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1. ESTUDI COMPARATIU – CAS 1

1.1. Sumari de text

SITE DATA:

Location: CATALONIA, SPAIN

Building Air Exchanges Per Hour: 0.17 (user specified)

Time: December 27, 2015 1454 hours ST (using computer's clock)

CHEMICAL DATA:

Chemical Name: PROPANE Molecular Weight: 44.10 g/mol

AEGL-1 (60 min): 5500 ppm AEGL-2 (60 min): 17000 ppm AEGL-3 (60 min): 33000 ppm

IDLH: 2100 ppm LEL: 21000 ppm UEL: 95000 ppm

Ambient Boiling Point: -42.0° C

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: 1.5 meters/second from S at 3 meters

Ground Roughness: urban or forest Cloud Cover: 10 tenths

Air Temperature: 25° C

Stability Class: F (user override)

No Inversion Height Relative Humidity: 50%

SOURCE STRENGTH:

Direct Source: 1500 kilograms/min Source Height: 0

Release Duration: 60 minutes

Release Rate: 1,500 kilograms/min

Total Amount Released: 90,000 kilograms

Note: This chemical may flash boil and/or result in two phase flow.

THREAT ZONE:

Threat Modeled: Flammable Area of Vapor Cloud

Model Run: Heavy Gas

Red : 206 meters --- (12600 ppm = 60% LEL = Flame Pockets)

Yellow: 560 meters --- (2100 ppm = 10% LEL)

