



**COMMONWEALTH OF VIRGINIA  
Department of Environmental Quality  
Valley Regional Office**

**STATEMENT OF LEGAL AND FACTUAL BASIS**

Valley Proteins – Linville Division  
Rockingham County, Virginia  
Permit No. VRO80144

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, Valley Proteins – Linville Division has applied for a renewal of its Title V Operating Permit for its Linville facility. The Department has reviewed the application and has prepared a draft Title V Operating Permit.

Engineer/Permit Contact: \_\_\_\_\_  
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Date:

Air Permit Manager: \_\_\_\_\_

Date:

## **FACILITY INFORMATION**

### Permittee

Valley Proteins, Inc.  
P.O. Box 3588  
Winchester, Virginia 22604

### Facility

Valley Proteins – Linville Division  
6230 Kratzer Road  
Linville, Virginia 22834

County-Plant Identification Number: 51-165-0023

## **SOURCE DESCRIPTION**

NAICS Code: 311613 - Rendering and Meat Byproduct Processing

Valley Proteins – Linville Division (VP-L) renders inedible animal by-products and surplus restaurant fats to produce protein solids and fats which are sold to feed mills. One 22.5 ton/hr and one 18.1 ton/hr continuous cookers, five 1.75 ton/hr feather cookers, and two 3.50 ton/hr eggshell cookers breakdown and dehydrate raw animal materials into solids and fats using steam from five residual oil, finished animal/vegetable oil, and natural gas-fired boilers. One additional boiler (B-5) which is distillate oil-fired is located at the facility but does not provide steam or heat to the rendering facility. The processed animal/vegetable oil may be mixed with distillate oil and may be used as a fuel for the boilers, depending on market and availability. One 10.0 ton/hr feather dryer is also used in the operation. Particulate matter, volatile organic compound, and odor emissions are controlled by two Venturi scrubbers, a packed tower scrubber, and five boilers. Fats and solids are stored in fat tanks and feed bins, respectively.

The facility is a Title V major source of SO<sub>2</sub> and NO<sub>x</sub>. This source is located in an attainment area for all pollutants PSD major source. The facility was previously permitted under minor NSR permits issued on October 23, 1992 and July 1, 2005, as amended December 11, 2006, May 23, 2008, and August 31, 2010.

## **COMPLIANCE STATUS**

A full compliance evaluation of this facility, including a site visit, was most recently conducted May 16, 2013. In addition, all reports and other data required by permit conditions or regulations which are submitted to DEQ are evaluated for compliance. Based on these compliance evaluations, the facility has not been found to be in violation of any state or federal applicable requirements at this time.

## **CHANGES AT FACILITY SINCE ISSUANCE OF CURRENT TITLE V PERMIT**

The minor new source review permit was amended August 30, 2010, to allow use of an alternative operating scenario in which Boiler B-6 could serve to provide backup steam to the rendering process equipment when the 260J continuous cooker (CC-2R) is offline. (Prior to the proposed scenario, Boiler B6 was dedicated exclusively to the continuous cooker.)

On September 18, 2014, a minor new source review permit was issued to VP-L that authorizes installation of an antimicrobial chemical dosing system on the protein meal mixing system for the purpose of salmonella control. Requirements from the 9/18/14 permit have not been included in the Title V renewal permit. According to 9 VAC 5-80-80 C.2, VP-L has up to one year after startup of the new process to apply for a Title V permit amendment.

Requirements applicable to Boiler B-5 have been added to the renewal permit. As described in VP-L's renewal application, references to B-5 were omitted from the current Title V permit, following the addition of Boiler B-6, although B-5 has been operating during this time. There are no new source review permit terms applicable to B-5, except one stating that it is not to be used as part of the rendering process. Conditions specifying approved fuel, maximum fuel sulfur content, throughput and emissions limits and recordkeeping requirements for B-5 have been added to the Title V renewal permit.

**EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION**

The emissions units at this facility consist of the following:

*Table I. Significant Emission Units*

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device Description (PCD)	PCD ID	Pollutants Controlled	Applicable Permit Date
<b>Fuel Burning Equipment</b>							
B-1	B1E-1	Cleaver Brooks CB400-700 boiler, manufactured in 1974	29.291 MMBtu/hr maximum heat input	---	---	---	7/1/05 as amended 12/11/06, 5/23/08 and 8/31/10
B-2	B2E-1	Cleaver Brooks CB400-700 boiler, manufactured in 1974	29.291 MMBtu/hr maximum heat input	---	---	---	7/1/05 as amended 12/11/06, 5/23/08 and 8/31/10
B-3	B3E-1	Cleaver Brooks CB400-700 boiler, manufactured in 1974	29.291 MMBtu/hr maximum heat input	---	---	---	7/1/05 as amended 12/11/06, 5/23/08 and 8/31/10
B-4	B4E-1	Superior 4-S-3004 stand-by boiler, manufactured in 1973	25 MMBtu/hr maximum heat input	---	---	---	7/1/05 as amended 12/11/06, 5/23/08 and 8/31/10
B-5	B5E-1	Cleaver Brooks CB200 boiler, manufactured in 1974	8.389 MMBtu/hr maximum heat input	---	---	---	7/1/05 as amended 12/11/06, 5/23/08 and 8/31/10
B-6	B6E-1	Johnston Series 509 boiler, manufactured in 1994	48 MMBtu/hr maximum heat input	---	---	---	7/1/05 as amended 12/11/06, 5/23/08 and 8/31/10
<b>Rendering Process Equipment</b>							

