
Chapter 4

Reference

The File and Edit menus

File Edit

The File Menu



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

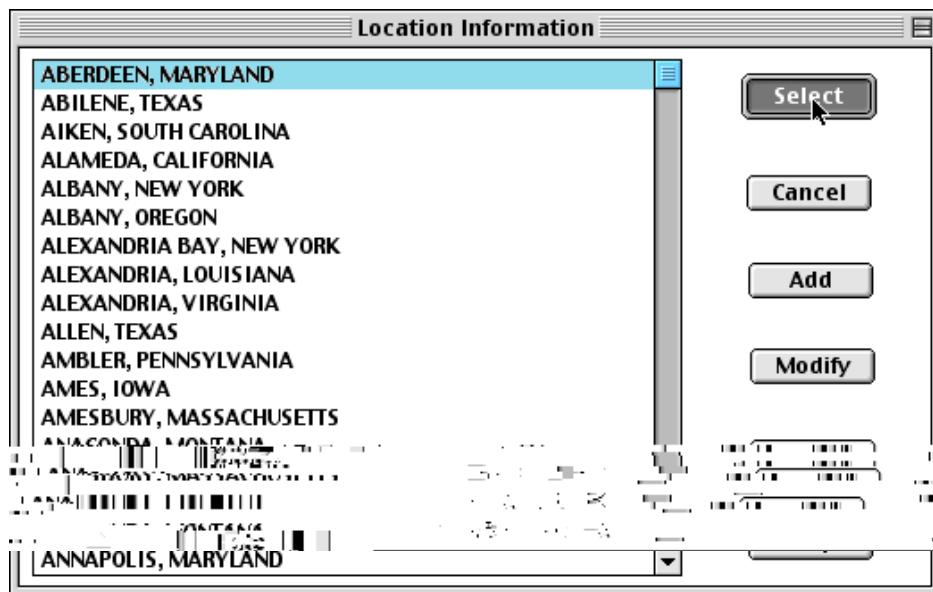
Location

-
-

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

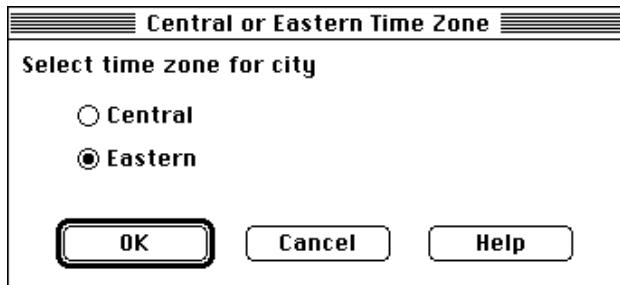
Is location in a U.S. state or territory?
 In U.S. Not in U.S. Select state or territory

Enter approximate elevation
Elevation is ft m

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

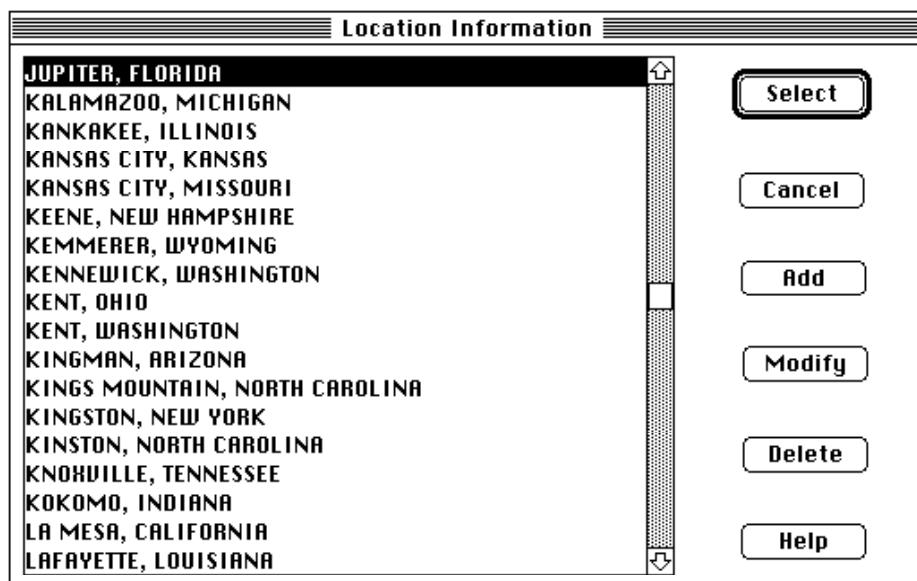
ALABAMA
ALASKA
ARIZONA
ARKANSAS
CALIFORNIA
COLORADO
CONNECTICUT
DELAWARE
DIST OF COLUMBIA
FLORIDA

OK **Cancel** **Help**



Select

Cancel



Adding a location outside the U.S.

U.S.

Add

**Not in
OK**

Location Input	
Enter full location name:	
Location is	<input type="text" value="Hamilton"/>
<hr/>	
Is location in a U.S. state or territory?	
<input type="radio"/> In U.S. <input checked="" type="radio"/> Not in U.S.	
<hr/>	
Enter approximate elevation	
Elevation is	<input type="text" value="0"/> <input checked="" type="radio"/> ft <input type="radio"/> m
<hr/>	
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
<input type="button" value="OK"/> <input type="button" value="Cancel"/> <input type="button" value="Help"/>	

Foreign Location Input

Foreign Location Input

Country name: **Bermuda**

Offset from local STANDARD time to GMT: **2** hours

Is current model time standard or daylight savings time?

