Modélisation de la dispersion atmosphérique des toxiques en cas d'incendie de trois cellules de stockage de pneumatiques

Incendie de trois cellules de stockage

Dispersion des suies

Condition A, vent 2 m/s

SITE DATA INFORMATION:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.32 (sheltered single storied)
Time: May 17, 2018 1445 hours ST (using computer's clock)

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 2 meters/sec from SW at 3 meters
No Inversion Height
Stability Class: A (user override) **Air Temperature: 20° C**
Relative Humidity: 50% Ground Roughness: open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Direct Source: 164 kilograms/sec **Source Height: 437 meters**
Release Duration: 60 minutes
Release Rate: 9,840 kilograms/min
Total Amount Released: 590,400 kilograms

FOOTPRINT INFORMATION:
Dispersion Module: Gaussian
Yellow LOC (79 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.

Incendie de trois cellules de stockage

Dispersion des suies

Condition D, vent 5 m/s

SITE DATA INFORMATION:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.32 (sheltered single storied)
Time: May 17, 2018 1446 hours ST (using computer's clock)

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 5 meters/sec from SW at 3 meters
No Inversion Height
Stability Class: D **Air Temperature: 20° C**
Relative Humidity: 50% Ground Roughness: open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Direct Source: 164 kilograms/sec **Source Height: 175 meters**
Release Duration: 60 minutes
Release Rate: 9,840 kilograms/min
Total Amount Released: 590,400 kilograms

FOOTPRINT INFORMATION:
Dispersion Module: Gaussian
Yellow LOC (79 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.

Incendie de trois cellules de stockage

Dispersion des suies

Condition F, vent 3 m/s

SITE DATA INFORMATION:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.32 (sheltered single storied)
Time: May 17, 2018 1448 hours ST (using computer's clock)

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 3 meters/sec from SW at 3 meters
No Inversion Height
Stability Class: F (user override) **Air Temperature: 15° C**
Relative Humidity: 50% Ground Roughness: open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Direct Source: 164 kilograms/sec **Source Height: 291 meters**
Release Duration: 60 minutes
Release Rate: 9,840 kilograms/min
Total Amount Released: 590,400 kilograms

FOOTPRINT INFORMATION:
Dispersion Module: Gaussian
Yellow LOC (79 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.

Incendie de trois cellules de stockage
Dispersion du Monoxyde de carbone
Condition A, vent 2 m/s

SITE DATA INFORMATION:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.32 (sheltered single storied)
Time: May 17, 2018 1452 hours ST (using computer's clock)

CHEMICAL INFORMATION:
Chemical Name: CARBON MONOXIDE Molecular Weight: 28.01 g/mol
ERPG-3: 500 ppm ERPG-2: 350 ppm ERPG-1: 200 ppm
IDLH: 1200 ppm
Normal Boiling Point: -191.5° C Ambient Boiling Point: -191.7° C
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 2 meters/sec from SW at 3 meters
No Inversion Height
Stability Class: A (user override) Air Temperature: 20° C
Relative Humidity: 50% Ground Roughness: open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Direct Source: 79.56 kilograms/sec Source Height: 437 meters
Release Duration: 60 minutes
Release Rate: 4,770 kilograms/min
Total Amount Released: 286,416 kilograms
Note: This chemical may flash boil and/or result in two phase flow.
Use both dispersion modules to investigate its potential behavior.

FOOTPRINT INFORMATION:
Dispersion Module: Gaussian
Red LOC (3680 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.
Orange LOC (920 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.

Incendie de trois cellules de stockage
Dispersion du Monoxyde de carbone
Condition D, vent 5 m/s

SITE DATA INFORMATION:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.32 (sheltered single storied)
Time: May 17, 2018 1453 hours ST (using computer's clock)

CHEMICAL INFORMATION:
Chemical Name: CARBON MONOXIDE Molecular Weight: 28.01 g/mol
ERPG-3: 500 ppm ERPG-2: 350 ppm ERPG-1: 200 ppm
IDLH: 1200 ppm
Normal Boiling Point: -191.5° C Ambient Boiling Point: -191.7° C
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 5 meters/sec from SW at 3 meters
No Inversion Height
Stability Class: D **Air Temperature: 20° C**
Relative Humidity: 50% Ground Roughness: open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Direct Source: 79.56 kilograms/sec **Source Height: 175 meters**
Release Duration: 60 minutes
Release Rate: 4,770 kilograms/min
Total Amount Released: 286,416 kilograms
Note: This chemical may flash boil and/or result in two phase flow.
Use both dispersion modules to investigate its potential behavior.

FOOTPRINT INFORMATION:
Dispersion Module: Gaussian
Red LOC (3680 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.
Orange LOC (920 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.

Incendie de trois cellules de stockage
Dispersion du Monoxyde de carbone
Condition F, vent 3 m/s

SITE DATA INFORMATION:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.32 (sheltered single storied)
Time: May 17, 2018 1455 hours ST (using computer's clock)

CHEMICAL INFORMATION:
Chemical Name: CARBON MONOXIDE Molecular Weight: 28.01 g/mol
ERPG-3: 500 ppm ERPG-2: 350 ppm ERPG-1: 200 ppm
IDLH: 1200 ppm
Normal Boiling Point: -191.5° C Ambient Boiling Point: -191.7° C
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 3 meters/sec from SW at 3 meters
No Inversion Height
Stability Class: F (user override) Air Temperature: 15° C
Relative Humidity: 50% Ground Roughness: open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Direct Source: 79.56 kilograms/sec Source Height: 291 meters
Release Duration: 60 minutes
Release Rate: 4,770 kilograms/min
Total Amount Released: 286,416 kilograms
Note: This chemical may flash boil and/or result in two phase flow.
Use both dispersion modules to investigate its potential behavior.

FOOTPRINT INFORMATION:
Dispersion Module: Gaussian
Red LOC (3680 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.
Orange LOC (920 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.

Incendie de trois cellules de stockage
Dispersion du Dioxyde de carbone
Condition A, vent 2 m/s

SITE DATA INFORMATION:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.32 (sheltered single storied)
Time: May 17, 2018 1502 hours ST (using computer's clock)

CHEMICAL INFORMATION:
Chemical Name: CARBON DIOXIDE Molecular Weight: 44.01 g/mol
TEEL-3: 40000 ppm TEEL-2: 30000 ppm TEEL-1: 30000 ppm
IDLH: 40000 ppm
Normal Boiling Point: -unavail-
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%
Note: Not enough chemical data to use Heavy Gas option

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 2 meters/sec from SW at 3 meters
No Inversion Height
Stability Class: A (user override) **Air Temperature: 20° C**
Relative Humidity: 50% Ground Roughness: open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Direct Source: 2121.2 kilograms/sec **Source Height: 437 meters**
Release Duration: 60 minutes
Release Rate: 127,000 kilograms/min
Total Amount Released: 7,636,320 kilograms

FOOTPRINT INFORMATION: (GAUSS SELECTED)
Dispersion Module: Gaussian
Red LOC (89980 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.

Incendie de trois cellules de stockage
Dispersion du Dioxyde de carbone
Condition D, vent 5 m/s

SITE DATA INFORMATION:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.32 (sheltered single storied)
Time: May 17, 2018 1504 hours ST (using computer's clock)

CHEMICAL INFORMATION:
Chemical Name: CARBON DIOXIDE Molecular Weight: 44.01 g/mol
TEEL-3: 40000 ppm TEEL-2: 30000 ppm TEEL-1: 30000 ppm
IDLH: 40000 ppm
Normal Boiling Point: -unavail-
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%
Note: Not enough chemical data to use Heavy Gas option

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 5 meters/sec from SW at 3 meters
No Inversion Height
Stability Class: D **Air Temperature: 20° C**
Relative Humidity: 50% Ground Roughness: open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Direct Source: 2121.2 kilograms/sec **Source Height: 175 meters**
Release Duration: 60 minutes
Release Rate: 127,000 kilograms/min
Total Amount Released: 7,636,320 kilograms

FOOTPRINT INFORMATION: (GAUSS SELECTED)
Dispersion Module: Gaussian
Red LOC (89980 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.

Incendie de trois cellules de stockage
Dispersion du Dioxyde de carbone
Condition F, vent 3 m/s

SITE DATA INFORMATION:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.32 (sheltered single storied)
Time: May 17, 2018 1505 hours ST (using computer's clock)

CHEMICAL INFORMATION:
Chemical Name: CARBON DIOXIDE Molecular Weight: 44.01 g/mol
TEEL-3: 40000 ppm TEEL-2: 30000 ppm TEEL-1: 30000 ppm
IDLH: 40000 ppm
Normal Boiling Point: -unavail-
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%
Note: Not enough chemical data to use Heavy Gas option

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 3 meters/sec from SW at 3 meters
No Inversion Height
Stability Class: F (user override) Air Temperature: 15° C
Relative Humidity: 50% Ground Roughness: open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Direct Source: 2121.2 kilograms/sec Source Height: 291 meters
Release Duration: 60 minutes
Release Rate: 127,000 kilograms/min
Total Amount Released: 7,636,320 kilograms

FOOTPRINT INFORMATION: (GAUSS SELECTED)
Dispersion Module: Gaussian
Red LOC (89980 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.

Incendie de trois cellules de stockage
Dispersion du SO_2
Condition A, vent 2 m/s

SITE DATA INFORMATION:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.32 (sheltered single storied)
Time: May 17, 2018 1506 hours ST (using computer's clock)

CHEMICAL INFORMATION:
Chemical Name: SULFUR DIOXIDE Molecular Weight: 64.06 g/mol
ERPG-3: 15 ppm ERPG-2: 3 ppm ERPG-1: 0.3 ppm
IDLH: 100 ppm
Carcinogenic risk - see CAMEO
Normal Boiling Point: -10.0° C Ambient Boiling Point: -10.2° C
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 2 meters/sec from SW at 3 meters
No Inversion Height
Stability Class: A (user override) Air Temperature: 20° C
Relative Humidity: 50% Ground Roughness: open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Direct Source: 10.77 kilograms/sec Source Height: 437 meters
Release Duration: 60 minutes
Release Rate: 646 kilograms/min
Total Amount Released: 38,772 kilograms
Note: This chemical may flash boil and/or result in two phase flow.

FOOTPRINT INFORMATION: (GAUSS SELECTED)
Dispersion Module: Gaussian
Red LOC (1885 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.
Orange LOC (211 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC

Incendie de trois cellules de stockage

Dispersion du SO_2

Condition D, vent 5 m/s

SITE DATA INFORMATION:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.32 (sheltered single storied)
Time: May 17, 2018 1507 hours ST (using computer's clock)

CHEMICAL INFORMATION:
Chemical Name: SULFUR DIOXIDE Molecular Weight: 64.06 g/mol
ERPG-3: 15 ppm ERPG-2: 3 ppm ERPG-1: 0.3 ppm
IDLH: 100 ppm
Carcinogenic risk - see CAMEO
Normal Boiling Point: -10.0° C Ambient Boiling Point: -10.2° C
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 5 meters/sec from SW at 3 meters
No Inversion Height
Stability Class: D **Air Temperature: 20° C**
Relative Humidity: 50% Ground Roughness: open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Direct Source: 10.77 kilograms/sec **Source Height: 175 meters**
Release Duration: 60 minutes
Release Rate: 646 kilograms/min
Total Amount Released: 38,772 kilograms
Note: This chemical may flash boil and/or result in two phase flow.

