Airgas Specialty Products Inc.
CN602881567 RN – To Be Determined

Permit Application for:
Anhydrous and Aqueous Ammonia Distribution Facility

Prepared for:

Airgas Specialty Products Inc.
11426 W. Fairmont Pkwy
La Porte, Texas 77571

Prepared by:

WOLF ENVIRONMENTAL, LLC
12621 FEATHERWOOD DRIVE, SUITE 255
HOUSTON, TX. 77034

November 2020

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1.0 PROJECT SCOPE AND ADMINISTRATIVE INFORMATION

1.1 Introduction

Airgas Specialty Products Inc. (Airgas) is submitting this permit application under 30 TAC Chapter 116, Subchapter B to authorize construction of an Anhydrous and Aqueous Ammonia Distribution Facility at an existing Air Gas site in La Porte, Texas. The ammonia distribution operation will receive and distribute various grades of anhydrous ammonia and will produce and distribute various concentrations of aqueous ammonia. The major plant equipment will consist of three 30,000 and one 15,000 gallon permanent anhydrous storage vessels, two 30,000 gallon aqueous ammonia storage vessels, aqueous ammonia production equipment, two 12,000 gallon capacity deionized water (DI) storage tanks, and associated equipment. Planned maintenance, startup, and shutdown (MSS) activities are addressed in the application as required. Airgas will recover residual liquid and gaseous ammonia resulting from normal and MSS operations to the greatest extent possible. This will be achieved by bleeding liquids into closed piping and routing these liquids into one of the deionized water tanks and recycled back to the process. Gaseous ammonia cleared during MSS operations will be recycled into a pressurized vessel. These best practices will minimize emissions and waste associated with the operation.

The site already has other operations but the new operations will be associated with a different business segment; therefore, a new Regulated Entity Number is being requested.

The permit fee of $10,585.50 and the fee of $10,000 to expedite the application has been paid to the TCEQ Revenue Section via company check under separate cover. A copy of the fee payments is included at the end of Section 1 of this application.

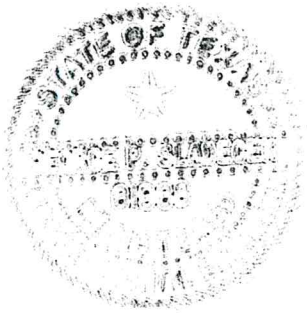
This section contains basic identifying and administrative information for the site. The following forms and information are included in this section:

- Certification of Professional Engineer
- Core Data Form
- PI-1 General Application
- Form APD-APS
- Form APD-EXP
- Copy of Fee Payments

1.2 Certification by Professional Engineer

In accordance with 30 TAC 116.110(f), this application is being submitted under my seal because the estimated capital cost of a project, as defined by 30 TAC 116.141, exceeds two million dollars.

I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements, are to the best of my knowledge and belief, are true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.



George Sladecek, P.E.
Professional Engineer
State of Texas No. 61968

NOVEMBER 12, 2020
Date

1.3 Core Data Form

TCEQ Core Data Form

TCEQ Use Only

For detailed instructions regarding completion of this form, please read the Core Data Form Instructions or call 512-239-5175.

SECTION I: General Information

1. Reason for Submission (*If other is checked please describe in space provided.*)

☒ New Permit, Registration or Authorization (*Core Data Form should be submitted with the program application.*)

☐ Renewal (*Core Data Form should be submitted with the renewal form*) ☐ Other

2. Customer Reference Number *(if issued)*	Follow this link to search for CN or RN numbers in Central Registry**	3. Regulated Entity Reference Number *(if issued)*
CN 602881567		RN

SECTION II: Customer Information

4. General Customer Information | **5. Effective Date for Customer Information Updates** (mm/dd/yyyy)

☐ New Customer ☐ Update to Customer Information ☐ Change in Regulated Entity Ownership
☐ Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)

The Customer Name submitted here may be updated automatically based on what is current and active with the Texas Secretary of State (SOS) or Texas Comptroller of Public Accounts (CPA).

6. Customer Legal Name (*If an individual, print last name first: eg: Doe, John*) *If new Customer, enter previous Customer below:*

7. TX SOS/CPA Filing Number	8. TX State Tax ID (11 digits)	9. Federal Tax ID (9 digits)	10. DUNS Number (*if applicable*)

11. Type of Customer: ☐ Corporation ☐ Individual Partnership: ☐ General ☐ Limited
Government: ☐ City ☐ County ☐ Federal ☐ State ☐ Other ☐ Sole Proprietorship ☐ Other:

12. Number of Employees
☐ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher

13. Independently Owned and Operated?
☐ Yes ☐ No

14. Customer Role (Proposed or Actual) – *as it relates to the Regulated Entity listed on this form. Please check one of the following*

☐ Owner ☐ Operator ☐ Owner & Operator
☐ Occupational Licensee ☐ Responsible Party ☐ Voluntary Cleanup Applicant ☐ Other:

15. Mailing Address:

City	State	ZIP	ZIP + 4

16. Country Mailing Information (*if outside USA*)	17. E-Mail Address (*if applicable*)

18. Telephone Number	19. Extension or Code	20. Fax Number (*if applicable*)
( ) -		( ) -

SECTION III: Regulated Entity Information

21. General Regulated Entity Information (*If 'New Regulated Entity" is selected below this form should be accompanied by a permit application*)

☒ New Regulated Entity ☐ Update to Regulated Entity Name ☐ Update to Regulated Entity Information

The Regulated Entity Name submitted may be updated in order to meet TCEQ Agency Data Standards (removal of organizational endings such as Inc, LP, or LLC).

22. Regulated Entity Name (*Enter name of the site where the regulated action is taking place.*)

La Porte Plant

23. Street Address of the Regulated Entity: *(No PO Boxes)*							
	City		**State**		**ZIP**		**ZIP + 4**
24. County	Harris						

Enter Physical Location Description if no street address is provided.

25. Description to Physical Location:	From the insection of SH-146 and Fairmont Pkwy in La Porte, head west for 1.5 miles, then turn left into the site.

26. Nearest City	**State**	**Nearest ZIP Code**
La Porte	TX	77571

27. Latitude (N) In Decimal:			**28. Longitude (W) In Decimal:**		
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
29	39	01	95	03	18

29. Primary SIC Code (4 digits)	**30. Secondary SIC Code** (4 digits)	**31. Primary NAICS Code** (5 or 6 digits)	**32. Secondary NAICS Code** (5 or 6 digits)
5169		424690	

33. What is the Primary Business of this entity? *(Do not repeat the SIC or NAICS description.)*

Anhydrous and Aqueous Ammonia Distribution Facility

34. Mailing Address:	**11426 W. Fairmont Pkwy**							
	City	**La Porte**	**State**	**TX**	**ZIP**	**77571**	**ZIP + 4**	**6000**

35. E-Mail Address:	**tyler.miller@airgas.com**

36. Telephone Number	**37. Extension or Code**	**38. Fax Number** *(if applicable)*
(678) 215-7282		**( ) -**

39. TCEQ Programs and ID Numbers Check all Programs and write in the permits/registration numbers that will be affected by the updates submitted on this form. See the Core Data Form instructions for additional guidance.

☐ Dam Safety	☐ Districts	☐ Edwards Aquifer	☐ Emissions Inventory Air	☐ Industrial Hazardous Waste
☐ Municipal Solid Waste	☒ New Source Review Air	☐ OSSF	☐ Petroleum Storage Tank	☐ PWS
☐ Sludge	☐ Storm Water	☐ Title V Air	☐ Tires	☐ Used Oil
☐ Voluntary Cleanup	☐ Waste Water	☐ Wastewater Agriculture	☐ Water Rights	☐ Other:

SECTION IV: Preparer Information

40. Name:	Shawn Haven	**41. Title:**	Project Manager

42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(281) 484-4200	101	( ) -	shaven@wolf-env.com

SECTION V: Authorized Signature

46. By my signature below, I certify, to the best of my knowledge, that the information provided in this form is true and complete, and that I have signature authority to submit this form on behalf of the entity specified in Section II, Field 6 and/or as required for the updates to the ID numbers identified in field 39.

Company:	Airgas Specialty Products Inc.	**Job Title:**	Director, EHS
Name *(In Print):*	Christina Ortiz, CSP	**Phone:**	(678) 407- **7504**
Signature:		**Date:**	

1.4 Form PI-1

I. Applicant Information	
I acknowledge that I am submitting an authorized TCEQ application workbook and any necessary attachments. Except for inputting the requested data and adjusting row height and column width, I have not changed the TCEQ application workbook in any way, including but not limited to changing formulas, formatting, content, or protections.	I agree

A. Company Information

Company or Legal Name:	Airgas Specialty Products, Inc.

Permits are issued to either the facility owner or operator, commonly referred to as the applicant or permit holder. List the legal name of the company, corporation, partnership, or person who is applying for the permit. We will verify the legal name with the Texas Secretary of State at (512) 463-5555 or at:

https://www.sos.state.tx.us

Texas Secretary of State Charter/Registration Number (if given):	

B. Company Official Contact Information: must not be a consultant

Prefix (Mr., Ms., Dr., etc.):	Ms.
First Name:	Christina
Last Name:	Ortiz, CSP
Title:	Director, EHS
Mailing Address:	2530 Sever Rd, Suite 300
Address Line 2:	
City:	Lawrenceville
State:	GA
ZIP Code:	30043
Telephone Number:	(678) 407-7504
Fax Number:	
Email Address:	christina.ortiz@airgas.com

C. Technical Contact Information: This person must have the authority to make binding agreements and representations on behalf of the applicant and may be a consultant. **Additional technical contact(s) can be provided in a cover letter.**

Prefix (Mr., Ms., Dr., etc.):	Ms.
First Name:	Tyler
Last Name:	Miller
Title:	Sr. Project Engineer
Company or Legal Name:	Airgas Specialty Products, Inc.
Mailing Address:	2530 Sever Rd, Suite 300
Address Line 2:	
City:	Lawrenceville
State:	GA
ZIP Code:	30043
Telephone Number:	(678) 215-7282
Fax Number:	
Email Address:	tyler.miller@airgas.com

D. Assigned Numbers

The CN and RN below are assigned when a Core Data Form is initially submitted to the Central Registry. The RN is also assigned if the agency has conducted an investigation or if the agency has issued an enforcement action. If these numbers have not yet been assigned, leave these questions blank and include a Core Data Form with your application submittal. See Section VI.B. below for additional information.

