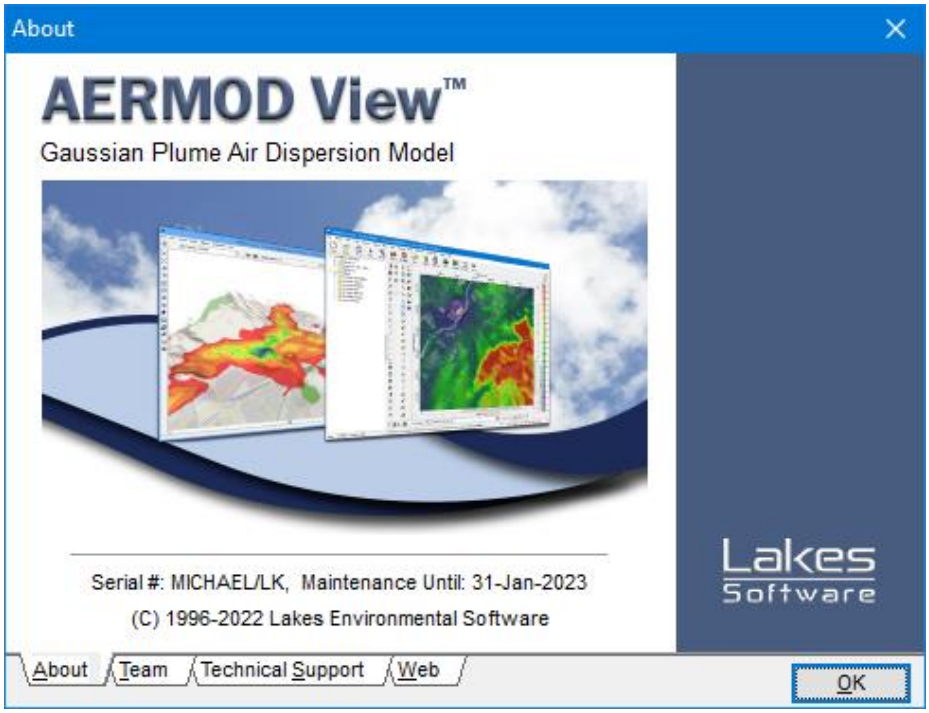
AERMOD View™

Gaussian Plume Air Dispersion Model - AERMOD

Release Notes

Version 11.0.0



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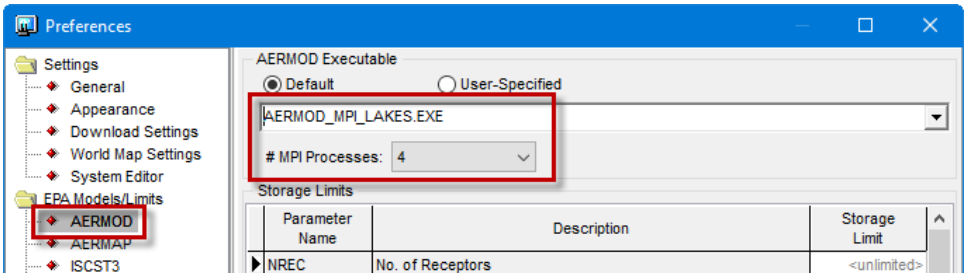
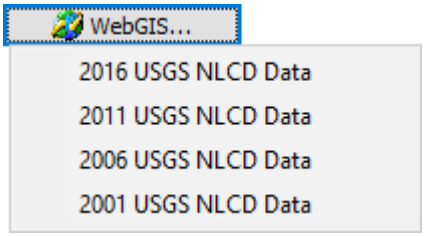
AERMOD View™ Version 11.0.0

