

New Jersey Department of
Environmental Protection
Division of Air Quality

GUIDANCE DOCUMENT

2010 Emission Statement Report of Actual Emissions



Important: Please read the entire document before beginning the process to prepare your emission statement.

State of New Jersey

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DISCLAIMER

This Guidance Document is designed only to assist in complying with New Jersey's Emission Statement rule (N.J.A.C. 7:27-21 et seq.). The Guidance Document has not been promulgated by the Department as a rule. Therefore, it does not have a rule's legal force and effect. If any difference is found between the Guidance Document and the Emission Statement rule, the rule in all cases and interpretations takes precedence over this guidance document.

Furthermore, the Department is under no legal obligation to notify persons of their legal responsibility to comply with the Emission Statement rule (other than the legal obligations of the Administrative Procedures Act). Any mailing of documents done by the Department is done *strictly* as a courtesy.

NJDEP EMISSION STATEMENT ADDRESS AND PHONE NUMBER

Please send all Emission Statement correspondence to the following address:

by US Postal Service:

**Emission Statement Program
NJDEP - Bureau of Air Quality Planning
Mail Code 401-07H
P.O. Box 420
Trenton, NJ 08625-0420**

by Private Carrier:

**Emission Statement Program
NJDEP - Bureau of Air Quality Planning
401 East State Street, 7th Floor
Trenton, NJ 08608-1501**

Telephone: (609) 984-5483

Fax: (609) 777-1343

E-mail: Emis_Statement@DEP.STATE.NJ.US

Assistance to complete the Emission Statement is available by e-mail or telephone between the hours of 9:00 a.m. and 4:00 p.m. - Monday to Friday

Please try to call between these hours as staff uses the hours between 8:00 and 9:00a.m. and 4:00 and 5:00 p.m. to return phone calls. All calls will be taken on a first come, first serve basis and all calls will be returned. We ask for your patience during peak times and when many are calling with questions. The Department is committed to returning **all** phone calls promptly.

The RADIUS software and this Guidance Document are also available for downloading at the Department's website:

<http://www.state.nj.us/dep/aqm/es/emstatpg.html>

ACKNOWLEDGMENTS

The New Jersey Department of Environmental Protection (the Department) acknowledges all who have participated in the development of the Emission Statement Program in New Jersey. In particular, the Department would like to thank the many participants of the working groups, especially the Emission Statement Workgroup and the participants of the RADIUS pilot program. The efforts of these groups led to a more comprehensive Emission Statement guidance document and the improved RADIUS data-entry software for Emission Statement reporting. Department staff and management look forward to your continued support and guidance in the future. The Department also thanks the many individuals within the United States Environmental Protection Agency's Office of Air Quality Planning and Standards and at Region II as well as the staff within the Department for their continued help, patience and guidance.

TABLE OF CONTENTS

INTRODUCTION.....	1
EMISSION STATEMENT PROCESSING.....	2
REQUEST FOR COMMENTS.....	4
WHAT’S NEW WITH THE 2010 EMISSION STATEMENT PROGRAM.....	4
GENERAL INSTRUCTIONS.....	7
Emission Statement Applicability.....	7
Request Of Non-Applicability.....	8
Due Date.....	10
Request For Extensions.....	10
SOURCES AND AIR CONTAMINANTS THAT DO NOT NEED TO BE REPORTED IN THE EMISSION STATEMENT.....	11
Non-Photoreactive Organic Compounds Do Not Need To Be Reported.....	11
The Emissions From The Combustion Of Fuel Within Off-Highway Sources Do Not Need To Be Reported.....	15
Other Sources Not To Include In The Emission Statement.....	15
Differentiating Fugitive Emissions and Insignificant Sources.....	15
Differentiating Air Contaminants.....	16
CERTIFICATION.....	16
ELECTRONIC SUBMISSION OF DATA.....	17
DEPARTMENT INTERNET WEBSITE.....	18
HIERARCHY OF EMISSIONS REPORTING.....	19
APPORTIONING EMISSIONS WHEN A CONTINUOUS EMISSION MONITOR, MASS BALANCE, OR CERTAIN STACK TESTING METHODS WERE PERFORMED.....	21
General Instructions.....	22
Suggested Methods and Examples.....	22
CONFIDENTIALITY OF EMISSIONS DATA.....	23
ASSISTANCE.....	24
REPORTING YEAR OF EMISSIONS.....	24
EMISSION STATEMENT CORRECTIONS.....	25
CALCULATIONS.....	25
Calculations That Must Be Made By Facilities.....	26
Calculations That Can Be Performed By RADIUS.....	27
REPORTING LEAD EMISSIONS.....	27
SMALL SOURCE REPORTING.....	27
USE OF SCIENTIFIC NOTATION AND SIGNIFICANT DIGITS.....	28
ESTIMATING THE OVERALL EFFICIENCY OF EMISSION CONTROL DEVICES.....	29

Operating Time	29
Capture Efficiency	29
Control Devices in Series	29
Control Devices in Parallel	30
Removal Efficiency.....	30
Overall Control Efficiency.....	30
Check Box for Design Efficiency.....	31
REPORTING OF UNUSUAL EMISSION RELEASES OR UPSETS	32
PERMIT AMENDMENTS AND ALTERATIONS.....	32
ENFORCEABILITY	32
OPERATING PERMIT FEES	33
SPECIFIC GUIDANCE FOR EMISSION STATEMENT REPORTING	34
GETTING STARTED.....	34
RADIUS REPORTING.....	34
New Users of RADIUS	35
Repeat Filers of Emission Statements.....	35
FACILITY INFORMATION SCREENS	35
Facility Profile (General).....	35
Facility Profile (Planning)	38
Non-Source Fugitive Emissions.....	39
Insignificant Source Emissions	40
Equipment Inventory	41
Control Device Inventory	42
Emission Point Inventory	42
Emission Unit/Batch Process Inventory	43
Emission Units	44
Batch Process	46
Subject Item Group Inventory	50
EMISSION REPORTING FORM	51
Emission Statement	51
Subject Item: FG (Non-Source Fugitive)	51
Subject Item: IS (Insignificant Source)	53
Subject Item: U (Emission Unit)	56
Subject Item: BP (Batch Process).....	58
Subject Item: GR (Group).....	59
Subject Item: FC (Facility)	59
ADMINISTRATIVE CHECK.....	60
Fixing Errors, Notes, and Warnings from the Administrative Check	60
PREPARING EMISSION STATEMENT FOR SUBMITTAL.....	61
NOTES	62

APPENDIX

A. Glossary	65
B. Functions In RADIUS.....	75
C. Bibliography Of Available Methods To Calculate Or Estimate Emissions Of Air Contaminants	78
D. Laboratory Hoods - Available Estimating Methods	82
E. Lead Emission Factors	85
F. Preferred Method For Combining Equipment Into An Emission Unit.....	88
G. PIN Code Request Form For RADIUS Submittal	91
H. Certification Form And Instructions	94
I. Essential Fields For Emission Statement.....	97
J. Emission Statement Comment Form	100
K. Expanded Contaminant List.....	102

INTRODUCTION

As in many other states, citizens of New Jersey are exposed to unhealthful air quality. The National Ambient Air Quality Standards and the New Jersey Ambient Air Quality Standards define the health and welfare standards. In New Jersey, the Department of Environmental Protection monitors the ambient air quality continuously, 24 hours a day, and 365 days a year. The monitors throughout the state are the basis for determining compliance with the ambient air quality standards. Unhealthful levels of ground level ozone (O₃) have been recorded in New Jersey, therefore, the entire state has been designated as not in attainment of the ozone health standard. Most of the state (18 out of 21 counties) is classified as in severe non-attainment of the ozone health standard. Some areas of the state are designated as not in attainment of the carbon monoxide (CO) and sulfur dioxide (SO₂) health standards. Carbon monoxide air quality is now considered to be meeting the health standard and the state must continue to maintain these levels.

The Federal Clean Air Act requires that states with designated ozone non-attainment areas gather Emission Statement data from sources of volatile organic compounds (VOC) and oxides of nitrogen (NO_x) beginning in 1992 (reporting in 1993). These two air contaminants react in the presence of sunlight to form ozone in the lower atmosphere, the troposphere, where it affects human health. Carbon monoxide by itself affects human health and elevated levels tend to occur primarily in the winter months. The United States Environmental Protection Agency (USEPA), therefore, requires the State of New Jersey to report the emissions from major sources annually. The Act also requires the state to periodically compile and report a comprehensive, accurate, and current inventory of all air contaminant sources in the state. The Emission Statement rule (N.J.A.C. 7:27-21) establishes requirements for the annual reporting of air contaminant emissions from stationary sources allowing the state to meet these requirements. The air contaminants required to be reported in the Emission Statement rule are carbon monoxide (CO), sulfur dioxide (SO₂), ammonia (NH₃), total suspended particulate matter (TSP), respirable particulate matter (PM₁₀ and PM_{2.5}), lead (Pb), volatile organic compounds (VOC), oxides of nitrogen (NO_x), carbon dioxide (CO₂), methane (CH₄) and the 36 toxic air pollutants (TAP's).

Emission Statements are intended to help the state agencies in their reporting and analysis of emissions into the outdoor air. All emission estimates reported on Emission Statements will be used in tracking the state's progress toward meeting the mandatory emission reduction targets specified as a percentage reduction from the 1990 base year inventory. This tracking will help to monitor the progress that areas make toward attainment of the ozone and carbon monoxide National Ambient Air Quality Standard and will be used as an indicator to measure the state's progress in maintaining a healthy environment.

The emissions data from the Emission Statement program provides an impact indicator of emissions on the ambient air quality from the stationary sources in New Jersey. The emissions data is also used as the basis of the state inventory for New Jersey's State Implementation Plan (SIP).

This Guidance Document and the RADIUS software are intended to cover all reporting situations that may arise at your facility. You are encouraged to read this Guidance Document to assist you in completing the Emission Statement using the RADIUS software.

The **Appendix** contains useful information such as the glossary of terms and methods for calculating the potential to emit for several types of sources.

EMISSION STATEMENT PROCESSING

Each year, the facilities required to report must complete, certify, and submit an Emission Statement to the Department. It is the **facility's** obligation to contact the Department electronically or in writing to obtain the reporting software, the guidance document, or any other material necessary for Emission Statement reporting. It is also the obligation of the facility to find out if it is required to comply with the Emission Statement rule. The Department will not accept any responsibility for any person's failure to provide a complete and certified Emission Statement by the reporting date. The address and telephone number for requesting the Emission Statement reporting materials is on the second page from the cover of this document.

PLEASE NOTE. **The Department is under *no* obligation to provide computer data entry diskettes a facility, to calculate emissions, to do any mailing to a facility, or to notify them of their obligation to complete an Emission Statement. Any mailings done by the Department are done strictly as a courtesy to help reporting and to enhance compliance with the rule.**

Also, the Emission Statement rule clearly states that “Acceptance or receipt of an Emission Statement by the Department does not constitute the Department’s acceptance of the truth, accuracy, or completeness of the Emission Statement. The Department’s failure to act on the information contained in an Emission Statement at the time of its receipt does not bar the Department from any future action based on that information” (N.J.A.C. 7:27-21.3(g)). The Emission Statement rule in its entirety specifies the contents of an Emission Statement. The Emission Statement forms mirror the requirements of the Emission Statement rule and any missing data in a submittal of an Emission Statement may result in a finding of an incomplete submittal.

The Department accepts no responsibility for the completeness, accuracy, or truth of the information provided on an Emission Statement. Any calculations or estimations of emissions made by the Department based on this information would be in error if the data submitted by the facility should prove to be in error. The Department has not attempted in most cases to verify the data submitted through an inspection or records search. Therefore, any emission estimate made by the Department (or made by using the computer tools provided by the Department) is based solely upon information supplied by the facility. Therefore, the accuracy of all information remains the sole responsibility of the facility.

Facilities are required to submit an Emission Statement to the Department by May 15 of each year for the previous emission year. For example, emissions that occurred in calendar year 2009 must be reported by May 15, 2010. Once the emissions data are received, the Department will confirm that the Certification Form was completed (see **Certification** section of this document for further discussion). If the Certification Form is missing or incomplete, the Department may return the Emission Statement to the facility for completion. Failure to provide a properly certified Emission Statement may result in the issuance of a Civil Administrative Penalty. If the Certification

Form is complete, the Department will import the RADIUS emissions data into its database. The electronic data is formatted by using the "Submit" tool in RADIUS to prepare the Emission Statement for submittal. This tool also performs an administrative check to ensure the administrative completeness of the data before the Emission Statement can be submitted to the Department.

The facility may be contacted by the Department to resolve any discrepancies related to the completeness of the emissions data. Typically, these include missing or blank fields on reporting screens in RADIUS on the Emission Statement. **Appendix I** lists the essential fields that should be entered to have the Emission Statement considered complete. If the Department is unable to resolve any discrepancies, the facility's name will be forwarded to the Department's compliance division to obtain the needed information. The name of any person failing to meet the May 15 deadline (or the appropriate extension date) will also be sent to the Department's compliance division. Please also see "Enforceability" in the **General Instructions** section of this document.

Once the Department has determined an Emission Statement as administratively complete, based upon the information submitted, the Department may review the contents to ensure that consistently accurate data are being provided. A facility may be asked to confirm that the contents or information provided were according to this Guidance Document, or confirm that certain common emissions or pieces of equipment are not present at the facility, or be asked to provide supportive information to support the estimate of emissions. An on-site inspection may occur or a letter may be sent, instead of an on-site inspection, to ascertain compliance with the reporting and certification requirements of the Emission Statement rule. Facilities are reminded that a copy of the Emission Statement and any record of justification for the estimates provided by the Emission Statement must be kept on-site for a period of five years after submittal of the Emission Statement.

Once the emissions data are found to be complete to the best knowledge of the Department and the Department has assured the accuracy of the data entry of the emissions data stored in its database, the data will be used for measuring the progress of New Jersey's State Implementation Plans or for the development of new statewide control strategies for air contaminants contributing to unhealthful levels of air pollutants in New Jersey's air. Trends in the release of air contaminants are developed for use in analyzing progress towards statewide goals.

Several newer initiatives, fostering environmental protection efforts in New Jersey, highlighted the need for a comprehensive and accurate inventory of air contaminants. The Department's strategic plan and the National Environmental Performance Partnership were created to shift the indicators of environmental performance to environmentally based indices. Emission Statement data is used to show progress towards making statewide reductions in air contaminants that contribute to New Jersey's air quality.

The data will also be used for Title V fee purposes. Title V facilities should expect an estimated invoice based on the data submitted within their prior years Emission Statement in December of the year in which the Emission Statement was due. If an Emission Statement is not submitted by a Title V facility, then facilities are required by law (N.J.A.C. 7:27-22, et. seq.) to base their Title V fee upon their potential emissions rather than the actual emissions reported in their Emission Statement.

Finally, the data will be made publicly available and reported to the USEPA national database, National Emissions Inventory (NEI). This database is useful for federal and regional planning agencies interested in national trends and information. Much of the information required by New Jersey's Emission Statement program is required by the federal NEI computer system.

REQUEST FOR COMMENTS

The goal of the program is to strive for the least complicated and most efficient reporting process possible to obtain the most accurate assessment of air contaminant emissions in New Jersey. Therefore, the Department is soliciting comments from the regulated community on this Guidance Document, the RADIUS software, and the assistance or support provided by the Department. This is done to identify areas for improvement and to identify areas where the program was successful as well. Please take the time to complete the "Request for Comments" form at the back of this document in **Appendix J**. Specific details would be especially helpful. The form may be returned with the Emission Statement submittal or separately. The Department is suggesting that a contact person be identified on the form in case a comment requires further clarification but they can be made anonymously. Many changes have been made in the past to the Department's program, regulations, and guidance based upon your comments. For example, because of your comments, the Department has created a personal computer program to help facilities by allowing data to be reported electronically on a diskette rather than on paper. Because of the positive reaction from the use of this method over the past five years, the Department is now requiring that all reporting be conducted electronically. The Department is committed to continue this practice of cooperation and assistance.

WHAT'S NEW WITH THE 2010 EMISSION STATEMENT PROGRAM

The RADIUS software was introduced to the regulated community for the reporting of the 1999 Emission Statement. In 2008, there was 100% compliance with the use of Radius electronic Emission Statement submittal. For that reason, this Guidance Document will focus on the reporting of Emission Statements using the RADIUS software.

The owner or operator of any VOC stationary storage tank with a floating roof is required to report roof landing emissions in a separate operating scenario(s). If a separate operating scenario is not permitted in a preconstruction permit or operating permit, one must be created for the tank in question.

Through the cooperative efforts of the Emission Statement Workgroup and the Department, enhancements were incorporated into RADIUS in order to make electronic reporting easier than before. These enhancements consist of the following:

- 1) Capability of accommodating the reporting of the expanded contaminant list, i.e. TAP's, GHG's (greenhouse gases – CO₂ and CH₄), NH₃ and PM_{2.5}. For 2003 emission year, this expanded reporting is limited to Title V facilities (Major). Non-Title V facilities (Minor) are required to report the expanded contaminant list for TAP's only beginning with emission year of 2005. See Appendix K for the expanded contaminant list that

requires reporting in Emission Statements. All TAP's and GHG's can be reported at the facility wide level only. NH₃ and PM_{2.5} must be reported at the source operation level, which are then summed into the facility wide level. **Please remember that PM₁₀ and PM_{2.5} have to include the sum of the filterables and the condensables.** Often, emission factors estimate filterables and condensables separately. TSP should include only filterable emissions, to agree with most current stack test protocols.

- 2) Heading of "Lbs/Yr for TAP's only" and "1000 Tons/Yr for CO₂ only" were added on the Emissions screen. These headings were added because TAP's usually have a lesser reporting amount compared to CO or NO_x. On the other hand, CO₂ has a greater reporting amount compared to CO and NO_x.
- 3) A new column has been added to the Emissions screen to record the NO_x emissions for the time period of 5/1/09-9/30/09 in units of tons/season.
- 4) NAICS (North American Industry Classification System) is required. This data is entered in the Facility Profile (General) screen in lieu of the primary and secondary SIC codes. The webpage at <http://www.census.gov/eos/www/naics/> is available for you to convert SIC to NAICS.

All 2009 Air Emission Statements must be reported in and submitted using the latest version of RADIUS. (v.3.5). Changes regarding this latest version are listed below as well on the Department's website.

Changes with RADIUS

Updates to Administrative Check Screen

RADIUS 3.5 (introduced in early 2010) contains an enhanced administrative check. The following new items are now flagged as "errors" and must be corrected prior to submitting the emission statement:

- Missing North American Industry Classification (NAICS) code in the Facility Profile (General) screen;
- Missing NO_x emissions in the "tons/season" columns of the Emission Statement screen;
- SCC codes fewer than four levels of description or beginning with the letter "A";
- The sum of the Quarterly Throughput values in the Emission Statement, General tab, does not equal exactly 100%; and
- All fields in certain Source Details screens (accessed via Emission Statement screen, Emissions tab, Source Details button) not completed, and all of the following are true:
 - Operating scenario NJID > 0;
 - Equipment for the operating scenario is for a significant combustion source;
 - None of the following boxes are checked off in the Emission Statement screen,

General tab: Source did not operate, This source No Longer Exists (Marked for Deletion); or This source Has No Reportable Emissions for 2009 *once* the operating scenario has become active.

Calculating NOx Tons/Season Emissions for Batch Process

RADIUS 3.5 automatically calculates a value for the NOx (Total) Tons/season fields for Batch Processes. This value is calculated by multiplying the currently calculated NOx annual total by 5/12, for the five months May through September.

Changes to Quarterly Throughput Fields

The following features related to the Quarterly Throughput fields (located in the Emission Statement screen, General tab) are changed in RADIUS 3.5

- Decimal values can no longer be entered into these fields (decimal values can continue to be displayed in old documents, but never entered in new documents);
- If Did Not Operate checkbox is checked off, any values in these fields will be erased, and the fields themselves will be disabled;
- Enhanced validation on these fields ensures that the sum of the values Q1 + Q2 + Q3 + Q4 = 100% upon save/exit; and
- Generating a new emission statement document using any of the following functions will transfer integer values into these fields: File/Save As, Tools/Merge Applications, Tools/Convert Permit Application, and Tools/Emission Statement/Save As With Different Year. This means that non-integer values will have the decimals trimmed (not rounded) so that an integer is loaded into the new document. These quarterly integers may have to be manually adjusted to get the best equation having a sum of 100%.

Changes To Operating Time Field

RADIUS 3.5 has new data validation in the 'Operating Time/Hours' column for the 'Entire Year of <year>' row. This field is located in the Emission Statement screen, Process tab. Specifically, only integer values from 0 to 8760 will be allowed in this field.

NAICS Field (Enhanced Data Validation)

RADIUS 3.5 has enhanced data validation associated with the NAICS field in the Facility Profile (General) screen.

RADIUS will delete invalid NAICS codes from a file if any of the following commands are used: File\Save As, Tools\Merge Applications, Tools\Convert Permit Application, and Tools\Emission Statement\Save As With A Different Year

The Emission Statement program requires facilities to supply the NAICS code for the facility. Failure to provide this data will cause an error in the Administrative Check (see Item 1, above).

The Air Permitting program does not require completion of the NAICS field, but the enhanced data validation described above applies to permit applications as well.

Removal of Primary and Secondary SIC Fields

The Standard Industrial Classification (SIC) system has been replaced by the North American Industry Classification System (NAICS). Accordingly, the Primary and Secondary Standard Industrial Classification (SIC) fields from the Facility Profile (General) screen of RADIUS 3.5 have been deleted.

SCC Fields (Enhanced Data Validation)

RADIUS 3.5 has enhanced data validation associated with the Source Classification Code (SCC) field in the Emission Unit/Batch Process Inventory screen (Emission Unit Operating Scenario and BPOS Steps tabs). Users entering an SCC code must now enter the full 4-level SCC code in that field. 1-, 2-, and 3- level SCC codes are considered invalid data and will not be saved. Please visit <http://www.state.nj.us/dep/aqm/es/scc.pdf> for a complete list of valid SCC codes.

RADIUS will delete invalid SCC codes from a file if any of the following commands are used: File\Save As, Tools\Merge Applications, Tools\Convert Permit Application, and Tools\Emission Statement\Save As With A Different Year.

The Emission Statement program requires facilities to supply at least one SCC value for each Operating Scenario/BPOS Step. Failure to provide this data will cause an error in the Administrative Check.

The Air Permitting program does not require completion of the SCC fields, but the enhanced data validation described above applies to permit applications as well. Users supplying SCC data must ensure that the full 4-level code is provided.

GENERAL INSTRUCTIONS

This section of the document describes the Emission Statement program and provides procedures for reporting the Emission Statement in RADIUS.

Emission Statement Applicability

For the Emission Statement submittal, the New Jersey Department of Environmental Protection requires emission data from all facilities that emit or have the Potential to Emit greater

than or equal to the following thresholds:

- 5 tons per year of Pb
- 10 tons per year of VOC
- 25 tons per year of NO_x
- 100 tons per year of any of the following – CO, NH₃, PM_{2.5}, PM₁₀, SO₂, or TSP

A facility's **Potential to Emit** is determined for each air contaminant by totaling the following:

- All allowable emissions from **permitted** sources;
- The emissions from all **non-permitted** sources operating at maximum capacity and assuming that the source operates for 8,760 hours per year; and
- All maximum **fugitive** emissions.

Please also see the definition of "Potential to Emit" in **Appendix A**.

Table 1 specifies the air contaminants that need to be reported when the Potential to Emit is equal to or greater than the thresholds of the indicated air contaminant. Generally, a facility is required to report the emissions of all air contaminants and not just the air contaminant that exceeded the threshold. The facility must report emission information for all nine air contaminants listed in **Table 1** unless only the VOC threshold has been exceeded. In the case where only the VOC threshold was exceeded, an additional factor will decide if the facility must report all seven categories or may report fewer categories. This factor is whether the facility has the Potential to Emit 25 tons per year, or greater, of VOC. If the facility's Potential to Emit VOC is 25 tons per year or greater, then all seven categories of air contaminants must be reported. However, if the facility's Potential to Emit VOC is greater than or equal to 10 tons per year, but less than 25 tons per year, then the facility is only required to report the emissions of VOC, NO_x and CO.