Enter the CN. The CN is a unique number given to each business, governmental body, association, individual, or other entity that owns, operates, is responsible for, or is affiliated with a regulated entity.	CN602881567

Enter the RN. The RN is a unique agency assigned number given to each person, organization, place, or thing that is of environmental interest to us and where regulated activities will occur. The RN replaces existing air account numbers. The RN for portable units is assigned to the unit itself, and that same RN should be used when applying for authorization at a different location.	

II. Delinquent Fees and Penalties	
Does the applicant have unpaid delinquent fees and/or penalties owed to the TCEQ? This form will not be processed until all delinquent fees and/or penalties owed to the TCEQ or the Office of the Attorney General on behalf of the TCEQ are paid in accordance with the Delinquent Fee and Penalty Protocol. For more information regarding Delinquent Fees and Penalties, go to the TCEQ Web site at: https://www.tceq.texas.gov/agency/financial/fees/delin	No

III. Permit Information

A. Permit and Action Type (multiple may be selected, leave no blanks)

Additional information regarding the different NSR authorizations can be found at:
https://www.tceq.texas.gov/permitting/air/guidance/authorize.html

Select from the drop-down the type of action being requested for each permit type. **If that permit type does not apply, you MUST select "Not applicable".**

Provide all assigned permit numbers relevant for the project. Leave blank if the permit number has not yet been assigned.

Permit Type	**Action Type Requested (do not leave blank)**	**Permit Number (if assigned)**
Minor NSR (can be a Title V major source): *Not applicable, Initial, Amendment, Renewal, Renewal Certification, Renewal/Amendment, Relocation/Alteration, Change of Location, Alteration, Extension to Start of Construction*	Initial	TBD
Special Permit: *Not applicable, Amendment, Renewal, Renewal Certification, Renewal/Amendment, Alteration, Extension to Start of Construction*	Not applicable	
De Minimis: *Not applicable, Initial*	Not applicable	
Flexible: *Not applicable, Initial, Amendment, Renewal, Renewal Certification, Renewal/Amendment, Alteration, Extension to Start of Construction*	Not applicable	
PSD: *Not applicable, Initial, Major Modification*	Not applicable	
Nonattainment: *Not applicable, Initial, Major Modification*	Not applicable	
HAP Major Source [FCAA § 112(g)]: *Not applicable, Initial, Major Modification*	Not applicable	
PAL: *Not applicable, Initial, Amendment, Renewal, Renewal/Amendment, Alteration*	Not applicable	
GHG PSD: *Not applicable, Initial, Major Modification, Voluntary Update*	Not applicable	

B. MSS Activities

How are/will MSS activities for sources associated with this project be authorized?	This permit

C. Consolidating NSR Permits

Will this permit be consolidated into another NSR permit with this action?	No

Will NSR permits be consolidated into this permit with this action?	No

D. Incorporation of Standard Permits, Standard Exemptions, and/or Permits By Rule (PBR)

To ensure protectiveness, previously issued authorizations (standard permits, standard exemptions, or PBRs) including those for MSS, are incorporated into a permit either by consolidation or by reference. At the time of renewal and/or amendment, consolidation (in some cases) may be voluntary and referencing is mandatory. More guidance regarding incorporation can be found in 30 TAC § 116.116(d)(2), 30 TAC § 116.615(3) and in this memo:

https://www.tceq.texas.gov/assets/public/permitting/air/memos/pbr_spc06.pdf

Are there any standard permits, standard exemptions, or PBRs to be incorporated by reference?	No
Are there any PBR, standard exemptions, or standard permits associated to be incorporated by consolidation? **Note:** Emission calculations, a BACT analysis, and an impacts analysis must be attached to this application at the time of submittal for any authorization to be incorporated by consolidation.	No

E. Associated Federal Operating Permits	
Is this facility located at a site required to obtain a **site operating permit (SOP)** or **general operating permit (GOP)?**	No

IV. Facility Location and General Information	
A. Location	
County: Enter the county where the facility is physically located.	Harris
TCEQ Region	Region 12
County attainment status as of Sept. 23, 2019	Serious Ozone nonattainment
Street Address:	
City: If the address is not located in a city, then enter the city or town closest to the facility, even if it is not in the same county as the facility.	La Porte
ZIP Code: Include the ZIP Code of the physical facility site, not the ZIP Code of the applicant's mailing address.	77571
Site Location Description: If there is no street address, provide written driving directions to the site. Identify the location by distance and direction from well-known landmarks such as major highway intersections.	From the insection of SH-146 and Fairmont Pkwy in La Porte, head west for 1.5 miles, then turn left into the site.
Use USGS maps, county maps prepared by the Texas Department of Transportation, or an online software application such as Google Earth to find the latitude and longitude.	
Latitude (in degrees, minutes, and nearest second (DDD:MM:SS)) for the street address or the destination point of the driving directions. Latitude is the angular distance of a location north of the equator and will always be between 25 and 37 degrees north (N) in Texas.	29:39:01
Longitude (in degrees, minutes, and nearest second (DDD:MM:SS)) for the street address or the destination point of the driving directions. Longitude is the angular distance of a location west of the prime meridian and will always be between 93 and 107 degrees west (W) in Texas.	95:03:18
Is this a project for a lead smelter, concrete crushing facility, and/or a hazardous waste management facility?	No

B. General Information	
Site Name:	La Porte Plant
Area Name: Must indicate the general type of operation, process, equipment or facility. Include numerical designations, if appropriate. Examples are Sulfuric Acid Plant and No. 5 Steam Boiler. Vague names such as Chemical Plant are not acceptable.	Anhydrous and Aqueous Ammonia Distribution Facility
Are there any schools located within 3,000 feet of the site boundary?	No
C. Portable Facility	
Permanent or portable facility?	Permanent
D. Industry Type	
Principal Company Product/Business:	Chemicals and Allied Products
A list of SIC codes can be found at: https://www.naics.com/sic-codes-industry-drilldown/	
Principal SIC code:	5169
NAICS codes and conversions between NAICS and SIC Codes are available at: https://www.census.gov/eos/www/naics/	
Principal NAICS code:	424690
E. State Senator and Representative for this site	
This information can be found at (note, the website is not compatible to Internet Explorer): https://wrm.capitol.texas.gov/	
State Senator:	Larry Taylor
District:	11
State Representative:	Dennis Paul
District:	129

V. Project Information	
A. Description	
Provide a brief description of the project that is requested. (Limited to 500 characters).	Airgas Specialty Products Inc. (Airgas) is submitting this permit application under 30 TAC Chapter 116, Subchapter B to authorize construction of an Anhydrous and Aqueous Ammonia Distribution Facility at the existing Air Gas site in La Porte, Texas. The ammonia distribution operation will receive and distribute various grades of anhydrous ammonia and will produce and distribute various concentrations of aqueous ammonia. See Application Introduction for more details.
B. Project Timing	
Authorization must be obtained for many projects before beginning construction. Construction is broadly interpreted as anything other than site clearance or site preparation. Enter the date as "Month Date, Year" (e.g. July 4, 1776).	
Projected Start of Construction:	March 1, 2021
Projected Start of Operation:	June 1, 2021
C. Enforcement Projects	
Is this application in response to, or related to, an agency investigation, notice of violation, or enforcement action?	No
D. Operating Schedule	
Will sources in this project be authorized to operate 8760 hours per year?	Yes

VI. Application Materials	
All representations regarding construction plans and operation procedures contained in the permit application shall be conditions upon which the permit is issued. (30 TAC § 116.116)	
A. Confidential Application Materials	
Is confidential information submitted with this application?	No
B. Is the Core Data Form (Form 10400) attached?	Yes
https://www.tceq.texas.gov/assets/public/permitting/centralregistry/10400.docx	
C. Is a current area map attached?	Yes
Is the area map a current map with a true north arrow, an accurate scale, the entire plant property, the location of the property relative to prominent geographical features including, but not limited to, highways, roads, streams, and significant landmarks such as buildings, residences, schools, parks, hospitals, day care centers, and churches?	Yes
Does the map show a 3,000-foot radius from the property boundary?	Yes
D. Is a plot plan attached?	Yes
Does your plot plan clearly show a north arrow, an accurate scale, all property lines, all emission points, buildings, tanks, process vessels, other process equipment, and two bench mark locations?	Yes
Does your plot plan identify all emission points on the affected property, including all emission points authorized by other air authorizations, construction permits, PBRs, special permits, and standard permits?	Yes
Did you include a table of emission points indicating the authorization type and authorization identifier, such as a permit number, registration number, or rule citation under which each emission point is currently authorized?	Yes
E. Is a process flow diagram attached?	Yes
Is the process flow diagram sufficiently descriptive so the permit reviewer can determine the raw materials to be used in the process; all major processing steps and major equipment items; individual emission points associated with each process step; the location and identification of all emission abatement devices; and the location and identification of all waste streams (including wastewater streams that may have associated air emissions)?	Yes
F. Is a process description attached?	Yes
Does the process description emphasize where the emissions are generated, why the emissions must be generated, what air pollution controls are used (including process design features that minimize emissions), and where the emissions enter the atmosphere?	Yes
Does the process description also explain how the facility or facilities will be operating when the maximum possible emissions are produced?	Yes
G. Are detailed calculations attached? Calculations must be provided for each source with new or changing emission rates. For example, a new source, changing emission factors, decreasing emissions, consolidated sources, etc. You do not need to submit calculations for sources which are not changing emission rates with this project. Please note: the preferred format is an electronic workbook (such as Excel) with all formulas viewable for review. It can be emailed with the submittal of this application workbook.	Yes

Are emission rates and associated calculations for planned MSS facilities and related activities attached?	Yes
H. Is a material balance (Table 2, Form 10155) attached?	Yes
Table 2 (Form 10155), entitled Material Balance: A material balance representation may be required for all applications to confirm technical emissions information. Typically this is required for refining and chemical manufacturing processes involving reactions, separations, and blending. It may also be requested by the permit reviewer for other applications. Table 2 should represent the total material balance; that is, all streams into the system and all streams out. Additional sheets may be attached if necessary. Complex material balances may be presented on spreadsheets or indicated using process flow diagrams. All materials in the process should be addressed whether or not they directly result in the emission of an air contaminant. All production rates must be based on maximum operating conditions.	
I. Is a list of MSS activities attached?	Yes
Are the MSS activities listed and discussed separately, each complete with the authorization mechanism or emission rates, frequency, duration, and supporting information if authorized by this permit?	Yes
J. Is a discussion of state regulatory requirements attached, addressing 30 TAC Chapters 101, 111, 112, 113, 115, and 117?	Yes
For all applicable chapters, does the discussion include how the facility will comply with the requirements of the chapter?	Yes
For all not applicable chapters, does the discussion include why the chapter is not applicable?	Yes
K. Are all other required tables, calculations, and descriptions attached?	Yes

VII. Signature

The owner or operator of the facility must apply for authority to construct. The appropriate company official (owner, plant manager, president, vice president, or environmental director) must sign all copies of the application. The applicant's consultant cannot sign the application. **Important Note: Signatures must be original in ink, not reproduced by photocopy, fax, or other means, and must be received before any permit is issued.**

The signature below confirms that I have knowledge of the facts included in this application and that these facts are true and correct to the best of my knowledge and belief. I further state that to the best of my knowledge and belief, the project for which application is made will not in any way violate any provision of the Texas Water Code (TWC), Chapter 7; the Texas Health and Safety Code, Chapter 382; the Texas Clean Air Act (TCAA); the air quality rules of the Texas Commission on Environmental Quality; or any local governmental ordinance or resolution enacted pursuant to the TCAA. I further state that I understand my signature indicates that this application meets all applicable nonattainment, prevention of significant deterioration, or major source of hazardous air pollutant permitting requirements. The signature further signifies awareness that intentionally or knowingly making or causing to be made false material statements or representations in the application is a criminal offense subject to criminal penalties.

