



**Minnesota Pollution  
Control Agency**

520 Lafayette Road North  
St. Paul, MN 55155-4194

# AQDMP-01

## AQDM Protocol Instructions for Criteria Pollutant Modeling Forms Air Quality Dispersion Modeling (AQDM)

*Doc Type: Air Dispersion Modeling*

**Instructions:** Permit applicants required to conduct air dispersion modeling should complete and submit two paper copies of the *Air Quality Dispersion Modeling Protocol form* (AQDMP-01), the *Air Quality Dispersion Modeling Protocol Spreadsheet* (AQDMPS-01), and all accompanying files to:

Air Quality Permit Document Coordinator  
Minnesota Pollution Control Agency  
520 Lafayette Road North  
St. Paul, MN 55155-4194

Applicants may also submit an **electronic** version in addition to the two paper copies of the forms and accompanying files to:  
[AirModeling.PCA@state.mn.us](mailto:AirModeling.PCA@state.mn.us).

**Note:** Applicants should receive Minnesota Pollution Control Agency (MPCA) approval of forms AQDMP-01 and AQDMPS-01 prior to submitting the Air Quality Dispersion Modeling Report (AQDMR-01) with the permit application.

### AQDMP-01: Protocol Form

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The AQDMP-01 is a standardized modeling protocol form that combines simple checkboxes, dropdown lists, and text to document a facility's air dispersion modeling approach. The AQDMP-01 asks for a brief description of the project and the purpose for the modeling, e.g., permit application, permit condition, Environmental Assessment Worksheet (EAW), etc. The AQDMP-01 provides flexibility in that it can accommodate the use of modeling methodologies, such as the tiered modeling approaches as outlined in Appendix W regarding Nitrogen Oxides (NO<sub>x</sub>) modeling. Throughout the form the applicant has the option, where applicable, to use facility specific modeling approaches. For example, in Section B., facilities can indicate if onsite meteorological data will be used. Links to relevant guidance documents and webpages are provided in the protocol Appendix.

- Applicants should provide the location, address, and contact person for the facility.
- Applicants should use a 3-character [F]acility [A]bbreviation [C]ode (FAC) to identify their facility.
- Applicants are also required to submit sample modeling input files, however please **do not** use spaces in file names. Applicants should use the most recent version of the U. S. Environmental Protection Agency (EPA) promulgated air dispersion model, AERMOD, along with regulatory default options unless otherwise specified.
- Applicants may specify the use of the Standardized Mobile Source (SMS) spreadsheet, as indicated in Sections D and E.
- Applicants have the option to examine the inclusion of paved roads according to the MPCA's most recent policy on modeling paved roads.
- Applicants may use MPCA or user-generated background values and nearby sources (see AQDMP-01 form for more details).

### AQDMPS-01: Protocol Spreadsheet

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The AQDMPS-01 is a spreadsheet that captures stack parameters, emission rates and emission factors. All sections of the AQDMPS-01 must be filled out and reviewed by the MPCA before an applicant receives approval of a submitted protocol. Facilities may add additional tabs/worksheets to the workbook to provide more detailed calculations. **The AQDMPS-01 replaces the Standardized Air Modeling (SAM) spreadsheet.**

The **AQDMPS-01** requests the following information:

- Specific locations for all stacks and release points, along with information pertaining to the manner in which emissions are discharged to the atmosphere (e.g., stacks with "rain caps", stacks with unobstructed vertical releases, "gooseneck" stacks, lateral discharges, vents, and fugitive releases).
- Potential or permitted allowable emissions, emission factors and references per emission release point.

#### Source Parameter Worksheets:

- Values in "emission rate" fields should be a calculated emission rate.
- Values in Area Source "emission rate" fields should be in g/m<sup>2</sup>/sec.
- List all operating scenarios to be modeled.
- All intermittent emissions must be listed.
- Exclusion of any emission source must be approved.

**Sheet 1: Point Source Parameters**

Enter stack parameters into spreadsheet tab “Stack Parameters” in the **AQDMP-01** spreadsheet. A **Model Input Key** table provides descriptions along with the required units for stack parameters. Input cells are colored green. Field headings and **Model Input Key** cells are locked and cannot be altered. An Example is provided at the top of the sheet.

**Sheet 2: Area Source Parameters**

Enter area source parameters into spreadsheet tab “Area Source Parameters” in the **AQDMP-01** spreadsheet. A **Model Input Key** table provides descriptions along with the required units for area source parameters. Input cells are colored green. Field headings and **Model Input Key** cells are locked and cannot be altered. An Example is provided at the top of the sheet.

**Sheet 3: Volume Source Parameters**

Enter stack parameters into spreadsheet tab “Stack Parameters” in the **Modeling Parameters** spreadsheet. A **Model Input Key** table provides descriptions along with the required units for stack parameters. Input cells are colored green. Field headings and **Model Input Key** cells are locked and cannot be altered. An Example is provided at the top of the sheet.

**Sheet 4: Emission Calculations**

Enter fugitive source, stack vent and emission unit information and all relevant emission factors, equations, and references into the **Emission Calculations Table** found in the “Emission Calculations” tab. An Example is provided at the top of the sheet. Input cells are colored green, field headings and “EXAMPLE” cells are locked and cannot be altered. *Indicate in the **Description** field whether emissions are ‘controlled’ or ‘uncontrolled’.*

**Sheet 5 and higher: User generated sheets**

Emissions calculations entered into the User Tab should be linked to the source parameter worksheets.

**Further information:** Direct any question regarding forms AQDMP-01 and AQDMPS-01 to Ruth Roberson at 651-757-2672, [ruth.roberson@state.mn.us](mailto:ruth.roberson@state.mn.us), or Melissa Sheffer at 651-757-2718 or [melissa.sheffer@state.mn.us](mailto:melissa.sheffer@state.mn.us). Direct any questions regarding background values and/or nearby sources to Dennis Becker at 651-757-2217 or [dennis.becker@state.mn.us](mailto:dennis.becker@state.mn.us).