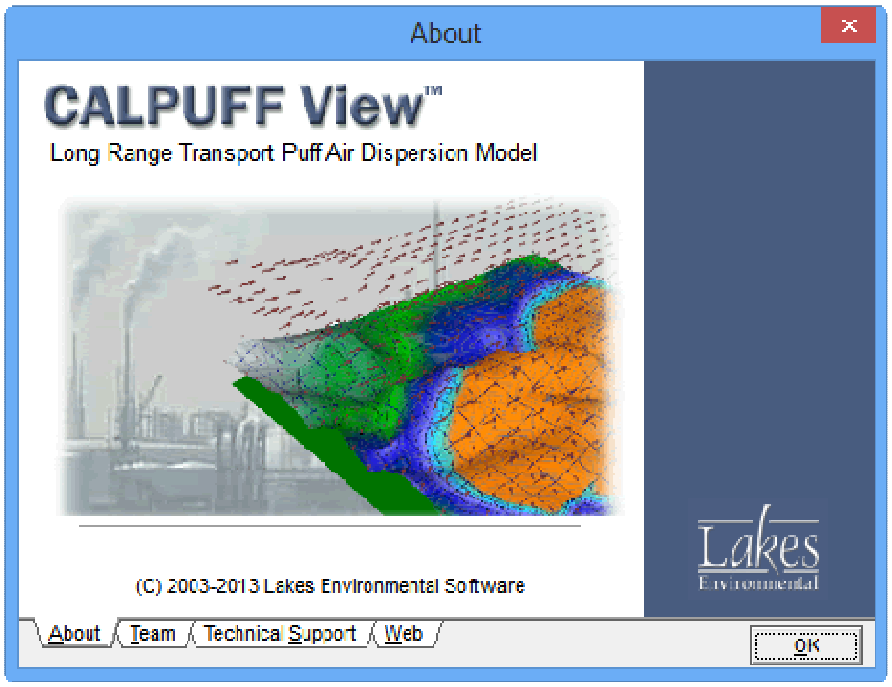
CALPUFF View™

Graphical Interface for the US EPA Approved Long Range Transport Model - CALPUFF

Release Notes

Versions 5 and 6



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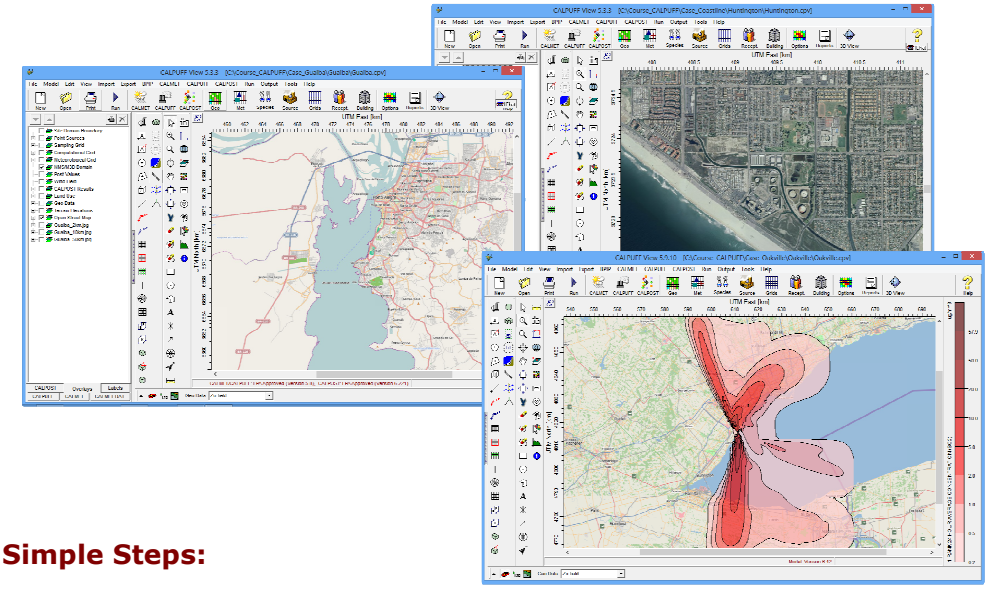
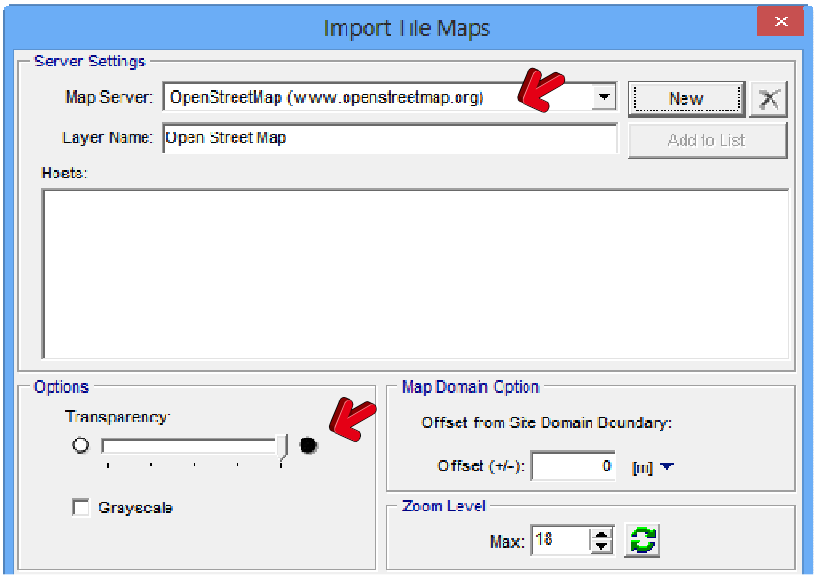
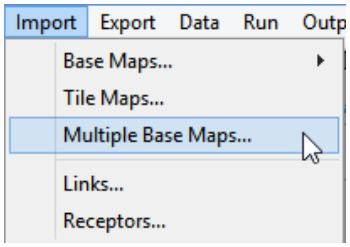
CALPUFF View™ Version 6.0

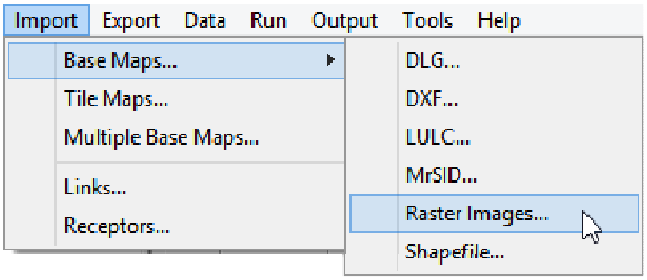
Release Notes

March 6, 2013

New Features

Topic	Feature Description
Installation	**Compatibility with Windows 8, 32-Bit and 64-Bit** CALPUFF View Version 6 is compatible with Microsoft Windows 8, 32-bit and 64-bit versions.
Base Maps	**Automated Download of Worldwide Geo-Referenced Base Maps** The **Import Tile Maps** feature allows users to import imagery from various online resources. The program comes loaded with 6 different Map Servers which range from road maps (e.g., OpenStreetMap, MapQuest Streets) to Satellite and Aerial photography (e.g., MapQuest Satellite, CloudMade Maps). Additional Map Servers can be added by the user. Map coverage may vary depending on location.  **Simple Steps:** **Step 1:** Create your CALPUFF View project **Step 2:** Select **Import | Tile Maps** menu option **Step 3:** Select **Map** type (e.g., OpenStreetMap) and click **OK**

Topic	Feature Description
	 Downloaded imagery is stored locally. Check the **File | Preferences | World Map Settings** to add Proxy Server details. **Important Note:** The **Import Tile Maps** feature is only available for **users with current maintenance**. If you are receiving this update as part of your maintenance, once your maintenance expires, you will no longer have access to this feature.
Base Maps	**Improved Method of Importing Multiple Base Maps**  Using this feature allows you to search for multiple base maps, which already contain geo-referenced world files, located in the same folder and import them either as a single layer or as separate layers.

Topic	Feature Description
Base Maps	**Import Raster Images** You can now import any supported raster image file (e.g., BMP, JPEG, TIFF, etc.) using the same option in the menu. 
Base Maps	**New Import Formats Added for Base Maps** You can now import base maps saved in .PNG and .GIF format. Use the **Import | Base Maps... | Raster Images...** menu item to import these files.
Models	**Latest Release of US EPA CALPOST Model** On August 27, 2012, the US EPA approved CALPOST Version 6.221 (level 080724) as the EPA-Approved version. The modifications in this new CALPOST version are related to the visibility option as per US EPA description: "Method 8" (MVISBK = 8, M8_MODE = 5, MVISCHECK = 1), which utilizes the revised IMPROVE equation per the Federal Land Managers' Air Quality Related Values Work Group (FLAG) revised October 2010 Phase 1 Report. The US EPA-approved versions for the models are: ▪ CALPUFF version 5.8 (level 070623) ▪ CALMET version 5.8 (level 070623) ▪ CALPOST version 6.221 (level 080724) **Note:** You must download this latest CALPOST model version 6.221 from TRC web site as the models exe are not included in the CALPUFF View installation.

