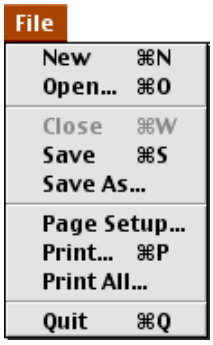
Chapter 4

Reference

The File and Edit menus

File **Edit**

The File Menu



File

New

New

Open

Open **Save**
Save As

Response Mode

Planning Mode

Close

Close

Save and Save As

Save Save As File

Print

Print

Print All

Print All

Quit or Exit

Quit **Exit**

Save **Save As** **File**

The Edit Menu

Edit

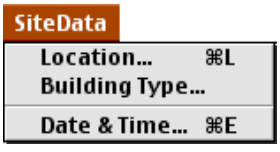
Copy

Copy

Undo Cut Paste **Clear**

The SiteData Menu

-
-
-



SiteData

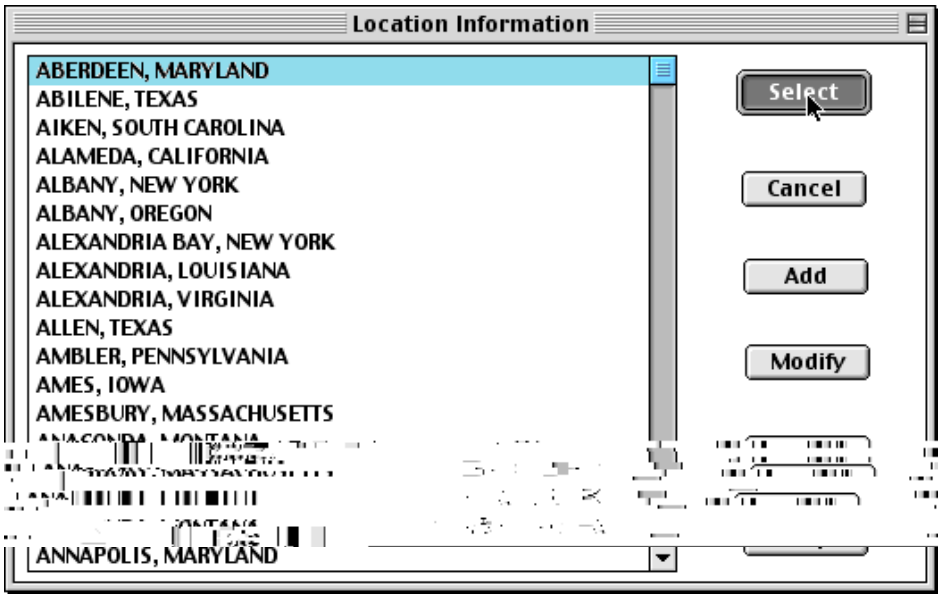
Location

-
-

Selecting a location

Location **SiteData**

Select

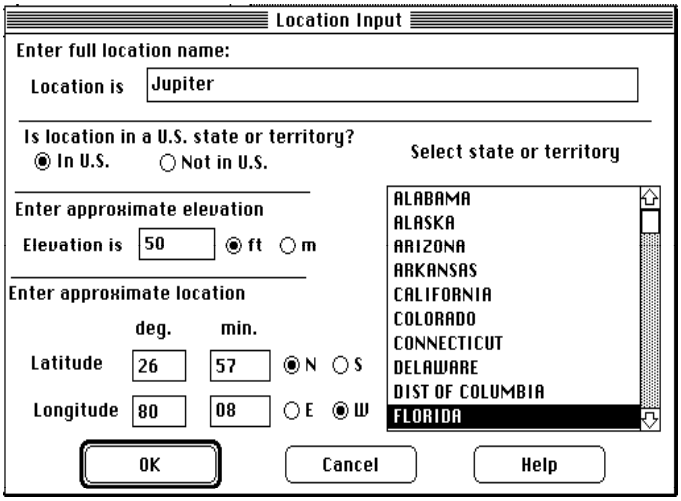


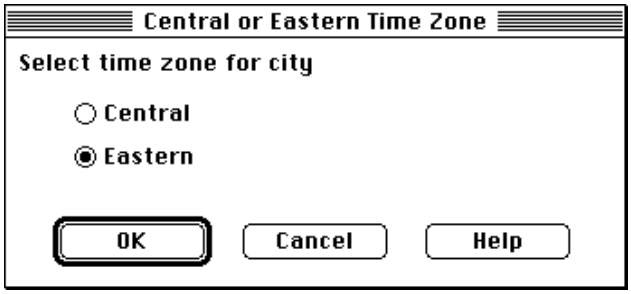
Adding, modifying, and deleting location information

Adding information about a U.S. city

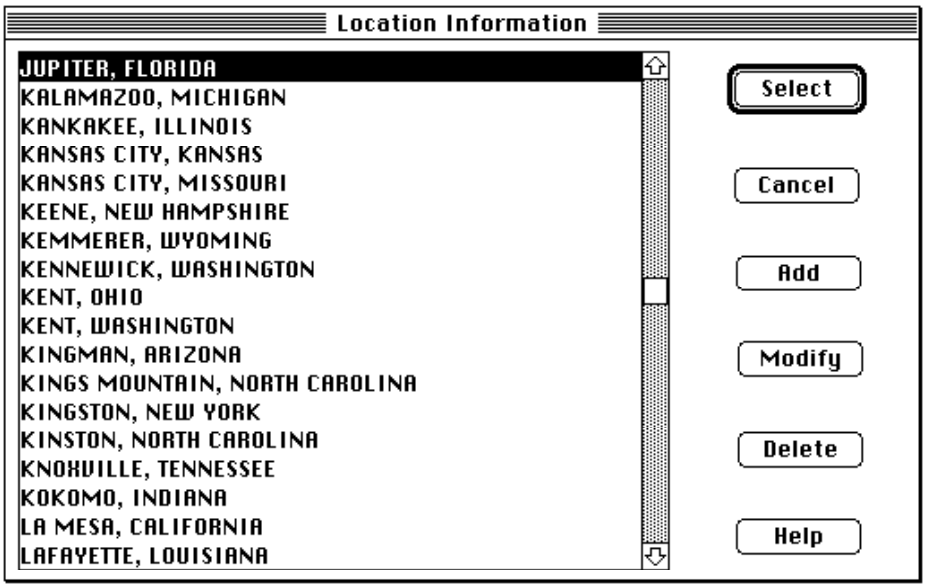
Location **SiteData**

OK





Select **Cancel**

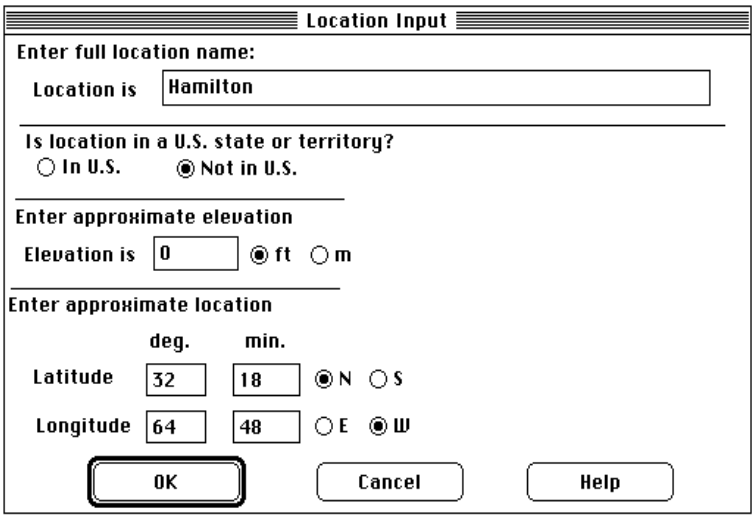


Adding a location outside the U.S.

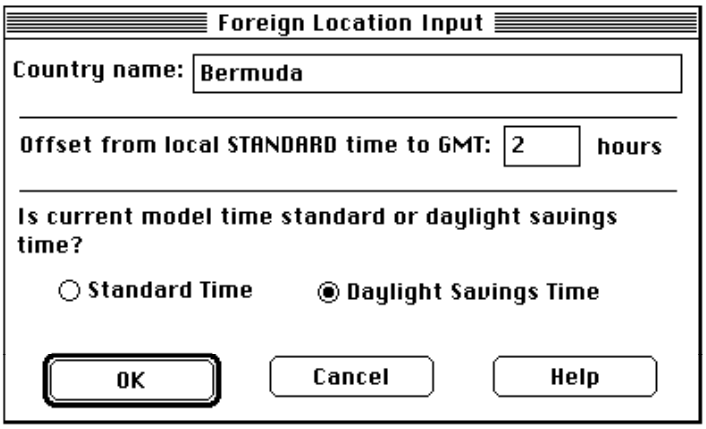
Add

Not in U.S.

OK

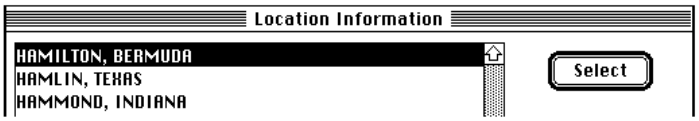


Foreign Location Input



OK

Select **Cancel**



Modifying a location

Modify

Deleting a location

Delete **Cancel** **OK**

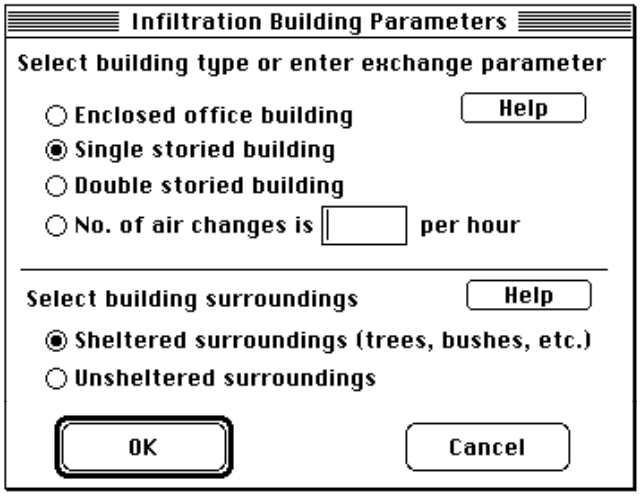
OK

Cancel **Select**

Building Type

air exchange rate

To estimate infiltration rate into a building, ALOHA assumes that all doors and windows are closed.



