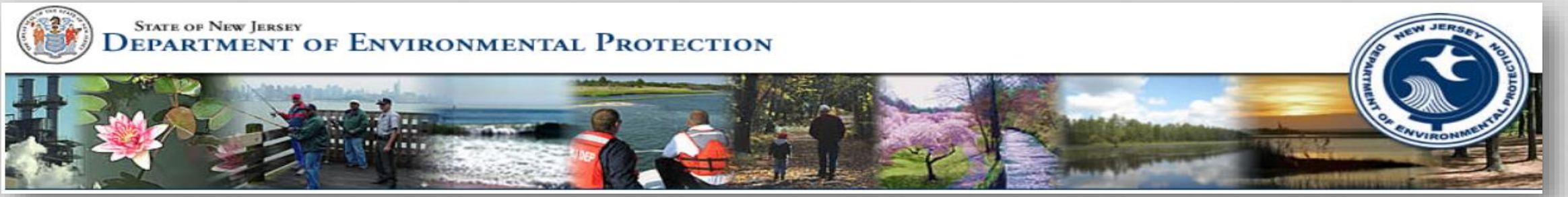
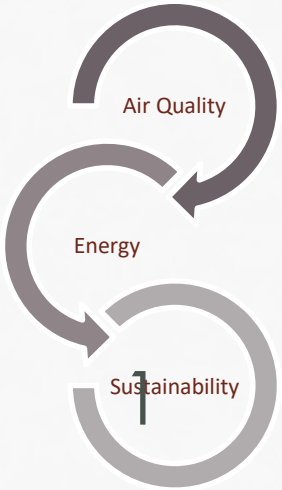


DIVISION OF AIR QUALITY

AIR QUALITY, ENERGY, AND SUSTAINABILITY

REVISIONS TO THE RISK SCREENING WORKSHEET

INDUSTRIAL STAKEHOLDERS GROUP
SEPTEMBER 7, 2018



Presented by Joel Leon

Outline

Two types of revisions to the Risk Screening Worksheet

1. Guidance and instructions - Completed

2. Changes to methodology used to determine health risk outputs – In Process

Guidance and Instructions

These updates were posted on August 30, 2018

Consistent with current guidance and policy which has been shared with Stakeholders

Additions made to Worksheet meant to put all relevant information in one location

Guidance and Instructions

Change to instruction section- Worksheet can only be used for sources with a single stack with an upward discharge direction

Read these instructions carefully before completing the spreadsheet.

This worksheet must be completed for the worst-case operating scenario for each new or existing source operation that has a potential to emit one or more air toxics above the reporting threshold. Based on the assumptions made, the following sources may not use this worksheet: (1) Sources without a stack as the sole point of air contaminant discharge, such as certain dry cleaners, degreasers, certain storage tanks, and gasoline stations, (2) sources with stacks with a horizontal or downward discharge direction, or (3) sources with stack heights less than 10 feet. Sources that cannot use this worksheet require Refined Health Risk Assessment. See the instructions below for more information on Refined Health Risk Assessment.

Guidance and Instructions

Added Section – Further Evaluation Required (FER)

- Reduce risk to change Worksheet output from FER to NEGL.
- If not possible, proceed to a Refined Health Risk Assessment

Further Evaluation Required (FER)

If the Worksheet generates a "FER" result for any air toxic, the facility should evaluate if the health risk level can be reduced through mitigating actions. Mitigating actions that could lower health risk levels include, but are not limited to, the following:

1. Reducing air toxic emissions through:

i. Installation of an APC device or improving the efficiency of an existing APC device.
ii. Replacing the air toxic substance with a non-toxic or less toxic substance.
iii. Decreasing the annual operative hours.
iv. Decreasing the annual or hourly throughput.

2. Increasing the stack height.

3. Relocation of the source to a location further from the property line.

If the health risk levels need further review after this evaluation, Refined Health Risk Assessment must be conducted. Only those air toxics with a "FER" result need to undergo a Refined Health Risk Assessment.

