NORTH CAROLINA DIVISION OF AIR QUALITY

Application Review

Issue Date: DRAFT

Region: Fayetteville Regional Office
County: Anson
NC Facility ID: 0400034
Inspector's Name: Jeffrey D. Cole
Date of Last Inspection: 02/24/2021
Compliance Code: 3 / Compliance - inspection

Facility Data

Applicant (Facility's Name): Valley Proteins, Inc. - Wadesboro Division

Facility Address:
Valley Proteins, Inc. - Wadesboro Division
656 Little Duncan Road
Wadesboro, NC 28170

SIC: 2077 / Animal And Marine Fats And Oil
NAICS: 311613 / Rendering and Meat Byproduct Processing

Facility Classification: Before: Title V **After:** Title V
Fee Classification: Before: Title V **After:** Title V

Permit Applicability (this application only)

SIP: 15A NCAC 02Q .0516, 02D .0515, 02D .0521, and 02D .0539
NSPS: N/A
NESHAP: N/A
PSD: N/A
PSD Avoidance: Yes
NC Toxics: N/A
112(r): N/A
Other: N/A

Contact Data

Facility Contact	Authorized Contact	Technical Contact
Gaz Thomas General Manager (910) 975-7577 PO Box 718 Wadesboro, NC 28170	Gaz Thomas General Manager (910) 975-7577 PO Box 718 Wadesboro, NC 28170	Matt Haynes District Environmental Manager (910) 213-1146 PO Box 718 Wadesboro, NC 28170

Application Data

Application Number: 0400034.20C
Date Received: 11/16/2020
Application Type: Modification
Application Schedule: TV-Significant

Existing Permit Data
Existing Permit Number: 06467/T20
Existing Permit Issue Date: 02/20/2020
Existing Permit Expiration Date: 12/31/2024

Total Actual emissions in TONS/YEAR:

CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2020	0.1800	29.08	18.88	24.43	0.1400	0.5469	0.5234 [Hexane, n-]
2019	0.1700	27.61	19.24	23.20	0.1400	0.5193	0.4971 [Hexane, n-]
2018	0.1400	25.40	17.16	21.34	0.1300	0.4777	0.4572 [Hexane, n-]
2017	0.1900	24.27	15.96	19.85	0.2400	0.4436	0.4245 [Hexane, n-]
2016	0.1800	25.13	17.75	20.71	0.2200	0.4632	0.4433 [Hexane, n-]

Review Engineer: Kevin Godwin

Review Engineer's Signature: **Date:**

Comments / Recommendations:
Issue 06467/T21
Permit Issue Date: DRAFT
Permit Expiration Date: 12/31/2024

I. Purpose of Application

This permit action is for a Significant Modification pursuant to 15A NCAC 02Q .0516.

A. 0400034.20C – This application was received on November 16, 2020 and is for incorporation of an alternate control scenario for odor and other emissions from Sources E1, E6, E7 and E9.

B. On January 8, 2021 FRO received an application for replacement of existing natural gas/No. 2 fuel oil/No. 6 fuel oil/On Specification recycled No. 4 equivalent fuel oil/saleable fat -fired boiler (33.5 million Btu per hour heat input, ID No. B-4) with a natural gas-fired boiler (49.6 million Btu per hour heat input, ID No. B-6) firing No. 2, No. 4, No. 6 fuel oil and saleable fat during natural gas curtailment. This application was accepted and assigned an application number (0400034.21A). On September 20, 2021, DAQ received an e-mail from the applicant stating that they have decided not to pursue this project. A written request from the Responsible Official, Mr. Gas Thomas requesting that the application be rescinded was received on September 27, 2021.

C. On July 16, 2021, the Division of Air Quality (DAQ) received a Notification of Title V Permit 502(b)(10) change for the replacement of a rotary steam tube dryer located in the Feather and Blood Rendering process (ID No. ES6) with an equivalent unit in August 2021. DAQ responded on July 19, 2021 acknowledging that this change qualifies as a 502(b)(10) change and stating "You may implement the change provided you have given the US EPA a seven-business day notice with the information specified in 15A NCAC 02Q .0523(a)(2) and have attached a copy of the notification to your permit. The Permittee assumes all financial risks associated with construction and operation without a permit revision. The permit shield will not extend to the modification described above until it has been incorporated into the permit at the time of the next significant modification or upon permit renewal."

Because this modification involves a significant change in existing monitoring, recordkeeping, and reporting requirements, it is considered a significant modification. The applicant has requested that the applications follow the one step processing schedule pursuant to 15A NCAC 02Q .0501(c)(1). The proposed Permit will go through a 30-day public notice and a 45-day EPA review period at this time.