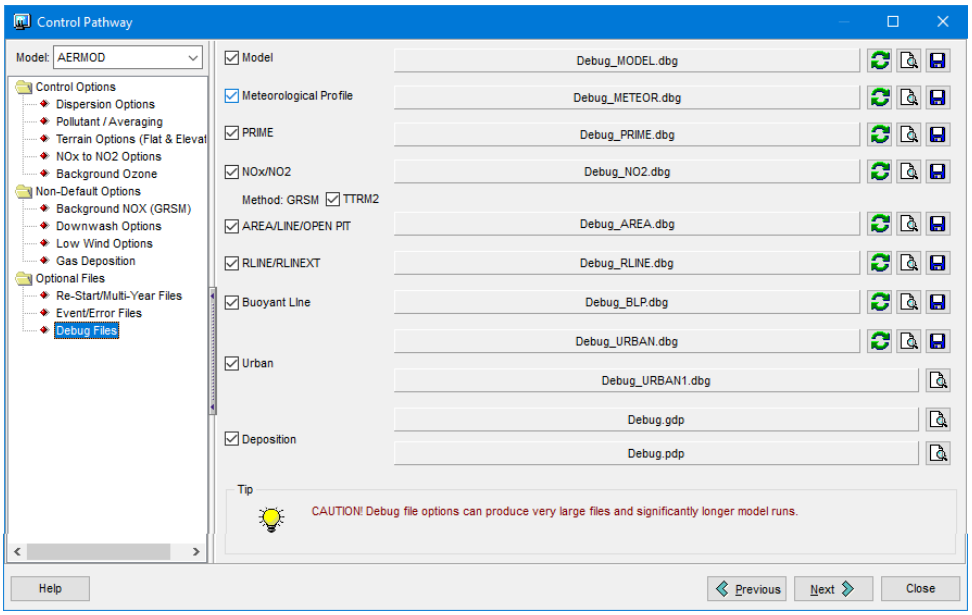
Release Notes

September 15, 2022

New Features

Topic	Feature Description
AERMOD	**Latest Release of U.S. EPA AERMOD Model Available – Dated 22112** The following U.S. EPA Models were released on June 27, 2022 and are incorporated into **AERMOD View Version 11.0**: 1. AERMOD.EXE is the latest version 22112 (32-Bit Version) 2. AERMOD_22112_X32.EXE – The same as above (32-Bit Version) 3. AERMOD_22112_X64.EXE – 64-Bit Version See the Model Change Bulletin for a list of changes and bug fixes: https://gaftp.epa.gov/Air/aqmg/SCRAM/models/preferred/aermod/aermod_mcb16_v22112.pdf
AERMOD MPI	**New Version of Lakes AERMOD MPI 22112 (Parallel Version)** A new version of the Lakes AERMOD MPI for the US EPA Model Version 22112 is now available (AERMOD_MPI_LAKES_22112.exe). Install includes 64-bit and 32-bit versions. You can specify to use this model under the **Preferences** dialog. **Note:** AERMOD_MPI_LAKES_22112.EXE or AERMOD_MPI_LAKES.EXE will run the latest version of the AERMOD model (22112) in parallel mode using up to a maximum of 8 cores. 

Topic	Feature Description
AERMET	**Latest Release of U.S. EPA AERMET Model Available – Dated 22112** The following U.S. EPA Models were released on June 27, 2022 and are incorporated into **AERMET View Version 11.0**: • AERMET.EXE is the latest version 22112 (32-Bit Version) • AERMET_22112_X32.EXE – The same as above (32-Bit Version) • AERMET_22112_X64.EXE – 64-Bit Version See the Model Change Bulleting for a list of changes and bug fixes: https://gaftp.epa.gov/Air/aqmg/SCRAM/models/met/aermet/aermet_mcb12.pdf
AERMET View	**New Input File Format** The U.S. EPA completely recoded the AERMET model with the model release 22112. Part of the recode process transitioned the model from a three-stage process to a two-stage process and included support for a single combined-stage input file rather than producing separate input and output files for each stage. To accommodate this change, AERMET View now produces a **single input file (*.INP)** for projects running AERMET 22112. In addition, all Message (*.MG) and Report (*.RP) output will be written to single, non-staged files.
WebGIS	**Updated NLCD Data Downloads** WebGIS has been updated with the **most current versions** of the USGS National Land Cover Database GEOTIFF data products (2001, 2006, 2011, and 2016) as published by the Multi-Resolution Land Characteristics (MRLC) Consortium. 

