

FIRST TIME TITLE V AIR PERMIT APPLICATION REVIEW

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|---|--|--|---------------------|
| APPLICANT: GDx Automotive | SITE LOCATION: Salisbury | COUNTY: Rowan | |
| TECHNICAL CONTACT: Eric Mowser | PHONE: 704-638-8724 | RESPONSIBLE OFFICIAL: Stephan A. Lepow | TITLE: VP |
| REVIEW ENGINEER: Gautam Patnaik, P.E. | SIGNATURE: | DATE: 10/3/03 | |
| REGIONAL CONTACT: Jim Westmoreland | REGIONAL OFFICE: Mooresville | SIC CODE: 8383 | |
| APPLICATION NUMBER: 8000145.98A & 8000145.03A | EXISTING PERMIT NUMBER: 08383R02 | NEW PERMIT NUMBER: 08383T03 | |

I. Introduction

The U.S. Environmental Protection Agency (EPA) has given interim approval to North Carolina's Title V operating permits program effective on December 15, 1995. This EPA approval triggered the requirements for Title V facilities to submit permit applications to the Division of Air Quality (DAQ). Title V facilities are required to obtain an operating permit which addresses all applicable regulations under the State Implementation Plan, Federal Implementation Plan, and other provisions of the Clean Air Act (CAA). The Title V Operating Permit will define all of the facility's obligations under the CAA.

This first time Title V Air Permit Application Review intends to convey all pertinent emissions data, rules, policies, and engineering assumptions used to construct the DRAFT Title V operating permit. The primary source of information used to construct the DRAFT permit is the above referenced air permit application.

II. Background Information

The DRAFT Title V operating permit will replace an existing Air Quality Construction and Operation Permit No.08383R02 which was issued on August 16, 2002 and is currently scheduled to expire on December 31, 2005.

Pursuant to 15A NCAC 2Q .0504 GDx Automotive submitted its initial Title V application to the DAQ on 4/13/1998. The application was considered complete for processing on 6/4/2003. The DRAFT permit is required to go to public notice pursuant to 15A NCAC 2Q .0521. This facility is a title V facility as it is considered a major for VOCs emissions.

III. Facility Description

GDx manufactures automotive weather stripping.

IV. Statement of Compliance

The DAQ has reviewed the compliance status of this facility. Based on its latest inspection, the facility was in compliance with most applicable requirements.

V. Summary of Emission Sources and Control Devices

The following table identifies all emission sources and associated control devices for which the Initial Title V Operating Permit is being issued:

| Emission Source ID No. | Emission Source Description | Control Device ID No. | Control Device Description |
|------------------------|--|-----------------------|---|
| ES-1 | <ul style="list-style-type: none"> - 44 thermal vulcanizers consisting of: Ten (10) natural gas vulcanizers (682,992 btu/hr maximum heat input, each), nine (9) natural gas vulcanizers (170,748 btu/hr maximum heat input, each), thirteen (13) infrared (electric) vulcanizers, ten (10) UHF electric/natural gas vulcanizers (170,748 btu/hr maximum heat input, each), and two (2) Liquid Curing Medium (LCM) vulcanizers. - four drying/curing (electric) ovens - one rubber pellet loading system | <p>NA</p> <p>NA</p> | <p>NA</p> <p>NA five (5) bagfilters (26.91 square feet of surface area, each)</p> |
| ES-2 | eight (8) polyvinyl chloride (PVC) extrusion lines including eight (8) extruders, four (4) combining lines, and 12 PVC line glue stations. | NA | NA |
| ES-3 | Thirteen (13) adhesive spray or low friction solvent spray cabinets | NA | NA |
| ES-4 | fifteen (15) varnish spraying cabinets | NA | NA |
| ES-5 | Final finishing department | NA | NA |

VI. Emission Source-by-Source Evaluation

A. (ES-1)

- **44 thermal vulcanizers consisting of: Ten (10) natural gas vulcanizers (682,992 btu/hr maximum heat input, each), nine (9) natural gas vulcanizers (170,748 btu/hr maximum heat input, each), thirteen (13) infrared (electric) vulcanizers, ten (10) UHF electric/natural gas vulcanizers (170,748 btu/hr maximum heat input, each), and two (2) Liquid Curing Medium (LCM) vulcanizers.**
- **four drying/curing (electric) ovens**
- **one rubber pellet loading system**