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device Description (PCD)	PCD ID	Pollutants Controlled	Applicable Permit Date
CC-1	B1E-1 B2E-1 B3E-1 B4E-1 B6E-1 PTSE-1	Dupps 320U continuous cooker and tank, equipped with a Strothers shell-and-tube condenser AC Corp, Pitcock & ACC-300 condensers, manufactured in 1988 **	22.5 tons/hr maximum solids input	Venturi scrubber manufactured by AC Corporation and Cleaver Brooks boilers with firebox or packed tower scrubber (when boilers are operating at firing load < 20%)	VS1 VS2 B-1 B-2 B-3 B-4 B-6 PTS-1	PM PM-10 VOC	7/1/05 as amended 12/11/06, 5/23/08 and 8/31/10
CC-2R	B1E-1 B2E-1 B3E-1 B4E-1 B6E-1 PTSE-1	Dupps 260J continuous cooker and tank, equipped with a Strothers shell-and-tube condenser, manufactured in 2005	18.1 tons/hr maximum solids input	Venturi scrubber manufactured by AC Corporation and Cleaver Brooks boilers with firebox or packed tower scrubber (when boilers are operating at firing load < 20%)	VS1 VS2 B-1 B-2 B-3 B-4 B-6 PTS-1	PM PM-10 VOC	7/1/05 as amended 12/11/06, 5/23/08 and 8/31/10
FC1-5	B1E-1 B2E-1 B3E-1 B4E-1 B6E-1 PTSE-1	Dupps 5x12 batch feather cookers, each equipped with a cyclone entrainment tank and a Dupps direct-contact condenser, manufactured in 1972-1976	1.75 tons/hr maximum solids input each	Venturi scrubber manufactured by AC Corporation and Cleaver Brooks boilers with firebox or packed tower scrubber (when boilers are operating at firing load < 20%)	VS1 VS2 B-1 B-2 B-3 B-4 B-6 PTS-1	PM PM-10 VOC	7/1/05 as amended 12/11/06, 5/23/08 and 8/31/10
EC-1,2	B1E-1 B2E-1 B3E-1 B4E-1 B6E-1 PTSE-1	Dupps 5x16 batch eggshell cookers, each equipped with a cyclone entrainment tank and a direct-contact condenser, manufactured in 1974	3.5 tons/hr maximum solids input each	Venturi scrubber manufactured by AC Corporation and Cleaver Brooks boilers with firebox or packed tower scrubber (when boilers are operating at firing load < 20%)	VS1 VS2 B-1 B-2 B-3 B-4 B-6 PTS-1	PM PM-10 VOC	7/1/05 as amended 12/11/06, 5/23/08 and 8/31/10

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device Description (PCD)	PCD ID	Pollutants Controlled	Applicable Permit Date
FD-1	B1E-1 B2E-1 B3E-1 B4E-1 B6E-1 PTSE-1	Davenport feather dryer equipped with a Dupps cyclone entrainment tank and an AC Corporation air-cooled condenser, manufactured in 1992	10.0 tons/hr maximum combined solids input (5.4 tons/hr feather meal product output at 10% moisture)	Venturi scrubber manufactured by AC Corporation and Cleaver Brooks boilers with firebox or packed tower scrubber (when boilers are operating at firing load < 20%)	VS1 VS2 B-1 B-2 B-3 B-4 B-6 PTS-1	PM PM-10 VOC	10/23/92
---	PTSE-1	Cooker process equipment	---	Venturi scrubber and packed tower scrubber	VS2 PTS-1	PM PM-10 VOC	7/1/05 as amended 12/11/06, 5/23/08 and 8/31/10

\* The Size/Rated capacity is provided for informational purposes only, and is not an applicable requirement.

\*\* This scenario is only used when water is not available to operate the shell & tube condenser.

**EMISSIONS INVENTORY**

A copy of the 2013 annual emission update is attached. Emissions are summarized in the following tables.