Table 1: Reporting Requirements

Air Contaminant(s)	"Potential to Emit" Threshold (in tons per year)	Need to Report
VOC	≥ 10 and < 25	VOC, NO _x , CO
NO _x or VOC	≥ 25	All Contaminants
CO, SO ₂ , NH ₃ , PM _{2.5} , PM ₁₀ , or TSP	≥ 100	All Contaminants
Pb	≥ 5	All Contaminants

Request of Non-Applicability

If a facility reported through the Emission Statement rule in a prior year or was sent a reporting package for this rule by the Department and now believes it is *not* subject to Emission Statement reporting because the "Potential to Emit" from the facility is below **all** reporting thresholds for **all** air contaminants, the Responsible Official of the facility is required to submit a Notice of Non-Applicability, as described in N.J.A.C. 7:27-21.10, and supporting documentation to the Department stating the specific reason for non-applicability. This request should be sent to the following address.

by US Postal Service:

**Emission Statement Non-Applicability
NJDEP - Bureau of Air Quality Planning
Mail code 401-07H
P.O. Box 420
Trenton, NJ 08625-0420**

by Private Carrier:

**Emission Statement Non-Applicability
NJDEP - Bureau of Air Quality Planning
401 East State Street, 7th Floor
Trenton, NJ 08608-1501**

If a facility's "Potential-to-Emit" did not exceed the threshold in **Table 1** for the emission year but completed an Emission Statement in the prior year or has been contacted by the Department that the facility may be required to report, the facility must send the notification by February 1 of the year in which the Emission Statement is due to the above address, providing evidence that the "Potential to Emit" (not the actual emissions) is below the reporting threshold. This evidence should show the following information:

- a) The maximum annual quantity of each air contaminants in Table 1 **allowed** to be emitted from all permitted sources;
- b) The maximum annual quantity of each air contaminants in Table 1 that can be emitted from all unpermitted sources operations operating at their maximum design capacity;
- c) The maximum quantity of all air contaminants that may be emitted as fugitive emissions;
- d) Whether the facility is required to obtain or has voluntarily applied for an operating permit pursuant to N.J.A.C. 7:27-22; and
- e) A statement as to whether the owner or operator anticipates that conditions at the facility may change in a way that may require the facility to submit an Emission Statement in future years.

In addition, the request should also contain the name and location of the facility, the facility ID (assigned by NJDEP), the name and telephone number of the plant contact and the Responsible Official of the facility. The person signing the letter and making the request for non-applicability must be a Responsible Official of the facility requesting for exemption. *THE PERSON SIGNING THE LETTER AND MAKING THE REQUEST FOR NON-APPLICABILITY CANNOT BE A CONSULTANT FOR THE FACILITY!* Facilities are allowed to base their decision upon the work of consultants but the ultimate responsibility for compliance still rests with the Responsible Official of the facility.

If this letter containing all the previous information is received no later than February 1 of the filing year, the Department will respond by April 1 with a decision on the request of non-applicability. If the Department agrees with the request of non-applicability, no Emission Statement would be required by May 15. If the Department disagrees with the request of non-applicability (received before February 1), the Department will notify the facility in writing of the disagreement. The facility may then make either a request of extension to the May 15 reporting deadline or the

Department will automatically grant an extension, depending upon the time it takes for the Department to respond to the request of non-applicability. Also, the Department will not penalize a facility for missing the May 15 deadline for submittal if a complete and proper request of non-applicability was made no later than February 1.

Again, this Notice of Non-Applicability is required if a facility has submitted an Emission Statement in a prior year or if a facility has been requested to complete an Emission Statement by the Department. If neither case applies to your facility, a facility is **not required** to send this notice of non-applicability.

Due Date for Emission Statement Submittal

A facility required to report must submit a complete and certified Emission Statement to the Department by May 15 of the year after the emissions occurred. For example, for emissions that occurred in calendar year 2009, emissions must be reported by May 15, 2010, or any Department approved extension date. Emission Statements must be submitted to the following address:

by US Postal Service:

**Emission Statement Non-Applicability
NJDEP - Bureau of Air Quality Planning
Mail code 401-07H
P.O. Box 420
Trenton, NJ 08625-0420**

by Private Carrier:

**Emission Statement Non-Applicability
NJDEP - Bureau of Air Quality Planning
401 East State Street, 7th Floor
Trenton, NJ 08608-1501**

Request for Extensions

Extensions past the May 15 due date may be granted under the terms of the Emission Statement rule at New Jersey Administrative Code (N.J.A.C.), Title 7, Chapter 27, Subchapter 21, Section 8 (N.J.A.C. 7:27-21.8), "Request for extension." A "Responsible Official" may submit a request for an extension, which must be in writing and be submitted by May 1. *THESE REQUESTS CANNOT BE MADE BY A CONSULTANT FOR THE FACILITY. REQUESTS FOR EXTENSIONS MUST BE MADE BY A RESPONSIBLE OFFICIAL OF THE FACILITY!*

The request for the extension must include:

- a) The facility ID assigned by DEP (if one exists);
- b) The name and telephone number of the plant contact;
- c) The name and telephone number of the responsible official;
- d) The reasons and justification for the inability to submit on time and the extreme hardship that would be prevented by submitting the Emission Statement after the May 15 due date; and
- e) The date that the responsible official commits as the submittal date, which shall be no later than June 15.

This extension is for a thirty-day period so that the request, if granted, will state that the

Emission Statement is not due until June 15 of the year the Emission Statement is due. As required by the Rule, the Department must respond to the requests within ten working days of the receipt of the requests if such request is made prior to May 1 of the year the Emission Statement is due. If the Department does not respond, the extension is automatically granted provided that the extension is not requested beyond the thirty-day period. The Department will automatically deny any extension requests from anyone other than a Responsible Official of the facility (e.g., a consultant for the facility) or any requests made after May 1 of the year the Emission Statement is due. Facilities are encouraged to make requests for an extension before May 1 to give enough time for the Department to review and respond. If a facility does not have an approved request for extension by May 15, the Department may take an enforcement action against the facility for not submitting an Emission Statement by May 15.

The Department cannot grant any extension request beyond June 15. The Department is required by the federal government to submit the data to them by July 1 of the filing year. Receipt of the data after June 15 would make it impossible for the state to meet this obligation.

SOURCES AND AIR CONTAMINANTS THAT DO NOT NEED TO BE REPORTED IN THE EMISSION STATEMENT

Once it is determined that your facility has a "Potential to Emit" air contaminants above the reporting threshold, several sources or categories of air contaminants do not need to be reported.

Non-Photoreactive Organic Compounds Do Not Need To Be Reported

A Volatile Organic Compound (VOC), for the purposes of Emission Statement reporting, means any compound of carbon (other than carbon monoxide, carbon dioxide, carbonic acid, metallic carbonates, metallic carbides, and ammonium carbonate) which participates in atmospheric photochemical reactions. This definition can be found in the Code of Federal Regulations at 40 CFR 51.100(s). A facility must report all photoreactive VOC emissions (including fugitive emissions) except those found in **Table 2** of this document. The federal definition of VOC can also be found in the header of this table. Also, note that there is no longer a *de minimis* vapor pressure in this VOC definition and liquid organic compounds may be considered a VOC.

The specific compounds listed in **Table 2 do not need** to be reported as VOC's as they are not photoreactive (i.e., do not contribute to the formation of ozone in the atmosphere). Similarly, these non-photoreactive compounds should not be included as VOC's in determining applicability. The compounds in **Table 2**, however, may need to be included within your Emission Statement as PM_{2.5}, PM₁₀, or TSP emissions if they are released as particulate emissions. Note that Methane is reported separately for major facilities.

For the purposes of Emission Statement reporting only, a simplified definition of a VOC would be those organic compounds (not exempted as VOC's in **Table 2**) that are a liquid or a gas at standard temperature and pressure (STP), or solids that sublime to a gas at standard temperature and pressure (e.g. naphthalene). Using this simplified assumption, examples of compounds that would not be considered VOC's would be any material that is a solid at room temperature and

pressure such as flour and sawdust. If a compound is used at other than standard temperatures and pressures, such as asphalt, then the emissions should be considered VOC's. The release of solids at STP, while excluded from the definition of a VOC, would still be considered particulate emissions and may need to be reported as such.

Please do not confuse the above assumptions with the term "non-applicable" VOC. Non-applicable VOC's are certain low vapor pressure organic liquid compounds that must be considered and incorporated into the VOC emissions from the facility. Please see the Glossary (**Appendix A**) of this document for the definition of a non-applicable VOC. The emissions of non-applicable VOC's need to be reported as VOC's, but the Department has attempted to simplify the reporting of these compounds.

Table 2: Non-Photoreactive Organic Compounds

VOC emissions to be reported on the survey forms include all organic compounds “which participate in atmospheric photochemical reactions or which are measured by a reference test method (40 CFR, Part 60.2).” Organic compounds are all carbon compounds other than ammonium carbonate, metallic carbonates, metallic carbides, carbon monoxide, carbon dioxide, and carbonic acid. Thus, VOC’s are all organic compounds other than those listed below.

Acetone	Perchloroethylene (tetrachloroethylene)
Methane	Ethylfluoride (HFC-161)
Ethane	Parachlorobenzotrifluoride (PCBTF)
Methyl acetate	1,1,1,2,3,4,4,5,5,5-Decafluoropentane (HFC 43-10mee)
Methylene chloride (dichloromethane)	1,1,2-Trichloro-1,1,2,2-trifluoroethane (CFC-113)
1,1,1-Trichloroethane (methyl chloroform)	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC-114)
Trichlorofluoromethane (CFC-11)	1,1,1-Trifluoro-2,2-dichloroethane (HCFC-123)
Dichlorodifluoromethane (CFC-12)	2-Chloro-1,1,1,2-tetrafluoroethane (HCFC-124)
Chlorodifluoromethane (HCFC-22)	1,1,1,3,3,3-Hexafluoropropane (HFC-236fa)
Trifluoromethane (HFC-23)	1,1,2,2,3-Pentafluoropropane (HFC-245ca)
Chloropentafluoroethane (CFC-115)	1,1,2,3,3-Pentafluoropropane (HFC-245ea)
1,1,1,2-Tetrafluoroethane (HFC-134a)	1,1,1,2,3-Pentafluoropropane (HFC-245eb)
1,1-Dichloro-1-fluoroethane (HCFC-141b)	1,1,1,3,3-Pentafluoropropane (HFC-245fa)
1-Chloro-1,1-difluoroethane (HCFC-142b)	1,1,1,2,3,3-Hexafluoropropane (HFC-236ea)
Difluoromethane (HFC-32)	1,1,1,3,3-Pentafluorobutane (HFC-365mfc)
Pentafluoroethane (HFC-125)	Chlorofluoromethane (HCFC-31)
1,1,2,2-Tetrafluoroethane (HFC-134)	1-Chloro-1-fluoroethane (HCFC-151a)
1,1,1-Trifluoroethane (HFC-143a)	1,2-Dichloro-1,1,2-trifluoroethane (HCFC-123a)
1,1-Difluoroethane (HFC-152a)	1,1,1,2,2,3,3,4,4-Nonafluoro-4-methoxybutane (C ₄ F ₉ OCH ₃)
3,3-Dichloro-1,1,1,2,2-pentafluoropropane (HCFC-225ca)	1-Ethoxy-1,1,2,2,3,3,4,4,4-Nonafluorobutane (C ₄ F ₉ OC ₂ H ₅)
1,3-Dichloro-1,1,2,2,3-pentafluoropropane (HCFC-225cb)	2-Ethoxydifluoromethyl-1,1,1,2,3,3,3- heptafluoropropane ((CF ₃) ₂ CFCF ₂ OC ₂ H ₅)
2-Difluoromethoxymethyl-1,1,1,2,3,3,3- heptafluoropropane ((CF ₃) ₂ CFCF ₂ OCH ₃)	

And the following four classes of methyl acetate and perfluorocarbon:

1. Cyclic, branched or linear, completely fluorinated alkanes
2. Cyclic, branched or linear, completely fluorinated ethers with no unsaturation
3. Cyclic, branched or linear, completely fluorinated tertiary amines with no unsaturation
4. Sulfur-containing perfluorocarbons with no unsaturation and with sulfur bonds only to carbon and fluorine.

If there is any conflict between the list at 40CFR 51.100(s)(1) and the list set forth above, the list at 40CFR 51.100(s)(1) shall prevail.

Table 3: Off-Highway And Equipment Inventory Source Categories

Light Commercial Equipment

Generator Sets < 50 HP	Gas Compressors < 50 HP
Pumps < 50 HP	Welders < 50 HP
Air Compressors < 50 HP	Pressure Washers < 50 HP

Industrial Equipment

Aerial Lifts	Other General Industrial Equipment
Forklifts	Other Material Handling Equipment
Sweeper Scrubbers	

Construction Equipment

Asphalt Pavers	Trenchers	Rough Terrain Forklifts
Tampers/Rammers	Bore/Drill Rigs	Rubber Tire Loaders
Plate Compactors	Excavators	Rubber Tire Dozers
Concrete Pavers	Concrete/Industrial Saws	Tractors/Loaders/Backhoes
Rollers	Cement and Mortar Mixers	Crawler Tractors
Scrapers	Cranes	Skid Steer Loaders
Paving Equipment	Graders	Off-Highway Tractors
Surfacing Equipment	Off-Highway Trucks	Dumpers/ Tenders
Signal Boards	Crushing/Processing Equipment	Other Construction Equipment

Agricultural Equipment

2-Wheel Tractors	Balers
Agricultural Tractors	Tillers
Agricultural Mowers	Swathers
Combines	Hydro Power Units
Sprayers	Other Agricultural Equipment

Chainsaws/Shredders/Fellers

Chain Saws	Shredders
Fellers/Bunchers	Skidders

Again, emissions associated with the combustion of fuel from any source listed in **Table 3** above should not be included as an individual source or included in the Fugitive Emission calculations for the facility. The Department already includes these sources and associated emissions in the Off-Highway and Equipment portion of the Emission Inventory. A facility, therefore, does not need to duplicate this effort on the Emission Statement form. However, non-fuel combustion emissions should be reported in the Emission Statement, e.g., particulate emissions from crushing/processing equipment or road dust from bulldozer/tractor/truck traffic.

The Emissions from the Combustion of Fuel Within Off-Highway Sources Do Not Need To Be Reported

If an air contaminant is released from fuel combustion within any off-highway source listed in this document's **Table 3**, the by-products of combustion need not be reported, either as a specific source or as a fugitive emission. For example, if a forklift or a small (less than 50 horsepower) generator set is at your facility, the by-products of fuel combustion need not be listed as emissions from your facility or listed as separate pieces of equipment on your Emission Statement. Please note that this exclusion pertains only to the emissions associated with the combustion of fuel. If stone crushing/processing equipment at a facility creates particulate emission, those particulate emissions from the crushing/processing equipment may still need to be reported and included in the facility's "Potential to Emit" an air contaminant (i.e., TSP, PM₁₀, and PM_{2.5}). The same would be true of VOC leaks from pump seals or compressors.

The Department already includes the emissions from fuel combustion from these types of sources within the statewide inventory of off-highway emissions. As the Department already calculates these emissions for you, a facility should not include these emissions in its Emission Statement.

Other Sources Not To Include In the Emission Statement

Unless contained in an approved air pollution permit, the following sources also should **not** be included in a facility's Emission Statement:

- Fuel burning sources for residential heating of duplex or single residence dwellings;
- Fuel oil tanks for residential heating of duplex or single residence dwellings;
- Pressurized tanks, e.g., propane or LPG;
- Delivery vessels, e.g., 55 gallon drums;
- Any sources that cannot emit the air contaminant categories that would require a permit to construct or certificate to operate equipment pursuant to the Air Pollution Control Act (N.J.A.C. 7:27-8, et. seq.), e.g., vents through which fresh air is drawn into the facility, electrically powered infrared heaters, or other electrical devices.

Differentiating Fugitive Emissions and Insignificant Sources

Fugitive emissions are emissions of an air contaminant released directly or indirectly into the atmosphere that do not pass through a stack, flue, vent, or chimney. If a source's "Potential to Emit" an air contaminant (CO, NO_x, NH₃, PM_{2.5}, PM₁₀, SO₂, TSP and VOC) is less than 0.05 pounds per hour, the emissions from a piece of equipment may be listed as a fugitive emissions. For lead (Pb), if the "Potential to Emit" is less than 2.00 pounds per year, then the emissions can be listed as fugitive emissions. Please refer to **Appendix A** for an explanation of source and non-source fugitive emissions.

An insignificant source is any piece of equipment that is not a significant source (see **Appendix A** for definition of significant source). An insignificant piece of equipment can have source fugitive emissions associated to it. Examples of insignificant sources are boilers with a

maximum heat input value of less than one million BTU per hour, VOC storage tanks less than two thousand gallons, and non-VOC storage tanks.

Characterizing an emission as a fugitive emission or an insignificant piece of equipment is not as important as ensuring that all emissions from the facility are reported. (Note: The exceptions to this are the fuel combustion in sources listed in **Table 3** and other sources not to be reported as previously discussed). *It is the Department's intent to have all emissions from the facility reported within the Emission Statement, consistent with any applicable and approved air pollution control permits and certificates.*

Differentiating Air Contaminants

When using emission factors or other methods of calculating and estimating emissions, separating the portion of one air contaminant that belongs to a subset of another air contaminant may not be practical. For example, AP-42 contains emission factors for Volatile Organic Compounds (VOC) and for Total Suspended Particulate (TSP). These could be used to calculate emissions from a combustion source of a certain size. A portion of the TSP emitted from the combustion source may also be a VOC. The quantity of TSP that is also a VOC would be difficult to figure out from the emission factor or from the documentation in AP-42. For simplicity reasons, one does not need to differentiate (and subtract) one air contaminant from another. Report each air contaminant by its category (i.e., VOC, CO, NO_x, NH₃, TSP, PM₁₀, PM_{2.5}, SO₂, or Pb) and do not subtract one air contaminant from another air contaminant (i.e., TSP minus PM₁₀, TSP minus VOC, etc.). Do not separate TAP's from VOC even though some of the TAP's are a subset of VOC.

Do not separate PM_{2.5} or PM₁₀ emissions from TSP emissions. PM₁₀ is particulate matter having a diameter equal to or less than 10 microns (a micron represents one millionth of a meter in length) and, therefore, is a subset of TSP by definition. PM₁₀ represents breathable particulate that could cause adverse health effects. Most sources that emit TSP have a certain percentage of the emitted pollutant as PM₁₀. Therefore, if TSP emissions are reported, PM₁₀ emissions should also be reported unless the facility can document that all TSP emissions are greater than 10 microns in diameter. Similarly, PM_{2.5} is particulate matter having a diameter equal to or less than 2.5 microns, with the same health concerns associated with PM₁₀ and is also a subset of TSP.

CERTIFICATION

To comply with the Emission Statement reporting rule (N.J.A.C. 7:27-21), all of the required data fields must be completed and returned to the address in the introductory pages of this document. In addition, a signed and dated certification of data accuracy and completeness must be included with the submittal. **Emission Statements submitted without a signed Certification Form or electronic certification will be returned to the facility and will be treated as a non-submittal.** A penalty may be issued if an Emission Statement is not properly certified.

A blank Certification Form and instructions on filling out the form is in **Appendix H**. Please read the instruction before completing the Certification Form. It may be prudent to make copies of the Certification Form because this form only allows signatures of three people; the

Responsible Official and two other people with direct knowledge of the information in the Emission Statement. These other people may be engineers at the facility or consultants hired by the facility. All persons who completed or assisted in completing the Emission Statement forms need to sign the certification form. So if more than two people were involved in the Emission Statement preparation, then more than one signed page of the certification form needs to be submitted with the Emission Statement.

Please ensure that your Emission Statement **or any changes made to your Emission Statement** are properly certified by having the person who completed the submittal sign in Section 2 and the Responsible Official sign in Section 1 of the certification form. For persons submitting on RADIUS created diskettes, the insertion of a valid Personal Identification Number (PIN) into the RADIUS Certification Form is considered to be a proper signature.

ELECTRONIC SUBMISSION OF DATA

To assist the regulated community in its reporting, a computerized data entry program (RADIUS) has been jointly developed by the industry and NJDEP. This software is available to facilities free of charge. RADIUS is a program created to allow facilities to prepare and submit air pollution control permits and Emission Statements. The use of this data entry system will save time and effort for both the facility and the Department. It was developed to meet the regulatory and reporting needs of the Department and regulated community and ensure consistency of data between all areas of the air pollution control program.

See <http://www.nj.gov/dep/aqpp/radius.html> for the latest information on which operating systems RADIUS 3.5 are compatible. The RADIUS software is available for free download on the Department's RADIUS website (<http://www.state.nj.us/dep/aqm/es/emstatpg.html>). Facilities that submitted an Emission Statement in the previous year can use that file and the "Save as different year" function in RADIUS to create the new Emission Statement for the current emission year. This allows the facilities to retain information that may be the same from year to year.

Facilities that did not submit an Emission Statement in the previous year can create a new Emission Statement document in RADIUS or request a copy of a skeleton Emission Statement file from the Department. This skeleton file is created from merging all permits the Department has for the facility in the database and converting that into an Emission Statement showing the equipment, emission units, operating scenarios, etc. filled in. The skeleton file gives the facilities a starting point; therefore, this file must be reviewed for completeness and accuracy before data is entered.

RADIUS has the ability to transfer data between Emission Statements and Title V and New Source Review permits to avoid having to enter the same information multiple times. Any facility that submitted a Title V permit application to the Department should have access to their Title V permit application in RADIUS format. These applications were entered either by the facility or by the Department, where the latter were sent to the facility for verification. RADIUS has the ability to use this Title V permit application for Emission Statement reporting. The facility profile information, lists of control devices, significant equipment, emission points, emission units, batch processes, insignificant sources, and non-source fugitive emissions will be copied from the Title V

permit application to the RADIUS Emission Statement format for use in Emission Statement reporting. This allows a facility to report using their new facility identification number and emission unit numbering system as contained in their Title V permit. If upon careful review during creation of an Emission Statement, it is found that the Title V permit application contains information that requires updating, the facility should contact the Bureau of Air Permits to determine the best procedure for submitting a revision to the Title V permit and/or permit application.

When submitting the Emission Statement in RADIUS, the facility has the option to certify the Emission Statement electronically or with paper certification. The facility must first have provided a secured PIN Code for all persons certifying the data in RADIUS. A form requesting a PIN Code can be found on the department's website <http://www.state.nj.us/dep/aqpp/downloads/PARTB2009.pdf> or (**Appendix G**). This form should be completed and returned to the New Facilities Group of the Department at the address indicated prior to submitting the electronically certified Emission Statement.

Also, built into RADIUS, are the calculation routines from AP-42 for certain fuel combustion sources. The calculation routines, when actual fuel use and throughput information is entered, will give similar results to calculations performed from AP-42 for similar type of equipment.

RADIUS also has a built-in "completeness" check function called the Administrative Check. This function checks your Emission Statement database after creation to find any blank fields within the Statement, missing reporting forms, or some data that may not seem accurate. The Administrative Check produces a list of the results. There are three designations for incomplete data: Error, Warning and Note. Error indicates that an important data element is missing and must be corrected or else RADIUS will not allow the Emission Statement to be submitted. Warning and Note indicate any missing or incorrect data that should be corrected but will not cause RADIUS to prevent Emission Statement submittal. But if the Department determines that any of the uncorrected Warning and Note messages from the Administrative Check are essential to the Emission Statement Program as listed in **Appendix I**, a written request may be sent to the facility for the data to be fixed and resubmitted electronically. Using this "Submit" function before sending the Emission Statement to the Department will reduce the time and effort needed to make the Emission Statement complete on the first submittal. It may also help to prevent future reporting issues or enforcement actions.