Guidance and Instructions

Added Section – Refined Health Risk Assessment

Refined Health Risk Assessment

If a Refined Health Risk Assessment is required, the applicant has two options.

Option 1: Facility Opts to Have the Department Perform the Refined Health Risk Assessment

The facility shall submit the following documents required for the Department to conduct the Refined Health Risk Assessment:

1. A detailed site plot plan that includes the information below. This plan shall have the signature and impression seal of a licensed land surveyor or professional engineer.

a. A depiction of the site, drawn to scale (with the scale indicated);
b. Location of all proposed emission points (stacks, vents, etc.), all buildings and structures on-site, and facility property line;
c. Location of buildings and structures immediately adjacent to the applicant's property, if they are located near the proposed emission points;
d. Height, width, and length of all buildings and structures;
e. An indication of true north. (If plant north is shown on the plot plan, the relationship between true north and plant north must be provided.); and

2. A scaled map with the location of nearby residences and other sensitive receptors, such as hospitals, nursing homes, schools, and day care centers.

The plot plan must be in the form of a physical, paper copy.

Option 2: Facility Opts to Perform its Own Refined Health Risk Assessment

The facility shall submit a modeling protocol for the Department's review and approval. The protocol must be developed in conformance with the Department's Technical Manual 1002 entitled "Guidance on Preparing an Air Quality Modeling Protocol" and Technical Manual 1003 entitled "Guidance on Preparing a Risk Assessment for Air Contaminant Emissions." Note that the plot plan must bear the signature and impression seal of a licensed land surveyor or professional engineer and be in the form of a physical, paper copy. Should you have any questions on the Department's Technical Manuals 1002 and 1003, please contact the Bureau of Evaluation and Planning at 609-292-6722.

Contact your permit evaluator to advise which option the facility chooses.

Guidance and Instructions

Added Section – NOTES

- Data in permit application and Worksheet must be consistent
- Short-term tank emissions rates only necessary for those HAP which have a short-term reference concentration
- Mailing address provided

Notes

The emission points, stack parameters, short-term emission rates (lb/hr) and annual emission rates (tpy) provided in the protocol and entered in the Worksheet must be consistent with your permit application. If changes to your permit are needed, please contact your permit evaluator.

[For Storage Tanks] Short-term emission rates (lb/hr) for storage tanks must be based on the worst-case operating scenario, which may result from scenarios like breathing, filling, roof landing, tank cleaning, or tank degassing as applicable. Short-term emission rates for storage tanks are only required to be permitted for air toxics for which there is a short-term reference concentration. Please indicate any HAPs listed in your permit that do not have short-term reference concentrations in the health risk assessment submitted with the permit application.

Please mail the physical, paper copy plot plan addressed to your permit evaluator at 401 E. State Street, 2nd Floor, P.O. Box 420, Mail Code 401-02, Trenton, NJ, 08265-0420. If you do not know the name of your permit evaluator, please address the physical, paper copy to NJDEP - Air Quality Permitting and Planning, Bureau of Stationary Sources.

NJDEP DIVISION OF AIR QUALITY HEALTH RISK SCREENING WORKSHEET

For Long-Term Carcinogenic and Noncarcinogenic Effects and Short-Term Effects

August 2018

Read these instructions carefully before completing the spreadsheet.

This worksheet must be completed for the worst-case operating scenario for each new or existing source operation that has a potential to emit one or more air toxics above the reporting threshold. Based on the assumptions made, the following sources may not use this worksheet: (1) Sources without a stack as the sole point of air contaminant discharge, such as certain dry cleaners, degreasers, certain storage tanks, and gasoline stations, (2) sources with stacks with a horizontal or downward discharge direction, or (3) sources with stack heights less than 10 feet. Sources that cannot use this worksheet require Refined Health Risk Assessment. See the instructions below for more information on Refined Health Risk Assessment.

To see a listing of air toxics by CAS number, click on the "CAS Index" tab at the bottom of this worksheet page.