II. Facility Description

Valley Proteins, Inc. – Wadesboro Division owns and operates a rendering facility that processes inedible animal parts and used cooking oils.

III. Application Chronology

November 16, 2020	DAQ Central Office sent acknowledgement letter deeming the application 0400034.20C for a Significant Modification complete pending receipt of application fee (fee paid 11/16/20),
January 8, 2021	DAQ Central Office received application 0400034.21A for a Significant Modification,
January 14, 2021	DAQ sent acknowledgement letter deeming the application complete pending receipt of application fee (fee paid 01/14/21),
March 2, 2021	FRO P&O review,
September 2, 2021	Draft to DAQ Supervisor,
September 9, 2021	Draft to the applicant and FRO,
XXXX	DAQ received a letter from the Responsible Official requesting that application 0400034.21A be rescinded,
XXXX	Draft to Public Notice and EPA for review,
XXXX	Public comment period expired,
XXXX	EPA review period expired,
XXXX	Final Permit issued

IV. Statement of Compliance

According to the March 2, 2021 P&O, the most recent compliance inspection was performed on February 24, 2021 by Mr. Jeffrey Cole. The facility was found to be operating in apparent compliance.

The five-year compliance history is outlined in the P&O as follows:

10/30/2020	NOCV/NRE issued due to facility not submitting response and permit application by 10/21/2020 as the required permit application not submitted by 10/07/2020 NOCV. Required permit application received on 11/16/2020. Staff turnover contributed to the violation and non-response; therefore, enforcement was not pursued.
10/07/2020	NOCV for a required permit application that was not received as of 10/07/2020.
06/04/2020	NOV for operating a control device in a way that was not permitted.

V. Description of Changes

According to application 0400034.20C, Valley Proteins requests approval of a modification allowing routing of process off-gas directly from each sources' (E1, E6, E7 and E9) air cooled condenser to the existing crossflow scrubber (ID No. C-8) in order to provide an effective control option for use when a malfunction occurs at the venturi scrubber (ID No. C-1) serving these emission sources. This modification will allow the facility to control odor and VOCs while the venturi scrubber is under repair.

The crossflow scrubber (ID No. C8) will provide equivalent odor control and achieve greater VOC control than the current control scenario. With the absence of the venturi scrubber in the emissions control sequence, the proposed alternate control scenario does not provide particulate matter control.

Emissions estimates indicate that odor and VOC limits in the current permit are not exceeded by use of the proposed alternate control scenario.

VI. Table of Changes

The following changes were made to the Air Quality Permit No. 06467T20:

Page(s)	Section	Description of Change(s)
All	All	Updated permit number and date
Insignificant Activities List	Insignificant Activities List	Removed Source ID No. IE-25.
9	2.1 A.4.g.	Revised NSPS Subpart Dc condition to include reporting of natural gas and saleable fat fired in Boiler B-3.
16	2.1 B.3.	Included a PSD avoidance condition for use of the alternate control scenario venting to crossflow scrubber (ID No. C-8).
23	3.0	Updated General Conditions to most recent shell version (version 5.5, 08/25/2020)

VII. Regulatory Review for 0400034.20C

A. 15A NCAC 02D .0515 "Particulates from Miscellaneous Industrial Processes" – Emissions of particulate matter from this source shall not exceed an allowable emission rate as calculated by the following equation:

$$E = 4.10 \times P^{0.67}$$

Where: E = allowable emission rate in pounds per hour
P = process weight in tons per hour

Liquid and gaseous fuels and combustion air are not considered as part of the process weight. This regulation will continue to apply to emission sources (ID Nos. E1, E6, E7, and E9). The facility will continue to meet these requirements under the alternate control scenario as shown in Attachment I, Table 2. Total system PM emissions are calculated using an uncontrolled emission factor of 0.6275 lb/ton of feedstock to be 37.7 lb/hr. Using a process input rate of 32.2 tons/hr, E calculates to 42.2 lb/hr. Therefore, compliance is indicated.

B. 15A NCAC 02D .0521 "Control of Visible Emissions" – This regulation will continue to apply to emission sources (ID Nos. E1, E6, E7, and E9). Compliance is expected.

C. 15A NCAC 02D .0539 "Odor Control of Feed Ingredient Manufacturing Plants" – This rule applies to any facility that produces feed grade animal proteins. It requires that all gases resulting from the processing of feed grade animal proteins and fats be passed through condensers and incinerated (or treated in an equally effective manner) prior to emitting to the atmosphere. This regulation will continue to apply to emission sources (ID Nos. E1, E6, E7, and E9). The facility has maintained compliance with this rule. The crossflow scrubber (C-8) is currently in compliance with this rule.