FOOTPRINT INFORMATION: (GAUSS SELECTED)
Dispersion Module: Gaussian
Red LOC (1885 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.
Orange LOC (211 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC

Incendie de trois cellules de stockage

Dispersion du SO_2

Condition F, vent 3 m/s

SITE DATA INFORMATION:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.32 (sheltered single storied)
Time: May 17, 2018 1508 hours ST (using computer's clock)

CHEMICAL INFORMATION:
Chemical Name: SULFUR DIOXIDE Molecular Weight: 64.06 g/mol
ERPG-3: 15 ppm ERPG-2: 3 ppm ERPG-1: 0.3 ppm
IDLH: 100 ppm
Carcinogenic risk - see CAMEO
Normal Boiling Point: -10.0° C Ambient Boiling Point: -10.2° C
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 3 meters/sec from SW at 3 meters
No Inversion Height
Stability Class: F (user override) Air Temperature: 20° C
Relative Humidity: 50% Ground Roughness: open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Direct Source: 10.77 kilograms/sec Source Height: 291 meters
Release Duration: 60 minutes
Release Rate: 646 kilograms/min
Total Amount Released: 38,772 kilograms
Note: This chemical may flash boil and/or result in two phase flow..

FOOTPRINT INFORMATION: (GAUSS SELECTED)
Dispersion Module: Gaussian
Red LOC (1885 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.
Orange LOC (211 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.

Incendie de trois cellules de stockage

Dispersion du NO_2

Condition A, vent 2 m/s

SITE DATA INFORMATION:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.32 (sheltered single storied)
Time: May 17, 2018 1512 hours ST (using computer's clock)

CHEMICAL INFORMATION:
Chemical Name: NITROGEN DIOXIDE Molecular Weight: 46.01 g/mol
TEEL-3: 30 ppm TEEL-2: 15 ppm TEEL-1: 2 ppm
IDLH: 20 ppm
Normal Boiling Point: 21.0° C Ambient Boiling Point: 20.9° C
Vapor Pressure at Ambient Temperature: 0.95 atm
Ambient Saturation Concentration: 958,041 ppm or 95.8%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 2 meters/sec from SW at 3 meters
No Inversion Height
Stability Class: A (user override) Air Temperature: 20° C
Relative Humidity: 50% Ground Roughness: open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Direct Source: 3.06 kilograms/sec Source Height: 437 meters
Release Duration: 60 minutes
Release Rate: 184 kilograms/min
Total Amount Released: 11,016 kilograms

FOOTPRINT INFORMATION: (GAUSS SELECTED)
Dispersion Module: Gaussian
Red LOC (132 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.
Orange LOC (75 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC

Incendie de trois cellules de stockage

Dispersion du NO_2

Condition D, vent 5 m/s

SITE DATA INFORMATION:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.32 (sheltered single storied)
Time: May 17, 2018 1514 hours ST (using computer's clock)

CHEMICAL INFORMATION:
Chemical Name: NITROGEN DIOXIDE Molecular Weight: 46.01 g/mol
TEEL-3: 30 ppm TEEL-2: 15 ppm TEEL-1: 2 ppm
IDLH: 20 ppm
Normal Boiling Point: 21.0° C Ambient Boiling Point: 20.9° C
Vapor Pressure at Ambient Temperature: 0.95 atm
Ambient Saturation Concentration: 958,041 ppm or 95.8%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 5 meters/sec from SW at 3 meters
No Inversion Height
Stability Class: D **Air Temperature: 20° C**
Relative Humidity: 50% Ground Roughness: open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Direct Source: 3.06 kilograms/sec **Source Height: 175 meters**
Release Duration: 60 minutes
Release Rate: 184 kilograms/min
Total Amount Released: 11,016 kilograms

FOOTPRINT INFORMATION: (GAUSS SELECTED)
Dispersion Module: Gaussian
Red LOC (132 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.
Orange LOC (75 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.

Incendie de trois cellules de stockage

Dispersion du NO_2

Condition F, vent 3 m/s

SITE DATA INFORMATION:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.32 (sheltered single storied)
Time: May 17, 2018 1516 hours ST (using computer's clock)

CHEMICAL INFORMATION:
Chemical Name: NITROGEN DIOXIDE Molecular Weight: 46.01 g/mol
TEEL-3: 30 ppm TEEL-2: 15 ppm TEEL-1: 2 ppm
IDLH: 20 ppm
Normal Boiling Point: 21.0° C Ambient Boiling Point: 20.9° C
Vapor Pressure at Ambient Temperature: 0.95 atm
Ambient Saturation Concentration: 958,041 ppm or 95.8%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 3 meters/sec from SW at 3 meters
No Inversion Height
Stability Class: F (user override) Air Temperature: 20° C
Relative Humidity: 50% Ground Roughness: open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Direct Source: 3.6 kilograms/sec Source Height: 291 meters
Release Duration: 60 minutes
Release Rate: 184 kilograms/min
Total Amount Released: 11,016 kilograms

FOOTPRINT INFORMATION: (GAUSS SELECTED)
Dispersion Module: Gaussian
Red LOC (132 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.
Orange LOC (75 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC

Incendie de trois cellules de stockage

Dispersion du formol

Condition A, vent 2 m/s

SITE DATA INFORMATION:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.32 (sheltered single storied)
Time: May 17, 2018 1518 hours ST (using computer's clock)

CHEMICAL INFORMATION:
Chemical Name: FORMIC ACID Molecular Weight: 46.03 g/mol
TEEL-3: 30 ppm TEEL-2: 10 ppm TEEL-1: 10 ppm
IDLH: 30 ppm
Normal Boiling Point: 100.6° C Ambient Boiling Point: 100.3° C
Vapor Pressure at Ambient Temperature: 0.044 atm
Ambient Saturation Concentration: 44,317 ppm or 4.43%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 2 meters/sec from SW at 3 meters
No Inversion Height
Stability Class: A (user override) **Air Temperature: 20° C**
Relative Humidity: 50% Ground Roughness: open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Direct Source: 0.122 kilograms/sec **Source Height: 437 meters**
Release Duration: 60 minutes
Release Rate: 7.32 kilograms/min
Total Amount Released: 439 kilograms

FOOTPRINT INFORMATION: (GAUSS SELECTED)
Dispersion Module: Gaussian
Red LOC (31 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.
Orange LOC (12 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC

Incendie de trois cellules de stockage

Dispersion du formol

Condition D, vent 5 m/s

SITE DATA INFORMATION:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.32 (sheltered single storied)
Time: May 17, 2018 1519 hours ST (using computer's clock)

CHEMICAL INFORMATION:
Chemical Name: FORMIC ACID Molecular Weight: 46.03 g/mol
TEEL-3: 30 ppm TEEL-2: 10 ppm TEEL-1: 10 ppm
IDLH: 30 ppm
Normal Boiling Point: 100.6° C Ambient Boiling Point: 100.3° C
Vapor Pressure at Ambient Temperature: 0.044 atm
Ambient Saturation Concentration: 44,317 ppm or 4.43%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 5 meters/sec from SW at 3 meters
No Inversion Height
Stability Class: D **Air Temperature: 20° C**
Relative Humidity: 50% Ground Roughness: open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Direct Source: 0.122 kilograms/sec **Source Height: 175 meters**
Release Duration: 60 minutes
Release Rate: 7.32 kilograms/min
Total Amount Released: 439 kilograms

FOOTPRINT INFORMATION: (GAUSS SELECTED)
Dispersion Module: Gaussian
Red LOC (31 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.
Orange LOC (12 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC

Incendie de trois cellules de stockage

Dispersion du formol

Condition F, vent 3 m/s

SITE DATA INFORMATION:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.32 (sheltered single storied)
Time: May 17, 2018 1520 hours ST (using computer's clock)

CHEMICAL INFORMATION:
Chemical Name: FORMIC ACID Molecular Weight: 46.03 g/mol
TEEL-3: 30 ppm TEEL-2: 10 ppm TEEL-1: 10 ppm
IDLH: 30 ppm
Normal Boiling Point: 100.6° C Ambient Boiling Point: 100.3° C
Vapor Pressure at Ambient Temperature: 0.044 atm
Ambient Saturation Concentration: 44,317 ppm or 4.43%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 3 meters/sec from SW at 3 meters
No Inversion Height
Stability Class: F (user override) Air Temperature: 20° C
Relative Humidity: 50% Ground Roughness: open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Direct Source: 0.122 kilograms/sec Source Height: 291 meters
Release Duration: 60 minutes
Release Rate: 7.32 kilograms/min
Total Amount Released: 439 kilograms
FOOTPRINT INFORMATION: (GAUSS SELECTED)
Dispersion Module: Gaussian
Red LOC (31 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.
Orange LOC (12 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC

Incendie de trois cellules de stockage

Dispersion des fumées d'incendie_ Seuils équivalents

Condition A, vent 2 m/s

SITE DATA INFORMATION:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.32 (sheltered single storied)
Time: May 17, 2018 1521 hours ST (using computer's clock)

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 2 meters/sec from SW at 3 meters
No Inversion Height
Stability Class: A (user override) **Air Temperature: 20° C**
Relative Humidity: 50% Ground Roughness: open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Direct Source: 2451.06 kilograms/sec **Source Height: 437 meters**
Release Duration: 60 minutes
Release Rate: 147,000 kilograms/min
Total Amount Released: 8,823,816 kilograms

FOOTPRINT INFORMATION: (GAUSS SELECTED)
Dispersion Module: Gaussian
Red LOC (11346 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.
Orange LOC (31018 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC

Incendie de trois cellules de stockage

Dispersion des fumées d'incendie_ Seuls équivalents

Condition D, vent 5 m/s

SITE DATA INFORMATION:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.32 (sheltered single storied)
Time: May 17, 2018 1522 hours ST (using computer's clock)

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 5 meters/sec from SW at 3 meters
No Inversion Height
Stability Class: D **Air Temperature: 20° C**
Relative Humidity: 50% Ground Roughness: open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Direct Source: 2451.06 kilograms/sec Source Height: 175 meters
Release Duration: 60 minutes
Release Rate: 147,000 kilograms/min
Total Amount Released: 8,823,816 kilograms

FOOTPRINT INFORMATION: (GAUSS SELECTED)
Dispersion Module: Gaussian
Red LOC (31018 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.
Orange LOC (11346 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC

Incendie de trois cellules de stockage

Dispersion des fumées d'incendie_ Seuils équivalents

Condition F, vent 3 m/s

SITE DATA INFORMATION:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.32 (sheltered single storied)
Time: May 17, 2018 1523 hours ST (using computer's clock)

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 3 meters/sec from SW at 3 meters
No Inversion Height
Stability Class: F (user override) Air Temperature: 20° C
Relative Humidity: 50% Ground Roughness: open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Direct Source: 2451.06 kilograms/sec Source Height: 291 meters
Release Duration: 60 minutes
Release Rate: 147,000 kilograms/min
Total Amount Released: 8,823,816 kilograms

FOOTPRINT INFORMATION: (GAUSS SELECTED)
Dispersion Module: Gaussian
Red LOC (31018 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.
Orange LOC (11346 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC

Modélisation de la dispersion atmosphérique

1- Généralités

La dispersion des gaz engendrés par un incendie est assez difficile à définir et il n'existe pas, à l'heure actuelle, de méthode parfaitement établie. On sait que les gaz chauds ont tendance à s'élever rapidement du fait de leur faible densité (une élévation de température de 300 ° divise environ par 2 la densité d'un gaz ; or les fumées atteignent rapidement des températures de l'ordre de 600 °C).

Pour la chronologie de l'incendie, le TNO propose d'envisager deux phases :

- **Au moment du démarrage**, lorsque les fumées s'accumulent sous les toitures et ne s'échappent que par les ouvertures de désenfumage. La température des fumées est alors encore relativement peu élevée et les fumées s'échappent à faible débit, elles sont donc directement entraînables par les vents. L'impact toxique est alors limité par le fait que les surfaces en combustion sont peu étendues.

- **Au moment de l'intensité maximale** du sinistre, lorsque la totalité du stock est embrasée ; alors le débit des gaz toxiques est plus élevé, mais la température des fumées également. Un panache se forme, la dispersion des toxiques peut être modélisée.

La dispersion atmosphérique des polluants résultant de la combustion des marchandises stockées est modélisée à l'aide d'un modèle de dispersion en panache de type Gaussien (modèle de Pasquill Giffird).