No. of air changes

Sheltered surroundings

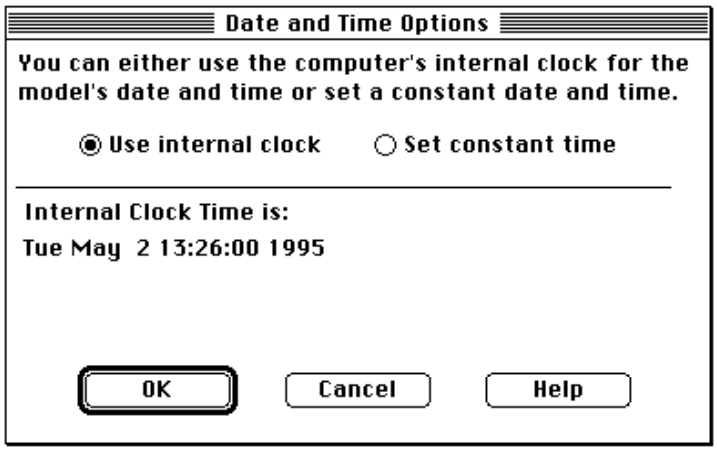
Unsheltered surroundings

Unsheltered surroundings

Date & Time

Date & Time **SiteData**

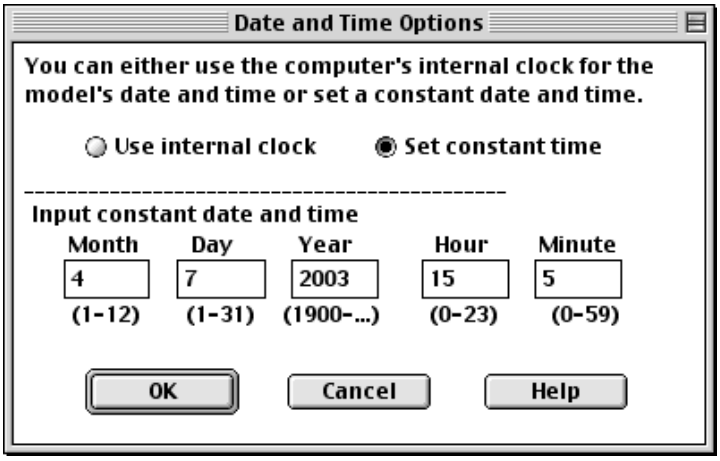
Set your computer’s clock to the local time where a release has occurred when you use the internal clock option.



Date and Time

Date & Time **SiteData**

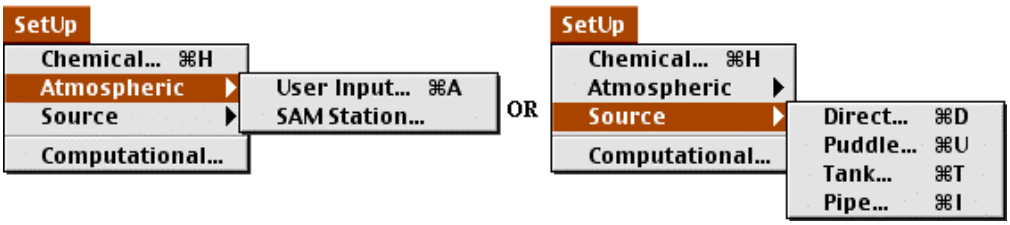
- **Use internal clock**
- **Set constant time**



The SetUp Menu

SiteData **SetUp**

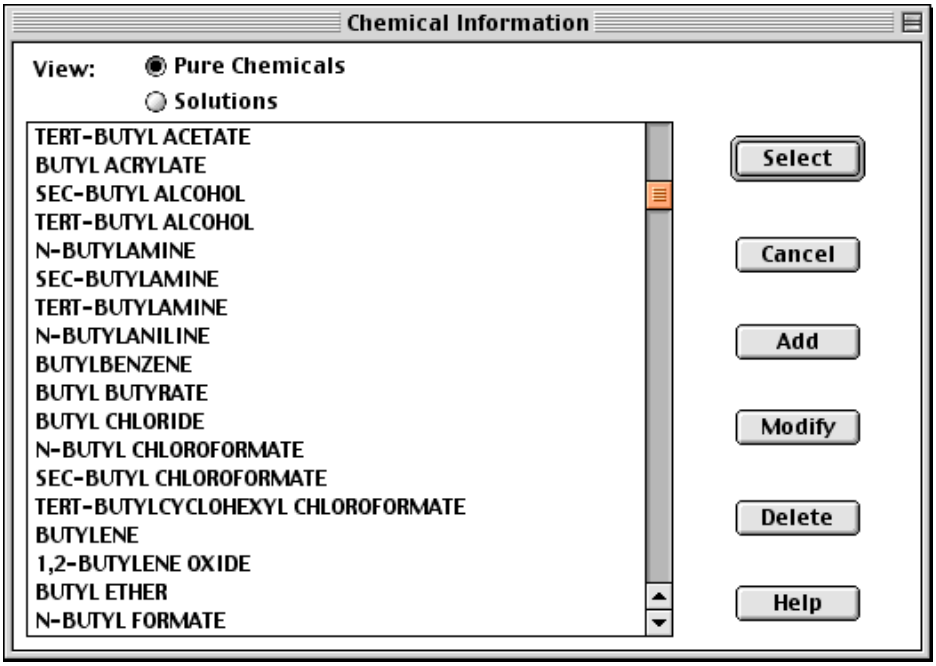
Chemical **Atmospheric** **Source**



SetUp

Chemical

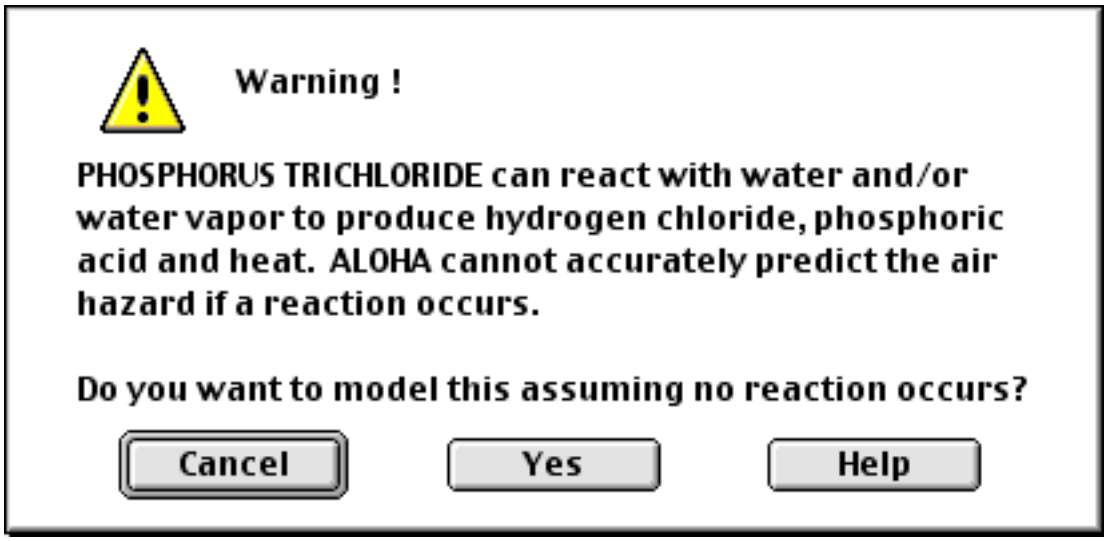
Chemical **SetUp**

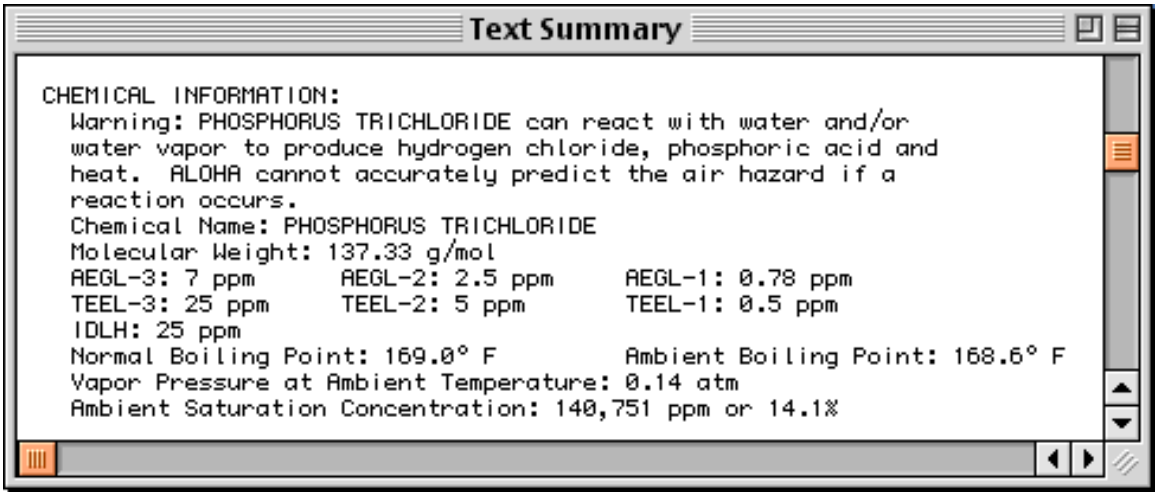


Selecting a Chemical

Select

Reactive chemicals

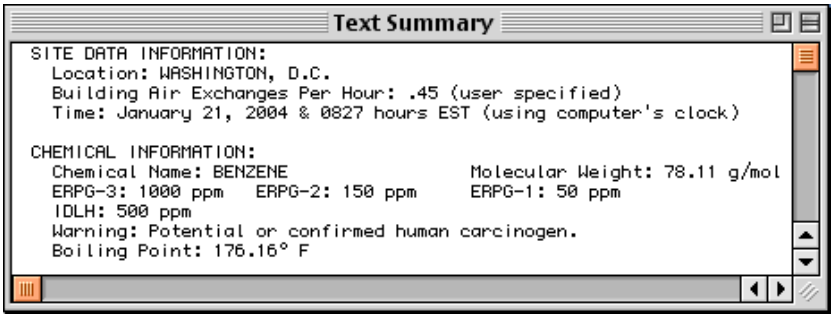

Warning !
PHOSPHORUS TRICHLORIDE can react with water and/or water vapor to produce hydrogen chloride, phosphoric acid and heat. ALOHA cannot accurately predict the air hazard if a reaction occurs.
Do you want to model this assuming no reaction occurs?
Cancel
Yes
Help


Text Summary
CHEMICAL INFORMATION:
Warning: PHOSPHORUS TRICHLORIDE can react with water and/or water vapor to produce hydrogen chloride, phosphoric acid and heat. ALOHA cannot accurately predict the air hazard if a reaction occurs.
Chemical Name: PHOSPHORUS TRICHLORIDE
Molecular Weight: 137.33 g/mol
AEGL-3: 7 ppm AEGL-2: 2.5 ppm AEGL-1: 0.78 ppm
TEEL-3: 25 ppm TEEL-2: 5 ppm TEEL-1: 0.5 ppm
IDLH: 25 ppm
Normal Boiling Point: 169.0° F Ambient Boiling Point: 168.6° F
Vapor Pressure at Ambient Temperature: 0.14 atm
Ambient Saturation Concentration: 140,751 ppm or 14.1%

Chemical information in the Text Summary window

- **Ambient Saturation Concentration**

- **Level of Concern**



- **Note: Carcinogenic risk – See**
- **Not enough chemical information to use the Heavy Gas option.**

Chemical Data

Property	Gaussian				Heavy Gas			
	Direct	Puddle	Tank	Pipe	Direct	Puddle	Tank	Pipe
	■	■	■	■	■	■	■	■
	■	■	■	■	■	■	■	■
	◆	■	■	■	■	■	■	■
	◆	■	■	■	▲	■	■	■
	◆	■	■	■	▲	■	■	■
					■	■	■	■
		■	■			■	■	
		■	■	■	■	■	■	■
		■	■			■	■	
					▼			