Name:	Christina Ortiz, CSP
Signature:	
Original signature is required.	
Date:	

E. Concrete Batch Plants

Is this a project for a concrete batch plant?	No

VIII. Federal Regulatory Questions	
Indicate if any of the following requirements apply to the proposed facility. Note that some federal regulations apply to minor sources. Enter all applicable Subparts.	
A. Title 40 CFR Part 60	
Do NSPS subpart(s) apply to a facility in this application?	No
B. Title 40 CFR Part 61	
Do NESHAP subpart(s) apply to a facility in this application?	No
C. Title 40 CFR Part 63	
Do MACT subpart(s) apply to a facility in this application?	No

IX. Emissions Review	
A. Impacts Analysis	
Any change that results in an increase in off-property concentrations of air contaminants requires an air quality impacts demonstration. Information regarding the air quality impacts demonstration must be provided with the application and show compliance with all state and federal requirements. Detailed requirements for the information necessary to make the demonstration are listed on the Impacts sheet of this workbook.	
Does this project require an impacts analysis?	Yes
B. Disaster Review	
If the proposed facility will handle sufficient quantities of certain chemicals which, if released accidentally, would cause off-property impacts that could be immediately dangerous to life and health, a disaster review analysis may be required as part of the application. Contact the appropriate NSR permitting section for assistance at (512) 239-1250. Additional Guidance can be found at: https://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/disrev-factsheet.pdf	
Does this application involve any air contaminants for which a disaster review is required?	Yes
If Yes, list which air contaminants require a disaster review.	Anhydrous Ammonia
C. Air Pollutant Watch List	
Certain areas of the state have concentrations of specific pollutants that are of concern. The TCEQ has designated these portions of the state as watch list areas. Location of a facility in a watch list area could result in additional restrictions on emissions of the affected air pollutant(s) or additional permit requirements. The location of the areas and pollutants of interest can be found at: https://www.tceq.texas.gov/toxicology/apwl/apwl.html	
Is the proposed facility located in a watch list area?	No
D. Mass Emissions Cap and Trade	
Is this facility located at a site within the Houston/Galveston nonattainment area (Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller Counties)?	Yes

Is Mass Emissions Cap and Trade applicable to the new or modified facilities?	No

X. Additional Requirements	
A. Bulk Fuel Terminals	
Is this project for a bulk fuel terminal?	No
B. Plant Fuel Gas Facilities	
Does this site utilize plant fuel gas?	No

Texas Commission on Environmental Quality
Form PI-1 General Application
Unit Types - Emission Rates

Date: 11/2020
Permit #: TBD
Company: Airgas Specialty Products, Inc.

Permit primary industry (must be selected for workbook to function)	Chemical / Energy

Action Requested (only 1 action per FIN)	Include these emissions in annual (tpy) summary?	Facility ID Number (FIN)	Emission Point Number (EPN)	Source Name	Pollutant	Current Short-Term (lb/hr)	Current Long-Term (tpy)	Consolidated Current Short-Term (lb/hr)	Consolidated Current Long-Term (tpy)	Proposed Short-Term (lb/hr)	Proposed Long-Term (tpy)	Short-Term Difference (lb/hr)	Long-Term Difference (tpy)	Unit Type (Used for reviewing BACT and Monitoring Requirements)	Unit Type Notes (only if "other" unit type in Column O)
New/Modified	Yes	NH3FUG	NH3FUG	Ammonia Fugitive Equipment	NH3					0.2	0.88	*0.2*	*0.88*	Fugitives: Piping and Equipment Leak	
New/Modified	Yes	DITNK	DITNK	Deionized Water Tank	NH3					0.18	0.11	*0.18*	*0.11*	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
New/Modified	Yes	EQCLRATM	EQCLRATM	Equipment Clearing	NH3					0.05	0.01	*0.05*	*0.01*	MSS Activities	
New/Modified	Yes	ANLOAD	ANLOAD	Anhydrous Ammonia Loading and Unloading	NH3					0.04	0.04	*0.04*	*0.04*	Loading: Truck	
New/Modified	Yes	AQLOAD	AQLOAD	Aqueous Ammonia Loading and Unloading	NH3					0.01	0.01	*0.01*	*0.01*	Loading: Truck	

Texas Commission on Environmental Quality
Form PI-1 General Application
Stack Parameters

Date: 11/2020
Permit #: TBD
Company: Airgas Specialty Products Inc.

Emission Point Discharge Parameters												
EPN	Included in EMEW?	UTM Coordinates Zone	East (Meters)	North (Meters)	Building Height (ft)	Height Above Ground (ft)	Stack Exit Diameter (ft)	Velocity (FPS)	Temperature (°F)	Fugitives - Length (ft)	Fugitives - Width (ft)	Fugitives - Axis Degrees
NH3FUG	Yes											
DITNK	Yes											
EQCLRATM	Yes											
ANLOAD	Yes											
AQLOAD	Yes											

Texas Commission on Environmental Quality
Form PI-1 General Application
Public Notice

Date: 11/2020
Permit #: TBD
Company: Airgas Specialty Products, Inc.

I. Public Notice Applicability	
A. Application Type	
Is this an application for an initial permit?	Yes
B. Project Increases and Public Notice Thresholds (for Initial and Amendment Projects)	

Pollutant			**Proposed Long-Term (tpy)**			
VOC			0.00			
PM			0.00			
PM_{10}			0.00			
$PM_{2.5}$			0.00			
NO_x			0.00			
CO			0.00			
SO_2			0.00			
Pb			0.00			
NH3			1.05			

* Notice is required for PM, PM10, and PM2.5 if one of these pollutants is above the threshold.

** Notice of a GHG action is determined by action type. Initial and major modification always require notice. Voluntary updates require a consolidated notice if there is a change to BACT. Project emission increases of CO2e (CO2 equivalent) are not relevant for determining public notice of GHG permit actions.

C. Is public notice required for this project as represented in this workbook? If no, proceed to Section III Small Business Classification. Note: public notice applicability for this project may change throughout the technical review.	Yes
D. Are any HAPs to be authorized/re-authorized with this project? The category "HAPs" must be specifically listed in the public notice if the project authorizes (reauthorizes for renewals) any HAP pollutants.	No

II. Public Notice Information

Complete this section if public notice is required (determined in the above section) or if you are not sure if public notice is required.

A. Contact Information

Enter the contact information for the **person responsible for publishing.** This is a designated representative who is responsible for ensuring public notice is properly published in the appropriate newspaper and signs are posted at the facility site. This person will be contacted directly when the TCEQ is ready to authorize public notice for the application.

Prefix (Mr., Ms., Dr., etc.):	Ms.
First Name:	Tyler
Last Name:	Miller
Title:	Sr. Project Engineer
Company Name:	Airgas Specialty Products, Inc.
Mailing Address:	2530 Sever Rd, Suite 300
Address Line 2:	
City:	Lawrenceville
State:	GA
ZIP Code:	30043
Telephone Number:	(678) 215-7282
Fax Number:	
Email Address:	tyler.miller@airgas.com

Enter the contact information for the **Technical Contact.** This is the designated representative who will be listed in the public notice as a contact for additional information.

Prefix (Mr., Ms., Dr., etc.):	Ms.
First Name:	Tyler
Last Name:	Miller
Title:	Sr. Project Engineer
Company Name:	Airgas Specialty Products, Inc.
Mailing Address:	2530 Sever Rd, Suite 300
Address Line 2:	
City:	Lawrenceville
State:	GA
ZIP Code:	30043
Telephone Number:	(678) 215-7282
Fax Number:	
Email Address:	tyler.miller@airgas.com

B. Public place

Place a copy of the full application (including all of this workbook and all attachments) at a public place in the county where the facilities are or will be located. You must state where in the county the application will be available for public review and comment. The location must be a public place and described in the notice. A public place is a location which is owned and operated by public funds (such as libraries, county courthouses, city halls) and cannot be a commercial enterprise. You are required to pre-arrange this availability with the public place indicated below. The application must remain available from the first day of publication through the designated comment period.

If this is an application for a PSD, nonattainment, or FCAA §112(g) permit, the public place must have internet access available for the public as required in 30 TAC § 39.411(f)(3).

If the application is submitted to the agency with information marked as Confidential, you are required to indicate which specific portions of the application are not being made available to the public. These portions of the application must be accompanied with the following statement: ***Any request for portions of this application that are marked as confidential must be submitted in writing, pursuant to the Public Information Act, to the TCEQ Public Information Coordinator, MC 197, P.O. Box 13087, Austin, Texas 78711-3087.***

Name of Public Place:	ADD URL WHEN RECEIVED FROM AIRGAS
Physical Address:	
Address Line 2:	
City:	
ZIP Code:	
County:	Harris
Has the public place granted authorization to place the application for public viewing and copying?	Yes

C. Alternate Language Publication

In some cases, public notice in an alternate language is required. If an elementary or middle school nearest to the facility is in a school district required by the Texas Education Code to have a bilingual program, a bilingual notice will be required. If there is no bilingual program required in the school nearest the facility, but children who would normally attend those schools are eligible to attend bilingual programs elsewhere in the school district, the bilingual notice will also be required. If it is determined that alternate language notice is required, you are responsible for ensuring that the publication in the alternate language is complete and accurate in that language.