DEPARTMENT INTERNET WEBSITE

The Department has created an Internet website, www.nj.gov/dep/. This website contains the Air Program's Bulletin Board as well as other programs such as hazardous waste and NJPDES. Also in the website are links to other useful websites such as the EPA's website. The website and its contents are for the convenience of the public and the private sector.

The Emission Statement Program and other related information are located in the Bureau of Air Quality Planning section of the website (www.nj.gov/dep/baqp/). Available on this website are

the data entry program (RADIUS) for personal computers and the 2010 Guidance Document.

The Department has developed a Listserv capability. A Listserv is an electronic mailing list program. First the user subscribes to the mailing list. As information is available, the Department will pass it on to the Listserv, which will then be emailed to the subscribers. This service will provide a vehicle to relay timely information to the regulated community. Please check the Department's website for this and other updates.

HIERARCHY OF EMISSIONS REPORTING AND SUBMISSION OF EMISSION FACTORS

The goal of New Jersey's Emission Statement program is to get quality, accurate emission totals of the reportable air contaminants. To achieve this goal, it is recommended that facilities report the quantity of their emissions based upon the following hierarchy of data quality. It is strongly recommended the facility report their emissions using the method that yields the higher quality results when a facility has already performed or used one of these methods to obtain emissions totals from a stack, source, or group of sources. The recommended hierarchy of data quality is as follows (from highest data quality, 1, to the lowest data quality, 8).

- | | |
|-------------|---|
| High | 1) Continuous emissions monitoring. |
| ↑ | 2) Predictive emissions monitoring. |
| | 3) Departmentally approved stack testing performed during the reporting year. |
| | 4) Departmentally approved stack testing performed in a prior year. |
| | 5) Mass/Material balance or chemical principal calculations (e.g.: TANKS4.0). |
| | 6) AP-42 Emission Factor. |
| ↓ | 7) Manufacturer's estimate or data. |
| Low | 8) Others: Industry council or organization emission factor, Stack testing not approved or supervised by the Department, Default to permit allowable or other default value, and Engineering Judgment/factor. |

Note: The Department is not mandating through Emission Statement reporting that a higher quality testing method be done to report emissions. It is, however, strongly recommending that if such tests or methods were already done that these tests or methods be used to estimate and report emissions.

When estimating emissions, select the appropriate method from the pull-down menu in RADIUS. The Department recognizes that good engineering judgment is inherent in the selection, use, and development of any specific calculation methodology. For example, a decision on when an AP-42 emission factor is appropriate to use for a given piece of equipment always involves good or best engineering judgment. Please only use Best Engineering Judgment as the Calculation Methodology Code, when no other Calculation Methodology Code adequately describes the primary method selected to estimate and report emissions for a given air contaminant. For example, if stack test data were relied upon to develop the emission estimates for a given source but the stack test data from several stack tests were averaged to report one annual estimate of emissions, please report "source test" as the Calculation Methodology Code rather than Best Engineering Judgment.

If a facility has stack testing results showing emissions from a source, the facility should apportion those emissions into the reported emission values using actual process rates. For example, if stack testing was performed under a certain load then those results should be used for the period of the year that the source operated under that load. If available, another emission factor or stack test result should be used for the period of time the source operated under other than stack test performed loads. Conversely, a facility may use the stack test results without modification if it believes, using good engineering judgment, that those results are representative of the emissions during actual operations. The emission factor would then be the pounds per hour emission rate derived from the stack test.

The Department expects any facility that performed a USEPA or NJDEP approved stack test to factor those emission results into their reported emission values. You will also note that AP-42 Emission Factors are recommended to be used over a non-approved stack test. Without USEPA or NJDEP approval, it is not certain if federal or state approved stack testing methods were used to generate the results and if the results obtained were scientifically valid.

You will also note that the Department has limited the types of combustion sources for which the Department will calculate emissions. In the past, the Department had to assume certain emission factors for non-standard operations when a simple calculation could not be done. This does not meet the goal of quality inventory data. It is suggested that this hierarchy of quality data be used to calculate emissions in those instances.

New Jersey's Emission Statement rules (N.J.A.C. 7:27-21) and the USEPA's national computer system (NEI) and guidance have always required an emission factor be provided as part of the Emission Statement when one was used. An emission factor is defined by the USEPA as a "representative value that attempts to relate the quantity of a pollutant released to the atmosphere with an activity associated with the release of a pollutant". Except if AP-42 is used to estimate emissions, please make sure that the units of the emission factor used relate the process rate being reported with the emission values. If the source being reported meets the criteria where you may default to the permitted emission rates, then the emission factor to be reported is the permitted maximum pound per hour value for each air contaminant being reported. In this case, the units for reporting would be permitted pounds per hour and the process rate would be the sources' actual hours of operation during the seasonal and annual periods. Multiplication of these two values would give the reported emissions values. If stack testing results were used as the emission factor, the annual emission rate would be the pounds per hour emission rate from the stack test multiplied by the actual annual hours of operation.

Emission factors are not required when a direct measurement technique is used to estimate emissions such as continuous emission monitors (CEM's), mass balance equations, and predictive emissions monitoring. Emission factors are also not required for insignificant sources. Also, if the Autocalculate function was used in RADIUS to obtain the emissions, then the emission factors are not required. If the estimates of emissions being reported on an Emission Statement involve any other method besides CEM's, mass balance, or predictive emission monitors then an emission factor must be provided. When reporting an emission factor please include the units for the emission factor, which are usually expressed in lbs/hr, lbs/MMBtu, lbs/gal or lbs/MMCF.

The following are recommendations for providing these emission factors.

1. Report the calculation methodology from the pull-down menu in RADIUS (i.e., the way you estimated emissions) that was primarily relied upon to estimate emissions. Please do not use Best Engineering Judgment as the Calculation Methodology Code if another code was the prime method relied upon to estimate emissions. All methods of estimating emissions rely upon Best Engineering Judgment to select, calculate, and report accurate and complete emissions. This code should only be reported when no other calculation methodology code is appropriate and not primarily relied upon to estimate emissions.
2. When estimating emissions based upon an AP-42 emission factor, report the identical AP-42 value and the units that were provided in the AP-42 document or the AP-42 based emission factor from the table. Please do not report the AP-42 value in the units used to estimate emissions of the Emission Statement (e.g., lbs/day) or convert the AP-42 value to other units. If the AP-42 document has a table of values that must be adjusted, for example, through footnotes or other assumptions, please report the exact value or equation from AP-42 and do not readjust the value. AP-42 emission factors are never in lbs/hr units.
3. If you determined that no other estimation method is appropriate and you did not rely upon another primary method to estimate emissions, it is appropriate to use Best Engineering Judgment as the Calculation Methodology Code. The emission factor to be provided in this case would be the value used as Best Engineering Judgment. For example, if based upon your experience, a different similarly sized and typed unit was tested as actually emitting 5 tons per year of VOC and you judge that the unit to be reported is analogous to the other reported unit, then you should report 5 tons per year as the emission factor. (Please note that stack testing should not be reported as the Calculation Methodology Code in this case because the stack testing was not actually conducted on the unit to be reported).

APPORTIONING EMISSIONS WHEN A CONTINUOUS EMISSION MONITOR, MASS BALANCE, OR CERTAIN STACK TESTING METHODS WERE PERFORMED

In some cases, the emissions from a facility or group of sources may have been determined at the stack level rather than at the equipment level. Accurate records and measurement procedures may be available to report the exact quantity of air contaminants that were emitted from a stack but it may be difficult to determine the exact quantity of air contaminants that were emitted from each individual piece of equipment leading to that stack. In these cases, it is recommended that the emissions from each piece of equipment that operated be apportioned based on the following instructions, assuming that summary reporting is not possible for the unit (see **Appendix F**).

General Instructions

Total emissions from a stack may be split between equipment based upon the size of the units, how the units actually operated, or a combination of the two. Sources that did not operate during the year or a certain reporting period should be reported as having zero emissions contributing to the stack's total emissions during that period. Emissions should then be apportioned between units that operated and emitted the measured air contaminant during the reporting period. The exact method selected to apportion emissions will depend on the records kept by the facility and the nature of the sources leading to the stack.

Suggested Methods and Examples

Gather the required process data for each individual source first, if possible. Determine how each source actually operated or the size of the source in relation to the other sources leading to the common stack. Using the information available, determine if emissions can be apportioned based on the size of the units, the hours of operation of the units, the quantity of material used in the units, the nature of the material used in the unit, or a combination of all the preceding factors. For example, a 20 million BTU per hour boiler can be assumed to contribute twice the amount of emissions as a 10 million BTU per hour boiler if both units operated for the same amount of time on the same fuel and firing method. For facilities that have accurate fuel monitoring methods for each unit, emissions may be apportioned by the BTU content of the fuel used in the unit and the total amount of BTU's generated by the unit. As another example, a surface coating operation with the ability to apply 100 gallons of coating in a day can be assumed to have twice the emissions than 50 gallons per day unit, assuming the same VOC content coating material was used.

After gathering the total emissions data at the stack level, multiply the total emissions by the percentage of emissions that could be attributable to the source based on its size, nature, or activity (process) level. For example, suppose three boilers of equal size, fuels, and firing method lead to one stack where emissions are monitored. Boiler 1 did not operate during the entire year and, therefore, the emissions from the unit should be reported as zero. Boilers 2 and 3 of the same size did operate and the total emissions can be split equally between boilers 2 and 3. If boilers 2 and 3 were of unequal size, different fuels, or firing methods, the total emissions could be unequally divided between the units based upon the size of the units, fuels, or firing method.

In more complex situations, other additional factors could be used to multiply the total emissions between sources using good engineering judgment and existing records at a facility. These factors include, but are not limited to, dividing actual emissions based upon the permitted emission rates, accounting for the VOC content of the coating used in a source, and accounting for varying amounts of emissions based on the size of the units. A facility may wish to divide the total actual emissions based on the permitted emission rates when sources of varying size and type lead to one stack and control device. For example, assume VOC emissions from a reactor are vented to the stack from an incinerator and associated controls. In this case, the total actual measured VOC emissions can be apportioned using the same percent of the permitted emissions from the reactor as compared to the total permitted emissions from all sources leading to the stack. If the total permitted emission rate of VOC from all sources leading to the stack is 50 pounds per hour and the permitted emission rate (after control by the incinerator) from the reactor is 0.5 pounds per hour, the

total actual emissions as measured by the CEM can be apportioned to the reactor by assuming the reactor contributes the same percent as the permitted rates (i.e., $0.01 = 1.0 \text{ percent} = 0.5 \text{ divided by } 50$). If the actual CEM measured VOC emission rate was 20 pounds per hour, the emission rate of VOC from the reactor would be 0.2 pounds per hour (i.e., $20 \text{ pounds per hour} \times 0.01$).

In some cases, the VOC content of the material used in production or in coatings may vary between different processes or between coating lines leading to one stack. The differences in the VOC content of the material used may also be used as a factor in apportioning total actual measured emissions to one source. The VOC content and the total gallons of material used in one source or line may be factored into the total gallons and VOC content of all material used in all lines leading to the CEM stack in estimating the total actual emissions between coating lines or processes.

In the third case, you may factor differences in emission factors or control devices between units. For example, one unit may have low NO_x burners added to reduce NO_x levels. These may be factored into the portion of NO_x attributed to the unit.

The most important thing to remember when apportioning emissions between units is to not double count emissions. If two operating sources lead to one stack with a CEM, never report the total emissions as recorded by the CEM as the total emissions for each individual source. Be sure that when all sources leading to a stack with a CEM are totaled, they accurately reflect what was measured by the CEM at the stack level. Also, be sure that when the emissions from all stacks at the facility are totaled, they accurately reflect the facility wide total emissions.

CONFIDENTIALITY OF EMISSIONS DATA

Facilities may mark certain Emission Statement data as confidential pursuant to the requirements of New Jersey Administrative Code (N.J.A.C.), Title 7, Chapter 27, Subchapter 1, Sections 6 through 30 (7:27-1.6 through 1.30). Emissions information (i.e., data related to the type, quantity or rate of an air contaminant released into the outdoor air) cannot be marked as confidential. If a facility wishes to claim any other data as confidential, they must provide two copies of the completed Emission Statement to the Department, one containing confidential data and one suitable for release to the public. The "public" copy must have all data that the facility wishes to keep confidential "blacked" out of Emission Statement. The "confidential" copy must be submitted only on paper forms. The confidential copy must contain all Emission Statement information and should be marked with the word "Confidential" in bold letters on the top of each page. The confidential copy should be sealed in an inner envelope that is also marked with the word "Confidential." The inner envelope should be contained in an unmarked envelope for mailing.

Because of data security issues, the Department will not accept any confidential data on a diskette (as previously described). In other words, do not send any data to the Department upon a diskette unless you first ensure that no confidential data resides on the diskette. Those reporting electronically can place only the "public" copy of the data on a diskette (as this is the data the Department will enter on its computer). For those wishing to report non-confidential data upon a diskette, mark the "Source Process Data Considered Confidential" option in RADIUS. This will disable the Process tab so that process information cannot be entered when it is considered

confidential. A paper copy of the "confidential" data must be provided to the Department in an envelope separate from the public copy and follow the procedure for submitting confidential data to the Department. This will reduce the chance of accidental release of confidential data and help the Department ensure that it continues to maintain its standards for protecting this data from public release.

Please note that emissions data cannot be declared as confidential. The types or quantities of emissions are by law public information. The Department will make this data available to the public regardless of any claim of confidentiality. The Department recommends, therefore, that facilities wishing to declare any raw materials or products contained in VOC storage tanks as confidential, calculate and report their own emissions of VOC's. This will allow one to report the quantity of "Total VOC" as the emission rather than to report the individual confidential raw material, product, or throughput. In addition, each copy of the Emission Statement (the public and confidential versions) must be accompanied by a properly signed Certification Form, i.e., one Certification Form for the public copy and one for the confidential copy.

ASSISTANCE

Assistance for proper completion of the Emission Statement is available by calling (609) 984-5483 from 9:00 a.m. to 4:00 p.m., Monday through Friday except on state holidays. Besides existing staff, the Department may also engage the services of a contractor to provide assistance during peak periods of activity. Please note that it may be difficult to reach the Department on this help line from 8:00 a.m. to 9:00 a.m. and from 4:00 p.m. to 5:00 p.m. These times are set aside for the Department staff and the contractor to return phone calls that they could not return during other portions of the day. Questions can also be submitted to the Department by e-mail, to Emis_Statement@DEP.STATE.NJ.US.

The Department urges the regulated community to prepare their Emission Statement as early as possible. An average of more than 1,000 phone calls are recorded to the Emission Statement program between April and May of each year. A large majority of these phone calls came when the May 15 deadline approached. Please be assured that all phone calls will be answered on a first come, first served basis. Your patience and understanding, especially during peak periods, are appreciated.

REPORTING YEAR OF EMISSIONS

The reporting year for an Emission Statement is the calendar year for which the majority of the annual emission information for all air contaminants is reported. For example, the Emission Statement for the reporting year of 2009 is for emissions into the outdoor air during the twelve-month period of January 1, 2009 through December 31, 2009, which is due May 15, 2010. Besides reporting the annual emissions (in tons per year) of all air contaminants on a calendar year basis, a daily estimate of carbon monoxide emissions (in pounds per day) must be made to reflect actual emissions from December of the prior reporting year and January and February of the current reporting year. For example, the daily estimate of carbon monoxide for reporting year 2009 should

include the emissions from December 1 of 2008 to February 28 of 2009 while the annual carbon monoxide emissions reported are from January 1, 2009 through December 31, 2009. The discrepancy with reporting carbon monoxide process rates and daily emissions is because an accurate estimate is needed for the winter season when unhealthy levels of this air pollutant were recorded in some parts of New Jersey.

EMISSION STATEMENT CORRECTIONS

Whenever writing to the Department about Emission Statements, please include in your correspondence the facility ID and the reporting year (see above for explanation of reporting year) with which your questions, concerns, comments, or data are related. All initial submittals, changes to initial submittals or changes to prior year submittals must be made electronically (i.e., on computer disk) since RADIUS restricts data entry and certified submittal to the person with the PIN Code for certification. A new submittal file containing the corrections must be sent with proper certification.

CALCULATIONS

The goal of the Emission Statement program is to accurately calculate, estimate, or assess the emissions of air contaminants from all sources at a facility and to have those emissions reported to the Department. Overall, facilities have five options to calculate the emissions from a process or source.

1. The facilities can do the calculation or measurements themselves.
2. The facility can provide the necessary data to allow the RADIUS software to perform the calculation for boilers burning certain fuels. RADIUS estimates boiler emissions using AP-42 type calculations. RADIUS can also calculate emissions from surface coating and printing equipment, as long as the VOC content of the ink or solution is provided.
3. For small unpermitted sources or operations (defined as a source with the Potential to Emit less than one ton per year), the facility may estimate the emissions as one ton per year (see Small Source Reporting).
4. For small permitted sources or operations (defined as a source with the Potential to Emit less than one ton per year), the facility may choose to use the allowable emission rate as shown on the source's air pollution control permit (see Small Source Reporting).
5. Insignificant pieces of equipment (such as laboratory hoods, combustion sources less than one million BTU's per hour, storage tanks of less than 2,000 gallon capacity containing VOC's and storage tanks containing only non-applicable VOC's) may be combined and reported as insignificant sources. This negates the need to

report each source individually (also see Small Source Reporting). These small combustion sources can be grouped together by the type of fuel burned but cannot be combined with other types of equipment, e.g., two small generators burning the same fuel can be grouped but the storage tank cannot be combined with the two small generators. Again, RADIUS can estimate emissions using AP-42 type calculations for boilers. Emissions from the combination of insignificant source types must be calculated by the facility and added to the Emission Statement by the type of source and type of fuel burned. Note that for Natural Gas combustion, Table 1.4-1 of AP-42 has different emission factors for NO_x and CO for boilers < 0.3 MMBtu/hr and larger boilers. Therefore, natural gas fired boilers less than < 0.3 MMBtu/hr can be combined in an Insignificant Source and those larger, but < 1.0 MMBtu/hr can be another Insignificant Source.

Calculations That Must Be Made by Facilities

The facility must calculate its own emission rates for all sources except boilers. One of the Calculation Methodology Codes must be used to determine emission rates. The facility is not required to submit example calculations but is required to maintain these calculations as described in the rule (N.J.A.C. 7:27-21).

Several technical references of calculation methodologies are available to calculate emissions. These references are listed below.

1. The USEPA publishes a document commonly called "AP-42." Its full name is "A Compilation of Air Pollutant Emission Factors." This document is available from the National Technical Information Services (N.T.I.S.) by calling (703) 487-4650 or by writing N.T.I.S. at 5285 Port Royal Road, Springfield Virginia, 22161. It is also available by writing the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402 or calling (202) 783-3228. Ordering through N.T.I.S. may cost up to several hundred dollars. A free copy can be downloaded at the USEPA Internet website (www.epa.gov/ttnchie1/index.html).
2. The USEPA's website, as listed above, contains several computer programs to calculate various sources of emissions. The section of the website containing the emission factors is called "CHIEF." Among the many items available on the USEPA's website are the following:
 - TANKS 4.0x – this program calculates emissions from VOC storage tanks.
 - WATER9 – this program estimates emissions from the equalization and aeration basins at Wastewater Treatment Systems.
 - WebFIRE – this program contains an internal repository of all available emission factors and a distribution system containing any available emission factors.
 - Fugitive Emission Programs – several programs to calculate fugitive particulate

emissions.

3. A bibliography of emission calculation procedures and factors is included as **Appendix C** in this document. Most of these documents are available through N.T.I.S. whose phone number and address are listed in item 1 above.

Calculations That Can Be Performed by RADIUS

Facilities may use the Autocalculate function in RADIUS to calculate emissions from **boilers**. This is available for both insignificant and significant sources. Because of the high variation in fuel types, RADIUS will only calculate emissions for the fuel types and associated firing methods in **Table 4**. The calculation routines used in RADIUS are based on AP-42. If the auto-calculate function is used in RADIUS, please choose “Emissions to be computer calculated by NJDEP” as the Calculation Methodology Code. To be able to use the Autocalculate function in RADIUS, ‘**Source Details**’ are required, which is discussed in the **SPECIFIC GUIDANCE FOR EMISSION STATEMENT REPORTING** section of this Guidance Document.

Table 4

<u>Fuel Type</u>	<u>Firing Method</u>
2FO	(For all the fuel types in the left column.)
4FO	Tangential
5FO	Vertical
6FO	Wall-Fired
LPG	Cross-Fired
LPGB	
NG	

REPORTING LEAD EMISSIONS

The regulated community had suggested to the Department that it was having difficulty finding lead emission factors for the combustion of fuel. To lessen this difficulty, the Department has included in **Appendix E** the lead emission factor guidance developed through the Department’s Emission Statement Workgroup. **Appendix E** lists the average lead content of various fuels and may be of assistance to facilities for reporting emissions from fuel combustion sources. It is suggested that a facility first try to obtain a more accurate lead emission factor than to rely upon this methodology. A facility may find that this emission factor overestimates or underestimates actual emission totals. Note that lead is reported as elemental lead, rather than the total weight of lead compounds.

SMALL SOURCE REPORTING

The Department is allowing facilities to estimate emissions from small **unpermitted** sources at one ton per year if the source has the Potential to Emit less than one ton per year.

It is suggested that this option not be used as it sometimes greatly overestimates emissions.

As the amount of fuel burned and the throughput information is required on these forms, it is suggested that facilities use the calculation routines in RADIUS to calculate emissions for boilers, so as to get a more accurate estimate of actual emissions. To ease the process for calculating emissions from many small sources, facilities are also allowed to group together certain sources. VOC storage tanks less than 2,000-gallon capacities, small combustion sources (less than one million BTU's per hour), and non-applicable VOC storage tanks can be grouped. Again, only combustion sources can be grouped with combustion sources by the type of fuel consumed. All other insignificant sources, regardless of the equipment type, may be combined under one Insignificant Source identification number. This grouping together of small sources may help to avoid greatly over estimating the emission coming from multiple small sources at a facility.

USE OF SCIENTIFIC NOTATIONS AND SIGNIFICANT DIGITS

Scientific notation is limited for use to reporting emission factors only. Do not use scientific notation for reporting emission rates, process data, or any other value. To report an emission factor in scientific notation, please use E-2 for 10^{-2} . An exponent of positive three, 10^3 , is E+3. For all exponents, specify the sign (+/-) of the exponent. For example, if the emission factor is 0.22×10^{-6} , to report the emission factor in RADIUS, it becomes 2.2E-5.

Please report and round off all values to TWO decimal places, except for lead (Pb) emissions. For example, a value of 2,690 should be reported as 2,690.00 when reporting. Also, a value of 0.0001 can be rounded off and reported as 0.00. A value of 0.0049 can be reported as 0.00 while 0.0050 should be reported as 0.01. The value 0 denotes no emissions while 0.00 indicates that the emissions are less than 0.0050. The Department recognizes that some emissions may occur that are less than 0.0050 but will accept 0.00 as the value to simplify reporting. By doing this, the Department intends to give assurance that certifying a 0.00 value does not mean that the person is certifying absolutely no emissions occurred. The Department recognizes that some amount smaller than 0.0049 could have occurred but reporting to this level of accuracy is not required.

There are three exceptions for rounding to two decimals that need to be noted. First, because lead emissions are toxic and usually released in smaller numerical amounts when stated in tons, the number should be rounded to four decimal places (i.e., 0.0000). Therefore, a value of 0.000049 ton for lead emissions should be rounded to 0.0000 and a value of 0.000050 ton should be rounded to 0.0001 ton.

The second exception is the operating time. Any data in hours, days, weeks, should be whole numbers (e.g., 8760 hours, 365 days, or 52 weeks). Reporting to decimal fractions of an hour, day, or week will not save/exit.