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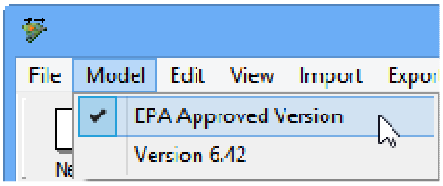
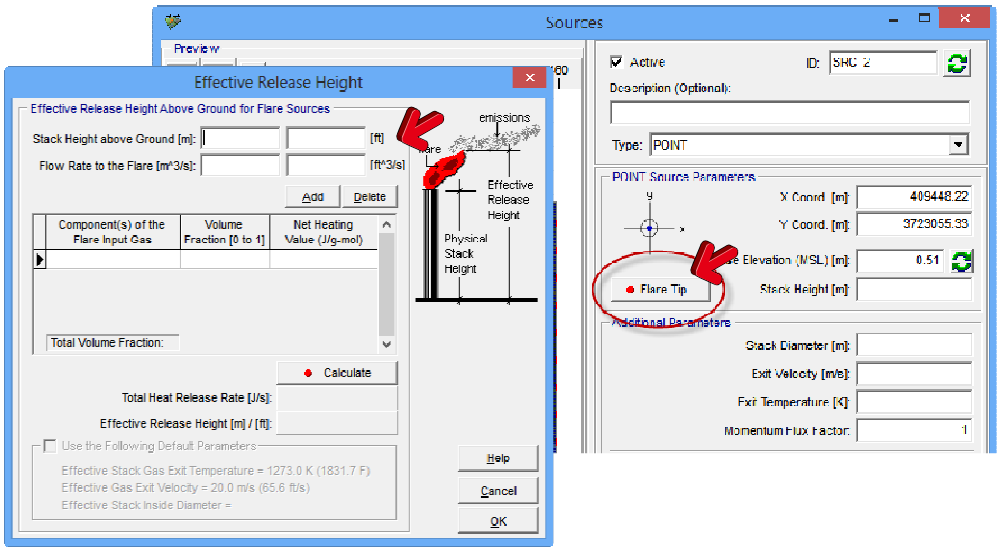
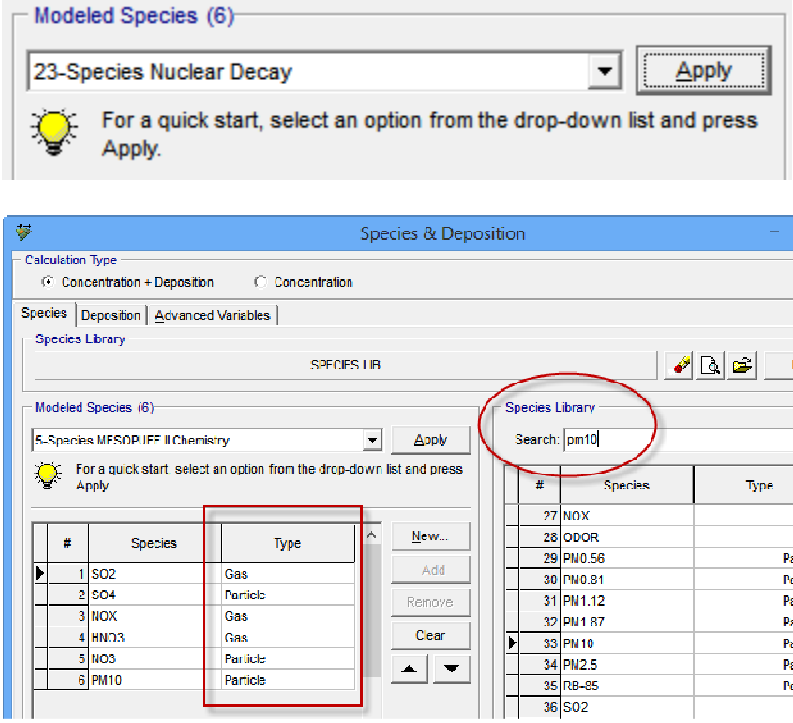
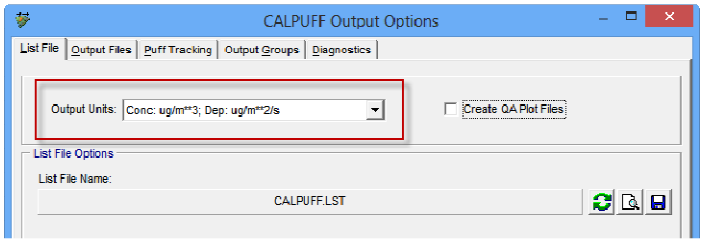
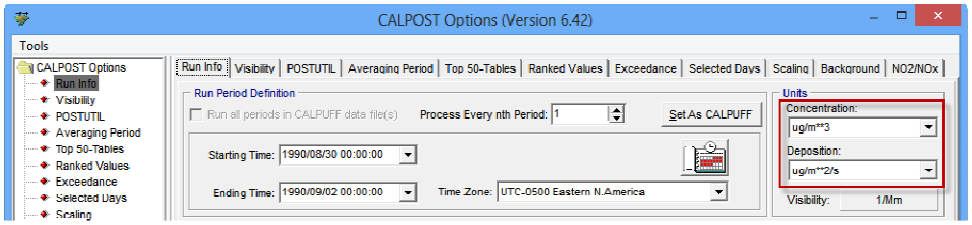
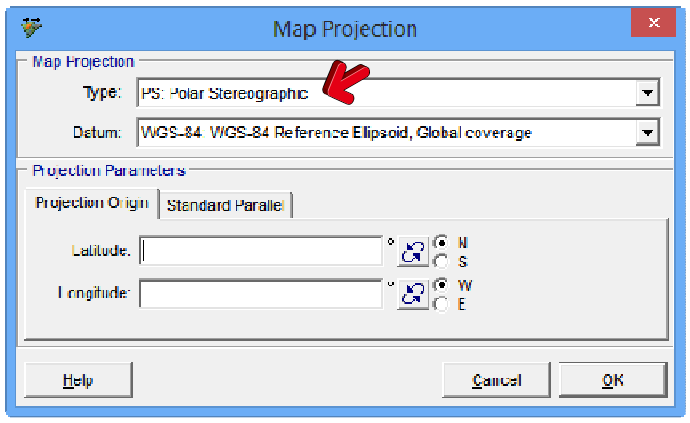
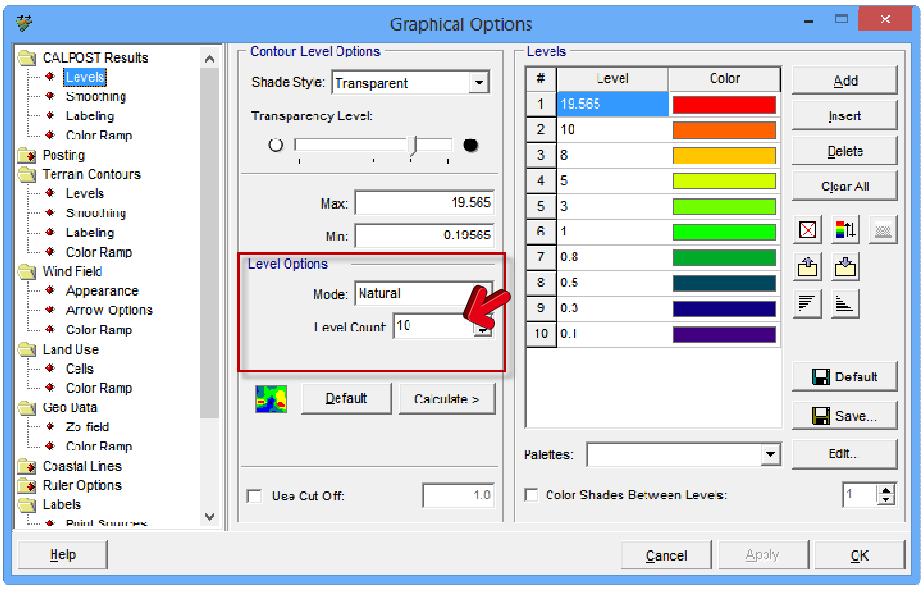
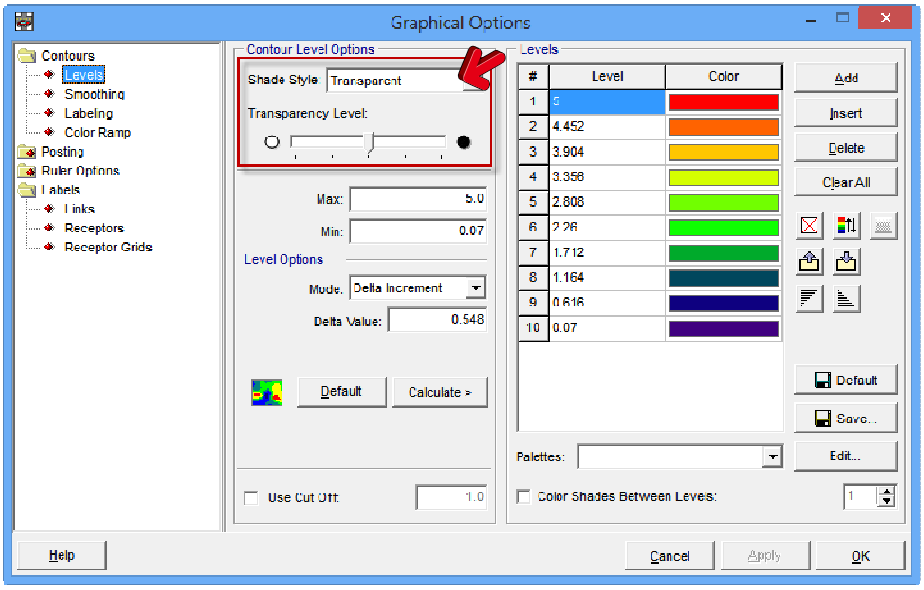
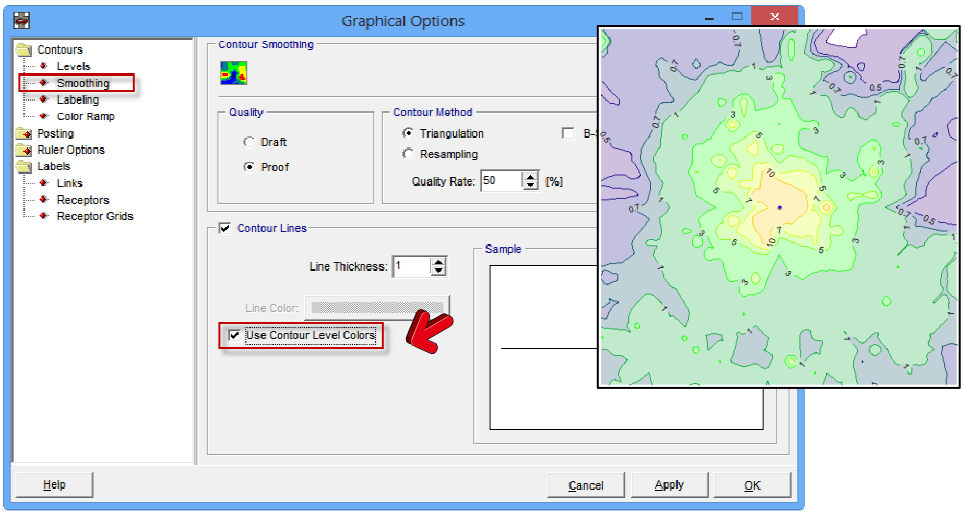
Topic	Feature Description
Models	**List of Models Available Has Been Updated** In CALPUFF View 5.0, Model Version 6 was still included as one of the model options for backward compatibility. Model executables supported under Model **Version 6** were released by TRC in 2008. Version 6 of the models was replaced by version 6.42 in 2011. Model versions under CALPUFF View 6.0 are now described as: • **EPA Approved Version:** This corresponds to the US EPA Approved Version of the models (CALPUFF/CALMET 5.8 and CALPOST 6.221) • **Version 6.42:** This corresponds to the TRC Version 6.42 Beta Versions of the models (CALPUFF 6.42, CALMET 6.334, CALPOST 6.292). 
Models	**Folder for EPA Approved Models Changed to "Models_EPA"** The folder where the user must copy the TRC model executables for the EPA Approved Version of the models was changed from "**Models_5_8**" to "**Models_EPA**". If you have already downloaded and copied the executables and parameter files to the folder "**Models_5_8**", then you need to move them to the folder "**Models_EPA**". **Warning:** Make sure the CALPOSTL.EXE and corresponding parameter file (PARAMSL.PST) that you copy to the "**Models_EPA**" folder is for the latest approved version 6.221. Instructions on which model files to download and where they should be stored are available in the document "**CALPUFF Model Download Instructions**" available in the **CALPUFF View Update Site**.