*2013 Actual Emissions*

	<b>2013 Criteria Pollutant Emission in Tons/Year</b>				
<b>Emission Unit</b>	<b>VOC</b>	<b>CO</b>	<b>SO<sub>2</sub></b>	<b>PM<sub>10</sub></b>	<b>NO<sub>x</sub></b>
Boilers B1 – B6	0.56	8.58	2.96	0.97	11.00
Rendering equipment	3.97	-	-	2.36	-
<b>Total</b>	4.53	8.58	2.96	3.33	11.00

*2013 Facility Hazardous Air Pollutant Emissions*

<b>Pollutant*</b>	<b>2013 Hazardous Air Pollutant Emission in Tons/Yr</b>
Formaldehyde	0.0086
Hexane	0.18
<b>Total</b>	0.1886

\* All other HAP emissions included in the 2013 report were less than 10 pounds for the year and were not included in the table.

**FUEL-BURNING EQUIPMENT APPLICABLE REQUIREMENTS – Boilers B1 – B6**

**Limitations**

The following limitations are state BACT and other applicable requirements from the minor NSR permit issued on July 1, 2005, as amended December 11, 2006, May 23, 2008 and August 31, 2010. Please note that the condition numbers are from that permit; a copy of the permit is included as Attachment B.

- Condition 2: The operating restriction for boiler (B-5) to not supply steam or heat to the rendering facility.

- Condition 3: The operating restriction for only the Johnston boiler (B-6) to provide steam for the Dupps 260J cooker (CC-2R). The Superior boiler (B-4) may provide steam to the cooker when the Johnston boiler (B-6) is not operating.
- Condition 4: The operating restriction for boiler Superior (B-4) to provide steam as a back up to any one of the three Cleaver-Brooks boilers (B-1, B-2, and B-3).
- Condition 5: The operating restriction stating that the Johnston boiler (B-6) to provide backup steam to any of the three Cleaver Brooks boilers (B-1, B-2 or B-3) or the Superior boiler (B-4) when the Dupps 260J cooker (CC-2R) is not operating.
- Condition 6: The approved fuels for the boilers (B-1, B-2, B-3, B-4, and B-6) are residual oil, natural gas, and processed animal fat.
- Condition 7: The processed animal fat may be blended with distillate oil in the ratio of a maximum of 10 gallons of distillate oil to 6500 gallons of processed animal fat.
- Condition 8: Specifies approved fuels for the Johnston boiler (B-6) when providing backup to the Cleaver-Brooks boilers (B-1, B-2 and B-3) or the Superior boiler (B-4).
- Condition 9: Processed animal fat fuel throughput limit for the three Cleaver-Brooks boilers (B-1, B-2, and B-3).
- Condition 10: Residual oil and natural gas fuel throughput limits for the Johnston and Superior boilers (B-4 and B-6).
- Condition 11: Substitution ratio for processed animal fat as a fuel for the Superior boiler (B-4) or the Johnston boiler (B-6).
- Condition 12: Fuel specification requirement for residual oil.
- Condition 13: Fuel specification requirements for distillate oil and processed animal fat.
- Condition 14: Fuel certification requirements for residual oil.
- Condition 15: Fuel certification requirements for distillate oil

- Condition 16: Requires proper operation and maintenance of the combustion equipment.
- Condition 17: Hourly emissions limits for the three Cleaver-Brooks boilers (B-1, B-2 and B-3) when burning processed animal fat
- Condition 18: Hourly emissions limits for the Johnston boiler (B-6) for all fuels. The particulate emission limits do not include condensibles.
- Condition 19: Hourly emissions limits for the Superior boiler (B-4) for all fuels. The particulate emission limits do not include condensibles.
- Condition 20: Combined annual emissions limits for the Cleaver-Brooks boilers (B-1, B-2 and B-3) when burning processed animal fat.
- Condition 21: Combined annual emissions limits for the Superior and Johnston boilers (B-4 and B-6) for all fuels. The particulate emission limits do not include condensibles.
- Condition 22: Visible emission limit for the Cleaver-Brooks boilers (B-1, B-2 and B-3) when burning processed animal fat.
- Condition 23: Visible emission limit for the Cleaver-Brooks boilers (B-1, B-2 and B-3) when burning residual oil or natural gas.
- Condition 24: Visible emission limit for the Superior and Johnston boilers (B-4 and B-6) when burning processed animal fat or natural gas.
- Condition 25: Visible emission limit for the Johnston boiler (B-6) when burning residual oil.
- Condition 26: Visible emission limit for the Superior boiler (B-4) when burning residual oil.
- Condition 27: Requirements by reference for NSPS, 40 CFR Subpart Dc, for the Johnston boiler (B-6).

