IRAP-h View
Human Health Risk Assessment Program
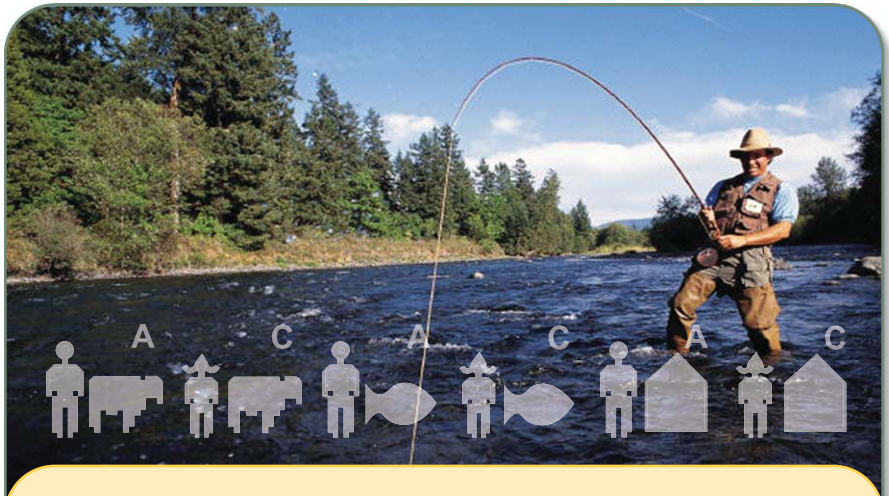

IRAP-h View is a user-friendly graphical interface for conducting a comprehensive multi-pathway human health risk assessment. All experience levels of risk assessors, trial burn planners, permit writers, and toxicologists can readily produce expert results and reports in a fraction of the time and cost traditionally required for a risk assessment.

Applications

▶ Combustion Risk Assessments

▶ Investigate facility-specific permit limits

▶ Evaluate actual operating conditions

▶ Analyze multiple sources and/or fugitive emissions at one facility

Technical Guidances

IRAP-h View supports guidance and procedures presented in documents such as:

▶ U.S. EPA OSW Human Health Risk Assessment Protocol (HHRAP)

  ✓ Facility Characterization
  ✓ Compounds of Potential Concern (COPC) database
  ✓ Emission Source Identification
  ✓ Exposure Scenarios
  ✓ Media Concentrations
  ✓ Exposure Quantification
  ✓ Risk & Hazard Characterization
  ✓ Uncertainty Interpretation

▶ North Carolina Protocol for Performing Indirect Exposure Risk Assessments for Hazardous Waste Combustion Units

▶ PCBs: Cancer Dose-Response Assessment and Application to Environmental Mixtures

▶ Recommendations for the Technical Review Work Group for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil

▶ Mercury Study Report to Congress

▶ New Policy on Evaluating Health Risks to Children

IRAP-h View Advantages

IRAP-h View reduces completion of risk assessment projects from months to days with significant savings in time, resources, and costs.

Simultaneously calculate risk values for multiple chemicals, from multiple sources, at multiple exposure locations.

Help Wizards guide you through conducting a risk based evaluation.

IRAP-h View easily guides the inexperienced and experienced through a risk assessment according to the latest U.S. EPA recommended exposure scenarios, including specialty risk exposure pathways such as the Breast Milk Equation and Lead Exposure.

This powerful tool places at your fingertips the ability to answer the question:

How will the risk change if I use a different value for this parameter or evaluate an alternative location?

Importing ISC and AERMOD Results

IRAP-h View imports concentration and deposition values from U.S. EPA air dispersion models, such as ISCST3 and AERMOD. Output files from these models contain all the necessary air parameter values for the fate and transport calculations within the risk assessment framework.

IRAP-h View displays receptor grid node locations, nodal air parameter values, and concentration isopleths from imported ISC/AERMOD modeling data.
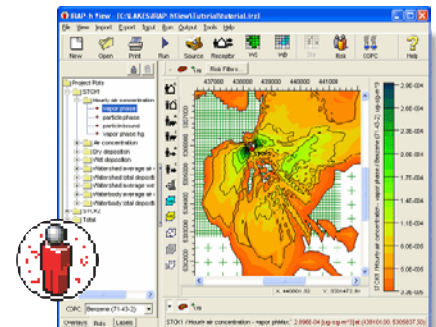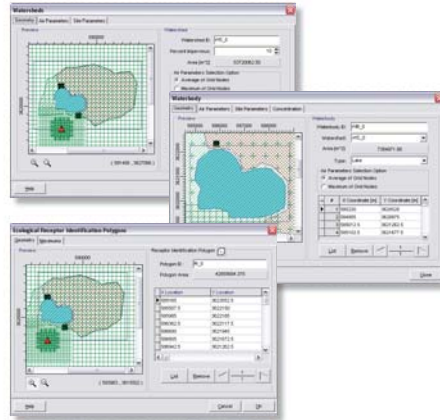

Import ISC/AERMOD Plotfiles

Watersheds, Waterbodies & Receptor Nodes

The watershed and waterbody polygon tools enable you to quickly define the perimeters of waterbodies and watersheds.

IRAP-h View calculates the associated pervious and impervious areas based upon site-specific assumptions and selects the maximum or average of air parameter values within the waterbody or watershed boundaries.

The receptor selection tool enables you to define an area of concern for potential evaluation (e.g. elementary school or hospital).
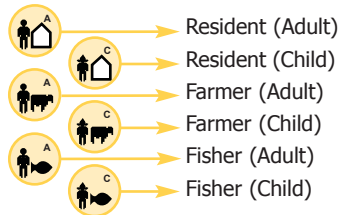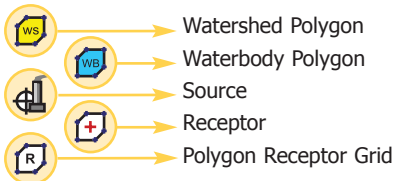
IRAP-h View automatically identifies which receptor grid nodes most likely represent locations of risk based upon air modeling and site-specific assumptions.

Graphical Tools

WS → Watershed Polygon
WB → Waterbody Polygon
→ Source
+ → Receptor
R → Polygon Receptor Grid

A → Resident (Adult)
C → Resident (Child)
A → Farmer (Adult)
C → Farmer (Child)
A → Fisher (Adult)
C → Fisher (Child)

Exposure Scenarios

‣ Locate exposure scenarios with a single mouse click

‣ Optional backdrops allow you to identify specific land use areas as exposure scenario locations

Chemical Database

All chemicals in the U.S. EPA - OSW Human Health Risk Assessment Protocol are included. The database is fully editable allowing you to modify default values and add new chemicals.

Base Maps

‣ Bitmap
‣ USGS DLG
‣ USGS LULC
‣ AutoCAD DXF
‣ ESRI Shapefile
‣ JPEG
‣ TIFF/GeoTIFF
‣ MrSID

Impressive Output Options

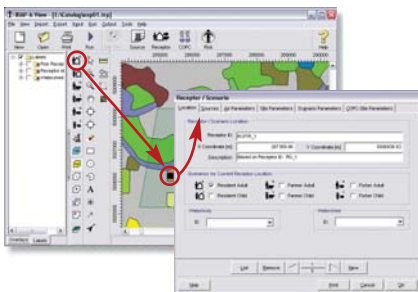‣ Media Concentrations
‣ Report Ready Output
‣ Graphical Outputs