The following provides a summary of limits and/or standards for the emission source(s) described above. A review of the information in the application was performed to ensure the appropriate limits and associated calculations used to show compliance were correct.

| Regulated Pollutant | Limits/Standards | Applicable Regulation |
|----------------------------|---|------------------------------|
| particulate matter | $E=4.10P^{0.67}$ where E = allowable emission rate in pounds per hour P = process weight in tons per hour | 15A NCAC 2D .0515 |
| sulfur dioxide | 2.3 pounds per million Btu heat input | 15A NCAC 2D .0516 |
| opacity | 20 percent opacity | 15A NCAC 2D .0521 |
| volatile organic compounds | less than 250 tons per year -See Section VII A. a | 15A NCAC 2Q .0317 |
| volatile organic compounds | work practice standards -See Section VII B. | 15A NCAC 2D .0958 (c) |
| volatile organic compounds | Best Available Control Technology (BACT) standards - See Section 2.2 C. | 15A NCAC 2D .0958 (e) |
| toxic air pollutants | State-enforceable only -See Section VII A. b. | 15A NCAC 2D .1100 |
| odors | State-enforceable only - odorous emissions must be controlled -See Section VII A. c. | 15A NCAC 2D .1806 |

a. 2D .0515 “Particulates from Miscellaneous Industrial Processes”

1) Regulation Analysis

The allowable particulate emission limit is calculated by the following equation:

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

where E = allowable emission rate for particulate matter in pounds per hour,
and P = process weight in tons per hour

Emissions of particulate matter are only from the source ES-1, thus, this source is only source subject to this regulation. Table I shows the emission of particulate matter from this source, which is controlled by five bagfilters each with 16.9 square feet of surface area. The applicant stated that the emissions of particulate matter from the sources are derived from test results. Since the before and after controls emission of particulate matter from the source is less than the allowable emission rate of particulate matter, the source is in compliance.

Table I (shows the emissions of particulate matter from various sources)

| Sources ID Nos. | Process rate lbs/hour | PM. Allowable rate lbs/hour | Before controls PM emissions rate lbs /hr | After controls PM emissions rate lbs /hr |
|-----------------|-----------------------|-----------------------------|---|--|
| ES-1 | 14138 | 15.2 | 10.39 | 0.2 |

- Allowable emission of particulate matter based on 2D .0515

PM- Potential emission of particulate matter based on source testing

2) Monitoring/Recordkeeping Requirements

A log of the type and amount of materials introduced into the sources that could cause emissions of particulate matter. Stack testing is not required to ensure compliance with this regulation. However the test method condition is stipulated in the permit in the event that DAQ or EPA finds that due to improper operation violations, etc, source testing is required.

3) Reporting Requirements

A summary report of the monitoring will be submitted to DAQ, by July 30 and January 30 of each year.

b. 2D .0516 “Sulfur Dioxide Emissions from Combustion Sources”

i) Regulation Analysis

Combustion of natural gas takes place at this source, where the emissions are discharged through a stack and is therefore subject to 2D .0516(a). Allowable emissions of sulfur dioxide from shall not exceed 2.3 pounds per million Btu heat input. There is no control device for the control of sulfur dioxide emissions. Since natural gas is used the emissions will always be less than the allowable rate and the source will comply with this regulation while combusting natural gas.

ii) Monitoring/Recordkeeping/Reporting Requirements

Since natural gas is combusted at this source, no monitoring, record keeping nor reporting is required.

c. 2D .0521 “Control of Visible Emissions”

i) Regulation Analysis

Since this source was established after July 1, 1971, it is subject to 2D .0521(d). Per this regulation, visible emissions shall not be more than 20 percent opacity when averaged over a six-minute period except that six-minute periods averaging not more than 87 percent opacity may occur not more than once in any hour nor more than four times in any 24-hour period. The latest inspection report did not cite any opacity exceedances.

ii) Monitoring Requirements

One a month visual observation of the emission stack shall be performed.

iii) Recordkeeping Requirements

The recordkeeping requirements to ensure compliance with the visual emission standard will be followed. In addition, a log will be kept of the daily visible emission stack observation.

iv) Reporting Requirements

Reporting requirements include a summary report of the daily visible emission stack observation results by July 30 and January 30 of each year.