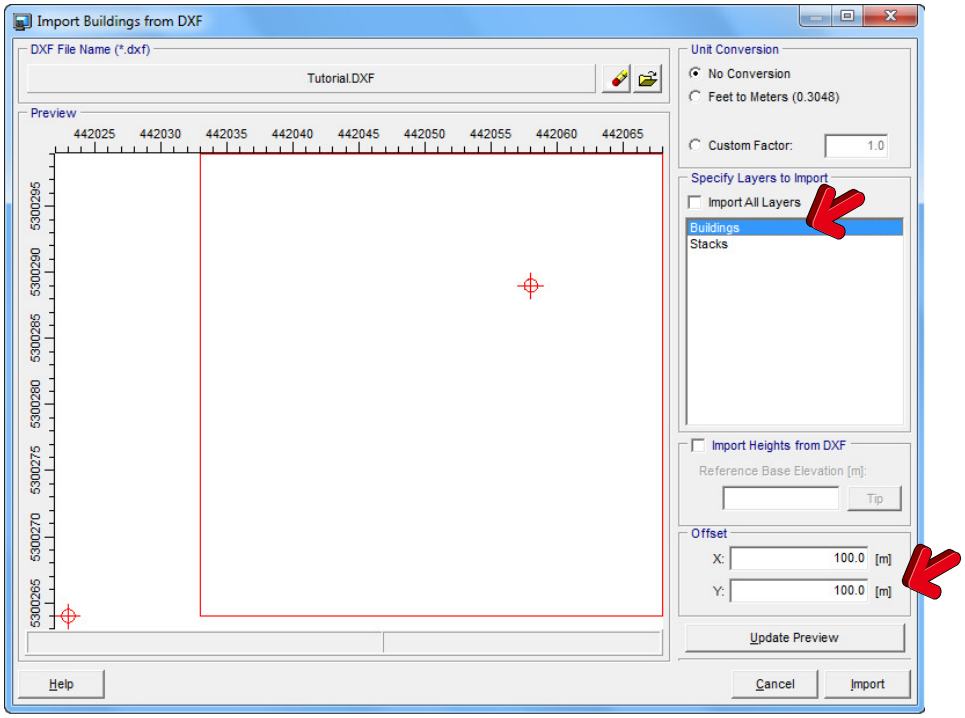
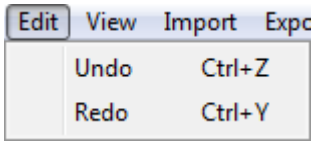
Topic	Feature Description
Sources	**Flare Calculator Available for Point Sources** The CALPUFF model does not support **Flare** sources directly; therefore an equivalent point source is usually used with pseudo release parameters that capture the unique behavior of the flare source. The **Flare Tip** button was introduced under the **Sources** dialog when a **POINT** source is specified. This button displays a built in calculator to determine the pseudo release parameters for the flare source according to the US EPA method. 

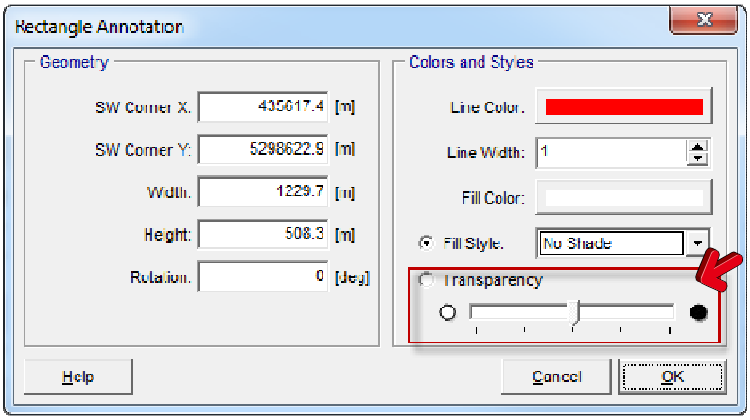
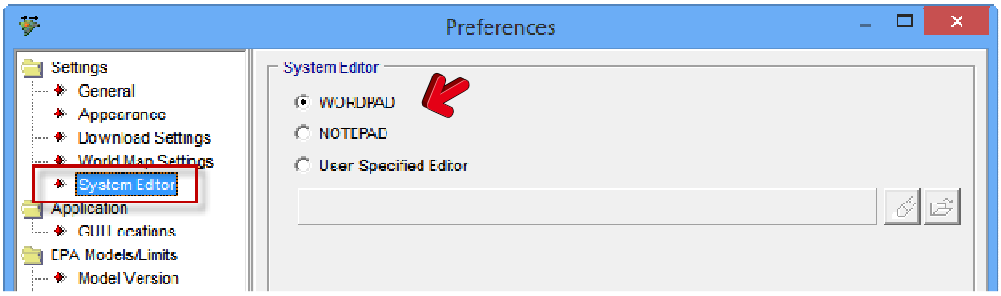
Topic	Feature Description
Species	**Additional Options for Species** A search capability was implemented for the **Species Library** table making it easier to quickly find species to be added to your project run. An additional column was added to the **Modeled Species** and **Species Library** tables for easy identification if the species is a gas or particle. In Model Version 6.42 the decay/gas and the decay/particle types are listed for radionuclide species. Two additional group of species are now available under the species quick start drop-down list box to be used with new chemical transformation options available under Version 6.42: • 25-Species RIVAD+CalTech SOA • 23-Species Nuclear Decay 