Requirements have been established for Boiler 5 (B-5) and added to the renewal permit. B-5 (manufactured in 1974 and operated on the site since the early 1980s) was included in the 2001 minor New Source Review permit, which allowed the boilers (B-1 through B-5) to burn animal fat. In the 2005 modification to the minor NSR permit, Boiler B-6 was added to the facility and all provisions relating to B-5 were omitted (without explanation), except for a new condition

stating that B-5 shall not be used to support the rendering operations. Accordingly, no other conditions for B-5 were included in the 2010 Title V permit. In its current Title V renewal application, VP-L indicates that B-5 is used as a process heater (to warm animal fat fuel tanks in cold weather), burning distillate oil, and that its emissions have been included in the facility's annual inventory updates all along. VP-L has requested a permit status determination for the unit. As a result, the following provisions have been included in the Title V renewal permit:

- Approved fuel for B-5 (distillate oil)
- Annual distillate oil throughput limit, based on 8760 hours per year operation
- Annual emissions limits for any pollutants emitted at rates greater than 0.5 tons/year
- Recordkeeping requirements to support the above added conditions

Note that the maximum sulfur content of distillate oil used at the facility is currently limited to 0.05% by weight; the current limit will apply to the distillate oil used in Boiler 5 (B-5). Emissions calculations for Boiler 5 are in Attachment F.

The following Virginia Administrative Codes that have specific emission requirements have been determined to be applicable:

9 VAC 5-40-900 - Particulate matter emission limit for fuel burning equipment installations as determined by the equation  $E = 1.0906H^{-0.2594}$ , where E is the emission limit in lbs/MMBTU and H is the total capacity in MMBTU/hr of the first five boilers (B-1 through B-5). The limit is 0.31 lb/MMBTU based on the combined rated heat input of 121.26 MMBTU/hr for the five boilers installed before 1979 (B-1 through B-5).

9 VAC 5-40-930 - Sulfur dioxide emission limit for fuel burning equipment installations as determined by the equation  $S = 2.64K$ , where S is the emission limit in lbs/hr and K is the total heat input capacity in MMBTU/hr of the five boilers installed before 1979 (B-1 through B-5). The limit is 320.13 lbs/hr based on the combined rated heat input of 121.26 MMBTU/hr for the five boilers (B-1 through B-5).

The following additional requirement has been included to demonstrate compliance with the sulfur dioxide and visible emission limits:

9 VAC 5-80-110 - The maximum sulfur content of the residual oil burned in the Cleaver Brooks boilers (B-1, B-2, and B-3) shall not exceed 2.5 % by weight per shipment.

In addition to the conditions from the NSR permit, the following conditions have been added to the Title V permit for the boilers in accordance with 40 CFR 63 Subpart JJJJJ; condition number refers to the Title V permit:

Condition 29: The condition establishes the boilers (B-1, B-2, B-3, B-4 and B-6) must comply with the applicable standards (40 CFR 63.11201), work practice standard, emission reduction measure, and management practice (Table 2 to 40 CFR 63, Subpart JJJJJJ). The permittee must also conduct an initial tune-up of each boiler (40 CFR 63.11214) and conduct a tune-up of each boiler biennially (40 CFR 63.11223).

Condition 30: The condition establishes that the permittee shall comply with the applicable requirements of the General Provisions of 40 CFR 63 Subpart A, as outlined in Table 8 to 40 CFR 63, Subpart JJJJJJ (40 CFR 63.11235).

Condition 31: For each boiler (B-1, B-2, B-3, B-4 and B-6), the permittee shall comply with the applicable general compliance requirements (40 CFR 63.11205).

Condition 32: The condition outlines the continuous compliance requirements for the boilers (B-1, B-2, B-3, B-4 and B-6) in 40 CFR 63.11223.

Boiler 5 (B-5) is used as a process heater to keep the animal fat in storage tanks from solidifying in the winter. Process heaters are excluded from the definition of boiler in 40 CFR 63 Subpart JJJJJJ and are therefore not subject to the rule. Accordingly, Subpart JJJJJJ is not applicable to Boiler 5 (B-5).

### **Monitoring and Recordkeeping**

This permit includes requirements for monitoring and recordkeeping to satisfy Part 70 requirements. The monitoring and recordkeeping requirements in Conditions 14, 15, 16, 28, 29, and 41 of the NSR permit dated July 1, 2005, as amended December 11, 2006, May 23, 2008, and August 31, 2010 have been modified to meet Part 70 requirements.

The Johnston boiler (B-6) is subject to NSPS, Subpart Dc. The NSPS requirements for boiler (B-6) have been incorporated into the operating permit including the continuous opacity monitor (COMS) requirements when the boiler is burning residual oil.

In addition to the monitoring requirements from the NSR permit, opacity has been chosen as a surrogate indicator for particulate matter emissions. The permittee is required to perform weekly inspections of the boiler stacks to determine the presence of visible emissions. If during the inspection, visible emissions are observed, the permittee has the option of either taking timely corrective action so that the stack operates with no visible emissions (the permittee must initiate corrective action within 4 hours and return to no visible emissions within 24 hours of the inspection) or conducting an EPA Method 9 (40 CFR Part 60, Appendix A) visible emission

evaluation (VEE). The VEE will be conducted for a minimum of six minutes. If any of the observations exceed the applicable opacity limit, the observation period must continue for a total of 60 minutes of observation or until a violation of the opacity standard is recorded.

