
Chapter 4

Reference

The File and Edit menus

File Edit

The File Menu

File	
New	⌘N
Open...	⌘O
Close	⌘W
Save	⌘S
Save As...	
Page Setup...	
Print...	⌘P
Print All...	
Quit	⌘Q

File

New

New

Open

Open

Save As

Save

Response Mode

Planning Mode

Close

Close

Save and Save As

Save Save As

File

Print

Print

Print All

Print All

Quit or Exit

Quit

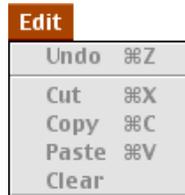
Exit

Save

Save As

File

The Edit Menu



Edit

Copy

Copy

Undo Cut Paste

Clear

The SiteData Menu

-
-
-



SiteData

Location

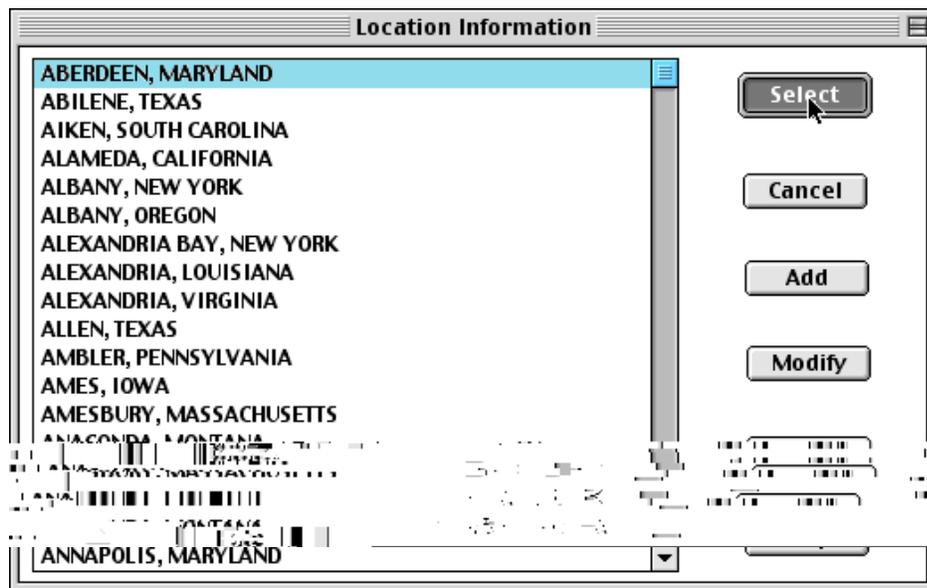
-
-

Selecting a location

Location

SiteData

Select



Adding, modifying, and deleting location information

Adding information about a U.S. city

Location SiteData

OK

Location Input

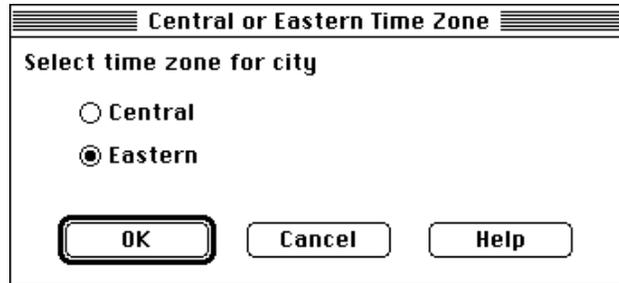
Enter full location name:
Location is

Is location in a U.S. state or territory?
 In U.S. Not in U.S. Select state or territory

Enter approximate elevation
Elevation is ft m

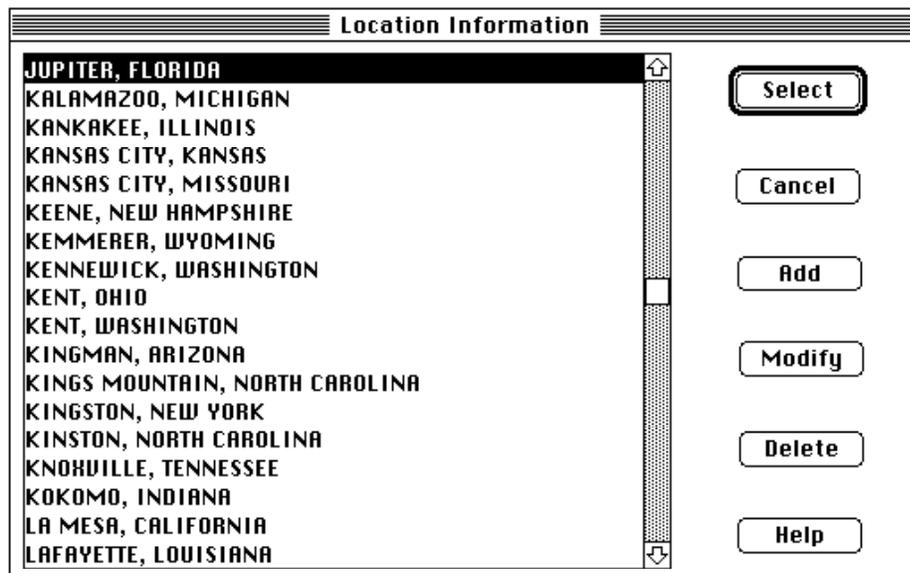
Enter approximate location
deg. min.
Latitude N S
Longitude E W

Select state or territory
ALABAMA
ALASKA
ARIZONA
ARKANSAS
CALIFORNIA
COLORADO
CONNECTICUT
DELAWARE
DIST OF COLUMBIA
FLORIDA



Select

Cancel



Adding a location outside the U.S.

Add

U.S.

**Not in
OK**

Location Input

Enter full location name:
Location is

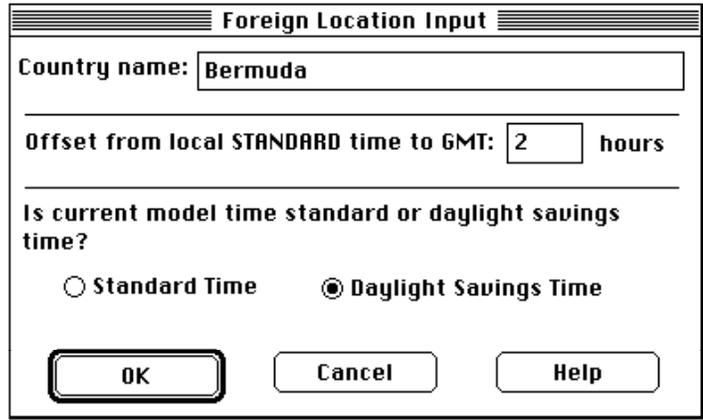
Is location in a U.S. state or territory?
 In U.S. Not in U.S.