- B.**
- **(ES-2) eight (8) polyvinyl chloride (PVC) extrusion lines including eight (8) extruders, four (4) combining lines, and 12 PVC line glue stations**
 - **(ES-3) thirteen (13) adhesive spray or low friction solvent spray cabinets**
 - **(ES-4) fifteen (15) varnish spraying cabinets**
 - **(ES-5) final finishing department**

The following provides a summary of limits and/or standards for the emission source(s) described above. A review of the information in the application was performed to ensure the appropriate limits and associated calculations used to show compliance were correct.

| Regulated Pollutant | Limits/Standards | Applicable Regulation |
|----------------------------|---|------------------------------|
| sulfur dioxide | 2.3 pounds per million Btu heat input | 15A NCAC 2D .0516 |
| opacity | 20 percent opacity | 15A NCAC 2D .0521 |
| volatile organic compounds | less than 250 tons per year -See Section VII A. .a | 15A NCAC 2D .0530 |
| volatile organic compounds | work practice standards -See Section VII B. | 15A NCAC 2D .0958 (c) |
| volatile organic compounds | Best Available Control Technology (BACT) -See Section VII C. | 15A NCAC 2D .0958 (e) |
| toxic air pollutants | State-enforceable only -See Section VII A. b. | 15A NCAC 2D .1100 |
| odors | State-enforceable only - odorous emissions must be controlled -See Section VII A. c. | 15A NCAC 2D .1806 |

a. 2D .0521 "Control of Visible Emissions"

i) Regulation Analysis

Since these sources was established after July 1, 1971, they are subject to 2D .0521(d). Per this regulation, visible emissions shall not be more than 20 percent opacity when averaged over a six-minute period except that six-minute periods averaging not more than 87 percent opacity may occur not more than once in any hour nor more than four times in any 24-hour period. The latest inspection report did not cite any opacity exceedances.

ii) Monitoring Requirements

One daily visual observations of the emission stacks shall be performed.

iii) Recordkeeping Requirements

The recordkeeping requirements to ensure compliance with the visual emission standard will be followed. In addition, a log will be kept of the daily visible emission stacks observation.

iv) Reporting Requirements

Reporting requirements include a summary report of the daily visible emission stacks observation results by July 30 and January 30 of each year.

VII. Multiple Emission Source Limits:

- A. - (ES-1)
 - **44 thermal vulcanizers consisting of: Ten (10) natural gas vulcanizers (682,992 btu/hr maximum heat input, each), nine (9) natural gas vulcanizers (170,748 btu/hr maximum heat input, each), thirteen (13) infrared (electric) vulcanizers, ten (10) UHF electric/natural gas vulcanizers (170,748 btu/hr maximum heat input, each), and two (2) Liquid Curing Medium (LCM) vulcanizers.**
 - **four drying/curing (electric) ovens**
 - **one rubber pellet loading system with five bagfilters (26.91 square feet of surface area, each)**
 - **(ES-2) eight (8) polyvinyl chloride (PVC) extrusion lines including eight (8) extruders, four (4) combining lines, and 12 PVC line glue stations**
 - **(ES-3) thirteen (13) adhesive spray or low friction solvent spray cabinets**
 - **(ES-4) fifteen (15) varnish spraying cabinets**
 - **(ES-5) final finishing department**

1. Applicable Regulatory Requirements

The following provides a summary of limits and/or standards for the emission source(s) described above. A review of the information in the application was performed to ensure the appropriate limits and associated calculations used to show compliance were correct.

| Regulated Pollutant | Limits/Standards | Applicable Regulation |
|----------------------------|--|------------------------------|
| volatile organic compounds | less than 250 tons per year | 15A NCAC 2D .0530 |
| toxic air pollutants | State-enforceable only | 15A NCAC 2D .1100 |
| odors | State-enforceable only - odorous emissions must be controlled | 15A NCAC 2D .1806 |

a. 2D.0530 "PREVENTION OF SIGNIFICANT DETERIORATION"

i) Regulatory Analysis

In order to avoid applicability of this regulation, the total discharge from the above sources shall

be less than 250 tons of VOCs per year. This limit is incorporated in the new permit.

ii.) Monitoring Requirements

The applicant shall calculate the facility-wide monthly emissions of VOCs using the method stated in the new permit. VOC emissions shall be determined by multiplying the total amount of each type of VOC-containing material consumed during the month by the VOC content of the material. The facility will be in noncompliance with this regulation if this method is not followed.

iii.) Recordkeeping Requirements

Calculations of the facility-wide monthly emissions of VOCs shall be recorded monthly in a logbook and made available to DAQ, upon request. Copies of the monthly emissions log must be kept for a minimum of three years.

iv.) Reporting Requirements

The Permittee shall submit a summary report of monitoring and recordkeeping activities each quarter.

