



**NORTH CAROLINA DEPARTMENT OF  
ENVIRONMENT & NATURAL RESOURCES  
DIVISION OF AIR QUALITY**

**PRELIMINARY REVIEW  
OF THE  
TRANSPORTATION FACILITY AIR PERMIT APPLICATION  
AND AMBIENT AIR IMPACT ANALYSIS  
FOR  
PIEDMONT TRIAD INTERNATIONAL AIRPORT  
IN  
GREENSBORO, NORTH CAROLINA  
GUILFORD COUNTY**

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**CONDUCTED BY: Connie J. Horne, Environmental Specialist,  
Air Quality Analysis Branch**

**MARCH 2003**  
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## **A. AIR QUALITY ANALYSIS AND SUMMARY**

On February 4, 2002, the Division of Air Quality (DAQ) received from the Piedmont Triad Airport Authority (PTAA), a transportation facility air permit application and traffic and air impact analyses for expansion of the Piedmont Triad International Airport in Greensboro, NC. Additionally, in February 2003, the DAQ received a revised air quality analysis of the project that was updated to account for the expected change in aircraft and motor vehicle operations due to the effects of the events of September 11, 2001.

The Piedmont Triad International Airport is located west of Greensboro, NC. The airport property is generally bounded by Bryan Boulevard to the North, I-40 to the South and NC 68 to the West. The proposed modifications at the airport include construction, modification or expansion of runways, taxiways and roadways associated with the construction and operation of an air cargo sorting/distribution facility. This first phase of construction is expected to be complete and operational in 2007.

Environmental Management Commission regulation 15A NCAC 2D .0804<sup>1</sup> states, in part:

- (b) Before constructing or modifying any airport facility designed to have at least 100,000 annual aircraft operations, or at least 45 peak-hour aircraft operations (one operation equals one takeoff or one landing), the owner or developer of the airport facility shall apply for and have received a permit as described in 15A NCAC 2Q .0600, and shall comply with all terms and conditions therein.

The number of aircraft operations expected at the Piedmont Triad International Airport exceeds the 100,000 annual aircraft operation threshold, as outlined above. Therefore, a complete air quality impact analysis including dispersion modeling of this facility is required to determine maximum predicted concentrations of Carbon Monoxide (CO) caused by existing operations and proposed expansion of the facility and to demonstrate compliance with the 1-hour and 8-hour National Ambient Air Quality Standards (NAAQS) for CO of 35 ppm and 9 ppm, respectively.

In January of 2002, URS Corporation prepared a Transportation Facility Permit Air Quality Analysis Report<sup>2</sup> containing air quality modeling for opening year 2005 for the proposed Phase 1 expansion of operations at the Piedmont Triad International Airport. The events of September 11, 2001 resulted in a delay of the project and an expected reduction in flight operations. Therefore, in February of 2003, the air quality analysis was reevaluated by URS for an opening year of 2007. A summary of this report follows.

### **Modeling Methodology**

The Federal Aviation Administration's Emissions and Dispersion Modeling System (EDMS)<sup>3</sup> version 4.11 was used to assess the effect of aircraft and vehicular emissions of CO on the air quality within and near the Piedmont Triad International Airport property. Specifically, the EDMS model utilizes the AERMOD dispersion modeling program to determine concentrations of CO from airport operations including point, area and volume sources.

*Sources* - Specific CO emitting sources evaluated in the EDMS program were: aircraft (landing, takeoff,

taxi and idling operations), ground support equipment for the aircraft (ie. baggage tugs, belt loaders and ground power units), and motor vehicles (traveling and idle operations on airport roadways and parking areas and nearby off-airport roadways).

**Receptors** - Twenty-eight (28) receptors were placed on and near the airport property in locations where maximum concentrations of CO from airport operations and vehicular traffic were expected to occur. Receptors were placed along the property boundary of the airport, in the pick-up/drop-off areas and apron areas near the terminals, and off-property in residential and industrial areas surrounding the airport.

**Meteorological Data** - The latest year (1992) of surface and upper air data from the Greensboro Airport was downloaded from WebMET and processed using the EPA AERMET protocol.

