

Text Summary

ALOHA® 5.4.7



SITE DATA:

Location: PHOENIX, ARIZONA
Building Air Exchanges Per Hour: 1.00 (unsheltered single storied)
Time: September 3, 2019 1207 hours MST (user specified)

CHEMICAL DATA:

Chemical Name: CHLORINE
CAS Number: 7782-50-5 Molecular Weight: 70.91 g/mol
AEGL-1 (60 min): 0.5 ppm AEGL-2 (60 min): 2 ppm AEGL-3 (60 min): 20

ppm

IDLH: 10 ppm
Ambient Boiling Point: -30.8° F
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)

Wind: 10 miles/hour from SW at 3 meters
Ground Roughness: open country Cloud Cover: 0 tenths
Air Temperature: 90° F Stability Class: C
No Inversion Height Relative Humidity: 5%

SOURCE STRENGTH:

Leak from hole in horizontal cylindrical tank
Non-flammable chemical is escaping from tank
Tank Diameter: 11.3 feet Tank Length: 40 feet
Tank Volume: 30000 gallons
Tank contains liquid Internal Temperature: -35° C
Chemical Mass in Tank: 375000 pounds
Tank is 96% full
Opening Length: 12 inches Opening Width: .5 inches
Opening is 2 feet from tank bottom
Ground Type: Default soil
Ground Temperature: equal to ambient
Max Puddle Diameter: Unknown
Release Duration: ALOHA limited the duration to 1 hour
Max Average Sustained Release Rate: 2,760 pounds/min
(averaged over a minute or more)
Total Amount Released: 153,525 pounds
Note: The chemical escaped as a liquid and formed an evaporating puddle.
The puddle spread to a diameter of 34 yards.

THREAT ZONE:

Model Run: Heavy Gas
Red : 2.2 miles --- (20 ppm = AEGL-3 [60 min])
Orange: greater than 6 miles --- (2 ppm = AEGL-2 [60 min])
Yellow: greater than 6 miles --- (0.5 ppm = AEGL-1 [60 min])

THREAT AT POINT:

Concentration Estimates at the point:
Downwind: 0.65 miles Off Centerline: 0.024 miles
Max Concentration:
 Outdoor: 185 ppm
 Indoor: 104 ppm