The third exception is when reporting process data (i.e. throughput, amount burned, amount processed, etc.) for values equal or greater than ten thousand. For this case, please report with four significant digits and do not report to two decimal places. This is to alleviate the burdens on facilities with large process data from having to certify the exact amount to two decimal places. For example, if a source burned 2,784,993.38 gallons of fuel oil, the facility can report 2,785,000 gallons. Or if a source burned 2,784,447.28 gallons of fuel oil, then report 2,784,000 gallons. By

reporting to four significant digits of very large values for process data, the Department intends to give assurance that certifying the value does not mean that the person is certifying to more accuracy than the four significant digits provided.

ESTIMATING THE OVERALL EFFICIENCY OF EMISSION CONTROL DEVICES

A facility is required to report the overall efficiency whenever a control device is present on a process or a source. The overall efficiency must account for the operating time, the combined control efficiency, and the capture efficiency of any control devices present. Therefore, overall control efficiency is not to be associated with any single control device or control device code.

Reporting only the design efficiency of the equipment is not acceptable when other information is available to accurately estimate the overall control efficiency.

Accurate information on a control device's overall control efficiency is essential for New Jersey's air pollution control planning efforts. The State is required to adjust reported emission estimates to account for variability in the operation and use of control devices. This adjustment, called Rule Effectiveness by USEPA, assumes that control devices do not always operate at 100% of their efficiency at all times and that regulations to control air pollution are not always 100% effective. Accurate data on control device efficiency and an indication of whether the design efficiency of a control device is being reported is essential to applying the correct adjustment factor to New Jersey's inventory of air contaminants.

Operating Time

Operating time is the percent of time the control device is operating when the emissions are produced or generated. For example, if a device operated half the time while emissions were being generated, then the operating time is 50%.

Capture Efficiency

The capture efficiency is the percentage of air stream (containing the air contaminants) captured by the control device. For example, if a control device captures ("sees") half the emission stream because the stream's other half is diverted elsewhere (or is a fugitive emission and does not go through the device), then the capture efficiency is 50%.

When multiple controls are used either in series or in parallel, care must be taken when calculating the capture efficiency. The following two examples attempt to illustrate the issues when the control devices are operating in a series or in a parallel mode.

Control Devices in Series

Control devices are considered in series when one control device is directly downstream of another device. For example, two control devices are directly connected and the first one, A, has a capture efficiency of 100%, this means that it "sees" all the emissions from the source. If the second device, B, also has a capture efficiency of 100%, then the control device B "sees" all the air

contaminants not removed by the control device A (assuming no vents or leaks).

If the first device, C, only "sees" half the emissions, then it has a capture efficiency of 50%. If the second device, D, also has a capture efficiency of 50%, then control device B "sees" only half of the emissions coming out of the control device A (assuming no vents or leaks).

Control Devices in Parallel

Control devices are considered parallel when part of the emission stream is diverted to two or more control devices simultaneously. For example, a source with two parallel control devices has 75% of the exhaust or emissions directed to control device E, then it follows that 25% are directed to control device F (assuming no vents or leaks).

Removal Efficiency

The removal efficiency of a device considers the elimination of the air contaminant from the emission stream that the device captures ("sees"). When calculating the removal efficiency of a device, one must consider the age and effectiveness of the device in removing an air contaminant and the device's loss of effectiveness over time. For example, a control device is 90% effective but steadily becomes linearly less effective over time. The control device finally reaches 40% effectiveness before it is serviced or replenished and returned to service at 90% effectiveness. The true removal efficiency of this device is 65%, not accounting for the time that it was off-line for servicing. The control device performance overtime or the curve of its effectiveness overtime is specific to the control device. Each separate control device should be considered independently.

Overall Control Efficiency

To calculate the overall efficiency of the control devices, one must consider the operating time, the capture efficiency, and removal efficiency of the control device. For one control device, the equation for calculating the overall control efficiency (%) is:

$$\text{Overall Control Efficiency} = \text{Operating Time} \times \text{Capture Efficiency} \times \text{Removal Efficiency}$$

The following are examples of calculating the overall efficiency. The methods of calculating the overall control efficiency in the following three examples can be combined to compute the overall control efficiency for more complicated control device configurations.

Example 1

One control device operates 90% of the time that the source operates. This control device captures 65% of emission stream and removes 75% of the air contaminant from the emission stream. The overall efficiency of the device is 44% as follows:

$$0.90 * 0.65 * 0.75 = 0.44 \text{ or } 44\%$$

Example 2

Two control devices are present in a series configuration. The first device, A, operates 100% of the time when the source is operating, captures 95% of the emission stream, and removes 60% of the air contaminant from the emission stream. A second device, B, operates 80% of the time when the source is operating, captures 100% (although in practice, 100% efficiency is almost unheard of) of the emission stream from the source, and removes 90% of the air contaminant it sees from the emission stream. Device A has an overall efficiency of 57% as follows:

$$\text{Device A } 1.00 * 0.95 * 0.60 = 0.57 \text{ or } 57\%$$

Control device B only sees 38% of the air contaminant from the original emission stream, e.g., if 100 units are exhausted from the source, five units are never captured by device A, and device A removes 60% of what it sees ($95 * 0.60 = 57$). Therefore, device B sees 38 units ($95 - 57 = 38$). Thus, the overall efficiency of device B in relation to the initial exhaust stream is 27% as follows:

$$\text{Device B } 0.38 * 0.80 * 1.00 * 0.90 = 0.27 \text{ or } 27\%$$

The overall efficiency of the entire system is 84% as follows:

$$\text{Entire System } 0.57 + 0.27 = 0.84 \text{ or } 84\%$$

Example 3

Two control devices are present in a parallel configuration. 75% of the source's exhaust is diverted to device C and the other 25% is diverted to device D. Device C operates 95% of the time the source is operating, captures 90% of the exhaust diverted to it, and has a removal efficiency of 80%. Device D operates 50% of the time when the source is operating, captures 75% of the exhaust diverted to it, and has a 40% removal efficiency. The overall efficiency of the Device C is 68% as follows:

$$\text{Device C } 0.95 * 0.90 * 0.80 = 0.68 \text{ or } 68\%$$

The overall efficiency of device D is 15% as follows:

$$\text{Device D } 0.50 * 0.75 * 0.40 = 0.15 \text{ or } 15\%$$

The overall efficiency of the entire system is 55% as follows:

$$\text{Entire System } (0.75 * 0.68) + (0.25 * 0.15) = 0.55 \text{ or } 55\%$$

Check Box for Design Efficiency

Please note that a check box has been added to each form to indicate if the design efficiency

of the air pollution control device is being reported. Please enter “Yes” in this box if, 1) the operating time of the control device was assumed to be 100% of the time, 2) the capture efficiency of the device was assumed to be 100%, and 3) the design efficiency of the control device as reported by the manufacturer or designer of the control device is being reported. If you are reporting emissions based upon a Continuous Emissions Monitoring (CEM) method, please do not check this box.

As discussed previously, facilities should make every effort to report the overall efficiency rather than the design efficiency if the information is available. This would avoid the conservative “rule effectiveness” assumption triggered when the design efficiency is used.

REPORTING OF UNUSUAL EMISSION RELEASES OR UPSETS

The Emission Statement forms are designed to capture the emissions data due to normal operations but do include provisions for any accidents or upsets. If the facility had unusual emission releases from upsets in operations or other unplanned events, these emissions should be reported as fugitive emissions under the “normal (steady state)” operating scenario or as total actual emissions under the “malfunction” operating scenario as written in an approved air pollution control permit. The different operating modes, normal or malfunction, are defined in the Emission Unit/Batch Process Inventory Form for each the operating scenario. If the approved air pollution permit has an operating scenario designated as malfunction for accidental releases or other unforeseen events, then the unusual emission releases should be reported under the “malfunction” operating scenario as fugitive or total emissions, as long as the emissions reporting follows the structure of the permit. If the approved air pollution permit does not have an operating scenario designated as malfunction, then the unusual emission releases should be reported under the “normal” operating scenario of that particular emission unit as fugitive emissions only.

PERMIT AMENDMENTS AND ALTERATIONS

Please note that deviation from permit conditions without notification and approval by the Department is a violation subject to a penalty or other enforcement action. Acceptance of an Emission Statement does not mean that the Department condones, accepts, or endorses any deviation from permit conditions or levels. To alter, amend, or delete a permit issued under N.J.A.C. 7:27-8, please contact the Helpdesk for Minor Sources at (609) 292-6716. To alter, amend, or delete a “major” facility permit issued under N.J.A.C. 7:27-22, please contact your Permit Writer directly or the Helpdesk for Major Sources at (609) 633-8248.

ENFORCEABILITY

This submittal is required by N.J.S.A. 13:1B-3, 13:1D-9, and 26:2C-1 et seq., in particular N.J.S.A. 26:2C-9 and 19. If the facility does not comply, it may be subject to enforcement actions according to N.J.S.A. 26:2C-19 et seq., N.J.A.C. 7:27-21 et. seq., and N.J.A.C. 7:27A-3.1 et. seq.

OPERATING PERMIT FEES

State law (N.J.S.A. 26:2C) requires the use of the Emission Statement as the basis for the estimation of fees. For facilities required to get a Title V Operating Permit, the Department may send an estimated invoice based upon the information provided in the Emission Statement. Should this estimated invoice not accurately reflect the true, accurate, or complete emissions from the facility, it is the responsibility of the facility to update the Emission Statement accordingly. This update must be made separately from the fee payment process. Please follow the procedures for making corrections as found in this Guidance Document. Questions on the Title V Operating Permit fees can be addressed to the Bureau of Air Permits at (609) 292-0834.

All revised submittals must be made in the RADIUS software and proper certification through the insertion of PIN Code in a document can suffice for certification through written signature. Please see the **Certification** section of this document for details on proper Certification. If any corrections to the Emission Statement are received without proper Certification or if only the Title V fee payment estimate is corrected without proper certification and without a change to the Emission Statement, the Department will disregard those changes if the changes cause any difference in the emissions from the facility. Compliance action may be taken for submitting an incomplete or inaccurate Emission Statement or for failure to pay the proper emission fees.

SPECIFIC GUIDANCE FOR EMISSION STATEMENT REPORTING

GETTING STARTED

To start the process of Emission Statement reporting, there are several items that need to be resolved. First, compile a complete list of all equipment or sources that fall under the Emission Statement rule. Gather all the information on material processed, raw materials used, products produced, fuel burned, etc. Good record keeping at the facility for the reporting year will make this process simpler. With the list of equipment, determine if the equipment is non-source fugitive, insignificant, or significant by referring to the Glossary for the definitions of these terms. Once the significant sources have been identified, determine if the source is a batch process. The sources that are not batch processes are reported as emission units. The Glossary provides definitions for batch process and emission unit. The rest of the Guidance Document is procedures for reporting emission via RADIUS, including an explanation on how to structure the batch processes and emission units with operating scenarios.

RADIUS REPORTING

RADIUS is structured in ten screens:

- Facility Profile (General)
- Facility Profile (Planning)
- Non-Source Fugitive Emissions
- Insignificant Source Emissions
- Equipment Inventory
- Control Device Inventory
- Emission Point Inventory
- Emission Unit/Batch Process Inventory
- Subject Item Group Inventory
- Emission Statement

Appendix B lists all the function buttons in RADIUS. Please take the time to review **Appendix B**. The list gives the description of the function and where the button is located in RADIUS. Also, there are pull-down menus that list choices for certain data fields. These pull-down menus are created to make reporting in RADIUS easier.

The starting point for first-time filers and repeat filers are different but once the 2009 Emission Statement has been created, the rest of the reporting process is the same.

New Users of RADIUS

Facilities filing an Emission Statement for the first time have the option of creating a new file in RADIUS or using existing permits to create an Emission Statement. The Department can provide to new users upon request a RADIUS file that has been converted to an Emission Statement from existing permits in the Department's database.

With RADIUS successfully installed on the computer, run RADIUS. To create a new Emission Statement, activate a new document by clicking the mouse on "File" at the top left corner. A pull-down menu appears. Click the mouse on "New" for a new document. In the dialog box that appears, choose Emission Statement under Document Type and enter a title or description under Document Title. Enter the emission year, 2009, in the next dialog box.

For users that choose not to re-enter data that are in their permits, a request can be made to the Department for the converted file from permits. Once the user receives the converted file, it can be imported into RADIUS by clicking on "File" and selecting "Import" from the pull-down menu. In the dialog box that appears, navigate to the folder where you saved the converted file, select the file, and hit "Open". Once the import is completed, click on "File" and select "Open" from the pull-down menu. In the dialog box that appears, select the Emission Statement document. Review the document and update any information that may have changed from year 2008 to 2009.

Repeat Filers of Emission Statements

To create a 2009 Emission Statement, facilities first would open their previously submitted 2008 Emission Statement in RADIUS. Then use the "Emission Statement/Save As Different Year" function under the "Tools" pull-down menu in RADIUS. A dialog box will appear, asking for a new "Emission Statement Document Title"; enter a new document title. Another dialog box will ask for the Emission Year; enter the Emission Year (2009). Once the new document has been created, click on "File", select "Open", and open the new document.

FACILITY INFORMATION SCREENS

Once the new Emission Statement has been created, start at **Table of Content** in RADIUS. There are nine screens listed under **Facility Information Forms** on the Table of Content. To activate a screen in RADIUS, double-click the mouse on the screen title, e.g., double clicking the mouse on **Facility Profile (General)** will bring up that particular screen. To close the screen and return to the **Table of Content**, click the mouse on "File" at the top left corner and select "Close" in the pull-down menu.

FACILITY PROFILE (GENERAL)

All administrative information is entered on this screen. Please provide as much information as possible, except in sections where the Department has deemed the information is unnecessary for the Emission Statement. Many of the fields are required. When using RADIUS, the

Administrative Check tool will list specific unfilled fields or reported data as “Errors” which must be corrected before the software will allow the Emission Statement to be submitted on diskette. Some data fields may appear on the completeness check as a “Warning.” Data that appears as a “Warning” may still be essential to an Emission Statement submittal and be required by the rule, as listed in Appendix I. The Department deemed this information to be of lesser consequence and may allow certain types of facilities or operations to submit an Emission Statement without this information. The Department may still require this information to be submitted after the initial submittal.

There are two sections to this form, **Location and Industry Information** and **Contact Information**. The Field Descriptions will help understand how to enter the information.

Field Descriptions

Location and Industry Information

Facility ID – the facility identification number assigned by NJDEP. For major facilities subject to Title V and for minor facilities, this number should be the Bureau of Air Permit’s five digit Program Interest (PI) number.

Facility Name – legal name of the facility.

Street Address – legal address of the facility.

Mailing Address – address where all written correspondence should be sent at the facility. If the Mailing Address is the same as the Street Address, click on the Copy button when reporting in RADIUS. This will copy the street address to the mailing address.

County – where the facility is located in New Jersey.

Location Description – physical description of the location of the facility to assist in finding the facility on a map or by a site visit.

X-Coordinate and **Y-Coordinate** – submittals may be made in either the UTM or the Latitude and Longitude. To determine facility location, use either United States Geological Survey (USGS) maps (sometimes called USGS photo quad maps) or electronic location using the Global Positioning System (GPS). The coordinates to be reported are not those of any one "stack" but should reflect those of the center of the facility. On the Department’s website, a Geographical Information System (GIS) facility locator is available. If not known, State Plane Coordinates for the facility can be accessed here at www.state.nj.us/dep/gis/faqgeneral.htm#Gen13.

Units – for X- and Y-coordinates, use one of the following: Dec. Deg., Dec. Min., DMS, Feet, Long/Lat, Meters, New Jersey State Plane 83-Meters, New Jersey State Plane

83-USFeet, Other, and UTM Zone 01N(180 W to 174W)-Meter. (Please do not use Latitude / Longitude because the RADIUS program only allows whole numbers.)

Datum – indicates how the location for the facility was determined. Choose one of the following: more test, NAD27, NAD83, test, test10, testing, unknown, or WGS84. NAD83 is the datum currently used to position points, lines, and polygons geospatially in NJ State Plane coordinates (in feet) for use with Arcview. It stands for “North American Datum 1983.” NAD27 is an older datum (1927). WGS84 stands for “World Geodetic System of 1984.” This is an ellipsoid used by GPS which is the same as GRS80 (“Geodetic Reference System of 1980”), the model used to define NAD83.

Source Org. – organizations where the coordinates were obtained. Choose one of the following: Address Match, County, DEP-GIS, DEP-Program, EPA, Other/Unknown, or Submittal Document. If one of the organizations was used to obtain the units and datum for the source, please provide this organization.

Source Type – method used by the source organization to obtain the coordinates. Choose one of the following: Approx. Addr. Match, DEP-Program Database, Digital Image, Exact Address Match, GPS, Hard Copy Map, or Other/Unknown.

NAICS – The North American Industry Classification System is a 6 digit numerical indicator of the primary type of business activity chosen from the drop-down menu. The NAICS code can be found here www.census.gov/eos/www/naics/.

Contact Information

For the Emission Statement, the only facility contact information required is for Emission Statement and Responsible Official. Emission Statement contact type is any one person **at the facility** (not a consultant) whom the Department may contact for information regarding the Emission Statement. (Note, however, that consultants who participated in the preparation of the Emission Statement must also sign the emission certification form. Consultant is a separate contact type but is not required in an Emission Statement submittal.) Please see the Glossary for an explanation of the criteria for designating an individual as a Responsible Official.

Name – name of the contact person at the facility.

Title – official title of contact person.

Phone – current telephone number where the contact person can be reached to answer specific questions about the Emission Statement submittal.

Fax – number where information can be faxed to the contact person

Other – other numbers where the contact person can be contacted.

Type – examples are cellular/mobile phone, pager number, voice mail, etc.

Email – electronic mail address of the contact person. Questions and Emission Statements can be submitted electronically by email.

Organization – name of the company where the contact person is employed.

Organization Type – choose one of the following: Corporation, County, Federal, Individually Owned, Local, Municipal, Partnership, Public, State, or Utility.

NJ EIN – Employer Identification Number is a tax identification number for employers that contribute to New Jersey unemployment insurance. The New Jersey EIN is an eleven digit number. Do not include any dashes when reporting the NJ EIN for Emission Statements. Also, do not use the nine digit federal number. The accounting or payroll office of the facility should be able to provide this number. Please provide the EIN associated with the employer at the facility's mailing address. Please do not use a placeholder number such as all zeros.

Mailing Address – address where all written correspondence should be sent for the contact person.

FACILITY PROFILE (PLANNING)

This screen is for estimating the projected percent change in emissions based on a comparison of the facility's reporting year emissions to those the facility expects in the future. For the 2009 Emission Statement, emission estimates for year 2011 and 2014 are required to compile data for a statewide inventory of all sources of air contaminants. Anticipated increases or decreases in emissions should only be listed if the facility managers have a reasonable degree of certainty that the change(s) will occur. For example, if company management has committed to and budgeted funds for a 25% reduction in VOC emissions through pollution prevention measures by 2011, the 25% decrease should be listed. If management has approved an expansion (new manufacturing line), including budgeting funds, the estimated emission increase should be listed. Projected changes should be based on real projects, not wishful thinking. Estimated projections do not become commitments of the facility. This information is for planning purposes only! For example, if a facility projects that emissions will be reduced, by some amount, the facility is not consequently liable to achieve the reductions projected simply because they listed this reduction in an Emission Statement.

Field Descriptions

Emission Year – This field is automatically filled at the beginning where RADIUS requested the emission year.

Facility Type – based on the PTE of the facility. If the PTE of the facility is equal to or exceeds the

threshold in N.J.A.C. 7:27-22, then the facility is designated as “Major” or “Major OP Pending.” All other facilities would be “Minor” or “Synthetic Minor”. The designation of the facility is determined by the Department. If the status of the facility has changed or if the facility believes that the information about the facility type is incorrect, please notify the Compliance and Enforcement Division of NJDEP the change. The Compliance and Enforcement Division will request information from the facility to document the change in status of facility type. If the Department agrees that the status of the facility should be changed, then this field can be changed by clicking “Tool” and selecting “Emission Statement/Change Facility Type” under the pull-down menu. Select the correct facility type and then save the document.

Number of Employees – determined by totaling the number of all full time and part time employees on the payroll and any on-site consultants used to operate processes or provide other engineering support. Number of employees does not include off-site consultants or maintenance crews, e.g., lawn and garden upkeep. This number is important for projecting the emissions of air contaminants in other areas of the Emission Inventory (e.g., area source emissions) to avoid double counting statewide emissions.

Estimated changes in total facility emissions – enter the percentage change in the first column and enter “Increase” or “Decrease” in the second column.

NON-SOURCE FUGITIVE EMISSIONS

Air emissions that are not intended to exhaust through an emission point (stack) or arise from a significant piece of equipment are non-source fugitive emissions. Examples of non-source fugitive emissions include dust blowing from rock or coal piles. Volatile organic compound emissions from leaking valves, pump seals, or flanges are also non-source fugitive emissions. Any emissions that occur from a significant piece of equipment (i.e., a source) should not be considered as non-source fugitive emissions. Emissions that occur from a source but are not captured by a control device are considered source fugitive emissions and are reported with that source. For example, printing emissions at a print shop are not non-source fugitive emissions because it can be collected and emitted from an emission source (i.e., a significant piece of equipment). Please see **Appendix A** for the definition of fugitive emissions and an explanation of source and non-source fugitive emissions.

Field Description

FG NJID – the non-source fugitive identification number for each source or each group of sources that emit fugitive emissions. Start with the number one as FG1. For RADIUS reporting, type only “1” and “FG” is automatically added to the number to indicate fugitive. For Emission Statement reporting purposes, all fugitive emissions may be included in FG1 or can be reported at the summary level (i.e., FG0).

Description of Activity – describes or lists the activity or activities that caused the fugitive emissions. Include in this field a description of all fugitive emissions for which you have

calculated and reported emissions.

Location – describes the physical location inside of the facility for the source or equipment.

Reasonable Estimate of Emissions – *CLICK THE “CALCULATE TOTALS” BUTTON AT THE BOTTOM OF THE SCREEN!* These are permitting fields for major facilities where the *potential* emission rates are in an approved Title V permit. These fields are not required for the Emission Statement Program and will not be used for reporting purposes. They may be used by others in the Department but not by the Emission Statement Program. Emissions for Non-Source Fugitives are **required** and should be reported on a different screen as described on page 48 of this Guidance Document.

INSIGNIFICANT SOURCE EMISSIONS

Equipment or control apparatus that does not need a permit and certificate under N.J.A.C. 7:27-8.2 is an insignificant source. Also, any equipment or control apparatus that does not meet the criteria for a significant source under N.J.A.C. 7:27-22 is an insignificant source. In other words, any piece of equipment that does not meet the definition of a significant source, as defined in **Appendix A**, is an insignificant source. Examples of insignificant sources include any fuel burning units with a maximum gross heat input rate less than one million BTU per hour, storage tanks less than two thousand gallons in capacity that contain VOC, and storage tanks that contains VOC with a vapor pressure less than 0.02 psia, including fuel oil storage tanks.

Field Description

IS NJID – the insignificant source identification number for each insignificant source. Start with the number one as IS1. For RADIUS reporting, type only “1” and “IS” is automatically added to the number to indicate insignificant. The Department recommends the following numbering scheme:

IS1 may include all other insignificant sources such as small storage tanks, laboratory hoods, small process equipment, food processing units, etc. The Department recommends that all non-combustion insignificant sources be combined into one identification number, IS1.

IS2 may include all insignificant combustion sources burning the same fuel. Use a separate number (e.g. IS3) for a second fuel type. For example, three insignificant sources less than 0.3 MMBtu/hr burning natural gas can be reported in IS2 while the two insignificant sources burning diesel fuel can be reported in IS3. As these are two different fuel types, these insignificant sources should be given two separate identification numbers.

Source Description – describes the equipment or source deemed as insignificant.

Equipment Type – a list of equipment types is available in the pull-down menu.

Location – describes the physical location inside of the facility for the insignificant source.

Estimate of Emissions – *CLICK THE “CALCULATE TOTALS” BUTTON AT THE BOTTOM OF THE SCREEN!* These are permitting fields for major facilities where the *potential* emission rates as in an approved Title V permit. These fields are not required for the Emission Statement Program and will not be used for reporting purposes. They may be used by others in the Department but not by the Emission Statement Program. Emissions for Insignificant Sources are **required** and should be reported on a different screen as described on page 50 of this Guidance Document.