Enter approximate elevation
Elevation is ft m

Enter approximate location

	deg.	min.		
Latitude	<input type="text" value="32"/>	<input type="text" value="18"/>	<input checked="" type="radio"/> N	<input type="radio"/> S
Longitude	<input type="text" value="64"/>	<input type="text" value="48"/>	<input type="radio"/> E	<input checked="" type="radio"/> W

Foreign Location Input

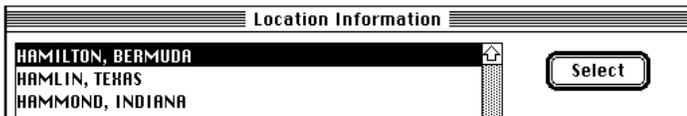


A dialog box titled "Foreign Location Input" with a double-line border. It contains a text field for "Country name" with "Bermuda" entered. Below it is a field for "Offset from local STANDARD time to GMT:" with "2" in a small box and "hours" to the right. A question "Is current model time standard or daylight savings time?" is followed by two radio buttons: "Standard Time" (unselected) and "Daylight Savings Time" (selected). At the bottom are three buttons: "OK", "Cancel", and "Help".

Select

Cancel

OK



A dialog box titled "Location Information" with a double-line border. It features a list box containing three entries: "HAMILTON, BERMUDA", "HAMLIN, TEXAS", and "HAMMOND, INDIANA". The first entry is highlighted. To the right of the list is a small upward-pointing arrow icon. A "Select" button is located to the right of the list box.

Modifying a location

Modify

Deleting a location

Delete

Cancel

OK

OK

Cancel

Select

Building Type

exchange rate

air

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

Infiltration Building Parameters

Select building type or enter exchange parameter

Enclosed office building Help

Single storied building

Double storied building

No. of air changes is per hour

Select building surroundings Help

Sheltered surroundings (trees, bushes, etc.)

Unsheltered surroundings

OK **Cancel**

No. of air changes

Sheltered surroundings

Unsheltered surroundings

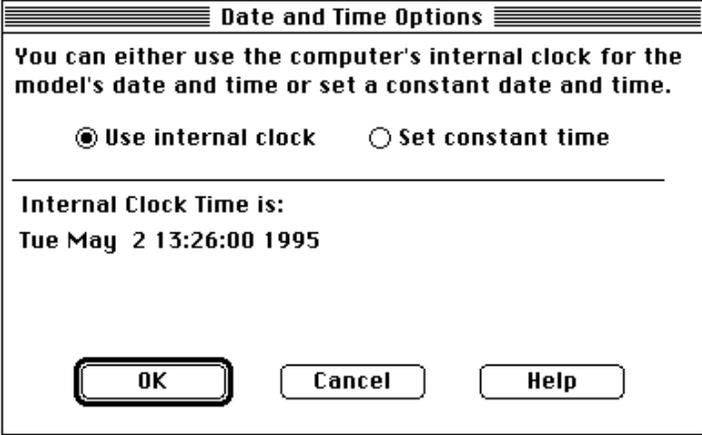
Unsheltered surroundings

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 Options

You can either use the computer's internal clock for the model's date and time or set a constant date and time.

Use internal clock Set constant time

Internal Clock Time is:
Tue May 2 13:26:00 1995

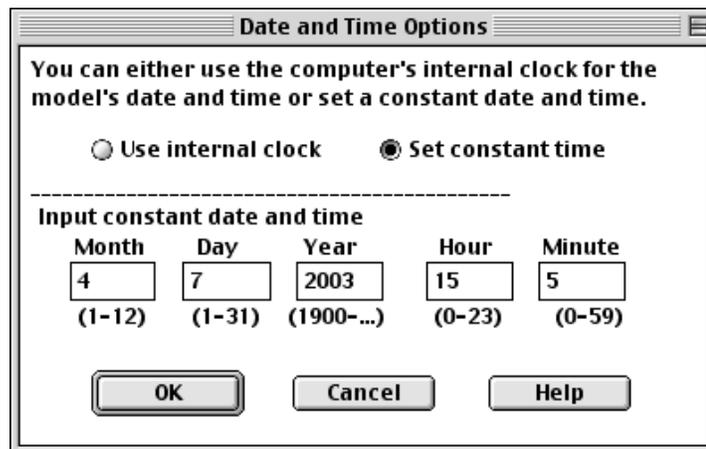
OK **Cancel** **Help**

Date and Time

Date & Time

SiteData

- Use internal clock
- Set constant time



The dialog box titled "Date and Time Options" contains the following text and controls:

You can either use the computer's internal clock for the model's date and time or set a constant date and time.

Use internal clock Set constant time

Input constant date and time

Month	Day	Year	Hour	Minute
4	7	2003	15	5
(1-12)	(1-31)	(1900-...)	(0-23)	(0-59)

OK Cancel Help

The SetUp Menu

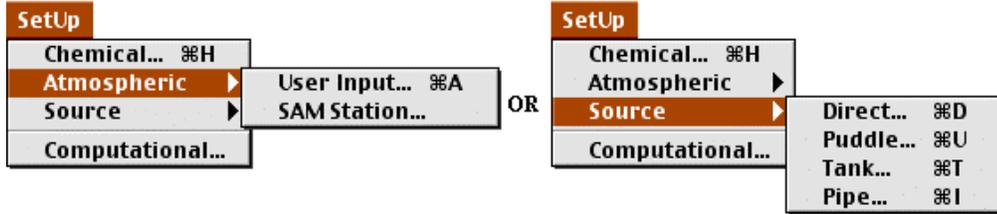
SiteData

SetUp

Chemical

Atmospheric

Source

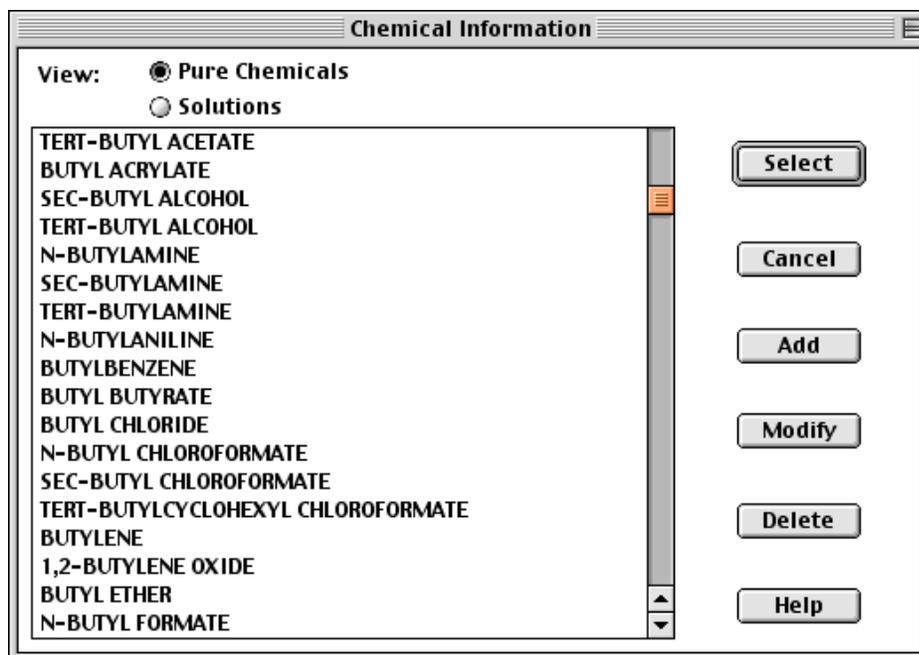


SetUp

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

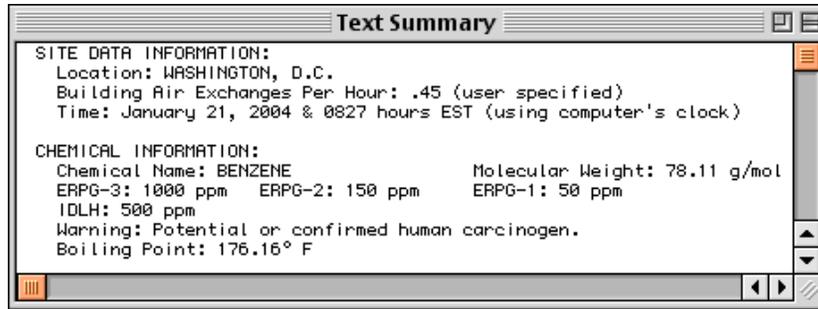
Text Summary

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
REGL-3: 7 ppm REGL-2: 2.5 ppm REGL-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

