

Description

Heading: FLADIS24

Description: Model of the FLADIS trial 24 ammonia release.

Source Condition

Source Type: Continuous
Source Location: (0,0,1.5)m
Release Type: Momentum Jet
Discharge Coefficient: 1
Orifice Radius: 0.00315m
Angle From Horizontal: 0deg
Angle From North: 90deg
Release Rate: 0.46kg/s
Duration: 600s
Using Finite Duration Model: Yes

Source Composition

Phase: Two-Phase
Substance: Ammonia (SRD Databank)
Liquid Fraction: 1
Temperature: 282.6K
Contaminant Mass Fraction: 1
Pressure: 570000Pa
Rainout Fraction: 0

Weather Conditions

Weather Scheme: Monin-Obukhov
Roughness Length: 0.04m
Wind Reference Height: 10m
Wind Angle From North: 270deg
Relative Humidity: 0.536
Temperature: 290.65K
Pressure: 101300Pa
Using User Input Mixing Height: Yes
User Input Mixing Height: 1000m
Inverse Obukhov Length: -0.013/m
Friction Velocity: 0.405m/s

Flammable Targets

Flammable Limits Input By User: No
Lower Flammable Limit: 0%
Upper Flammable Limit: 0%
Target LFL Fractions: 1

Toxic Targets

Indoors Ventilation Rate: 0 air changes per hour
Indoors Lag Time: 0s
Maximum Exposure Duration: 400s
Use Time Averaging: Yes
Averaging Time: 400s
Toxic Dose Fraction Method: Method 1
Toxic Dose Exponents: Ammonia: 1
Outdoor Conc Criteria #1: 60ppm Ammonia

Expanded Source Conditions

Diameter: 0.046669m
Velocity: 53.3764m/s
Density: 5.03803kg/m³
Vapour Fraction: 0.170764
Richardson Number: 0.0817895

Messages:

Running Model

At 30.8167m downstream from the source there is no liquid remaining in the cloud in phase 0

At 70.754m downstream from the source the cloud centreline has reached ground-level

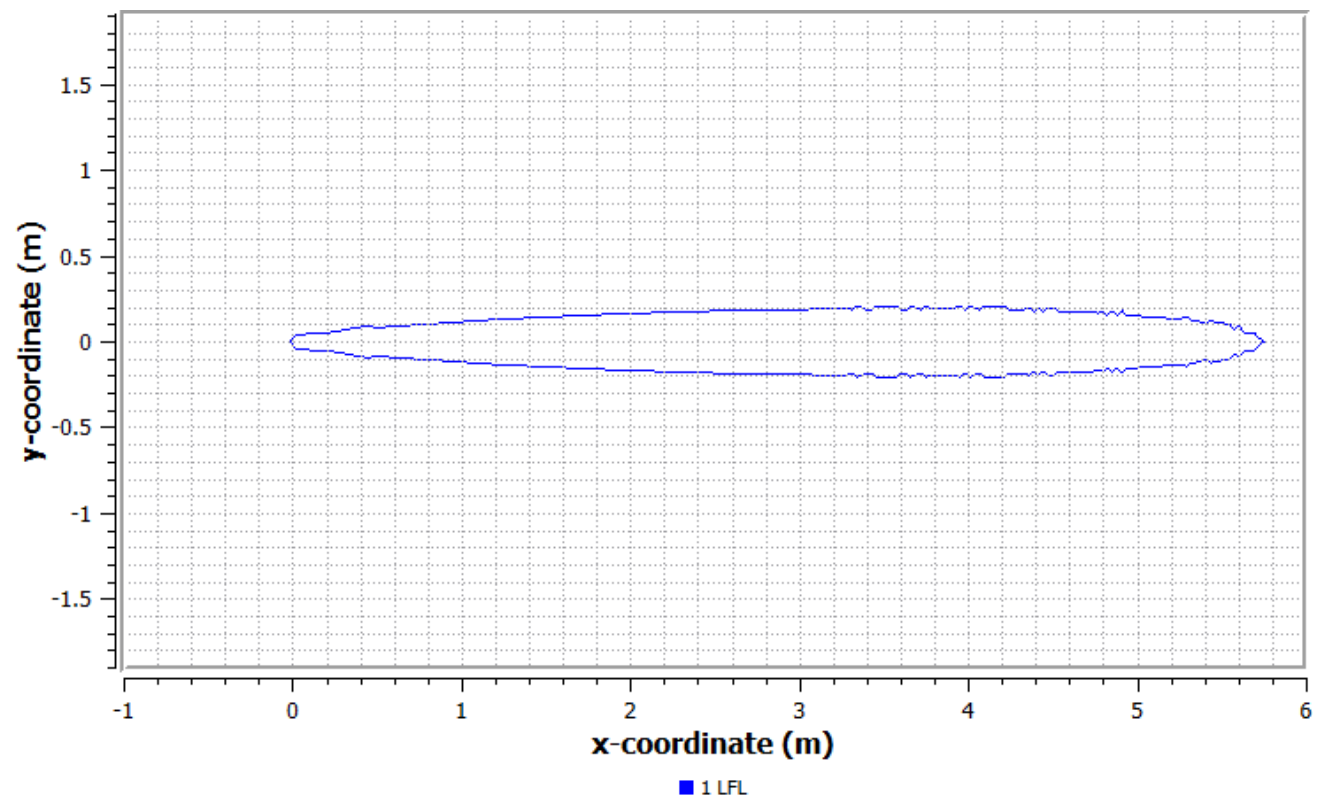
At a downstream distance of 1017.65m and a centroid height of 77.0547m the cloud centroid has left the Surface Layer and has now entered the Free Convection Layer