EQUIPMENT INVENTORY

This is the list of all significant pieces of equipment at the facility. Please see the Glossary in **Appendix A** for the definition of significant equipment from N.J.A.C. 7:27-8. **This includes control devices that burn fuel.**

Field Description

Equip. NJID – identification number for each piece of equipment. Start with the number one, E1. For RADIUS reporting, type only “1” and “E” is automatically added to the number to denote equipment.

Facility’s Designation – this is the facility’s own identification for the source.

Equipment Description – describes the piece of equipment.

Equipment Type – a list of equipment types is available in the pull-down menu.

Certification Number – this is the certificate to operate or the permit to construct from NJDEP.

Installation Date – *THIS FIELD DOES NOT NEED TO BE ENTERED FOR EMISSION STATEMENT REPORTING!* These are permitting fields for major facilities.

Grandfathered – *THIS FIELD DOES NOT NEED TO BE ENTERED FOR EMISSION STATEMENT REPORTING!* These are permitting fields for major facilities.

Last Modified Date – *THIS FIELD DOES NOT NEED TO BE ENTERED FOR EMISSION STATEMENT REPORTING!* These are permitting fields for major facilities.

Equipment Set ID – *THIS FIELD SHOULD ONLY BE USED IF IT IS USED IN YOUR AIR POLLUTION CONTROL PERMITS/APPLICATIONS!*

For equipment type storage vessels (liquid storage tanks) or combustion sources with internal NOx controls, equipment information must be provided by using the Edit Details function

button. Please refer to **Appendix B** for more details on this function button.

CONTROL DEVICE INVENTORY

This is the list of all control devices at the facility. Any control devices used to remove air contaminants after leaving the equipment should be listed here and then related to a significant piece of equipment at the emission unit or batch process level. Regardless of the number of pieces of equipment connected to it, a control device should be listed only once in this list.

Field Description

CD NJID – identification number for each control device. Start with the number one as CD1. For RADIUS reporting, type only “1” and “CD” is automatically added to the number to denote a control device.

Facility’s Designation – this is the facility’s own identification for the control device. It can be changed or modified at anytime by the facility.

CD Description – describes the control device.

CD Type – a list of control device types is available in the pull-down menu.

Installation Date – *THIS FIELD DOES NOT NEED TO BE ENTERED FOR EMISSION STATEMENT REPORTING!* These are permitting fields for major facilities.

Grandfathered – *THIS FIELD DOES NOT NEED TO BE ENTERED FOR EMISSION STATEMENT REPORTING!* These are permitting fields for major facilities.

Last Modified Date – *THIS FIELD DOES NOT NEED TO BE ENTERED FOR EMISSION STATEMENT REPORTING!* These are permitting fields for major facilities.

CD Set ID – *THIS FIELD SHOULD ONLY BE USED IF IT IS USED IN YOUR AIR POLLUTION CONTROL PERMITS/APPLICATIONS!*

EMISSION POINT INVENTORY

This screen records data for each emission point at the facility. An emission point is the “doorway” where the air contaminants are emitted to the atmosphere. A stack, door, window, vent, or any other opening to the atmosphere all constitute an emission point.

Field Description

PT NJID – identification number for each emission point. Start with the number one as PT1. For RADIUS reporting, type only “1” and “PT” is automatically added to the number to denote an emission point.

Facility’s Designation – this is the facility’s own identification for the particular emission point. It can be changed or modified at any time by the facility.

PT Description – describes the emission point in terms of location or characteristics.

Configuration – physical configuration of the emission point.

Equivalent Diameter – relates the diameter as if a round configuration is present. It can be calculated for non-circular emission points in the RADIUS software. Use the “Calculate Equivalent Diameter” button in RADIUS to compute the equivalent diameter of a stack that is not circular. Enter the dimensions into the spaces next to the button and the RADIUS software will calculate the equivalent diameter.

Height – stack height or the height of emission point. This is the height above the ground at the base of the stack.

Distance to Property Line – *THIS FIELD DOES NOT NEED TO BE ENTERED FOR EMISSION STATEMENT REPORTING!* These are permitting and risk analysis fields.

Exhaust Temperature – in degrees Fahrenheit. Report only the **average** exhaust temperature under Average. For Emission Statement reporting, the maximum and minimum exhaust temperature are not required.

Exhaust Volume – the volumetric flow rate of the exhaust in cubic feet per minute. Report only the **average** exhaust volume. For Emission Statement reporting, the maximum and minimum exhaust volume are not required.

Discharge Direction – *THIS FIELD DOES NOT NEED TO BE ENTERED FOR EMISSION STATEMENT REPORTING!* These are permitting and risk analysis fields.

PT Set ID – *THIS FIELD SHOULD ONLY BE USED IF IT IS USED IN YOUR AIR POLLUTION CONTROL PERMITS/APPLICATIONS!*

EMISSION UNIT/BATCH PROCESS INVENTORY

This screen is composed of two parts, Emission Unit and Batch Process. All significant sources are reported as an emission unit or a batch process.

Emission Unit

An emission unit is a permitting method that describes one or more significant

component operations. Stand-alone equipment can make up an emission unit. Several pieces of equipment with physical commonalities such as a common exhaust system may constitute an emission unit. An emission unit process is more likely to be a continuous operation, where raw materials enter production equipment as product is removed from it. A piece of equipment may only appear in one emission unit.

All reporting of the emissions from significant pieces of equipment are done on the Emission Unit or Batch Process level. In **Appendix F**, the Preferred Method for Combining Equipment into an Emission Unit for Emission Statement Reporting presents the ideal scheme to structure an emission unit. Reporting under the Emission Statement program must follow the structure of the process as indicated on the approved permit for the process. If the Department approved a permit after the company requested a given structure, then the structure of the Departmentally approved permit must be followed even if this structure leads to reporting more detailed data than in the past.

Field Description

Type: U – when using RADIUS, pick U as Type at the upper right hand corner of the screen if an Emission Unit is being reported.

Emission Unit Inventory

U NJID – identification number for each emission unit as used on the approved permit for this source. Start with the number one, U1, or enter the number of the emission unit from the approved permit. For RADIUS reporting, type only “1” and no “U” which is automatically added to the number to denote emission unit.

Facility’s Designation – this is the facility’s own identification for the emission unit. This designation can be changed at anytime.

U Description – describes the emission unit.

Emission Unit Operating Scenarios

If a piece of equipment operates in more than one mode, the various modes of operation can be described by operating scenarios within one emission unit. An operating scenario describes a particular manufacturing operation or process. The description identifies the relationship of a piece of equipment, a control device, and an emission point. **An operating scenario may describe only one piece of equipment, but several operating scenarios may describe the same piece of equipment.**

U: NJID/Facility’s Designation – this field is for the emission unit identification number listed on previous screen that contains all the emission units. For RADIUS reporting, choose from the pull-down menu that lists the emission

units available. Use the U-NJID number from the approved air pollution control permit for this source. If a permit is pending and no approved permit exists, then use the U-NJID number from the pending permit application.

UOS NJID – identification number for each emission unit operating scenario. Start with the number one as OS1. For RADIUS reporting, type only “1” and no “OS” which is automatically added to the number to denote an emission unit operating scenario. Use the OS number from the approved air pollution control permit for the source. If no permit has been issued, then use the OS number from the pending permit application or start with the number one.

Facility’s Designation – this is the facility’s own identification for the operating scenario.

UOS Description – describes the operating scenario.

Operation Type – the type of operation for the operation scenario. For Emission Statement reporting by Emission Unit, only report the emissions in the Normal-Steady State as operation type. The emissions for Maintenance, Malfunction, Normal-Steady State, Shutdown, Standby, and Startup all should be reported in Normal-Steady State operation type. To apportion the emissions by operation type is unpractical and is not required. Reporting by Malfunction operation type is for accidental releases (see section on **Reporting of Unusual Emissions Releases or Upsets**). The Malfunction operation type should be used only if it is written in an approved air pollution control permit. Exceptions to this guidance include creating separate operating scenarios for roof landings of floating roof VOC tanks, cleaning of printing presses with solvent, and tank cleaning.

Significant Equipment – this field is to identify the equipment associated to this operating scenario. In RADIUS, choose from the pull-down menu that contains the Equipment Inventory.

Control Device – for RADIUS reporting, double-click option activates the dialog box for reporting the use of a control device on the emission unit. In the dialog box, a pull-down menu lists all the control devices in the Control Device Inventory as well as a pull-down menu that designates the control device as primary, secondary, or tertiary. Primary, secondary, and tertiary are the order of overall control efficiency for a particular air contaminant. If a facility has a thermal oxidizer (e.g., overall control efficiency is 95%) and a carbon filter (e.g., overall control efficiency is 80%) for removal of VOC, then the thermal oxidizer is the primary and the carbon filter is the secondary.

Emission Point – In RADIUS, double-click option activates the dialog box for reporting the emission point for the emission unit. A pull-down menu lists

all the emission points in the Emission Point Inventory. Use the PT-NJID from the approved air pollution control permit for the source. If no permit has been issued, use the PT-NJID from the pending permit or start with the number one.

SCC – A list of SCC codes are available as a separate document at the Departments website at www.state.nj.us/dep/aqm/es/scc.pdf. Double-click on this field in RADIUS activates the SCC builder. Using the draw-down menu to create the SCC codes, choose a category in each line, starting with the first and going until no more choices are available. Then click the “Add” button to obtain the full SCC code. Please be sure that SCC codes are no fewer than four levels and do not begin with the letter ‘A’. Consider SCC codes beginning with 4-03- for VOC storage tanks, 3- series for storage tank classifications depending on the chemical stored and 3-90-900-xx, 910-xx, and 920-xx for storage tanks for combustion sources.

Annual Operating Hours – *THIS FIELD DOES NOT NEED TO BE ENTERED FOR EMISSION STATEMENT REPORTING!* These are permitting fields for major facilities.

VOC Range – *THIS FIELD DOES NOT NEED TO BE ENTERED FOR EMISSION STATEMENT REPORTING!* These are permitting fields for major facilities.

Flow – *THIS FIELD DOES NOT NEED TO BE ENTERED FOR EMISSION STATEMENT REPORTING!* These are permitting fields for major facilities.

Temperature – *THIS FIELD DOES NOT NEED TO BE ENTERED FOR EMISSION STATEMENT REPORTING!* These are permitting fields for major facilities.

Batch Process

A batch process is a method of permitting that describes manufacturing operations (normally related to the chemical or pharmaceutical industries) that involves multiple components and multiple manufacturing operations. Continuity of the flow of raw materials into and the flow of products from production equipment primarily differentiates an emission unit process from a batch process. Batch processes occur when raw material input and product removal does not occur simultaneously. However, many simple batch processes can be treated as an Emission Unit, even though the process is not continuous. Batch Process reporting should be used only for processes that have Departmentally approved batch permits.

Field Description

Type: BP – when using RADIUS, pick BP as Type at the upper right hand corner of the form.

Batch Process Inventory

BP NJID – identification number for each batch process. Start with the number one as BP1. For RADIUS reporting, type only “1” and “BP” is automatically added to the number to denote batch process. Use the BP-NJID from the approved air pollution control permit for the source. If no permit has been issued, use the BP-NJID from the pending permit or start with the number one.

Facility’s Designation – this is the facility’s own identification for the batch process.

BP Description – describes the batch process.

Batch Process Operating Scenarios

An operating scenario in a batch process always describes a process line. The unit operations within the process line are referred to as steps. Therefore, naming the operating scenario within a batch process and the step identifies a unit operation.

BP: NJID/ Facility’s Designation – this field is for the batch process identification number from the previous screen that lists all the batch processes. In RADIUS reporting, choose from the pull-down menu that lists the batch processes available. Use the BP-NJID from the approved air pollution control permit for the source. If no permit has been issued, use the BP-NJID from the pending permit or start with the number one.

BPOS NJID – identification number for each batch process operating scenario. Start with the number one as OS1. For RADIUS reporting, type only “1” and no “OS” which is automatically added to the number to denote batch process operating scenario. Use the BPOS-NJID from the approved air pollution control permit for the source. If no permit has been issued, use the BPOS-NJID from the pending permit or start with number one.

Facility’s Designation – this is the facility’s own identification for the operating scenario.

BPOS Description – describes the operating scenario.

BPOS Type – the type of operation that best describes the operating scenario.

For Emission Statement reporting by Batch Process, only report the

emissions for the Batch Manufacturing as operation type. The emissions in Batch Manufacturing, Maintenance, Malfunction, Normal-Steady State, Shutdown, Standby, and Startup all can be reported in Batch Manufacturing operation type. To apportion the emissions by operation type is unpractical and is not required. Reporting by Malfunction operation type is for accidental releases (see section on **Reporting of Unusual Emissions Releases or Upsets**). The Malfunction operation type should be used only if it is written in an approved air pollution control permit.

BPOS Steps

BP: NJID/Facility's Design – this field is for the batch process identification number from the previous screen that lists the batch processes. For RADIUS reporting, choose from the pull-down menu that lists the emission units available. Use the BP-NJID number.

BPOS: NJID/Facility's Design – this field is for the operating scenario identification number from the previous screen that lists the operating scenarios. For RADIUS reporting, choose from the pull-down menu that lists the emission units available. Use the BPOS-NJID number.

Step NJID – identification number for each step. Start with the number one as ST1. For RADIUS reporting, type only “1” and no “ST” which is automatically added to the number to denote step. When reporting emissions for the operating scenario, only summary step reporting, ST0, is required for Emission Statement reporting. This is a summary of the emissions occurring for the specific operating scenario in all of the steps.

Facility's Designation – this is the facility's own identification for the step.

Step Description – describes the step.

Operation Type – the type of operation that best describes the step of the operating scenario.

For Emission Statement reporting by Batch Process Step, only report the emissions in the Normal-Steady State or Malfunction as operation type. The emissions for Maintenance, Malfunction, Normal-Steady State, Shutdown, Standby, and Startup all can be reported in the Normal-Steady State operation type. To apportion the emissions by operation type is unpractical and is not required. Reporting by Malfunction operation type is for accidental releases (see section on **Reporting of Unusual Emissions Releases or Upsets**). The Malfunction operation type should be used only if it is written in an approved air pollution control permit. Exceptions to this guidance include creating separate operating scenarios for roof landings of floating roof VOC tanks, cleaning of printing presses with solvent, and tank

cleaning.

Significant Equipment – this field is to identify the equipment associated to this operating scenario step. In RADIUS, choose from the pull-down menu that contains the Equipment Inventory.

Control Device – for RADIUS reporting, double-click option activates the dialog box for reporting the use of a control device or control device sets on the emission unit. In the dialog box, a pull-down menu lists all the control devices in the Control Device Inventory and a pull-down menu that designates the control device as primary, secondary, or tertiary. Primary, secondary, and tertiary are the order of overall control efficiency for a particular air contaminant. If a facility has a thermal oxidizer (e.g., overall control efficiency is 95%) and a carbon filter (e.g., overall control efficiency is 80%) for removal of VOC, then the thermal oxidizer is the primary and the carbon filter is the secondary.

Emission Point – choose the emission point of the source from the Emission Point Inventory. In RADIUS, double-click option activates the dialog box for reporting the emission point for the emission unit. A pull-down menu lists all the emission points in the Emission Point Inventory.

SCC – A list of SCC codes are available as a separate document at the Department’s website at www.state.nj.us/dep/aqm/es/scc.pdf. In RADIUS, the double-click option on this field activates the SCC builder. Using the draw-down menu to create the SCC codes, choose a category in each line, starting with the first and going until no more choices are available. Then click the “Add” button to obtain the full SCC code. Please be sure that SCC codes are no fewer than four levels and do not begin with the letter ‘A’.

Step Run Time – *THIS FIELD DOES NOT NEED TO BE ENTERED FOR EMISSION STATEMENT REPORTING!* These are permitting fields for major facilities and not where actual emissions are reported.

VOC Range – *THIS FIELD DOES NOT NEED TO BE ENTERED FOR EMISSION STATEMENT REPORTING!* These are permitting fields for major facilities and not where actual emissions are reported.

Flow – *THIS FIELD DOES NOT NEED TO BE ENTERED FOR EMISSION STATEMENT REPORTING!* These are permitting fields for major facilities and not where actual emissions are reported.

Temperature – *THIS FIELD DOES NOT NEED TO BE ENTERED FOR EMISSION STATEMENT REPORTING!* These are permitting fields for major facilities and not where actual emissions are reported.

SUBJECT ITEM GROUP INVENTORY

This screen is for grouping subject items (e.g. emission units) together for the purpose of proposing a cap, an intra-facility emissions trading group, or placing requirements on groups of subject items. DO NOT USE THIS SCREEN FOR EMISSION STATEMENT REPORTING UNLESS YOU HAVE AN APPROVED AIR POLLUTION CONTROL PERMIT THAT SPECIFIES A “GROUP” FOR REPORTING! In this case, the group must be created consistent with the permit that contains this group.

Field Description

GR NJID – identification number for each group. Start with number one as GR1. In RADIUS, first click on the “New Group” function button. This activates a window that asks for the GR NJID and Facility’s Designation. To assign the GR NJID in RADIUS, type only “1” and “GR” is automatically added to the number to denote a group.

Facility’s Designation – this is the facility’s own identification for the group. Also, a description of the group may be included in this field.

Type – this is the type of source, i.e., choose batch process, equipment, fugitive, insignificant, or emission unit. To add more sources to the group in RADIUS, click on “Edit” at the top left corner of the screen and select “Add Row” from the pull-down menu.

ID – this is the NJID for the source that is to be grouped. In RADIUS, choose from the list of available sources that is associated with the “Type,” i.e., if Type was Emission Unit, then choose the U-NJID from the Emission Unit Inventory.

OS – this is the operating scenario that is associated to the group. In RADIUS, choose from the list of available sources that is associated with the “ID.”

Step – this is the step of a batch process associated to the group. In RADIUS, choose from the list of available sources that is associated with the “OS” if batch process is the selected as the “Type” for the group.

Formal Reason(s) for Group/Cap – choose one or more from this list of four as the reason(s) for the Group. The reason(s) should be consistent with the air pollution control permit for these sources.

“Avoid being subject to reqts of MACT standards”

“Avoid being subject to reqts of emis offsets”

“Avoid being subject to reqts of PSD”

“Others”

Other (Specify) – field should be completed if “Others” was selected as a reason for grouping.

Condition/Reqs that will be complied with or are no longer applicable as a result of this Group – this is a list of conditions or requirements that becomes applicable or non-applicable due to grouping. The reason(s) should be consistent with the air pollution control permit for these sources.

Operating Circumstances – this is a list of any conditions or restriction on the operation of the sources as a group. *THIS FIELD DOES NOT NEED TO BE ENTERED FOR EMISSION STATEMENT REPORTING!* These are permitting fields for major facilities and not where actual emissions are reported.

EMISSION REPORTING FORM

This is the section where all actual emissions are reported. This section solely constitutes the Emission Statement. This section cannot properly be completed unless the facility structure has been created using the Equipment, Emission Point, Control Device, Emission Unit/Batch Process, and other associated Facility Information Forms.

EMISSION STATEMENT

Emissions are reported under six Subject Items: Non-Source Fugitive, Insignificant Source, Emission Unit, Batch Process, Group, and Facility. *FOR EMISSION STATEMENT REPORTING, DO NOT REPORT EMISSIONS IN SUBJECT ITEM “GROUP” UNLESS SPECIFIED BY AN APPROVED PERMIT!* This will keep the Emission Statement reporting consistent with the Air Quality Permitting Program.

Subject Item: FG (Non-Source Fugitive)

Select FG for Subject Item. Then select a FG number, i.e., FG0, FG1, FG2, etc. FG0 allows the emissions for all FG sources to be summarized under the FG0-Summary. If a facility choose to report each FG source separately, that is also acceptable. This Subject Item is for “non-source fugitive” only; therefore source fugitive should be reported with the emission unit or batch process (see **Appendix A** for definition of non-source fugitive and source fugitive).

Field Descriptions

General

Check Boxes – only two out of the five check boxes can be used for FG.

“This Source No Longer Exists (Mark for Deletion)” – check this option if the source no longer exists in the facility or is a duplicate of another source. If the source still exists at the facility, do not check this box and see if another option below is more appropriate.

Selecting this option will delete the data from the Process and Emissions screen for the source. This will also clear any existing values in the emissions and process data fields.

“Source Did Not Operate” – this is for sources that did not operate anytime during the reporting year, i.e., the year the Emission Statement is reported for. Checking this box deactivates the emissions and process tabs so that this information is not required. This will also clear any existing values in the emissions and process data fields.

Associated Permit Activity # - this field is not applicable to FG.

Quarterly Throughput - the percentage of annual production, use of the source, or throughput occurring during each quarter, where 100% represents the operations during the calendar year, not the potential operations of the source. Quarter one (Q1) consists of the months of January, February, and March; quarter two (Q2) consists of the months of April, May, and June; quarter three (Q3) consists of the months of July, August, and September; and quarter four (Q4) consists of October, November, and December. The four quarters must total 100%. If the source operated and emitted, before controls, one or more of the air contaminant categories to be reported, then 100% must be reported for quarterly throughput. For example, for a source operating 24 hours per day for seven days per week for the entire year, the quarterly throughput would read 25, 25, 25, 25, for the quarters beginning Jan., Apr., Jul., and Oct., respectively. In a second case, if the source only operated for 123 hours in the first quarter of the year and did not operate the rest of the year, the quarterly throughput would read 100, 0, 0, and 0. Remember that the number of hours that a source operates, despite how many or few, makes up 100% of its use. A source may have operated for 1 hour or for 8760 hours during the year and either figure would represent 100% of its throughput. The Department recognizes that the values reported here are inconsistent with the reporting of fuel use and daily estimates of CO emissions for combustion sources where emissions and fuel use from December of the prior calendar year need to be reported. For each source, the quarterly throughput for the reporting year must be reported, unless the "Mark For Deletion" or “Source Did Not Operate” box was checked.

If a boiler provides seasonal space heating, but has a constant pilot light, the Quarterly Throughput should be based on the amounts of fuel burned during each Quarter, rather than the operating time that the pilot light was on.

Emissions Data

Air Contaminant – VOC, NO_x, CO (also SO₂, TSP, PM₁₀, PM_{2.5}, NH₃, CH₄, CO₂, and Pb for Title V facilities) and any of the 36 toxic air pollutants (TAP's) emitted above the reporting thresholds listed in N.J.A.C. 7:27-8, Appendix 1, Table B. Some of these air contaminants are default filled based upon the equipment type or can be added to the Emission Statement if not default filled. To add an air contaminant in RADIUS, first click onto the last air contaminant. Then click on “Edit” at the top left corner, which brings down a menu of options. Choose “Add Row” which adds a blank row. Choose an air contaminant from the draw down menu of the blank row.

Actual Emission Rates – emissions are reported under the Fugitive heading. The emissions for the entire year are reported in tons/year, 1000 tons/year for CO₂ only, or lbs/year for TAP's only. During the Peak Ozone Season (6/1-8/31) and Carbon Monoxide Season (12/1-2/28), the emissions are reported in lbs/day. For the entire Ozone Season (5/1-9/30), only NO_x needs to be reported in tons/season. The Summer Season total values are only required for CO, NO_x, and VOC. The Winter Season total values are only required for CO. For Batch Process, the emissions are reported for the batch in lbs/batch and any NO_x emitted from Batch Process is automatically calculated as 5/12 total NO_x.