**Modeling Results** - All of the previously described source, receptor and meteorological data was input into and processed by the EDMS program to determine the maximum CO concentrations occurring on or near the airport due to the proposed expanded operations associated with the construction and operation of the air cargo sorting/distribution facility. The maximum concentrations of CO are expected to occur on-airport adjacent to the terminal building. Below is a listing of the 28 receptors and the maximum 1-hour and 8-hour CO concentrations as calculated by the EDMS program.

<b>EDMS Modeling Results for 2007</b>			
<b>Receptor #</b>	<b>Receptor Location</b>	<b>1-Hour CO Concentration *</b>	<b>8-hour CO Concentration *</b>
1	Apron area next to terminal gate	<b>31.0</b>	<b>8.9</b>
1_Area	Apron area	19.3	6.4
2	Terminal	20.3	6.2
Upper 2	Terminal – upper roadway	12.8	4.1
3	Terminal	16.9	5.4
Upper 3	Terminal – upper roadway	9.6	3.9
4	Terminal	19.3	6.7
Upper 4	Terminal – upper roadway	9.8	3.8
5	Off Bryan Boulevard	7.1	3.1
6	Northeast of Airport	6.5	2.9
7	East of Airport	19.8	4.5
8	East of Airport off Old Oak Road	17.6	4.5

<b>EDMS Modeling Results for 2007</b>			
<b>Receptor #</b>	<b>Receptor Location</b>	<b>1-Hour CO Concentration *</b>	<b>8-hour CO Concentration *</b>
9	Off Radar Road	11.8	3.6
10	South of Airport off West Market Street	11.4	3.5
11	West of Airport	7.6	3.1
12	Industrial Area northwest of Airport	7.6	2.9
7c	East of Airport off Bryan Boulevard	6.4	2.9
FedEx	Federal Express Area	12.3	4.4
GA	General Aviation Area	9.3	4.2
Hotel	On Airport at Hotel Area	11.3	3.9
Indust 1	Industrial Area Southeast of Airport	6.5	3.1
Indust 2	Industrial Area Southwest of Airport	8.4	3.6
Indust 3	Industrial Area Off West Market Street	7.7	2.9
Res 1	Residential Area North of Airport	6.7	3.0
Res 2	Residential Area North of Airport	7.1	3.1
Res 3	Residential Area North of Airport	7.9	4.1
Res 4	Residential Area Northeast of Airport	10.1	3.7
Res 5	Residential Area Southeast of Airport	12.4	3.9

\* CO Concentrations are in parts per million (ppm) and include background concentrations of 2.7 ppm for the 1-hour and 2.2 ppm for the 8-hour.

As shown in the above table, the maximum 1-hour CO concentration of 31.0 ppm and the maximum 8-hour CO concentration of 8.9 ppm both occur at Receptor 1 located on the tarmac near the terminal gate area. As compared to the 1-hour and 8-hour NAAQS of 35 ppm and 9 ppm, respectively, these concentrations are below the standards. Therefore, the proposed expansion of the Piedmont Triad International Airport, associated parking, aircraft operations, and vehicle movement is not expected to result in carbon monoxide (CO) concentrations that exceed the 1-hour or 8-hour CO National Ambient Air Quality Standards.

## **References**

1. North Carolina Administrative Code, Title 15A, Department of Environment, Health, and Natural Resources, Chapter 2, Environmental Management, Environmental Management Commission, Raleigh, NC, revised July 1, 1996.
2. Transportation Facility Permit Air Quality Analysis for the Piedmont Triad International Airport, Greensboro, North Carolina, URS Corporation, Tampa, FL, January 18, 2002 with revisions February 19, 2003.
3. Emissions and Dispersion Modeling System Version 4.11, CSSI, Washington, DC, January 2003.

## **B. PRELIMINARY DETERMINATION**

Based on the review and analysis of the submitted air permit application, the Division of Air Quality finds that the proposed expansion of the Piedmont Triad International Airport does not:

- (1) interfere with the attainment or maintenance of any ambient air quality standard,
- or
- (2) result in violation of applicable portions of the implementation plan control strategy.

Accordingly, this Division proposes to approve the expansion by granting Air Permit No. **DRAFT**.

March 13, 2003

Mr. Mickie Elmore  
Piedmont Triad Airport Authority  
PO Box 35445  
Greensboro, North Carolina 27425

Subject: Air Permit No. [DRAFT](#)  
Piedmont Triad International Airport  
Guilford County

Dear Mr. Elmore:

In accordance with your application received February 4, 2002, we are forwarding herewith Permit No. [DRAFT](#) for the expansion of the Piedmont Triad International Airport, Greensboro, North Carolina.