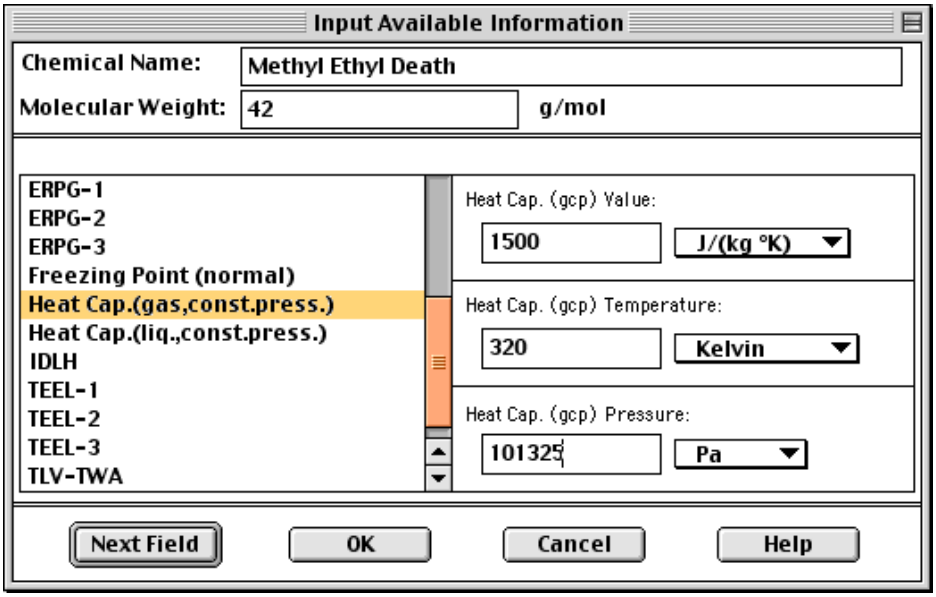
■
◆
▲
▼

Adding, modifying, or deleting chemicals

How to add a chemical to the library

Chemical **SetUp** **Add**

Next Field



OK

Select

Cancel

How to modify information about a chemical

Chemical **SetUp**

Modify

Next

Field

OK

Cancel

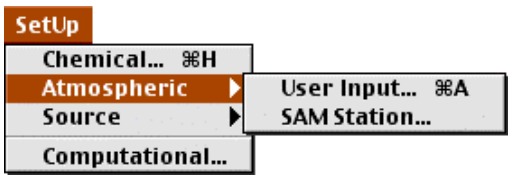
How to delete a chemical

Chemical

SetUp **Delete**

OK **Cancel**

Atmospheric

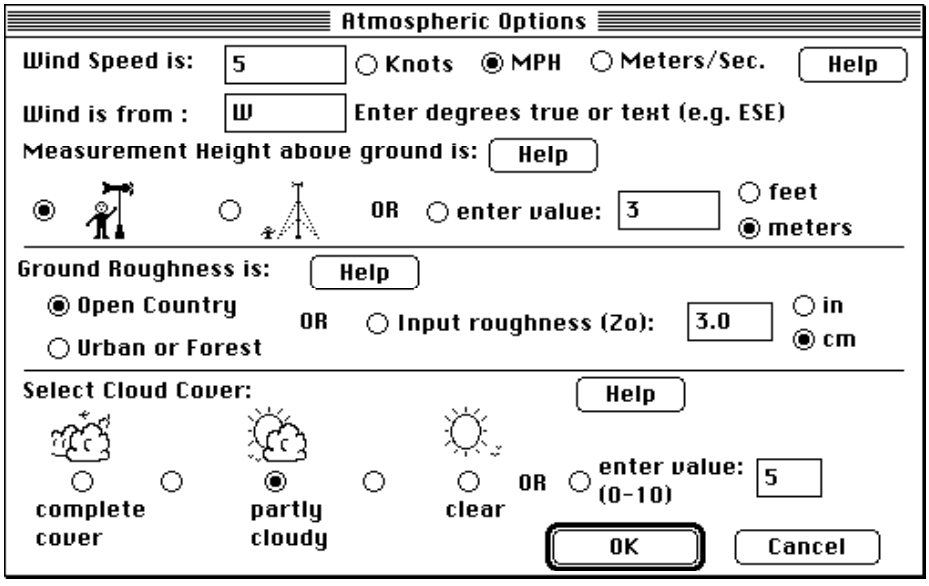


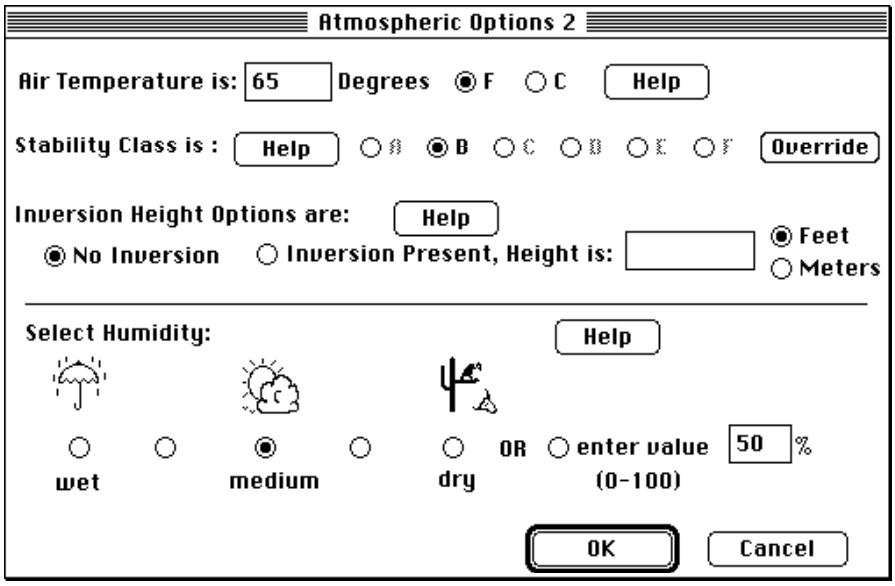
Atmospheric

User Input

SetUp **Atmospheric** **User Input**

Wind speed, direction, and measurement height

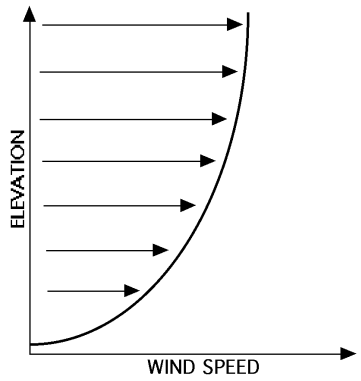




User Input

from

wind profile



-

-

-

Ground roughness

roughness elements

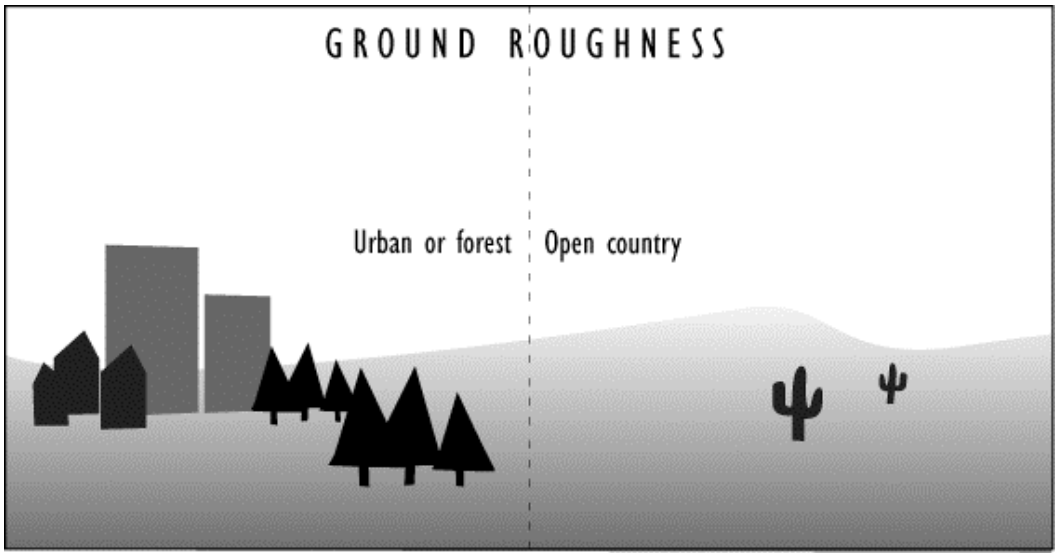
Open Country **Urban or Forest**

roughness length,

- **Open Country**