Standard Time Daylight Savings Time

OK **Cancel** **Help**

OK

Select

Cancel

Location Information

HAMILTON, BERMUDA	▲
HAMLIN, TEXAS	
HAMMOND, INDIANA	

Select

Modify

Modifying a location

Delete

Cancel

OK

Deleting a location

OK

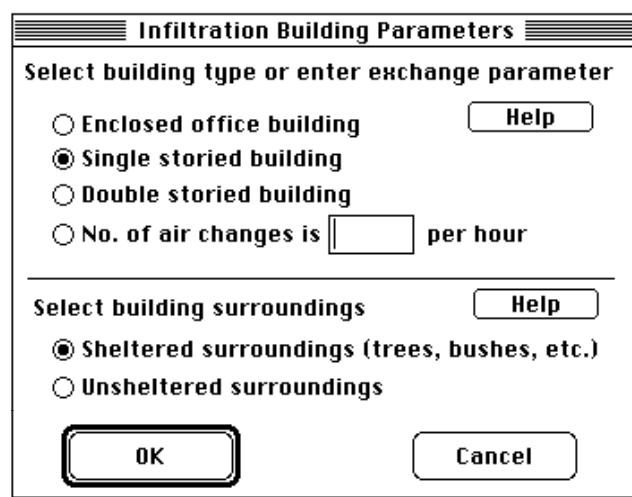
Cancel

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

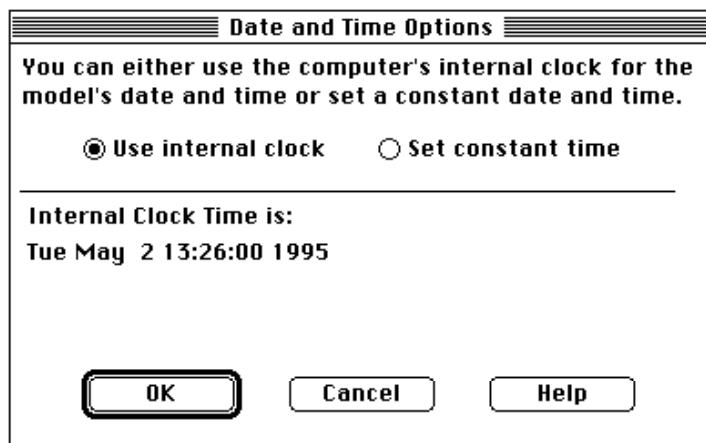
Unsheltered surroundings

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.**

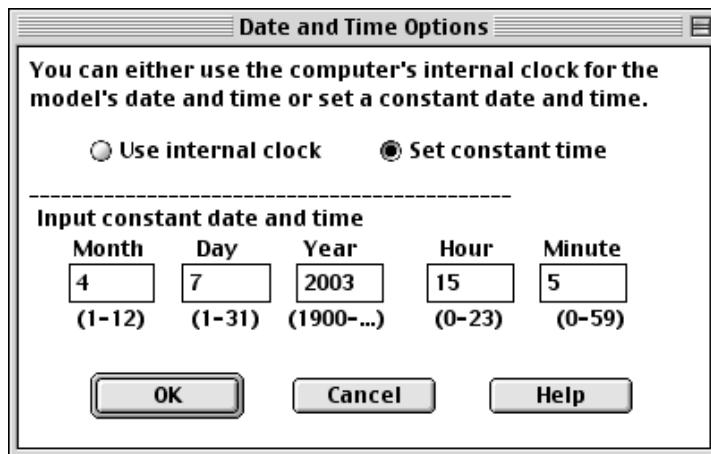


Date and Time

Date & Time

SiteData

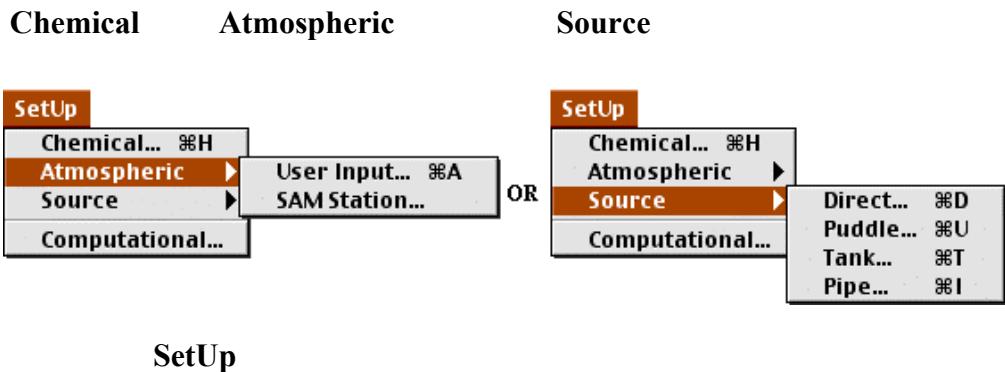
- Use internal clock
- Set constant time



The SetUp Menu

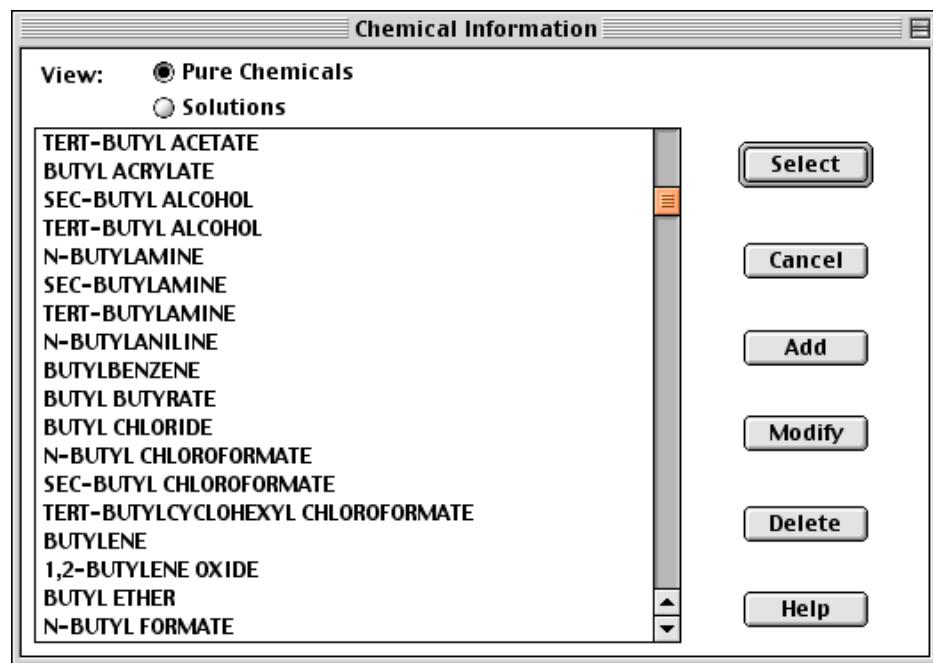
SiteData

SetUp



Chemical

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

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

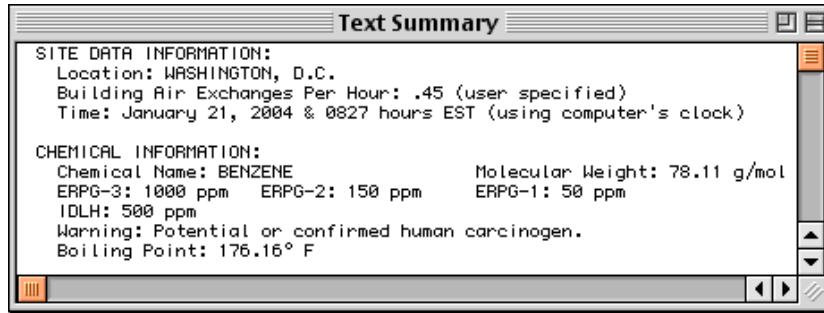
Normal Boiling Point: 169.0° F Ambient Boiling Point: 168.6° F

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

Input Available Information

Chemical Name:	Methyl Ethyl Death		
Molecular Weight:	42 g/mol		
ERPG-1			
ERPG-2			
ERPG-3			
Freezing Point (normal)			
Heat Cap.(gas,const.press.)			
Heat Cap.(liq.,const.press.)			
IDLH			
TEEL-1			
TEEL-2			
TEEL-3			
TLV-TWA			
Heat Cap. (gcp) Value:	1500 J/(kg °K)		
Heat Cap. (gcp) Temperature:	320 Kelvin		
Heat Cap. (gcp) Pressure:	101325 Pa		
Next Field	OK	Cancel	Help

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 (Z_0): in cm

Urban or Forest

Select Cloud Cover:

 complete cover  partly cloudy  clear OR enter value:

Atmospheric Options 2

Air Temperature is: Degrees F C

Stability Class is : A B C D E F OR

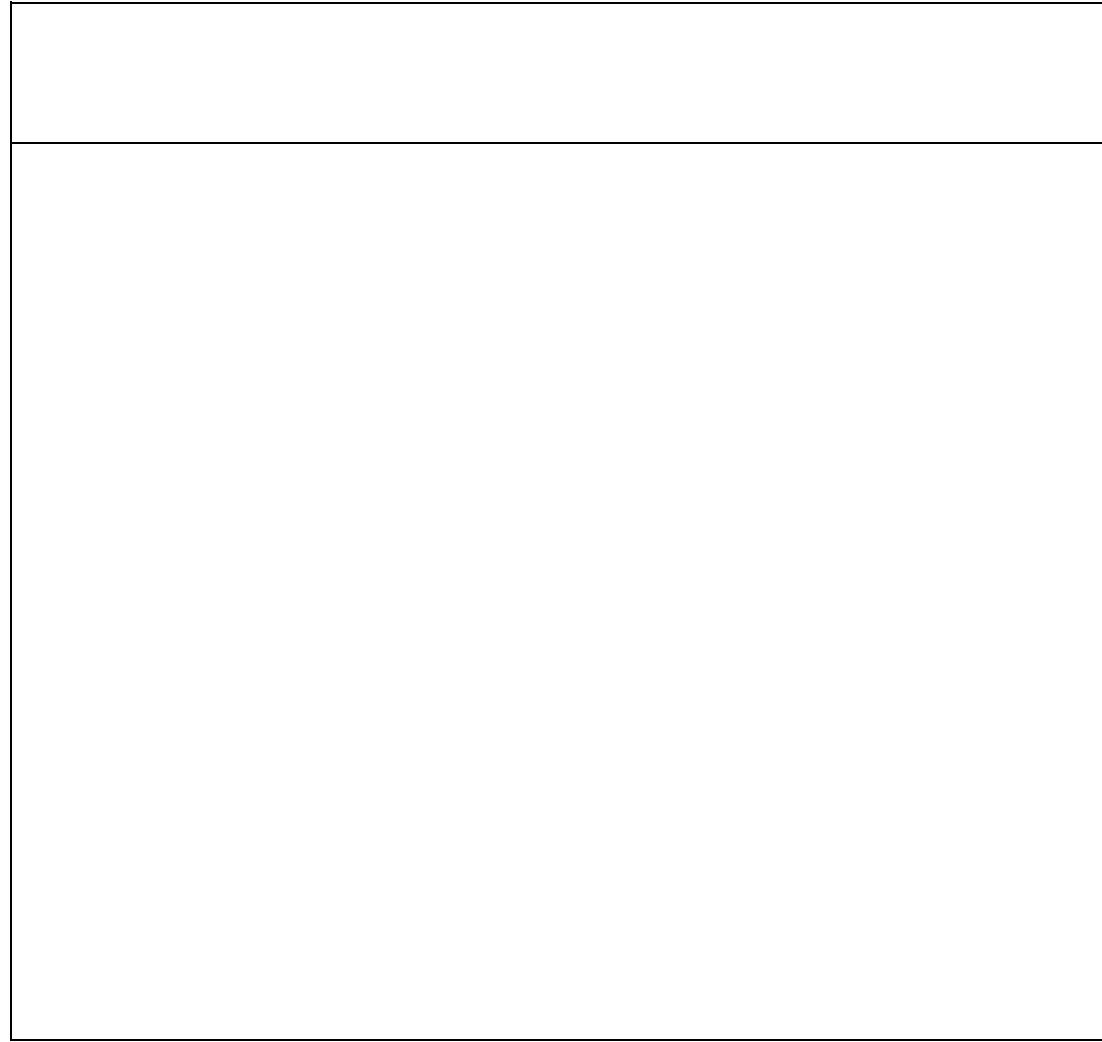
Inversion Height Options are:

No Inversion Inversion Present, Height is: Feet Meters

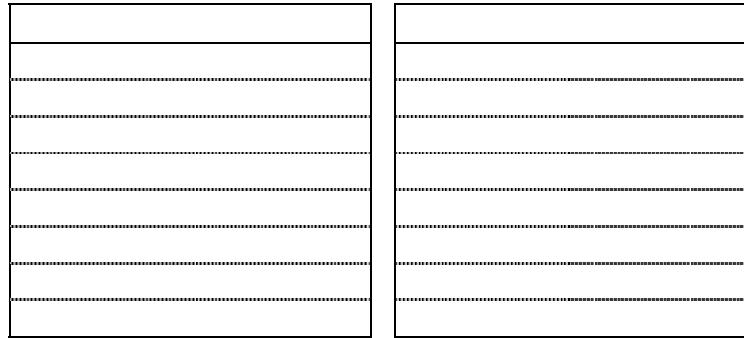
Select Humidity:

 wet  medium  dry OR enter value %

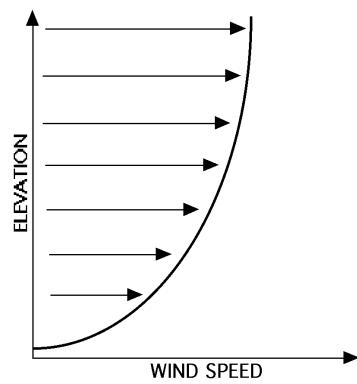
User Input



from



wind
profile



•

•

-
-

Ground roughness

roughness elements

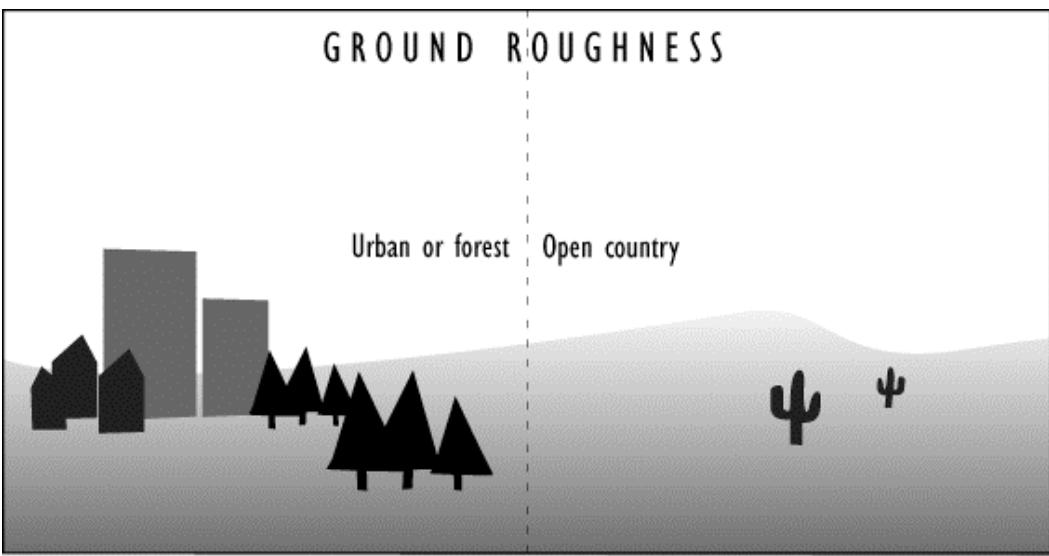
Open Country

**Urban or Forest
roughness length,**

- **Open Country**

Urban or Forest

- **Urban or Forest**



Urban or Forest

obstacle



Note

Cloud cover

-
-

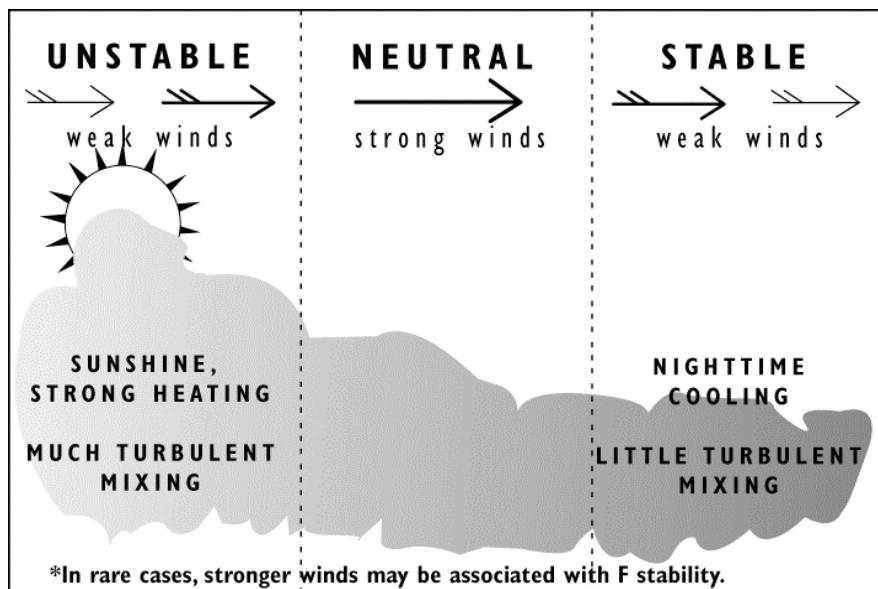
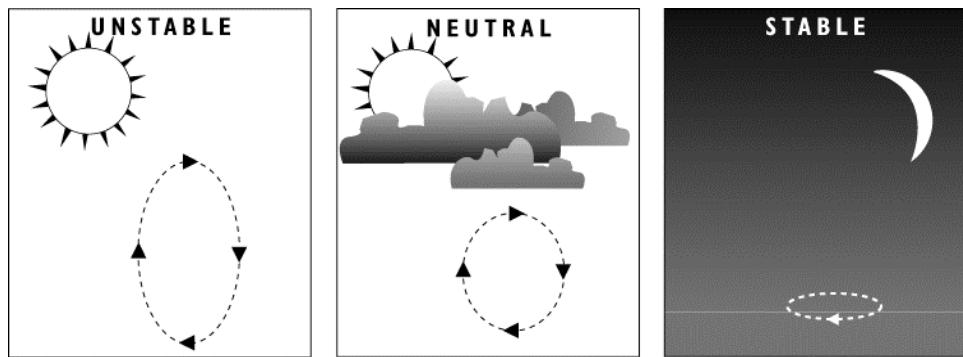
Air temperature