Is a bilingual program required by the Texas Education Code in the School District?	Yes
Are the children who attend either the elementary school or the middle school closest to your facility eligible to be enrolled in a bilingual program provided by the district?	Yes
If yes to either question above, list which language(s) are required by the bilingual program?	Spanish

III. Small Business Classification	
Complete this section to determine small business classification. If a small business requests a permit, agency rules (30 TAC § 39.603(f)(1)(A)) allow for alternative public notification requirements if all of the following criteria are met. If these requirements are met, public notice does not have to include publication of the prominent (12 square inch) newspaper notice.	
Does the company (including parent companies and subsidiary companies) have fewer than 100 employees or less than $6 million in annual gross receipts?	No
Small business classification:	**No**

Texas Commission on Environmental Quality
Form PI-1 General Application
Federal Applicability

Date: 11/2020
Permit #: TBD
Company: Airgas Specialty Products Inc.

I. County Classification	
Does the project require retrospective review?	No
County (completed for you from your response on the General sheet)	Harris
This project will be located in an area that is in serious nonattainment for ozone as of Sept. 23, 2019. Select from the drop-down list to the right if you would like the project to be reviewed under a different classification.	
Determination:	**This project will be located in a county with a Serious Ozone nonattainment classification. Complete the nonattainment section below and provide an analysis with the application.**

II. PSD and GHG PSD Applicability Summary			
Is netting required for the PSD analysis for this project?			**No**
Pollutant	**Project Increase**	**Threshold**	**PSD Review Required?**
CO	0	100	No
NO_x	0	40	No
PM	0	25	No
PM_{10}	0	15	No
$PM_{2.5}$	0	10	No
SO_2	0	40	No
Pb	0	0.6	No
H_2S	0	10	No
TRS	0	10	No
Reduced sulfur compounds (including H_2S)	0	10	No
H_2SO_4	0	7	No
Fluoride (excluding HF)	0	3	No
CO2e	0	75000	No

III. Nonattainment Applicability Summary	
Is netting required for the nonattainment analysis for this project?	**No**

Pollutant	Project Increase	Threshold	NA Review Required?
Ozone (as VOC)	0	100	No
Ozone (as NO_x)	0	100	No

IV. Offset Summary (for Nonattainment Permits)			
Pollutant	**Offset Ratio**	**Offset Quantity Required (tpy)**	**Where is the offset coming from?**

Texas Commission on Environmental Quality
Form PI-1 General Application
Fees

Date: 11/2020
Permit #: TBD
Company: Airgas Specialty Products Inc.

I. General Information - Non-Renewal	
Is this project for new facilities controlled and operated directly by the federal government? (30 TAC § 116.141(b)(1) and 30 TAC § 116.163(a))	No
A fee of $75,000 shall be required if no estimate of capital project cost is included with the permit application. (30 TAC § 116.141(d)) Select "yes" here to use this option. Then skip sections II and III.	No
Select Application Type	Minor Application

II. Direct Costs - Non-Renewal	
Type of Cost	**Amount**
Process and control equipment not previously owned by the applicant and not currently authorized under this chapter.	$655,000.00
Auxiliary equipment, including exhaust hoods, ducting, fans, pumps, piping, conveyors, stacks, storage tanks, waste disposal facilities, and air pollution control equipment specifically needed to meet permit and regulation requirements.	$60,000.00
Freight charges.	$72,500.00
Site preparation, including demolition, construction of fences, outdoor lighting, road, and parking areas.	$916,000.00
Installation, including foundations, erection of supporting structures, enclosures or weather protection, insulation and painting, utilities and connections, process integration, and process control equipment.	$1,100,000.00
Auxiliary buildings, including materials storage, employee facilities, and changes to existing structures.	$310,000.00
Ambient air monitoring network.	$40,000.00
Sub-Total:	$3,153,500.00

III. Indirect Costs - Non-Renewal	
Type of Cost	**Amount**
Final engineering design and supervision, and administrative overhead.	$190,000.00
Construction expense, including construction liaison, securing local building permits, insurance, temporary construction facilities, and construction clean-up.	$185,000.00
Contractor's fee and overhead.	(part of constr. expenses)
Sub-Total:	$375,000.00

IV. Calculations - Non-Renewal
For GHG permits: A single PSD fee (calculated on the capital cost of the project per 30 TAC § 116.163) will be required for all of the associated permitting actions for a GHG PSD project. Other NSR permit fees related to the project that have already been remitted to the TCEQ can be subtracted when determining the appropriate fee to submit with the GHG PSD application. Identify these other fees in the GHG PSD permit application.
In signing the "General" sheet with this fee worksheet attached, I certify that the total estimated capital cost of the project as defined in 30 TAC §116.141 is equal to or less than the above figure. I further state that I have read and understand Texas Water Code § 7.179, which defines Criminal Offenses for certain violations, including intentionally or knowingly making, or causing to be made, false material statements or representations.

Estimated Capital Cost	Minor Application Fee	
Less than $300,000	$900 (minimum fee)	
$300,000 - $7,500,000	N/A	
$300,000 - $25,000,000	0.30% of capital cost	
Greater than $7,500,000	N/A	
Greater than $25,000,000	$75,000 (maximum fee)	

Your estimated capital cost:	**$3,528,500.00**	x 0.30% =
Permit Application Fee:		**$10,585.50**

VI. Total Fees	
Note: fees can be paid together with one payment or as two separate payments.	
Non-Renewal Fee	$10,585.50
Total	$10,585.50

VII. Payment Information	
A. Payment One (required)	
Was the fee paid online?	No
Enter the fee amount:	$ 10,585.50
Enter the check, money order, ePay Voucher, or other transaction number:	
Enter the Company name as it appears on the check:	
C. Total Paid	**$10,585.50**

VIII. Professional Engineer Seal Requirement	
Is the estimated capital cost of the project above $2 million?	Yes
Is this project subject to an exemption contained in the Texas Engineering Practice Act (TEPA)? (30 TAC § 116.110(f))	No
Is the application required to be submitted under the seal of a Texas licensed P.E.? Note: an electronic PE seal is acceptable.	Yes

Pollutant	Does this pollutant require PSD review?	How will you demonstrate that this project meets all applicable requirements?	Notes	Additional Notes (optional)
VOC	No	Not applicable	This pollutant is not a part of this project or does not require an impacts analysis.	
NH3	No	Modeling: screen or refined	Attach a completed "Electronic Modeling Evaluation Workbook" (EMEW).	

Texas Commission on Environmental Quality
Form PI-1 General Application
BACT

Date: 11/2020
Permit #: TBD
Company: Airgas Specialty Products Inc.

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
New/Modified	NH3FUG	Fugitives: Piping and Equipment Leak	NH3	AVO inspection twice per shift. Appropriate credit for AVO program.	Yes	
			MSS	Same as normal operation BACT requirements.	Yes	
New/Modified	DITNK	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	NH3	See Additional Notes:	Yes	Filling of the storage tank will be accomplished utilizing submerged fill. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum.
			MSS	Same as normal operation BACT requirements except as listed below. Fixed roof tank draining: VOC: Send liquid to a covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia. Control device must meet BACT. Acid: Drain to covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the acid vapor pressure is less than 0.02 psia. Control device must meet BACT.	Yes	Liquids will be drained into closed piping and routed to one of the aqueous ammonia storage tanks. The tank will be water washed until the vapor concentration of ammonia is equal to or less than 500 ppmv before degassing to atmosphere.

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
New/Modified	EQCLRATM	MSS Activities	NH3	See Additional Notes:	Yes	Free liquids are drained and water washed/vacuumed until the conc. is 500 ppmv or less. Equipment clearing to atm. will not occur until the concentration inside of vessels/piping is 500 ppmv or less before opening equipment to atmosphere. This requirement does not apply to replacement of PRVs in anhydrous ammonia service, which may be replaced while the process is in operation. Emissions from these PRVs will be minimized by isolating the PRV before removal from the process piping.
			MSS	Not required since this is a MSS unit type.	Yes	

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
New/Modified	ANLOAD	Loading: Truck	NH3	See Additional Notes:	Yes	Each tank truck shall be leak checked and certified annually in accordance with 49 CFR 180.407 Department of Transportation (DOT), for pressure tank trucks rated at 15 psig or greater. Displaced vapors due to loading are maintained in a closed system by vapor balancing to the host tank. This level of control exceeds current BACT.
			MSS	Same as normal operation BACT requirements.	Yes	

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
New/Modified	AQLOAD	Loading: Truck	NH3	See Additional Notes:	Yes	Each tank truck shall be leak checked and certified annually in accordance with 49 CFR 180.407 Department of Transportation (DOT), for pressure tank trucks rated at 15 psig or greater. Displaced vapors due to loading are maintained in a closed system by vapor balancing to the host tank. This level of control exceeds current BACT.
			MSS	Same as normal operation BACT requirements.	Yes	

Texas Commission on Environmental Quality
Form PI-1 General Application
Monitoring

Date: 11/2020
Permit #: TBD
Company: Airgas Specialty Products Inc.

FIN	Unit Type	Pollutant	Minimum Monitoring Requirements	Confirm	Additional Notes for Monitoring	Proposed Measurement Technique (only complete for pollutants with a project increase above the PSD threshold)	Additional Notes for Measuring:
NH3FUG	Fugitives: Piping and Equipment Leak	NH3	Look for leaks twice per shift using audio, visual or olfactory (AVO) senses to observe leaks. Record results and corrective action taken.	Yes			
DITNK	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	NH3	See Additional Notes:	Yes	Ensure the liquid level remains above the submerged fill pipe when ammonia is present in the liquid.		
EQCLRATM	MSS Activities	NH3	See Additional Notes:	Yes	Prior to releasing residual ammonia to the atmosphere, the concentration will be monitored to ensure the concentration is 500 ppmv or less. This requirement does not apply to PRVs in anhydrous ammonia service.		