Input Available Information

Chemical Name:

Molecular Weight: g/mol

ERPG-1	Heat Cap. (gcp) Value:
ERPG-2	<input type="text" value="1500"/> <input type="text" value="J/(kg °K)"/>
ERPG-3	Heat Cap. (gcp) Temperature:
Freezing Point (normal)	<input type="text" value="320"/> <input type="text" value="Kelvin"/>
Heat Cap.(gas,const.press.)	Heat Cap. (gcp) Pressure:
Heat Cap.(liq.,const.press.)	<input type="text" value="101325"/> <input type="text" value="Pa"/>
IDLH	
TEEL-1	
TEEL-2	
TEEL-3	
TLV-TWA	

OK

Select

Cancel

How to modify information about a chemical

Chemical

SetUp

Modify

Next

Field



OK

Cancel

How to delete a chemical

SetUp

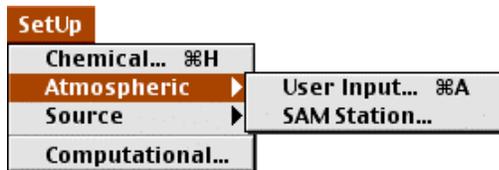
OK

Chemical

Delete

Cancel

Atmospheric



Atmospheric

User Input

SetUp

Atmospheric

User Input

Wind speed, direction, and measurement height

Atmospheric Options

Wind Speed is: Knots MPH Meters/Sec.

Wind is from : Enter degrees true or text (e.g. ESE)

Measurement Height above ground is:

  OR enter value: feet meters

Ground Roughness is:

Open Country OR Input roughness (Z0): in cm

Urban or Forest

Select Cloud Cover:

   OR enter value: (0-10)

complete cover partly cloudy clear

Atmospheric Options 2

Air Temperature is: Degrees F C

Stability Class is : A B C D E F

Inversion Height Options are:

No Inversion Inversion Present, Height is: Feet Meters

Select Humidity:

   OR enter value % (0-100)

wet medium dry

User Input

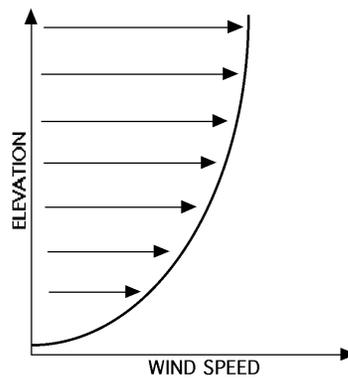


from



profile

wind



•

•

- *Ground roughness*

roughness elements

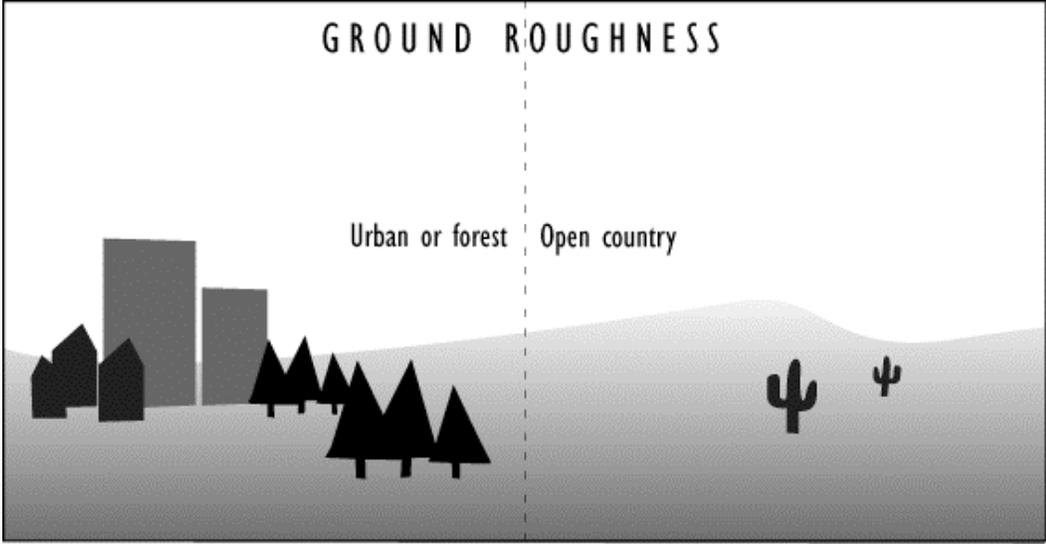
Open Country

**Urban or Forest
roughness length,**

- **Open Country**

Urban or Forest

- **Urban or Forest**



Urban or Forest

obstacle

Note

Cloud cover

-
-

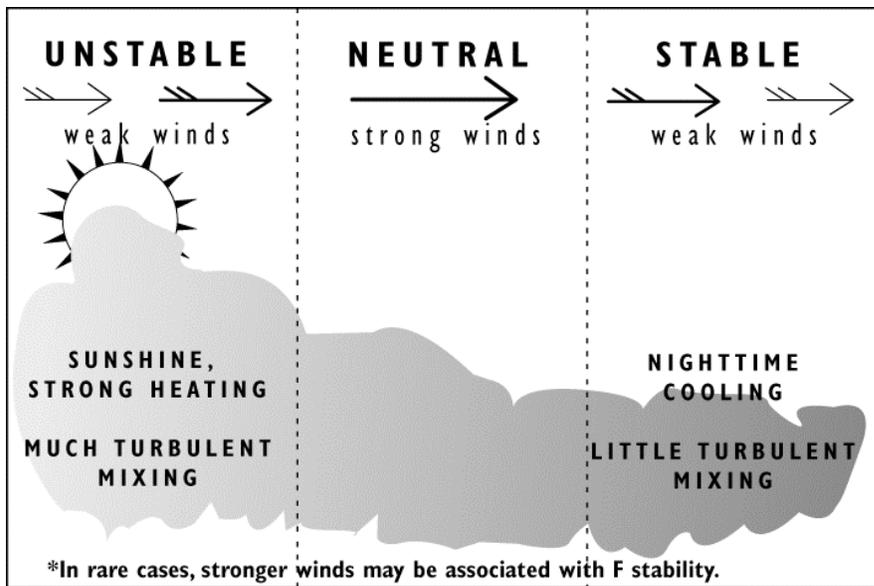
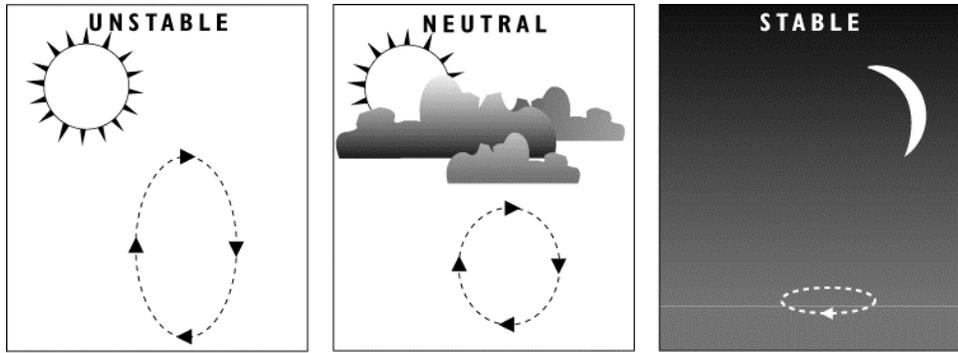
Air temperature