Subject Item: IS (Insignificant Source)

Select IS for Subject Item. Then select an IS number, i.e., IS0, IS1, IS2, etc. **Summary reporting under IS0 is only allowed if there are no combustion sources listed as insignificant sources.** Insignificant sources can be combined by equipment type to ease reporting. “Insignificant” combustion sources can be combined with other insignificant combustion sources burning the same fuel as one IS type. For example, thirty small dryers (< 0.3 MMBTU/Hr) burning natural gas can be reported as one IS type and number while other small combustion units (< 1 MMBTU/Hr) burning diesel fuel should be reported as another IS type and number. Likewise, all “insignificant” storage tanks can be combined into one IS number. Emission calculations for equipment type **Boiler** can be performed by RADIUS. If the facility chooses to have RADIUS perform the emission calculations, then the boilers have to be listed separately in the Insignificant Source Emissions screen. Then, use the RADIUS calculation routine (Autocalculate Emissions button) to perform emission calculations for the boilers. **Equipment information must be provided by using the Source Details function button.** This is required for combustion sources, VOC storage vessels, and surface coating/printing processes, regardless if RADIUS is to perform the calculation or not. This button is on the **Emissions** screen, as is the Autocalculate Emission button.

Field Descriptions

General

Check Boxes – these five check boxes may be valid in certain cases and can be used when appropriate.

“This Source No Longer Exists (Mark for Deletion)” – check this option if the source no longer exists in the facility or is a duplicate of another source. If the source still exists at the facility, do not check this box and see if another option below is more appropriate. Selecting this option will delete the data from the Process and Emissions screen for the source. This will also clear any existing values in the emissions and process data fields.

“This Source Has No Reportable Emissions for 2009 ” – check this box if the source did not emit VOC, NO_x, CO, SO₂, TSP, PM₁₀, PM_{2.5}, NH₃, CH₄, CO₂, TAP’s, or Pb for Title V facilities. For a non-Title V facility, checking this box means the source does not emit VOC, NO_x, or CO; or the source emits SO₂, TSP, PM₁₀, PM_{2.5}, NH₃, CH₄, CO₂, TAP’s, and Pb and the non-Title V facility is not required to report these emissions. When this option is selected, the facility does not need to report the emissions for that particular emission unit (or batch process). Selecting this option will delete the data from the Process and Emissions screen for the source. This will also clear any existing values in the emissions and process data fields.

“Source Process Data Is Considered Confidential” – this option inactivates the Process data sheet. Therefore the process data does not have to be entered and can be kept confidential. Do not enter any confidential data in RADIUS. Please see the section on **Confidentiality of Emission Data** in this Guidance Document to determine what information can be marked confidential and how to properly submit confidential data to the Department.

“Source Did Not Operate” – this is for sources that did not operate anytime during the reporting year, i.e., the year the Emission Statement is reported for. Checking this box deactivates the emissions and process tabs so that this information is not required. Selecting this option will delete the data from the Process and Emissions screen for the source. This will also clear any existing values in the emissions and process data fields.

“NJDEP Default Emission Calculations” – this option is for facilities that use the RADIUS calculation routine to do the calculation for them. This is valid for boilers only. In order to use this option, the facility must supply certain information such as process data and source details.

Associated Permit Activity # - the application or permit number of the permit or certificate to operate from NJDEP, according to N.J.A.C. 7:27-8 et. seq. (in the form of PCP000000 or GEN000000) or N.J.A.C. 7:27-22 et. seq. (in the form of BOP000000). This field may not be applicable to IS.

Quarterly Throughput is the percentage of annual production, use of the source, or throughput occurring during each quarter, where 100% represents the operations during the calendar year, not the potential operations of the source. Quarter one (Q1) consists of the months of January, February, and March; quarter two (Q2) consists of the months of April, May, and June; quarter three (Q3) consists of the months of July, August, and September; and quarter four (Q4) consists of October, November, and December. The four quarters must total 100%. If the source operated and emitted, before controls, one or more of the air contaminant categories to be reported, then 100% must be reported for quarterly throughput. For example, for a source operating 24 hours per day for seven days per week for the entire year, the quarterly throughput would read 25, 25, 25, 25, for the quarters beginning Jan., Apr., Jul., and Oct., respectively. In a second case, if the source only operated for 123 hours in the first quarter of the year and did not operate the rest of the year, the quarterly throughput would read 100, 0, 0, and 0, respectively. Remember that the number of hours that a source operates, despite how many or few, makes up 100% of its use. A source may have operated for 1 hour or for 8760 hours during the year and either figure would represent 100% of its throughput. The Department recognizes that the values reported here are inconsistent with the reporting of fuel use and daily estimates of CO emissions for combustion sources where emissions and fuel use from December of the prior calendar year need to be reported. For each source, the quarterly throughput for the reporting year must be reported, unless the "Mark For Deletion" or "Source Did Not Operate" box was checked.

Process Data

Operating Amount – this is the **total** amount processed, amount of fuel burned, throughput, etc. Please note that this number should be the total amount of material processed during the period and **not** adjusted to a daily amount. For example, if an emission unit burned 10,000 gallons of fuel between 12/1 to 2/28, the amount to be reported should be 10,000 gallons. Also, the units need to be included (tons, gallons, and MMft³). The operating amount must be reported for the entire year, Peak Ozone Season (6/1-8/31), and Carbon Monoxide Season (12/1-2/28). The 6/1-8/31 total values are only required for equipment types that emits CO, NO_x, and VOC. The 12/1-2/28 values are only required for equipment types that emit CO.

Operating Time – this is the **total** actual amount of time the source operated. This

is reported for increments of **total** hours, **total** days, and **total** weeks. The operating time must be reported for the entire year, Peak Ozone Season (6/1-8/31), and Carbon Monoxide Season (12/1-2/28). The 6/1-8/31 total values are only required for equipment types that emits CO, NO_x, and VOC. The 12/1-2/28 values are only required for equipment types that emits CO. The operating time should be in whole numbers so that if a source operated for only a half-hour, the time reported should be one hour.

Emissions Data

Air Contaminant – VOC, NO_x, and CO (also SO₂, TSP, PM₁₀, PM_{2.5}, NH₃, CH₄, CO₂, and Pb for Title V facilities) and any of the 36 toxic air pollutants (TAP's) emitted above the reporting thresholds listed in N.J.A.C. 7:27-8, Appendix 1, Table B. Some of these air contaminants are default filled based upon the equipment type or can be added to the Emission Statement if not default filled. To add an air contaminant in RADIUS, first click onto the last air contaminant. Then click on “Edit” at the top left corner, which brings down a menu of options. Choose “Add Row” which adds a blank row. Choose an air contaminant from the draw down menu of the blank row.

Actual Emission Rates – the actual emission rate is differentiated into two types, Stack and (Source) Fugitive. When RADIUS performs the “Sum Facility Emissions” function, Stack and (Source) Fugitive are treated separately and each column is summed individually. The sum of the Stack and Fugitive columns constitute the total of the emissions from the source. The emissions are reported for the entire year in tons/year, Peak Ozone Season (6/1-8/31), entire Ozone Season (5/1-9/30), and Carbon Monoxide Season (12/1-2/28). The 6/1-8/31 total values are only required for CO, NO_x, and VOC. The 5/1-9/30 values are only required for NO_x. The 12/1-2/28 values are only required for CO. For Batch Process, the emissions are reported for the batch in lbs/batch.

Subject Item: U (Emission Unit)

Select U for Subject Item. Then select a U number from the pull-down menu. Finally select an OS number to be reported. Summary reporting under OS0-Summary is allowed only if the equipment type for the sources are the same for all the operating scenarios under that one emission unit. For example, one or more boilers that burn only natural gas. By contrast, emissions from a single boiler burning both oil and natural gas must be reported under each fuel burning scenario and cannot be reported at the Summary (OS-0) level.

Use the Control Operations function button to report the control efficiencies for any control devices related to this operating scenario. Also, report equipment information by using the Source Details function button. This is required for combustion sources, VOC storage vessels, and surface coating/printing processes. Both of these buttons are on the **Emissions** screen, as is the Autocalculate Emission button.

Field Descriptions

General

Check Boxes – these five check boxes may be valid in certain cases and can be used when appropriate, as described for Subject Item IS.

“This Source No Longer Exists (Mark for Deletion)”

“This Source Has No Reportable Emissions for 2009 ”

“Source Process Data Is Considered Confidential”

“Source Did Not Operate”

“NJDEP Default Emission Calculations”

Associated Permit Activity # - the application or permit number of the operating permit or certificate to operate from NJDEP, according to N.J.A.C. 7:27-8 et. seq. or N.J.A.C. 7:27-22 et. seq.

Quarterly Throughput - as described for Subject Item IS.

Process Data

Operating Amount – as described for Subject Item IS.

Operating Time – as described for Subject Item IS.

Emissions Data

Air Contaminant – as described for Subject Item IS.

Actual Emission Rates – as described for Subject Item IS.

Calculation Methodology Code – in RADIUS, a pull-down menu lists all the possible methods used to determine the emission rate. Please report the calculation methodology that was primarily relied upon to develop the emission estimate for each air contaminant. Please do not use Best Engineering Judgment as the Calculation Methodology Code if another code was the prime method relied upon to estimate emissions. All methods of estimating emission rely upon Best Engineering Judgment to select, calculate and report accurate and complete emissions. So this code should only be reported when no other calculation methodology code is appropriate and not primarily relied upon to estimate emissions. For example, if material balance and source testing were used together, then choose either material balance or source testing but not best engineering judgment. If the auto-calculate function is used in RADIUS, please choose “Emissions to be computer calculated by NJDEP” as the Calculation Methodology Code.

Please refer to the earlier section on **Hierarchy of Emissions Reporting** in this Guidance Document for more details on calculation methodology.

Emission Factor – in this field, please provide the emission factor used to calculate the emission rates. Most of the Calculation Methodology Code requires an emission factor to accompany it to document the validity of the emission rate. When reporting the emission factor, report both the value and the units (lbs/ton, lb/MMft³, lbs/Mgal, lbs/mg, lbs/ft³, lbs/MMBtu, and lbs/gal).

Subject Item: BP (Batch Process)

For batch processes, only fields related to batch processes need to be reported; all other fields are automatically calculated from the data entered. Emissions for batch processes should be reported at the summary level of the “Step” (i.e., ST0). Use the Control Operations function button to report any control devices. This is required for combustion sources, VOC storage vessels, and surface coating/graphic arts processes.

Field Descriptions

General

Check Boxes – four out of the five check boxes may be valid in certain cases and can be used when appropriate, as described for Subject Item IS.

“This Source No Longer Exists (Mark for Deletion)”

“This Source Has No Reportable Emissions for 2009”

“Source Process Data Is Considered Confidential”

“Source Did Not Operate”

Associated Permit Activity # - as described for Subject Item IS.

Quarterly Throughput - as described for Subject Item IS.

Process Data

Operating Time – Hours are not entered here because RADIUS calculates the hours from the reported data (# of batches and batch run time).

of Batches Run – this is the total number of batches run for the entire year, 6/1-8/31 (Summer Season or Peak Ozone Season). The Summer Season total values are only required for equipment types that emit CO, NO_x, and VOC. The Winter Season total values are only required for equipment types that emit CO. This information is only required for Batch Processes.

Additional Batch Process Information – this includes amount produced per batch with units (tons, gallons, and MMft³) and the batch run time in hours. This

information is only required for Batch Processes.

Emissions Data

Air Contaminant – as described for Subject Item IS.

Actual Emission Rates – for Batch Process, the emissions are calculated by RADIUS from the reported “Batch (Lbs/Batch)”.

Calculation Methodology Code – as described for Subject Item U.

Emission Factor – as described for Subject Item U.

Subject Item: GR (Group)

Select GR for Subject Item. Then select a GR number. As a reminder, this Subject Item may only be used if the facility has a permit structured as Subject Item Group.

Field Descriptions

General

Check Boxes – these five check boxes may be valid in certain cases and can be used when appropriate, as described for Subject Item IS.

“This Source No Longer Exists (Mark for Deletion)”

“This Source Has No Reportable Emissions for 2009 ”

“Source Process Data Is Considered Confidential”

“Source Did Not Operate”

“NJDEP Default Emission Calculations”

Associated Permit Activity # - the application or permit number of the operating permit or certificate to operate from NJDEP, according to N.J.A.C. 7:27-8 et. seq or N.J.A.C. 7:27-22 et. seq.

Quarterly Throughput - as described for Subject Item IS.

Process Data

Operating Amount – as described for Subject Item IS.

Operating Time – as described for Subject Item IS.

Emissions Data

Air Contaminant – as described for Subject Item IS.

Actual Emission Rates – as described for Subject Item IS.

Calculation Methodology Code – as described for Subject Item U.

Emission Factor – as described for Subject Item U.

Subject Item: FC (Facility)

Select FC as the Subject Item. This is the total emissions for the whole facility. Use the “Sum Facility Emissions” function button on the **Emissions** screen to calculate or update the facility emissions total. This is the sum of all the FG, IS, U, BP, and GR sources reported. The values for Stack and Fugitive emissions should then reflect the actual facility wide emissions that occurred in the reporting year.

ADMINISTRATIVE CHECK

This is a tool built into the RADIUS software. It checks for completeness of data entry. To run the Administrative Check, click on “Document” at the top left corner of the screen and choose Administrative Check. If there are problems in the Emission Statement, then the Administrative Check will list errors, notes, or warnings, depending on the severity of the incompleteness. Errors must be corrected before the Emission Statement can be submitted (see the **Preparing Emission Statement For Submittal** section). RADIUS does not require notes and warnings to be corrected before the Emission Statement is submitted, but the Department may request the omitted information later in a follow-up letter if this information is required by the Emission Statement rule.

A list of the fields essential for an administratively complete Emission Statement is included in **Appendix I**. Please note if you are not using a method to report emissions such as batch or group reporting, then fields associated with these reporting methods would not be essential.

Fixing Errors, Notes, and Warnings From The Administrative Check

Once the Administrative Check is finished, a screen with the result appears. It may be advantageous to print out the Administrative Check result, which may contain errors, notes, and warnings. The printout has three columns, “Source for Failure,” “Description,” and “Error/Warning.” The “Source for Failure” column lists the source of the error. The “Description” column gives a description of the error. The “Error/Warning” column identifies if the item is an error, a note, or a warning. The errors are grouped by the “Source for Failure” or form type (i.e., Emission Statement: Process Information, Facility Profile Planning, etc.). **Table 6** is an example of what the Administrative Check may produce.

The first set of results is warnings from the **Emission Statement: Emissions Information**. The warnings are due to missing emission factors for PM₁₀ and TSP on the Emissions screen for emission unit U51, operating scenario OS51. The second set is from **Emission Statement: Process Information**. The errors are due to missing operating time on the Process screen for IS0. The

description “N/A” will appear under the first column if there is no specific emission unit, batch process, fugitive source, or insignificant source.

Table 6

Source of Failure	Description	Error/Warning
Emission Statement: Emissions Information		
U51 OS51	PM-10 (Total) emission factor value should be entered.	Warning
U51 OS51	TSP (Total) emission factor value should be entered.	Warning
Emission Statement: Process Information		
ISO	Days between 12/1-2/28 must be entered.	Error
ISO	Hours between 12/1-2/28 must be entered.	Error
ISO	Process Quantity between 12/1-2/28 must be entered.	Error
ISO	Weeks between 12/1-2/28 must be entered.	Error
Emission Storage (Equipment)		
N/A	No records found.	Warning
N/A	No records found.	Warning

PREPARING EMISSION STATEMENT FOR SUBMITTAL

Perform the facility total emissions calculation by using the Sum Facility Emissions function button in Subject Item “Facility”. Then, close the Emission Statement by clicking on the “File” pull-down menu at the upper left hand corner of the screen and click on “Close”. On the same “File” pull-down menu, click on “Submit”. This activates a dialog box. Highlight the Document Title for the Emission Statement submittal. Click on the OK button. RADIUS performs the Administrative Check. There may be some dialog boxes that will appear with system errors. Toggle through these system errors by clicking on the OK button. The Administrative Check will continue to run. Once it’s finished, a list of administrative errors or warnings may appear. If there are Errors, they need to be corrected or RADIUS will not allow the Emission Statement to be submitted. For Notes and Warnings, RADIUS will not prevent the submittal, but the Department may send the Emission Statement back to the facility if the Notes and Warnings are for data that are essential to the Department for Emission Statement review. To avoid this possibility, we suggest that all warnings be corrected prior to submitting a disk to the Department. Once no “Error” messages appear on the administrative check, click on the Certify button. The screen with the Certification Form appears. Use the PIN Codes supplied by the Responsible Official on the “Request for PIN Code Form” (**Appendix G**) to certify the Emission Statement electronically or click on the “Skip Electronic Certification” button to proceed with the submittal. The certification must be performed by the Responsible Official and by all those with direct knowledge of the Emission Statement preparation, either electronically or on paper. If the facility chooses to skip the electronic certification, a signed paper Certification Form must be mailed with the diskette or CD. Once the certification process is performed, it is recommended that the file be saved to the computer prior to saving it to diskette or CD. . Make a copy of the submittal file for the facility’s record and maintain this file in a secure location. **Appendix G** contains the “Request for PIN Code Form.” If you have already returned this form to the Department, you do not have to complete this

form again. You may use the PIN Codes from the prior submittal.

NOTES

- In RADIUS, the Department strongly urges you not use the “Batch Print Details” button because it will print many pages of superfluous data instead of what’s on the monitor screen.
- Calculate Stack and Fugitive emissions separately. The Stack and Fugitive emissions are later combined to provide the Total emissions from the source.
- For purposes of the Emission Statement, control devices that burn fuel, such as a thermal oxidizer or flare, should be reported as a piece of equipment and included in a separate emission unit or operating scenario. This is because the emissions and the amount of fuel burned by the control device must be reported. Please report only the products of combustion for the thermal oxidizer in its emission unit or operating scenario. The emissions from the process should be reported separately, showing the thermal oxidizer as a control device for VOC’s being emitted from the process. This will allow for summary reporting of the process emissions from other than the thermal oxidizer.
- Combustion sources can only be combined with other combustion sources burning the same fuel for reporting on the Summary (OS-0) level. If combustion sources are combined and are permitted to burn different fuels, detailed level reporting must occur, i.e., report each fuel type in separate operating scenarios.
- The Edit Details function button in the Equipment Inventory should be used for reporting design parameters such as low NOx burners for boilers and white paint for storage tanks instead of reporting these parameters as control devices. In the old reporting format, these parameters were reported as control devices. But in the RADIUS format, these parameters are no longer considered control devices. They are in the design of the equipment so these design parameters should be reported with the Edit Details function button.
- Facilities should structure the Emission Statements the same way as their approved air pollution control permits. If no particular structure guidance was given in the permitting process, then follow the instructions in this Guidance Document (**Appendix F**). There will be a couple of instances where the Emission Statement will be slightly different from the permit(s) because the Department requires the reporting of certain information in the Emission Statement that is not required in the permitting program.
- Facilities that are required to submit a Title V permit must use their Facility ID (PI) from their Title V application or approved operating permit for their Emission Statement.
- **The “Submit” function in RADIUS does NOT automatically send the electronic file to the Department.** When using the “Submit” function, you must save the file on a disk and mail it along with a signed paper certification to the Department. Or, if you electronically certified the file with a PIN during the “Submit” process, you may e-mail the file (which contains the

electronic PIN certification) as an attachment to the Department.

- When using the Autocalculate function for boilers, RADIUS does NOT calculate the NO_x emissions for the 5/1-9/30 time period (tons/season), except for Batch Processes. You will have to calculate these emissions manually.
- For Pb, SO₂, TSP, PM₁₀, PM_{2.5}, NH₃, CO₂, CH₄, and TAP's, only the annual emissions (tons/year) need to be reported. If the ozone seasons and CO season fields are not grayed out, change the air contaminant from your current pollutant to another one, then back to your original pollutant. For example, if your original pollutant is TSP and the seasonal fields are not grayed out, then change TSP to SO₂ and back to TSP.
- PM₁₀ and PM_{2.5} should include filterables and condensables. TSP should include filterables only.
- CO₂, Methane, PM_{2.5} and Ammonia have no minimum reporting thresholds.
- Benzene emissions should be expected from Gasoline storage and loading.
- Ammonia emission factors can be found at EPA's 2004 Final Draft Report on Estimating Ammonia Emissions from Anthropogenic Nonagricultural Sources here at http://www.epa.gov/ttn/chief/eiip/techreport/volume03/eiip_areasourcesnh3.pdf
- Emission statements should include "Exempt" sources not that are not listed in an operating permit. These sources could include maintenance shops, cafeteria ovens, laboratory hoods, site remediation and R&D facilities that have been kept outside of the main facilities' operating permit.
- FG Fugitive emissions should list "Reasonable Estimate of Emissions". This means that for material dust, TSP is generally greater than PM₁₀, which is generally greater than PM_{2.5}. Please see AP-42 for estimates.
- Use 8760 hours/year even for leap years.
- The Emission Inventory Improvement Program of the EPA has a guide that includes a procedure for estimating ammonia emissions from landfills. It is available online at: http://www.epa.gov/ttn/chief/eiip/techreport/volume03/eiip_areasourcesnh3.pdf See page 28 of the Report (page 34/87 of the pdf file)
Ammonia emissions from MSW Landfills should be estimated as 0.73% of Methane emissions. Methane emissions are readily estimated from the EPA's LandGEM program.
- Fuel suppliers have generally decreased the amount of Sulfur in Diesel, #2 Fuel Oil, and other fuel oils. Use the percentage from the actual fuel delivered and burned, rather than the limits in your permit.
- Process data should be the total actual time that a source operated. This should include the total

actual hours of operation, the total actual calendar days and total actual calendar weeks of operation of a source. For tanks in constant use, please list the operating time as “8760 hours / 365 days / 52 weeks”, not “24 hours / 7 days / 52 weeks.”

- Calculate the lb./day for the Ozone Season as per EPA guidance. (Average over “operating days.”)

APPENDIX A

GLOSSARY

The following words and terms, when used in this document, have the following meanings, unless the use of the word in its context clearly suggests otherwise.

“**AP-42**” means the EPA document commonly referred to as "AP-42"; its full name is "A Compilation of Air Pollutant Emission Factors." It is available from the USEPA website at www.epa.gov/ttnchie1/index.html

“**API**” means the American Petroleum Institute. API has been the source of methods for determining evaporative loss from storage tanks. It is API methodology that has been adopted into AP-42. Various methods are used to determine the emissions from various types of tanks e.g., external floating roof tanks, fixed roof tanks, etc.

“**Batch process**” means the method of permitting that describes manufacturing operations (normally related to the chemical or pharmaceutical industries) that involves multiple components and multiple manufacturing operations. Continuity of the flow of raw materials into and the flow of products from production equipment primarily differentiates an emission unit process from a batch process. Batch processes occur when raw material input and product removal does not occur simultaneously.

“**Batch run time**” means the total elapsed time per batch from the start of adding raw materials to the completion of the reaction or process. This excludes time waiting for removal of batch product from a vessel. This exclusion is consistent with "batch cycle time" in N.J.A.C. 7:27-16. Because the Department will allow the grouping of similar batches, the batch run time is reported as an average time of the batches that may have been grouped together.

"**Capture efficiency**" means the quantity of an exhaust stream collected by a control device serving the source operation, expressed as a percentage of the total amount of the exhaust emitted by the source operation before any controls.

“**CAS number**” means the Chemical Abstract Service number of a chemical compound or mixture. The CAS number can be acquired from the facility's Material Safety Data Sheets (MSDS). The CAS number is important information because of the several systems of organic compound nomenclature that have survived over the years. The chemical abstract numbers are surrogate means by which the Department assures the proper identity of reported information, particularly in light of some use of "common" names or trade names in addition to the various systems.

"**Control efficiency**" see definition for “overall control efficiency.”

“**DEP**” (or NJDEP) means the New Jersey Department of Environmental Protection.

“**Detailed level**” means reporting emissions for each piece of equipment separately instead of by summary level, i.e., IS1 or IS2 for Insignificant Source, or OS1 or OS2 for operating scenarios for Emission Unit, etc.

“**Emission unit**” means the permitting method that describes one or more significant component operations. Stand alone equipment can make up an emission unit. Making collective data presentation easier to understand, pieces of equipment with physical commonalities such as common exhaust systems may constitute an emission unit. An emission unit process is more likely

to be a continuous operation, where raw materials enter production equipment as product is removed from it. **A piece of equipment may only appear in one emission unit.**

“Emission Year” means the reporting year; it is the year relevant to the facility process activities and the resultant emissions. It is not the year in which the emission statements are due by May 15 (e.g., emission year 2009 statements are due in 2010). It is the year in which emissions actually occurred.