L'INERIS préconise de prendre en considération les cas de figure ci-après : Etat A (au sens de Pasquill) pour des vents de 2 m/s, état D pour des vents de 5 m/s et état F pour des vents de 3 m/s.

2- Modélisation de la dispersion

Comme indiqué si dessus, la dispersion atmosphérique résulte de la combinaison de deux phénomènes principaux qui agissent simultanément : le transport et la diffusion. L'étude d'une dispersion de toxiques est complexe et nécessite de distinguer deux cas :

- La dispersion rapprochée,
- La dispersion lointaine.

Dans le cas de la dispersion lointaine, on démontre que cette phase échappe aux effets du sol et à la présence d'obstacles ainsi qu'aux effets induits par la densité du polluant émis.
Il devient alors possible d'utiliser un modèle classique simplifié de type Gaussien.

Le modèle de dispersion employé est le modèle gaussien développé selon la méthode de Pasquill et Grifford. Ce modèle s'applique dans différents cas de figure possibles définis en fonction de la vitesse du vent et de différents états atmosphériques désignés comme « classes » par Pasquill.

Ces classes sont au nombre de 6, caractérisées par l'intensité de la turbulence :

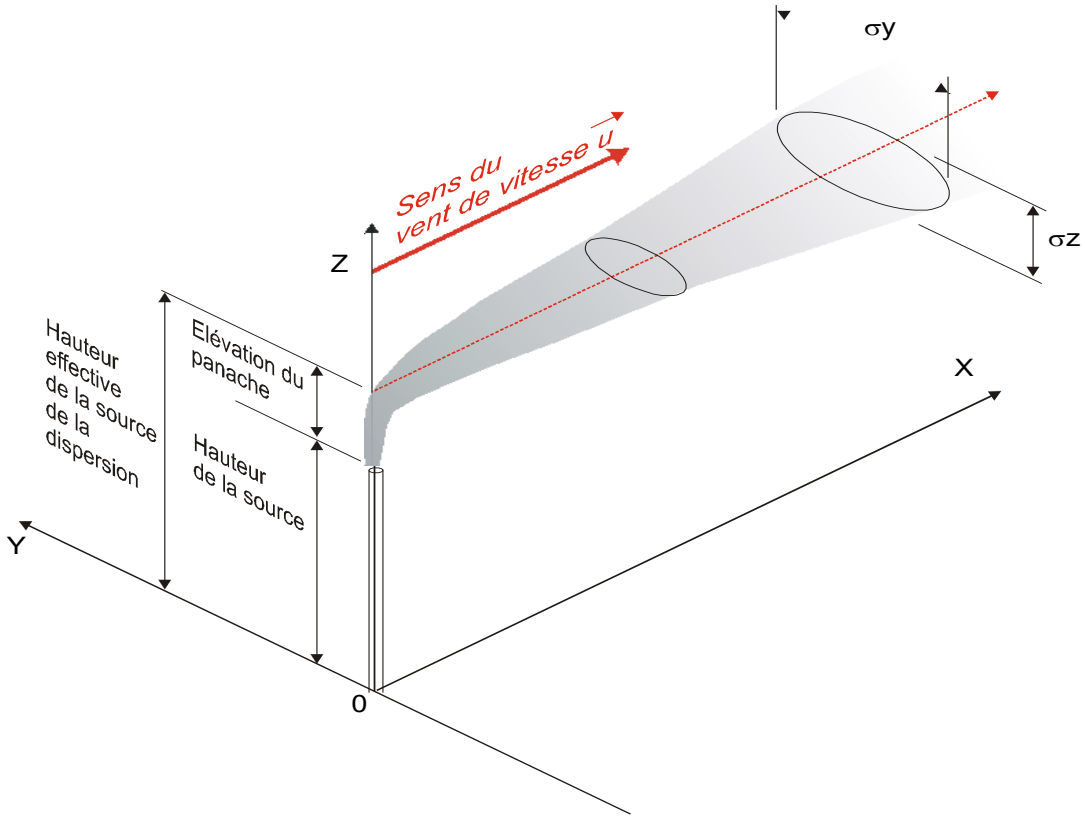
- classe A : « très instable »
- classe B : « instable »
- classe C : « légèrement instable »
- classe D : « neutre »
- classe E : « stable »
- classe F : « très stable »

Le tableau ci-dessous fournit les conditions dans lesquelles sont définies les classes de Pasquill-Turner :

Vitesse du vent	Jour Selon un rayonnement solaire incident			Nuit Selon une couverture nuageuse	
(m/s	Fort Eté – ciel dégagé	Modéré Ciel nuageux	Léger Hiver – ciel couvert	Dense >1/2 surface	Dégagée <1/2 surface
< 2 2 à 3 3 à 5 5 à 6 >6	A A – B B C C	A – B B B – C C – D D	B C C D D	 E D D D	 F E D D

Le modèle de Pasquill et Grifford repose sur l'idée qu'une substance à l'état gazeux se diffuse dans l'atmosphère de manière aléatoire selon une fonction de distribution de Gauss, on caractérise alors l'allure de la distribution par son « écart-type » σ.

La représentation de la diffusion dans l'espace se fait généralement en définissant l'axe des X comme celui du sens du vent. Dans le cas de la diffusion dans un panache continu, on ne tient compte que de deux axes de diffusion : en largeur (axe Y) et en hauteur (axe Z) ; et par conséquent on ne définit que deux écarts-types pour déterminer la distribution : σ_y et σ_z. La distribution étant définie par une concentration en fonction de l'éloignement de la source, les écart-types sont mesurés en mètres. Ils résultent d'observations réalisées par les différents auteurs des modèles, qui fournissent des équations empiriques qui permettent d'en calculer l'évolution dans l'espace en fonction des conditions de stabilité de l'atmosphère.



La *figure ci-dessus* montre un exemple de panache continu. :

L'équation générale de la dispersion d'un panache suivant une distribution gausienne est la suivante :

$$C=\frac{Q}{2\pi.u.\sigma_z.\sigma_y}.\exp\left(-\frac{y_2}{2.\sigma_y^2}\right).\exp\left(-\frac{(z-h)^2}{2.\sigma_z^2}\right)$$

dans laquelle :

C	(kg/m^3)	est la concentration de la substance considérée au point M(x,y,z)
Q	(kg/s)	est le débit massique de la substance à la source
u	(m/s)	est la vitesse du vent
σ_y	(m)	est l'écart type de la distribution horizontale
σ_z	(m)	est l'écart type de la distribution verticale
h	(m)	est la hauteur *effective* de l'émission

Dans le cas des dispersions près du sol, on doit de plus tenir compte de l'effet miroir du sol. Il en résulte l'introduction d'un facteur de correction sur l'exponentielle donnant la dispersion suivant l'axe Z par addition d'un facteur de réflexion, ce qui donne l'équation de Pasquill Grifford :

$$C=\frac{Q}{2\pi.u.\sigma_z.\sigma_y}.\exp\left(-\frac{y_2}{2\cdot\sigma_y^2}\right).\left[\exp\left(-\frac{(z-h)^2}{2\cdot\sigma_z^2}\right)+\exp\left(-\frac{(z+h)^2}{2\cdot\sigma_z^2}\right)\right]$$

La distribution est exprimée sous la forme d'écarts types σ_y pour la dispersion horizontale et σ_z pour la dispersion verticale.

Ces écarts type traduisent l'étalement de la distribution gaussienne à mesure que l'on s'éloigne de la source d'émission.
Leur établissement a fait l'objet de nombreux travaux et on trouve différentes méthodes pour les évaluer (méthode de Briggs, méthode de Pasquill Grifford).

La méthode de Pasquill Grifford est adaptée aux dispersions dans des environnements dégagées. Dans le cas présent les écarts type ont été calculés à partir de cette méthode.

Modélisation de la dispersion atmosphérique des toxiques en cas d'incendie d'une cellule de stockage de produits combustibles

Incendie d'une cellule de stockage
Dispersion des suies
Condition A, vent 2 m/s

SITE DATA:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.42 (unsheltered single storied)
Time: May 11, 2018 1032 hours ST (using computer's clock)

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)
Wind: 2 meters/second from W at 3 meters
Ground Roughness: open country Cloud Cover: 5 tenths
Air Temperature: 20° C **Stability Class: A (user override)**
No Inversion Height Relative Humidity: 50%

SOURCE STRENGTH:
Direct Source: 22.23 kilograms/sec **Source Height: 233 meters**
Release Duration: 60 minutes
Release Rate: 1,330 kilograms/min
Total Amount Released: 80,028 kilograms

THREAT ZONE: (GAUSSIAN SELECTED)
Model Run: Gaussian
Red : **LOC is not exceeded** --- (79 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Incendie d'une cellule de stockage
Dispersion des suies
Condition D, vent 5 m/s

SITE DATA:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 1.04 (unsheltered single storied)
Time: May 11, 2018 1106 hours ST (using computer's clock)

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)
Wind: 5 meters/second from W at 3 meters
Ground Roughness: open country Cloud Cover: 5 tenths
Air Temperature: 20° C **Stability Class: D**
No Inversion Height Relative Humidity: 50%

SOURCE STRENGTH:
Direct Source: 22.23 kilograms/sec **Source Height: 93 meters**
Release Duration: 60 minutes
Release Rate: 1,330 kilograms/min
Total Amount Released: 80,028 kilograms

THREAT ZONE: (GAUSSIAN SELECTED)
Model Run: Gaussian
Red : **LOC is not exceeded** --- (79 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Incendie d’une cellule de stockage

Dispersion des suies

Condition F, vent 3 m/s

SITE DATA:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.65 (unsheltered single storied)
Time: May 11, 2018 1108 hours ST (using computer's clock)

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)
Wind: 3 meters/second from W at 3 meters
Ground Roughness: open country Cloud Cover: 5 tenths
Air Temperature: 15° C **Stability Class: F (user override)**
No Inversion Height Relative Humidity: 50%

SOURCE STRENGTH:
Direct Source: 22.23 kilograms/sec **Source Height: 155 meters**
Release Duration: 60 minutes
Release Rate: 1,330 kilograms/min
Total Amount Released: 80,028 kilograms

THREAT ZONE: (GAUSSIAN SELECTED)
Model Run: Gaussian
Red : **LOC is not exceeded** --- (79 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Incendie d'une cellule de stockage
Dispersion du Monoxyde de carbone
Condition A, vent 2 m/s

SITE DATA:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.42 (unsheltered single storied)
Time: May 11, 2018 1110 hours ST (using computer's clock)

CHEMICAL DATA:
Chemical Name: CARBON MONOXIDE Molecular Weight: 28.01 g/mol
AEGL-1 (60 min): N/A AEGL-2 (60 min): 83 ppm AEGL-3 (60 min): 330 ppm
IDLH: 1200 ppm LEL: 125000 ppm UEL: 742000 ppm
Ambient Boiling Point: -312.6° 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: 2 meters/second from W at 3 meters
Ground Roughness: open country Cloud Cover: 5 tenths
Air Temperature: 20° C **Stability Class: A (user override)**
No Inversion Height Relative Humidity: 50%

SOURCE STRENGTH:
Direct Source: 69.74 kilograms/sec **Source Height: 233 meters**
Release Duration: 60 minutes
Release Rate: 4,180 kilograms/min
Total Amount Released: 251,064 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: (GAUSSIAN SELECTED)
Model Run: Gaussian
Red : **LOC is not exceeded** --- (3520 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.
Orange: **LOC is not exceeded** --- (880 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC..