Stability class

atmospheric stability classes

unstable

stable



Override

only

Inversion height



No Inversion

Humidity

SAM Station

Station for Atmospheric Measurement (SAM)

Choosing a SAM

Transmitting SAM data to ALOHA

from

Using a SAM during an incident

Choosing the correct port for receiving SAM data

Choosing a radio frequency

User Input for SAM Unit

Inversion Height Options are:

No inversion
 Inversion present, Height is:

feet
 meters

Ground Roughness is:

Open Country OR Input roughness (Z₀):

Urban or Forest in
 cm

Station Height above ground is:

  OR enter value:

feet
 meters

Setting up ALOHA when you're using a SAM

SetUp

Atmospheric

SAM Station

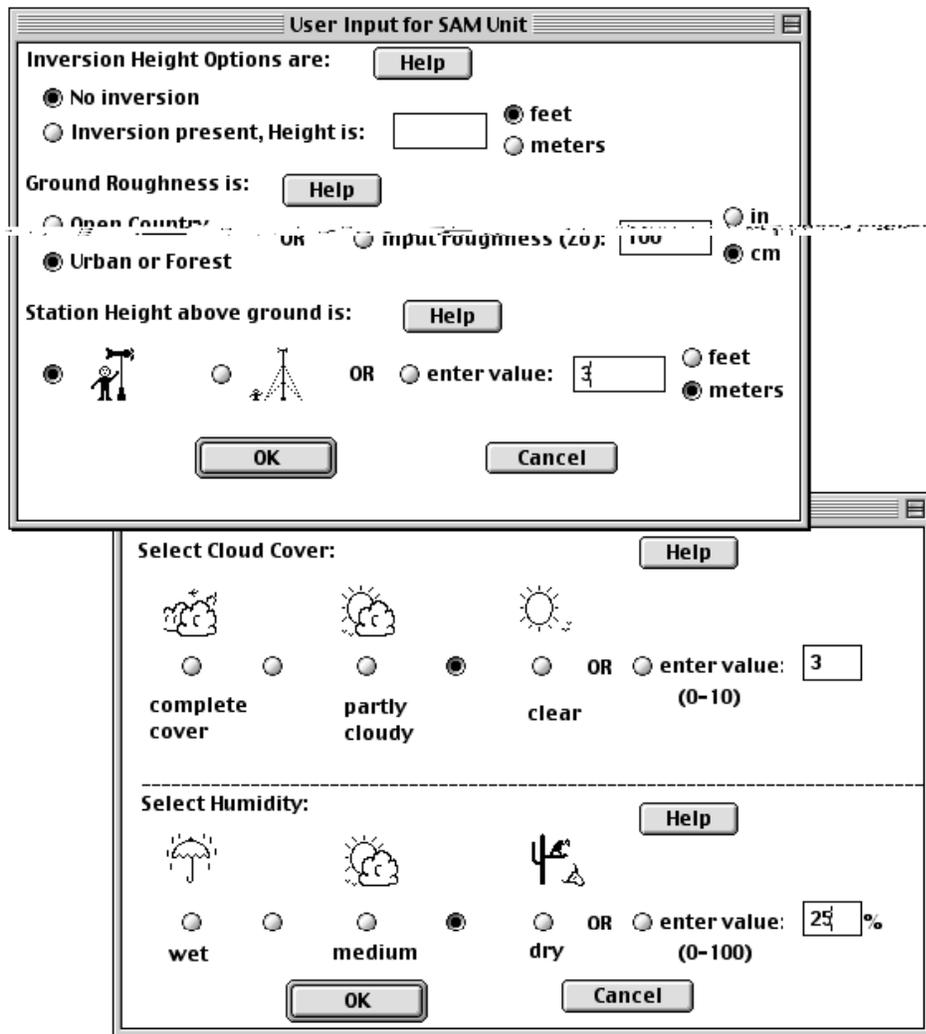
•

•

•

•

•



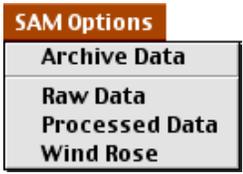
Source

last

SAM Options

OK

Sharing



SAM Options

Archive Data

Archive Data

SAM Options

Save

End Archive Data

SAM Options

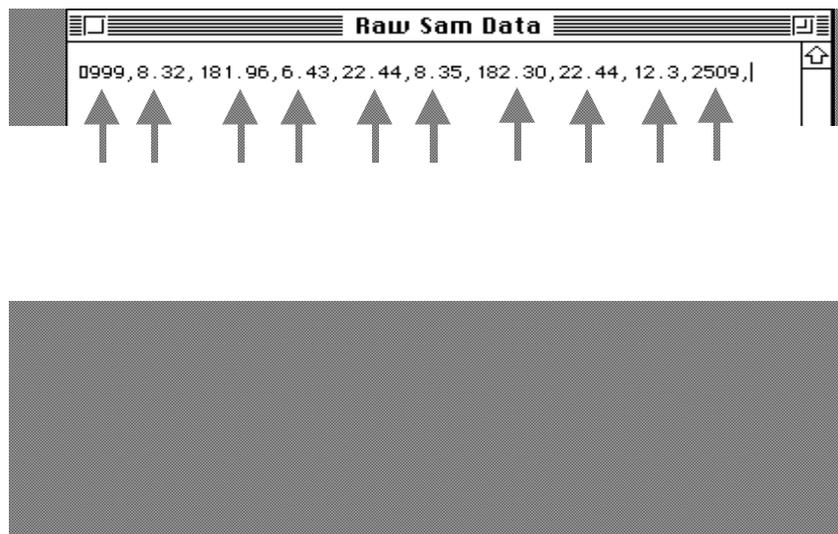
Raw Data Processed Data

SAM Options

Raw Data

Raw Data

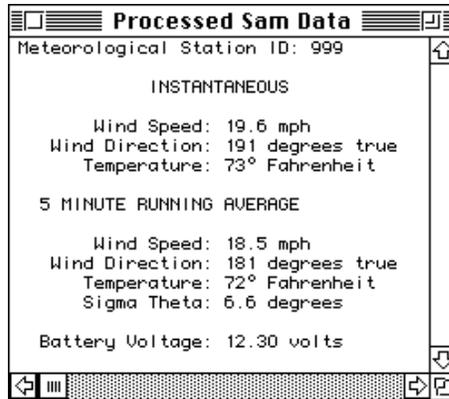
SAM Options



Processed Data

Processed Data

SAM Options



- **Meteorological Station ID**

- **Wind Direction**
from

- **Sigma Theta**

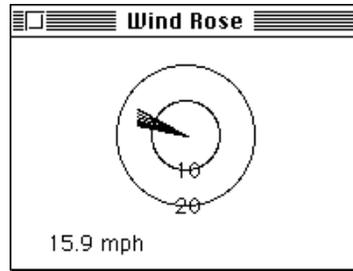
- **Battery Voltage**

Wind Rose

Wind Rose

SAM Options

to



Options

Display

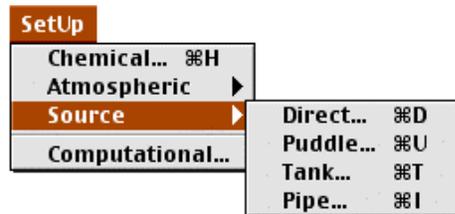
Monitoring a long-term release

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

Strength

Display

Source

When you're using a SAM

Direct source

Direct Source

User Input Source Strength			
Select source strength units of mass or volume:			Help
<input type="radio"/> grams	<input type="radio"/> kilograms	<input checked="" type="radio"/> pounds	<input type="radio"/> tons(2,000 lbs)
<input type="radio"/> cubic meters	<input type="radio"/> liters	<input type="radio"/> cubic feet	<input type="radio"/> gallons
Select an instantaneous or continuous source:			Help
<input checked="" type="radio"/> Continuous source		<input type="radio"/> Instantaneous source	
Enter the amount of pollutant ENTERING THE ATMOSPHERE:			Help
<input type="text" value="50"/>	<input type="radio"/> pounds/sec	for	<input type="text" value="60"/>
	<input checked="" type="radio"/> pounds/min		minutes (1-60)
	<input type="radio"/> pounds/hr		
Enter source height (0 if ground source):	<input type="text" value="25"/>	<input checked="" type="radio"/> feet	Help
		<input type="radio"/> meters	
<input type="button" value="OK"/>		<input type="button" value="Cancel"/>	

Describing a direct release

continuous

instantaneous

Note

Tank Pipe

Source height

source height

only