State-enforceable only:

b. 2D .1100: CONTROL OF TOXIC AIR POLLUTANTS

i.) Regulation Analysis

The emissions of these toxic air pollutants do have exceed the Toxic Permit Emission Rates (TPERS). However, the facility has demonstrated compliance with the Ambient Air Levels (AALs), with the emission rates of various TAPs as mentioned in the table below:

| <u>EMISSION SOURCE(S)</u> | <u>TOXIC AIR POLLUTANT(S)</u> | <u>EMISSION LIMIT(S)</u> <u>Lbs/day</u> | <u>EMISSION LIMIT(S)</u> <u>lbs/hr</u> | <u>EMISSION LIMIT(S)</u> <u>lbs/Year</u> |
|---------------------------|-------------------------------|--|---|---|
| Sources (ES-3 and ES-4) | xylene | 2,020 | 84.17 | |
| Source (ES-2) | methyl ethyl ketone | 435.36 | 18.14 | |
| Source (ES-3) | methyl isobutyl ketone | 62.16 | 2.59 | |
| Sources (ES-3 and ES-4) | Toluene | 225.91 | 9.41 | |
| Source (ES-4) | Benzene | - | - | 37.82 |

ii.) Monitoring Requirements

To ensure compliance with the above limits, the amount of xylene, methyl ethyl ketone, methyl isobutyl ketone, and toluene released from all sources shall be determined on a daily basis using a mass balance, as stated in the permit. The amount of benzene released from all sources shall be

determined on an annual basis using a mass balance.

iii.) Recordkeeping Requirements

The amount of product used containing the TAPs shall be recorded, and the amount of TAPs released into the atmosphere will be noted.

iv.) Reporting Requirements

The Permittee shall submit a summary report of monitoring and recordkeeping activities each quarter. The report should also contain the single highest, daily emissions rate of xylene, methyl ethyl ketone, methyl isobutyl ketone, and toluene released on a daily basis, and also the single highest, hourly emission rate for each of the individual TAPs for that particular day. The amount of benzene released on an annual basis shall be reported to the Regional Office, every year.

State-enforceable only:

c. 2D .1806 “CONTROL AND PROHIBITION OF ODOROUS EMISSIONS”

i) Regulatory and Monitoring Requirements

The facility is required to implement management practices, or install and operate odor control equipment, sufficient, to prevent odorous emissions from the facility.

ii.) Recordkeeping and Reporting Requirements

None.

B. - (ES-1)

- **44 thermal vulcanizers consisting of: Ten (10) natural gas vulcanizers (682,992 btu/hr maximum heat input, each), nine (9) natural gas vulcanizers (170,748 btu/hr maximum heat input, each), thirteen (13) infrared (electric) vulcanizers, ten (10) UHF electric/natural gas vulcanizers (170,748 btu/hr maximum heat input, each), and two (2) Liquid Curing Medium (LCM) vulcanizers.**
- **four drying/curing (electric) ovens**
- **(ES-2) eight (8) polyvinyl chloride (PVC) extrusion lines including eight (8) extruders, four (4) combining lines, and 12 PVC line glue stations**
- **(ES-3) thirteen (13) adhesive spray or low friction solvent spray cabinets**
- **(ES-4) fifteen (15) varnish spraying cabinets**
- **(ES-5) final finishing department**

The following provides a summary of limits and/or standards for the emission source(s) described above. A review of the information in the application was performed to ensure the appropriate limits and associated calculations used to show compliance were correct.