ANLOAD	Loading: Truck	NH3	See Additional Notes:	Yes	AVO inspections will be performed during loading/unloading operations. If leaks are observed while loading/unloading the operation will be discontinued until corrective action is initiated. Tank trucks shall not be filled unless it has passed a leak-tight test within the past year as evidenced by DOT cargo tank inspection and testing markings which shows the date the tank truck last passed the leak-tight test.		
AQLOAD	Loading: Truck	NH3	See Additional Notes:	Yes	AVO inspections will be performed during loading/unloading operations. If leaks are observed while loading/unloading the operation will be discontinued until corrective action is initiated. Tank trucks shall not be filled unless it has passed a leak-tight test within the past year as evidenced by DOT cargo tank inspection and testing markings which shows the date the tank truck last passed the leak-tight test.		

1.5 Form APD-APS

Texas Commission on Environmental Quality

Form APD-APS Air Permitting Surcharge Payment

I. Contact Information	
Company or Other Legal Customer Name: Airgas Specialty Products Inc.	
Customer Reference Number (CN): 602881567	
Regulated Entity Number (RN): TBD	
Company Official or Technical Contact Information: (☐ Mr. ☐ Mrs. ☒ Ms. ☐ Other:_____)	
Name: Tyler Miller	
Title: Sr. Project Engineer	
Mailing Address: 2530 Sever Rd., Suite 300	
City: Lawrenceville	
State: GA	
ZIP Code: 30043	
Telephone Number: 972-576-3305	
E-mail Address: tyler.miller@airgas.com	
II. Project Information	
Facility Name: La Porte Plant	
Permit Number: TBD	
Project Number: TBD	
III. Surcharge Payment	
Project Type: NSR Case By Case	
Fee Amount: $10,000	
Check, Money Order, Transaction Number, and/or ePay Voucher Number: *(below)*	
Paid Online:	☐ YES ☒ NO
Company Name on Check:	

1.6 Form APD-EXP

Form APD-EXP Expedited Permitting Request

I. Contact Information	
Company or Other Legal Customer Name: Airgas Specialty Products, Inc.	
Customer Reference Number (CN): 602881567	
Regulated Entity Number (RN): TBD	
Company Official or Technical Contact Name: Christina Ortiz, CSP	
Phone Number: 678-407-7504	
Email: christina.ortiz@airgas.com	
II. Project Information	
Facility Type: Aqueous Ammonia Production Unit	
Permit Number: TBD	
Project Number: TBD	
III. Economic Justification	
The purpose of the application associated with this request to expedite will benefit the economy of this state or an area of this state.	☒ YES ☐ NO
IV. Delinquent Fees and Penalties	
Applications will not be expedited if any delinquent fees and/or penalties are owed to the TCEQ or the Office of the Attorney General on behalf of the TCEQ. For more information regarding Delinquent Fees and Penalties, go to the TCEQ Web site at: www.tceq.texas.gov/agency/delin/index.html.	
V. Signature	
The signature below confirms that I have knowledge of the facts included in this application and that these facts are true and correct to the best of my knowledge and belief. As the applicant, I commit to fulfilling all expectations of the expedited permitting program and application requirements promptly. Failure to meet any expectation or requirement may cause my application to be removed from the expedited permitting program and possibly voided at the discretion of the TCEQ Executive Director. The signature further signifies awareness that intentionally or knowingly making or causing to be made false material statements or representations in the application is a criminal offense subject to criminal penalties.	
Name: Christina Ortiz, CSP	
Signature:	
Date:	

1.7 Copy of Fee Payments

2.0 MAPS AND PLOT PLANS

An area map is attached as Figure 1. The area map shows the location of the property relative to surrounding roads, residences, a plant benchmark, a true north arrow, all property lines, and other geographic features.

A plot plan is attached as Figure 2. The plot plan shows emission point identification numbers and emission units consistent with the numbers referenced in other parts of the application.

2.1 Figure 1 - Area Map

Benchmark
(Decimal Degrees)
29.648738
-95.054142

Airgas Specialty Products Inc.

N

2.2 Figure 2 - Plot Plan

Airgas Specialty Products Inc.

La Porte Plant

3.0 PROCESS DESCRIPTION

3.1 Process Description

Airgas will operate an anhydrous ammonia distribution and aqueous ammonia (ammonium hydroxide) production and distribution operation at the existing Airgas site in La Porte, Texas. The major plant equipment will consist of three 30,000 and one 15,000 gallon permanent anhydrous storage vessels, two 30,000 gallon aqueous ammonia storage vessels, aqueous ammonia production equipment, two 12,000 gallon capacity deionized water (DI) storage tanks, and associated equipment.

Anhydrous ammonia will be received at the site via tank trucks. The anhydrous ammonia will be mixed with deionized water to produce aqueous ammonia in varying concentrations between 10% and 32% and stored onsite while awaiting shipment to customers via tank trucks. Anhydrous ammonia will also be shipped to customers via tank trucks. Loading and unloading of anhydrous and aqueous ammonia will be accomplished in a closed piping system utilizing rubber hoses approved for anhydrous ammonia service and inspected regularly. Upon completion of loading and unloading, isolation valves on both sides of the liquid connection will be closed and the liquid will be drained from the connector and pumped to one deionized water storage tanks. Once the pressure between these isolation valves reaches atmospheric pressure, the hose is disconnected. The vapors displaced during the loading and unloading operations will be vapor balanced to the host tank.

Liquids drained from the loading and unloading operations and from equipment and piping that require clearing will be routed to one of the deionized water storage tanks and recycled into the aqueous ammonia production operations. The other deionized water tank will only store water. Airgas will produce the deionized water onsite by purifying either well water or water from the Coastal Water Authority (CWA).

Planned maintenance, startup, shutdown will consist clearing of equipment to facilitate inspections and maintenance as required, including inspections of tank trucks owned by the site. Prior to opening the vessels / equipment to atmosphere, any free liquids in the equipment will be drained. The equipment may be water

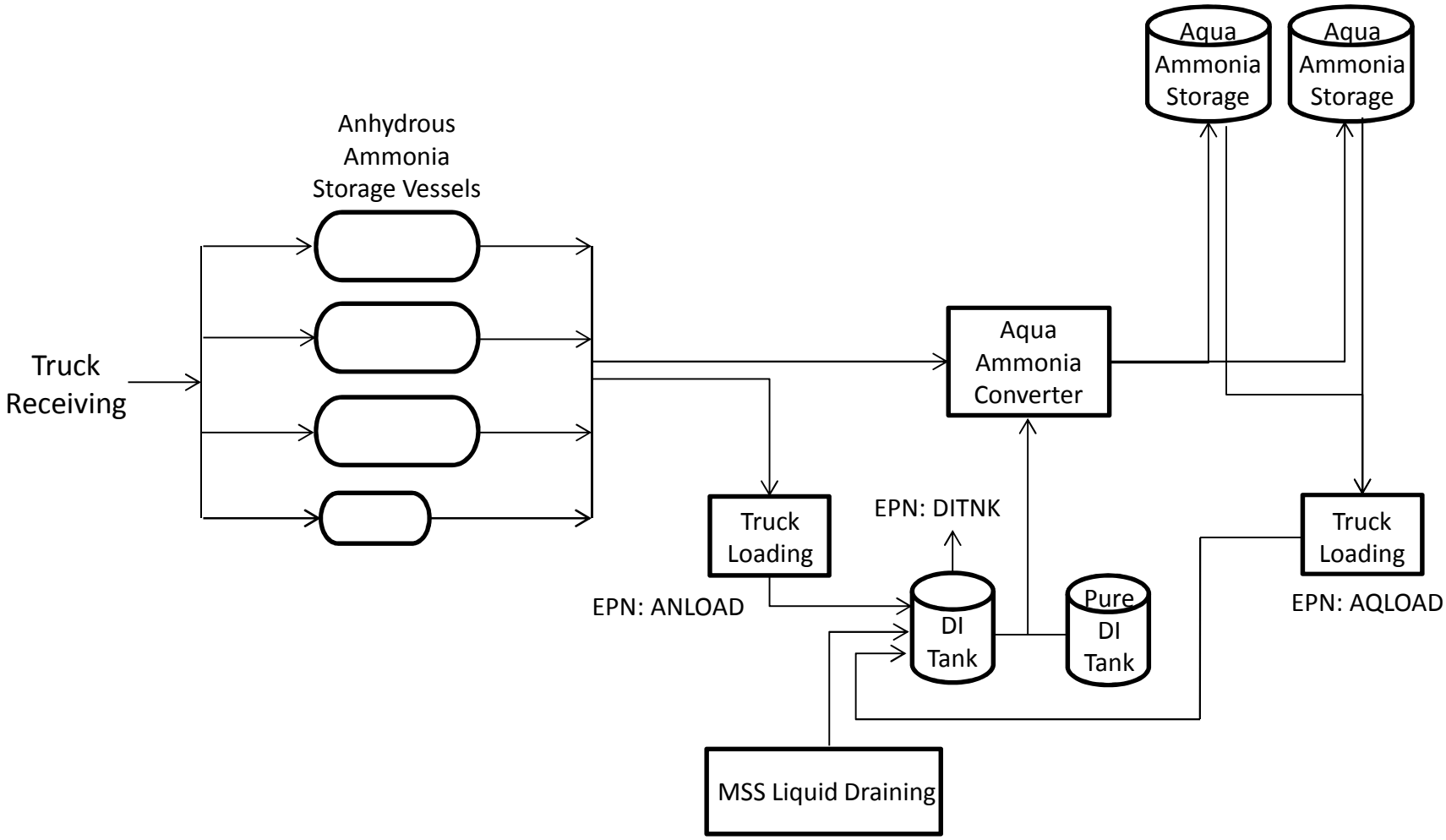
washed if needed. The free liquids and water wash will be routed to the deionized water tank for recycle. Vapors remaining in the equipment will be vacuumed from the system utilizing a reciprocating compressor or a vacuum pump as needed before opening to atmosphere. The vapors removed from the system will be routed into one of the site storage vessels.

3.2 Process Flow Diagram

A process flow diagram is included on the following page.

Airgas Specialty Products Inc.

La Porte Plant – Aqueous Ammonia Plant



3.3 Table 2 – Material Balance

Texas Commission on Environmental Quality
Table 2
Material Balance

This material balance table is used to quantify possible emissions of air contaminants and special emphasis should be placed on potential air contaminants, for example: If feed contains sulfur, show distribution to all products. Please relate each material (or group of materials) listed to its respective location in the process flow diagram by assigning emission point numbers (taken from the flow diagram) to each material.