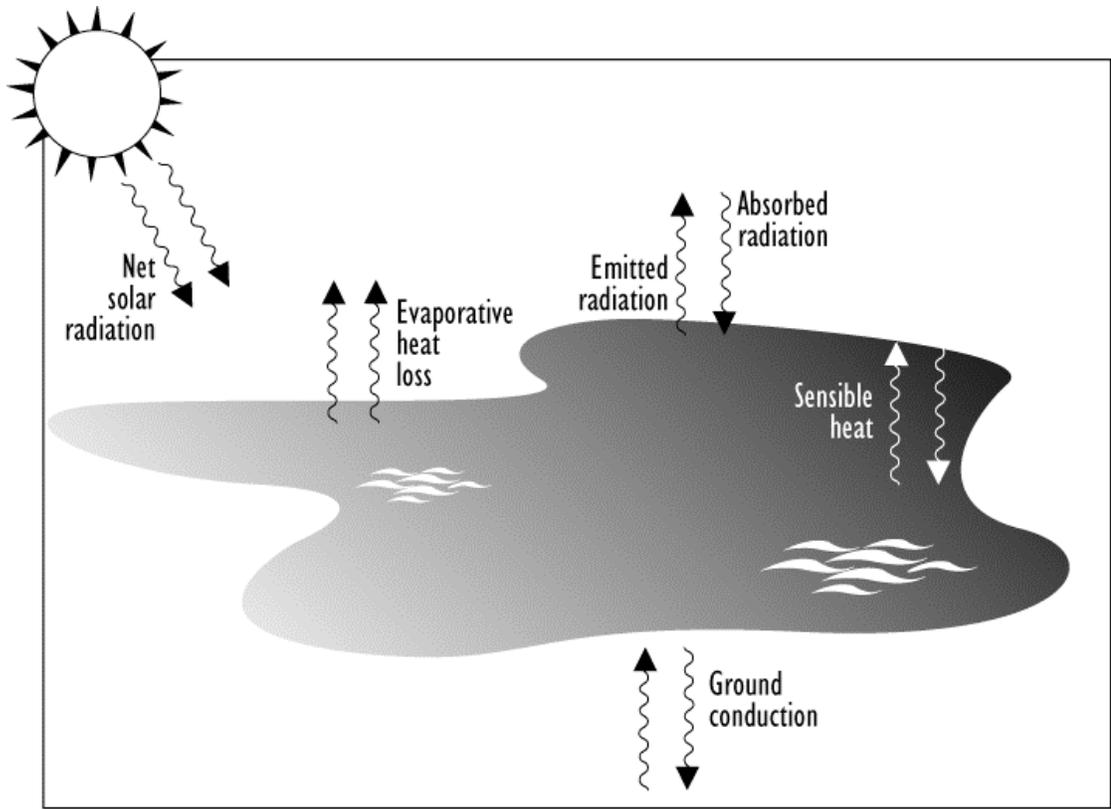
Puddle

Puddle

Tank

sublimation rate

sublimes



Entering information about a

Puddle Input

Puddle area diameter is: square feet yards meters

Select one and enter appropriate data

Volume of puddle
 Average depth of puddle
 Mass of puddle

Volume is: gallons liters
 cubic feet cubic meters

Soil Type, Air and Ground Temperature

Select ground type

Default Concrete Sandy Moist

Input ground temperature

Use air temperature (select this if unknown)
 Ground temperature is F C

Input initial puddle temperature

Use ground temperature (select this if unknown)
 Use air temperature
 Initial puddle temperature is F C

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

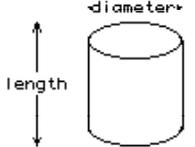
-
-
-

Tank Size and Orientation

Select tank type and orientation:

Horizontal cylinder Vertical cylinder Sphere

Enter two of three values:

 diameter: feet meters
length:
volume: gallons cu feet

Chemical state



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

- **Chemical stored at ambient temperature,**
-

Chemical State and Temperature

Enter the state of the chemical:

Tank contains liquid
 Tank contains gas only
 Unknown

Enter the temperature within the tank:

Chemical stored at ambient temperature
 Chemical stored at degrees F C

Liquid in a tank

contains liquid

Tank

•

•

•

% full by volume

•

Liquid Mass or Volume

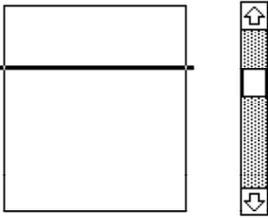
Enter the mass in the tank OR volume of the liquid

The mass in the tank is:

- pounds
- tons(2,000 lbs)
- kilograms

_____ OR _____

Enter liquid level OR volume



The liquid volume is:

- gallons
- cubic feet
- liters
- cubic meters

% full by volume

Gas in a tank

contains gas only

Tank

Mass or Pressure of Gas

Enter either tank pressure OR amount of gas

The tank pressure is:

- mmHg
- atm
- psi
- Pa

_____ OR _____

The amount of gas is:

- pounds
- tons(2,000 lbs)
- kilograms
- cu ft at STP
- cu m at STP

OK

Cancel

Tank contains liquid,

Chemical of unknown state in a tank

Unknown

Mass of Chemical In Tank

For a chemical of unknown state,
the chemical mass is required

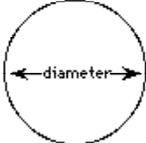
The amount of chemical in pounds
 tons(2,000 lbs)
 kilograms

Area and type of leak

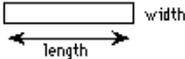
OK

Area and Type of Leak

Select the shape that best represents the shape of the opening through which the pollutant is exiting



Circular opening



Rectangular opening

Opening length: inches
 feet

Opening width: centimeters
 meters

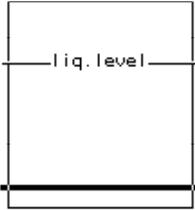
Is leak through a hole or short pipe/valve?