Incendie d'une cellule de stockage
Dispersion du Monoxyde de carbone
Condition D, vent 5 m/s

SITE DATA:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 1.04 (unsheltered single storied)
Time: May 11, 2018 1114 hours ST (using computer's clock)

CHEMICAL DATA:
Chemical Name: CARBON MONOXIDE Molecular Weight: 28.01 g/mol
AEGL-1 (60 min): N/A AEGL-2 (60 min): 83 ppm AEGL-3 (60 min): 330 ppm
IDLH: 1200 ppm LEL: 125000 ppm UEL: 742000 ppm
Ambient Boiling Point: -312.6° 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: 5 meters/second from W at 3 meters
Ground Roughness: open country Cloud Cover: 5 tenths
Air Temperature: 20° C **Stability Class: D**
No Inversion Height Relative Humidity: 50%

SOURCE STRENGTH:
Direct Source: 69.74 kilograms/sec **Source Height: 93 meters**
Release Duration: 60 minutes
Release Rate: 4,180 kilograms/min
Total Amount Released: 251,064 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: (GAUSSIAN SELECTED)
Model Run: Gaussian
Red : **LOC is not exceeded** --- (3520 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.
Orange: **LOC is not exceeded** --- (880 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Incendie d'une cellule de stockage
Dispersion du Monoxyde de carbone
Condition F, vent 3 m/s

SITE DATA:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.65 (unsheltered single storied)
Time: May 11, 2018 1115 hours ST (using computer's clock)

CHEMICAL DATA:
Chemical Name: CARBON MONOXIDE Molecular Weight: 28.01 g/mol
AEGL-1 (60 min): N/A AEGL-2 (60 min): 83 ppm AEGL-3 (60 min): 330 ppm
IDLH: 1200 ppm LEL: 125000 ppm UEL: 742000 ppm
Ambient Boiling Point: -312.6° 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: 3 meters/second from W at 3 meters
Ground Roughness: open country Cloud Cover: 5 tenths
Air Temperature: 15° C **Stability Class: F (user override)**
No Inversion Height Relative Humidity: 50%

SOURCE STRENGTH:
Direct Source: 69.74 kilograms/sec **Source Height: 155 meters**
Release Duration: 60 minutes
Release Rate: 4,180 kilograms/min
Total Amount Released: 251,064 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: (GAUSSIAN SELECTED)
Model Run: Gaussian
Red : **LOC is not exceeded** --- (3520 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.
Orange: **LOC is not exceeded** --- (880 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Incendie d'une cellule de stockage
Dispersion du Dioxyde de carbone
Condition A, vent 2 m/s

SITE DATA:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.42 (unsheltered single storied)
Time: May 16, 2018 1424 hours ST (using computer's clock)

CHEMICAL DATA:
Chemical Name: CARBON DIOXIDE
CAS Number: 124-38-9 Molecular Weight: 44.01 g/mol
IDLH: 40000 ppm
Normal Boiling Point: -unavail-
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%
Note: Not enough chemical data to use Heavy Gas option

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)
Wind: **2 meters/second** from W at 3 meters
Ground Roughness: open country Cloud Cover: 5 tenths
Air Temperature: 20° C **Stability Class: A** (user override)
No Inversion Height Relative Humidity: 50%

SOURCE STRENGTH:
Direct Source: 697.4 kilograms/sec **Source Height: 233 meters**
Release Duration: 60 minutes
Release Rate: 41,800 kilograms/min
Total Amount Released: 2,510,640 kilograms

THREAT ZONE: (GAUSSIAN SELECTED)
Model Run: Gaussian
Red : **LOC is not exceeded** --- (89980 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Incendie d'une cellule de stockage
Dispersion du Dioxyde de carbone
Condition D, vent 5 m/s

SITE DATA:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 1.04 (unsheltered single storied)
Time: May 16, 2018 1427 hours ST (using computer's clock)

CHEMICAL DATA:
Chemical Name: CARBON DIOXIDE
CAS Number: 124-38-9 Molecular Weight: 44.01 g/mol
IDLH: 40000 ppm
Normal Boiling Point: -unavail-
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%
Note: Not enough chemical data to use Heavy Gas option

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)
Wind: **5 meters/second** from W at 3 meters
Ground Roughness: open country Cloud Cover: 5 tenths
Air Temperature: 20° C **Stability Class: D**
No Inversion Height Relative Humidity: 50%

SOURCE STRENGTH:
Direct Source: 697.4 kilograms/sec **Source Height: 93 meters**
Release Duration: 60 minutes
Release Rate: 41,800 kilograms/min
Total Amount Released: 2,510,640 kilograms

THREAT ZONE: (GAUSSIAN SELECTED)
Model Run: Gaussian
Red : **LOC is not exceeded** --- (**89980 mg/(cu m))**
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Incendie d'une cellule de stockage
Dispersion du Dioxyde de carbone
Condition F, vent 3 m/s

SITE DATA:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.65 (unsheltered single storied)
Time: May 16, 2018 1428 hours ST (using computer's clock)

CHEMICAL DATA:
Chemical Name: CARBON DIOXIDE
CAS Number: 124-38-9 Molecular Weight: 44.01 g/mol
IDLH: 40000 ppm
Normal Boiling Point: -unavail-
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%
Note: Not enough chemical data to use Heavy Gas option

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)
Wind: **3 meters/second** from W at 3 meters
Ground Roughness: open country Cloud Cover: 5 tenths
Air Temperature: 15° C **Stability Class: F** (user override)
No Inversion Height Relative Humidity: 50%

SOURCE STRENGTH:
Direct Source: 697.4 kilograms/sec **Source Height: 155 meters**
Release Duration: 60 minutes
Release Rate: 41,800 kilograms/min
Total Amount Released: 2,510,640 kilograms

THREAT ZONE: (GAUSSIAN SELECTED)
Model Run: Gaussian
Red : **LOC is not exceeded** --- (89980 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Incendie d'une cellule de stockage
Dispersion du HCl
Condition A, vent 2 m/s

SITE DATA:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.42 (unsheltered single storied)
Time: May 11, 2018 1118 hours ST (using computer's clock)

CHEMICAL DATA:
Chemical Name: HYDROGEN CHLORIDE Molecular Weight: 36.46 g/mol
AEGL-1 (60 min): 1.8 ppm AEGL-2 (60 min): 22 ppm AEGL-3 (60 min): 100 ppm
IDLH: 50 ppm
Ambient Boiling Point: -121.0° 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: 2 meters/second from W at 3 meters
Ground Roughness: open country Cloud Cover: 5 tenths
Air Temperature: 20° C **Stability Class: A (user override)**
No Inversion Height Relative Humidity: 50%

SOURCE STRENGTH:
Direct Source: 26.28 kilograms/sec **Source Height: 233 meters**
Release Duration: 60 minutes
Release Rate: 1,580 kilograms/min
Total Amount Released: 94,608 kilograms
Note: This chemical may flash boil and/or result in two phase flow.

THREAT ZONE: (GAUSSIAN SELECTED)
Model Run: Gaussian
Red : **LOC is not exceeded** --- (358 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.
Orange: **LOC is not exceeded** --- (60 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC..

Incendie d'une cellule de stockage
Dispersion du HCl
Condition D, vent 5 m/s

SITE DATA:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 1.04 (unsheltered single storied)
Time: May 11, 2018 1122 hours ST (using computer's clock)

CHEMICAL DATA:
Chemical Name: HYDROGEN CHLORIDE Molecular Weight: 36.46 g/mol
AEGL-1 (60 min): 1.8 ppm AEGL-2 (60 min): 22 ppm AEGL-3 (60 min): 100 ppm
IDLH: 50 ppm
Ambient Boiling Point: -121.0° 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: 5 meters/second from W at 3 meters
Ground Roughness: open country Cloud Cover: 5 tenths
Air Temperature: 20° C **Stability Class: D**
No Inversion Height Relative Humidity: 50%

SOURCE STRENGTH:
Direct Source: 26.28 kilograms/sec **Source Height: 93 meters**
Release Duration: 60 minutes
Release Rate: 1,580 kilograms/min
Total Amount Released: 94,608 kilograms
Note: This chemical may flash boil and/or result in two phase flow.

THREAT ZONE: (GAUSSIAN SELECTED)
Model Run: Gaussian
Red : **LOC is not exceeded** --- (358 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.
Orange: **LOC is not exceeded** --- (60 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Incendie d'une cellule de stockage
Dispersion du HCl
Condition F, vent 3 m/s

SITE DATA:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.65 (unsheltered single storied)
Time: May 11, 2018 1123 hours ST (using computer's clock)

CHEMICAL DATA:
Chemical Name: HYDROGEN CHLORIDE Molecular Weight: 36.46 g/mol
AEGL-1 (60 min): 1.8 ppm AEGL-2 (60 min): 22 ppm AEGL-3 (60 min): 100 ppm
IDLH: 50 ppm
Ambient Boiling Point: -121.0° 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: 3 meters/second from W at 3 meters
Ground Roughness: open country Cloud Cover: 5 tenths
Air Temperature: 15° C **Stability Class: F (user override)**
No Inversion Height Relative Humidity: 50%

SOURCE STRENGTH:
Direct Source: 26.28 kilograms/sec **Source Height: 155 meters**
Release Duration: 60 minutes
Release Rate: 1,580 kilograms/min
Total Amount Released: 94,608 kilograms
Note: This chemical may flash boil and/or result in two phase flow.

THREAT ZONE: (GAUSSIAN SELECTED)
Model Run: Gaussian
Red : **LOC is not exceeded** --- (358 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.
Orange: **LOC is not exceeded** --- (60 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Incendie d'une cellule de stockage
Dispersion du HCN
Condition A, vent 2 m/s

SITE DATA:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.42 (unsheltered single storied)
Time: May 11, 2018 1125 hours ST (using computer's clock)

CHEMICAL DATA:
Chemical Name: HYDROGEN CYANIDE Molecular Weight: 27.03 g/mol
AEGL-1 (60 min): 2 ppm AEGL-2 (60 min): 7.1 ppm AEGL-3 (60 min): 15 ppm
IDLH: 50 ppm LEL: 56000 ppm UEL: 400000 ppm
Ambient Boiling Point: 78.3° F
Vapor Pressure at Ambient Temperature: 0.81 atm
Ambient Saturation Concentration: 805,867 ppm or 80.6%

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)
Wind: 2 meters/second from W at 3 meters
Ground Roughness: open country Cloud Cover: 5 tenths
Air Temperature: 20° C **Stability Class: A (user override)**
No Inversion Height Relative Humidity: 50%

SOURCE STRENGTH:
Direct Source: 2.04 kilograms/sec **Source Height: 233 meters**
Release Duration: 60 minutes
Release Rate: 122 kilograms/min
Total Amount Released: 7,344 kilograms

THREAT ZONE: (GAUSSIAN SELECTED)
Model Run: Gaussian
Red : **LOC is not exceeded** --- (45 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Incendie d'une cellule de stockage
Dispersion du HCN
Condition D, vent 5 m/s

SITE DATA:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 1.04 (unsheltered single storied)
Time: May 11, 2018 1127 hours ST (using computer's clock)

CHEMICAL DATA:
Chemical Name: HYDROGEN CYANIDE Molecular Weight: 27.03 g/mol
AEGL-1 (60 min): 2 ppm AEGL-2 (60 min): 7.1 ppm AEGL-3 (60 min): 15 ppm
IDLH: 50 ppm LEL: 56000 ppm UEL: 400000 ppm
Ambient Boiling Point: 78.3° F
Vapor Pressure at Ambient Temperature: 0.81 atm
Ambient Saturation Concentration: 805,867 ppm or 80.6%

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)
Wind: 5 meters/second from W at 3 meters
Ground Roughness: open country Cloud Cover: 5 tenths
Air Temperature: 20° C **Stability Class: D**
No Inversion Height Relative Humidity: 50%

SOURCE STRENGTH:
Direct Source: 2.04 kilograms/sec **Source Height: 93 meters**
Release Duration: 60 minutes
Release Rate: 122 kilograms/min
Total Amount Released: 7,344 kilograms

THREAT ZONE: (GAUSSIAN SELECTED)
Model Run: Gaussian
Red : **LOC is not exceeded** --- (45 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Incendie d'une cellule de stockage
Dispersion du HCN
Condition F, vent 3 m/s