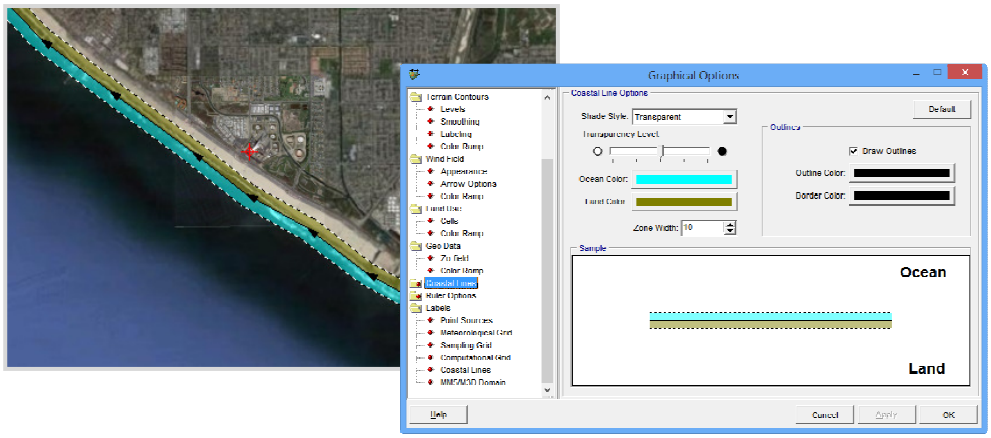
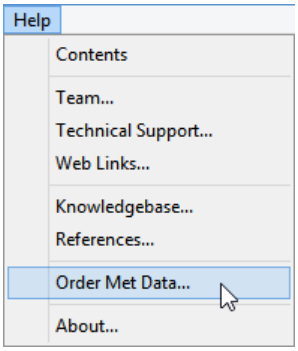
Topic	Feature Description
Output	**New Output Units Available in CALPUFF/CALPOST 6.42** New Output units are available in CALPUFF and CALPOST for Model Version 6.42. Some of the new supported output units are: PPM, PPB, and Bq (Becquerel).  
Projection	**Support for Additional Map Projections** The following projections are now available CALPUFF View: • PS : Polar Stereographic • EM : Equatorial Mercator • LAZA : Lambert Azimuthal Equal Area 

Topic	Feature Description
Graphical Options	**New Default Level Options for Contours** Contour levels are now set using the **Natural** value distribution algorithm by default. The **Natural** algorithm creates rounded level values (e.g., 10, 20, 50, 100, 200, etc.). The default minimum value is now defined as the maximum between the plot minimum value and the plot maximum value divided by 100. The maximum calculated value will be shown as the highest value in the color ramp. 

Topic	Feature Description
Graphical Options	**Default Contour Shade Style Set to Transparent** Results contours will now default to the **Transparent** Shade Style after the model is run. This change makes all lower-layer overlays (e.g., base maps) easier to see beneath the results contours. Also, the **Alpha Blend** option was renamed to **Transparent** option for easy understanding. 
Graphical Options	**Colored Contour Lines** Contour Lines can now be colored to match the contour level colors. This option is available under the **Graphical Options – Smoothing panel**. 
Export	**New Google Earth Export Options** Export contour lines only, without shading

Topic	Feature Description
Import/ Export	**Updated Functionality for Import/Export of Excel Files** Previous versions of CALPUFF View required that you had Microsoft Excel installed in your computer in order to use the Import/Export from Excel file (*.XLS) functionality. Starting with CALPUFF View 6, you no longer need to have Excel installed on your machine.
Import Buildings from DXF	**Additional Options for Importing Buildings from DXF** • **Layer to Import:** Import more than one layer containing buildings. • **Offset Option:** Allows you to shift your buildings in the project domain (e.g. convert a local Cartesian coordinate system to UTM). 
General	**Options to Undo/Redo Changes** You can now undo or redo Move/Rotate/Resize changes to graphical model elements (e.g. annotations) using the **Edit | Undo** and **Edit |Redo** options. 

Topic	Feature Description
Annotations	**Transparency Option for Annotations** A transparency level can now be set for all annotation objects. 
Annotations	**Last Selected Annotation Settings** Last selected settings for the **Annotation** tools will now be saved. These settings will be applied globally – the changes made in one project will be applied to annotations made in the next project until changed again.
Preferences	**Select Text Editor** In previous versions of CALPUFF View the only text editor available to view the output files was WordPad. Beginning with version 6.0 you may select an alternate text editor under Preferences (Preferences | Settings | System Editor). You may choose between the two pre-defined text editors, **WordPad** and **NotePad**, or use the **User-Specified Editor** option to select any text editor installed on your machine. 

Topic	Feature Description
Graphical Tools	**Color Representation of Coastlines Improved** The graphical representation of the coastline was improved for better visualization, especially when base maps are used in the project. Further modifications to the graphical representation of coastlines can be done by the user under the **Graphical Options** dialog – **Coastal Lines** page. 
License	**HASP Key License Needs to be Renewed** The **HASP Key license must be** renewed for of CALPUFF View Version 6.0. The HASP Key Renew Code was sent by email to clients with this type of license that are in current maintenance. CALPUFF View users using the **Web License** will not need to perform any license update. **Note:** Lakes Environmental no longer sells CALPUFF View with HASP License keys but will continue to support the HASP License key for users that received this type of license in the past.
Order Met Data	**New Link under the Help Menu** The **Order Met Data** link is now available under the **Help** menu. This link connects to the **Request Met Data Quote** online form available on our web site: www.weblakes.com/services/met_order.html 

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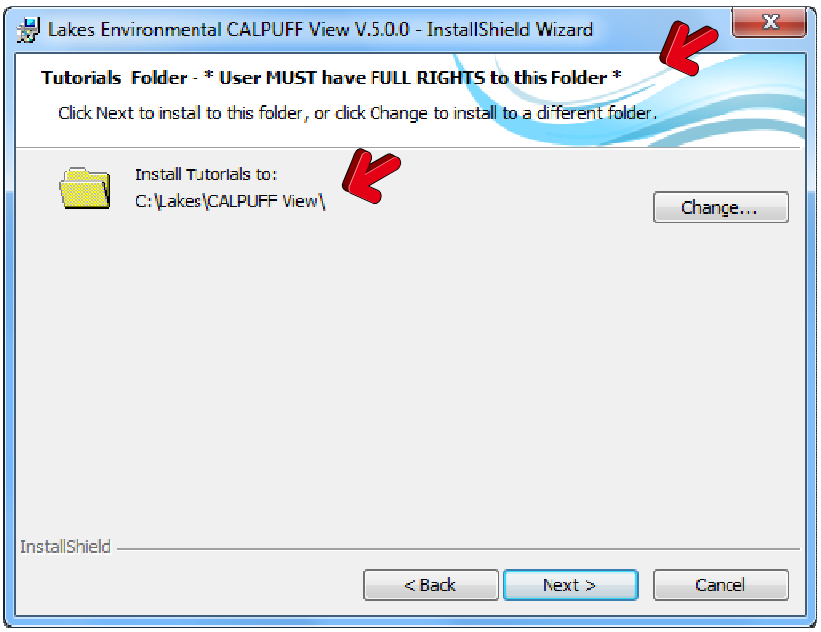
CALPUFF View™ Version 5.0

Release Notes

February 26, 2012

New Features

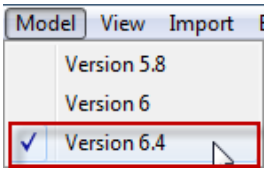
Topic	Feature Description
Installation	**Installation Updates** The following changes were made in the product installation: • Firebird database updated from version 1.5 to version 2.1.3 • Crystal Reports updated from version 10 to version 11.5 • Windows 7 installation compatibility improved for 32-bit and 64-bit operating systems
Installation	**New Default Folder for Tutorial Files** Tutorial files are now installed by default under the "**C:\Lakes\CALPUFF View**" folder, unless another folder is selected during installation. 