If any parts, requirements, or limitations contained in this permit are unacceptable to you, you may request an informal review procedure, pursuant to General Statute 150B-22 and Regulation 15 NCAC 2B .0508(b), through which the permit may be modified by the Director. This request must be submitted in writing to the Director and must identify the specific provisions or issues for which modification is being sought. Unless such a request is made within thirty (30) days following the receipt of this permit, this permit shall become final and binding.

In the alternative, you have the right to request a formal adjudicatory hearing within thirty (30) days following receipt of this permit, identifying the specific issues to be contended. This hearing request must be in the form of a written petition, conforming to Chapter 150B of the North Carolina General Statutes, and filed with the Office of Administrative Hearings, Post Office Drawer 11666, Raleigh, North Carolina 27604. Unless such demand is made, this permit shall be final and binding.

**As a reminder, all new construction of air pollution sources or modifications to the sources contained in this permit must obtain, as required, a permit from this Division. Failure to do so is a violation of General Statute 143-215.108 and may subject the permittee to civil or criminal penalties contained in General Statute 143-215.114.**

Mr. Mickie Elmore  
March 13, 2003  
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This permit shall be effective from [April XX, 2003](#), until [April 1, 2008](#), is nontransferable to future owners and operators, and shall be subject to the conditions and limitations as specified therein.

Sincerely,

Laura S. Butler, P.E.  
Chief

Enclosures

cc: Myron Whitley, WSRO  
Deborah D. Wilson, URS  
Central Files

\Attachments

LSB/cjh

**NORTH CAROLINA ENVIRONMENTAL MANAGEMENT COMMISSION**

**DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES**

**Division of Air Quality**

**AIR PERMIT NO. DRAFT**

Issue Date: [April XX, 2003](#)

Effective Date: [April XX, 2003](#)

Expiration Date: [April 1, 2008](#)

Replaces Permit: [7126](#)

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To construct and for the discharge of air contaminants resulting from mobile source activity into the atmosphere. In accordance with the provisions of Article 21B of Chapter 143, General Statutes of North Carolina as amended, and other applicable Laws, Rules and Regulations,

Piedmont Triad Airport Authority (PTAA)  
Greensboro, North Carolina

is hereby authorized to build the transportation facility sources at the Piedmont Triad International Airport; in accordance with the application received on February 4, 2002, that are identified as Phase 1 and listed below.

- , Construction of an air cargo sorting/distribution facility (approximately 736,000 square feet) and associated employee parking area, air cargo aircraft parking and cargo ramp
- , Construction of a new parallel 9,000 ft runway, high speed exit taxiway, taxiway connector, taxiway bridge and extension of taxiway D in support of the air cargo sorting/distribution facility
- , Roadway modifications to include closure and relocation of a portion of Bryan Boulevard between Airport Center Road and Old Oak Ridge Road, construction of an interchange for Bryan Boulevard and Old Oak Ridge Road, relocation of a portion of Old Oak Ridge Road, and modification of North and South Triad Boulevards to accommodate one-way traffic at the airport
- , Existing and newly constructed parking facilities totaling 15078 spaces and identified as shown in the following table:

<b>Lot#</b>	<b>Parking Lot</b>	<b>Number of Spaces</b>
1	Long-Term Lot	2000
2	Cargo Truck Area for FedEx	250
3	Short-Term Lot	554
4	Garage	2000
5	Overflow Lot	700
6	Rental Car Lots (all)	1650
7	Rental Car Return Lot	258
8	Employee Lot S	410
9	US Air Employee Lot	400
10	Overflow Lots	974
11	Employee Lot N	247
12	FedEx Employee Lots	1250
13	Marriot Hotel Lot	500
14	Control Tower ATCT	68
15	FBO – Piedmont Aviation	193
16	FBO – Atlantic Acro	154
17	Weather Service Lot	17
18	Aviation School Lot	201
19	Fire Station Lot	6
20	Old Terminal Lot	1000
21	Burlington Industries Lot	68
22	TIMCO Lot (US Air Maint.)	1600
23	Cargo Building Lot	225
24	Air Cargo Facility Lot	61
25	Cessna Hangar Lot	66
26	Dobbs	23
27	FSDO	68
28	New Maintenance Building	24
29	VF Hangar	61
30	Emery	50
<b>TOTAL</b>		<b>15078</b>

The Piedmont Triad Airport Authority is hereby further authorized for the discharge of the air contaminants resulting from mobile source activity into the atmosphere at the Piedmont Triad International Airport, Greensboro, North Carolina, Guilford County, in accordance with the application received February 4,

Permit #: DRAFT

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2002 in conformity with the plans, specifications, and other supporting data, all of which Air Permit No. **DRAFT** are filed with the Department of Environment and Natural Resources and are incorporated as part of this Permit.