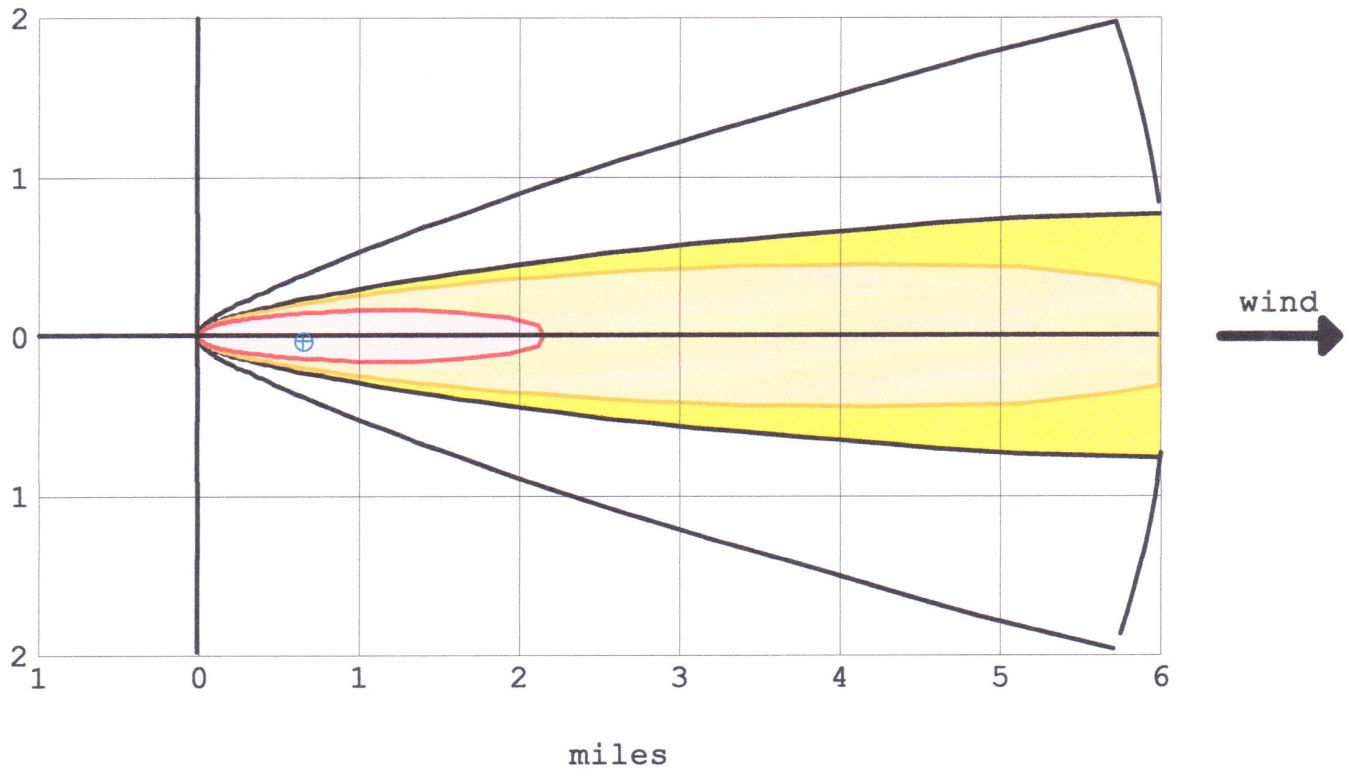
Toxic Threat Zone





ALOHA® 5.4.7



Time: September 3, 2019 1207 hours MST (user specified)
Chemical Name: CHLORINE
Wind: 10 miles/hour from SW at 3 meters
THREAT ZONE:
Model Run: Heavy Gas
Red : 2.2 miles --- (20 ppm = AEGL-3 [60 min])
Orange: greater than 6 miles --- (2 ppm = AEGL-2 [60 min])
Yellow: greater than 6 miles --- (0.5 ppm = AEGL-1 [60 min])

miles



-  greater than 20 ppm (AEGL-3 [60 min])
-  greater than 2 ppm (AEGL-2 [60 min])
-  greater than 0.5 ppm (AEGL-1 [60 min])
-  wind direction confidence lines

Note: Threat zone picture is truncated at the 6 mile limit.

Concentration at Point

ALOHA® 5.4.7



Time: September 3, 2019 1207 hours MST (user specified)

Chemical Name: CHLORINE

Building Air Exchanges Per Hour: 1.00 (unsheltered single storied)

THREAT AT POINT:

Model Run: Heavy Gas

Concentration Estimates at the point:

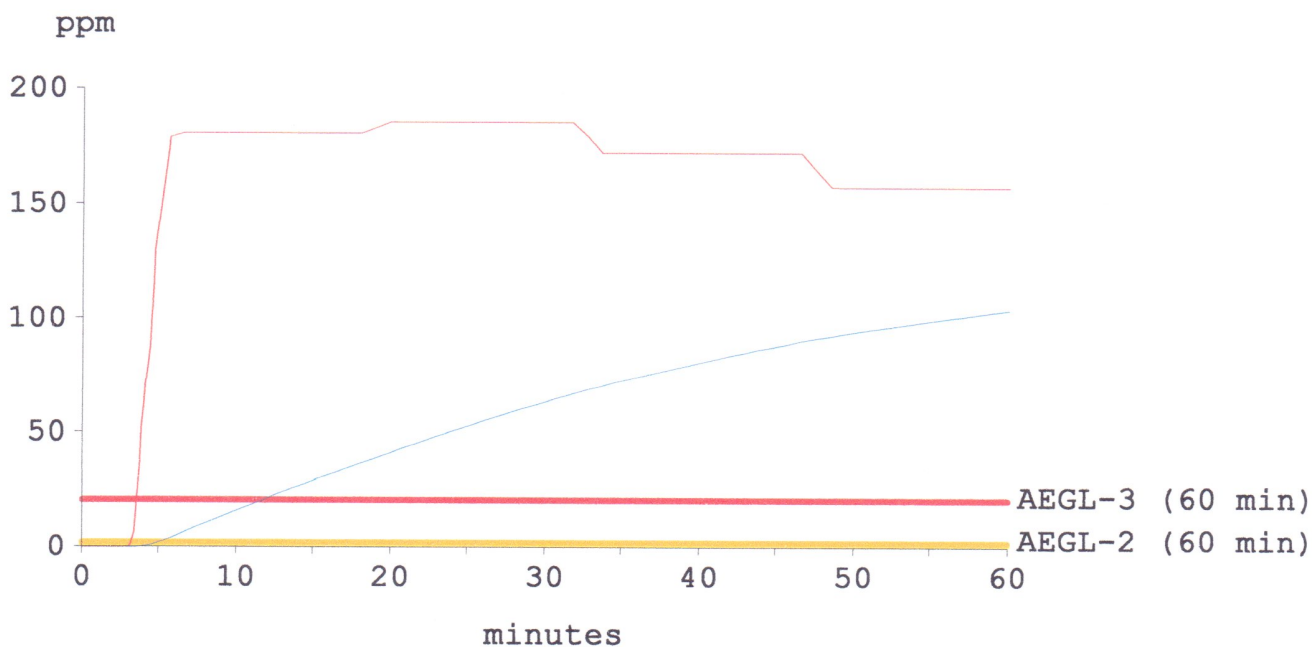
Downwind: 0.65 miles

Off Centerline: 0.024 miles

Max Concentration:

Outdoor: 185 ppm

Indoor: 104 ppm



— Outdoor Concentration

— Indoor Concentration

At Point: Downwind: 0.65 miles Off Centerline: 0.024 miles