List every material involved in each of the following groups	**Emission Point No. from Flow Diagram**	**Process Rate[1] Check appropriate column at right to indicate process rate method.**	**Measurement**	**Estimation**	**Calculation**
Raw Materials – Input NH3 Water		33,000 ton/yr (anhydrous NH_3) 75,000 ton/yr (Water)			 X X
Fuels - Input		None			
Products and By-Products - Output		18,250 ton/yr (Anhydrous NH_3 Products) 83,000 ton/yr (Aqua NH_3 Products)			X X
Solid Wastes - Output		None			
Liquid Wastes - Output		None Expected			
Airborne Waste (Solid) - Output		See PI-1 / Permit Application		X	
Airborne Wastes (Gaseous) - Output		See PI-1 / Permit Application		X	

[1] Specify the process rate of the facility using conventional engineering units (e.g., bbl/d, lb/yr, SCFM), and indicate the units next to each number. Standard Conditions: are 68°F 14.7 psia (30 Texas Administrative Code, Section 101.1(99).

4.0 EMISSIONS CALCULATIONS AND METHODOLOGY

This section provides the emission calculations for the emission sources in the permit.

4.1 Ammonia Fugitive Equipment (EPN NH3FUG)

The ammonia production facilities will consist of fugitive equipment components in anhydrous and aqueous service in varying concentrations up to 32% NH_3. In order to estimate the worst-case emissions for aqueous service, the calculations are based on an aqueous NH_3 concentration of 32%. Fugitive emission estimation methodologies follow those provided in the TCEQ guidance document entitled "Air Permit Technical Guidance for Chemical Sources: Fugitive Guidance, June 2018".

Basis and Assumptions (Anhydrous and Aqua Ammonia):

- Emission factors are for SOCMI without C_2 (lb/hr-component) except for sampling connectors which are lb/hr-sample.
- Control efficiencies based on conducting AVO Inspections (inorganic/odorous compounds)
- Aqueous liquid components emissions based on 32% by weight aqueous NH_3
- Aqueous gas/vapor components emissions assumed to be 100% NH_3
- Sampling connections in anhydrous NH_3 services are closed loop systems therefore, control efficiency is 100%

Anhydrous Ammonia Fugitive Equipment

Component	Service	Qty	Emission Factor	Control Efficiency	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
Valves	Gas/Vapor	36	0.0089	97	0.010	0.042
	Light Liquid	74	0.0035	97	0.008	0.034
Pumps	Light Liquid	3	0.0386	93	0.008	0.036
Compressors	Gas/Vapor	1	0.5027	95	0.025	0.110
Flanges / Connectors	Gas/Vapor	127	0.0029	97	0.011	0.048
	Light Liquid	305	0.0005	97	0.005	0.020
Relief Valves	Gas/Vapor	11	0.2293	97	0.076	0.331
Open Ended Lines	–	7	0.004	100	0.000	0.000
Sampling Connections	–	5	0.033	100	0.000	0.000
				Totals	**0.14**	**0.62**

Anhydrous NH_3 Sample Calculations (Valves in gas/vapor service as an example)

$$NH_3\,\frac{lb}{hr} = 36\ comp \times 0.0089\,\frac{lb}{hr - comp} \times (1 - 97\%) = 0.01\,\frac{lb}{hr}$$

$$NH_3\,\frac{ton}{yr} = 36\ comp \times 0.0089\,\frac{lb}{hr - comp} \times (1 - 97\%) \times 8760\,\frac{hr}{yr} \div 2000\,\frac{lb}{ton}$$

$$= 0.042\,\frac{ton}{yr}$$

Aqueous Ammonia Fugitive Equipment

Component	Service	Qty	Emission Factor	NH3 %	Control Efficiency	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
Valves	Gas/Vapor	18	0.0089	100	97	0.005	0.021
	Light Liquid	33	0.0035	32	97	0.001	0.005
Pumps	Light Liquid	6	0.0386	32	93	0.005	0.023
Compressors	Gas/Vapor	0	0.5027	100	95	0.000	0.000
Flanges / Connectors	Gas/Vapor	52	0.0029	100	97	0.001	0.006
	Light Liquid	103	0.0005	32	97	0.0005	0.002
Relief Valves	Gas/Vapor	2	0.2293	100	97	0.014	0.060
Relief Valves	Gas/Vapor		0.2293	100	100	0.000	0.000
Open Ended Lines	–	4	0.004	32	100	0.000	0.000
Sampling Connections	–	3	0.033	32	0	0.032	0.139
					Totals	**0.06**	**0.26**

Aqueous NH_3 Sample Calculations (Valves in light liquid service as an example)

$$NH_3 \frac{lb}{hr} = 18\ comp \times 0.0089 \frac{lb}{hr - comp} \times (1 - 97\%) \times (32\%) = 0.005 \frac{lb}{hr}$$

$$NH_3 \frac{ton}{yr} = 18\ comp \times 0.0089 \frac{lb}{hr - comp} \times (1 - 97\%) \times (32\%) \times 8760 \frac{hr}{yr} \div 2000 \frac{lb}{ton}$$
$$= 0.021 \frac{ton}{yr}$$

Emissions Summary

Service	Constituent	lb/hr	tpy
Anhydrous	NH_3	0.14	0.62
Aqueous	NH_3	0.06	0.26
	Total Emissions	**0.20**	**0.88**

4.2 Deionized Water Tank (EPN DITNK)

One of the two deionized water tanks will be utilized to capture NH_3 liquids that are drained from equipment during normal and planned MSS activities. The liquids drained from the process during normal and MSS activities will be routed to the bottom of the tank and sparged into the water to ensure adequate mixing with the deionized water. Due to the amount of fresh water in the tank and very low concentration (< 0.25%) of NH_3 that will be present in the water, the water will absorb the NH_3 that gets sparged into the tank. Water is frequently removed / added to the tank when aqueous NH_3 is being produced; therefore, the NH_3 concentration is kept low. Gaseous streams will not be sparged into the tank. Since AP-42 is not an appropriate methodology to calculate emissions from aqua ammonia tanks, emissions are estimated based on the volume displacement of pumping into the tank and utilizing tabulated vapor-liquid equilibrium data for NH_3/Water mixtures from Perry's Chemical Engineer's Handbook, 6th Ed. Short-term emissions are estimated utilizing TCEQ's "Estimating Short Term Emission Rates from Fixed Roof Tanks, APDG 6250v3, 02/20. Annual emissions are estimated similarly to the short-term emissions, but with the pump rate term changed to reflect the annual throughput.

Basis and Assumptions

- NH_3 Molecular weight (MW): 17.03 lb/lbmol
- Maximum concentration: 0.25% ammonia concentration in the liquid phase
- TVP (0.25% aqueous NH_3) ~ 0.903 psia @ 95˚F (maximum tank temperature), from Perry's
- TVP (0.25% aqueous NH_3) ~ 0.402 psia @ 70˚F (annual average tank temperature), from Perry's
- Partial Pressure of H_2O (over 0.25% NH_3): P_{H2O} ~ 0.823 psia @ 95˚F, P_{H2O} ~ 0.36 psia @ 70˚F
- Universal Gas Constant = 80.273 psia-gal/lbmole-R
- Maximum pump rate = 100 gal/min (6,000 gal/hr)
- Tank Capacity = 12,000 gallons
- Tank turnovers per day = 3 (36,000 gallons)

Calculation of NH_3 Partial Pressure @ 95˚F

$$P_{Total} = P_{NH_3} + P_{H_2O}$$

$$P_{NH_3} = 0.903\ psia - 0.823\ psia = 0.08\ psia$$

Calculation of NH_3 Partial Pressure @ 70˚F

$$P_{Total} = P_{NH_3} + P_{H_2O}$$

$$P_{NH_3} = 0.402\ psia - 0.36\ psia = 0.042\ psia$$

Emissions Estimates

$$NH_3\frac{lb}{hr} = \frac{17.03\frac{lb}{lbmol} \times 0.08\ psia}{80.273\frac{psia * gal}{lbmol * R} \times 554.67\ R} \times 6{,}000\frac{gal}{hr} = 0.18\frac{lb}{hr}$$

$$NH_3\frac{ton}{yr} = \frac{17.03\frac{lb}{lbmol} \times 0.042\ psia}{80.273\frac{psia - gal}{lbmol - R} \times 529.67\ R} \times 36{,}000\frac{gal}{day} \times 365\frac{day}{yr} \div 2000\frac{lb}{ton} = 0.11\ \frac{ton}{yr}$$

Emissions Summary

Constituent	lb/hr	tpy
NH_3	0.18	0.11

4.3 Equipment Clearing to Atmosphere (EPN EQCLRATM)

Periodically, vessels, piping, and transport vessels will be cleared to allow for equipment inspections and maintenance. After draining any residual liquids to the DI water tank, equipment is water washed and/or a vacuum is drawn on the equipment to remove NH3 vapors to a concentration of 500 ppmv or less. In addition to equipment that will vent to the atmosphere at 500 ppmv, Airgas will also replace pressure relief valves (PRVs) in 100% anhydrous ammonia service periodically. These PRVs will be isolated and only the volume between the isolation valves will be vented. Airgas will utilize handheld monitoring equipment or equivalent to verify the concentration prior to opening to the atmosphere. The table provided in this section provides a listing of equipment and associated emissions. The sum of emissions from all equipment is shown for reference only. For the purposes of the maximum hourly emissions for the MAERT Table and combinations of equipment that can be simultaneously cleared, Airgas will only clear combinations of equipment that are equal to or less than the MAERT limit. Miscellaneous equipment includes pumps, compressors, valves, PRVs and piping as required.

Basis and Assumptions

- NH_3 Molecular weight (MW) = 17.03 lb/lbmol
- Standard molar volume @60˚F and 14.7 psia (SMV) = 379.5 scf/lbmol

Emissions Summary

Constituent	lb/hr	tpy
NH_3	0.05	0.01

A table of the equipment volumes and associated emissions estimates is provided on the following page.