If the results of the VEE exceed the opacity standard, the permittee is required to do a particulate matter performance test within 90 days of the exceedance. No more than one test per year per boiler is required as long as the performance test results do not exceed the particulate matter emission limit. A concurrent VEE is required with the performance test.

When burning fuels other than processed animal fat, the particulate matter emission limit of 0.31 pound per million Btu input applies to the combined capacity of the first five boilers (B-1 through B-5), which is 121.26 MMBtu/hr. This is equal to 37.59 lb/hr. Potential particulate emissions from the five boilers (B-1 through B-5) combined using AP-42 emission factors are shown in the following table.

Table III. Particulate Emissions

Fuel Type	Capacity of Fuel Burning Equipment	Maximum Hourly Throughput	AP-42 Emission Factor for PM (lb/1000 gal)	Maximum Sulfur Content (S)	Maximum Emissions of PM (lb/hr)	Calculated PM Emission Standard (lb/hr)
Residual Oil	121.26 MMBtu/hr	0.808 mgal/hr	9.19 S + 3.22	2.5	21.17	37.59

The maximum expected particulate emissions using the EPA AP-42 emissions factor slightly more than half of the allowable limit. The calculation is conservative because it is based on all five boilers burning 2.5% S residual oil, while one of the boilers (B-5) is permitted to burn only 0.05% S distillate oil (and thus would emit less PM relative to higher-sulfur residual oil). Therefore, there is reasonable assurance that the particulate matter emission limit will not be violated as long as the fuel sulfur content and the opacity limit are not exceeded. Boiler inspection reports have revealed no past violations of the opacity limitations contained in this permit.

When burning fuels other than processed animal fat, the allowable sulfur dioxide emission limit for the first five boilers (B-1 through B-5) combined equals 320.13 lbs/hr. The AP-42 emission factor for sulfur dioxide assumes that all of the sulfur is converted to sulfur dioxide. The maximum sulfur dioxide emissions from the boilers are included in the following table.

Table IV. Sulfur Dioxide Emissions

Fuel Type	Capacity of Fuel Burning Equipment	Maximum Hourly Throughput	AP-42 Emission Factor for Sulfur Dioxide (lb/1000 gal)	Maximum Sulfur Content (S)	Maximum Emissions of Sulfur Dioxide (lb/hr)	Sulfur Dioxide Emission Standard (lb/hr)
Residual Oil	121.26 MMBtu/hr	0.808 mgal/hr	157 S	2.5	317.14	320.13

Since the AP-42 emission factor assumes that all of the sulfur in the fuel is converted to sulfur dioxide when burning residual oil, the sulfur dioxide emission limit cannot be exceeded as long as the sulfur content of the fuel does not exceed 2.5 % for residual oil. . The calculation is conservative because it is based on all five boilers burning 2.5% S residual oil, while one of the boilers (B-5) is permitted to burn only 0.05% S distillate oil (and thus would emit less SO<sub>2</sub> relative to higher-sulfur residual oil). Therefore, there is reasonable assurance that the sulfur dioxide emission limit will not be violated as long as the fuel sulfur content limit is not exceeded. The permittee is required to obtain a certification from the fuel supplier with each shipment of residual oil. The certification must include the name of the fuel supplier, the date the oil was received, the quantity of oil delivered in the shipment, and the sulfur content (in weight percent) of the residual oil. The permittee is required to retain the fuel certifications.

Actual particulate matter and sulfur dioxide emissions from the operation of the three boilers (B-1, B-2, and B-3) when burning residual will be calculated using the following equations:

For residual oil combustion:

$$E = F \times O \quad \text{..... Equation 1}$$

Where:

E = Emission Rate (lb/time period)  
F = Pollutant specific emission factors as follows:

PM = 9.19 S + 3.22 lb/1000 gal (S = weight percent sulfur)  
SO<sub>2</sub> = 157 S lb/1000 gal (S = weight percent sulfur)

O = residual oil consumed (1000 gal/time period)

Calculations for maximum hourly emissions have been included in Attachment D.