1.2. Il·lustracions

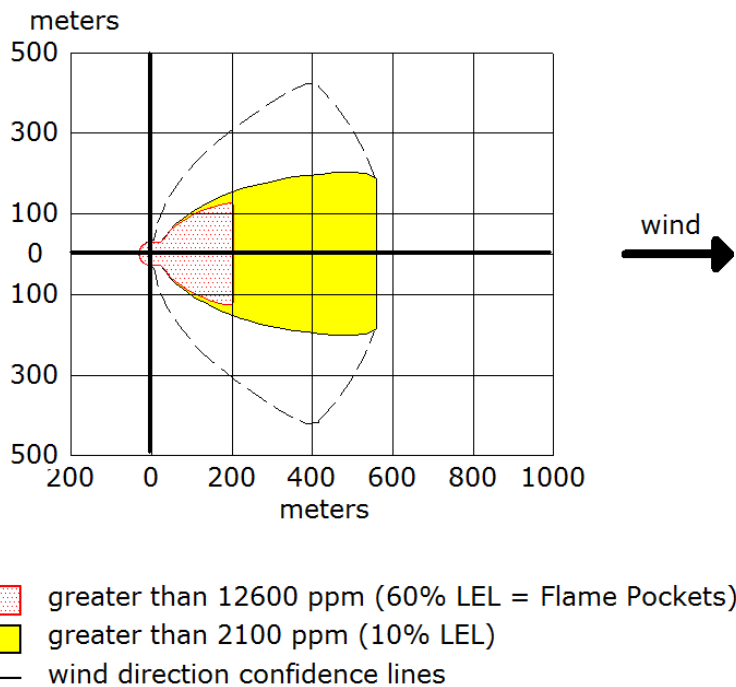


Figura 1 Flamarada per al Cas-1

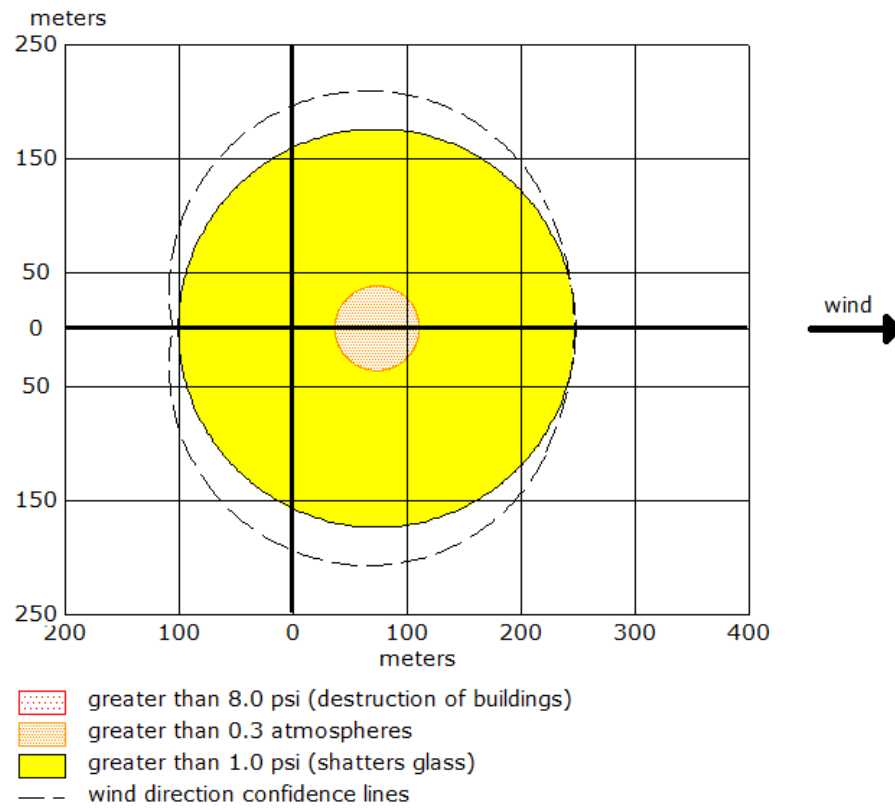


Figura 2. Explosió (sobrepessió) per al Cas-1

2. ESTUDI COMPARATIU – CAS 2

2.1. Sumari de text

SITE DATA:

Location: CATALONIA, SPAIN

Building Air Exchanges Per Hour: 0.17 (user specified)

Time: December 27, 2015 1502 hours ST (using computer's clock)

CHEMICAL DATA:

Chemical Name: AMMONIA Molecular Weight: 17.03 g/mol

AEGL-1 (60 min): 30 ppm AEGL-2 (60 min): 160 ppm AEGL-3 (60 min): 1100 ppm

IDLH: 300 ppm LEL: 150000 ppm UEL: 280000 ppm

Ambient Boiling Point: -33.4° C

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: 1.5 meters/second from S at 3 meters

Ground Roughness: urban or forest Cloud Cover: 10 tenths

Air Temperature: 15° C

Stability Class: F (user override)

No Inversion Height Relative Humidity: 50%

SOURCE STRENGTH:

Direct Source: 1000 pounds/min Source Height: 0

Release Duration: 20 minutes



Release Rate: 454 kilograms/min

Total Amount Released: 9,072 kilograms

Note: This chemical may flash boil and/or result in two phase flow.

Use both dispersion modules to investigate its potential behavior.

THREAT ZONE:

Model Run: Gaussian

Red : 1.0 kilometers --- (1100 ppm = AEGL-3 [60 min])

Orange: 3.5 kilometers --- (160 ppm = AEGL-2 [60 min])

Yellow: 8.3 kilometers --- (30 ppm = AEGL-1 [60 min])

2.2. Il·lustracions

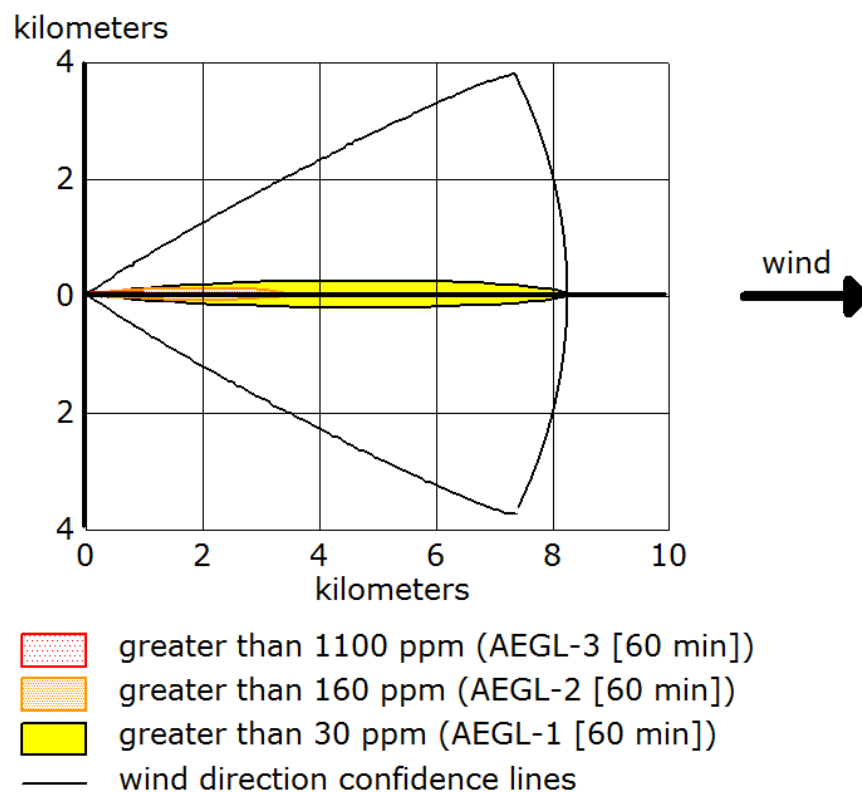


Figura 3. Núvol tòxic per al Cas-2