Topic	Feature Description
Display	**Shapefile Attributes** The main display was updated to support the display of additional attributes found in imported Shapefile base maps.
Control Pathway	**New Debug File Options** Three new debug files have been added to AERMOD 22112: • **RLINE/RLINEXT** source calculations • **Buoyant Line** source calculations • **Urban** boundary layer calculations The **Debug Files** settings on the Control Pathway have been reorganized to accommodate the additional selections. New default file names were also applied to debug files to aid users in their project file management.  **Note:** A bug in the U.S. EPA AERMOD model code prevents users from activating **more than 6 debug files** in a single project. An error message will be presented in the Run Status display if more than 6 files are enabled in a single project.

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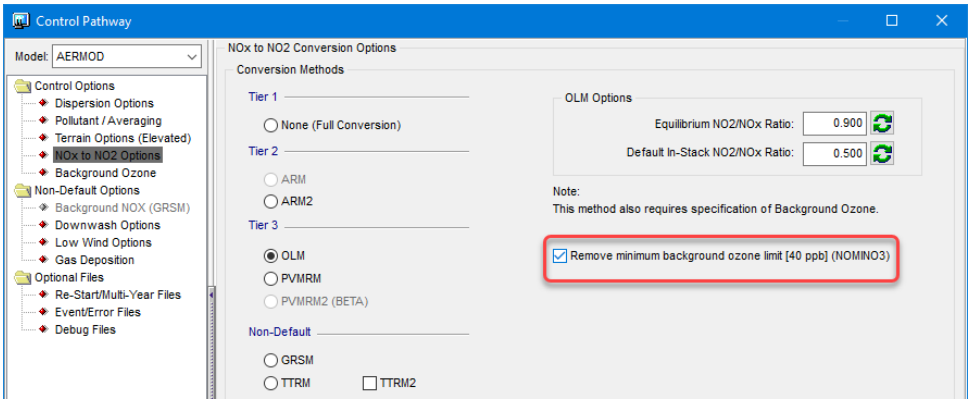
Topic	Feature Description
Control Pathway	**Minimum Ozone Concentration Removal (NOMINO3)** AERMOD 22112 includes an option which removes the restriction that limited background stable-hour ozone concentrations to a minimum of 40 ppb regardless of user-defined values. The option is listed as **NOMINO3** on the MODELOPT keyword of the AERMOD input file. 
Control Pathway	**Updates to Non-Default BETA & ALPHA Options** The U.S. EPA has modified the classifications of the following **Non-Default** options in AERMOD 22112: • Use of the **Urban** dispersion coefficient with Buoyant Line (BUOYLINE) or RLINE sources is no longer an ALPHA option. • The Generic Reaction Set Method (GRSM), for NO2 conversion, has been updated to a **BETA** option (previously ALPHA). Several new ALPHA options have been added as described in additional new features below.