<table>
<tr><th>Topic</th><th>Feature Description</th></tr>
<tr><td>Models</td><td>
Support for Models Version 6.4

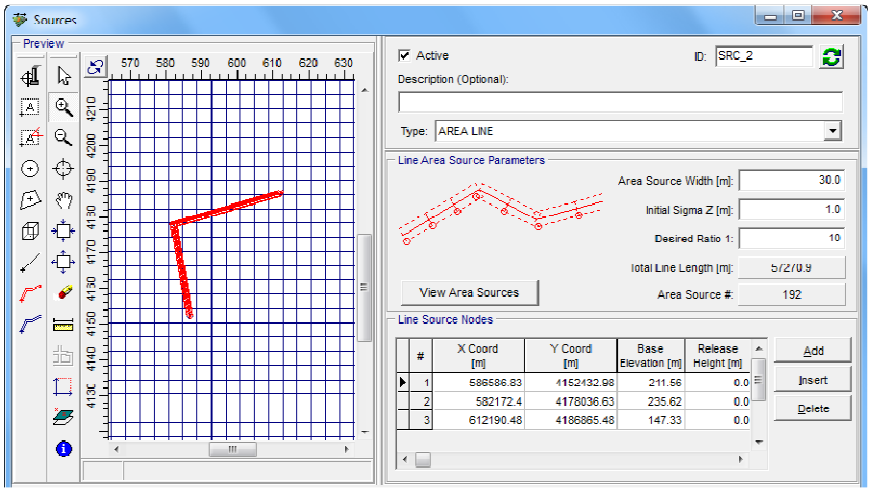
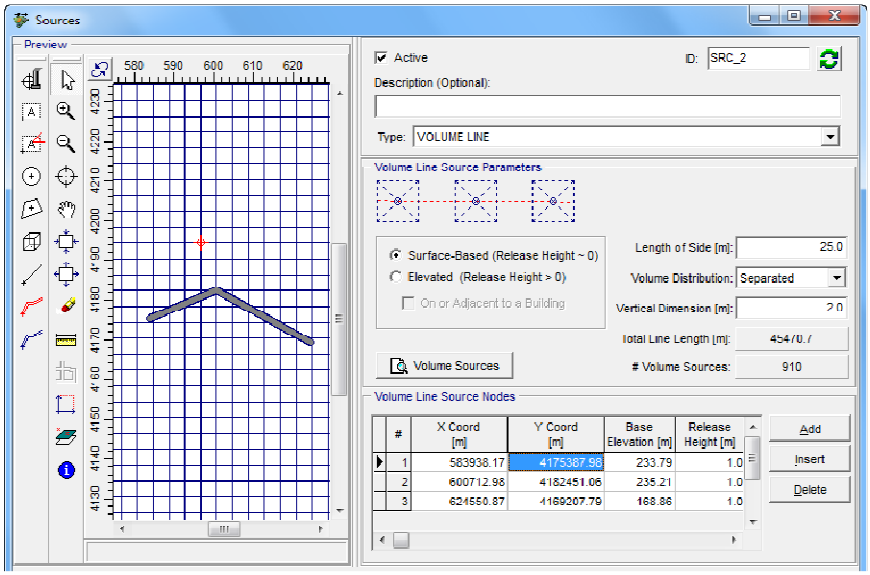
CALPUFF View Version 5 supports the latest TRC CALPUFF Model Version 6.4 and the related models as per table below:

<table>
<tr><th>Model</th><th>Version</th><th>Level</th></tr>
<tr><td>CALMET.EXE</td><td>6.334</td><td>110421</td></tr>
<tr><td>CALPUFF.EXE</td><td>6.4</td><td>110325</td></tr>
<tr><td>CALPOST.EXE</td><td>6.292</td><td>110406</td></tr>
<tr><td>CALSUM.EXE</td><td>1.4</td><td>110301</td></tr>
<tr><td>POSTUTIL.EXE</td><td>1.641</td><td>110225</td></tr>
<tr><td>TERREL.EXE</td><td>3.69</td><td>110330</td></tr>
<tr><td>CTGCOMP.EXE</td><td>2.253</td><td>110225</td></tr>
<tr><td>CTGPROC.EXE</td><td>3.5</td><td>110401</td></tr>
<tr><td>MAKEGEO.EXE</td><td>3.2</td><td>110401</td></tr>
<tr><td>SMERGE.EXE</td><td>5.661</td><td>110225</td></tr>
<tr><td>PXTRACT.EXE</td><td>4.253</td><td>110225</td></tr>
<tr><td>PMERGE.EXE</td><td>5.633</td><td>110225</td></tr>
<tr><td>READ62.EXE</td><td>5.661</td><td>110225</td></tr>
<tr><td>BUOY.EXE</td><td>1.251</td><td>110225</td></tr>
<tr><td>METSCAN.EXE</td><td>4.0</td><td>010315</td></tr>
</table>

After you downloaded all the above EXEs from the TRC web site, copy all the executables to the following Models_6_4 folder:
▪ “C:\Program Files\Lakes\CALPUFF View\Models_6_4” or
▪ “C:\Program Files (x86)\Lakes\CALPUFF View\Models_6_4”

You can select Version 6.4 from the Model menu.


Note: Model Version 6 option is still available as one of the Model options for backward compatibility only. Model executables supported under Version 6 were released by TRC in 2008.
</td></tr>
</table>

Topic	Feature Description
Sources	**New Source Type "AREA LINE" Available**  The **Line Area** source tool is a new feature of the CALPUFF View interface. This source type creates a series of area sources along user-defined line segments. 
Sources	**New Source Type "VOLUME LINE" Available**  The **Volume Line** source tool is a new feature of the CALPUFF View interface. This source type creates a series of volume sources along user-defined line segments. 

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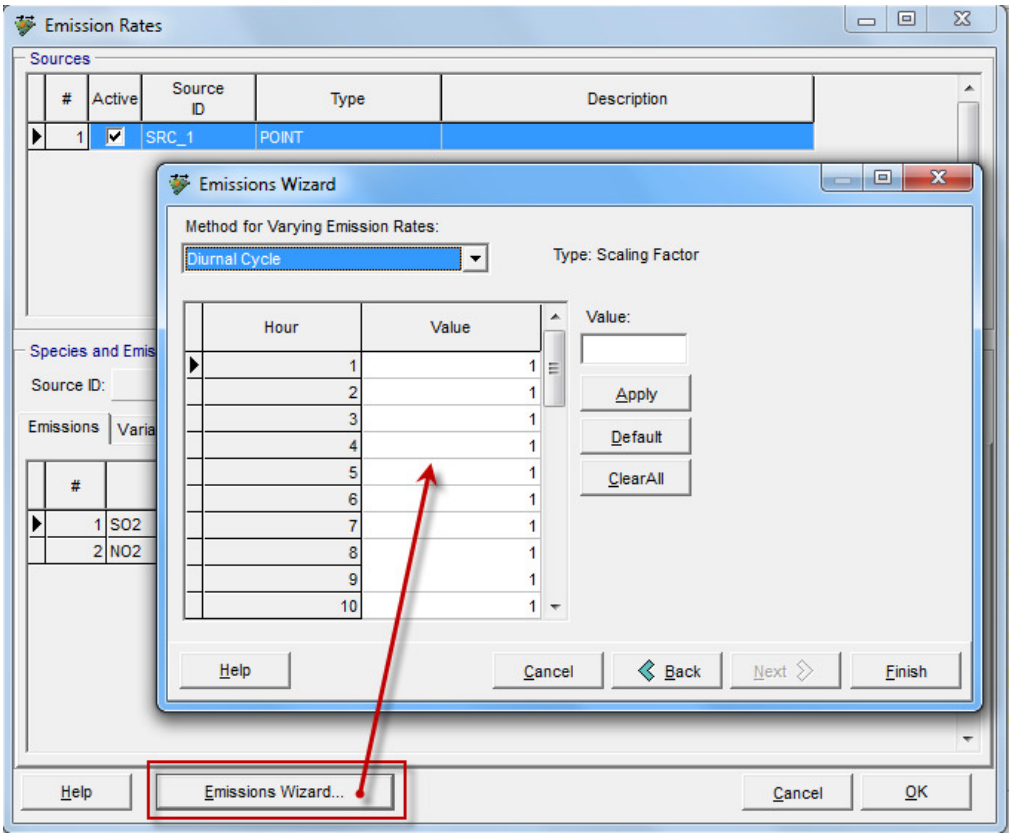
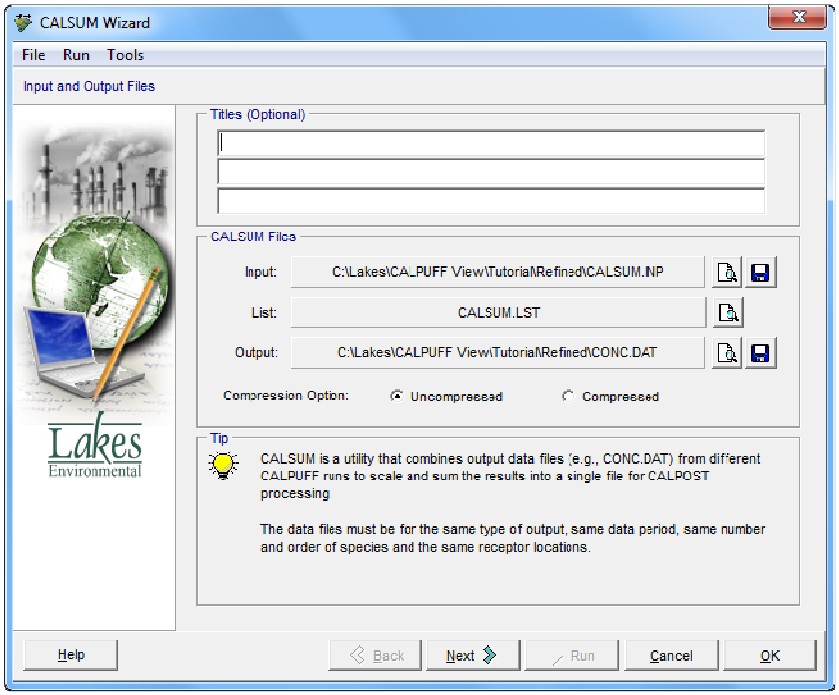
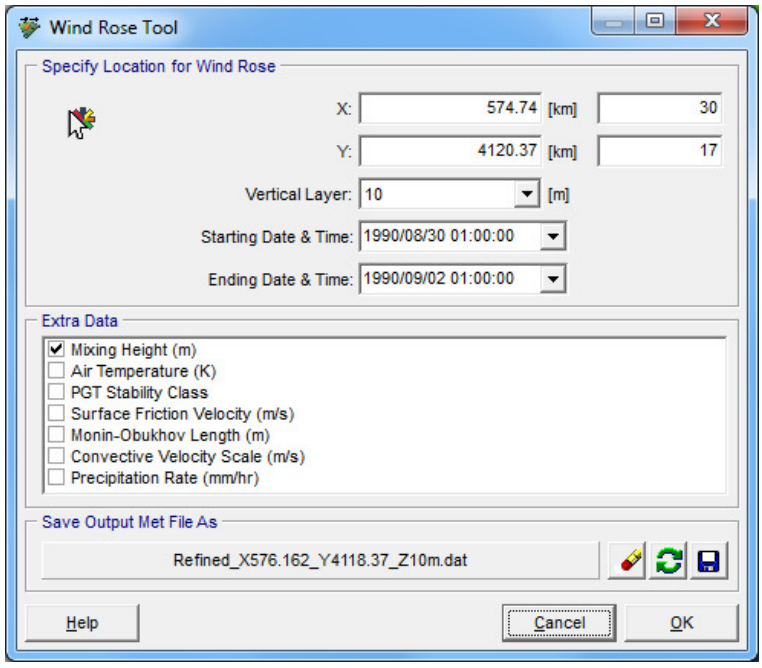
Topic	Feature Description
Emissions	**New Emissions Wizard** A wizard is now available under the **Emission Rates** dialog which allows you to apply similar emission rate scaling factors to a group of selected sources. 