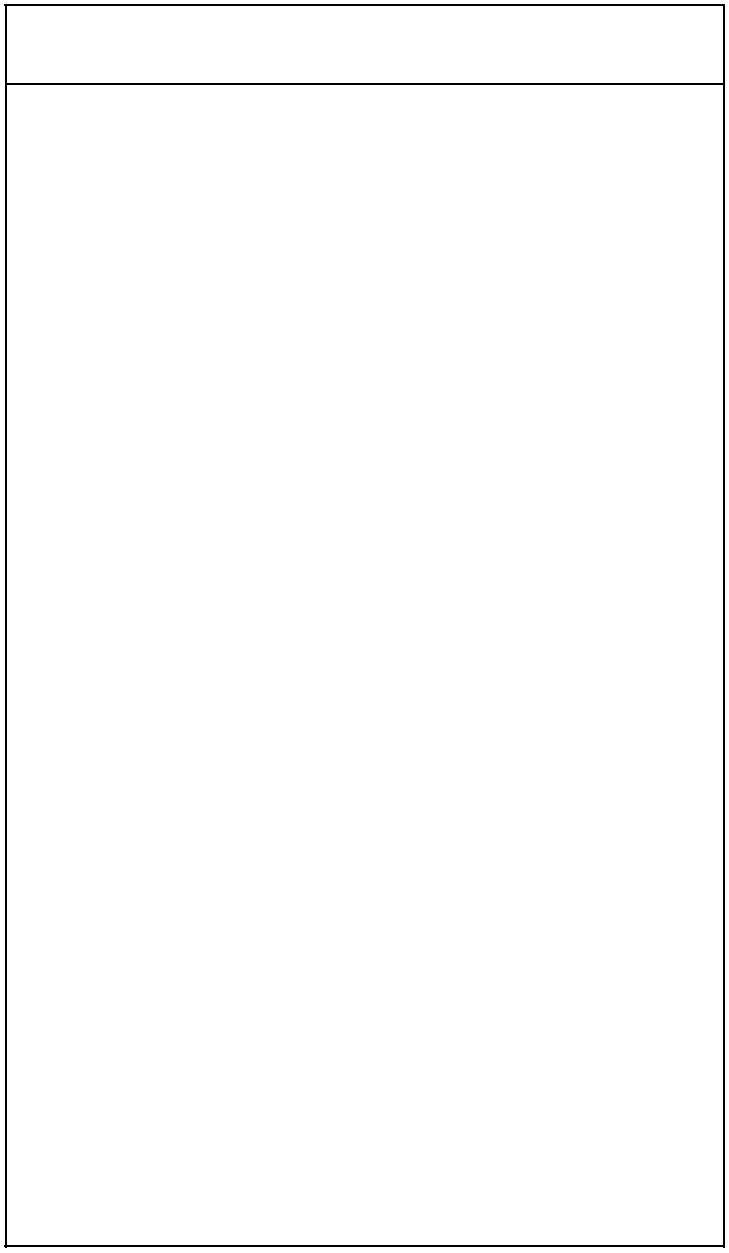
Urban or Forest

- **Urban or Forest**



Urban or Forest

obstacle



Note

Cloud cover

-
-

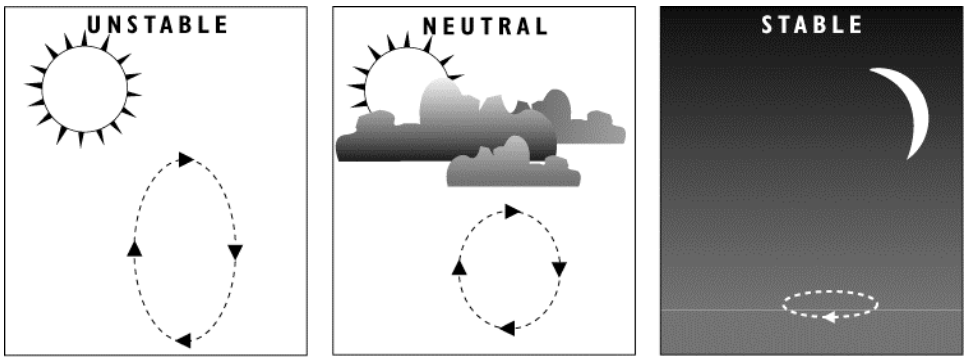
Air temperature

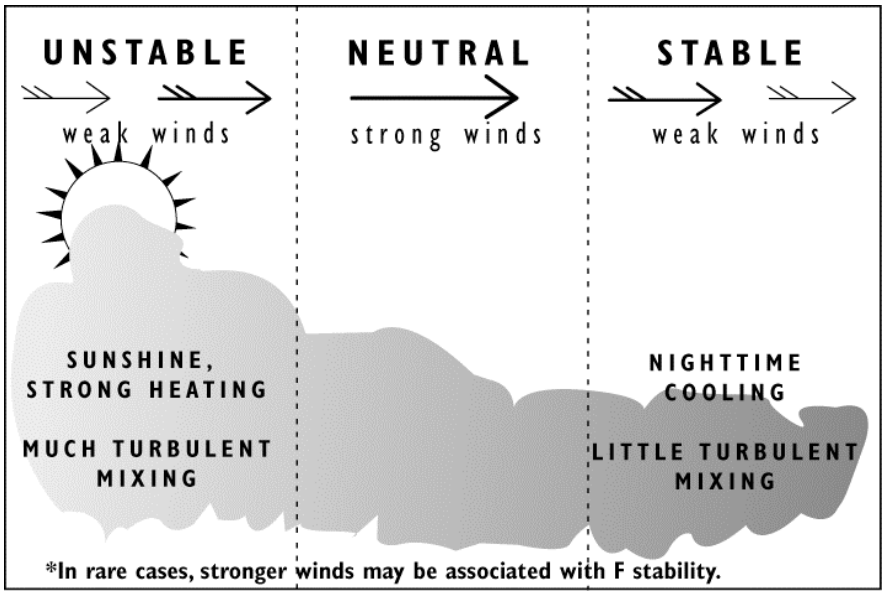
Stability class

atmospheric stability classes

unstable

stable


UNSTABLE
NEUTRAL
STABLE


UNSTABLE
NEUTRAL
STABLE
weak winds
strong winds
weak winds
SUNSHINE,
STRONG HEATING
MUCH TURBULENT
MIXING
NIGHTTIME
COOLING
LITTLE TURBULENT
MIXING
*In rare cases, stronger winds may be associated with F stability.

A

Override

only

Inversion height

No Inversion

Humidity

SAM Station

Station for Atmospheric Measurement (SAM)

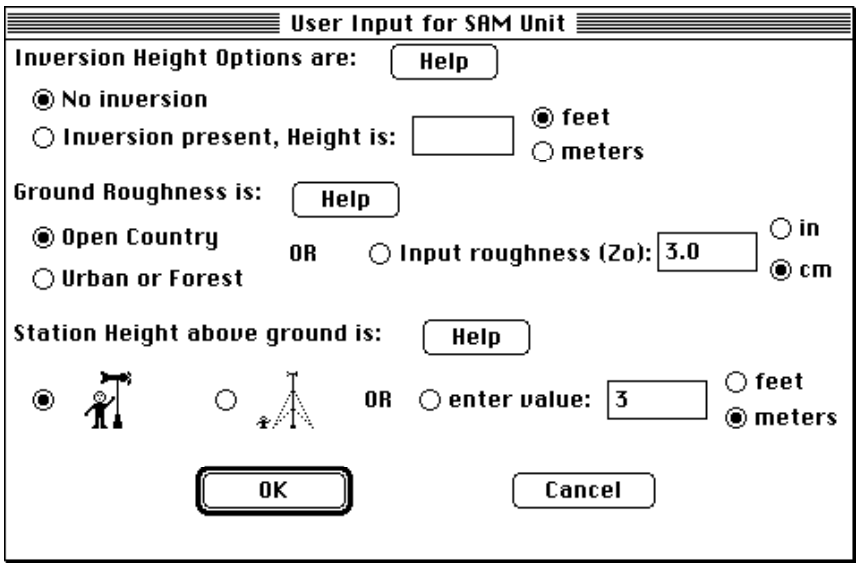
Choosing a SAM

from

Using a SAM during an incident

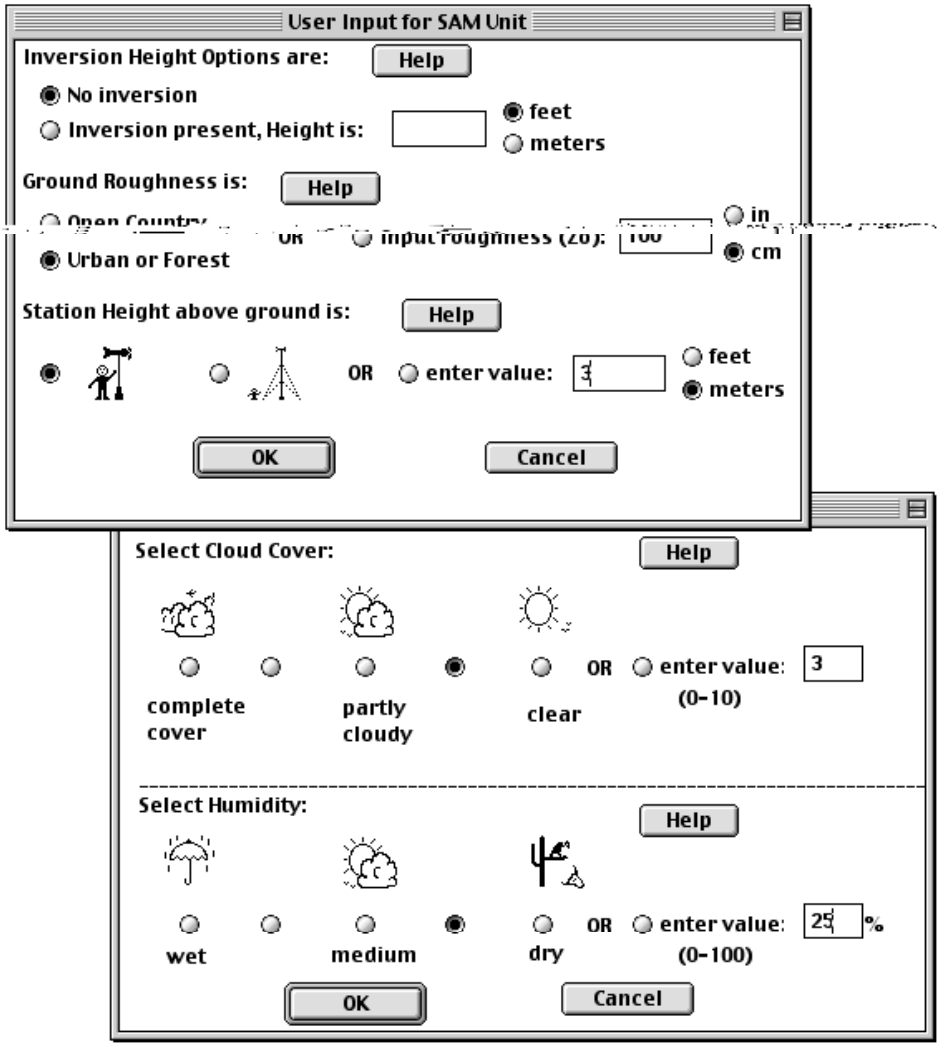
Choosing the correct port for receiving SAM data