Hole Short pipe/valve

Leak height on the tank wall

-
-
-

Height of the Tank Opening



The bottom of the leak is:
 in ft cm m
above the bottom of the tank
_____ OR _____
 % of the way to the top of
the tank

OK **Cancel** **Help**

Puddle formation

Puddle

Unknown

OK

Puddle Parameters

Select ground type Help

Default
 Concrete
 Sandy
 Moist

Input ground temperature Help

Use air temperature (select this if unknown)

Ground temperature is deg.
 F
 C

Input maximum puddle diameter or area Help

Unknown

Maximum diameter is

 ft
 yds
 meters

Maximum area

Pipe

Pipe

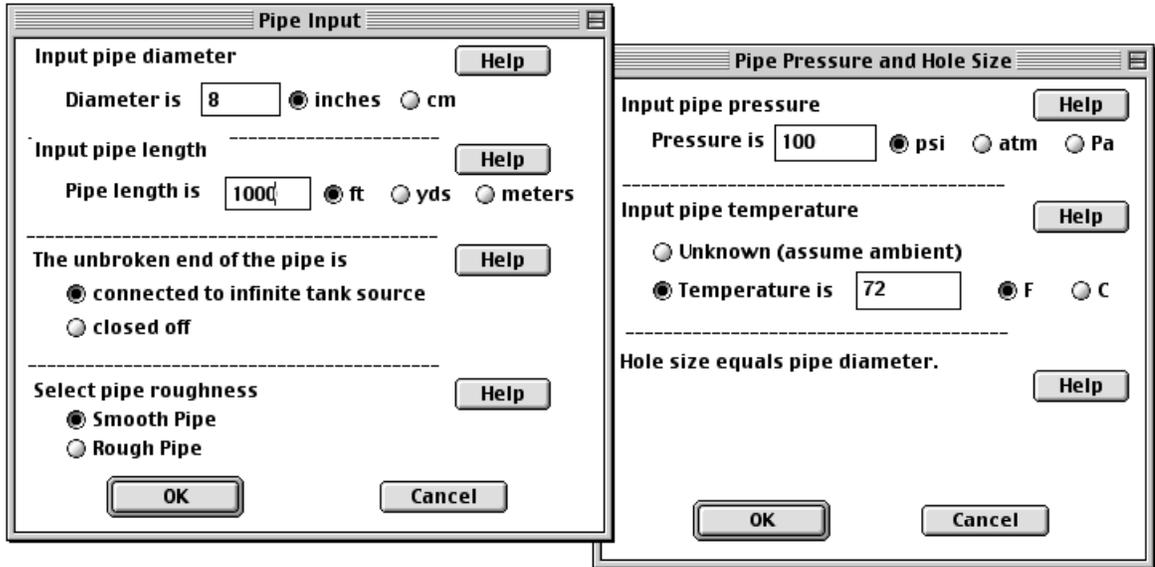
Source

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

Computational Preferences

Select spreading algorithm. If unsure, let model decide. Help

Let model decide (select this if unsure)
 Use Gaussian dispersion only
 Use Heavy Gas dispersion only

Define dose: Help

Dose = $\int_0^t C^n(\tau) d\tau$ n =

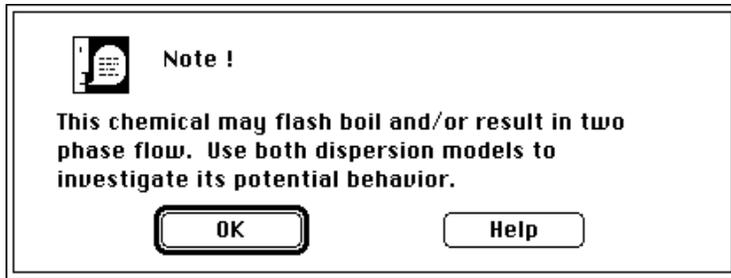
OK Cancel

Dispersion options

- Let model decide.

Let model decide
Let model decide

Direct



- Use Gaussian dispersion only

- Use Heavy Gas dispersion only

Chemical **SetUp**
Heavy Gas dispersion only

Modify

Use

Define dose

Computational

C
n

t



n

n *n*
n *n*
n *n* *n*
n *n*

The Display Menu

Display

- **Tile Stack**

Display	
Tile Windows	
Stack Windows	
Options...	⌘Y
Text Summary	⌘K
Footprint...	⌘F
Concentration...	⌘R
Dose	
Source Strength	⌘G