This is a protected file. Changes are allowed only to certain cells (those in yellow). It is also a "read only" file. To save the data you input, select "File" on the menu above, then "Save as" in your own files, under the name of your choice. Input data only to yellow fields. Incremental cancer risk (IR) and hazard quotient (HQ) will calculate automatically when you type in the stack parameters (stack height and distance to property line) and an emission rate.

For references for toxicity data (URFs and RfCs), see the lists at www.nj.gov/dep/aqpp/risk.html.

Further Evaluation Required (FER)

If the Worksheet generates a "FER" result for any air toxic, the facility should evaluate if the health risk level can be reduced through mitigating actions. Mitigating actions that could lower health risk levels include, but are not limited to, the following:

1. Reducing air toxic emissions through:

i. Installation of an APC device or improving the efficiency of an existing APC device.
ii. Replacing the air toxic substance with a non-toxic or less toxic substance.
iii. Decreasing the annual operative hours.
iv. Decreasing the annual or hourly throughput.

2. Increasing the stack height.

3. Relocation of the source to a location further from the property line.

If the health risk levels need further review after this evaluation, Refined Health Risk Assessment must be conducted. Only those air toxics with a "FER" result need to undergo a Refined Health Risk Assessment.

Refined Health Risk Assessment

If a Refined Health Risk Assessment is required, the applicant has two options.

Option 1: Facility Opts to Have the Department Perform the Refined Health Risk Assessment

The facility shall submit the following documents required for the Department to conduct the Refined Health Risk Assessment:

1. A detailed site plot plan that includes the information below. This plan shall have the signature and impression seal of a licensed land surveyor or professional engineer.

a. A depiction of the site, drawn to scale (with the scale indicated);
b. Location of all proposed emission points (stacks, vents, etc.), all buildings and structures on-site, and facility property line;
c. Location of buildings and structures immediately adjacent to the applicant's property, if they are located near the proposed emission points;
d. Height, width, and length of all buildings and structures;
e. An indication of true north. (If plant north is shown on the plot plan, the relationship between true north and plant north must be provided.); and

2. A scaled map with the location of nearby residences and other sensitive receptors, such as hospitals, nursing homes, schools, and day care centers.

The plot plan must be in the form of a physical, paper copy.

Option 2: Facility Opts to Perform its Own Refined Health Risk Assessment

The facility shall submit a modeling protocol for the Department's review and approval. The protocol must be developed in conformance with the Department's Technical Manual 1002 entitled "Guidance on Preparing an Air Quality Modeling Protocol" and Technical Manual 1003 entitled "Guidance on Preparing a Risk Assessment for Air Contaminant Emissions." Note that the plot plan must bear the signature and impression seal of a licensed land surveyor or professional engineer and be in the form of a physical, paper copy. Should you have any questions on the Department's Technical Manuals 1002 and 1003, please contact the Bureau of Evaluation and Planning at 609-292-6722.

Contact your permit evaluator to advise which option the facility chooses.

Notes

The emission points, stack parameters, short-term emission rates (lb/hr) and annual emission rates (tpy) provided in the protocol and entered in the Worksheet must be consistent with your permit application. If changes to your permit are needed, please contact your permit evaluator.

[For Storage Tanks] Short-term emission rates (lb/hr) for storage tanks must be based on the worst-case operating scenario, which may result from scenarios like breathing, filling, roof landing, tank cleaning, or tank degassing as applicable. Short-term emission rates for storage tanks are only required to be permitted for air toxics for which there is a short-term reference concentration. Please indicate any HAPs listed in your permit that do not have short-term reference concentrations in the health risk assessment submitted with the permit application.

Please mail the physical, paper copy plot plan addressed to your permit evaluator at 401 E. State Street, 2nd Floor, P.O. Box 420, Mail Code 401-02, Trenton, NJ, 08265-0420. If you do not know the name of your permit evaluator, please address the physical, paper copy to NJDEP - Air Quality Permitting and Planning, Bureau of Stationary Sources.