SITE DATA:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.65 (unsheltered single storied)
Time: May 11, 2018 1128 hours ST (using computer's clock)

CHEMICAL DATA:
Chemical Name: HYDROGEN CYANIDE Molecular Weight: 27.03 g/mol
AEGL-1 (60 min): 2 ppm AEGL-2 (60 min): 7.1 ppm AEGL-3 (60 min): 15 ppm
IDLH: 50 ppm LEL: 56000 ppm UEL: 400000 ppm
Ambient Boiling Point: 78.3° F
Vapor Pressure at Ambient Temperature: 0.66 atm
Ambient Saturation Concentration: 660,892 ppm or 66.1%

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)
Wind: 3 meters/second from W at 3 meters
Ground Roughness: open country Cloud Cover: 5 tenths
Air Temperature: 15° C **Stability Class: F (user override)**
No Inversion Height Relative Humidity: 50%

SOURCE STRENGTH:
Direct Source: 2.04 kilograms/sec **Source Height: 155 meters**
Release Duration: 60 minutes
Release Rate: 122 kilograms/min
Total Amount Released: 7,344 kilograms

THREAT ZONE: (GAUSSIAN SELECTED)
Model Run: Gaussian
Red : **LOC is not exceeded** --- (45 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Incendie d'une cellule de stockage
Dispersion des fumées de l'incendie (seuil équivalent)
Condition A, vent 2 m/s

SITE DATA:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.42 (unsheltered single storied)
Time: May 11, 2018 1151 hours ST (using computer's clock)

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)
Wind: **2 meters/second** from W at 3 meters
Ground Roughness: open country Cloud Cover: 5 tenths
Air Temperature: 20° C **Stability Class: A** (user override)
No Inversion Height Relative Humidity: 50%

SOURCE STRENGTH:
Direct Source: 3 176 kilograms/sec **Source Height: 233 meters**
Release Duration: 60 minutes
Release Rate: 191,000 kilograms/min
Total Amount Released: 11,433,600 kilograms

THREAT ZONE: (GAUSSIAN SELECTED)
Model Run: Gaussian
Red : **LOC is not exceeded ---** (21705 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.
Orange: **LOC is not exceeded** --- (5568 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Incendie d'une cellule de stockage
Dispersion des fumées de l'incendie (seuil équivalent)
Condition D, vent 5 m/s

SITE DATA:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 1.04 (unsheltered single storied)
Time: May 11, 2018 1153 hours ST (using computer's clock)

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)
Wind: **5 meters/second** from W at 3 meters
Ground Roughness: open country Cloud Cover: 5 tenths
Air Temperature: 20° C **Stability Class: D**
No Inversion Height Relative Humidity: 50%

SOURCE STRENGTH:
Direct Source: 3 176 kilograms/sec **Source Height: 93 meters**
Release Duration: 60 minutes
Release Rate: 191,000 kilograms/min
Total Amount Released: 11,433,600 kilograms

THREAT ZONE: (GAUSSIAN SELECTED)
Model Run: Gaussian
Red : **LOC is not exceeded** --- (21705 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.
Orange**: LOC is not exceeded** --- (5568 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Incendie d'une cellule de stockage
Dispersion des fumées de l'incendie (seuil équivalent)
Condition F, vent 3 m/s

SITE DATA:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.65 (unsheltered single storied)
Time: May 11, 2018 1153 hours ST (using computer's clock)

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)
Wind: **3 meters/second** from W at 3 meters
Ground Roughness: open country Cloud Cover: 5 tenths
Air Temperature: 15° C **Stability Class: F** (user override)
No Inversion Height Relative Humidity: 50%

SOURCE STRENGTH:
Direct Source: 3 176 kilograms/sec **Source Height: 155 meters**
Release Duration: 60 minutes
Release Rate: 191,000 kilograms/min
Total Amount Released: 11,433,600 kilograms

THREAT ZONE: (GAUSSIAN SELECTED)
Model Run: Gaussian
Red : **LOC is not exceeded** --- (21705 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.
Orange: **LOC is not exceeded** --- (5568 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Modélisation de la dispersion atmosphérique des toxiques en cas d'incendie d'une cellule de stockage de pneumatiques

Incendie d'une cellule de stockage

Dispersion des suies

Condition A, vent 2 m/s

SITE DATA INFORMATION:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.32 (sheltered single storied)
Time: May 17, 2018 1357 hours ST (using computer's clock)

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 2 meters/sec from SW at 3 meters
No Inversion Height
Stability Class: A (user override) **Air Temperature: 20° C**
Relative Humidity: 50% Ground Roughness: open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Direct Source: 54.67 kilograms/sec **Source Height: 282 meters**
Release Duration: 60 minutes
Release Rate: 3,280 kilograms/min
Total Amount Released: 196,812 kilograms

FOOTPRINT INFORMATION:
Dispersion Module: Gaussian
Yellow LOC (79 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.

Incendie d'une cellule de stockage

Dispersion des suies

Condition D, vent 5 m/s

SITE DATA INFORMATION:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.32 (sheltered single storied)
Time: May 17, 2018 1401 hours ST (using computer's clock)

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 5 meters/sec from SW at 3 meters
No Inversion Height
Stability Class: D **Air Temperature: 20° C**
Relative Humidity: 50% Ground Roughness: open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Direct Source: 54.67 kilograms/sec **Source Height: 113 meters**
Release Duration: 60 minutes
Release Rate: 3,280 kilograms/min
Total Amount Released: 196,812 kilograms

FOOTPRINT INFORMATION:
Dispersion Module: Gaussian
Yellow LOC (79 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.

Incendie d'une cellule de stockage

Dispersion des suies

Condition F, vent 3 m/s

SITE DATA INFORMATION:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.32 (sheltered single storied)
Time: May 17, 2018 1404 hours ST (using computer's clock)

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 3 meters/sec from SW at 3 meters
No Inversion Height
Stability Class: F (user override) **Air Temperature: 15° C**
Relative Humidity: 50% Ground Roughness: open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Direct Source: 54.67 kilograms/sec **Source Height: 188 meters**
Release Duration: 60 minutes
Release Rate: 3,280 kilograms/min
Total Amount Released: 196,812 kilograms

FOOTPRINT INFORMATION:
Dispersion Module: Gaussian
Yellow LOC (79 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.

Incendie d'une cellule de stockage
Dispersion du Monoxyde de carbone
Condition A, vent 2 m/s

SITE DATA INFORMATION:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.32 (sheltered single storied)
Time: May 17, 2018 1408 hours ST (using computer's clock)

CHEMICAL INFORMATION:
Chemical Name: CARBON MONOXIDE Molecular Weight: 28.01 g/mol
ERPG-3: 500 ppm ERPG-2: 350 ppm ERPG-1: 200 ppm
IDLH: 1200 ppm
Normal Boiling Point: -191.5° C Ambient Boiling Point: -191.7° C
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 2 meters/sec from SW at 3 meters
No Inversion Height
Stability Class: A (user override) Air Temperature: 20° C
Relative Humidity: 50% Ground Roughness: open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Direct Source: 26.52 kilograms/sec Source Height: 282 meters
Release Duration: 60 minutes
Release Rate: 1,590 kilograms/min
Total Amount Released: 95,472 kilograms
Note: This chemical may flash boil and/or result in two phase flow.
Use both dispersion modules to investigate its potential behavior.

FOOTPRINT INFORMATION:
Dispersion Module: Gaussian
Red LOC (3680 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.
Orange LOC (920 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.

Incendie d'une cellule de stockage
Dispersion du Monoxyde de carbone
Condition D, vent 5 m/s

SITE DATA INFORMATION:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.32 (sheltered single storied)
Time: May 17, 2018 1409 hours ST (using computer's clock)

CHEMICAL INFORMATION:
Chemical Name: CARBON MONOXIDE Molecular Weight: 28.01 g/mol
ERPG-3: 500 ppm ERPG-2: 350 ppm ERPG-1: 200 ppm
IDLH: 1200 ppm
Normal Boiling Point: -191.5° C Ambient Boiling Point: -191.7° C
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 5 meters/sec from SW at 3 meters
No Inversion Height
Stability Class: D **Air Temperature: 20° C**
Relative Humidity: 50% Ground Roughness: open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Direct Source: 26.52 kilograms/sec **Source Height: 113 meters**
Release Duration: 60 minutes
Release Rate: 1,590 kilograms/min
Total Amount Released: 95,472 kilograms
Note: This chemical may flash boil and/or result in two phase flow.
Use both dispersion modules to investigate its potential behavior.

FOOTPRINT INFORMATION:
Dispersion Module: Gaussian
Red LOC (3680 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.
Orange LOC (920 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.

Incendie d'une cellule de stockage
Dispersion du Monoxyde de carbone
Condition F, vent 3 m/s

SITE DATA INFORMATION:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.32 (sheltered single storied)
Time: May 17, 2018 1410 hours ST (using computer's clock)

CHEMICAL INFORMATION:
Chemical Name: CARBON MONOXIDE Molecular Weight: 28.01 g/mol
ERPG-3: 500 ppm ERPG-2: 350 ppm ERPG-1: 200 ppm
IDLH: 1200 ppm
Normal Boiling Point: -191.5° C Ambient Boiling Point: -191.7° C
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 3 meters/sec from SW at 3 meters
No Inversion Height
Stability Class: F (user override) Air Temperature: 15° C
Relative Humidity: 50% Ground Roughness: open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Direct Source: 26.52 kilograms/sec Source Height: 188 meters
Release Duration: 60 minutes
Release Rate: 1,590 kilograms/min
Total Amount Released: 95,472 kilograms
Note: This chemical may flash boil and/or result in two phase flow.
Use both dispersion modules to investigate its potential behavior.

FOOTPRINT INFORMATION:
Dispersion Module: Gaussian
Red LOC (3680 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.
Orange LOC (920 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.

Incendie d'une cellule de stockage
Dispersion du Dioxyde de carbone
Condition A, vent 2 m/s

SITE DATA INFORMATION:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.32 (sheltered single storied)
Time: May 17, 2018 1413 hours ST (using computer's clock)

CHEMICAL INFORMATION:
Chemical Name: CARBON DIOXIDE Molecular Weight: 44.01 g/mol
TEEL-3: 40000 ppm TEEL-2: 30000 ppm TEEL-1: 30000 ppm
IDLH: 40000 ppm
Normal Boiling Point: -unavail-
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%
Note: Not enough chemical data to use Heavy Gas option

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 2 meters/sec from SW at 3 meters
No Inversion Height
Stability Class: A (user override) **Air Temperature: 20° C**
Relative Humidity: 50% Ground Roughness: open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Direct Source: 707 kilograms/sec **Source Height: 282 meters**
Release Duration: 60 minutes
Release Rate: 42,400 kilograms/min
Total Amount Released: 2,545,200 kilograms

FOOTPRINT INFORMATION: (GAUSS SELECTED)
Dispersion Module: Gaussian
Red LOC (89980 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.

Incendie d'une cellule de stockage
Dispersion du Dioxyde de carbone
Condition D, vent 5 m/s

SITE DATA INFORMATION:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.32 (sheltered single storied)
Time: May 17, 2018 1414 hours ST (using computer's clock)

CHEMICAL INFORMATION:
Chemical Name: CARBON DIOXIDE Molecular Weight: 44.01 g/mol
TEEL-3: 40000 ppm TEEL-2: 30000 ppm TEEL-1: 30000 ppm
IDLH: 40000 ppm
Normal Boiling Point: -unavail-
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%
Note: Not enough chemical data to use Heavy Gas option

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 5 meters/sec from SW at 3 meters
No Inversion Height
Stability Class: D **Air Temperature: 20° C**
Relative Humidity: 50% Ground Roughness: open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Direct Source: 707 kilograms/sec **Source Height: 113 meters**
Release Duration: 60 minutes
Release Rate: 42,400 kilograms/min
Total Amount Released: 2,545,200 kilograms

FOOTPRINT INFORMATION: (GAUSS SELECTED)
Dispersion Module: Gaussian
Red LOC (89980 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.