When burning processed animal fat or animal fat blended with distillate oil in the three Cleaver Brooks boilers (B-1, B-2, and B-3), the following equation and emission factors will be used to

calculate actual emissions to determine compliance with the hourly and annual limits contained in Conditions 18 and 21 of the permit.

$$E = F \times O \dots\dots\dots \text{Equation 2}$$

Where:

- E = Emission Rate (lb/time period)
- F = Pollutant specific emission factors as follows:

Pollutant	Emission Factor	Emission Factor Units
PM	2.0	lbs/10 <sup>3</sup> gallons
PM-10	2.0	
NOx	38.0	
SO2	2.36	
CO	0.46	
VOC	1.8	

O = Processed animal fat consumed (1000 gal/time period)

Previously, it was assumed that the sulfur in processed animal fat was negligible. However, lab fuel testing conducted in 2006 determined that the unblended animal fat contained 0.015 % sulfur. The lab testing conducted on the blended animal fat did not indicate an increase in sulfur content. Since the sulfur content of the processed animal fat is so low, no sulfur monitoring is required. However, fuel supplier certifications, including sulfur content, for the distillate oil that is blended with the animal fat is a monitoring requirement.

The hourly emission limits for each Cleaver Brooks boiler (B-1, B-2, and B-3) were established based on burning processed animal fat when operating at capacity. The annual emission limits for the combined operation of the three boilers are based on the annual throughput limit of 2.0 million gallons of processed animal fat. Therefore, as long as the fuel throughput limit for processed animal fat is not exceeded, there should not be a violation of the hourly or annual emission rates. Calculations have been included in Attachment D to demonstrate how the limits were established.

Hourly emission limits for the Johnston and Superior boilers (B-4 and B-6) were calculated based on maximum rated capacity of each boiler and on the emission factors and higher heating values submitted with VP’s application. Total annual emissions for the Johnston and Superior boilers (B-4 and B-6) were based on the combined annual throughput limit of 1.006 million gallons of residual oil and 193.137 million cubic feet of natural gas. As long as the throughput limit for residual oil and natural gas (Condition 10) and the substitution ratio for processed animal fat (Condition 11) are not exceeded, the annual emissions limits should not be exceeded.

The permittee will keep records of monthly and annual throughput of each type of fuel, the quantity of distillate oil and processed animal fat used for each batch of blended animal fat, fuel supplier certifications, sulfur content, all COMS performance evaluations, emissions calculations and DEQ-approved pollutant specific emission factors and equations used to demonstrate compliance with emission limits, fuel specification test results for processed animal fat, weekly inspection log, results of all VEEs and performance tests, all opacity data, written operating procedures, maintenance schedules for the boilers, and operator and training procedure records.

The following periodic monitoring and recordkeeping conditions are established in accordance with 40 CFR 63 Subpart JJJJJ; condition numbers refer to the Title V permit:

Condition 41: The condition establishes the Subpart JJJJJ recordkeeping requirements of 40 CFR 63.11225 for the boilers (B-1, B-2, B-3, B-4 and B-6).

The recordkeeping established in 40 CFR 63 Subpart JJJJJ for the boilers (B-1, B-2, B-3, B-4 and B-6) provide a means of demonstrating continued compliance with the MACT Subpart JJJJJ emission limitations.

### **Compliance Assurance Monitoring (CAM)**

None of the fuel burning equipment (B-1 through B-6) has add-on control equipment and is therefore not subject to CAM.

### **Testing**

The permit requires stack testing for particulate matter if there is a violation of the opacity standard. Additionally, DEQ can request additional visible emission evaluations on the boilers. The Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

### **Reporting**

Per 40 CFR 60, Subpart Dc, fuel quality reports for all residual oil shipments for the Superior and Johnston boilers (B-4 and B-6) are required per Condition 47. Also, the permittee is required to submit excess emissions reports for the Johnston boiler (B-6) on a semi-annual basis.

The following reporting requirement is established in accordance with 40 CFR 63 Subpart JJJJJ; the condition number refers to the Title V permit:

Condition 49: The condition establishes the notification and reporting requirements in 40 CFR 63.11225 for the two boilers.

### **Streamlined Requirements**

The 10% opacity limit for the boilers when burning processed animal fat is more stringent than the Virginia Administrative Code Standard for visible emissions, 9 VAC 5-50-80. Therefore, only the more stringent opacity limit was included in the permit.

The 20% opacity limit with no six minute deviation for the boilers (B-1, B-2, and B-3) when burning residual oil or natural gas is more stringent than the Virginia Administrative Code Standard for visible emissions, 9 VAC 5-50-80. Therefore, only the more stringent 20% opacity with no six minute deviation was included in the permit.

The opacity limits for the boilers (B-1 through B-6) are all as or more stringent than Condition 8 of the 1992 Permit for boilers controlling emissions from the feather dryer. These opacity limits include the NSPS, Subpart Dc opacity requirements for boiler (B-6). Therefore, the opacity limit was not included in the permit.

### **EMISSION UNIT APPLICABLE REQUIREMENTS - Rendering Equipment**

#### **Limitations**

The following limitations are requirements from the minor NSR permit issued on July 1, 2005, as amended December 11, 2006, May 23, 2008, and August 31, 2010. Please note that the condition numbers are from that permit; a copy of the permit is included as Attachment B.