D. 15A NCAC 02D .0530 "Prevention of Significant Deterioration" – The Wadesboro Division facility is not an existing major stationary source. The proposed modification may cause the facility to exceed the major source threshold of 250 tons per year for particulate matter (PM) without any consideration of restricted hours of operation for the alternate control scenario. This is due to uncontrolled PM emissions in the absence of a venturi scrubber in the control device sequence. To avoid exceeding this threshold, the Permittee will limit use of the alternate control scenario to less than 4,380 hour per year. Actual operation in this scenario is anticipated to be between 0 and 72 hours per year. Total potential to emit for all pollutants subject to PSD are less than major source thresholds considering this limit. Attachment I to this review provides emissions estimates and a PSD applicability analysis for this proposed modification.

The revised permit will include a PSD avoidance condition for PM emissions by limiting the operating hours of the alternate control scenario.

IX. Public Notice/EPA and Affected State(s) Review

A notice of the DRAFT Title V Permit will be made pursuant to 15A NCAC 02Q .0521. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Copies of the public notice will be sent to persons on the Title V mailing list and EPA. Pursuant to 15A NCAC 02Q .0522, a copy of each permit application, each proposed permit and each final permit pursuant will be provided to EPA for a 45-day review period. Also pursuant to 02Q .0522, a notice of the DRAFT Title V Permit will be provided to each affected State at or before the time notice provided to the public under 02Q .0521 above.

X. Other Regulatory Considerations

- A P.E. seal is not required for this application.
- A zoning consistency determination is required for this application. Receipt of the request was acknowledged by Mr. Larry Newton, Planner, Anson County Government, on January 20, 2021. According to Mr. Newton, there are no applicable zoning ordinances for the facility at this time.
- A permit application fee of $988.00 is required for application .20C and was included.
- According to the application, Valley Proteins, Inc. has determined that no chemicals are stored in a quantity above the 112r triggering threshold and thus is not subject to 112r requirements.
- The application was signed by Mr. Gaz Thomas, General Manager as the Responsible Official on November 11, 2020.

XI. Recommendations

The Significant Modification application for Valley Proteins, Inc. – Wadesboro Division, Anson County, NC has been reviewed by DAQ to determine compliance with all procedures and requirements. DAQ has determined that this facility is complying or will achieve compliance, as specified in the permit, with all requirements that are applicable to the affected sources. The public comment and EPA review periods expire on XXXX and XXXX, respectively with XXXX comments received. Therefore, DAQ will make a recommendation on permit issuance following the comment and review periods.

Attachement I - Emissions Estimates for Application 0400034.20C – Alternative Control Scenario

Valley Protiens • Wadesboro, North Carolina
Emissions Calculations for ES-1, ES-6, ES-7 and ES-9 • Current Control Scenarios

Max Feed Rate

55,000 lb/hr for Dupps 320U Cooker (ES-7)
65,000 lb/hr for Evaporator (ES-1)
30,000 lb/hr for Feather Hydrolyser (ES-9)
20,000 lb/hr for Feather Dryer (ES-6)
Total

	lb/ton	
VOC	0.000994	Controlled - Venturi (C-1) and Boiler (B-1, B-2, or B-3) (99.9% control by boiler assumed)
VOC	0.0994	Controlled - Venturi (C-1) and Packed Tower Scrubber (C-4)
VOC	0.994	Uncontrolled Process (90% control by C-4 assumed)
VOC	0.0917	Controlled - Room Air through Crosstlow Scrubber (C-8)
VOC	0.917	Uncontrolled Room air {90% control assumed
PM/PM10	0.6275	Uncontrolled
$PM_{2.5}$	0.6275	Uncontrolled
PM Control, %	99	Venturi (C-1) and Packed Bed Scrubber (C-4}
PM Control, %	99	Venturi (C-1) and Boiler (B-1, B-2, or B-3)

EMISSIONS[3]	COOKER (ES-7) (lb/hr)	COOKER (ES-7) (tpy)	EVAPORATOR (ES-1) (lb/hr)	EVAPORATOR (ES-1) (tpy)	Feather System[5] (lb/hr)	Feather System (tpy)	TOTAL SYSTEM (lb/hr)
Uncontrolled							
PM/PM10	17.3	75.6	20.4	89.3	6.3	21.51	**37.7**
PM2.s	17.31	75.6(	20.41	89.31	6.31	27.51	**37.7**
Controlled							
VOC[4]	2.8	12.4	3.3	14.6	1.0	4.5	**6.2**
PM/PM10	0.17	0.8	0.20	0.9	0.06	0.3	**0.4**
PM2.s	0.17	0.8	0.20	0.9	0.06	0.3	**0.4**