Stability class

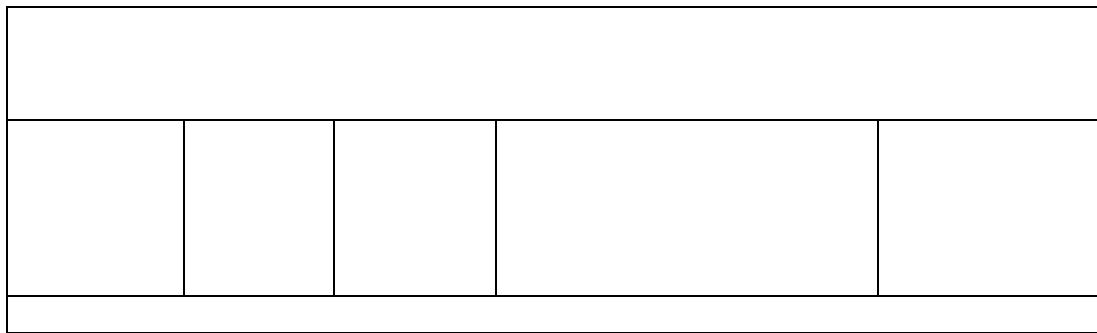
atmospheric stability classes

unstable

stable



A



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 feet
 Inversion present, Height is: meters

Ground Roughness is:

Open Country OR Input roughness (Z_0): in
 Urban or Forest cm

Station Height above ground is:

  OR enter value: feet
 meters

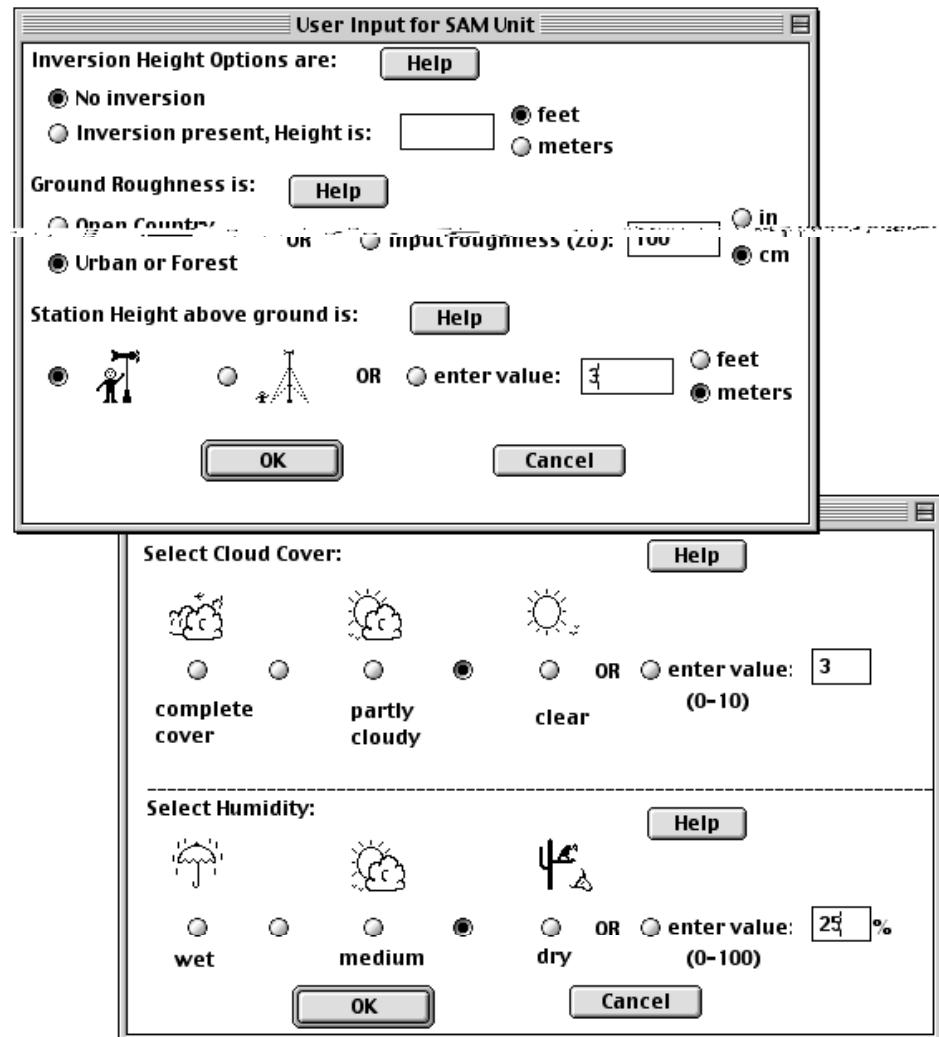
Setting up ALOHA when you're using a SAM

SetUp

Atmospheric

SAM Station

-
-
-
-
-



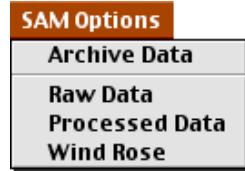
Source

last

SAM Options

OK

Sharing



SAM Options

Archive Data

Archive Data

SAM Options

Save

End Archive Data

SAM Options

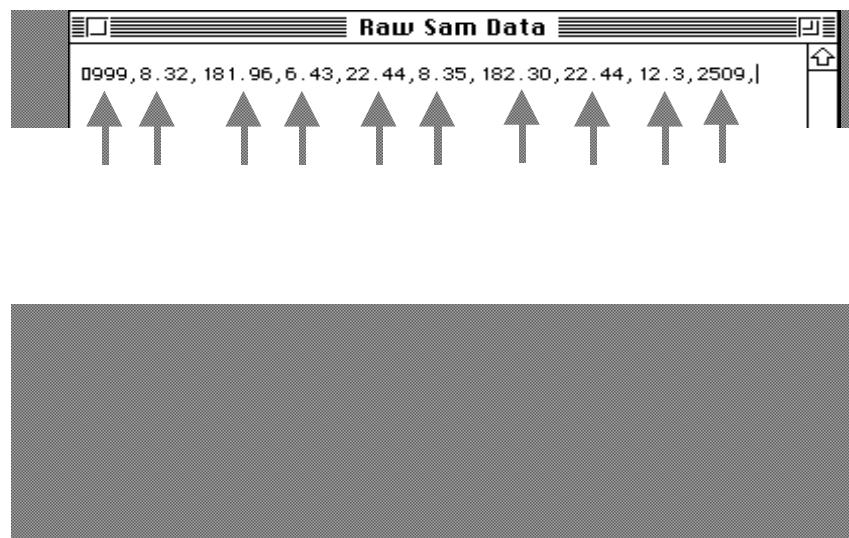
Raw Data Processed Data

SAM Options

Raw Data

Raw Data

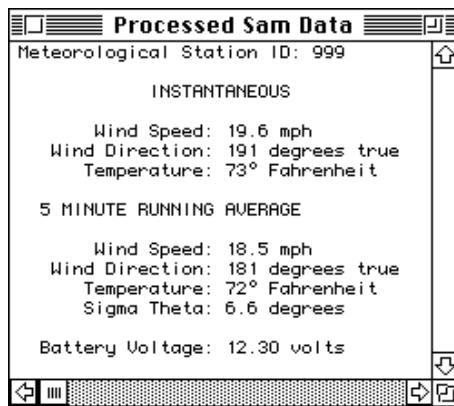
SAM Options



Processed Data

Processed Data

SAM Options



- Meteorological Station ID

- Wind Direction

from

- Sigma Theta

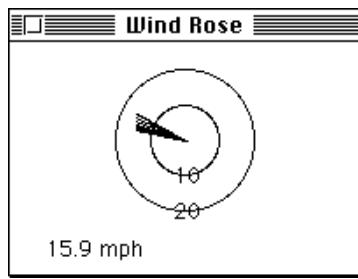
- Battery Voltage

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:

grams kilograms pounds tons(2,000 lbs)
 cubic meters liters cubic feet gallons

Select an instantaneous or continuous source:

Continuous source Instantaneous source

Enter the amount of pollutant ENTERING THE ATMOSPHERE:

50 for 60 minutes
 pounds/sec pounds/min pounds/hr
(1-60)

Enter source height
(0 if ground source): 25 feet meters

Describing a direct release

continuous

instantaneous

Note

Tank Pipe

Source height

source height

only

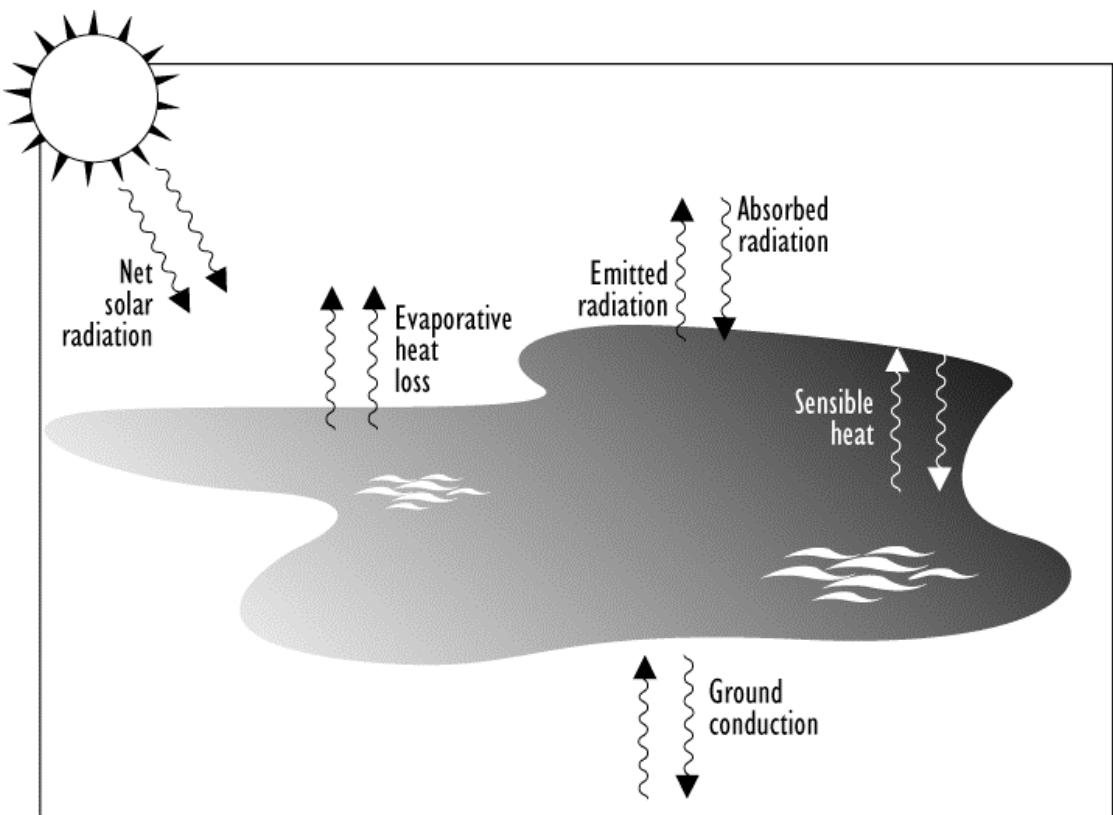
Puddle

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

Horizontal cylinder Vertical cylinder Sphere

Enter two of three values:

diameter: feet meters

length:

volume: gallons cu feet

OK **Cancel** **Help**

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

Tank

contains liquid

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

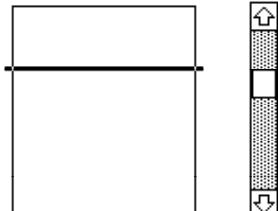
Liquid Mass or Volume

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

OK **Cancel** **Help**

Gas in a tank

Tank

contains gas only

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** **Help**

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

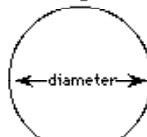
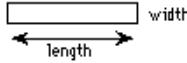
OK **Cancel** **Help**

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

Opening width: feet

centimeters

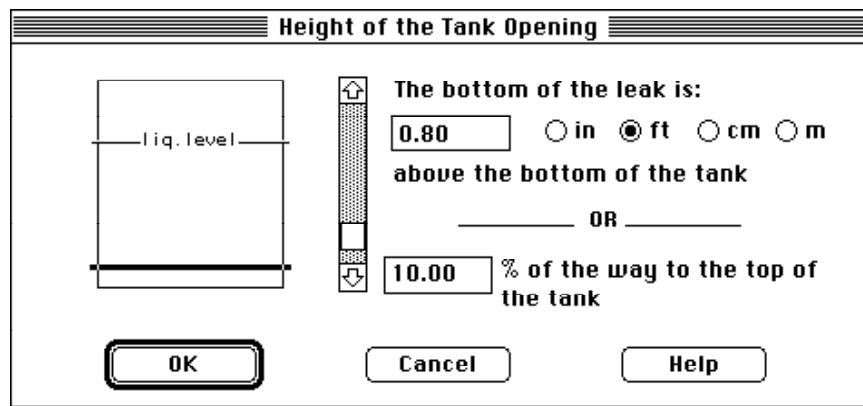
meters

Is leak through a hole or short pipe/value?