Equip. ID	Equipment Description	Equip. Volume	PPMV Remaining in Equipment	NH3 Inside Equipment Prior to Clearing		Number hours to clear	Emiss-ions to Atm[1]	Annual Clearings	Emissions to Atm
		ft3		scf	lb		lb/hr		tpy
AQTLR1	Aqua Trailer	868.98	500	0.43	0.02	1	0.02	1	9.75E-06
AQTLR2	Aqua Trailer	868.98	500	0.43	0.02	1	0.02	1	9.75E-06
AQTLR3	Aqua Trailer	868.98	500	0.43	0.02	1	0.02	1	9.75E-06
AQTLR4	Aqua Trailer	868.98	500	0.43	0.02	1	0.02	1	9.75E-06
AQTLR5	Aqua Trailer	868.98	500	0.43	0.02	1	0.02	1	9.75E-06
AQTLR6	Aqua Trailer	868.98	500	0.43	0.02	1	0.02	1	9.75E-06
ANTLR1	Anhydrous Trailer	868.98	500	0.43	0.02	1	0.02	1	9.75E-06
ANTLR2	Anhydrous Trailer	868.98	500	0.43	0.02	1	0.02	1	9.75E-06
ANTLR3	Anhydrous Trailer	868.98	500	0.43	0.02	1	0.02	1	9.75E-06
ANTLR4	Anhydrous Trailer	868.98	500	0.43	0.02	1	0.02	1	9.75E-06
ANTLR5	Anhydrous Trailer	868.98	500	0.43	0.02	1	0.02	1	9.75E-06
ANTLR6	Anhydrous Trailer	868.98	500	0.43	0.02	1	0.02	1	9.75E-06
ANTLR7	Anhydrous Trailer	868.98	500	0.43	0.02	1	0.02	1	9.75E-06
ANTLR8	Anhydrous Trailer	868.98	500	0.43	0.02	1	0.02	1	9.75E-06
MISCEQ	Piping / Miscellaneous Equipment	1000.00	500	0.50	0.02	1	0.02	1	1.12E-05
DITNK	Deionized H_20 Tank	1604.28	500	0.80	0.04	1	0.04	1	1.80E-05
PRV	Anhydrous PRV Maint (5 PRVs)	0.007	1,000,000	0.09	0.004	1	0.004	1	1.97E-06
ANTK-1	Anhydrous Storage Tank	4010.70	500	2.01	0.09	2	0.04	1	4.50E-05
ANTK-2	Anhydrous Storage Tank	4010.70	500	2.01	0.09	2	0.04	1	4.50E-05
ANTK-3	Anhydrous Storage Tank	4010.70	500	2.01	0.09	2	0.04	1	4.50E-05
ANTK-4	Anhydrous Storage Tank	2005.35	500	1.00	0.04	2	0.04	1	2.25E-05
AQTK-1	Aqua NH3 Storage Tank	4010.70	500	2.01	0.09	2	0.04	1	4.50E-05
AQTK-2	Aqua NH3 Storage Tank	4010.70	500	2.01	0.09	2	0.04	1	4.50E-05
Total							0.58		0.0004
MAERT Limits[1]							**0.05**		**0.01**

Note 1 – Equipment that can be simultaneously cleared is limited to the sum of individual equipment being cleared, not to exceed the MAERT limit. MAERT limit established by conducting air dispersion modeling.

4.4 Anhydrous Truck Loading and Unloading (EPN ANLOAD)

Loading/unloading of various grades of anhydrous ammonia will be conducted at the site. Tank trucks that are utilized are pressure rated to prevent emissions to the atmosphere under normal loading/unloading conditions. During loading, the displaced NH_3 vapors are routed back to the storage tank via vapor balancing. Prior to disconnecting the loading/unloading line, any liquid remaining in the connection will be drained into closed piping and pumped to the deionized water tank and recycled. Emissions are estimated by calculating emissions released from the loading/unloading line and vapor return connections to the tank truck.

Basis and Assumptions

- Molecular weight (MW) = 17.03 lb/lbmol
- Standard molar volume @60˚F and 14.7 psia (SMV) = 379.5 scf/lbmol
- Standard molar volume @85˚F and 14.7 psia (SMV) = 397.81 scf/lbmol
- Loading/Unloading and Vapor Return Line Connection Volume = 0.041ft^3
- Loading/Unloading and Vapor Return Line Connection Volume = 0.452 scf @ ~170 psia and 85 degrees F
- Loading/Unloading and Vapor Return Line Connection Volume = 0.279 scf @ ~100 psia and 60 degrees F
- Number of Trucks Loaded/unloaded per Year = 3,125

Emission Estimates

$$NH_3\left(\frac{lb}{hr}\right) = 0.452\ \frac{scf}{connector} \times 2\frac{connector}{truck} \times 17.03\ \frac{lb}{lbmol} \div 397.81\ \frac{scf}{lbmol}$$
$$= 0.0387\ \frac{lb\ NH_3}{truck} = 0.04\frac{lb}{hr}$$

$$NH_3\left(\frac{ton}{yr}\right) = 0.279\ \frac{scf}{connector} \times 2\frac{connector}{truck} \times 17.03\ \frac{lb}{lbmol} \div 379.5\ \frac{scf}{lbmol}$$
$$\times 3{,}125\frac{trucks}{yr} \div 2000\frac{lb}{ton} = 0.039\frac{ton}{yr}$$

Emissions Summary

Constituent	lb/hr	tpy
NH_3	0.04	0.04

4.5 Aqueous Ammonia Truck Loading and Unloading (EPN AQLOAD)

Loading/unloading of various concentrations of aqueous NH_3 (10% - 32% by weight) will be conducted at the site. During loading, the displaced vapors are routed back to the storage tank via vapor balancing. Prior to disconnecting the loading/unloading line, any liquid remaining in the connection will be drained into closed piping and pumped to the deionized water tank and recycled. Emissions are estimated by calculating emissions released from the loading/unloading line and vapor return connections to the tank truck. In order to estimate worst-case emissions, the molecular weight of 10% aqueous NH_3 is utilized and the vapor composition of 100% NH_3 is utilized. This will result in the worst-case emissions estimates.

Basis and Assumptions

- Molecular weight 10% Aqueous NH_3 (MW) = 17.22 lb/lbmol
- Standard molar volume @60˚F and 14.7 psia (SMV) = 379.5 scf/lbmol
- Standard molar volume @85˚F and 14.7 psia (SMV) = 397.81 scf/lbmol
- Loading/Unloading and Vapor Return Line Connection Volume = 0.041ft^3
- Loading/Unloading and Vapor Return Line Connection Volume = 0.082 scf @ ~20.43 psia and 85 degrees F
- Loading/Unloading and Vapor Return Line Connection Volume = 0.065 scf @ ~11.63 psia and 60 degrees F
- Number of Trucks Loaded/unloaded per Year = 3,155

Emission Estimates

$$NH_3\left(\frac{lb}{hr}\right) = 0.082\ \frac{scf}{connector} \times 2\frac{connector}{truck} \times 17.22\ \frac{lb}{lbmol} \div 397.81\ \frac{scf}{lbmol}$$
$$= 0.007\ \frac{lb\ NH_3}{truck} = 0.01\frac{lb}{hr}$$

$$NH_3\left(\frac{ton}{yr}\right) = 0.065\ \frac{scf}{connector} \times 2\frac{connector}{truck} \times 17.03\ \frac{lb}{lbmol} \div 379.5\ \frac{scf}{lbmol}$$
$$\times\ 3{,}155\frac{trucks}{yr} \div 2000\frac{lb}{ton} = 0.01\frac{ton}{yr}$$

Emissions Summary

Constituent	lb/hr	tpy
NH_3	0.01	0.01

5.0 GENERAL APPLICATION REQUIREMENTS

30 TAC 116.111 specifies the requirements to be granted a permit amendment. Rule language is below in plain type with responses in **bold** type:

(a) In order to be granted a permit, amendment, or special permit amendment, the application must include:

(1) a completed Form PI-1 General Application signed by an authorized representative of the applicant. All additional support information specified on the form must be provided before the application is complete;

A completed PI-1 General Application and additional support documentation has been included in this application.

(2) information which demonstrates that emissions from the facility, including any associated dockside vessel emissions, meet all of the following.

(A) Protection of public health and welfare.

(i) The emissions from the proposed facility will comply with all rules and regulations of the commission and with the intent of the Texas Clean Air Act (TCAA), including protection of the health and property of the public.

The emissions from the facilities will comply with the rules and regulations of the commission and with the intent of the Texas Clean Air Act (TCAA) and will be protective of the health and property of the public.

(ii) For issuance of a permit for construction or modification of any facility within 3,000 feet of an elementary, junior high/middle, or senior high school, the commission shall consider any possible adverse short-term or long-term side effects that an air contaminant or nuisance odor from the facility may have on the individuals attending the school(s).

N/A. The site is not within 3,000 feet of any schools.

(B) Measurement of emissions. The proposed facility will have provisions for measuring the emission of significant air contaminants as determined by the executive director. This may include the installation of sampling ports on exhaust stacks and construction of

sampling platforms in accordance with guidelines in the "Texas Commission on Environmental Quality Sampling Procedures Manual."

Airgas will comply with this requirement as applicable.

(C) Best available control technology (BACT) must be evaluated for and applied to all facilities subject to the TCAA. Prior to evaluation of BACT under the TCAA, all facilities with pollutants subject to regulation under Title I Part C of the Federal Clean Air Act (FCAA) shall evaluate and apply BACT as defined in §116.160(c)(1)(A) of this title (relating to Prevention of Significant Deterioration Requirements).

Airgas is complying with BACT requirements. Please refer to the BACT Discussion included in this application for specific information for each emission source.

(D) New Source Performance Standards (NSPS). The emissions from the proposed facility will meet the requirements of any applicable NSPS as listed under 40 Code of Federal Regulations (CFR) Part 60, promulgated by the United States Environmental Protection Agency (EPA) under FCAA, §111, as amended.

N/A. The proposed facilities are not subject to the requirements of any NSPS standards.

(E) National Emission Standards for Hazardous Air Pollutants (NESHAP). The emissions from the proposed facility will meet the requirements of any applicable NESHAP, as listed under 40 CFR Part 61, promulgated by EPA under FCAA, §112, as amended.

N/A. The proposed facilities are not subject to the requirements of any NESHAP standards.

(F) NESHAP for source categories. The emissions from the proposed facility will meet the requirements of any applicable maximum achievable control technology standard as listed under 40 CFR Part 63, promulgated by the EPA under FCAA, §112 or as listed under Chapter 113, Subchapter C of this title (relating to National Emissions Standards for Hazardous Air Pollutants for Source Categories (FCAA §112, 40 CFR Part 63)).

N/A. The proposed facilities are not subject to the requirements of any MACT standards.

