

## **RENEWAL PROCESS**

The Title V Operating Permit renewal application was deemed administratively complete on April 15, 2019. According to District Rule 5, the District must issue a renewed permit no later than 18 months after an application is deemed complete. A permit shield was issued to the facility making the current Title V Permit 03-TV-01c remain in force during the completion of the renewal process.

A copy of the proposed permit will be submitted to the California Air Resources Board (CARB) for the required 30-day comment and review period.

A 30-day notification of the proposed action will be published in the Redding Record Searchlight in concurrence with the CARB 30-day comment period. All comments will be addressed by the District and will be attached and submitted to EPA for review.

A 45-day notification of the proposed action and a copy of the proposed permit will be submitted to the Environmental Protection Agency, Region IX.

## **CONCLUSIONS AND RECOMMENDATION**

The proposed Title V Permit for the Knauf Insulation, GmbH facility is an affected facility with respect to the requirements of District Rule 5, ADDITIONAL PROCEDURES FOR ISSUING PERMITS TO OPERATE FOR SOURCE SUBJECT TO TITLE V OF THE CLEAN AIR ACT AMENDMENTS OF 1990 (adopted 9-28-93 and amended 5-8-01).

Therefore, it is the recommendation of the District that the Title V Operating Permit for Knauf Insulation, GmbH be renewed.