- Condition 30: Particulate matter and volatile organic compound emissions from the rendering process equipment shall be controlled by wet and chemical scrubbers or incinerated as combustion air in the boilers (B-1, B-2, B-3, B-4, and B-6).
- Condition 35: Throughput limit on the amount of material received for rendering.
- Condition 34: Throughput limit on amount of raw material input to the Dupps 260J continuous cooker.
- Condition 37: Hourly and annual emissions limits from the scrubber controlling the rendering process (PTS-1).
- Condition 38: Visible emission limit for the scrubber (PTS-1).
- Condition 39: Requires written operating procedures for air pollution control equipment and for operator training.

The following limitations are requirements from the minor NSR permit issued on October 23, 1992. Please note that the condition numbers are from that permit; a copy of the permit is included as Attachment C.

- Condition 3: Particulate matter control from the feather dryer (FD-1) by a Venturi scrubber with a design efficiency of 98 %.
- Condition 4: Volatile organic compound and odor emissions from the feather dryer (FD-1) equipped with a condenser shall be controlled by a boiler firebox.
- Condition 7: Throughput limits for the feather dryer (FD-1).
- Condition 14: Requires development of a maintenance schedule and inventory of spare parts for air pollution control equipment.
- Condition 15: Requires written operating procedures for air pollution control equipment and for operator training.

The following conditions from the Permit dated October 23, 1992 were not included:

- Condition 5: This condition has been fulfilled as the existing feather dryer (at the time the permit was written) was replaced with the new feather dryer.
- Condition 9: Notification requirements for the construction and start-up of the new feather dryer have been fulfilled.

### **Monitoring and Recordkeeping**

The monitoring and recordkeeping requirements in Conditions 27, 28, 31, 32, 33, 34 and 41 of the minor NSR permit dated July 1, 2005, as amended December 11, 2006, May 23, 2008 and August 31, 2010 and the monitoring and recordkeeping requirements in Conditions 3 and 10 of the minor NSR permit dated October 23, 1992 have been modified to meet Part 70 requirements.

Proper operation of the scrubbers and boilers provide reasonable assurance that the particulate matter and volatile organic compound emission and visible emission limits are being met. Proper operation of the boilers is covered in the previous section. Proper operation of the packed tower scrubber (PTS-1) will be monitored by equipping the scrubber with a device to continuously measure the differential pressure across the scrubber. Additionally, the Venturi scrubbers (VS1 and VS2) are equipped with devices to continuously measure the scrubber flow rate and differential pressure across each scrubber. All of these devices are to be observed and logged by the permittee at least once per day.

Valley Proteins will be required to keep records on monthly and annual throughput of material received for rendering, monthly and annual throughput of material processed by the Dupps 260J continuous cooker (CC-2R), annual throughput of wet feather input and feather meal product output, daily monitoring log, manufacturer's specifications for the Venturi scrubber, maintenance, and training.

### **Compliance Assurance Monitoring (CAM)**

Although Units CC-1, CC-2R, FC-1 – FC-5, EC-1, EC-2, and FD-1 are controlled by either boiler incineration, Venturi scrubbers or a packed tower scrubber, the control equipment is primarily for odor control. Additionally, since the entrainment tanks and condensers are considered inherent to the process, uncontrolled particulate and volatile organic compound emissions are less than 100 tons per year. Therefore, CAM does not apply to these units. See Attachment E.

### **Testing**

The permittee may be required to conduct additional VEEs if requested by the Virginia DEQ. The Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard. Condition 38 of the minor NSR permit dated 7/1/05, as amended 12/11/06, 5/23/08 and 8/31/10, allows for VEE testing upon request by DEQ.

### **Reporting**

No specific reporting has been included in the permit for the process operations.

### **Streamlined Requirements**

There are no requirements that have been streamlined.

### **GENERAL CONDITIONS**

The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110 that apply to all Federal-operating permitted sources. These include requirements for submitting semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions.

**STATE ONLY APPLICABLE REQUIREMENTS**

The following Virginia Administrative Codes have specific requirements only enforceable by the State and have been identified as applicable by the applicant:

*9 VAC 5-50-310, Odorous Emissions.*

None of these requirements have been included in the Title V permit.

**FUTURE APPLICABLE REQUIREMENTS**

The facility has not identified any future applicable requirements in the application. This facility is not a major source of HAPS. Therefore, this facility is not subject to any 40 CFR Part 63 NESHAP standards. In addition, the facility is not subject to any current or proposed area source MACT standards.

**INAPPLICABLE REQUIREMENTS**

The permittee has not identified any inapplicable requirements in the application. There are no greenhouse gas permitting requirements applicable to the facility.

**COMPLIANCE PLAN**

Valley Proteins, Inc. - Linville has not been found to be in violation of any state or federal applicable requirements at this time. No compliance plan was included in the application or in the permit.