FOR EDUCATIONAL AND DISCUSSION PURPOSES ONLY

Changes to methodology used to determine Worksheet health risk outputs

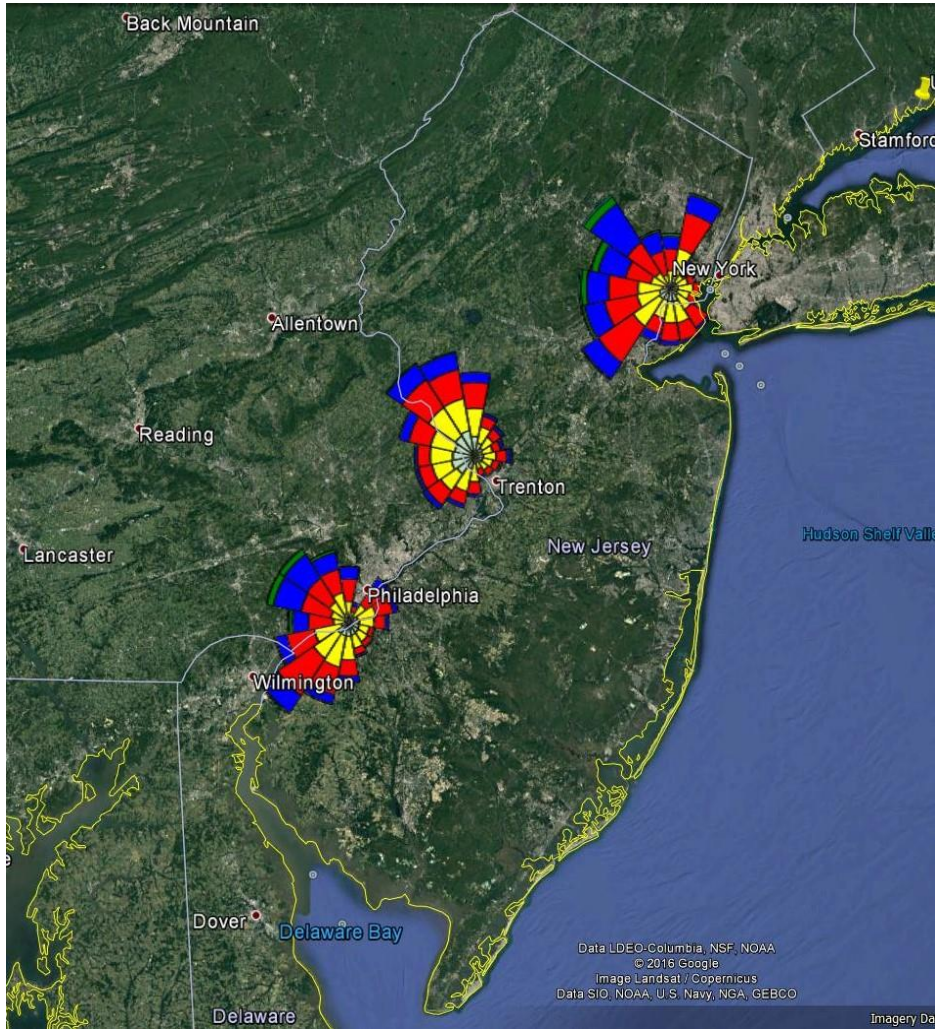
New methodology will based on Revisions to Technical Manuals 1002 “Preparing and Air Quality Modeling Protocol” and 1003 “Preparing a Risk Assessment”

- Public Comment Period: March 19 to April 18, 2018
- Only one comment received related to a reference concentration
- Final versions of the Technical Manuals will be posted by the end of September

Changes to methodology used to determine Worksheet health risk outputs

Most current air quality modeling software AERMOD (v. 15181)

- Land Use – Rural and Urban
- Meteorology – 5 years of data
- Comprehensive receptor grid
- Receptor grid assumed flat terrain



Changes to methodology used to determine Worksheet health risk outputs

1. All changes will be embedded in the locked sections of the Excel Spreadsheet

2. Same input data points (pound per hour, ton per year, stack height, stack distance to the property line)

3.New Risk Screening Worksheet should be posted by November

Questions?