“EPA” (or USEPA) means the United States Environmental Protection Agency.

"Equipment" means any device capable of causing the emission of an air contaminant either directly or indirectly to the outdoor atmosphere, and any stack, chimney, conduit, flue, duct, vent, or similar device connected or attached to, or serving the equipment. This term includes, but is not limited to, a device in which the preponderance of the air contaminants emitted is caused by a manufacturing process.

"Facility" means the combination of all structures, buildings, equipment, storage tanks, source operations, and other operations located on one or more contiguous or adjacent properties owned or operated by the same person.

"Federally enforceable" means all limitations and conditions on operation, production, or emissions that can be enforced by the EPA pursuant to authorities that include, but are not limited to, those established in rule, regulation, or permit.

“Filing year” means the year when the Emission Statement is filed. For example, the 2009 Emission Statement is filed or submitted for the 2010 filing year. The filing year is always the one year after the emission or reporting year.

“Firing Method” means the manner on how equipment introduces fuel into the area where it is burned and is an indication of the type of equipment (e.g., diesel engine, pulverized coal - wet bottom, an asphalt plant burner or conventional wall fired equipment, etc.). It is not about how the fuel is ignited e.g., electrodes for fuel oil, pilot light for gas, etc.

"Fugitive emissions" means any emissions of an air contaminant released directly or indirectly into the atmosphere that do not pass through a stack, flue, conduit, vent or chimney. Fugitive emissions are categorized into two types, source and non-source. Source fugitive emissions are from specific pieces of equipment; i.e., if the fugitive emissions can be related to a piece of equipment, then it is source fugitive. Non-source fugitive emissions cannot be associated to a specific piece of equipment. For example, the road dusts from a construction site are non-source fugitive emissions because the dusts are not from a specific piece of equipment. Other examples of non-source fugitive emissions are storage piles, pump seal leaks, and the use of cleaning solvents. Accidental releases can be source or non-source fugitive emissions, depending on if the accidental release can be linked to specific pieces of equipment or not. It is not important to distinguish between non-source and source fugitive emissions but it is important that the fugitive emissions be reported, one way or another. Report the fugitive emissions as allowed in an approved permit, i.e., if the permit allows the fugitive emissions to be reported as non-source fugitive, then reported as such. But if the approved permit allows the fugitive emissions to be reported as source fugitive, then report these as source fugitive emissions. Landfills are a special case. Emissions that could be captured count as Stack emissions. Emissions that can not be reasonably collected count a Source Fugitive.

“Graphic arts operation” means the application of one or more surface coating formulations across

portions of a surface using one or more rotogravure or flexographic printers used to produce published material and packaging for commercial or industrial purposes, or any rotogravure or flexographic printers used to produce vinyl or urethane coated fabric or sheets, or any sheet fed gravure, screen printing, or fabric printing operations together with any associated drying or curing areas. A single graphic arts operation ends after drying or curing and before other surface coating formulations are applied. For any web line, this term means an entire application system, including any associated drying ovens, or areas between the supply roll and take-up roll or folder.

“Grandfathered” means, in reference to equipment or control apparatus, that construction, reconstruction, or modification occurred prior to the enactment of N.J.S.A. 26:2C-9.2 on June 15, 1967, or prior to the subsequent applicable revisions to rules and regulations codified at N.J.A.C. 7:27-8 that occurred March 5, 1973, June 1, 1976, April 5, 1985, and October 31, 1994, and no construction, reconstruction, or modification of the equipment or control apparatus has occurred since. Grandfathered equipment must be reported in an Emission Statement.

"Incinerator" means any device, apparatus, equipment, or structure using combustion or pyrolysis for destroying, reducing, or salvaging any material or substance, but does not include thermal or catalytic oxidizers used as control apparatus on manufacturing equipment.

“Insignificant Source” means any piece of equipment that is below the thresholds for a significant source.

"Manufacturing process" means any action, operation or treatment embracing chemical, industrial, manufacturing or processing factors, methods or forms including, but not limited to, furnaces, kettles, ovens, converters, cupolas, kilns, crucibles, stills, dryers, roasters, crushers, grinders, mixers, reactors, regenerators, separators, filters, reboilers, columns, classifiers, screens, quenchers, cookers, digesters, towers, washers, scrubbers, mills, condensers, or absorbers.

“MSDS” means Material Safety Data Sheet.

"NAICS" means The North American Industry Classification System Code, assigned by the United States Office of Management and Budget, which classifies establishments according to the type of economic activity in which they are engaged.

“NESHAP” means National Emission Standards for Hazardous Air Pollutants.

“N.J.A.C.” means New Jersey Administrative Code.

"Non-Applicable VOC" means a VOC that has a vapor pressure (or, if a mixture, the sum of its partial pressures) of less than 0.02 pounds per square inch absolute (psia). For the purposes of Emission Statement reporting, this term is **only** applicable to deciding if several VOC storage tanks can be reported on one form as a group or if each VOC storage tank needs to be reported individually.

“Non-Source Fugitive” see Fugitive Emissions.

“NSPS” means New Source Performance Standards.

“NTIS” means the National Technical Information Services.

“Operating permit” means a permit issued by the Department pursuant to N.J.A.C. 7:27-22 to authorize the use of one or more source operations from which air contaminants may be emitted.

“Operating scenario” means the various modes of operation. These various modes of operations can be described by operating scenarios within one emission unit if a piece of equipment operates in more than one mode. An operating scenario describes a particular manufacturing operation or process. The description identifies the relationship of a piece of equipment, a control device, and an emission point. An operating scenario may describe only one piece of equipment. For a batch process, an operating scenario describes a process line. The unit operation within the process line is referred to as steps. Therefore, naming the operating scenario within a batch process and the step identifies a unit operation.

“Order” means any and all orders issued by the New Jersey Department of Environmental Protection including, but not limited to, Administrative Orders and Administrative Consent Orders. This term is pertinent only to the definition of federally enforceable.

“Overall control device efficiency” means percentage of the air contaminant removed from the entire air stream (i.e., the emissions) from a source by a control apparatus that is prevented from being discharged into the outdoor atmosphere. The overall control efficiency is the product of the operating time, the capture efficiency, and the removal efficiency. For more details, see the section in the Guidance Document titled **“Estimating The Overall Efficiency Of Emission Control Devices.”**

“Ozone Season (Entire)” means May 1 through September 30, inclusive. Also see “Peak ozone season.”

"Peak carbon monoxide season" means December 1 through the last day of February, inclusive. Please note that the last day of February differs in a leap year.

"Peak ozone season" means June 1 through August 31, inclusive. Also see “Ozone Season (Entire)”

"Percent quarterly throughput" means the percentage of the total 12-month operating activity that occurs during each of the following periods:

- Q1)** January 1 through March 31
- Q2)** April 1 through June 30
- Q3)** July 1 through September 30
- Q4)** October 1 through December 31

Percent quarterly throughput, denoted as Q1, Q2, Q3 and Q4, should be updated to reflect the calendar year quarters. This change does not affect the need to report daily estimates of CO emissions using data (e.g., fuel use) from the prior calendar year. Daily estimates of CO emissions must be based on actual data obtained from December of the prior year and January and February of the reporting year.

“Permit” means any permit issued pursuant to the requirements established under the Air Pollution Control Act, N.J.S.A. 26:C-1 et seq., or N.J.A.C. 7:27-1 et seq., except to the extent that the permit includes any prohibition established solely pursuant to N.J.A.C. 7:27-8.8(f).

"Potential to Emit" means the maximum aggregate capacity of a source operation or of a facility to emit an air contaminant under its physical or operational design. Any physical or operational limitation on the capacity of a source operation or a facility to emit an air contaminant, including control

apparatus, and restrictions on hours of operation or on the type or amount of material combusted, stored or processed, shall be treated as part of its design if the limitation is federally enforceable. Fugitive emissions shall be included in the determination of potential to emit. However, the determination shall not include any banked emission reductions held by the owner or operator.

Using the above definition, "Potential to Emit" means the emissions from *all* sources at the facility that are theoretically possible (without considering theorized disasters or worst case accidents) *plus* the maximum fugitive emissions for the facility. The theoretically possible emissions from all sources are determined from the design specifications of the sources, as if each was operated at full capacity for every hour of the year. A lower potential for each source may be applicable if the operation of the source is limited by a permit condition (e.g., the throughput or hours of operation) or by a permitted control device. Note that *all* sources at a facility must be considered, not just permitted sources. Grandfathered sources and other sources that may not require permits must also be included using the assumption that the source operates at maximum physical or operational design for 8,760 hours per year.

"Process rate" means the quantity per unit of time of any raw material or process intermediate consumed, or a product generated, through the use of any equipment, source operation, or control apparatus. For a stationary internal combustion unit or any other fuel burning equipment, this term is expressed as the quantity and type of fuel burned per unit of time.

"Product" means the output from a source operation, equipment, or control apparatus. Such outputs may include mixtures, composites, compounds and elemental substances. "Product" may be MMBtu for an institutional boiler or kWh for a generator.

"Raw material" means any input to equipment, control apparatus, or a source operation, including fuels, but excluding heat and other forms of energy. Such inputs may include mixtures, composites, compounds and elemental substances.

"Reporting Year" means process rate data and annual emissions in tons per year occurring between January 1 and December 31 inclusive.

"Responsible Official" means one of the following:

- (1) For a corporation: a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either:
 - (i) the facilities employ more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars);
 - (ii) the delegation of authority to such representative is approved in advance by the Assistant Director for Air and Environmental Quality Enforcement, Division of Facility Wide Enforcement, Department of Environmental Protection;
- (2) For a partnership or sole proprietorship: a general partner or the proprietor, respectively;
- (3) For a municipality, state, federal, or other public agency: either a principal executive officer or

ranking elected official. For the purposes of this part, a principal executive officer of a federal agency includes the chief executive having responsibility for the overall operations of a principal geographic unity of the agency (e.g., a regional administrator of the EPA); or

(4) For affected sources under Title IV of the Clean Air Act:

- (i) the designated representative as far as actions, standards, requirements, or prohibitions under Title IV of the Clean Air Act or the regulations promulgated thereunder are concerned; and
- (ii) the designated representative for any other purposes under 40 CFR part 70.

“SCC” means Standard Classification Code as established by the USEPA.

"Significant Equipment or source operation" means any source operation which is one of the following unless the source operation is explicitly specified, in the definition of “exempt activity,” as an exempt activity, and unless the source operation is explicitly specified, in paragraphs 1, 2 or 4 of the definition of “insignificant source,” in N.J.A.C. 7:27-22.1 as an insignificant source:

1. Equipment that is used in a surface coating operation including, but not limited to, spray or dip painting, roller coating, electrostatic depositing, surface stripping or spray cleaning, in which the quantity of coating or cleaning material used in any one hour is equal to or greater than one half gallon;
2. Dry cleaning equipment;
3. A surface cleaner that uses a cleaning solution containing five percent or more VOCs, HAPs, or VOC and HAP combined, and which is:
 - i. An unheated open top surface cleaner with a top opening of greater than six square feet (0.56 square meters) or a capacity greater than 100 gallons;
 - ii. A heated open top surface cleaner;
 - iii. A conveyORIZED surface cleaner; or
 - iv. A stationary spray cleaning or surface stripping operation using one half gallon or more of cleaning solution in any one hour;
4. Equipment that shreds wood, if the engine powering the equipment has a maximum rated gross heat input of 1,000,000 BTU per hour or greater; or
5. Equipment, in addition to a surface cleaner as set forth in paragraph 3 above that has a capacity of more than 100 gallons and that is used in a process involving surface cleaning or preparation including, but not limited to, degreasing, etching, pickling, plating, chromium electroplating, or chromium anodizing;
6. Equipment in which the combined weight of all raw materials used exceeds 50 pounds in any one hour, provided:

- i. Such equipment shall not include equipment which is the same type as is included within a category described in paragraphs 1, 3, 4 or 5 above, or in paragraphs 7, 8, 9, 11, 14, 16, 17, 18 or 19 below; but which is excluded from the category because it does not meet an applicability threshold set forth in the description of the category. That is, the equipment has a lower capacity, weight of materials processed, vapor pressure, or consumption of BTUs, or otherwise falls outside a parameter that is included in the description of the category;
 - ii. In determining the weight of the raw materials used, the weight of the following shall be excluded:
 - (1) Air;
 - (2) Water;
 - (3) Containers, provided that the container is not consumed as part of the operation of the equipment; and
 - (4) Paper, metal, or plastic that is twisted, bent, or folded, in the equipment, provided that the twisting, bending, or folding does not cause visible emissions or air pollution;
7. Stationary storage tanks which have a capacity in excess of 10,000 gallons and which are used for the storage of liquids, except water or distillates of air, not including a storage tank maintained under a pressure greater than one atmosphere provided that any vent serving such storage tank has the sole function of relieving pressure under emergency conditions;
8. Stationary storage tanks which have a capacity of 2,000 gallons or greater and which are used for the storage of a VOC or mixture of VOCs having a vapor pressure or sum of partial pressures of 0.02 pounds per square inch absolute (one millimeter of mercury) or greater at standard conditions, not including a storage tank maintained under a pressure greater than one atmosphere provided that any vent serving such storage tank has the sole function of relieving pressure under emergency conditions;
9. Tanks, reservoirs, containers and bins which have a capacity in excess of 2,000 cubic feet and which are used for the storage of solid particles;
10. Stationary material handling equipment using pneumatic, bucket or belt conveying systems from which direct or indirect emissions of air contaminants occur;
11. Commercial fuel burning equipment, except for a source listed in paragraph 20 below, that has a maximum rated heat input of 1,000,000 BTU per hour or greater to the burning chamber, including emergency generators;
12. Except where a registration has been filed pursuant to N.J.A.C. 7:27-20.3, any equipment that is used for the burning of noncommercial fuel, crude oil or process by-products in any form. This includes off-specification used oil, processed used oil fuel, or on specification used oil as defined in N.J.A.C. 7:27-20.1;

13. Any incinerator, except incinerators constructed, installed or used in one or two-family dwellings or in multi-occupied dwellings containing six or less family units, one of which is owner occupied;
14. Any waste or water treatment equipment which may emit air contaminants including, but not limited to, air stripping equipment, aeration basins, surface impoundments, lagoons, sludge tanks, dewatering equipment, soil cleaning equipment, conveying equipment, digesters, thickeners, flocculators, driers, fixation equipment, composting equipment, pelletizing equipment and grit classifying equipment. For water treatment equipment, the concentration in the water of any TXS must equal or exceed 100 parts per billion by weight or the total concentration in the water of VOC must equal or exceed 3,500 parts per billion by weight;
15. Equipment used for the purpose of venting a closed or operating dump, sanitary landfill, hazardous waste landfill, or other solid waste facility, directly or indirectly into the outdoor atmosphere including, but not limited to, any transfer station, recycling facility, or municipal solid waste composting facility;
16. Any source operation or equipment that has the potential to emit any Group 1 or Group 2 TXS (or a combination thereof) at a rate greater than 0.1 pounds per hour (45.4 grams per hour);
17. A transfer operation involving gasoline or other VOCs regulated under N.J.A.C. 7:27-16.3 or 16.4, or a marine tank vessel loading or ballasting operation regulated under N.J.A.C. 7:27-16.5, if the operation is required to have a control device other than bottom fill or submerged fill;
18. Equipment that is used in a graphic arts operation including, but not limited to, newspaper, lithographic, gravure, flexographic, letterpress and screen printing, in which the quantity of ink, fountain solution, or cleaning material used in any one hour is equal to or greater than one half gallon;
19. Welding equipment, if the weight of the welding rod or welding wire used in the process is greater than 12 pounds in any calendar day; or
20. Any stationary reciprocating engine with a maximum rated power output of 37 kW or greater, used for generating electricity, not including emergency generators.

The above definition is for Major sources. Further information is found in N.J.A.C. 7:27-22, available online at <http://www.state.nj.us/dep/aqm/Sub22.doc>.

A similar definition is for Minor sources. Further information is found in N.J.A.C. 7:27-8, available online at <http://www.state.nj.us/dep/aqm/Sub8.doc>.

“Summary level” means reporting all the emissions for that source at the summary level instead of the

detailed level. Summary level is denoted as “0” in the source types, i.e. FG0 in Non-Source Fugitive, IS0 as Insignificant Source, OS0 as operating scenario in an Emission Unit, etc.

"Summer season" means June 1 through August 31 inclusive. It is the same as "Peak Ozone Season."

"Surface coating operation" means the application of one or more surface coating formulations across an entire surface, using one or more coating applications, together with any associated drying or curing areas. A single surface coating operation ends after drying or curing and before other surface coating formulations are applied. For any web coating line, this term means an entire coating application system, including any associated drying ovens, or areas between the supply roll and take-up roll, that is used to apply surface coating formulations onto a continuous strip or web.

"Title V" means the operating permit required by N.J.A.C. 7:27-22 for major facilities.

"Toxic Air Pollutant" means any of the substances listed in N.J.A.C. 7-27:21, Appendix 1, Table 1. (Do not confuse Toxic Air Pollutants with TXS (Toxic Substances) from N.J.A.C. 7:27-17.)

"Winter season" means December 1 through the last day of February inclusive. It is the same as "Peak Carbon Monoxide Season." Please note that the last day of February will differ during a leap year.

APPENDIX B

FUNCTIONS IN RADIUS

These functions are “buttons” that appear on a certain window in the RADIUS program. Some of the functions are for reporting or editing data while others make data entry easier.

AUTOCALCULATE EMISSIONS – Calculates the emissions for the sources listed in the section on **Calculations That Can Be Performed By The Department** in this Guidance Document. This function is located on the **Emissions** screen.

BATCH PRINT DETAILS – Prints information for the document. The Department recommends that this function **NOT** be used because it prints superfluous information. To print just the useful information, use the printer icon on the tool bar. For example, if you want to print the Equipment Inventory, go to the Equipment Inventory screen and hit the printer icon. This will only print the Equipment Inventory. If you want to print other sections, you must use the printer icon in each section you open on the screen.

CALCULATE EQUIVALENT DIAMETER – Calculates the equivalent diameter for a given dimension of a stack, even non-circular stacks. This function is in **Emission Point Inventory**.

CALCULATE TOTALS – Adds up the emissions for all sources listed for each air pollutant. This function is available in **Non-Source Fugitive Emissions** and **Insignificant Source Emissions** screens. (Note: No emission information is required to be entered here for Emission Statement purposes.)

CLEAR CONTACT – Deletes the information for that contact person in **Contact Information screen** being viewed.

CONTROL OPERATIONS – Activates the dialog box for reporting control device efficiency. The dialog box will request data on operating time, capture efficiency, removal efficiency, overall control efficiency, and if design efficiency was used or not (see section on **Estimating The Overall Efficiency Of Emission Control Devices** in the Guidance Document). Those data requested for each control device on that source and if the source has more than one control device, the total combined efficiencies are reported at the bottom of the dialog box in Combined Overall. In order to indicate the use of a control device, **CONTROL OPERATIONS** function button must be used or else the Department will not recognize the existence of a control device on a particular process. This function is on the **Emissions** screen.

COPY – Copies the current field(s) to the next field(s).

COPY CURRENT ROW – Copies the current row to the next row.

COPY TO – Copies the current field(s) to a chosen field(s).

DELETE GROUP – Deletes a group from the **Subject Item Group Inventory**.

EDIT DESIGNATION – Activates the dialog box for editing the Facility Designation in the

Subject Item Group Inventory.

EDIT DETAILS – Activates the dialog box for data entry of equipment specific information. The dialog box will request different data for different equipment types.

NEW GROUP – Creates a new group for combining sources in the **Subject Item Group Inventory**.

RENUMBER NJID – Allows the NJID number to be changed for all sources except for operating scenario numbers.

SOURCE DETAILS – Activates the dialog box for data entry of equipment specific information. This is required information for combustion sources, VOC storage vessels, and surface coating/graphic arts processes. The dialog box will request different data for different equipment types. This function is on the **Emissions** screen.

SUM FACILITY EMISSIONS – Adds up all the emissions by air contaminant for the entire Emission Statement of the facility. It should be utilized as the last function before preparing for submittal. This function is in the facility-wide Emission Reporting Form for **Subject Item FC**. If emissions data are changed at any other level (i.e., emission unit, non-source fugitive, insignificant source, and group) then this function should be used again to recalculate the facility emissions and update the totals shown on this section.

APPENDIX C

BIBLIOGRAPHY OF AVAILABLE METHODS TO CALCULATE AND ESTIMATE EMISSIONS OF AIR CONTAMINANTS

NTIS

AIRS Facility Subsystem Source Classification Codes and Emission Factor Listing for Criteria Pollutants, EPA/450/4-90-003, March 1990.

PM₁₀ Emission Factor Listing Developed by Technology Transfer and AIRS Source Classification Codes with Documentation, PB91-148411/HMD, EPA/450/4-89/022, November 1989.

Revised Emissions Estimation Methodologies for Industrial, Residential, and Electric Utility Stationary Combustion Sources, Final Report, PB93-135663/HDM, EPA/60/R-92/239, December 1992.

Emission Factors for Iron and Steel Sources: Criteria and Toxic Pollutants, Final Report, PB90-242314, EPA/600-2-90/024, June 1990.

Fugitive Dust Model (FDM) User's Guide (Revised), Volume 1, User's Instructions, Final Report, PB90-215203/HDM, EPA/910/9-88/202R, May 1990.

Air Emissions Species Manual, Volume 2, Particulate Matter Species Profiles, Second Edition, Final Report, PB90-184367/HDM, EPA/450/2-90/001B, January, 1990.

Methodologies for Estimating Air Emissions from Three Non-Traditional Source Categories: Oil Spills, Petroleum Vessel Loading and Unloading, and Cooling Towers, PB93-181592/HDM, EPA/600/R-93/063, April 1993.

Development of size-Specific Data from Particulate Control Technology Research Reports, Final Report, PB93-131456/HDM, EPA/600/R-92/214, November 1992.

Crosstalk/Air Toxic Emission Factor (XATEF) Database Management System User's Manual, Version 1.2, Final Report, PB92-105527/HDM, EPA/450/2-91/028, October 1991.

Volatile Organic Compound (VOC) and Particulate Matter (PM) Speciation (Speciate) Data Systems User's Manual, PB92-105527/HDM, EPA/450/4-91/027, October 1991.

Toxic Air Pollutant Emission Factors – A Compilation for Selected Air Toxic Compounds and Sources, Second Edition, Final Report, PB91-126003/HDM, EPA/450/2-90/011, October 1990.

Air Toxic Emissions from Iron Foundries, PB91-223206/HDM, EPA/600/D-91/150, 1991.

Emission Factors for Iron Foundries, Criteria and Toxic Pollutants, Final Report, PB90-266743/HDM, EPA/600/2-91/044, August 1990.

Emissions of Metals and Organics from Municipal Wastewater Sludge Incinerators, Volume 1, Summary Report, Final Report, PB91-151480/HDM, EPA/600/2-91/007a, September 1989.

These two references were highlighted in the Guidance Document in previous years.

Estimating Releases and Waste Treatment Efficiencies for the Toxic Chemical Release Inventory Form, EPA 560/4-88-002, U.S. Environmental Protection Agency, Office of Pesticides and Toxic Substances, December 1987.

Emission Factors for Equipment Leaks of VOC and HAP, EPA-4540/3-86-002, U.S. Environmental Protection Agency.

PERIODICALS AND JOURNALS

Altmayer, F., "Estimating Emissions," Plating and Surface Finishing, Vol. 76, pg. 12-13, June 1989.

Beckman, J.R., Holcomb, J.H., "Experimental and Theoretical Investigation of Working Emissions from Fixed-Roof Tanks," Industrial & Engineering Chemistry Process Design and Development, Vol. 25, pg. 293-298, January 1986.