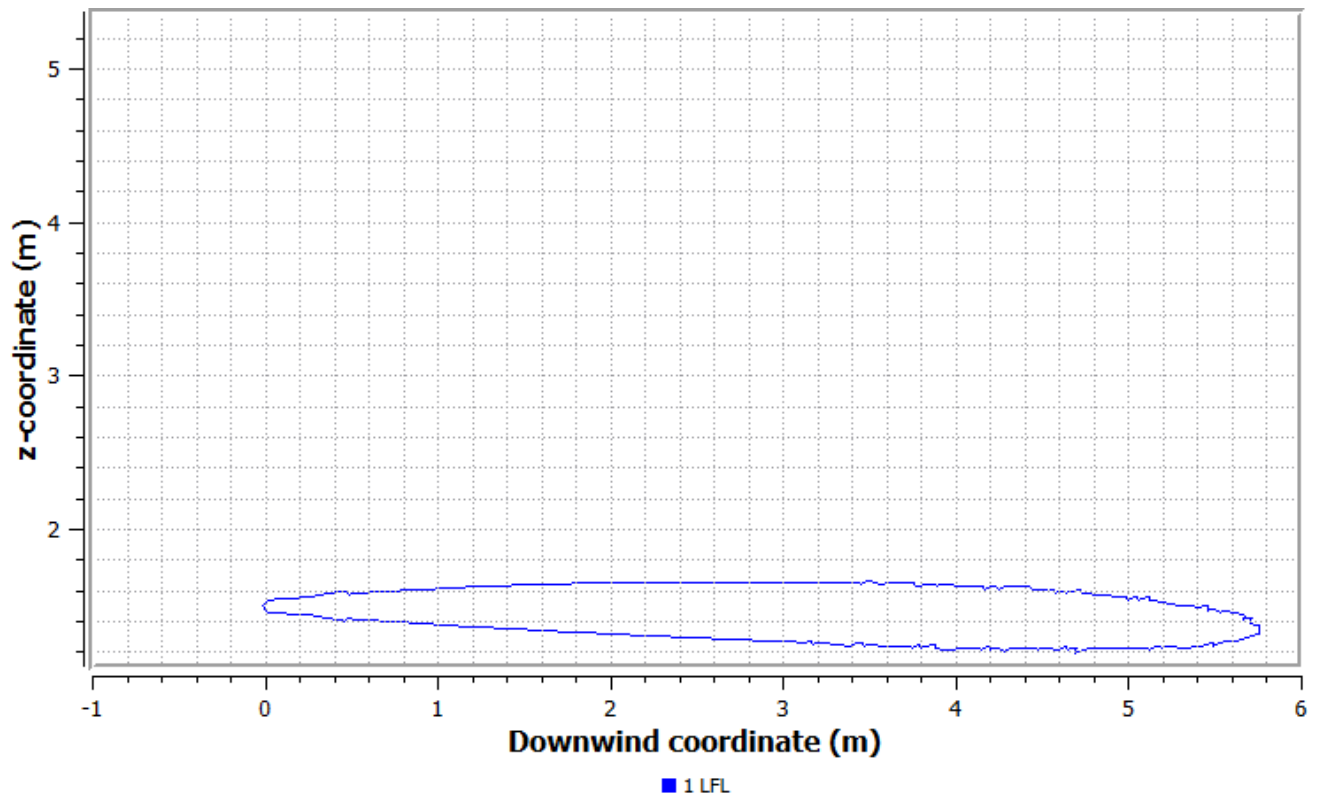
Run terminated 1159.93m downstream from the source. Cloud centreline concentration has fallen below the lowest level of interest.