(G) Performance demonstration. The proposed facility will achieve the performance specified in the permit application. The applicant may be required to submit additional engineering data after a permit has been issued in order to demonstrate further that the proposed facility will achieve the performance specified in the permit application. In addition, dispersion modeling, monitoring, or stack testing may be required.

Airgas will comply with this requirement as required. Air dispersion modeling was submitted concurrently with the permit application as required.

(H) Nonattainment review. If the proposed facility is located in a nonattainment area, it shall comply with all applicable requirements in this chapter concerning nonattainment review.

Although the site is located in an ozone nonattainment area, there will be no emissions of NOx or VOC from the facilities in this application. Nonattainment review is not applicable to this application.

(I) Prevention of Significant Deterioration (PSD) review.

(i) If the proposed facility is located in an attainment area, it shall comply with all applicable requirements in this chapter concerning PSD review.

(ii) If the proposed facility or modification meets or exceeds the applicable greenhouse gases thresholds defined in §116.164 of this title (relating to Prevention of Significant Deterioration Applicability for Greenhouse Gases Sources) then it shall comply with all applicable requirements in this chapter concerning PSD review for sources of greenhouse gases.

PSD review is not applicable to this application since there are no criteria pollutants associated with the facilities in this application.

(J) Air dispersion modeling. Computerized air dispersion modeling may be required by the executive director to determine air quality impacts from a proposed new facility or source modification. In determining whether to issue, or in conducting a review of, a permit application for a shipbuilding or ship repair operation, the commission will not require and may not consider air dispersion modeling results predicting ambient concentrations of non-criteria air contaminants over coastal waters of the state. The commission shall determine compliance with non-criteria ambient air contaminant standards and guidelines at land-based off-property locations.

Site-wide air dispersion modeling of ammonia was conducted as required by the MERA guidelines.

(K) Hazardous air pollutants. Affected sources (as defined in §116.15(1) of this title (relating to Section 112(g) Definitions)) for hazardous air pollutants shall comply with all applicable requirements under Subchapter E of this chapter (relating to Hazardous Air Pollutants: Regulations Governing Constructed or Reconstructed Major Sources (FCAA, §112(g), 40 CFR Part 63)).

This requirement is not applicable as the site is not a major source of HAPS.

(L) Mass cap and trade allowances. If subject to Chapter 101, Subchapter H, Division 3, of this title (relating to Mass Emissions Cap and Trade Program), the proposed facility, group of facilities, or account must obtain allowances to operate.

N/A. The proposed facilities are not subject to the MECT Program.

(b) In order to be granted a permit, amendment, or special permit amendment, the owner or operator must comply with the following notice requirements.

(1) Applications declared administratively complete before September 1, 1999, are subject to the requirements of Division 3 of this subchapter (relating to Public Notification and Comment Procedures).

(2) Applications declared administratively complete on or after September 1, 1999, are subject to the requirements of Chapter 39 of this title (relating to Public Notice) and Chapter 55 of this title (relating to Request for Reconsideration and Contested Case Hearings; Public Comment). Upon request by the owner or operator of a facility which previously has received a permit or special permit from the commission, the executive director or designated representative may exempt the relocation of such facility from the provisions in Chapter 39 of this title if there is no indication that the operation of the facility at the proposed new location will significantly affect ambient air quality and no indication that operation of the facility at the proposed new location will cause a condition of air pollution.

Airgas will comply with the applicable public notice requirements as required.

5.1 State Regulatory Requirements

This section of the application discusses applicability of state air quality regulations.

(1) 30 TAC Chapter 101 - General Air Quality Rules

Airgas will comply with the applicable requirements of Chapter 101.

(2) 30 TAC Chapter 111 – Control of Air Pollution from Visible Emissions and Particulate Matter

The facilities addressed in this application comply with the applicable requirements of Chapter 111. Specifically, Subchapter A, Division 1 is potentially applicable to vents; however, there are no vents capable of emitting visible emissions.

(3) 30 TAC Chapter 112 – Control of Air Pollution from Sulfur Compounds

The requirements of Chapter 112 are not applicable to any facilities associated with this project. The process will not contain any sulfur compounds and there are no combustion sources that fire sulfur-containing fuels.

(4) 30 TAC Chapter 115 – Control of Air Pollution from Volatile Organic Compounds

The requirements of Chapter 115 are not applicable to any facilities associated with this project. The process will not contain any VOCs.

(5) 30 TAC Chapter 117 – Control of Air Pollution from Nitrogen Compounds

The requirements of Chapter 117 are not applicable to any facilities associated with this project. There are no sources that meet the applicable criteria of Chapter 117.

6.0 BACT DISCUSSION

This section discusses BACT for the emission sources being authorized in this permit application.

Fugitive Equipment (EPN: NH3FUG)

Airgas will comply with the 28AVO physical inspection program to detect ammonia leaks and will perform the AVO inspections twice per shift per current Tier 1 BACT.

Aqueous and Anhydrous Ammonia Loading/Unloading (EPNs: AQLOAD, ANLOAD)

Airgas is proposing the following as BACT. Emissions resulting from loading and unloading of ammonia products will be vapor balanced back to the host storage tank. This ensures that the displaced vapors will remain within a closed system to prevent emissions to the atmosphere. The liquid transfer and vapor return systems will utilize hoses rated for anhydrous ammonia service and equipped with vapor tight fittings to prevent leaks. During loading / unloading, AVO inspections will be performed. If a leak is observed during the loading / unloading operation, the operation will be discontinued and corrective action will be initiated. Upon completion of the loading operation, isolation valves will be closed. The remaining liquid in the liquid loading / unloading connector will be bled into enclosed piping and routed into the deionized water tank, then recycled. The only emissions to atmosphere from loading / unloading will be from disconnection of the liquid and vapor balance connectors. Additionally, Airgas claims 100% collection efficiency for displaced vapors due to the loading / unloading operations since the tank trucks that are utilized are pressure rated and comply with the annual leak checking / inspections specified in 49 CFR 180.407. This level of control exceeds the current TCEQ BACT guidance for loading / unloading into tank trucks.

Deionized Water Tank (DITNK)

This storage tank will be equipped with a submerged fill pipe. In addition, uninsulated surfaces exposed to the sun will be white or aluminum in color. This is considered Tier 1 BACT for storage tanks with a capacity less than 25,000 gallons.

Equipment Clearing to Atmosphere (EQCLRATM)

Free liquids within equipment will be drained into closed piping and recycled into the process. Equipment will be water washed and/or evacuated utilizing a vacuum pump or compressor until the vapor concentration of ammonia is 500 ppmv or less before opening to equipment to atmosphere. The evacuated vapors will be routed into a pressure vessel to prevent emissions to the atmosphere. This requirement does not apply to replacement of PRVs in anhydrous ammonia service, which may be replaced while the process is in operation. Emissions from these PRVs will be minimized by isolating the PRV before removal from the process piping. Process equipment / piping may be degassed to the atmosphere if the vapor concentration of ammonia does not exceed 500 ppmv. This level of control exceeds current Tier 1 BACT for clearing of equipment / piping. Current Tier 1 BACT allows equipment clearing to atmosphere at concentrations of 10,000 ppmv or less.

DISTRIBUTION

Texas Commission on Environmental Quality
Initial Permit Application
Aqua Ammonia Production Unit
Airgas Specialty Products Inc.

November 2020

Copy 1: Airgas Specialty Products Inc.
2530 Sever Road, Suite 300
Lawrenceville, GA 30043

Copy 2: Airgas Specialty Products Inc.
11426 W. Fairmont Parkway
La Porte, TX 77571

Copy 3: TCEQ
Air Permits Initial Review Team (MC-161)
12100 Park 35 Circle
Austin, Texas 78753
(Via STEERS which includes regional and local programs)

Copy 4: Wolf Environmental, LLC
12621 Featherwood Drive, Suite 255
Houston, Texas 77034

ACRONYM LIST

The following abbreviations or acronyms may be used in this permit application:

acf	actual cubic feet
acfm	actual cubic feet per minute
BACT	Best Available Control Technology
Btu	British thermal unit(s)
^{o}C	degrees Celsius
CC/AFRC	Combustion Catalyst/Air-Fuel Ratio Controller
CIN	Control Identification Number
CO	Carbon monoxide
CO_2	Carbon dioxide
dscf	dry standard cubic feet
EPN	Emission Point Number
ESL	Effects Screening Level
EPA	Environmental Protection Agency
^{o}F	degrees Fahrenheit
FIN	Facility Identification Number
FOP	Federal Operating Permit
ft	feet
ft^3	cubic feet
g	gram(s)
gal	gallon(s)
GOP	General Operating Permit
gr	grain(s)
H_2	Hydrogen
H_2S	Hydrogen sulfide
HAP	Hazardous Air Pollutant
HRVOC	Highly Reactive Volatile Organic Compound
hp	horsepower
hr	hour(s)
in	inch(es)
K	Kelvin
lb	pounds(s)
m	meter(s)
m^3	cubic meter(s)
min	minute(s)
M	Thousand
MAERT	Maximum Allowable Emission Rate Table
MM	Million
MSS	Planned Maintenance, Startup, and Shutdown

N_2	Nitrogen
N_2O	Nitrous oxide
NA	Not Applicable
NO_x	Nitrogen oxides
NSPS	New Source Performance Standard (40 CFR Part 60)
NSR	New Source Review
PBR	Permit(s) By Rule
PM	Particulate Matter
PM_{10}	Particulate Matter with the mean aerodynamic diameter of 10 microns or less
$PM_{2.5}$	Particulate Matter with mean aerodynamic diameter of 2.5 microns or less
ppmv	parts per million by volume
ppmw	parts per million by weight
PSD	Prevention of Significant Deterioration
psig	pounds square inch gauge
PTE	Potential To Emit
RACT	Reasonably Available Control Technology
R	Rankine
s	second(s)
scf	standard cubic feet
SIP	State Implementation Plan
SOP	Standard Operating Permit
SO_2	Sulfur dioxide
TAC	Texas Administrative Code
TBD	To Be Determined
THC	Total Hydrocarbon
TCEQ	Texas Commission on Environmental Quality
TOC	Total Organic Compound
tonne	metric ton
tpd	ton(s) per day
tpy	ton(s) per year
TSP	Total Suspended Particulate
TVP	Total Vapor Pressure
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
VOHAP	Volatile Organic Hazardous Air Pollutant
VOC	Volatile Organic Compound
VOL	Volatile Organic Liquid
yr	year(s)

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Wolf Environmental, LLC