Incendie d'une cellule de stockage
Dispersion du Dioxyde de carbone
Condition F, vent 3 m/s

SITE DATA INFORMATION:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.32 (sheltered single storied)
Time: May 17, 2018 1415 hours ST (using computer's clock)

CHEMICAL INFORMATION:
Chemical Name: CARBON DIOXIDE Molecular Weight: 44.01 g/mol
TEEL-3: 40000 ppm TEEL-2: 30000 ppm TEEL-1: 30000 ppm
IDLH: 40000 ppm
Normal Boiling Point: -unavail-
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%
Note: Not enough chemical data to use Heavy Gas option

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 3 meters/sec from SW at 3 meters
No Inversion Height
Stability Class: F (user override) Air Temperature: 15° C
Relative Humidity: 50% Ground Roughness: open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Direct Source: 707 kilograms/sec Source Height: 188 meters
Release Duration: 60 minutes
Release Rate: 42,400 kilograms/min
Total Amount Released: 2,545,200 kilograms

FOOTPRINT INFORMATION: (GAUSS SELECTED)
Dispersion Module: Gaussian
Red LOC (89980 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.

Incendie d'une cellule de stockage de pneumatiques
Dispersion du SO_2
Condition A, vent 2 m/s

SITE DATA INFORMATION:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.32 (sheltered single storied)
Time: May 17, 2018 1418 hours ST (using computer's clock)

CHEMICAL INFORMATION:
Chemical Name: SULFUR DIOXIDE Molecular Weight: 64.06 g/mol
ERPG-3: 15 ppm ERPG-2: 3 ppm ERPG-1: 0.3 ppm
IDLH: 100 ppm
Carcinogenic risk - see CAMEO
Normal Boiling Point: -10.0° C Ambient Boiling Point: -10.2° C
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 2 meters/sec from SW at 3 meters
No Inversion Height
Stability Class: A (user override) Air Temperature: 20° C
Relative Humidity: 50% Ground Roughness: open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Direct Source: 3.59 kilograms/sec Source Height: 282 meters
Release Duration: 60 minutes
Release Rate: 215 kilograms/min
Total Amount Released: 12,924 kilograms
Note: This chemical may flash boil and/or result in two phase flow.

FOOTPRINT INFORMATION: (GAUSS SELECTED)
Dispersion Module: Gaussian
Red LOC (1885 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.
Orange LOC (211 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC

Incendie d'une cellule de stockage de pneumatiques

Dispersion du SO_2

Condition D, vent 5 m/s

SITE DATA INFORMATION:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.32 (sheltered single storied)
Time: May 17, 2018 1420 hours ST (using computer's clock)

CHEMICAL INFORMATION:
Chemical Name: SULFUR DIOXIDE Molecular Weight: 64.06 g/mol
ERPG-3: 15 ppm ERPG-2: 3 ppm ERPG-1: 0.3 ppm
IDLH: 100 ppm
Carcinogenic risk - see CAMEO
Normal Boiling Point: -10.0° C Ambient Boiling Point: -10.2° C
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 5 meters/sec from SW at 3 meters
No Inversion Height
Stability Class: D **Air Temperature: 20° C**
Relative Humidity: 50% Ground Roughness: open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Direct Source: 3.59 kilograms/sec **Source Height: 113 meters**
Release Duration: 60 minutes
Release Rate: 215 kilograms/min
Total Amount Released: 12,924 kilograms
Note: This chemical may flash boil and/or result in two phase flow.

FOOTPRINT INFORMATION: (GAUSS SELECTED)
Dispersion Module: Gaussian
Red LOC (1885 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.
Orange LOC (211 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC

Incendie d'une cellule de stockage de pneumatiques

Dispersion du SO_2

Condition F, vent 3 m/s

SITE DATA INFORMATION:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.32 (sheltered single storied)
Time: May 17, 2018 1421 hours ST (using computer's clock)

CHEMICAL INFORMATION:
Chemical Name: SULFUR DIOXIDE Molecular Weight: 64.06 g/mol
ERPG-3: 15 ppm ERPG-2: 3 ppm ERPG-1: 0.3 ppm
IDLH: 100 ppm
Carcinogenic risk - see CAMEO
Normal Boiling Point: -10.0° C Ambient Boiling Point: -10.2° C
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 3 meters/sec from SW at 3 meters
No Inversion Height
Stability Class: F (user override) Air Temperature: 20° C
Relative Humidity: 50% Ground Roughness: open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Direct Source: 3.59 kilograms/sec Source Height: 188 meters
Release Duration: 60 minutes
Release Rate: 215 kilograms/min
Total Amount Released: 12,924 kilograms
Note: This chemical may flash boil and/or result in two phase flow.

FOOTPRINT INFORMATION: (GAUSS SELECTED)
Dispersion Module: Gaussian
Red LOC (1885 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.
Orange LOC (211 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.

Incendie d'une cellule de stockage de pneumatiques
Dispersion du NO_2
Condition A, vent 2 m/s

SITE DATA INFORMATION:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.32 (sheltered single storied)
Time: May 17, 2018 1424 hours ST (using computer's clock)

CHEMICAL INFORMATION:
Chemical Name: NITROGEN DIOXIDE Molecular Weight: 46.01 g/mol
TEEL-3: 30 ppm TEEL-2: 15 ppm TEEL-1: 2 ppm
IDLH: 20 ppm
Normal Boiling Point: 21.0° C Ambient Boiling Point: 20.9° C
Vapor Pressure at Ambient Temperature: 0.95 atm
Ambient Saturation Concentration: 958,041 ppm or 95.8%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 2 meters/sec from SW at 3 meters
No Inversion Height
Stability Class: A (user override) Air Temperature: 20° C
Relative Humidity: 50% Ground Roughness: open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Direct Source: 1.02 kilograms/sec Source Height: 282 meters
Release Duration: 60 minutes
Release Rate: 61.2 kilograms/min
Total Amount Released: 3,672 kilograms

FOOTPRINT INFORMATION: (GAUSS SELECTED)
Dispersion Module: Gaussian
Red LOC (132 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.
Orange LOC (75 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC

Incendie d'une cellule de stockage de pneumatiques
Dispersion du NO_2
Condition D, vent 5 m/s

SITE DATA INFORMATION:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.32 (sheltered single storied)
Time: May 17, 2018 1425 hours ST (using computer's clock)

CHEMICAL INFORMATION:
Chemical Name: NITROGEN DIOXIDE Molecular Weight: 46.01 g/mol
TEEL-3: 30 ppm TEEL-2: 15 ppm TEEL-1: 2 ppm
IDLH: 20 ppm
Normal Boiling Point: 21.0° C Ambient Boiling Point: 20.9° C
Vapor Pressure at Ambient Temperature: 0.95 atm
Ambient Saturation Concentration: 958,041 ppm or 95.8%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 5 meters/sec from SW at 3 meters
No Inversion Height
Stability Class: D **Air Temperature: 20° C**
Relative Humidity: 50% Ground Roughness: open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Direct Source: 1.02 kilograms/sec **Source Height: 113 meters**
Release Duration: 60 minutes
Release Rate: 61.2 kilograms/min
Total Amount Released: 3,672 kilograms

FOOTPRINT INFORMATION: (GAUSS SELECTED)
Dispersion Module: Gaussian
Red LOC (132 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.
Orange LOC (75 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.

Incendie d'une cellule de stockage de pneumatiques
Dispersion du NO_2
Condition F, vent 3 m/s

SITE DATA INFORMATION:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.32 (sheltered single storied)
Time: May 17, 2018 1426 hours ST (using computer's clock)

CHEMICAL INFORMATION:
Chemical Name: NITROGEN DIOXIDE Molecular Weight: 46.01 g/mol
TEEL-3: 30 ppm TEEL-2: 15 ppm TEEL-1: 2 ppm
IDLH: 20 ppm
Normal Boiling Point: 21.0° C Ambient Boiling Point: 20.9° C
Vapor Pressure at Ambient Temperature: 0.95 atm
Ambient Saturation Concentration: 958,041 ppm or 95.8%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 3 meters/sec from SW at 3 meters
No Inversion Height
Stability Class: F (user override) Air Temperature: 20° C
Relative Humidity: 50% Ground Roughness: open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Direct Source: 1.02 kilograms/sec Source Height: 188 meters
Release Duration: 60 minutes
Release Rate: 61.2 kilograms/min
Total Amount Released: 3,672 kilograms

FOOTPRINT INFORMATION: (GAUSS SELECTED)
Dispersion Module: Gaussian
Red LOC (132 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.
Orange LOC (75 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC

Incendie d'une cellule de stockage de pneumatiques
Dispersion du formol
Condition A, vent 2 m/s

SITE DATA INFORMATION:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.32 (sheltered single storied)
Time: May 17, 2018 1430 hours ST (using computer's clock)

CHEMICAL INFORMATION:
Chemical Name: FORMIC ACID Molecular Weight: 46.03 g/mol
TEEL-3: 30 ppm TEEL-2: 10 ppm TEEL-1: 10 ppm
IDLH: 30 ppmf
Normal Boiling Point: 100.6° C Ambient Boiling Point: 100.3° C
Vapor Pressure at Ambient Temperature: 0.044 atm
Ambient Saturation Concentration: 44,317 ppm or 4.43%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 2 meters/sec from SW at 3 meters
No Inversion Height
Stability Class: A (user override) **Air Temperature: 20° C**
Relative Humidity: 50% Ground Roughness: open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Direct Source: 0.04 kilograms/sec **Source Height: 282 meters**
Release Duration: 60 minutes
Release Rate: 2.4 kilograms/min
Total Amount Released: 144.0 kilograms

FOOTPRINT INFORMATION: (GAUSS SELECTED)
Dispersion Module: Gaussian
Red LOC (31 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.
Orange LOC (12 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC

Incendie d'une cellule de stockage de pneumatiques
Dispersion du formol
Condition D, vent 5 m/s

SITE DATA INFORMATION:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.32 (sheltered single storied)
Time: May 17, 2018 1432 hours ST (using computer's clock)

CHEMICAL INFORMATION:
Chemical Name: FORMIC ACID Molecular Weight: 46.03 g/mol
TEEL-3: 30 ppm TEEL-2: 10 ppm TEEL-1: 10 ppm
IDLH: 30 ppm
Normal Boiling Point: 100.6° C Ambient Boiling Point: 100.3° C
Vapor Pressure at Ambient Temperature: 0.044 atm
Ambient Saturation Concentration: 44,317 ppm or 4.43%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 5 meters/sec from SW at 3 meters
No Inversion Height
Stability Class: D **Air Temperature: 20° C**
Relative Humidity: 50% Ground Roughness: open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Direct Source: 0.04 kilograms/sec **Source Height: 113 meters**
Release Duration: 60 minutes
Release Rate: 2.4 kilograms/min
Total Amount Released: 144.0 kilograms

FOOTPRINT INFORMATION: (GAUSS SELECTED)
Dispersion Module: Gaussian
Red LOC (31 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.
Orange LOC (12 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC

Incendie d'une cellule de stockage de pneumatiques
Dispersion du formol
Condition F, vent 3 m/s

SITE DATA INFORMATION:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.32 (sheltered single storied)
Time: May 17, 2018 1433 hours ST (using computer's clock)