General Results

Worst Case Time: Yes

Flammable Results





Worst Case Time: Yes

Worst Case Height: Yes

Flammable Volume: 0.424113m³

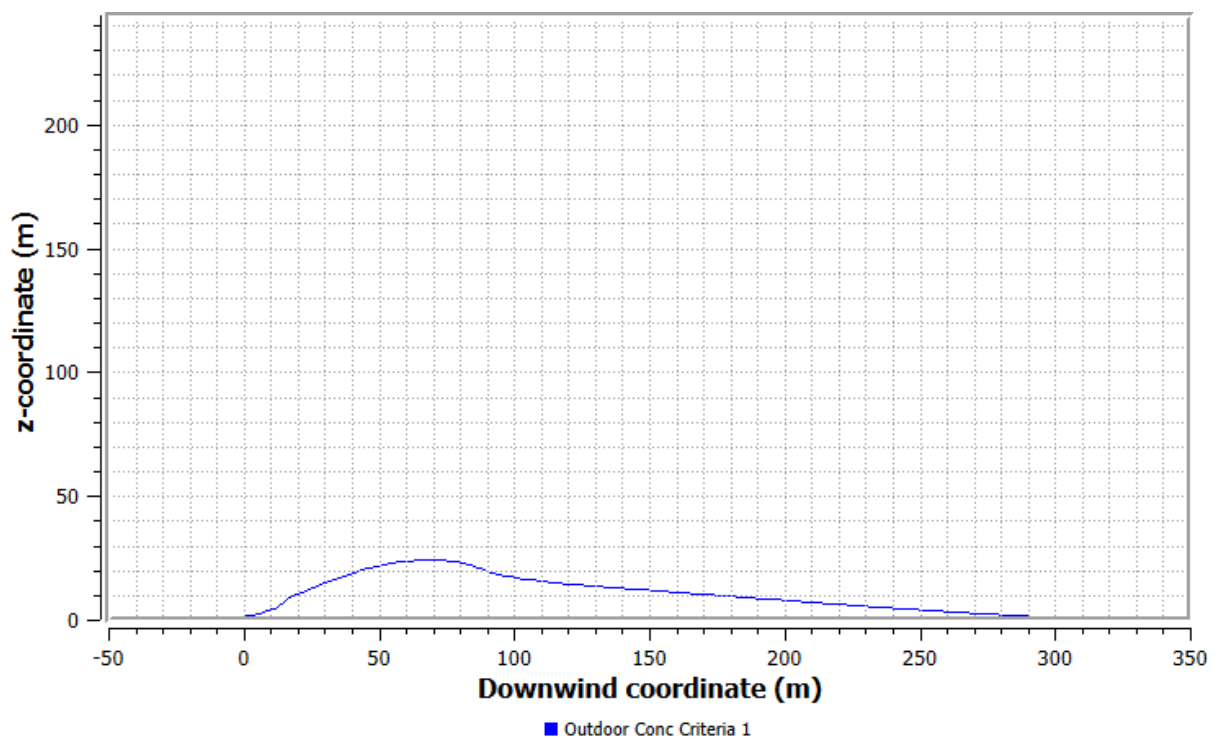
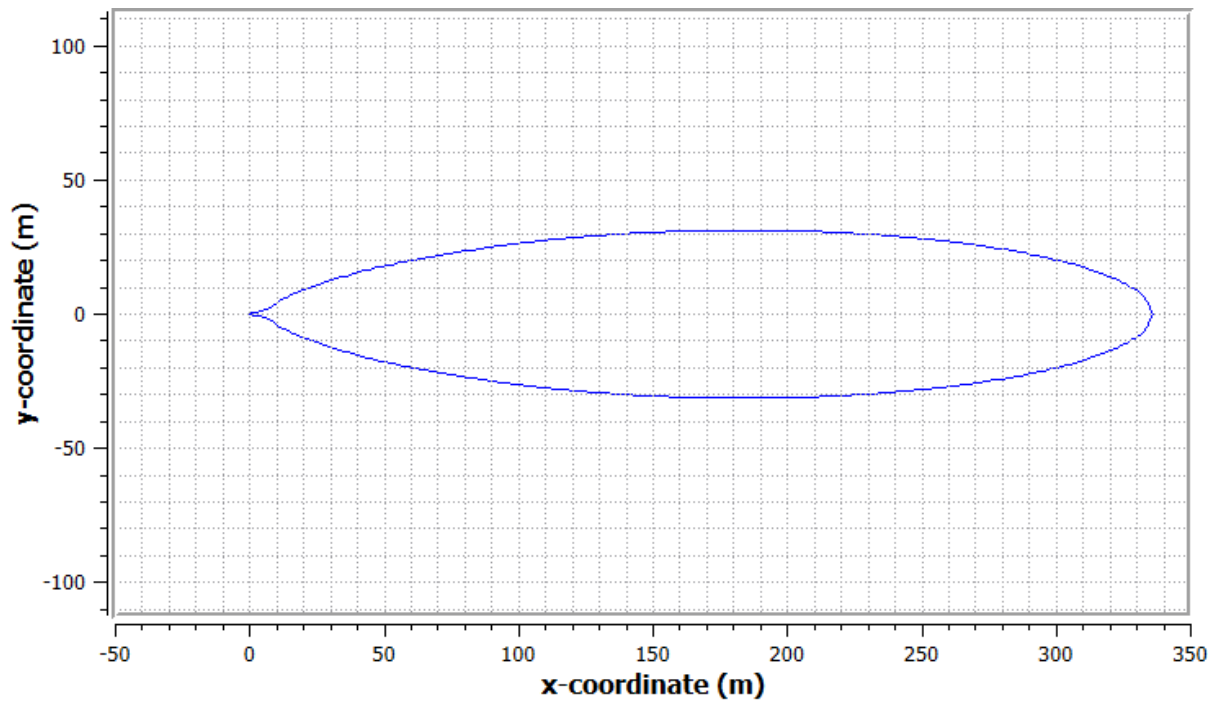
Excluding UFL Region: No

Flammable Mass: 0.069693kg

Excluding UFL Region: No

	Fraction Of LFL Distance Upstream (m)	Distance Downstream (m)	Max. Half Width (m)	Distance to Max. Half Width (m)
1	0.0371894	5.77706	0.20568	4.16831

Toxic Results



Worst Case Time: Yes

Worst Case Height: Yes

Criteria Description:	Distance Upstream (m)	Distance Downstream (m)	Max. Half Width (m)	Distance to Max. Half Width (m)
Outdoor Concentration Level 1	0.0406272	336.089	31.3076	182.736