Choosing a radio frequency



Setting up ALOHA when you're using a SAM

SetUp	Atmospheric	SAM Station
•		
•		
•		
•		
•		



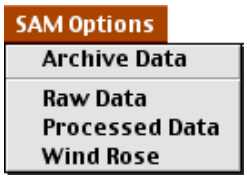
Source

last

SAM Options

OK

Sharing



SAM Options

Archive Data

Archive Data **SAM Options**

Save

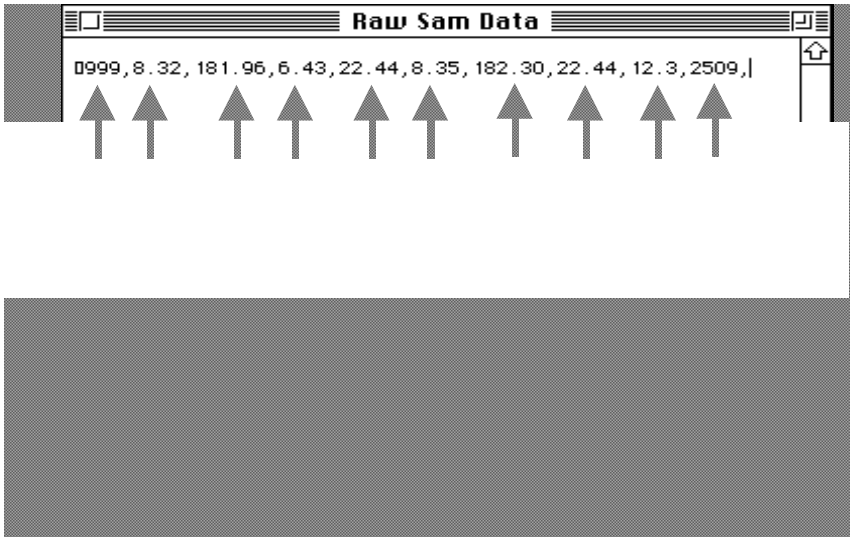
End Archive Data **SAM Options**

Raw Data **Processed Data**

SAM Options

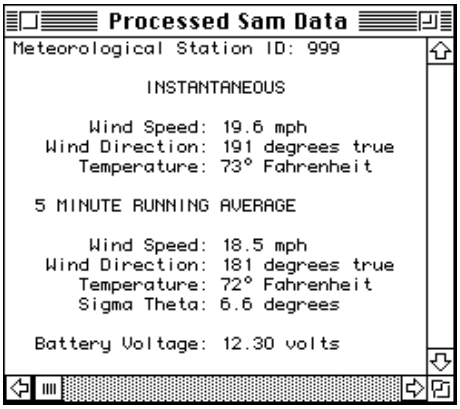
Raw Data

Raw Data **SAM Options**



Processed Data

Processed Data **SAM Options**



- **Meteorological Station ID**

- **Wind Direction**
  from

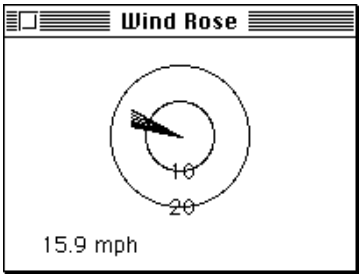
- **Sigma Theta**

- **Battery Voltage**

Wind Rose

Wind Rose **SAM Options**

to



Options **Display**

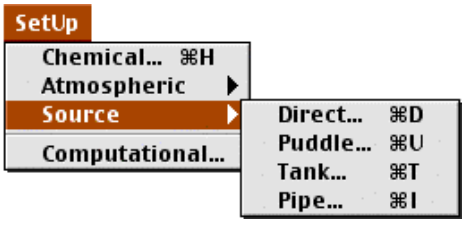
Monitoring a long-term release

Check the time and date

Source

source
source strength

- *Direct*
- *Puddle*
- *Tank*
- *Pipe*



Source

OK

ALOHA's duration limits

Release Duration: ALOHA limited the duration to 1 hour.

maximum possible

ALOHA reports release rate

Maximum Average Sustained Release Rate

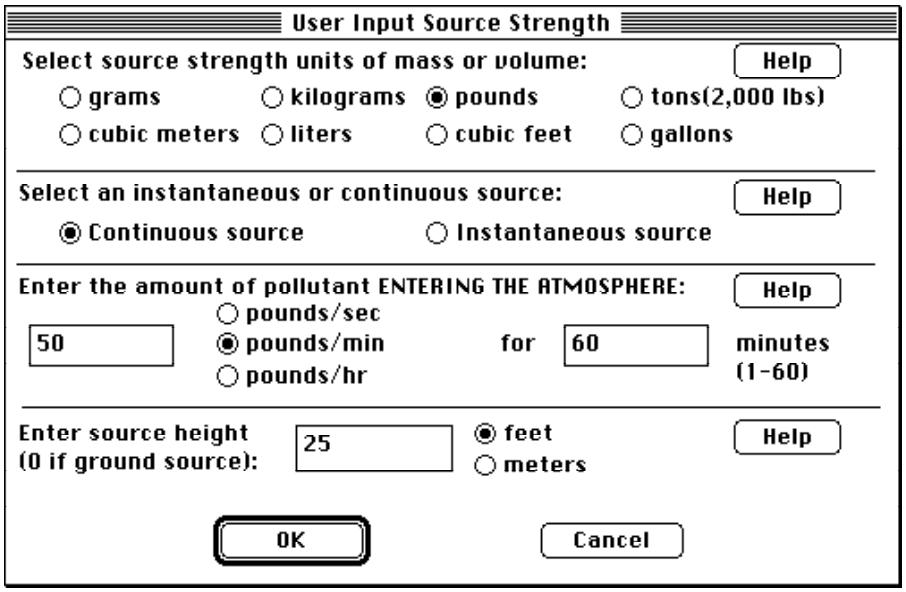
timesteps

Source Strength **Display**

When you're using a SAM

Direct source

Direct **Source**



Describing a direct release

continuous **instantaneous**

Note

Tank **Pipe**

Source height

source height

only

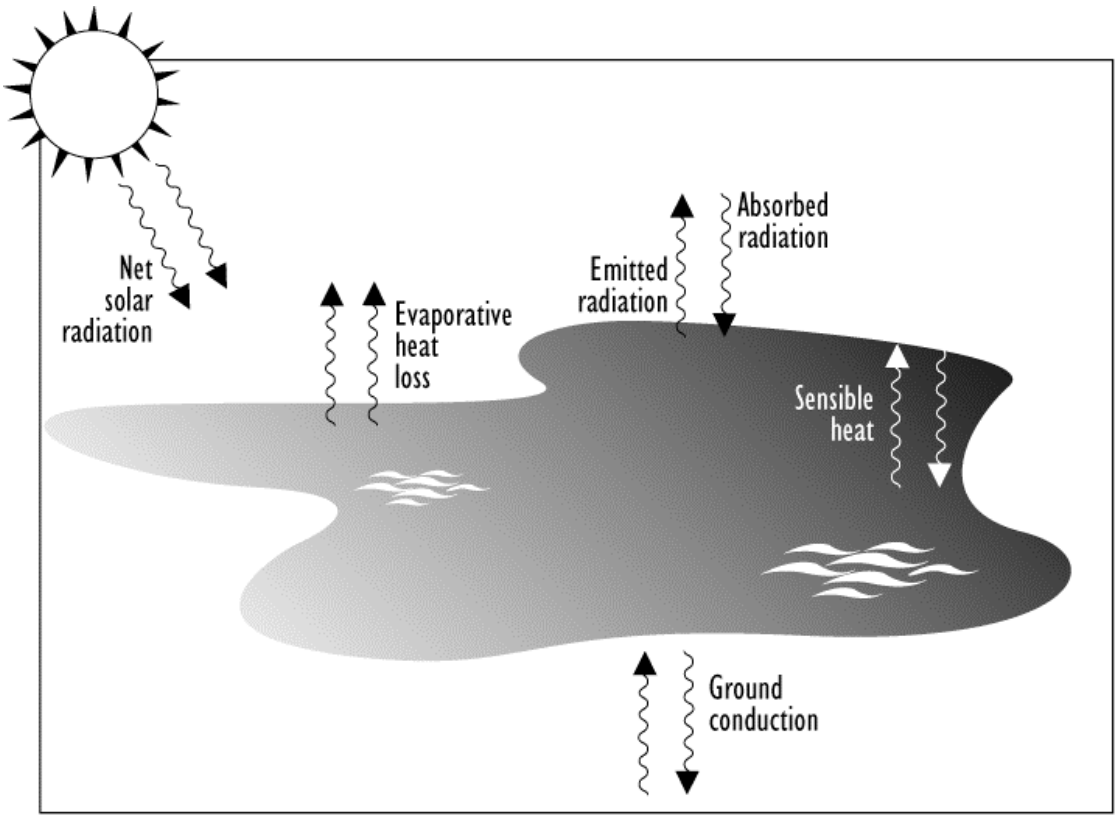
Puddle

Puddle

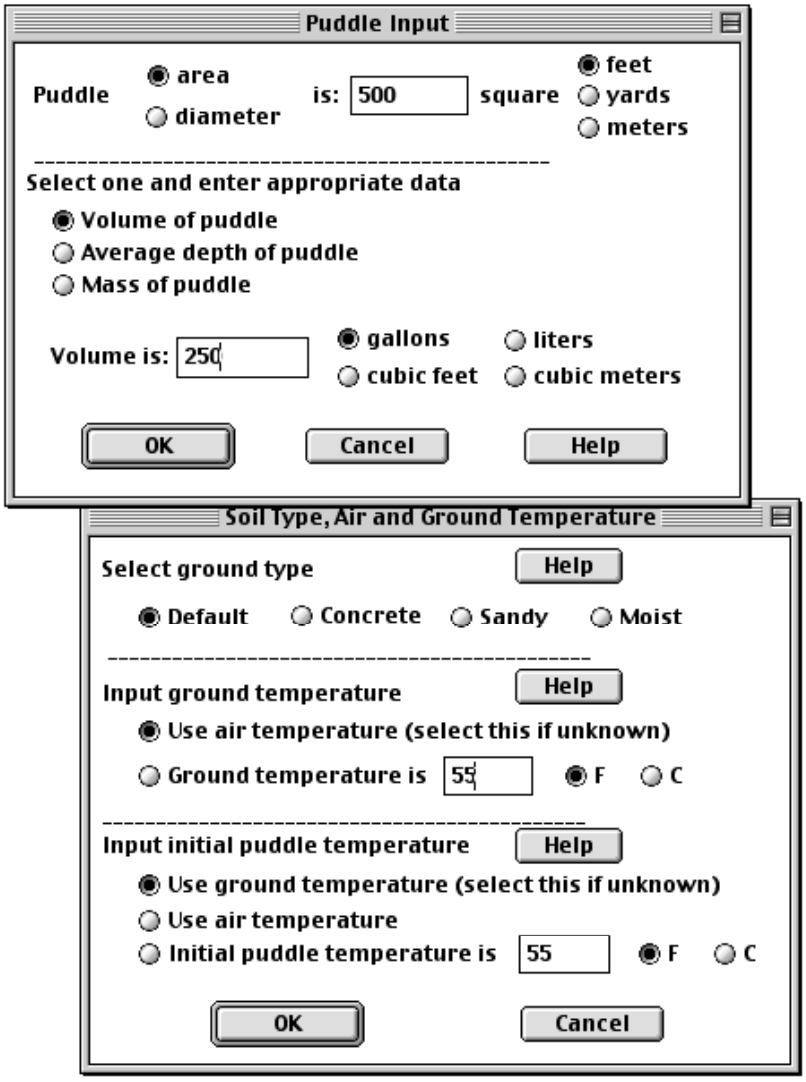
Tank

sublimation rate

sublimes



Entering information about a


Puddle Input
Puddle
area
diameter
is: 500
square
feet
yards
meters
Select one and enter appropriate data
Volume of puddle
Average depth of puddle
Mass of puddle
Volume is: 250
gallons
liters
cubic feet
cubic meters
OK
Cancel
Help
Soil Type, Air and Ground Temperature
Select ground type
Help
Default
Concrete
Sandy
Moist
Input ground temperature
Help
Use air temperature (select this if unknown)
Ground temperature is 55
F
C
Input initial puddle temperature
Help
Use ground temperature (select this if unknown)
Use air temperature
Initial puddle temperature is 55
F
C
OK
Cancel

cryogenic

- **Default**
- **Concrete**
- **Sandy**
- **Moist**

Use air temperature (select this if unknown)