CHEMICAL INFORMATION:
Chemical Name: FORMIC ACID Molecular Weight: 46.03 g/mol
TEEL-3: 30 ppm TEEL-2: 10 ppm TEEL-1: 10 ppm
IDLH: 30 ppm
Normal Boiling Point: 100.6° C Ambient Boiling Point: 100.3° C
Vapor Pressure at Ambient Temperature: 0.044 atm
Ambient Saturation Concentration: 44,317 ppm or 4.43%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 3 meters/sec from SW at 3 meters
No Inversion Height
Stability Class: F (user override) Air Temperature: 20° C
Relative Humidity: 50% Ground Roughness: open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Direct Source: 0.04 kilograms/sec Source Height: 188 meters
Release Duration: 60 minutes
Release Rate: 2.4 kilograms/min
Total Amount Released: 144.0 kilograms

FOOTPRINT INFORMATION: (GAUSS SELECTED)
Dispersion Module: Gaussian
Red LOC (31 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.
Orange LOC (12 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC

Incendie d'une cellule de stockage de pneumatiques
Dispersion des fumées d'incendie_ Seuils équivalents
Condition A, vent 2 m/s

SITE DATA INFORMATION:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.32 (sheltered single storied)
Time: May 17, 2018 1434 hours ST (using computer's clock)

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 2 meters/sec from SW at 3 meters
No Inversion Height
Stability Class: A (user override) **Air Temperature: 20° C**
Relative Humidity: 50% Ground Roughness: open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Direct Source: 817.02 kilograms/sec **Source Height: 282 meters**
Release Duration: 60 minutes
Release Rate: 49,000 kilograms/min
Total Amount Released: 2,941,272 kilograms

FOOTPRINT INFORMATION: (GAUSS SELECTED)
Dispersion Module: Gaussian
Red LOC (31018 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.
Orange LOC (11346 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC

Incendie d’une cellule de stockage de pneumatiques
Dispersion des fumées d’incendie_ Seuls équivalents
Condition D, vent 5 m/s

SITE DATA INFORMATION:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.32 (sheltered single storied)
Time: May 17, 2018 1435 hours ST (using computer's clock)

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 5 meters/sec from SW at 3 meters
No Inversion Height
Stability Class: D **Air Temperature: 20° C**
Relative Humidity: 50% Ground Roughness: open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Direct Source: 817.02 kilograms/sec **Source Height: 113 meters**
Release Duration: 60 minutes
Release Rate: 49,000 kilograms/min
Total Amount Released: 2,941,272 kilograms

FOOTPRINT INFORMATION: (GAUSS SELECTED)
Dispersion Module: Gaussian
Red LOC (31018 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.
Orange LOC (11346 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC

Incendie d'une cellule de stockage de pneumatiques
Dispersion des fumées d'incendie_ Seuils équivalents
Condition F, vent 3 m/s

SITE DATA INFORMATION:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.32 (sheltered single storied)
Time: May 17, 2018 1436 hours ST (using computer's clock)

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 3 meters/sec from SW at 3 meters
No Inversion Height
Stability Class: F (user override) **Air Temperature: 20° C**
Relative Humidity: 50% Ground Roughness: open country
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Direct Source: 817.02 kilograms/sec **Source Height: 188 meters**
Release Duration: 60 minutes
Release Rate: 49,000 kilograms/min
Total Amount Released: 2,941,272 kilograms

FOOTPRINT INFORMATION: (GAUSS SELECTED)
Dispersion Module: Gaussian
Red LOC (31018 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC.
Orange LOC (11346 mg/(cu m)) Max Threat Zone: **LOC is not exceeded**
Note: Footprint was not drawn because the ground level concentrations never exceed the LOC

Modélisation de la dispersion atmosphérique des toxiques en cas d'incendie de trois cellules de stockage de produits combustibles

Incendie de trois cellules de stockage

Dispersion des suies

Condition A, vent 2 m/s

SITE DATA:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.42 (unsheltered single storied)
Time: May 16, 2018 1417 hours ST (using computer's clock)

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)
Wind: **2 meters/second** from W at 3 meters
Ground Roughness: open country Cloud Cover: 5 tenths
Air Temperature: 20° C **Stability Class: A** (user override)
No Inversion Height Relative Humidity: 50%

SOURCE STRENGTH:
Direct Source: 66.69 kilograms/sec **Source Height: 358 meters**
Release Duration: 60 minutes
Release Rate: 4,000 kilograms/min
Total Amount Released: 240,084 kilograms

THREAT ZONE: (GAUSSIAN SELECTED)
Model Run: Gaussian
Red : **LOC is not exceeded** --- (79 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Incendie de trois cellules de stockage

Dispersion des suies

Condition D, vent 5 m/s

SITE DATA:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 1.04 (unsheltered single storied)
Time: May 16, 2018 1418 hours ST (using computer's clock)

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)
Wind: **5 meters/second** from W at 3 meters
Ground Roughness: open country Cloud Cover: 5 tenths
Air Temperature: 20° C **Stability Class: D**
No Inversion Height Relative Humidity: 50%

SOURCE STRENGTH:
Direct Source: 66.69 kilograms/sec **Source Height: 143 meters**
Release Duration: 60 minutes
Release Rate: 4,000 kilograms/min
Total Amount Released: 240,084 kilograms

THREAT ZONE: (GAUSSIAN SELECTED)
Model Run: Gaussian
Red : **LOC is not exceeded** --- (79 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

.Incendie de trois cellules de stockage

Dispersion des suies

Condition F, vent 3 m/s

SITE DATA:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.65 (unsheltered single storied)
Time: May 16, 2018 1418 hours ST (using computer's clock)

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)
Wind: **3 meters/second** from W at 3 meters
Ground Roughness: open country Cloud Cover: 5 tenths
Air Temperature: 15° C **Stability Class: F** (user override)
No Inversion Height Relative Humidity: 50%

SOURCE STRENGTH:
Direct Source: 66.369 kilograms/sec **Source Height: 239 meters**
Release Duration: 60 minutes
Release Rate: 4,000 kilograms/min
Total Amount Released: 240,084 kilograms

THREAT ZONE: (GAUSSIAN SELECTED)
Model Run: Gaussian
Red : **LOC is not exceeded** --- (79 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Incendie de trois cellules de stockage
Dispersion du Monoxyde de carbone
Condition A, vent 2 m/s

SITE DATA:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.42 (unsheltered single storied)
Time: May 16, 2018 1420 hours ST (using computer's clock)

CHEMICAL DATA:
Chemical Name: CARBON MONOXIDE
CAS Number: 630-8-0 Molecular Weight: 28.01 g/mol
AEGL-1 (60 min): N/A AEGL-2 (60 min): 83 ppm AEGL-3 (60 min): 330 ppm
IDLH: 1200 ppm LEL: 125000 ppm UEL: 742000 ppm
Ambient Boiling Point: -191.5° 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: **2 meters/second** from W at 3 meters
Ground Roughness: open country Cloud Cover: 5 tenths
Air Temperature: 20° C **Stability Class: A** (user override)
No Inversion Height Relative Humidity: 50%

SOURCE STRENGTH:
Direct Source: 209.22 kilograms/sec **Source Height: 358 meters**
Release Duration: 60 minutes
Release Rate: 12,600 kilograms/min
Total Amount Released: 753,192 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: (GAUSSIAN SELECTED)
Model Run: Gaussian
Red : **LOC is not exceeded** --- (3680 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.
Orange: **LOC is not exceeded** --- (920 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Incendie de trois cellules de stockage
Dispersion du Monoxyde de carbone
Condition D, vent 5 m/s

SITE DATA:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 1.04 (unsheltered single storied)
Time: May 16, 2018 1421 hours ST (using computer's clock)

CHEMICAL DATA:
Chemical Name: CARBON MONOXIDE
CAS Number: 630-8-0 Molecular Weight: 28.01 g/mol
AEGL-1 (60 min): N/A AEGL-2 (60 min): 83 ppm AEGL-3 (60 min): 330 ppm
IDLH: 1200 ppm LEL: 125000 ppm UEL: 742000 ppm
Ambient Boiling Point: -191.5° 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: **5 meters/second** from W at 3 meters
Ground Roughness: open country Cloud Cover: 5 tenths
Air Temperature: 20° C **Stability Class: D**
No Inversion Height Relative Humidity: 50%

SOURCE STRENGTH:
Direct Source: 209.22 kilograms/sec **Source Height: 143 meters**
Release Duration: 60 minutes
Release Rate: 12,600 kilograms/min
Total Amount Released: 753,192 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: (GAUSSIAN SELECTED)
Model Run: Gaussian
Red : **LOC is not exceeded** --- (3680 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.
Orange: **LOC is not exceeded** --- (920 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Incendie de trois cellules de stockage
Dispersion du Monoxyde de carbone
Condition F, vent 3 m/s

SITE DATA:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.65 (unsheltered single storied)
Time: May 16, 2018 1422 hours ST (using computer's clock)

CHEMICAL DATA:
Chemical Name: CARBON MONOXIDE
CAS Number: 630-8-0 Molecular Weight: 28.01 g/mol
AEGL-1 (60 min): N/A AEGL-2 (60 min): 83 ppm AEGL-3 (60 min): 330 ppm
IDLH: 1200 ppm LEL: 125000 ppm UEL: 742000 ppm
Ambient Boiling Point: -191.5° 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: **3 meters/second** from W at 3 meters
Ground Roughness: open country Cloud Cover: 5 tenths
Air Temperature: 15° C **Stability Class: F** (user override)
No Inversion Height Relative Humidity: 50%

SOURCE STRENGTH:
Direct Source: 209.22 kilograms/sec **Source Height: 239 meters**
Release Duration: 60 minutes
Release Rate: 12,600 kilograms/min
Total Amount Released: 753,192 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: (GAUSSIAN SELECTED)
Model Run: Gaussian
Red : **LOC is not exceeded** --- (3680 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.
Orange: **LOC is not exceeded** --- (920 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Incendie de 3 cellules de stockage

Dispersion du Dioxyde de carbone

Condition A, vent 2 m/s

SITE DATA:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.42 (unsheltered single storied)
Time: May 16, 2018 1424 hours ST (using computer's clock)

CHEMICAL DATA:
Chemical Name: CARBON DIOXIDE
CAS Number: 124-38-9 Molecular Weight: 44.01 g/mol
IDLH: 40000 ppm
Normal Boiling Point: -unavail-
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%
Note: Not enough chemical data to use Heavy Gas option

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)
Wind: **2 meters/second** from W at 3 meters
Ground Roughness: open country Cloud Cover: 5 tenths
Air Temperature: 20° C **Stability Class: A** (user override)
No Inversion Height Relative Humidity: 50%

SOURCE STRENGTH:
Direct Source: 2092.19 kilograms/sec **Source Height: 358 meters**
Release Duration: 60 minutes
Release Rate: 126,000 kilograms/min
Total Amount Released: 7,531,884 kilograms

THREAT ZONE: (GAUSSIAN SELECTED)
Model Run: Gaussian
Red : **LOC is not exceeded** --- (89980 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Incendie de 3 cellules de stockage

Dispersion du Dioxyde de carbone

Condition D, vent 5 m/s

SITE DATA:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 1.04 (unsheltered single storied)
Time: May 16, 2018 1427 hours ST (using computer's clock)

CHEMICAL DATA:
Chemical Name: CARBON DIOXIDE
CAS Number: 124-38-9 Molecular Weight: 44.01 g/mol
IDLH: 40000 ppm
Normal Boiling Point: -unavail-
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%
Note: Not enough chemical data to use Heavy Gas option

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)
Wind: **5 meters/second** from W at 3 meters
Ground Roughness: open country Cloud Cover: 5 tenths
Air Temperature: 20° C **Stability Class: D**
No Inversion Height Relative Humidity: 50%

SOURCE STRENGTH:
Direct Source: 1046.09 kilograms/sec **Source Height: 143 meters**
Release Duration: 60 minutes
Release Rate: 126,000 kilograms/min
Total Amount Released: 7,531,884 kilograms

THREAT ZONE: (GAUSSIAN SELECTED)
Model Run: Gaussian
Red : **LOC is not exceeded** --- (**89980 mg/(cu m)**)
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Incendie de 3 cellules de stockage
Dispersion du Dioxyde de carbone
Condition F, vent 3 m/s