**INSIGNIFICANT EMISSION UNITS**

The insignificant emission units are presumed to be in compliance with all requirements of the Clean Air Act as may apply. Based on this presumption, no monitoring, recordkeeping or reporting shall be required for these emission units in accordance with 9 VAC 5-80-110.

Insignificant emission units include the following:

*Table V. Insignificant Emission Units*

<b>Emission Unit No.</b>	<b>Emission Unit Description</b>	<b>Citation</b>	<b>Pollutant(s) Emitted (9 VAC 5-80-720 B)</b>	<b>Rated Capacity (9 VAC 5-80-720 C)</b>
MS-1, MS-2, MS-3, MS-4, MS-5	five meal storage silos (66,500 cubic feet each)	9 VAC 5-80-720 B	PM and PM-10	---

<b>Emission Unit No.</b>	<b>Emission Unit Description</b>	<b>Citation</b>	<b>Pollutant(s) Emitted (9 VAC 5-80-720 B)</b>	<b>Rated Capacity (9 VAC 5-80-720 C)</b>
SS-1, SS-2	two silage storage silos (66,500 cubic feet each)	9 VAC 5-80-720 B	PM and PM-10	---
T-1	distillate oil fuel tank (10,000 gals) Installed in 1974	9 VAC 5-80-720 B	VOC	---
T-2	residual oil fuel tank (20,000 gals) Installed in 1974	9 VAC 5-80-720 B	VOC	---
T-3	residual oil fuel tank (17,000 gals) Installed in 1974	9 VAC 5-80-720 B	VOC	---
T-4	diesel fuel storage tank (15,000 gals) Installed in 1974	9 VAC 5-80-720 B	VOC	---
T-5	Gasoline storage tank (2,000 gals)	9 VAC 5-80-720 B	VOC	---

<sup>1</sup>The citation criteria for insignificant activities are as follows:

9 VAC 5-80-720 A - Listed Insignificant Activity, Not Included in Permit Application

9 VAC 5-80-720 B - Insignificant due to emission levels

9 VAC 5-80-720 C - Insignificant due to size or production rate

### **CONFIDENTIAL INFORMATION**

Valley Proteins, Inc. did not submit a request for confidentiality. Therefore, all portions of the Title V application are suitable for public review.

### **OTHER CONSIDERATIONS**

Following the drafting of the Title V renewal permit, it was discovered that the minor NSR permit most recently amended 8/31/10 contains a typographical error. Specifically, Condition 19 of the permit limits Boiler 4 NO<sub>x</sub> emissions to 0.17 lbs/hr; the limit should be 9.17 lbs/hr. The previous version of that permit (amended 5/23/08) limited NO<sub>x</sub> to 9.17 lbs/hr. The NO<sub>x</sub> limit was inadvertently changed to 0.17 lbs/hr in the 8/31/10 amendment to the permit. The 8/31/10 amendment had nothing to do with the Boiler 4 NO<sub>x</sub> limit and the limit should not have been changed. DEQ is amending the minor NSR permit to correct the error; in the meantime, the

appropriate limit of 9.17 lbs NO<sub>x</sub> per hour has been included in Condition 19 of the Title V renewal permit.

## **PUBLIC PARTICIPATION**

A public notice regarding the draft permit was placed in the Daily News-Record, Harrisonburg, Virginia, on November 12, 2014. EPA was sent a copy of the draft permit and notified of the public notice on November 10, 2014. The affected state of West Virginia was sent a copy of the public notice on November 12, 2014. All persons on the Title V mailing list were also sent a copy of the public notice in e-mail dated November 12, 2014.

Public comments were accepted from November 12, 2014 to December 12, 2014. The EPA 45-day comment period ended on December 29, 2014. Day 45 would be December 27, but because the 27<sup>th</sup> is a Saturday, comment will be accepted through December 29, the following Monday. No comments were received from the public or from EPA.

## **ATTACHMENTS**

Attachment A: 2013 Emissions Inventory Report

Attachment B: Minor NSR permit, most recently amended August 31, 2010

Attachment C: Minor NSR permit dated October 23, 1992

Attachment D: Emissions calculations

Attachment E: Emissions calculations for CAM applicability

Attachment F: Boiler 5 emissions spreadsheet

Attachment G: Derivation of Chapter 40 boiler limits

**ATTACHMENT A**

**CEDS Emission Inventory Report**

**ATTACHMENT B**

**Minor NSR Permit  
(dated July 1, 2005, as amended December 11, 2006, May 23, 2008  
and August 31, 2010)**

**ATTACHMENT C**

**Minor NSR Permit  
(dated October 23, 1992)**

**ATTACHMENT D**  
**Emissions Calculations**

## **ATTACHMENT E**

### **Emissions Calculations for CAM Applicability**

**ATTACHMENT F**

**Boiler 5 emissions spreadsheet**

## **ATTACHMENT G**

### **Derivation of Chapter 40 boiler limits**