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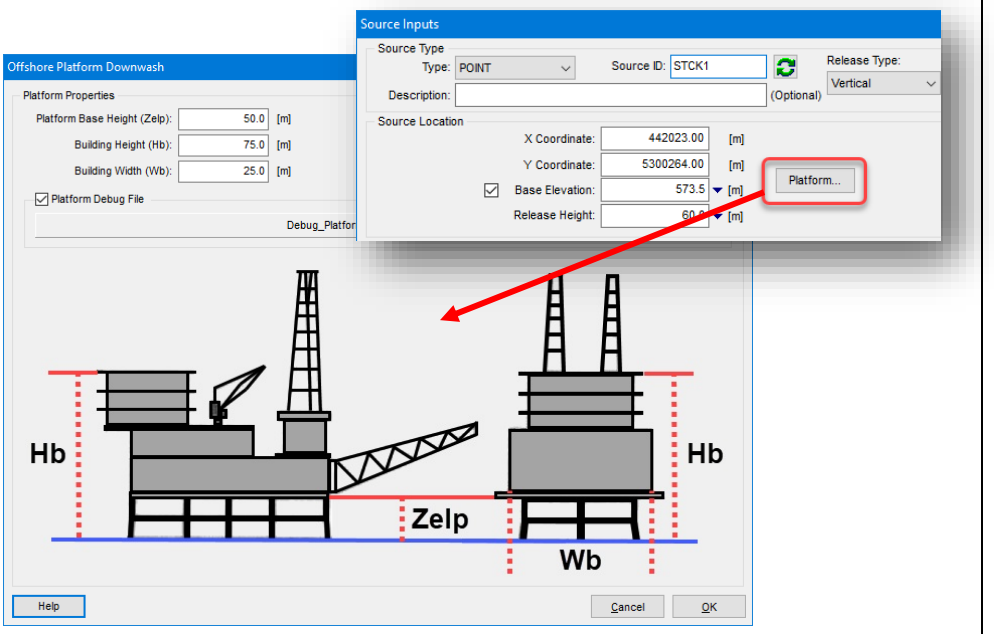
Topic	Feature Description
Source Pathway	**Offshore Platform Downwash for Point Sources (ALPHA)** AERMOD 22112 includes new non-default routines for calculating downwash impacts on point sources (vertical, capped, or horizontal) located on offshore platforms. Modelers include dimensions for the platform height above the water surface (Zelp), height of the dominant building tier above the water surface (Hb), and the shorter width of the structure (Wb). 

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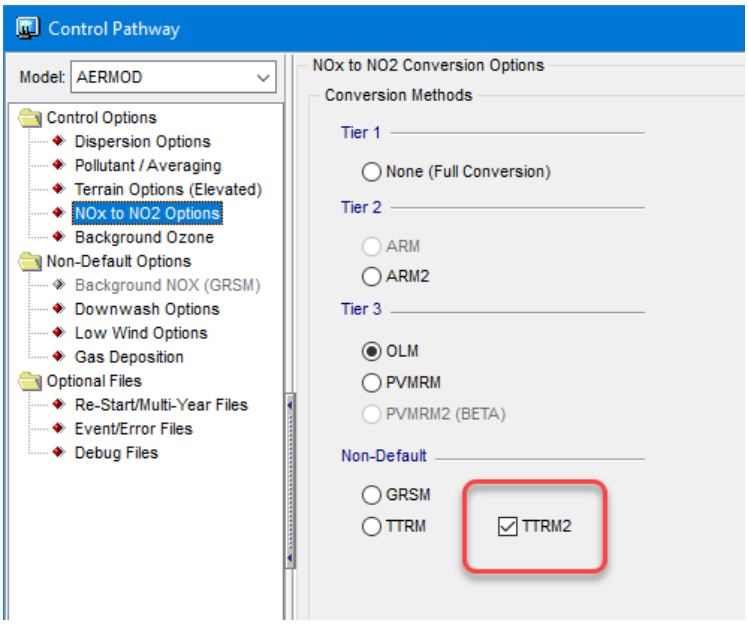
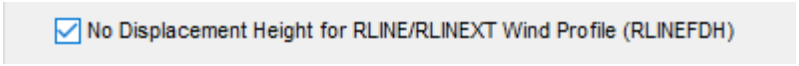
Topic	Feature Description
Control Pathway	**New NO_X to NO_2 Conversion Option – TTRM2 (ALPHA)** AERMOD 22112 includes a new non-default NO2 conversion option called the **Travel Time Reaction Method 2 (TTRM2)**. This method combines the existing TTRM method with one of the existing regulatory options (ARM2, OLM, or PVMRM) and calculates which method would produce lower concentrations. 
Control Pathway	**RLINE Displacement Height Removal (ALPHA)** A new non-default ALPHA option in AERMOD 22112 removes the displacement height used in the model's internal wind profile calculations associated with RLINE & RLINEXT source types. 