Hole Short pipe/value

OK **Cancel** **Help**

Leak height on the tank wall

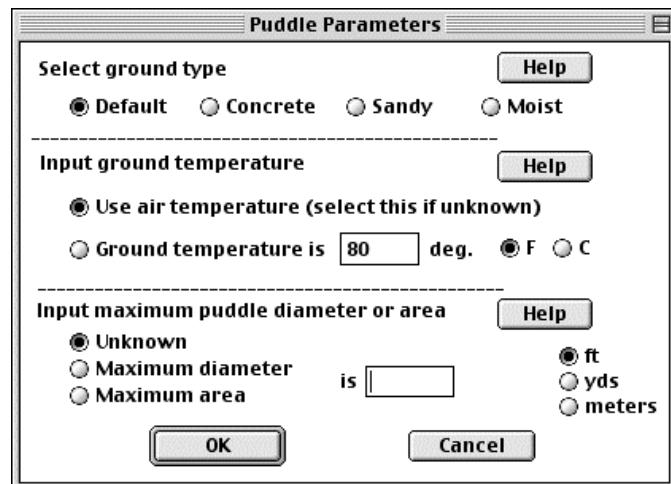


Puddle formation

Puddle

Unknown

OK



Pipe

Pipe

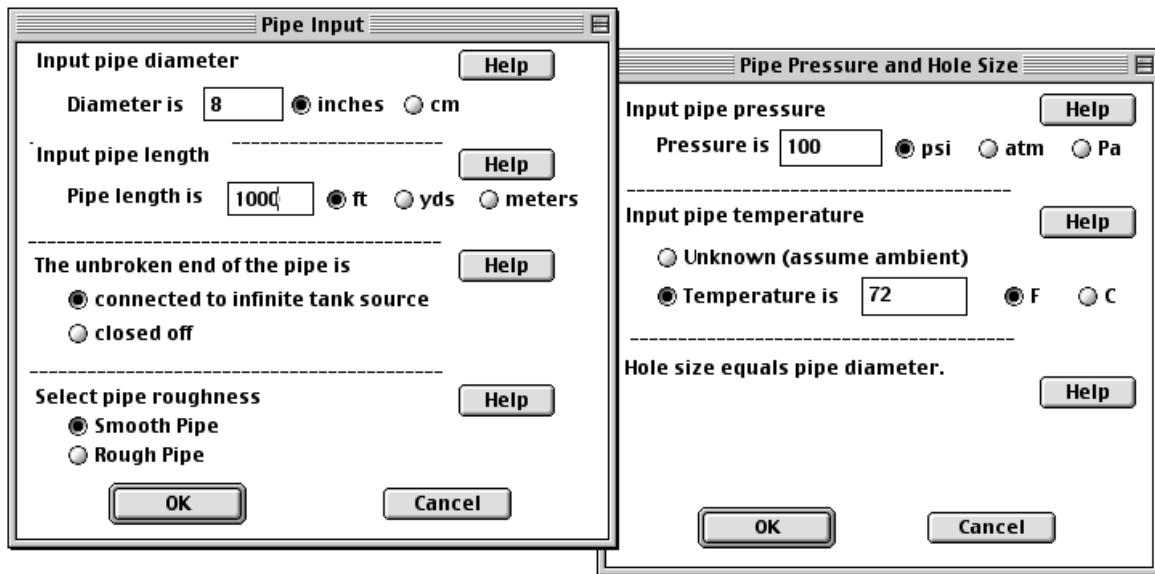
Source

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:

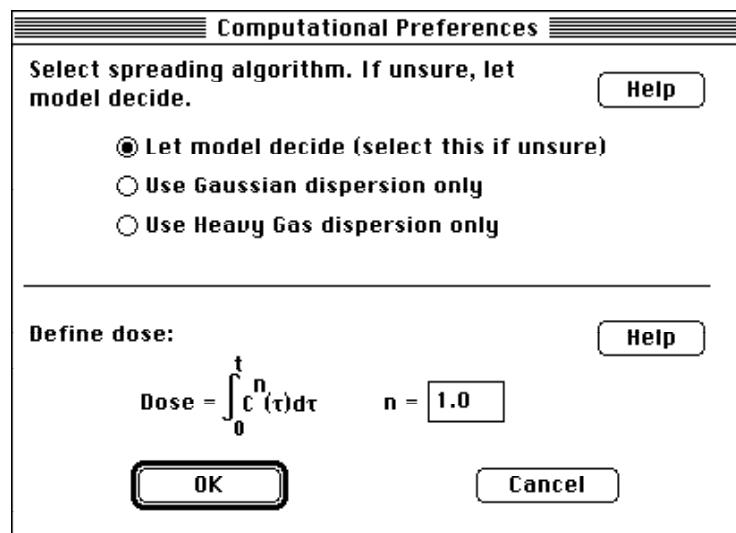
ALOHA limited the duration to 1 hour

- Total amount released
into the atmosphere

Computational

Computational

SetUp



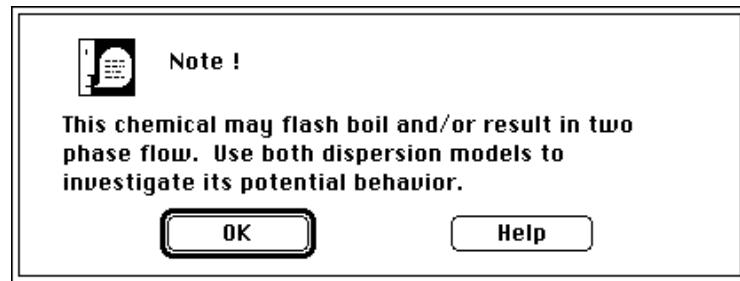
Dispersion options

- 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*

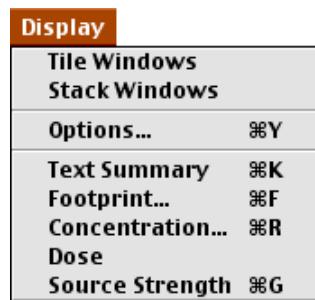
n

n *n*
 n

The Display Menu

Display

- Tile Stack



Display

Tile and Stack Windows

Tile Stack Windows

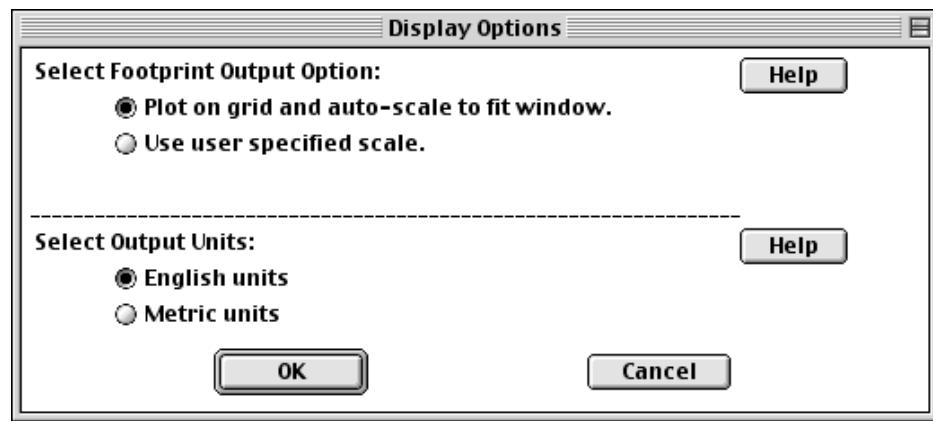
- Tile Windows

- Stack Windows

Options

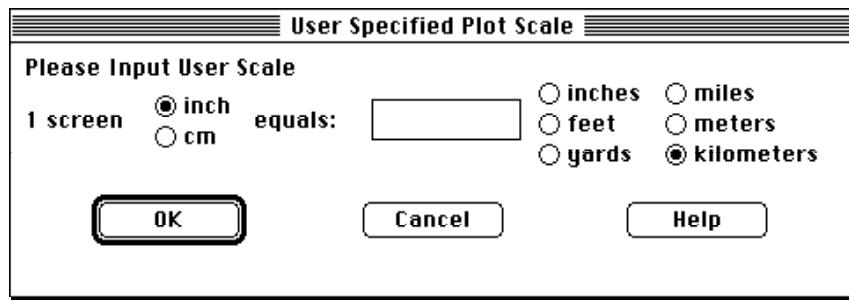
Options Display

-
-



Footprint options

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



Select Output Units

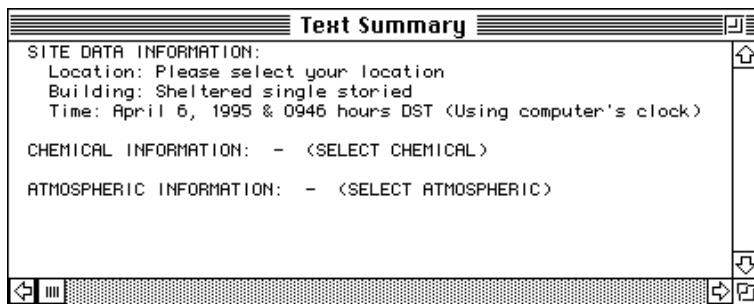
-
-

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

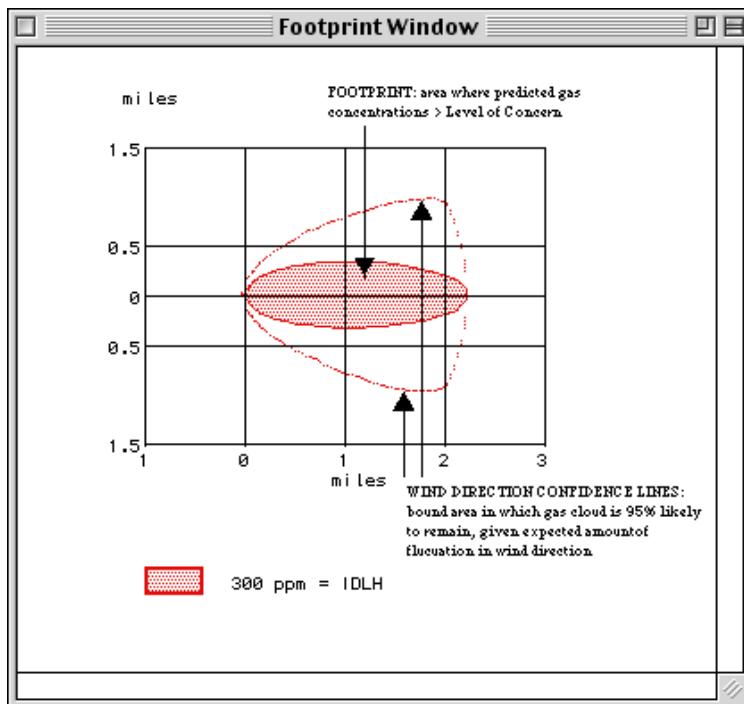
.

-

User Specified Conc.

Enter value

wind direction confidence lines



Footprint Display

Interpreting a footprint

-
-
-

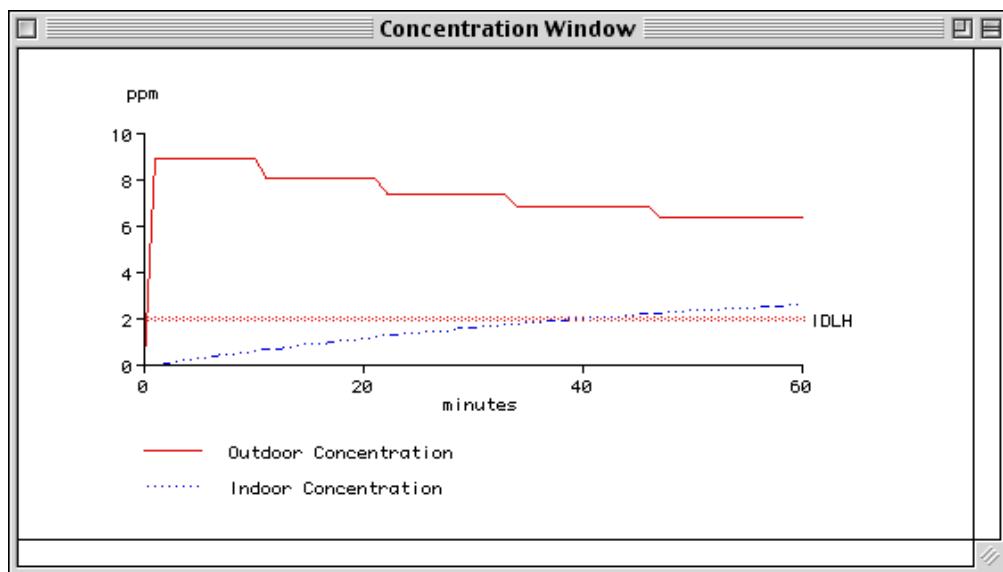
Concentration

Concentration vs. Time

-
-
-

Building Type

SiteData



Concentration vs. Time

Note

Designating a location

-
-



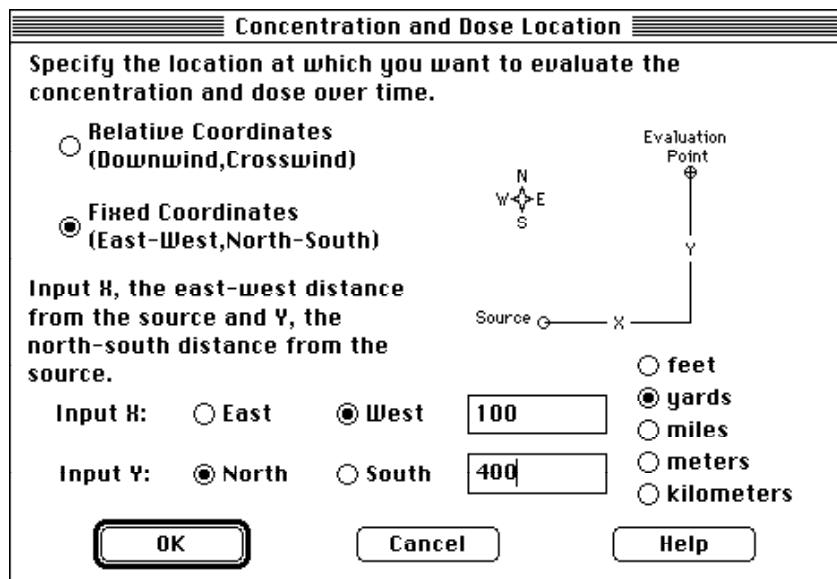
- 1. In the Footprint window, double-click on the location of concern**