Cota, Harold M., "A Basic Computer Program for the Gaussian Equation for a Point Source," Journal of the Air Pollution Control Association, Vol. 34, pg. 253, March 1984.

Curran, L. M., Kisior, G.J., "A Computerized Model for Reporting Sara Title III Section 313 Emissions from a Petroleum Refinery," Journal of Hazardous Materials, Vol. 31, pg. 255-275, August 1992.

Pankow, J.F., Bidleman, T.F., "Effects of Temperature, TSP, and Percent Non-Exchangeable Material in Determining the Gas-Particle partitioning of Organic Compounds," Atmospheric Environment, Part A, General Topics, Vol. 25A, No. 10, pg. 2241-2249, 1991.

Segal, M., Pielke, R.A., Arritt, R.W., "Application of a Mesoscale Atmospheric Dispersion Modeling System to the Estimation of SO₂ Concentrations from Major Elevated Sources in Southern Florida," Atmospheric Environment, Vol. 22A, No. 7, pg. 1319-1334, 1988.

Simpson, R.W., Butt, J., Jakeman, A.J., "An Averaging Time Model of SO₂ Frequency Distributions from a Single Point Source," Atmospheric Environmental, Vol. 18, No. 6, Pg. 1115-1123, 1984.

EPA

Ammonia emission factors can be found at EPA's 2004 Final Draft Report on Estimating Ammonia Emissions from Anthropogenic Nonagricultural Sources here at http://www.epa.gov/ttn/chief/eiip/techreport/volume03/eiip_areasourcesnh3.pdf

APPENDIX D

LABORATORY HOODS – AVAILABLE ESTIMATING METHODS

Report of Working Group

A Working Group of the Research & Development Council of New Jersey considered the Department's request for assistance in the development of guidance for reporting fugitive emissions from laboratory hoods.

The Council participated in this endeavor to assist the Department in providing some avenues by which laboratory emissions could be estimated. We cautioned the Department to limit the use of the proposed calculation methods to emission Statement requirements (N.J.A.C. 7:27-21), and not to allow them to become the basis for regulatory limits. The work product of the group was based on information available, which was a consensus of estimating techniques, which were devoid of sound experimental data. We undertook this task recognizing the lack of data because we, as scientifically qualified environmental professionals, believe that there are no impacts to the community where responsible laboratories are located. Further, though we would prefer to have sound data on which to base recommendations on these matters, because of the low emissions and high variability of research activities, definitive studies would be economically prohibitive.

The following alternative guidelines are proposed in order of implementation feasibility, considering such factors as technical accuracy, reproducibility, and practicality of implementation (cost):

1. Hood Emission Factors

Analysis of the emissions data reported from 17 of the largest R&D facilities in the State, including an evaluation of estimating assumptions, was the basis for concluding that hood emission factors as listed below are technically reasonable. Three factors are proposed based on levels of organic chemical usage, vapor pressure, and nature of operations in the hoods.

a.	Group I	--	30 lbs/yr/hood
b.	Group II	--	15 lbs/yr/hood
c.	Group III	--	5 lbs/yr/hood

The database used to develop these factors had 60% of the laboratories in the Low Usage Group and 20% in each of the other groups.

Group I:	Heavy VOC Usage (Petroleum, Petrochemical, Pharmaceutical, etc.)
Group II:	Medium VOC Usage (Flavors/Fragrances, Biotechnology, and Adhesive)
Group III:	Low VOC Usage (Electronics, Semiconductors, and Polymers)

2. Purchase Volumes Multiplied by Loss Factor

For facilities where operations are reasonably constant and predictable, a calculation based on purchased materials times a constant loss factor would be acceptable.

3. Mass Balance

For facilities having accurate records of purchased solvents being used in their laboratories, as well as a high confidence level in data or estimates on solvents in wastewater and waste chemical disposal streams, total air emissions from the facility may be estimated by difference calculation.

4. Displacement Calculation

Facility management may calculate losses to emissions based on accurate purchase records and estimating the volume displacement of transferring solvents from one type of container to another, using the Ideal Gas Law and assuming the air displaced is saturated with solvents.

5. Stack Measurements

Conduct stack gas analyses of all or a representative number of hoods at the facility. Measurements conducted in the stack should include those methods, which the facility management believes are technically reasonable.

Although not unanimous, the Working Group was overwhelmingly in favor of prescribing Guideline 1 as most reasonable. Most laboratories do not have nor could they quantify the resources for constant data collection and analysis required for a more technically sophisticated approach.

Facility managers who feel that none of the above estimating methods are suitable for their facility have the prerogative to propose methodologies unique to their situation.

APPENDIX E

LEAD EMISSION FACTORS

New Jersey Department of Environmental Protection
Bureau of Air Quality Planning (BAQP)
Mail code 401-07H
P.O. Box 420
Trenton, NJ 08625

Guidance For Estimating The Actual Emissions Of Lead From Fuel Combustion Sources

These Emission Factors Are For Emission Statement Reporting Only

The purpose of this document is to provide some general guidance on estimating the emissions of lead from fuel combustion sources. The BAQP has received many questions regarding the estimation of lead emissions from these sources. This document attempts to provide some general guidance. Because of the variability in the emission factors, these emission factors should not be used for determining compliance with any order, rule, or regulation of the Department or for specific air pollution control permitting situations.

Please Use The Most Accurate Data Available

The attached list of emission factors was found upon the USEPA's database of available emission factors. These emission factors should only be used if no other information is available to the facility, such as source testing data, fuel analysis data, or any other information, from which a more accurate calculation of lead emissions could be derived. It is suggested that this more accurate data, instead of these emission factors, be used in all cases where it is available.

Select The Right Emission Factor For Your Source

As these emission factors are average values, derived from many different sources and samples, they may not be applicable to every specific source or situation. Best Engineering Judgment should be used when using these factors to ensure that the correct factor is chosen and that the factor accurately reflects the lead emissions from the fuel combustion operation. If these emission factors are not appropriate for your source then you must determine the best method to calculate emissions.

Please call us at (609) 984-5483 if we can answer any questions on the use of these factors.

Fuel Type and Source

1. Residual Oil (#4, #5 or #6) – For All Uncontrolled Boilers

Multiply the gallons of oil (in Mgals) by 0.0042 (lbs/Mgals). This assumes a 150,000 Btu/Gal fuel heating value.

2. Distillate Oil (#2), Kerosene, And Similar Fuels – For All Uncontrolled Internal And External

Combustion Engines

Multiply the gallons of oil (in Mgals) by 0.0013 (lbs/Mgals). This assumes a 141,000 Btu/Gal fuel heating value.

3. Natural Gas – For All Controlled And Uncontrolled Internal And External Combustion Sources

Lead is negligible in natural gas and may be reported as “0.00”.

4. Bituminous Coal – With Pulverized Coal-Fired Dry Bottom Utility Boilers With ESP Control

Use Equation:

$$EF_{Pb} = \frac{(C_{Pb})_c}{H_c} * f(1 - E) * ER_{Pb} * 10^6$$

Where:

EF_{Pb} = emission factor for lead, pg/J

H_c = higher heating value of coal, kJ/kg

E = fractional particulate collection efficiency of control device

ER_{Pb} = enrichment factor for lead

(C_{Pb})_c = concentration of lead in coal, ppm

f = fraction of coal ash as fly ash. Use a fly ash fraction of 0.80

Fuel Specific Units: Multiply derived factor (lb/10¹² Btu) by the heating value of coal (Btu/lb) and by 2, 000 (lb/ton) to calculate factor (lb/ton). For example, (74 lb Pb/10¹² Btu)(13,077 Btu/lb)(2000 lb/ton) = 0.0019 lb/ton.

5. Bituminous Coal – With Pulverized Coal-Fired Wet Bottom Utility Boilers With ESP Control

Use the same equation as above except use a fly ash fraction of 0.65.

APPENDIX F

PREFERRED METHOD FOR COMBINING EQUIPMENT INTO AN EMISSION UNIT FOR EMISSION STATEMENT REPORTING

Type(s) of Equipment	Scenario	Preferred Method	Reason
Multiple boilers (and other combustion sources).	Same physical parameters and burning same fuel.	One emission unit.	Able to report by summary level.
	Same physical parameters and burning different fuel.	One emission unit, but separate operating scenario for each fuel type.	Cannot report by summary level because of different fuel and different emission factors.
	Different physical parameters and burning same fuel.	Separate emission unit for each boiler.	Different applicable requirements by NJAC 7:27-4.2.
	Different physical parameters and burning different fuel.	Separate emission unit for each boiler.	Different applicable requirements by NJAC 7:27-4.2.
Different combustion sources, i.e., equipment types.	For example, boilers and emergency generator.	Separate emission units.	Different applicable requirements by NJAC 7:27-4.2.
One boiler.	Burning multiple types of fuel at the same time.	One emission unit. Separate operating scenario to report fuel use but total emission can be reported in just one operating scenario.	Need the amount of burned for each type of fuel and the emission factors for each type of fuel unless source testing is used.
Control devices that burn fuel, e.g. thermal oxidizer.		Separate operating scenario where the thermal oxidizer is also a piece of equipment.	Need the amount of fuel burned as process rate data for thermal oxidizer.
Multiple storage tanks.	Same physical parameters and same content.	One emission unit.	Able to report by summary level and same applicable requirements by N.J.A.C. 7:27-16.2.
	Same physical parameters and different contents.	One emission unit. Report as if one tank but multiple contents.	Cannot report by summary level because of different contents.
	Different physical parameters and same content.	Separate emission unit for each tank.	Different applicable requirements by NJAC 7:27-16.2.
	Different physical parameters and different contents.	Separate emission unit for each tank. Separate operating scenario for each content in each tank.	Different applicable requirements by NJAC 7:27-16.2.
One storage tank.	Multiple contents (not mixture).	One emission unit, but separate operating scenario for each content.	Cannot report by summary level because of different contents.

Print line: multiple presses and multiple dryers (that do not burn fuel).	Same physical parameters and same ink (VOC content).	One emission unit.	Able to report by summary level.
	Same physical parameters but different ink (VOC content).	One emission unit but separate operating scenario for each type of ink.	Cannot report by summary level because of different VOC contents.
	Different physical parameters but same ink (VOC content).	Separate emission units for each print line.	Different applicable requirements by NJAC 7:27-16.7.
	Different physical parameters and different ink (VOC content).	Separate emission units for each print line and separate operating scenario for each type of ink within the emission unit.	Different applicable requirements by NJAC 7:27-16.7.
Print line: multiple presses and multiple dryers (that burn fuel).	Various combinations of physical parameter, ink type, and fuel.	Separate emission units for the presses and the dryers. Follow the directions from the previous four combinations for the presses. Treat the dryers as combustion sources like a boiler so follow the directions for multiple boilers.	For dryers, follow rules for boilers. For presses, follow rules from the four previous combinations for the presses.
Any source of TSP and PM ₁₀ only.	Storage bins, conveyor, grinders, crushers, and other solids handling equipment.	One emission unit.	Able to report by summary level.
Other types of equipment; multiple pieces of equipment in one process line.	Same physical parameters and same operating conditions.	One emission unit.	Able to report by summary level.
Other types of equipment; multiple pieces of equipment in one process line.	Different physical parameters and/or different operating condition.	Separate emission unit.	Different applicable requirements by NJAC 7:27-6.2.

APPENDIX G

PIN CODE REQUEST FORM FOR RADIUS SUBMITTAL

This form is also available from the Department's website, www.nj.gov/dep/aqpp/downloads/PARTB2009.doc. You only need to have completed this form once. If you do not wish to certify the information electronically, you do not need to do so. You may submit a paper certification form along with your diskette and you do not need to complete and send this form at all.

Please do not send this form along with your Emission Statement submittal. This form should be completed prior to the Emission Statement submittal so that you will have the PIN Codes for certification of the Emission Statement. If you have not done so already, you should return this form after completion to:

New Facility Group
NJDEP – Air Quality Regulations
Mail Code 401-02
P.O. Box 420
Trenton, NJ 08625-0420

Or the completed form may be faxed and be processed that same day. The fax number is (609) 777-1343.

AIMS-099 – Part B

**PIN CODE ASSIGNMENT FOR RADIUS SUBMITTAL
(Please Print)**

DEP OFFICIAL USE ONLY

Date Assigned: _____ Assigned by: _____

Email to: AIRDMG@dep.state.nj.us
Fax to: (609) 633-8236
Mail to: NJDEP –Division of Air Quality
Data Management Group
PO Box 420, Mail Code 401-02, Trenton NJ 08625

Facility ID: _____
Facility Name: _____
Street Address: _____
Address Line 2: _____
City: _____ State: _____ Zip: _____
Person to contact regarding this form: Name _____

**Please note that this Pin Code Assignment Form
is for Radius applications and certifications only,
and can not be used for any other purpose.**

Email _____ Phone _____

*****This box is for Responsible Official Information Only*****

Name of Person Requesting PIN CODE: _____
Select a Pin Code below (Limit is 7 Alpha/Numeric characters using Capital Letters only)
Pin Code _____ Phone _____
Responsible Official Email Address: _____

Name of Person Requesting PIN CODE: _____
Select a Pin Code below (Limit is 7 Alpha/Numeric characters using Capital Letters only)
Pin Code _____ Phone _____
Is this Individual a Responsible Official? (Please check one) Yes No

Name of Person Requesting PIN CODE: _____
Select a Pin Code below (Limit is 7 Alpha/Numeric characters using Capital Letters only)
Pin Code _____ Phone _____
Is this Individual a Responsible Official? (Please check one) Yes No

Name of Person Requesting PIN CODE: _____
Select a Pin Code below (Limit is 7 Alpha/Numeric characters using Capital Letters only)
Pin Code _____ Phone _____
Is this Individual a Responsible Official? (Please check one) Yes No

NOTE: Pin Codes are kept confidential and are encrypted once entered into the NJDEP system. They are case sensitive and should be entered with capital letters only. This request must have at least one Responsible Official listed requesting a Pin Code. Individuals using this form can not be assigned identical Pin Codes. A Responsible Official signature is required if submitted via fax, mail, or by someone other than a responsible official. A consultant can not be listed and/or sign as a Responsible Official unless a letter accompanies this request form (on company letterhead) from a Responsible Official designating him/her to act as such.

*****No signature is required if Responsible official emails this form using their company or personal email address*****

I certify under penalty of law that the submitted information is true, accurate and complete. I am aware that there may be significant civil penalties imposed, including the possibility of fine, imprisonment or both, for submitting false, inaccurate or incomplete information. An email submission of this form by a company responsible official denotes certification.

Responsible Official Name (Please Print)

Signature

Date

APPENDIX H

CERTIFICATION FORM

This form must be used and included with **all** Emission Statement submittals. No modifications or alterations to the Certification language will be accepted. A blank certification form is also provided with the Emission Statement blank forms in the **Attachments to the 2010 Guidance Document**. It has also been inserted into the package of preprinted forms. Photocopies of the blank form may be used (see below) but the original signed Certification form must be returned to the Department. Any Emission Statement submitted without a completed certification form will be determined as a non-submittal and returned to the facility. Penalties may result from failing to properly certify the return. The required form contains two tiers of certification separated into Section 1 and Section 2. Each is described below.

Certification can be performed by using the PIN Codes sent to the NJDEP on the AIMS-099 Form instead of a written signature. The Department will accept the PIN Codes as a valid certification in place of a written signature. This is true for only electronic certification in RADIUS.

SECTION 1

Referring to the blank Certification Form on the following page, the first tier is shown in Section 1 and provides for the certification by the responsible official. This term is defined in the rule (N.J.A.C. 7:27-21.1) and in **Appendix A**. Although this level of certification is shown first on the form, this certification should occur last, since the responsible official will be relying (at least in part) on the lower level certifications (Section 2).

For a large corporation (over 250 employees or sales or expenditures over \$25 million in 2Q 1980 dollars), the rule allows a corporate officer (President, Vice President, Secretary or Treasurer) to designate a lower level official or plant manager to certify the Emission Statement if the lower level representative is responsible for overall operation of one or more manufacturing, production or operating facilities. For small corporations, the responsible official for certification can only be delegated if prior approval is received from the Assistant Director of Air and Environmental Quality Enforcement in the Department. Any requests for approval of delegation should be sent to the following address:

Emission Statement Certification Delegation
Assistant Director, Division of Facility Wide Enforcement
Department of Environmental Protection
P.O. Box 422
Trenton, NJ 08625-0422

SECTION 2

Again referring to the blank Certification Form, the second tier is shown in Section 2 and provides for the certification of the lower level individual(s). All individuals, *including any consultants*, with direct knowledge of and responsibility for the information contained in the Emission Statement must sign in Section 2 of the Certification Form. Where a supervisor exercises close supervision over employees collecting and estimating data for the Emission Statement, the supervisor may sign the certification, otherwise the employees with direct knowledge of the information should sign the certification form. The certification form may be photocopied if additional space is needed. The "Responsible Official" is required to sign one form.

**New Jersey Department Of Environmental Protection
Certification Form For the 2009 Emission Statement**

Company Name _____ **Facility ID** _____

1. **Responsible Official** – This first tier of this certification is to be signed by a Responsible Official as defined in N.J.A.C. 7:27-1.

“I certify under penalty of law that I have personally examined and am familiar with the information submitted in the attached document and, based on my inquiry of those officials immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I certify that, based on my inquiry of those officials immediately responsible for obtaining the information, I believe that any estimates are the result of good faith application of sound professional judgment, using techniques, factors, or standards approved by the Department or EPA, or generally accepted in the trade. I am aware that there are significant civil and criminal penalties, including fines or imprisonment or both, for submitting false, inaccurate or incomplete information.”

Name (type or print) _____ Title _____

Signature _____ Date _____

2. **Individuals with direct knowledge** – This second tier of certification is to be signed by the individual or individuals with direct knowledge and/or responsibility for the information contained in the attached spreadsheet. Please use a copy of this form if you need to have this certified by more than two individuals.

“I certify under penalty of law that I believe the information provided in this document is true, accurate, and complete. For those portions of the document that are based on estimates, those estimates are the result of good faith application of sound professional judgment, using techniques, factors, or standards approved by the Department or EPA, or generally accepted in the trade. I am aware that there are significant civil and criminal penalties, including fines or imprisonment or both, for submitting false, inaccurate or incomplete information.”

Name (type or print) _____ Title _____

Signature _____ Date _____

“I certify under penalty of law that I believe the information provided in this document is true, accurate, and complete. For those portions of the document that are based on estimates, those estimates are the result of good faith application of sound professional judgment, using techniques, factors, or standards approved by the Department or EPA, or generally accepted in the trade. I am aware that there are significant civil and criminal penalties, including fines or imprisonment or both, for submitting false, inaccurate or incomplete information.”

Name (type or print) _____ Title _____

Signature _____ Date _____

APPENDIX I

ESSENTIAL FIELDS FOR EMISSION STATEMENT

Facility Profile (General)

Location and Industry Information
 Facility ID & Name
 Location
 Street & Mailing Address
 County
 Location Description
 State Plane Coordinates
 X- & Y-Coordinates
 Units
 Datum
 Source Org.
 Source Type
 NAICS
 Contact Information
 Name
 Title
 Phone
 Organization
 Org. Type
 NJ EIN
 Mailing Address

Facility Profile (Planning)

Emission Year
 Number of Employees
 Predicted Emission Changes
 % Increase or Decrease

Non-Source Fugitive Emissions

FG-NJID
 Description of Activity

Insignificant Source Emissions

IS-NJID
 Source Description
 Equip. Type

Equipment Inventory

Equip.-NJID
 Facility's Designation (optional)
 Equip. Description
 Equip. Type
 Edit Details button (for storage tanks)

Control Device Inventory

CD-NJID
 Facility's Designation (optional)
 CD Description
 CD Type

Emission Point Inventory

PT-NJID

Facility's Designation (optional)

PT Description
 Equiv. Diam.
 Height
 Exhaust Temp. – Avg.
 Exhaust Vol. – Avg.

Emission Unit Inventory

Emission Unit Inventory
 U-NJID
 Facility's Designation (optional)
 U Description
 Emission Unit Operating Scenarios
 U-NJID
 UOS-NJID
 Facility's Designation (optional)
 UOS Description
 Operation Type
 Significant Equipment ID(s)
 Control Device ID(s)
 Emission Point
 SCC
 Batch Process Inventory
 BP-NJID
 Facility's Designation (optional)
 BP Description

Batch Process Inventory

Batch Process Operating Scenarios
 BP-NJID
 BPOS-NJID
 Facility's Designation (optional)
 BPOS Description
 BPOS Type
 BPOS Steps
 BP-NJID
 BPOS-NJID
 Step-NJID
 Facility's Designation (optional)
 Step Description
 Operation Type
 Significant Equipment ID(s)
 Control Device ID(s)
 Emission Point ID(s)
 SCC

Subject Item Group Inventory

Group-NJID

Type
ID
OS
Step (for batch process only)
Formal Reason(s) for Group/Cap

Emission Statement: Facility

Emissions
Actual Emission Rates

Emission Statement: Non-Source Fugitive

FG-NJID
Emissions
Actual Emission Rates

Emission Statement: Insignificant Source

IS-NJID
Process (for fuel burning units only)
Operating Amount
Operating Time
Emissions (for all insignificant sources)
Actual Emission Rates
Calculation Methodology Code
Emission Factors

Emission Statement: Batch Process

BP-NJID
BPOS-NJID
Step-NJID
General
Permit #
Quarterly Throughput
Process
Operating Time
Times Step Run
Additional Batch Process Oper.
Emissions
Actual Emission Rates
Calculation Methodology Code
Emission Factors
Control Operations button

UOS-NJID
General
Permit #
Quarterly Throughput
Process
Operating Amount
Operating Time
Emissions
Actual Emission Rates
Calculation Methodology Code
Emission Factors
Control Operations button
Source Details button for:
Combustion sources
VOC storage vessels
Printing processes (graphic arts)
Surface coating processes

Emission Statement: Group

GR-NJID
General
Permit #
Quarterly Throughput
Process
Operating Amount
Operating Time
Emissions
Actual Emission Rates
Calculation Methodology Code
Emission Factors

Emission Statement: Emission Unit

U-NJID

APPENDIX J

Annual 2009 Emission Statement Comments Form

Optional:

Facility ID _____

Company Name _____

Contact Person _____

Telephone Number _____

Did the facility contact person or any other individual from the facility attend the Department Emission Statement Workshop? _____

Please provide your comments below (attach additional sheets if needed):

APPENDIX K

Expanded Contaminant List

Toxic Air Pollutants (TAPs)

Acetaldehyde	Formaldehyde
Acrolein	Hexachlorobenzene
Acrylonitrile	Hydrazine
Arsenic and compounds	Hydrochloric acid (as HCl)
Benzene	Manganese and compounds
Beryllium and compounds	Mercury and compounds
1,3-Butadiene	Methylene chloride
Cadmium and compounds	Nickel and compounds
Carbon tetrachloride	Polychlorinated biphenyls (PCBs)
Chloroform	Polycyclic organic matter (POM) (excludes Naphthalene)
Chromium and compounds	Propylene dichloride
1,3-Dichloropropene	Quinoline
1,4-Dioxane	1,1,2,2-Tetrachloroethane
Dioxins	Tetrachloroethylene
Ethylene dibromide	1,1,1-Trichloroethane (Methyl chloroform)
Ethylene dichloride	1,1,2-Trichloroethane
Ethyleneimine	Trichloroethylene
Ethylene oxide	Vinyl chloride

This is the same list of chemicals in Table 1 of Appendix 1 in N.J.A.C. 7:27-21. The reporting thresholds for these chemicals are in N.J.A.C. 7:27-8, Appendix 1, Table B (**Reporting and SOTA Thresholds for HAPs**).

Greenhouse Gases (GHG's)

Carbon Dioxide (CO₂)

Methane (CH₄)

There is no minimum tons per year reporting threshold for GHG's.

PM_{2.5} and Precursor

PM_{2.5}

Ammonia (NH₃)

There is no minimum tons per year reporting threshold for PM_{2.5} and ammonia.