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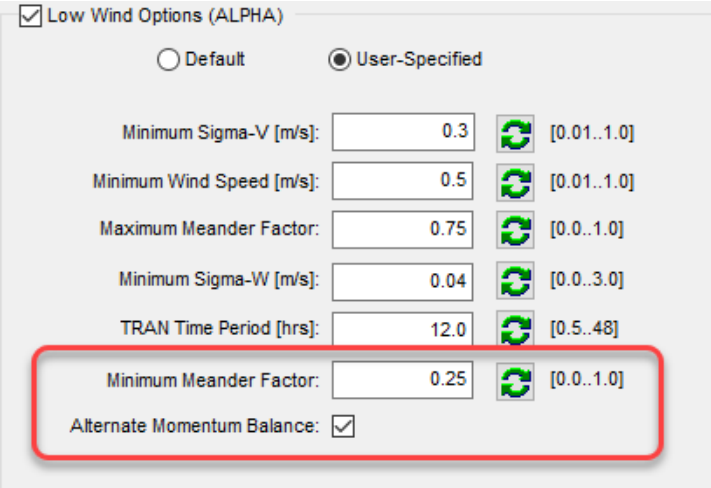
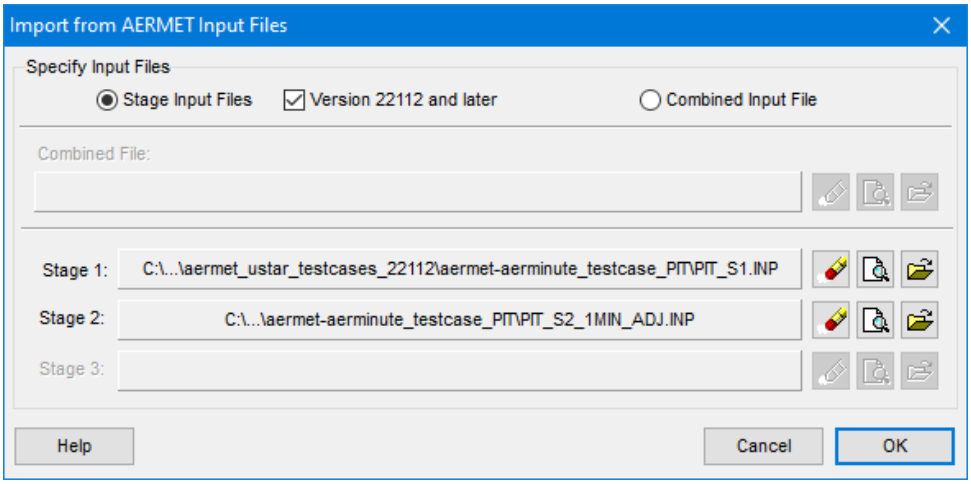
Topic	Feature Description
Control Pathway	**Additional Low Wind Options Added (ALPHA)** Two new options have been added to the existing set of non-default LOW_WIND selections in AERMOD 22112. 1. **FRANmin** is a Minimum Meander Factor to coincide with the existing Maximum Meander Factor. 2. **PBAL** enables an alternate momentum balance approach to determine plume meander 
AERMET View	**Import from AERMET Input Files Updates** To accommodate the new input file formatting in AERMET 22112, the Import from AERMET Input Files dialog has been updated. Users can import existing AERMET input files in both Staged and Combined formats with the Staged files being either two- or three-stages. 