Topic	Feature Description
Tools	**CALSUM Wizard** Interface for the CALSUM postprocessor is now available by selecting the menu option: **Tools | CALSUM Wizard**. The CALSUM postprocessor can be used to combine CALPUFF output data files for different runs and/or to apply scaling factors to CALPUFF results. CALSUM can support the following output data types: ▪ CONC.DAT (Concentration) ▪ DFLX.DAT (Dry deposition fluxes) ▪ WFLX.DAT (Wet deposition fluxes) 

Topic	Feature Description
Tools	**Wind Rose Tool and Time Series File**  A new graphical tool is now available, the **Wind Rose** tool. The **Wind Rose tool** allows you to specify any location within the Met Grid for which a time series file will be created and the corresponding wind rose will be displayed. The time series file contains data extracted from the CALMET.DAT file that is generated after the CALMET run. The **Time Series** file has the same format as the file generated by the TRC pre-processor PRTMET.EXE. With the **Wind Rose** tool, you can choose to output the following parameters: ▪ Wind Speed (m/s) - WS ▪ Wind Direction (deg) - WD ▪ Mixing Height (m) – Mix.Hgt ▪ Air Temperature (K) - T ▪ PGT Stability Class - PG ▪ Surface Friction Velocity (m/s) – U* ▪ Monin-Obukhov Length (m) -Lmo ▪ Convective Velocity Scale (m/s) – W* ▪ Precipitation Rate (mm/hr) – Prec.Rate 