| Regulated Pollutant | Limits/Standards | Applicable Regulation |
|----------------------------|-------------------------|------------------------------|
| volatile organic compounds | work practice standards | 15A NCAC 2D .0958 |

a. 2D .0958 “WORK PRACTICES FOR SOURCES OF VOLATILE ORGANIC COMPOUNDS”

i.) Regulatory Analysis

To ensure compliance with this regulation the applicant while using volatile organic compounds (VOC) as solvents, carriers, material processing media, or industrial chemical reactants, or in similar uses that mix, blend, or manufacture volatile organic compounds, or emit volatile organic compounds as a product of chemical reactions, and whose emissions of VOC are greater than 15 pounds per day; shall implement management practices as mentioned in the permit.

ii) Monitoring Requirements

To ensure compliance the Permittee shall, at a minimum, perform a visual inspection once per month of all operations and processes utilizing volatile organic compounds.

iii) Recordkeeping Requirements

The results of the inspections shall be maintained in a logbook and made available to DAQ upon request.

vi) Reporting Requirements

The summary report of the observations shall be submitted to DAQ semi annually.

- C. - **five adhesive spray cabinets (ID No. ES-3) including eight adhesive or low friction solvent spray cabinets**
- **eight varnish spraying cabinets (ID No. ES-4), including four low friction solvent spraying cabinets**

The following provides a summary of limits and/or standards for the emission source(s) described above. A review of the information in the application was performed to ensure the appropriate limits and associated calculations used to show compliance were correct.

| Regulated Pollutant | Limits/Standards | Applicable Regulation |
|----------------------------|--|-----------------------|
| volatile organic compounds | Best Available Control Technology (BACT) | 15A NCAC 2D .0958 |

a. 2D .0958 “WORK PRACTICES FOR SOURCES OF VOLATILE ORGANIC COMPOUNDS”

i) Regulatory Analysis

Historically the BACT (best available control technology) was used to ensure that these sources will comply with now defunct 2D . 0518 (“Miscellaneous Volatile Organic Compound Emissions”) regulation. However, to comply with ambient air quality standard for ozone (15A NCAC 2D .0405), this current regulation (15A NCAC 2D .0958(e)) requires “the owner or operator of a source on which a control device has been installed to comply with 15A NCAC 2D .0518(d) shall continue to maintain and operate the control device.” Thus, failure to use this techniques for the above spray booths shall be deemed to be in noncompliance with 15A NCAC 2D .0958

ii) Monitoring Requirements

The applicant shall maintain record of the hours of operation of the spray booths.

iii) Recordkeeping Requirements

The records of the hours of operation of the spray booths shall be maintained in a logbook and made available to an authorized representative upon request.

vi) Reporting Requirements

The Permittee shall submit a semi-annual summary report of the hours of operation.

VIII. General Conditions

The "General Conditions" section of the Title V Operating Permit lists additional applicable rule requirements that the permittee must adhere to, as with any other permit condition. These requirements in general are common to all Title V facilities. The general conditions include provisions such as annual fee payment, permit renewal and expiration, transfer of ownership or operation, property rights, submission of documents, inspections and entry procedures, reopen for cause, severability, etc.

IX. Regional Office and Applicant's Comments

The Regional Office and the applicant were given an opportunity to comment on the draft permit and their comments are taken into account. The applicant modified the listing of their sources in their facility resulting in application # 8000145.03A. This application listed correctly all the sources that are currently at the facility and a few insignificant activities as per 15A NCAC 2Q .0503(8). This draft permit will undergo the public review, and that the Regional office and the applicant will have that time frame (30 days) to comment on this re-modified draft permit. Since all of the sources added by the application # 8000145.03A are in operation within the facility the new title V permit does not contain a part II (Air Quality Construction and Operation Permit).

X. Public Notice

Pursuant to 15A NCAC 2Q. 0521, a notice of the draft Title V Operating Permit was placed in a newspaper of general circulation in the area where the facility is located. The notice provided for a 30 day comment period, with an opportunity for a public hearing. Copies of the public notice were sent to persons on the Title V mailing list, South Carolina, and EPA.

XI. Recommendations

GDX Automotive, first time Title V application has been reviewed by the DAQ to determine compliance with all procedures and requirements under 15A NCAC 2Q .0500 and 40 CFR Part 70. The DAQ has made a preliminary determination that the facility is complying or will achieve compliance as specified in the draft permit with all applicable requirements. Therefore, the DAQ is proposing to issue the Title V Operating Permit upon completion of the public comment period and the EPA review.