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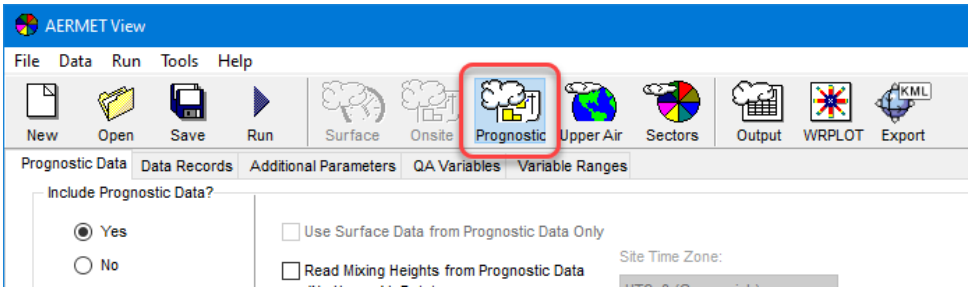
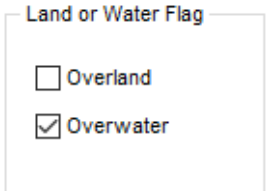
Topic	Feature Description
AERMET View	**New Prognostic Data Input Pathway** AERMET 22112 includes a new pathway for handling prognostic meteorological data from the Weather Research & Forecasting (WRF) or Mesoscale Model Version 5 (MM5) meteorological models. This pathway is analogous to the existing Onsite Pathway with the same features and keywords. It is formatted to work directly with output from the Mesoscale Model Interface (MMIF) Version 4.0 application. 
AERMET View	**Overwater/Overland Processing Flags for Prognostic & Onsite Pathways** A new data flag allows users to identify whether their Prognostic Pathway input data originates from a location that is **Overwater (OW)** or **Overland (OL)**. Selection of the overwater option will allow AERMET to read and process convective parameters directly from the prognostic data (as formatted by MMIF V4.0). A similar flag has been applied to the Onsite Pathway, but AERMET 22112 only supports use of the overland option with Onsite data. 

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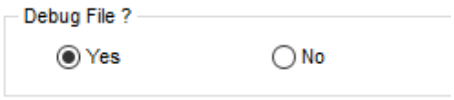
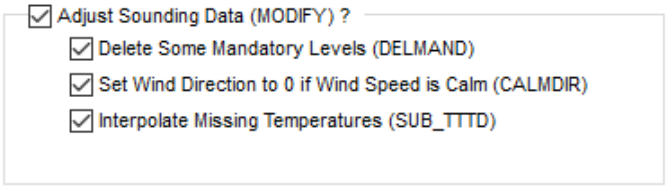
Topic	Feature Description
AERMET View	**New Debug Output File** AERMET 22112 includes a new Debug Output File which prints internal storage array information and planetary boundary layer calculations to an external file (aermet_debug.txt). This option is found in the **Processing Options** tab of the **Sectors** input pathway. 
AERMET View	**Individual Upper Air Sounding Modifications** AERMET 22112 allows selection of individual sounding modifications. 
AERMET View	**Mode Menu Removed for 22112** AERMET 22112 no longer produces or reads an external Merge file. To support this change, AERMET View's **Mode** menu was removed for 22112 projects, and the **Merge File** section of the Output Files tab disabled.
AERMET View	**Order Swap for Sectors Tabs** The order of the Sectors (Onsite) and Sectors (Surface) tabs were swapped to reflect AERMET's preferred order for reading these data variables. This aligns with the AERMET input file format which assigns primary surface characteristics (FREQ_SECT/SITE_CHAR) to **Onsite** data and secondary surface characteristics (FREQ_SECT2/SITE_CHAR2) to **Surface** data.