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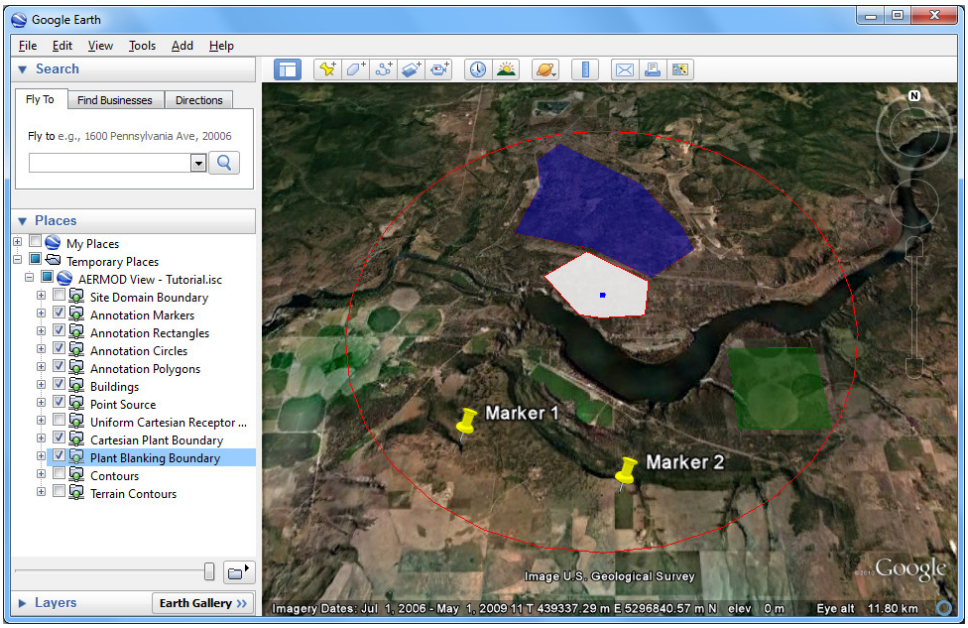
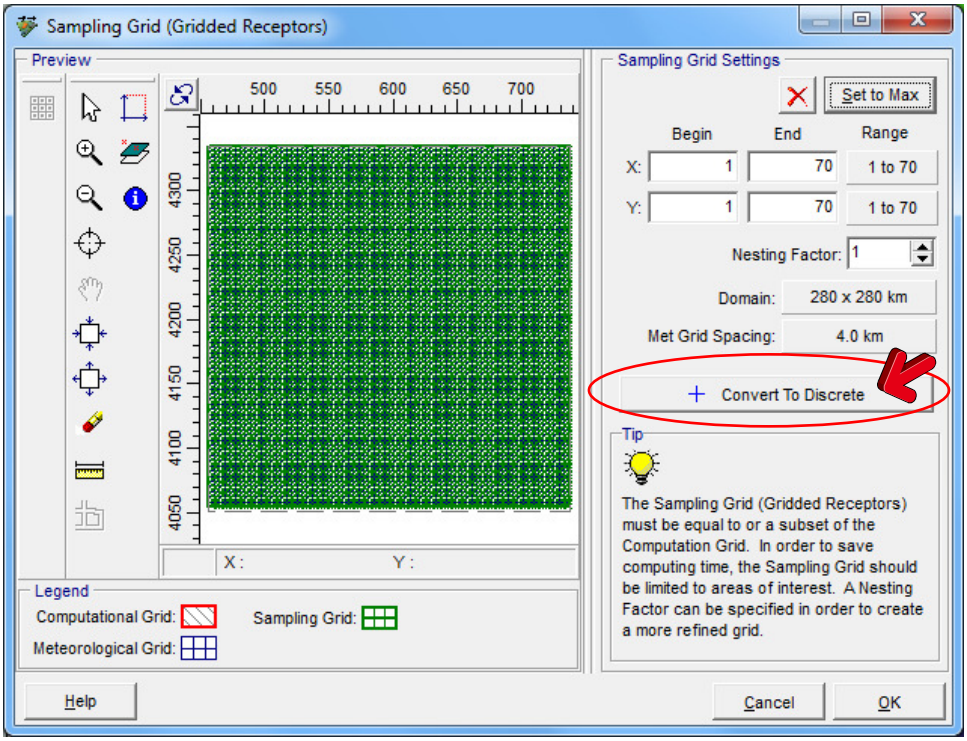
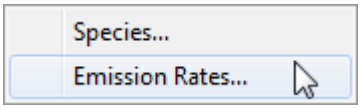
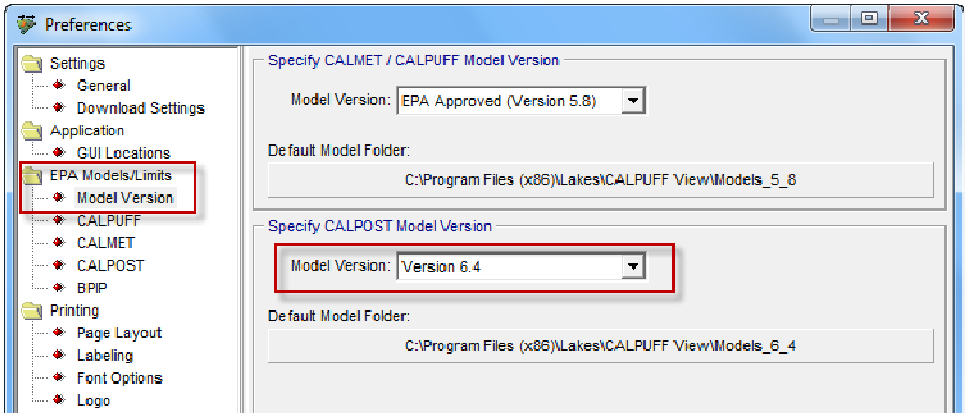
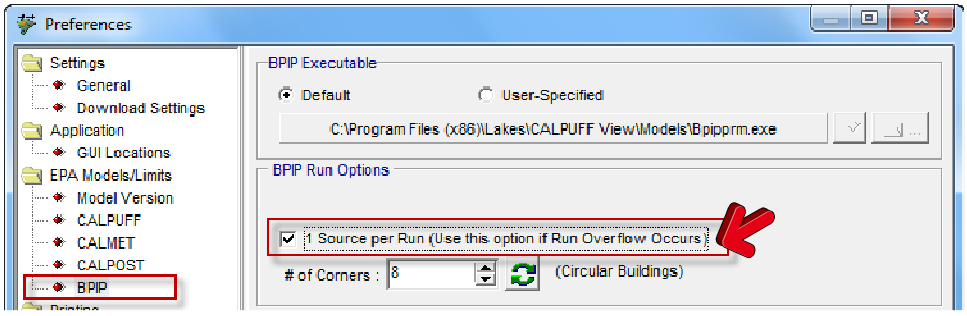
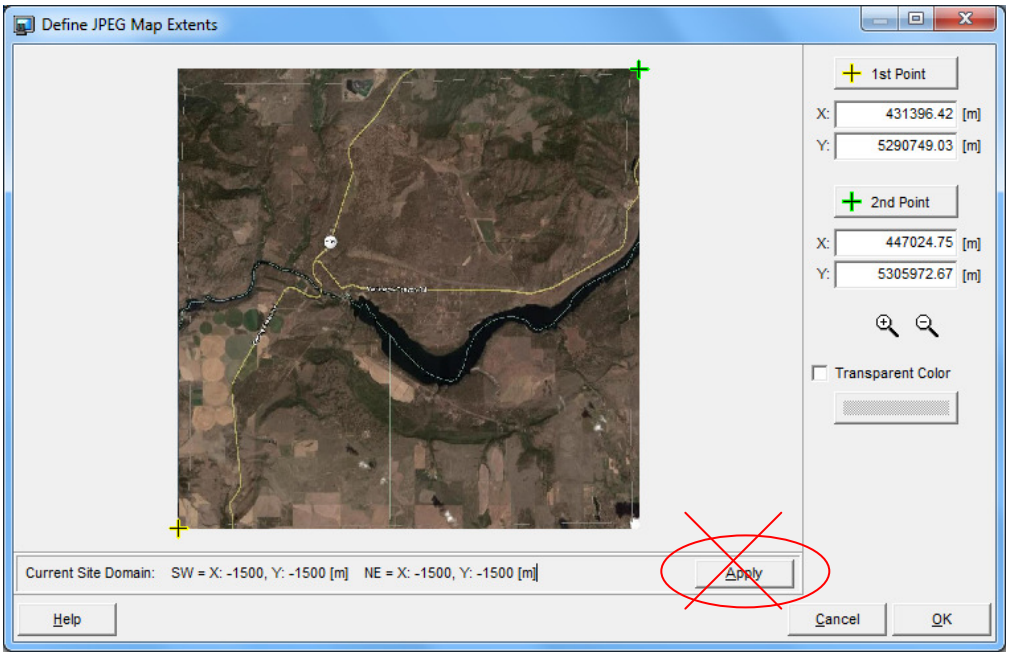
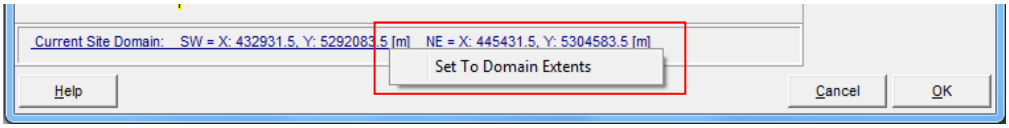
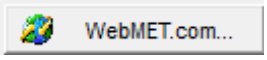
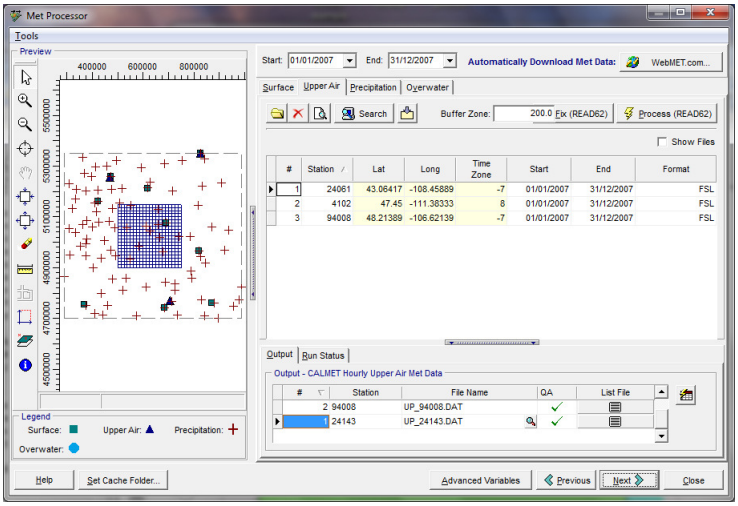
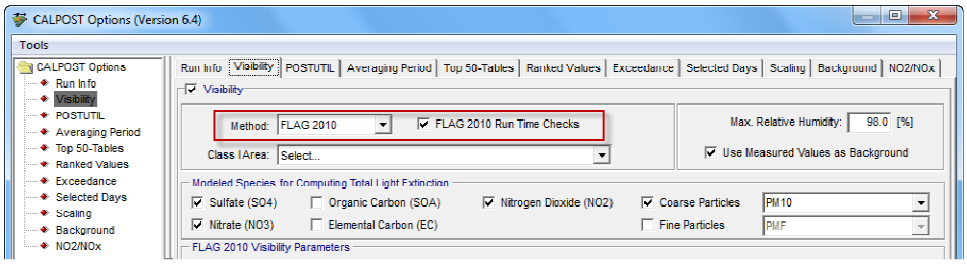
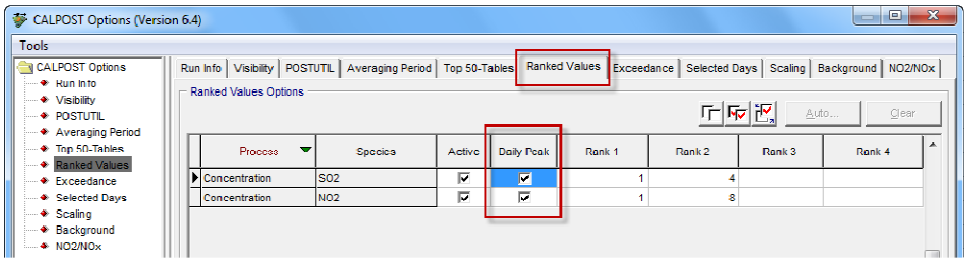
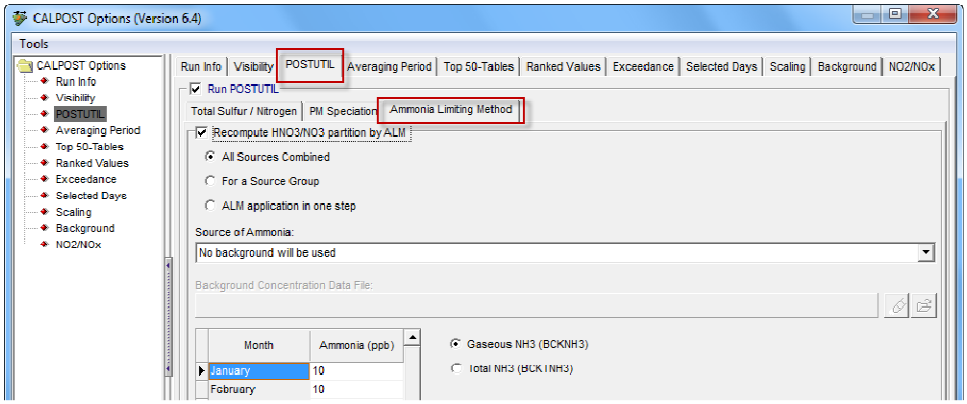
Topic	Feature Description
Export	**Additional Layers Exported to Google Earth™** The following layers can now be exported to Google Earth: • Plant Boundary • Plant Blanking Boundary • Annotation Markers • Annotation Circles • Annotation Rectangles • Annotation Polygons 
Export	**Export Puff Tracking with Different Colors** The puff tracking option, which allows you to visualize the puffs in Google Earth, now assigns a different color for puffs released by different sources.