This permit shall be effective from [April XX, 2003](#), until [April 1, 2008](#), and shall be subject to the following specified conditions and limitations:

1. REPORTS, TEST DATA, MONITORING DATA, NOTIFICATIONS, and REQUESTS for RENEWAL shall be submitted to the: **North Carolina Division of Air Quality, Air Quality Analysis Branch, 1641 Mail Service Center, Raleigh, NC 27699-1641.**
2. PERMIT RENEWAL REQUIREMENT - If construction of the transportation facility has not been commenced and/or completed by the expiration date of this permit and the Permittee still intends to construct, the Permittee shall request extension of this permit by letter at least ninety (90) days prior to the Permit expiration date. The letter should include the permit number, the reason(s) for the extension request, a description of any modifications to the original plans, and state the new completion date. This package should be sent to the address stated in item#1 above. DAQ may require additional information, level of service analyses and air quality modeling as well as a renewal fee for the extension request to be granted.
3. REPORTING REQUIREMENT - Any changes in the information submitted in the application regarding facility emissions that would result in previously unpermitted, new, or increased emissions must be reported to the DAQ/AQAB. If appropriate, modifications to the permit may then be made by the DAQ/AQAB to reflect any necessary changes in the permit conditions. In no case are any new or increased emissions allowed that will cause violation of the emission limitations specified herein.
4. This Permit is subject to revocation or modification by this Division upon a determination that information contained in the application or presented in support thereof is incorrect, conditions under which this Permit was granted have changed, or violations of conditions contained in this Permit have occurred.
5. This Permit is nontransferable by the Permittee. Future owners must obtain a new air permit from the Division of Air Quality.
6. The issuance of this permit in no way absolves the permittee of liability for any potential civil penalties which may be assessed for violations of State law which occurred prior to the effective date of this permit.
7. This Permit does not relieve the Permittee of the responsibility of complying with all applicable requirements of any Federal, State, or Local water quality or land quality control authority.
8. The owner of the facility shall submit to the Division of Air Quality, in such form and detail and at

Permit #: DRAFT

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such time as may be required by the Environmental Management Commission or its

administrative staff, ambient air quality monitoring data, actual traffic counts, and other such information deemed necessary.

9. A violation of any term or condition of this Permit shall subject the Permittee to enforcement pursuant to North Carolina General Statute 143-215.114, including assessment of civil penalties.
10. Pursuant to G.S. 143-215.3 (a)(2), no person shall refuse entry or access to any authorized representative of the Division of Air Quality who requests entry or access for purposes of inspection, and who presents appropriate credentials, nor shall any person obstruct, hamper, or interfere with any such representative while in the process of carrying out his official duties. Refusal of entry or access may constitute grounds for permit revocation and assessment of civil penalties.

Permit issued this XX day of April 2003.

NORTH CAROLINA ENVIRONMENTAL MANAGEMENT COMMISSION

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Laura S. Butler, P.E., Chief  
Division of Air Quality  
By Authority of the Environmental Management Commission

Air Permit No. DRAFT

March 13, 2003

Ms. Valerie McNeil  
Greensboro News and Record  
Classified Department  
PO Box 20848  
Greensboro, NC 27402

Subject:       Publication of Legal Notice  
                  Piedmont Triad International Airport  
                  Parking Facilities  
                  Guilford County

Dear Ms. McNeil:

Please publish the attached Public Notice in your newspaper on or before March 18, 2003.

Publication charges for the Notice will be paid by this Office upon receipt of your invoice and affidavit of publication. Please send the invoice and affidavit, in triplicate, to the following:

Division of Air Quality  
Budget Office  
1641 Mail Service Center  
Raleigh, North Carolina 27699-1641

If you have any questions, please contact Connie J. Horne at (919) 715-6268.