Display

Tile and Stack Windows

Tile Stack Windows

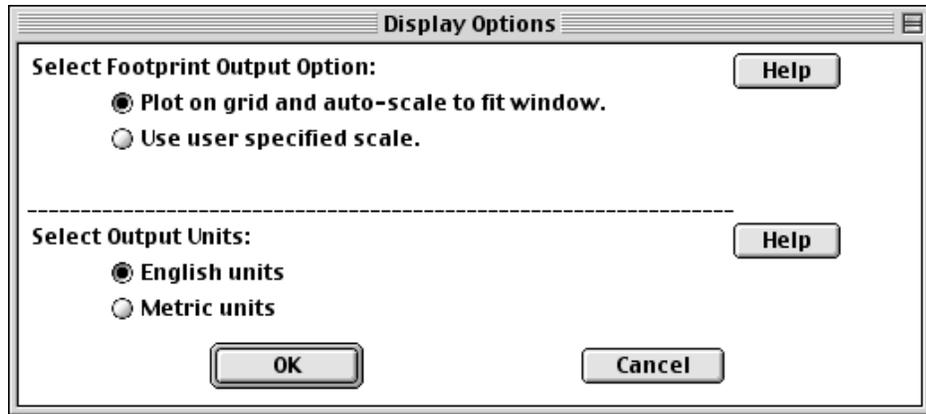
- **Tile Windows**

- **Stack Windows**

Options

Options Display

-
-



Footprint options

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

- Feet Inch
- Inches Inch

User Specified Plot Scale

Please Input User Scale

1 screen inch equals: inches miles
 cm feet meters
 yards kilometers

OK **Cancel** **Help**

Select Output Units

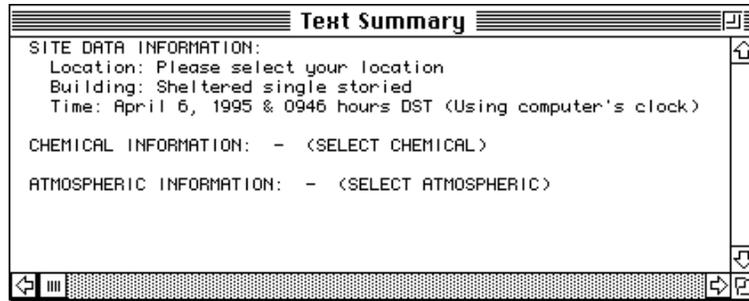
-
-

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

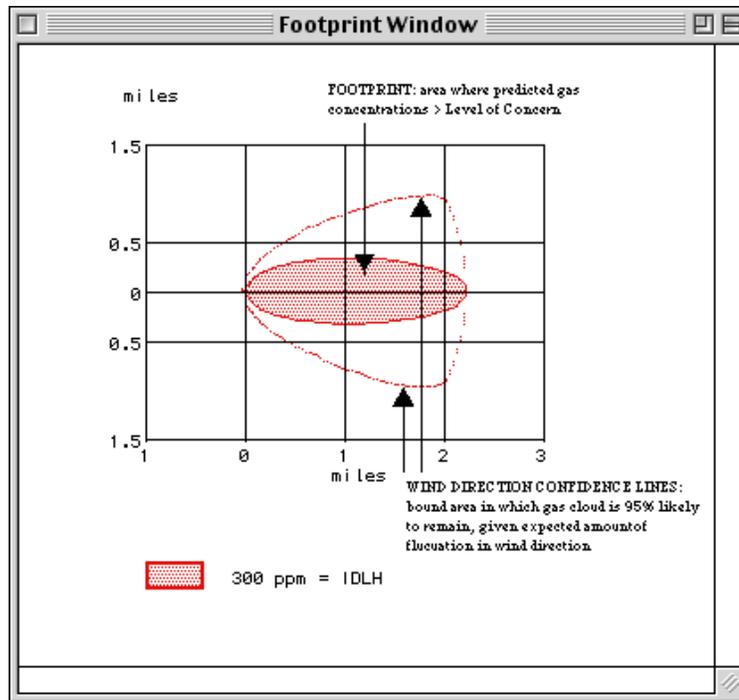
•

•

User Specified Conc.

Enter value

wind direction confidence lines



Footprint

Display

Interpreting a footprint

-
-
-

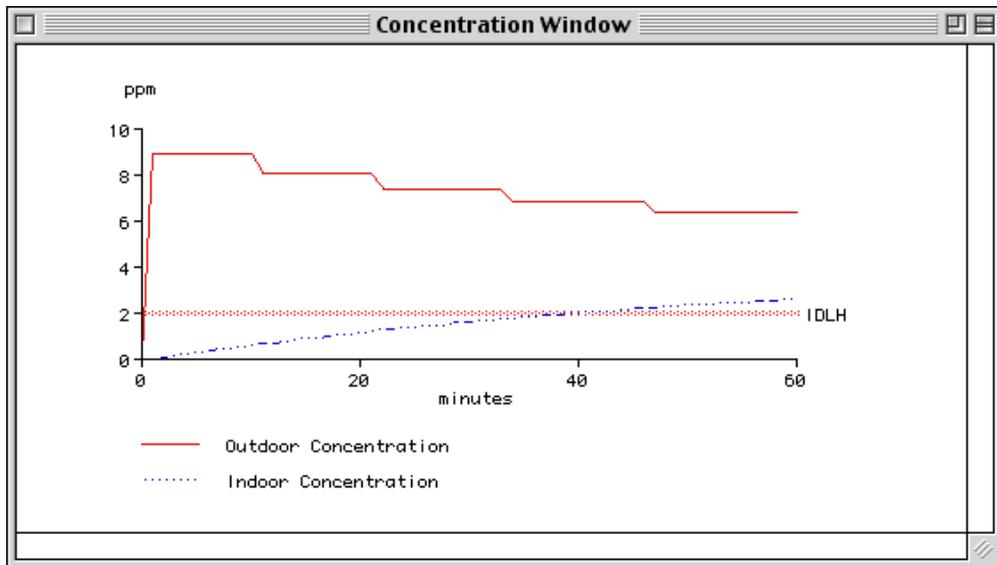
Concentration

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

Concentration and Dose Location

Specify the location at which you want to evaluate the concentration and dose over time.

Relative Coordinates
(Downwind,Crosswind)

Fixed Coordinates
(East-West,North-South)

Input X, the east-west distance from the source and Y, the north-south distance from the source.

Input X: East West

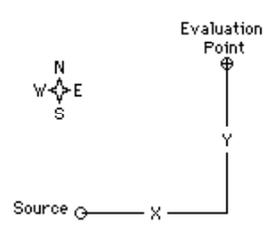
Input Y: North South

feet
 yards
 miles
 meters
 kilometers

Evaluation Point

Source X Y

N E
 W S



Using relative (downwind and crosswind) coordinates

Concentration and Dose Location

Specify the location at which you want to evaluate the concentration and dose over time.

Relative Coordinates (Downwind,Crosswind)

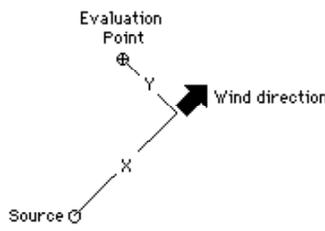
Fixed Coordinates (East-West,North-South)

Input X, the downwind distance from the source and Y, the perpendicular distance from the downwind axis.

Input X, the downwind distance:

Input Y, the crosswind distance :

feet
 yards
 miles
 meters
 kilometers



Dose

ALOHA's definition of dose

$$dose = \int C^n \tau d\tau$$

C

n

t

n

n

Adjusting the dose exponent

n

Computational

SetUp

Computational

Obtaining a dose graph

n.