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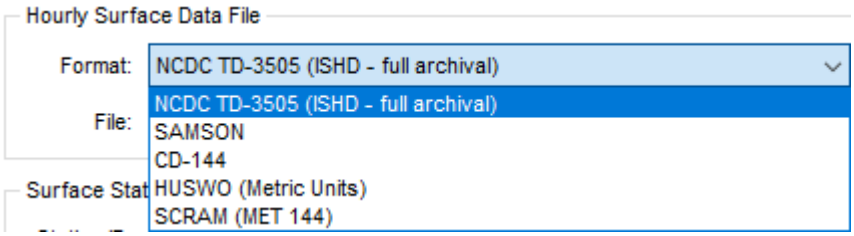
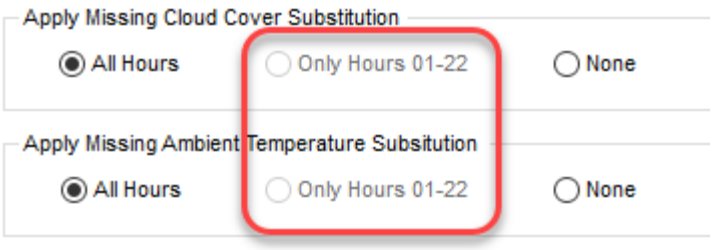
AERMET View	**Miscellaneous Changes in AERMET 22112** AERMET View has undergone extensive updates to support various minor changes throughout the AERMET 22112 model: • **TD-3280** files are **no longer supported** on the Surface Pathway. This option has been removed from the Format drop-down menu. • The Format drop-down menu on the Surface Pathway was reordered to list **TD-3505** as the default format.  • ASOS stations are now automatically recognized internally by AERMET. The **ASOS Site** checkbox has been disabled for all recognized ASOS station ID numbers. • The no persistence keyword (NOPERS), for the cloud cover and temperature data substitution routines, was made obsolete. The "Only Hours 01-22" substitution options in AERMET View have been disabled for 22112 projects. 

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Fixed Issues

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Display	**Incorrect RLINE Source Width** In the main display, the width of **RLINE** sources was inadvertently doubled from the assigned numeric value. This issue has been corrected.
Source Pathway	**Unpopulated Background Concentration Table** A correction was made to ensure all time-varying emission values will populate the **Background Concentrations** tables when imported from existing AERMOD input files.
Source Pathway	**Hourly Emission File Editor Excel Import** The Hourly Emission File Editor was updated to correctly read certain Excel spreadsheets (XLS & XLSX).
Meteorology Pathway	**Non-Concurrent PFL File Reading in the Multi-Year File Utility** The Multi-Year Met Data File Utility was updated to correctly read and process profile meteorological data files (*.PFL) that are not from concurrent years.
Meteorology Pathway	**Incorrect Model Keyword** Use of the Turbulence Treatment options previously resulted in an additional keyword being added to the AERMOD input file. This has been corrected.
Terrain Processor	**Property Boundary Intersection with Offsite Grid Receptors** AERMAP has been updated to process cases where an existing gridded receptor network intersected with one or more receptors along the Plant Boundary and the “Remove Onsite Receptors” option was enabled.
AERMET View	**Loss of Category Display in Land Use Creator** Some codes were not displayed correctly when using the “Save Land Use File As” function in the Land Use Creator. The utility has been updated to use Import functionality when reading the newly copied data file.

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Known Issues

Topic	Issue Description
AERMOD Model	**AERMOD System Bugs, Errata, and Related Guidance** The U.S. EPA now maintains a list on their website of known issues with the current modeling system. Users will find the list at: https://gaftp.epa.gov/Air/aqmg/SCRAM/models/preferred/aermod/AERMOD_System_Bugs_and_Related_Guidance.pdf
AERMOD Model	**RLINEXT Not Correctly Linked to ALPHA Keyword** Despite regulatory guidance indicating that the RLINEXT source is a non-default ALPHA option, the AERMOD model halts if the input file does not contain the BETA keyword. AERMOD View addresses this by writing both BETA and ALPHA to the MODELOPT card of the input file.
AERMOD Model	**RLINEXT Results Sensitive to Receptor Order** When modeling with the RLINEXT source in AERMOD 19191 or later, results are dependent upon receptor order for receptors that fall within the source dimensions.
New Project Wizard	**No Spaces in Project Name with ISC** The ISCST3 and ISC-PRIME models are included in AERMOD for backwards compatibility purposes. Due to limitations in their code, these models will issue a fatal error if the project name contains spaces or special characters.

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