Watch for changing weather conditions

Tank

Tank **Source**

Tank Source

Puddle Source

Pressurized liquids

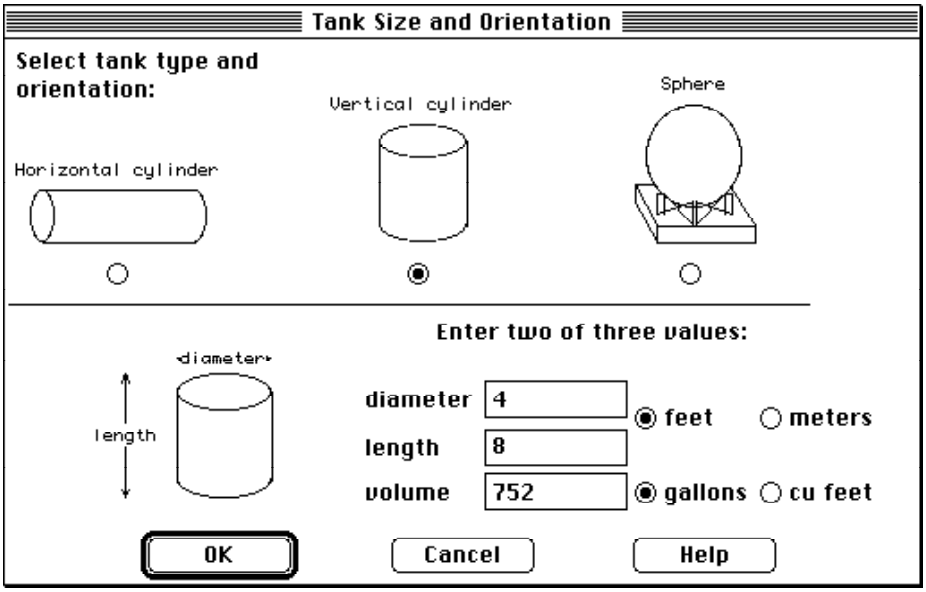
two-phase flow

Note: The chemical escaped as a mixture of gas and aerosol (two phase flow).

ammonia chlorine

Tank size and orientation

-
-
-

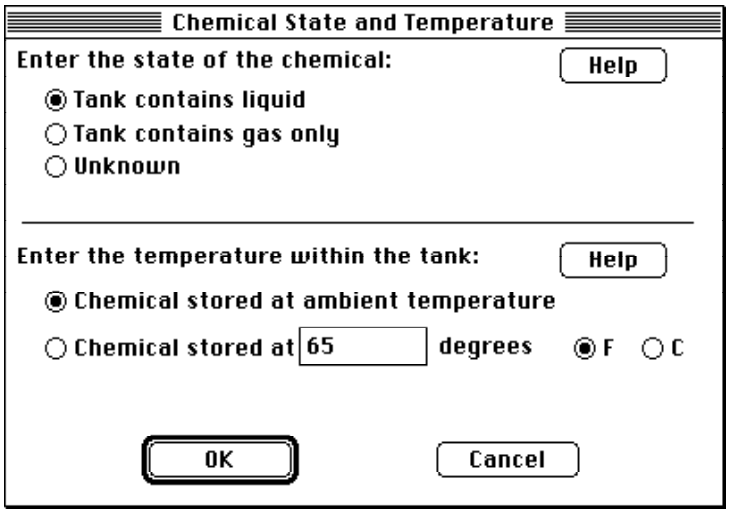


Chemical state

- **Tank contains liquid** *any*
- **Tank contains gas only**
  only
- **Unknown**

- **Chemical stored at ambient temperature,**

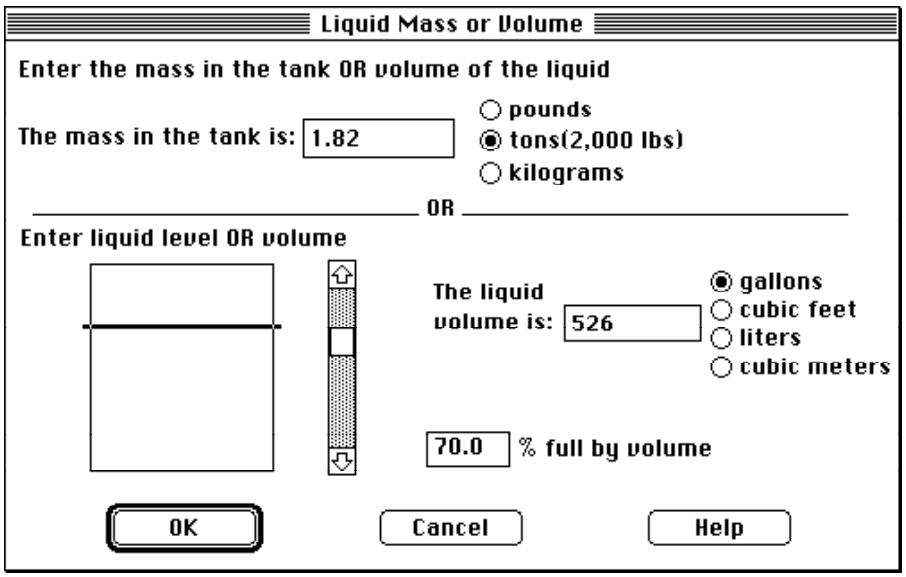
-



Liquid in a tank

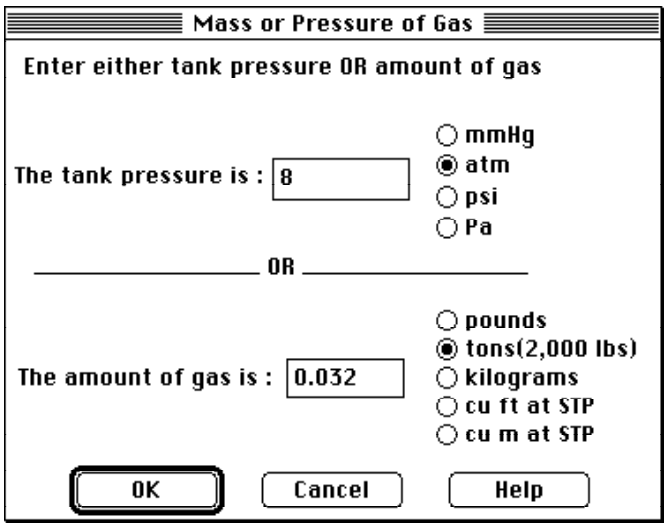
Tank contains liquid

-
-
- **% full by volume**
-



Gas in a tank

Tank contains gas only



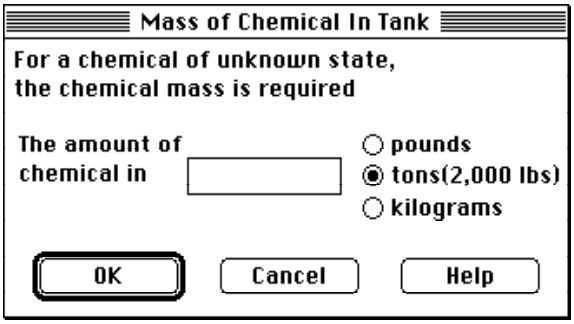
OK

Cancel

Tank contains liquid,

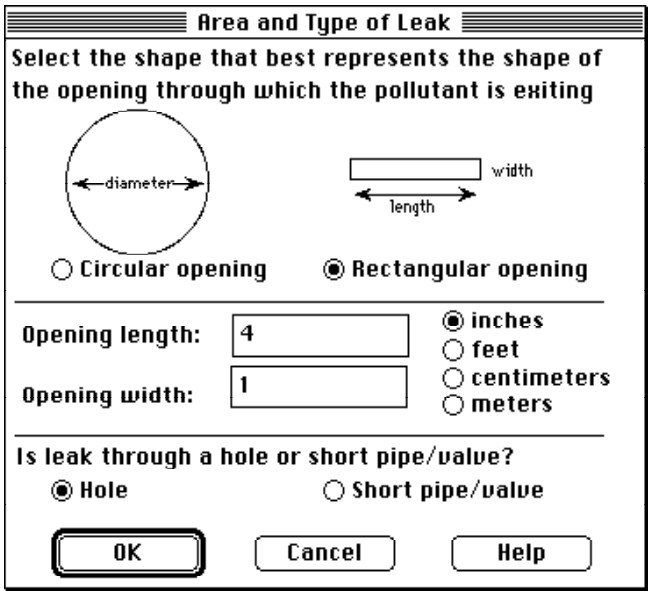
Chemical of unknown state in a tank

Unknown



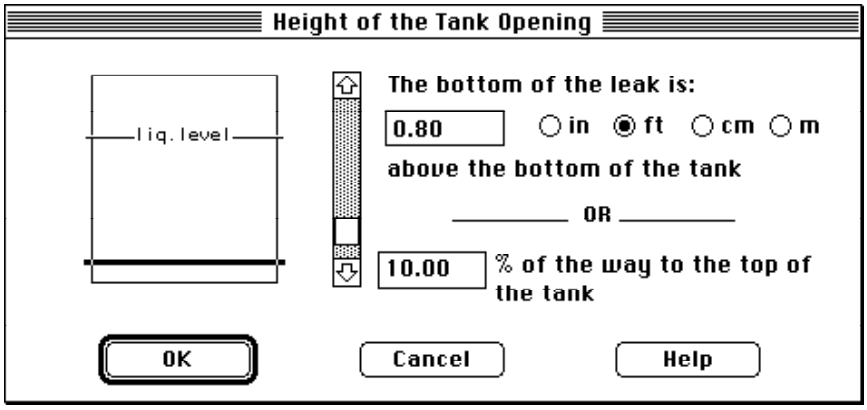
Area and type of leak

OK



Leak height on the tank wall

-
-
-

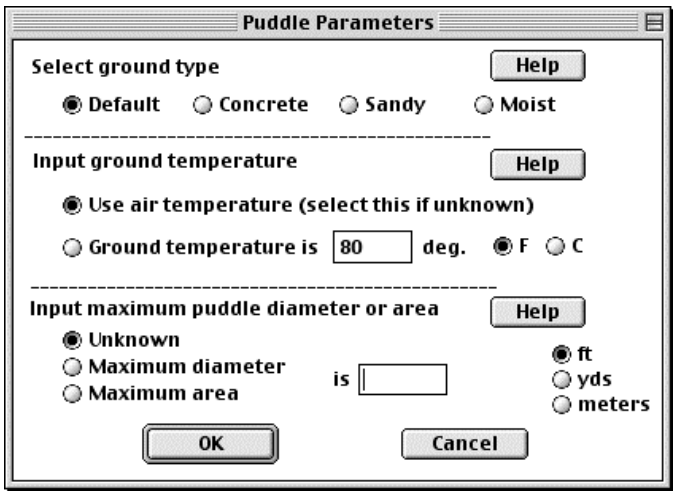


Puddle formation

Puddle

Unknown

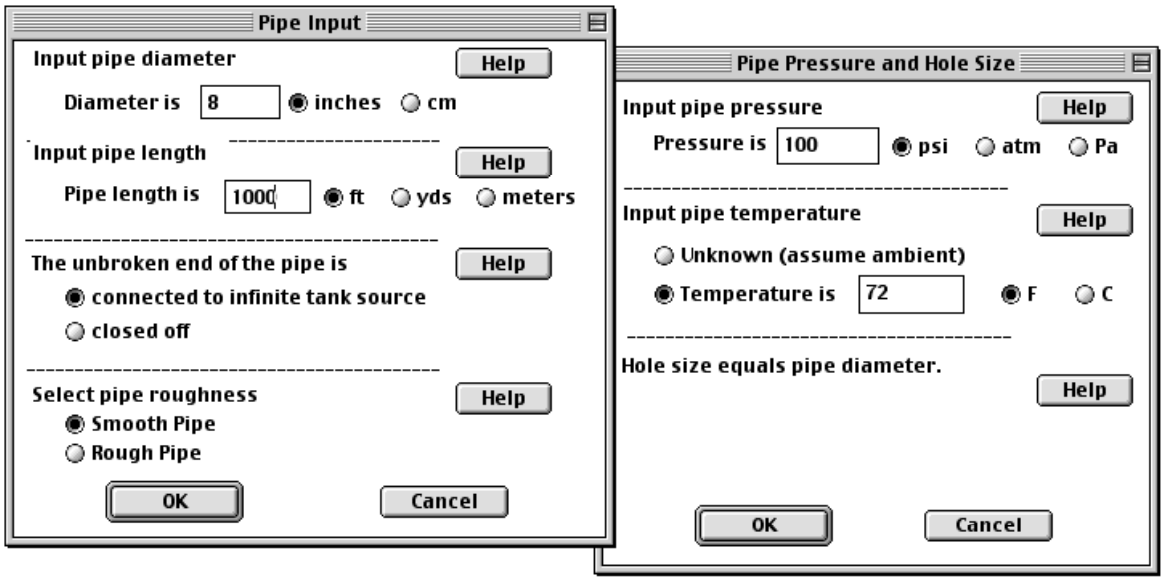
OK



Pipe

Pipe **Source** **SetUp**

- **infinite tank source**
-



Pipe source inputs

- **Pipe diameter and length.** *inner*

- **Pipe connection.**

- **Pipe roughness.**

rough

smooth

- **Pipe pressure.**

- **Pipe temperature**

Unknown (assume ambient)