[1] Based on August 14, 2000 NC DENR memo "Estimation of Emissions of voes from rendering facilities".
[2] Emission factor per Valley Proteins is 0.6275 lb PM per ton of feedstock. All PM is ass1.tmed to be PM10 / PM2.5
[3] Assumes 8,760 hours per year operation. Control scenario is 90% of NCG to Venturi/boiler (COS1 or COS2) and 10% to Venturi/packed bed scrubber (COS3)
[4] v oe control - see Notes 1 and 3.
[5] Feather system limited by maximum process rate of feather dryer.
[6] Calculated per 15A NCAC 2D.0515 for process rates less than 30 tons per hour. Lowest max feed rate used in Omit calculation.

Table 2.
Valley Protiens - Wadesboro, North Carolina
Emissions Calculations for ES-1, Es-6, ES-7 and ES-9- Alternate Control Scenario• Off-gas routed to Crossflow scrubber C-8

Max Feed Rate

55,000 lb/hr for Dupps 320U Cooker {ES-7)
65,000 lb/hr for Evaporator{ES-1)
30,000 lb/hr for Feather Hydrolyser (ES-9)
20,000 lb/hr for Feather Dryer {ES-6)

VOE	0.0917	Controlled - Room Air through Crossflow Scrubber {C-8)
VOE	0.917	Uncontrolled Room air {90% control assumed)
PM/PM1n"	0.6275	Uncontrolled
PM2.s	0.6275	Uncontrolled

EMISSIONS[3]	COOKER (ES-7) (lb/hr)	COOKER (ES-7) (tpy)	EVAPORATOR (ES-1) (lb/hr)	EVAPORATOR (ES-1) (tpy)	Feather System[5] (lb/hr)	Feather System (tpy)	TOTAL SYSTEM (lb/hr)	TOTAL SYSTEM (tpy)	2D.0515 LIMIT[6] (lb/hr)
Uncontrolled									
PM/PM_{10}	17.3	75.6	20.4	89.3	6.3	27.5	**37.7**	164.9	42.2
PM2.s	17.3	75.6	20.4	89.3	6.3	27.5	37.7	164.9	42.2
Controlled									
VOE[4]	5.0	22.1	6.0	26.1	1.8	8.0	**11.0**	**48.2**	**NA**

Based on August 14, 2000 NC DENR memo "Estimation of Emissions of voes from rendering facilities".

[2] Emission factor per Valley Proteins is 0.6275 lb PM per ton of feedstock. All PM is assumed to be PM10 / PM2.5

[3] **Assumes 8,760 hours per year operation. Control scenario is use of condenser and Crossflow scrubber C-8.**

[4] VOC oontrol • see Notes 1 and 3.

[5] Feather system limited by maximum process rate of feather dryer.

[6] Calculated per 1SA NCAC 20.0515 for process rates less than 30 tons per hour. Lowest max feed rate used in limit calculation.

Table 3.
Valley Protiens • Wadesboro, North Carolina
Summary of Emissions Increase due to Alternate Control Scenario (Crossftow Scrubber CS)

	Current Control		Alternate Control		Change	
Pollutant	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
PM/PM_{10}	0.38	1.65	37.7	165	37.3	163
$PM_{2.5}$	0.38	1.65	37.7	165	37.3	163
OC	6.2	26.9	11.0	48.2	5	21.3

Valley Proteins -Wadesboro, North Carolina
PSD Analysis for Alternate Control Scenario (Crossflow Scrubber CS)
Potential to Emit Emissions after Proposed Project*

POLLUTANT	Current Facility PTE (tpy)	Increase in PTE from Project (tpy)	TOTAL (tpy)	ABOVE PSD THRESHOLD?	TOTAL with Limit** (tpy)	PSD THRESHOLD (tpy)	ABOVE PSD THRESHOLD?
PM	90.6	163.0	254	YES	91	250	NO
PM10	81.2	163.0	244	NO	81	250	NO
PM2.5	55.5	163.0	219	NO	56	250	NO
S02	250***	0.0	250***	NO	250-*	250	NO
NOx	228	0.0	228	NO	228	250	NO
CO	250***	0.0	250***	NO	250***	250	NO
VOe	47.7	21.3	69.0	NO	82.2	250	NO