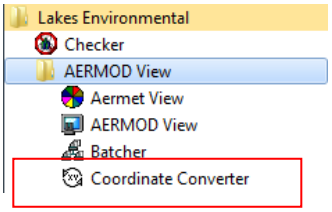
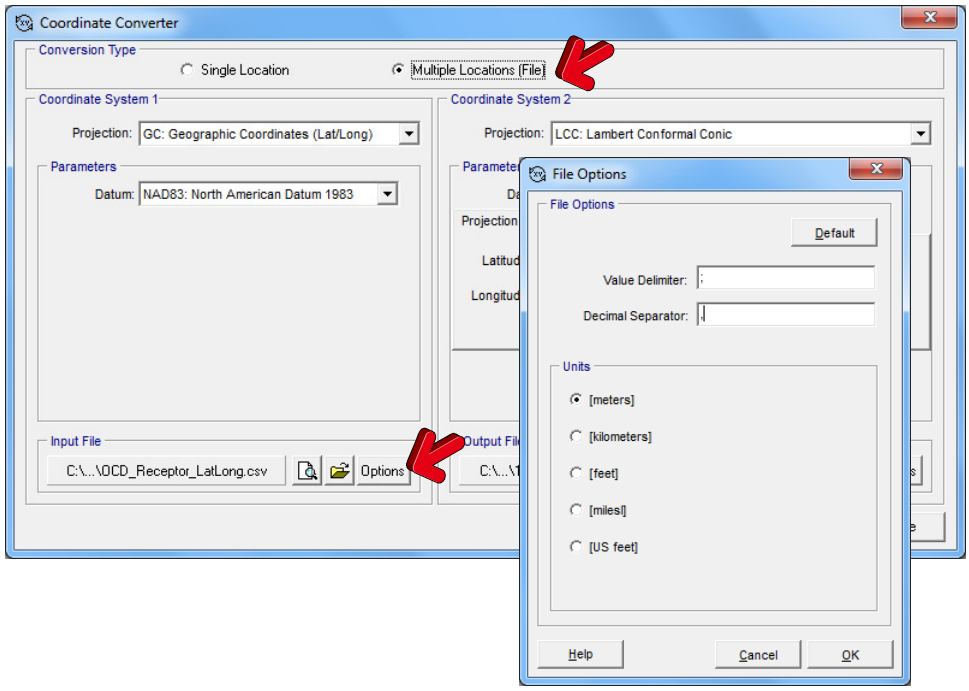
Topic	Feature Description
Receptors	**Feature to Convert Sampling Grid to Discrete Receptors** You can now convert **Sampling Grid** Receptors into **Discrete Receptors**. 
General	**New Floating menu for Species Button** You now have easy access to the **Emission Rates** dialog by pressing the **Species** button and selecting **Emission Rates** from the floating menu.  

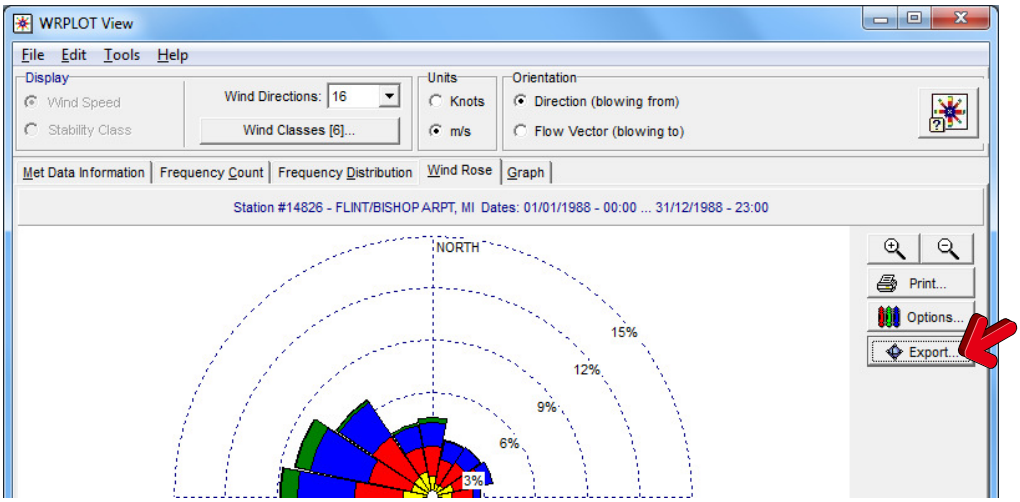
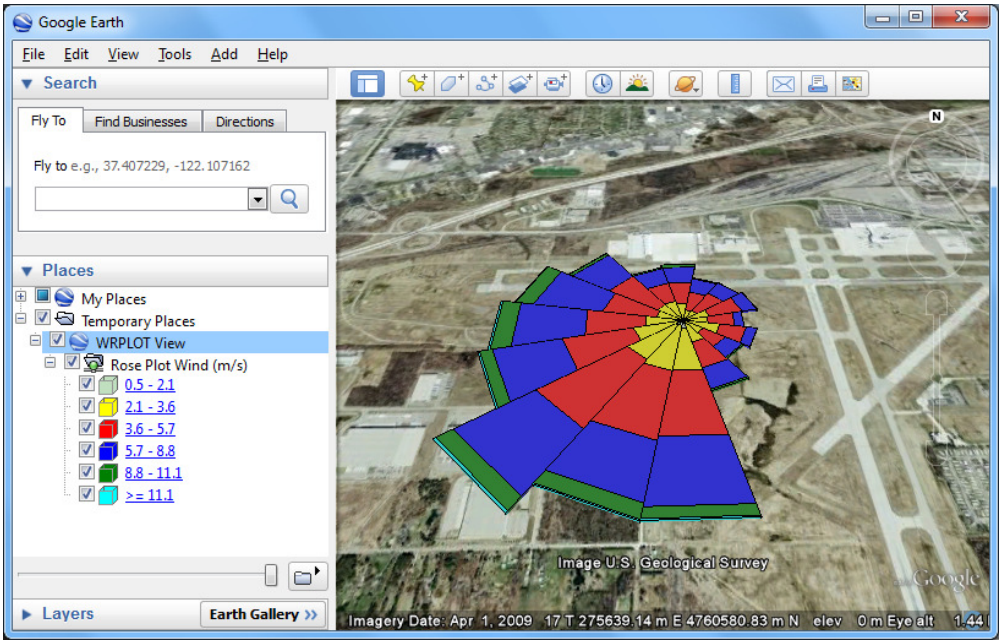
Topic	Feature Description
Preferences	**CALPOST Model Version** Under **Preferences**, you can now specify which **CALPOST** Model version to be used for your project independent of the selected CALMET/CALPUFF Version. This option, for example, allows modelers to carry out a Class I Area modeling with the US EPA Approved Version (Version 5.8) for CALMET and CALPUFF runs and use the latest TRC CALPOST model (Version 6.292 – Level 110406) for the FLAG 2010 visibility study. This can be done by selecting Version 6.4 for the CALPOST Model as seen in image below. 
BPIP	**Alternative BPIP Run Mode in Case of Run Overflow** In some instances, due to a large amount of buildings and point sources (e.g., >200), the US EPA BPIP executable displays an "Overflow" error message. In this case, we suggest that you run BPIP on a 1 Source per Run basis. This alternative way of running BPIP can be set in the **Preferences** dialog. 

Topic	Feature Description
Import	**Importing Base Maps from Raster Maps – Apply Button Replaced** The **Apply** button available under the **Define Map Extents** dialog was replaced by a hyperlink located at the **Current Site Domain** label. The functionally of the **Apply** button was to apply the coordinates for the current site domain (SW and NE corners) to the 1st Point and 2nd Point coordinates for the map being imported. This function should only be used if the map being imported and geo-referenced is exactly the same size of the current site domain.  Replaced by a pop-up menu displayed if you click the hyperlink: 
Import	**Import Sources from Excel** The Excel template for importing and exporting sources has been updated so that AERMOD and CALPUFF sources files are compatible. Sources exported from AERMOD can now be imported into CALPUFF (where source types match) and vice versa.

Topic	Feature Description
Met Processor	**New Meteorological Data (USA Only)** **WebMET** has been updated with new US meteorological data that can be automatically downloaded by CALPUFF View's **Met Processor**. Complete surface, upper air, precipitation, and overwater data is available up to 2007, with some data as recent as 2010. To access this data, click the  button in the Met Processor. 
CALMET	**Met File Compatibility Checks** CALPUFF View now checks the versions of met processors which were used to create SURF.DAT and PRECIP.DAT, as CALMET 5.8 is not compatible with higher versions of the models (Versions 6.x).
CALPOST	**FLAG 2010 Options** Support for FLAG 2010 Class I Area Visibility modeling options (Model Version 6.4). 

Topic	Feature Description
CALPOST	**New Daily Peak Option** The new **Daily Peak** option of CALPOST, available for Models Version 6.4 only, computes first the maximum daily value and then applies the rank specified by the user. This option was introduced in CALPOST Model Version 6.4 (Version 6.292 – Level 110406) to allow users to compute daily peak 1-hour concentration values consistent with the new US EPA 1-hour SO2 and 1-hour NO2 NAAQS standards. 
POSTUTIL	**Ammonia Limiting Method** The **Ammonia Limiting Method** option in POSTUTIL, accessible through CALPOST, has been updated to reflect the options available within the model. 

Topic	Feature Description
Utilities	**New Options for the Coordinate Converter Utility** The following new features are available for the **Coordinate Converter** utility: • Convert multiple locations from a csv file • File options (delimiter, units, etc.) • Separate application that can now be started from the Windows Start menu  

Topic	Feature Description
WRPLOT View	**Export Wind Rose to Google Earth** Now you can export the wind rose from WRPLOT View into Google Earth by pressing the **Export** button available under the **Wind Rose** tab.  

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