- **Hole size**

Use pipe diameter

Source strength information in the Text Summary

OK

- **Source type**
  Leak from hole in horizontal cylindrical tank selected
- **Release duration**

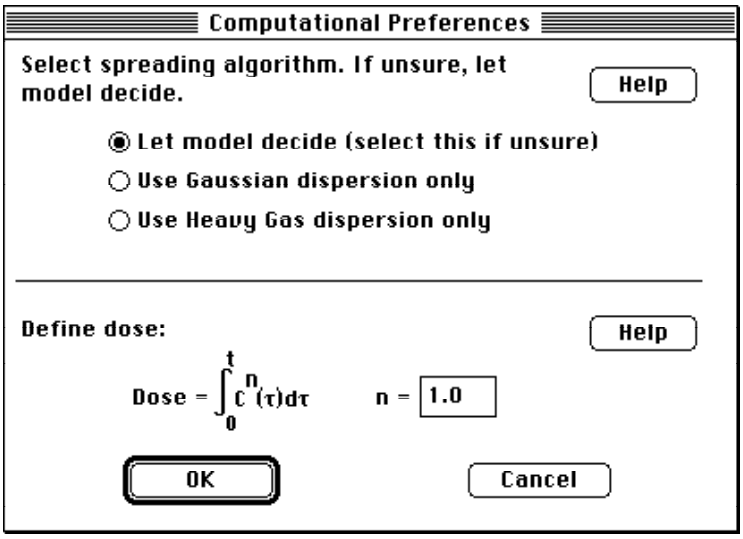
Release Duration:

ALOHA limited the duration to 1 hour

- **Total amount released**
  into the atmosphere

Computational

Computational **SetUp**

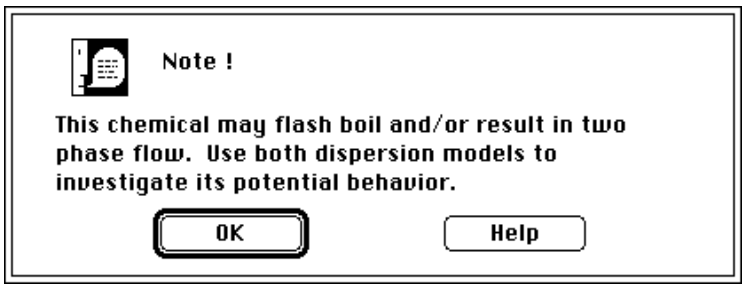


Dispersion options

- **Let model decide.**

Let model decide
Let model decide

Direct



- **Use Gaussian dispersion only**

- **Use Heavy Gas dispersion only**

Chemical **SetUp** **Modify** **Use Heavy Gas dispersion only**

Define dose

Computational

C *t*

n

n

n

n *n*

n

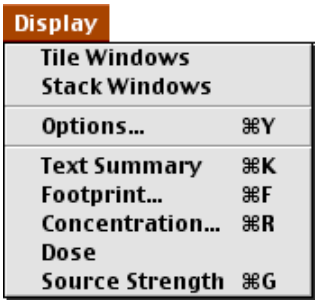
n *n*

n

The Display Menu

Display

- **Tile** **Stack**



Display

Tile and Stack Windows

Tile Stack Windows

- **Tile Windows**

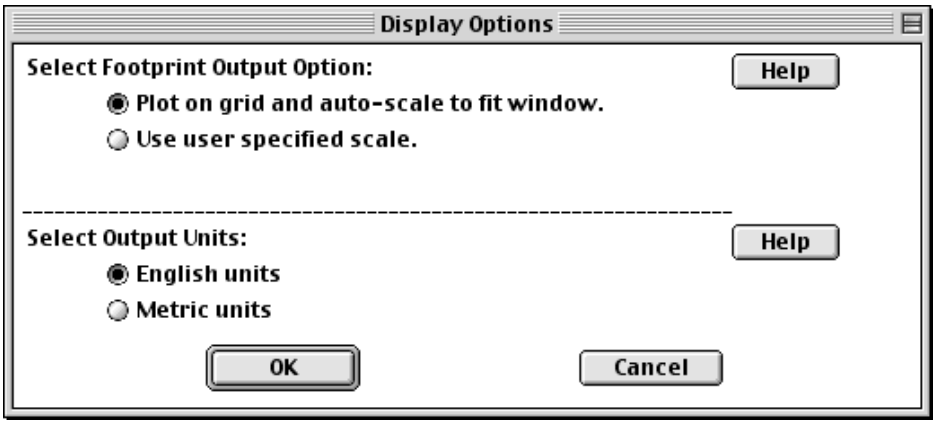
- **Stack Windows**

Options

Options Display

-

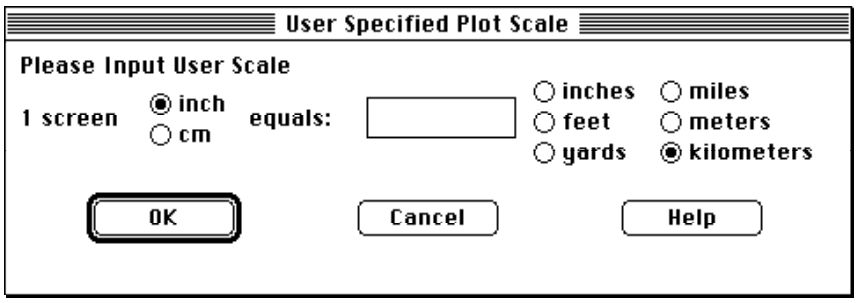
-



Footprint options

- **Plot on grid and auto-scale to fit window**
- **Use user specified scale**

- **Inch**
  Feet
- **Inch**
  Inches



Select Output Units

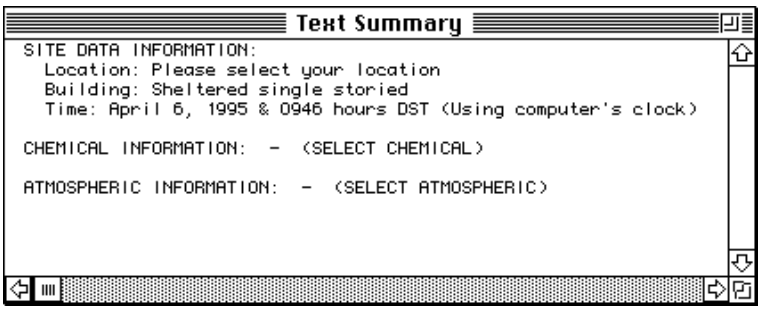
-
-

English units **Metric units**

Text Summary

Text Summary **Display**

-
-
-
-
-



New

File

Footprint

Level of Concern

Chemical **SetUp**

Modify

Default Level of Concern

OK **Select**

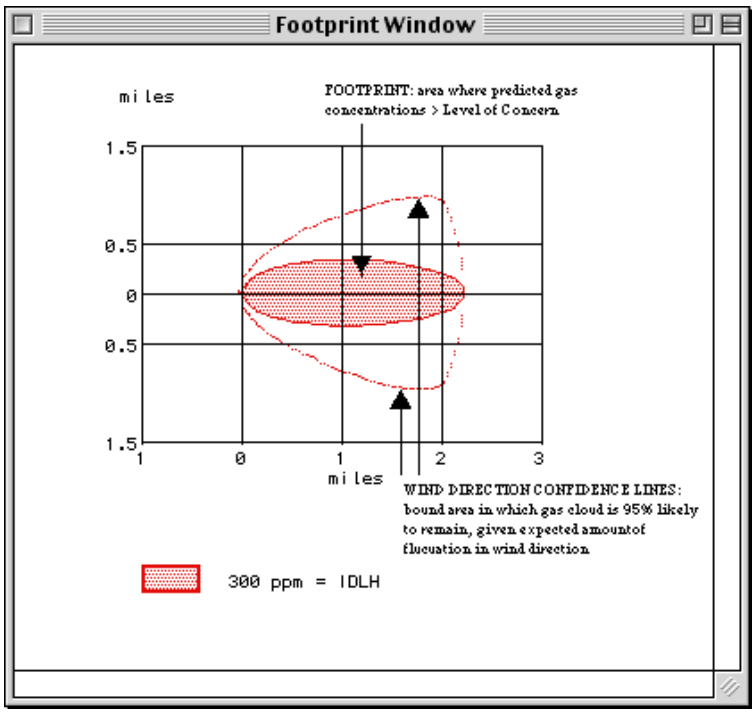
Footprint **Display**

-

- **User Specified Conc.**

  Enter value

  wind direction confidence lines



Footprint Display

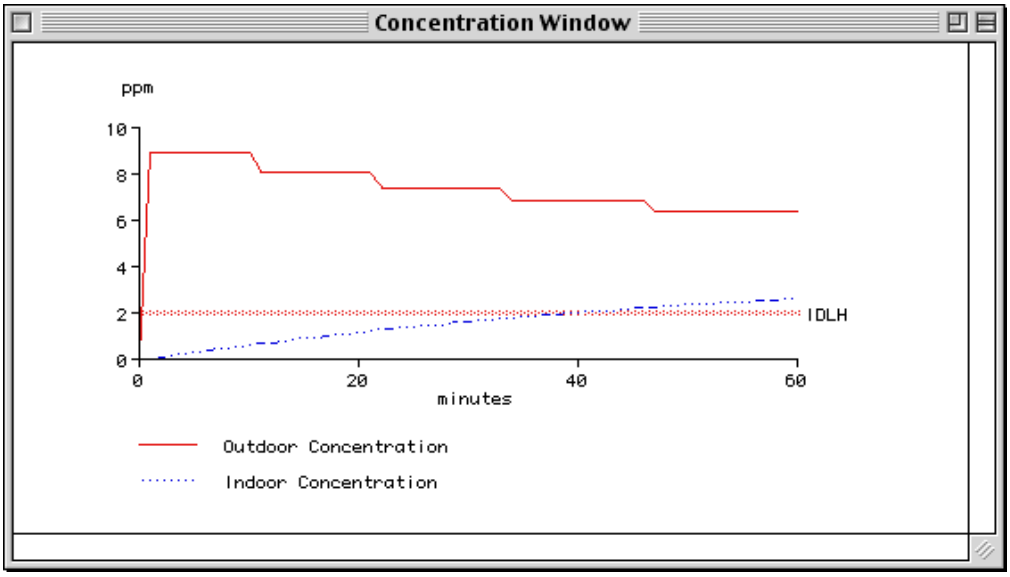
Interpreting a footprint

-
-
-

Concentration

Concentration vs. Time

-
- **Building Type** **SiteData**
-



Concentration vs. Time

Note

Designating a location

-
-

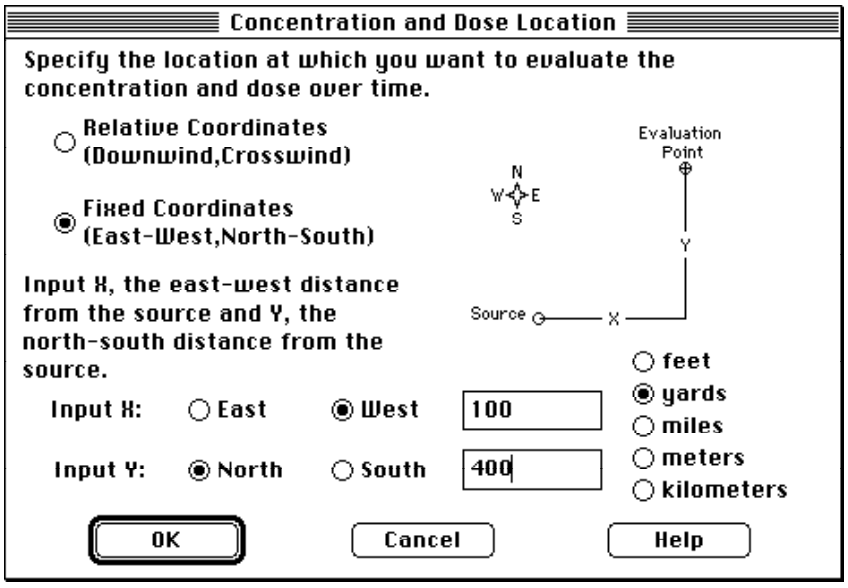
1. In the Footprint window, double-click on the location of concern

2. Choose Concentration from the Display menu

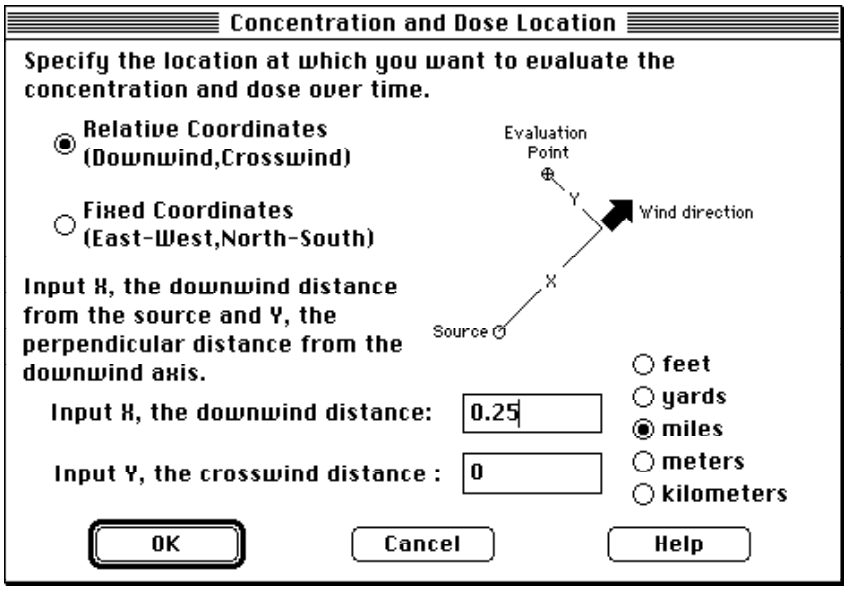
OK

Choosing coordinates

Using fixed (east-west and north-south) coordinates



Using relative (downwind and crosswind) coordinates



Dose

ALOHA's definition of dose

$$dose = \int^{t} C^{n} \ \tau \ d\tau$$

C t n

n

n

Adjusting the dose exponent

n **Computational** **SetUp**

Computational

Obtaining a dose graph

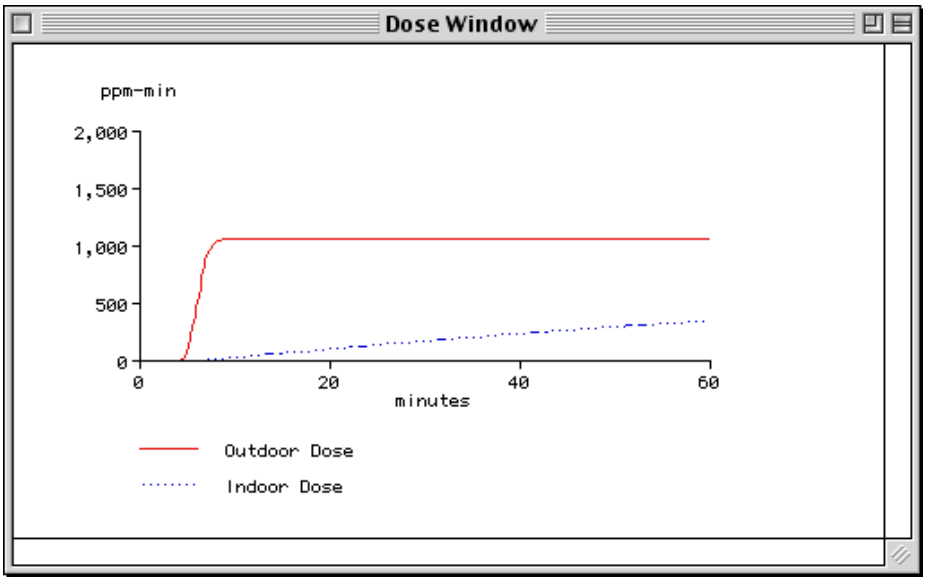
n.

Concentration **Display**

Dose **Display**

Concentration

Building Type **SiteData**



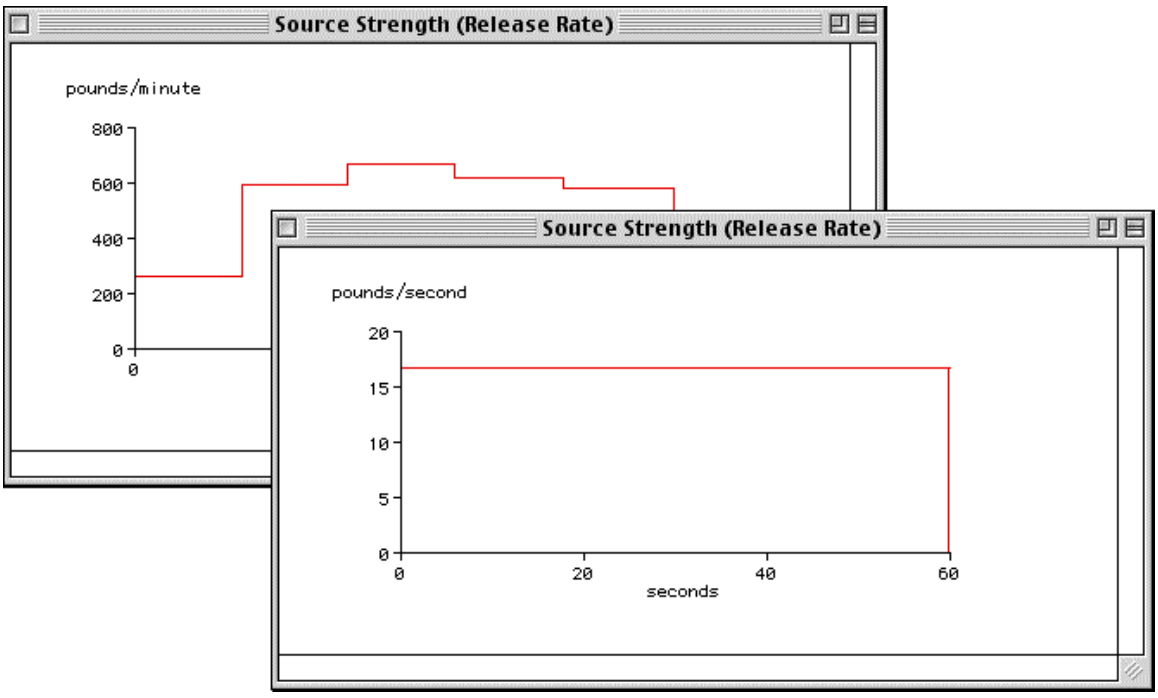
Source Strength

Source Strength **Display**

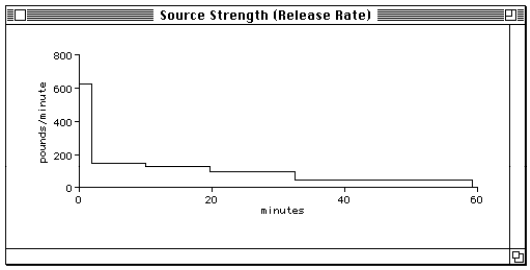
Constant source strength

Direct

Direct



Variable source strength



Source strength averaging

maximum averaged release rate

The Sharing Menu

Sharing

Sharing

Sharing

Sharing

Sharing

Sharing

Sharing

Edit

Shared Menus **Sharing**

Delete

Sharing

Items in the Sharing Menu

- **About Shared Menus**
- **Edit Shared Menus** **Sharing**

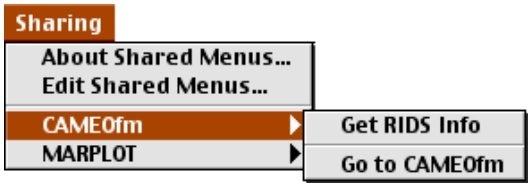
Delete

The CAMEO menu

Sharing **CAMEO** **Sharing**

- **Help**
- **Get RIDS Info**

- **Go to CAMEO**



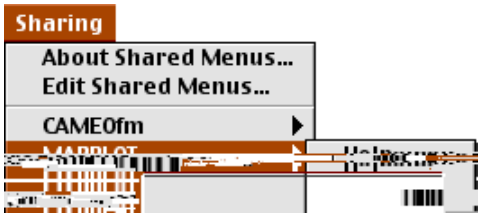
CAMEO **Sharing**

The MARPLOT menu

MARPLOT **Sharing**

- **Help**

- **Go to Map**



MARPLOT **Sharing**

Displaying an ALOHA footprint on a map

Sharing

Using MARPLOT

Sharing

- **Help** **Help**
- **Set Source Point.**

  Set Source Point

- **Set Conc & Dose Point**

  Set Conc & Dose Point

- **Delete ALOHA Objects**

- **Go to ALOHA**