2. Choose Concentration from the Display menu

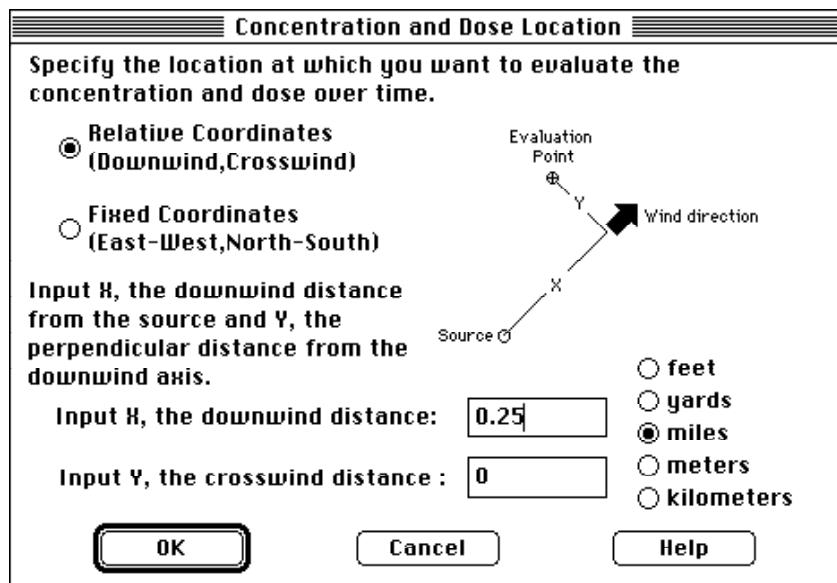
OK

Choosing coordinates

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



Using relative (downwind and crosswind) coordinates



Dose

ALOHA's definition of dose

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

$$C^n \quad t^n$$

n

Adjusting the dose exponent

n. Computational SetUp
Computational

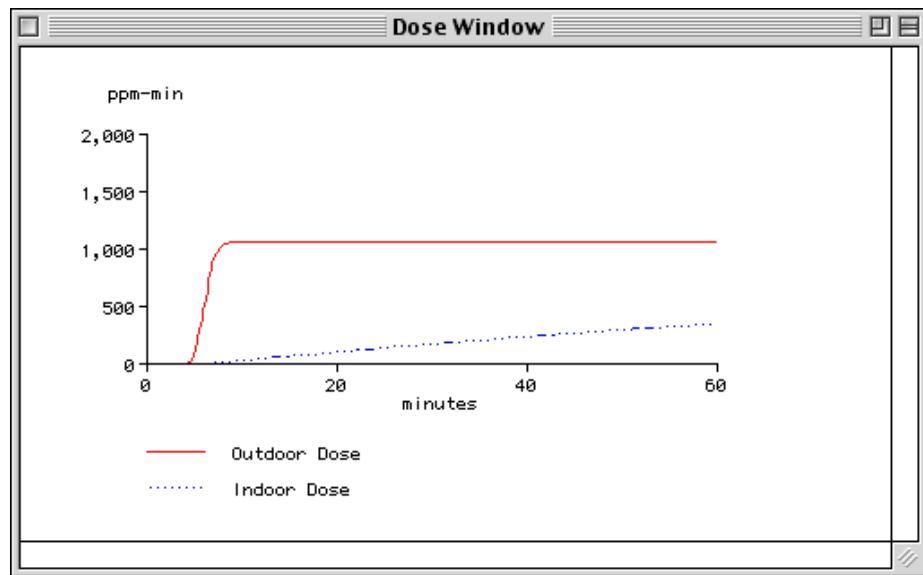
Obtaining a dose graph

Concentration Display

Dose Display

Concentration

Building Type SiteData



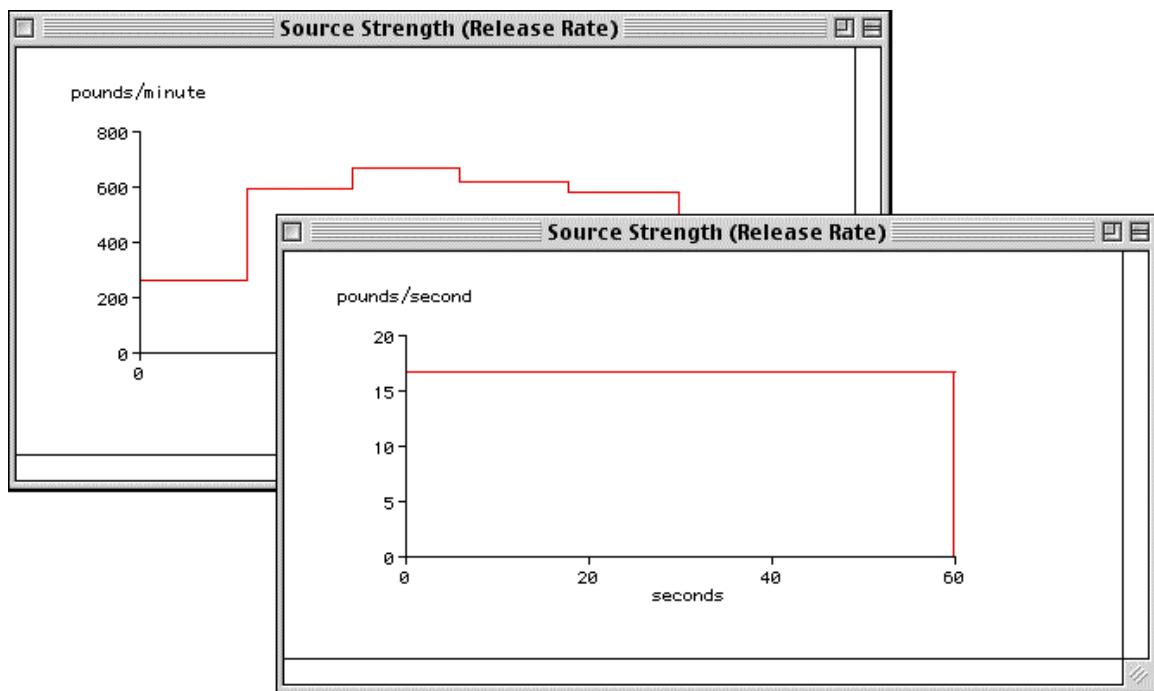
Source Strength

Source Strength Display

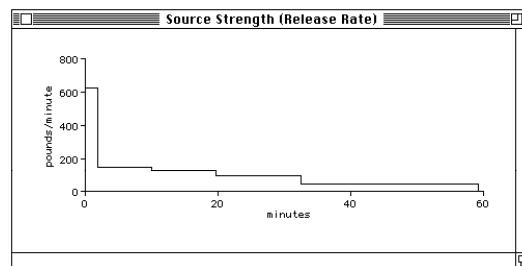
Constant source strength

Direct

Direct



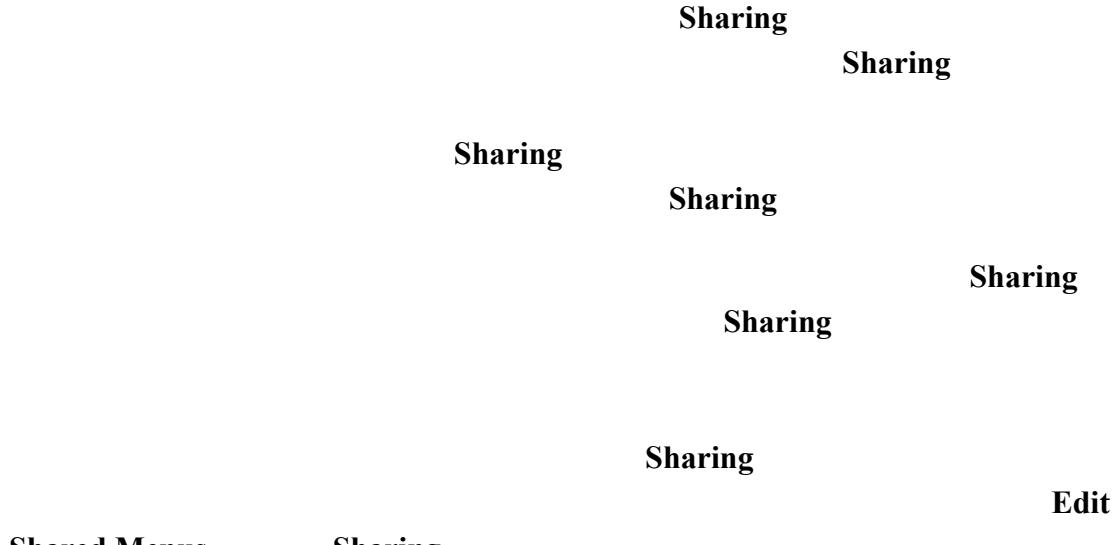
Variable source strength



Source strength averaging

maximum averaged release rate

The Sharing Menu

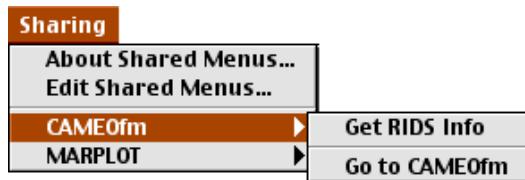


Items in the Sharing Menu

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

The CAMEO menu

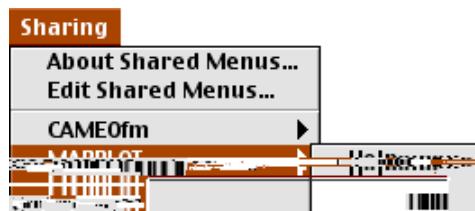
- | | | |
|---------|-------|---------|
| Sharing | CAMEO | Sharing |
|---------|-------|---------|
- Help
 - Get RIDS Info
 - Go to CAMEO



CAMEO	Sharing
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The MARPLOT menu

- | | |
|---------|---------|
| MARPLOT | Sharing |
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- Help
 - Go to Map



MARPLOT	Sharing
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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