Sincerely,

Laura S. Butler, P.E.

Chief

\\Attachments  
LSB/cjh

**STATE OF NORTH CAROLINA  
ENVIRONMENTAL MANAGEMENT COMMISSION  
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES  
RALEIGH, NORTH CAROLINA  
NOTICE OF OPPORTUNITY FOR PUBLIC COMMENT**

**NOTICE IS HEREBY GIVEN**, of the opportunity for public comment on all information and the accompanying air quality analysis relating to the expansion of the Piedmont Triad International Airport in Greensboro, Guilford County, North Carolina. The airport property is located west of Greensboro and is generally bounded by Bryan Boulevard to the North, I-40 to the South and NC 68 to the West. The proposed modifications at the airport include construction, modification or expansion of runways, taxiways and roadways associated with the construction and operation of an air cargo sorting/distribution facility. This first phase of construction is expected to be complete and operational during 2007.

This notice is being served pursuant to the “North Carolina Plan for Controlling the Effects of Transportation Facilities on Air Quality” and as required by 15A NCAC 2D .0800-Transportation facilities. A transportation facility is defined as any facility that may not directly emit air pollutants but may induce development or activities that will result in emissions of air pollutants. Examples of transportation facilities include shopping centers, sports complexes, drive-in theaters, parking lots and garages, highways, and any other facilities that will result in increased emissions from motor vehicles or stationary sources. The traffic and air quality impact analyses for the project indicate that the proposed expansion should not cause the contravention of applicable carbon monoxide standards nor result in violation of applicable portions of the implementation control strategy. Accordingly, the Division of Air Quality proposes to issue an air permit for the expansion of activities at the Piedmont Triad International Airport.

Interested persons are invited to review these materials and to submit written comments on this proposal. To be considered, written comments must be received within 30 days of the date of this notice. Any person requesting a public hearing should submit a written request with a statement supporting the need for such a hearing including an indication of interest in the Piedmont Triad International Airport expansion project and a

brief summary of the information intended to be offered at such hearing. Requests for public hearing should be submitted within 15 days of this notice.

A copy of the proposed air permit, the permit application, and air quality analysis can be reviewed during normal working hours at the:

Air Quality Division	Or	Greensboro Public Library
2728 Capital Boulevard		Reference Department
Raleigh, NC 27604		201 North Green Street
Telephone (919) 715-6268		Greensboro, NC 27420

Written comments or requests should be submitted to Mr. B. Keith Overcash, PE, Division of Air Quality, 1641 Mail Service Center, Raleigh, North Carolina 27699-1641, Attention: Air Permits Section.

After reviewing any comments received during the comment period, a final decision will be made on the application of Piedmont Triad International Airport.

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Laura S. Butler, P.E., Chief  
Division of Air Quality

LSB/cjh

March 13, 2003

Mr. Mickie Elmore  
Piedmont Triad Airport Authority  
PO Box 35445  
Greensboro, North Carolina 27425

Subject: Air Permit No. [DRAFT](#)  
Piedmont Triad International Airport  
Guilford County

Dear Mr. Elmore:

Enclosed you will find a copy of the Division of Air Quality review of the Piedmont Triad International Airport air quality permit application and the draft transportation facility air quality permit.

If you have any questions please contact Connie J. Horne at (919) 715-6268.

Sincerely,

Laura S. Butler, P.E.  
Chief

cc: Myron Whitley, WSRO  
Connie J. Horne  
Deborah D. Wilson, URS

\Attachments

LSB/cjh

March 13, 2003

Ms. Leby Lamb  
Reference Department  
Greensboro Public Library  
201 North Green Street  
Greensboro, NC 27420

Subject: Placement of Document for Public Review  
Piedmont Triad International Airport  
Parking Facilities

Dear Ms. Lamb:

This office is required by North Carolina Regulation to make certain that air permit applications are available for public review and comment. Please maintain the enclosed document(s) in your library until April 20, 2003, allowing access by the public in any manner you see fit. You may then dispose of the document(s).

If for any reason you are unable to comply with this request, please advise Connie J. Horne of this office at (919) 715-6268, so that we may locate an alternate site for public inspection of this document.

Thank you very much for your assistance. If there are any questions please feel free to contact Connie J. Horne at the above number.

Sincerely,

Laura S. Butler, P.E.  
Chief

\Attachments

LSB/cjh