Concentration

Display

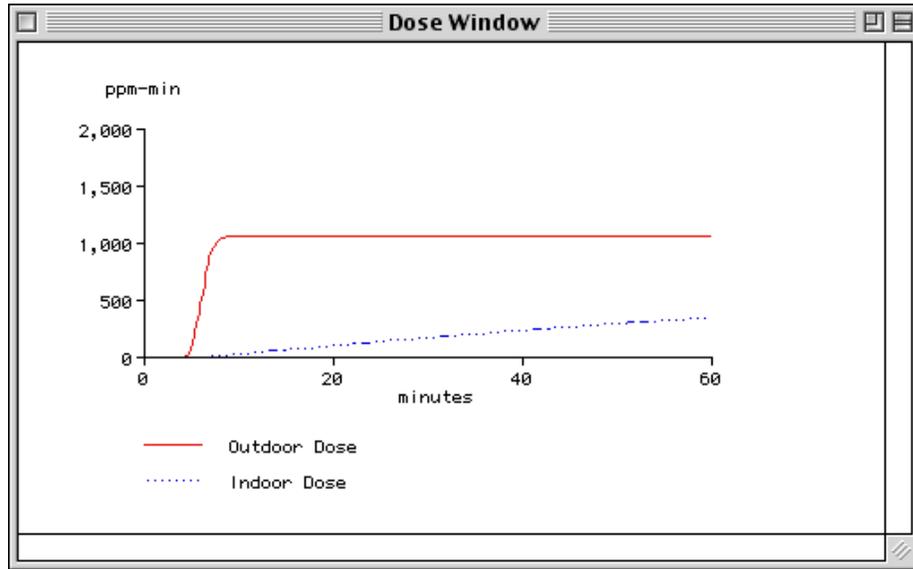
Dose

Display

Concentration

Building Type

SiteData



Source Strength

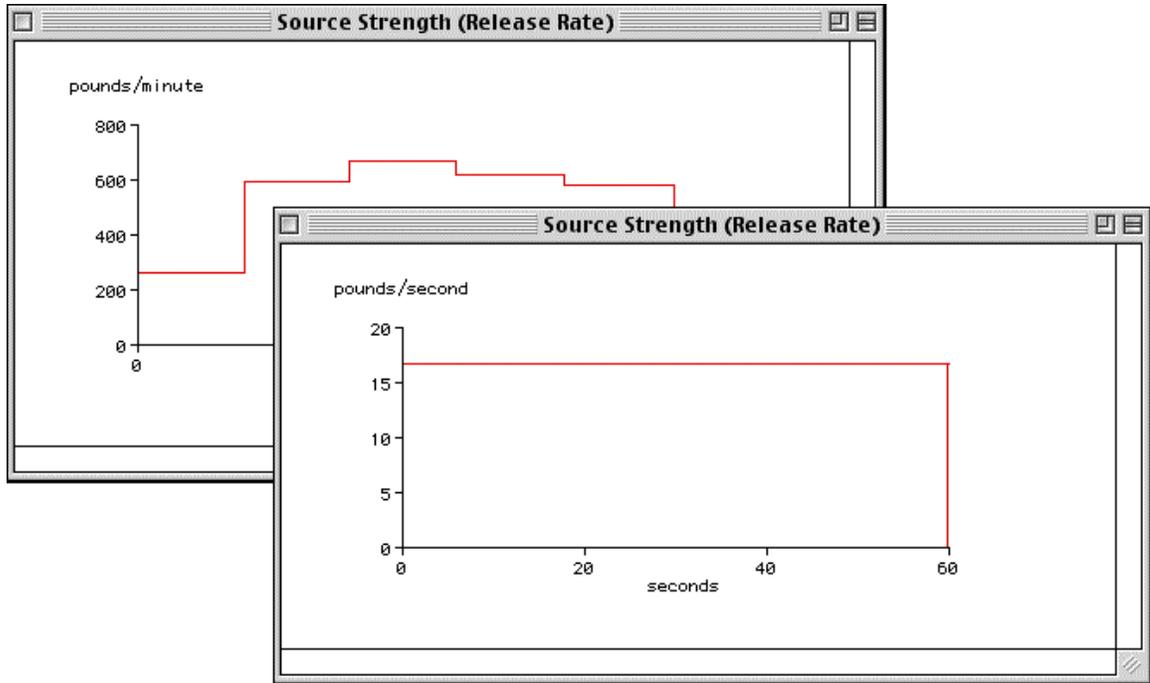
Source Strength

Display

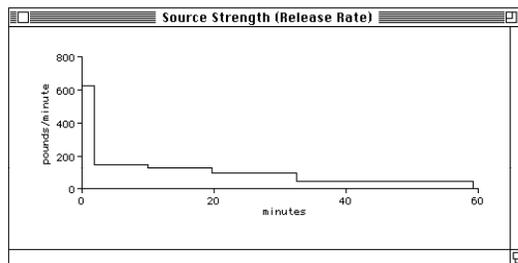
Constant source strength

Direct

Direct



Variable source strength

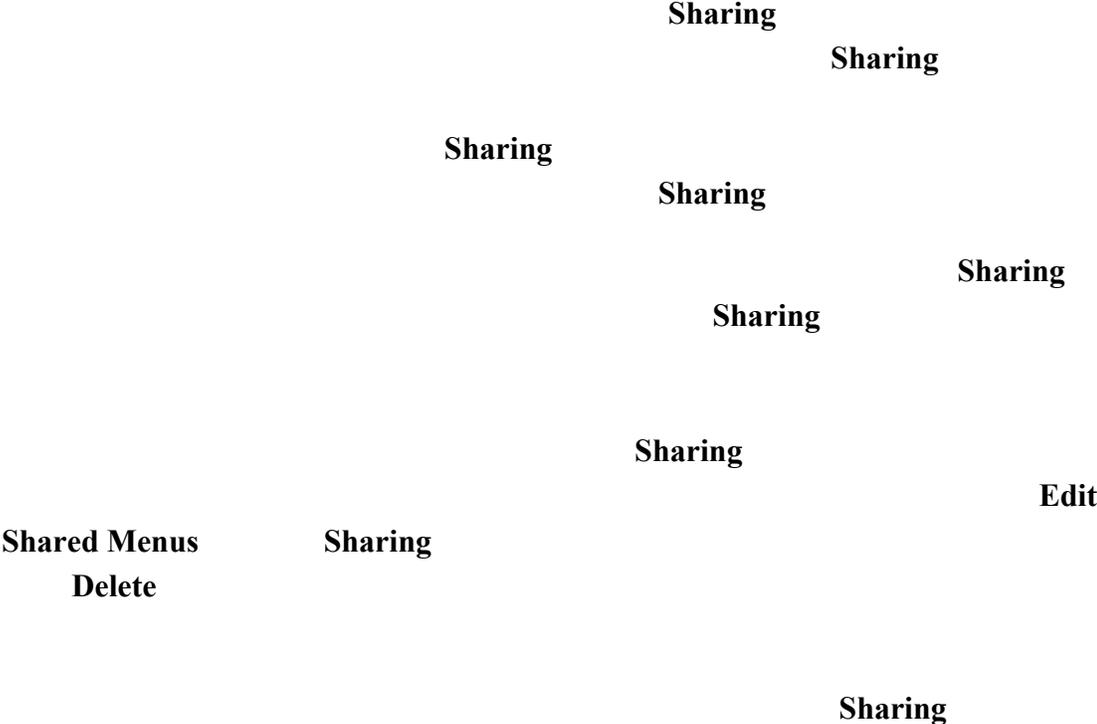


Source strength averaging



maximum averaged release rate

The Sharing Menu



Items in the Sharing Menu

- About Shared Menus
 - Edit Shared Menus
- Sharing
- Delete

The CAMEO menu

- | | | |
|---|--------------|----------------|
| Sharing | CAMEO | Sharing |
| <ul style="list-style-type: none">• Help• Get RIDS Info• Go to CAMEO | | |

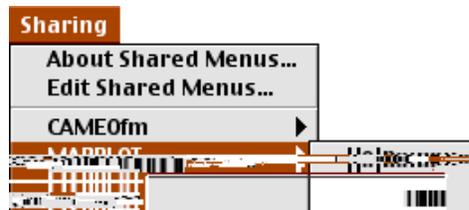


CAMEO

Sharing

The MARPLOT menu

- | | |
|--|----------------|
| MARPLOT | Sharing |
| <ul style="list-style-type: none">• Help• Go to Map | |



MARPLOT

Sharing

Displaying an ALOHA footprint on a map



Sharing

Using MARPLOT

Sharing

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

Source Point



Set

- **Set Conc & Dose Point**

Conc & Dose Point



Set

- Delete ALOHA Objects

- Go to ALOHA