SITE DATA:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.65 (unsheltered single storied)
Time: May 16, 2018 1428 hours ST (using computer's clock)

CHEMICAL DATA:
Chemical Name: CARBON DIOXIDE
CAS Number: 124-38-9 Molecular Weight: 44.01 g/mol
IDLH: 40000 ppm
Normal Boiling Point: -unavail-
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%
Note: Not enough chemical data to use Heavy Gas option

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)
Wind: **3 meters/second** from W at 3 meters
Ground Roughness: open country Cloud Cover: 5 tenths
Air Temperature: 15° C **Stability Class: F** (user override)
No Inversion Height Relative Humidity: 50%

SOURCE STRENGTH:
Direct Source: 1046.09 kilograms/sec **Source Height: 239 meters**
Release Duration: 60 minutes
Release Rate: 126,000 kilograms/min
Total Amount Released: 7,531,884 kilograms

THREAT ZONE: (GAUSSIAN SELECTED)
Model Run: Gaussian
Red : **LOC is not exceeded** --- (89980 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Incendie de trois cellules de stockage
Dispersion du HCl
Condition A, vent 2 m/s

SITE DATA:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.42 (unsheltered single storied)
Time: May 16, 2018 1428 hours ST (using computer's clock)

CHEMICAL DATA:
Chemical Name: HYDROGEN CHLORIDE
CAS Number: 7647-1-0 Molecular Weight: 36.46 g/mol
AEGL-1 (60 min): 1.8 ppm AEGL-2 (60 min): 22 ppm AEGL-3 (60 min): 100 ppm
IDLH: 50 ppm
Ambient Boiling Point: -85.0° 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: **2 meters/second** from W at 3 meters
Ground Roughness: open country Cloud Cover: 5 tenths
Air Temperature: 20° C **Stability Class: A** (user override)
No Inversion Height Relative Humidity: 50%

SOURCE STRENGTH:
Direct Source: 78.84 kilograms/sec **Source Height: 358 meters**
Release Duration: 60 minutes
Release Rate: 4,730 kilograms/min
Total Amount Released: 283,824 kilograms
Note: This chemical may flash boil and/or result in two phase flow.

THREAT ZONE: (GAUSSIAN SELECTED)
Model Run: Gaussian
Red : **LOC is not exceeded** --- (358 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.
Orange: **LOC is not exceeded** --- (60 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Incendie de trois cellules de stockage

Dispersion du HCl

Condition D, vent 5 m/s

SITE DATA:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 1.04 (unsheltered single storied)
Time: May 16, 2018 1430 hours ST (using computer's clock)

CHEMICAL DATA:
Chemical Name: HYDROGEN CHLORIDE
CAS Number: 7647-1-0 Molecular Weight: 36.46 g/mol
AEGL-1 (60 min): 1.8 ppm AEGL-2 (60 min): 22 ppm AEGL-3 (60 min): 100 ppm
IDLH: 50 ppm
Ambient Boiling Point: -85.0° 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: **5 meters/second** from W at 3 meters
Ground Roughness: open country Cloud Cover: 5 tenths
Air Temperature: 20° C **Stability Class: D**
No Inversion Height Relative Humidity: 50%

SOURCE STRENGTH:
Direct Source: 78.84 kilograms/sec **Source Height: 143 meters**
Release Duration: 60 minutes
Release Rate: 4,730 kilograms/min
Total Amount Released: 283,824 kilograms
Note: This chemical may flash boil and/or result in two phase flow.

THREAT ZONE: (GAUSSIAN SELECTED)
Model Run: Gaussian
Red : **LOC is not exceeded** --- (358 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.
Orange: **LOC is not exceeded** --- (60 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Incendie de trois cellules de stockage

Dispersion du HCl

Condition F, vent 3 m/s

SITE DATA:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.65 (unsheltered single storied)
Time: May 16, 2018 1431 hours ST (using computer's clock)

CHEMICAL DATA:
Chemical Name: HYDROGEN CHLORIDE
CAS Number: 7647-1-0 Molecular Weight: 36.46 g/mol
AEGL-1 (60 min): 1.8 ppm AEGL-2 (60 min): 22 ppm AEGL-3 (60 min): 100 ppm
IDLH: 50 ppm
Ambient Boiling Point: -85.0° 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: **3 meters/second** from W at 3 meters
Ground Roughness: open country Cloud Cover: 5 tenths
Air Temperature: 15° C **Stability Class: F** (user override)
No Inversion Height Relative Humidity: 50%

SOURCE STRENGTH:
Direct Source: 78.84 kilograms/sec **Source Height: 239 meters**
Release Duration: 60 minutes
Release Rate: 4,730 kilograms/min
Total Amount Released: 283,824 kilograms
Note: This chemical may flash boil and/or result in two phase flow.

THREAT ZONE: (GAUSSIAN SELECTED)
Model Run: Gaussian
Red : **LOC is not exceeded** --- (358 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.
Orange: **LOC is not exceeded** --- (60 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Incendie de trois cellules de stockage

Dispersion du HCN

Condition A, vent 2 m/s

SITE DATA:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.42 (unsheltered single storied)
Time: May 16, 2018 1449 hours ST (using computer's clock)

CHEMICAL DATA:
Chemical Name: HYDROGEN CYANIDE
CAS Number: 74-90-8 Molecular Weight: 27.03 g/mol
AEGL-1 (60 min): 2 ppm AEGL-2 (60 min): 7.1 ppm AEGL-3 (60 min): 15 ppm
IDLH: 50 ppm LEL: 56000 ppm UEL: 400000 ppm
Ambient Boiling Point: 25.7° C
Vapor Pressure at Ambient Temperature: 0.81 atm
Ambient Saturation Concentration: 806,532 ppm or 80.7%

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)
Wind: 2 meters/second from W at 3 meters
Ground Roughness: open country Cloud Cover: 5 tenths
Air Temperature: 20° C **Stability Class: A (user override)**
No Inversion Height Relative Humidity: 50%

SOURCE STRENGTH:
Direct Source: 6.12 kilograms/sec **Source Height: 358 meters**
Release Duration: 60 minutes
Release Rate: 367 kilograms/min
Total Amount Released: 22,032 kilograms

THREAT ZONE: (GAUSSIAN SELECTED)
Model Run: Gaussian
Red : LOC is not exceeded --- (45 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Incendie de trois cellules de stockage

Dispersion du HCN

Condition D, vent 5 m/s

SITE DATA:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 1.04 (unsheltered single storied)
Time: May 16, 2018 1450 hours ST (using computer's clock)

CHEMICAL DATA:
Chemical Name: HYDROGEN CYANIDE
CAS Number: 74-90-8 Molecular Weight: 27.03 g/mol
AEGL-1 (60 min): 2 ppm AEGL-2 (60 min): 7.1 ppm AEGL-3 (60 min): 15 ppm
IDLH: 50 ppm LEL: 56000 ppm UEL: 400000 ppm
Ambient Boiling Point: 25.7° C
Vapor Pressure at Ambient Temperature: 0.81 atm
Ambient Saturation Concentration: 806,532 ppm or 80.7%

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)
Wind: **5 meters/second** from W at 3 meters
Ground Roughness: open country Cloud Cover: 5 tenths
Air Temperature: 20° C **Stability Class: D**
No Inversion Height Relative Humidity: 50%

SOURCE STRENGTH:
Direct Source: 6.12 kilograms/sec **Source Height: 143 meters**
Release Duration: 60 minutes
Release Rate: 367 kilograms/min
Total Amount Released: 22,032 kilograms

THREAT ZONE: (GAUSSIAN SELECTED)
Model Run: Gaussian
Red : **LOC is not exceeded** --- (45 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Incendie de trois cellules de stockage

Dispersion du HCN

Condition F, vent 3 m/s

SITE DATA:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.65 (unsheltered single storied)
Time: May 16, 2018 1450 hours ST (using computer's clock)

CHEMICAL DATA:
Chemical Name: HYDROGEN CYANIDE
CAS Number: 74-90-8 Molecular Weight: 27.03 g/mol
AEGL-1 (60 min): 2 ppm AEGL-2 (60 min): 7.1 ppm AEGL-3 (60 min): 15 ppm
IDLH: 50 ppm LEL: 56000 ppm UEL: 400000 ppm
Ambient Boiling Point: 25.7° C
Vapor Pressure at Ambient Temperature: 0.66 atm
Ambient Saturation Concentration: 661,437 ppm or 66.1%

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)
Wind: **3 meters/second** from W at 3 meters
Ground Roughness: open country Cloud Cover: 5 tenths
Air Temperature: 15° C **Stability Class: F** (user override)
No Inversion Height Relative Humidity: 50%

SOURCE STRENGTH:
Direct Source: 6.12 kilograms/sec **Source Height: 239 meters**
Release Duration: 60 minutes
Release Rate: 367 kilograms/min
Total Amount Released: 22,032 kilograms

THREAT ZONE: (GAUSSIAN SELECTED)
Model Run: Gaussian
Red : **LOC is not exceeded** --- (45 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Incendie de trois cellules de stockage

Dispersion des fumées de l'incendie (seuil équivalent)

Condition A, vent 2 m/s

SITE DATA:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.42 (unsheltered single storied)
Time: May 16, 2018 1451 hours ST (using computer's clock)

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)
Wind: **2 meters/second** from W at 3 meters
Ground Roughness: open country Cloud Cover: 5 tenths
Air Temperature: 20° C **Stability Class: A** (user override)
No Inversion Height Relative Humidity: 50%

SOURCE STRENGTH:
Direct Source: 9526.6 kilograms/sec **Source Height: 358 meters**
Release Duration: 60 minutes
Release Rate: 572,000 kilograms/min
Total Amount Released: 34,295,760 kilograms

THREAT ZONE: (GAUSSIAN SELECTED)
Model Run: Gaussian
Red : **LOC is not exceeded ---** (21705 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.
Orange: **LOC is not exceeded** --- (5568 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Incendie de trois cellules de stockage
Dispersion des fumées de l'incendie (seuil équivalent)
Condition D, vent 5 m/s

SITE DATA:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 1.04 (unsheltered single storied)
Time: May 16, 2018 1453 hours ST (using computer's clock)

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)
Wind: **5 meters/second** from W at 3 meters
Ground Roughness: open country Cloud Cover: 5 tenths
Air Temperature: 20° C **Stability Class: D**
No Inversion Height Relative Humidity: 50%

SOURCE STRENGTH:
Direct Source: 9526.6 kilograms/sec **Source Height: 143 meters**
Release Duration: 60 minutes
Release Rate: 572,000 kilograms/min
Total Amount Released: 34,295,760 kilograms

THREAT ZONE: (GAUSSIAN SELECTED)
Model Run: Gaussian
Red : **LOC is not exceeded** --- (21705 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.
Orange**: LOC is not exceeded** --- (5568 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Incendie de trois cellules de stockage
Dispersion des fumées de l'incendie (seuil équivalent)
Condition F, vent 3 m/s

SITE DATA:
Location: CERNAY-LES-REIMS, FRANCE
Building Air Exchanges Per Hour: 0.65 (unsheltered single storied)
Time: May 16, 2018 1453 hours ST (using computer's clock)

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)
Wind: **3 meters/second** from W at 3 meters
Ground Roughness: open country Cloud Cover: 5 tenths
Air Temperature: 15° C **Stability Class: F** (user override)
No Inversion Height Relative Humidity: 50%

SOURCE STRENGTH:
Direct Source: 9526.6 kilograms/sec **Source Height: 239 meters**
Release Duration: 60 minutes
Release Rate: 572,000 kilograms/min
Total Amount Released: 34,295,760 kilograms

THREAT ZONE: (GAUSSIAN SELECTED)
Model Run: Gaussian
Red : **LOC is not exceeded** --- (21705 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.
Orange: **LOC is not exceeded** --- (5568 mg/(cu m))
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.