



CERES (Chemical Emergency Response E-Service) is a cloud based emergency response decision support application design to be used before, during and after a chemical incident. It incorporates the US EPA CAMEO - ALOHA code as its modeling engine and runs on MS Windows, Mac OS, Android and iOS devices allowing users to use their response tool in or out of the office or in the field, anytime, anywhere and on any device.

The application is offered in a base (no cost) configuration with all of the standard ALOHA modeling capabilities integrated with a Google Map interface. A Pro version is available as a cost effective solution for users needing to address a higher level of risk or the need for advanced emergency response capability, wide area mapping coverage, live internet weather, monitoring hardware integration, visual and audible alarms, automatic generation and assessment of impacted receptors, predefined scenarios, quick response mode when the chemical or release rate is unknown, historical data archiving and analysis, as well as improved collaboration and reporting tools.

CERES BASE

<p>Full CAMEO ALOHA plume dispersion modeling capabilities including toxic gas clouds, flammable gas clouds, BLEVEs, jet fires, pool fires, vapor cloud explosions, building infiltration analysis and the following source strengths: Direct, Puddle, Tank, and Gas Pipe.</p>	<div style="display: flex; justify-content: space-between;"> <div data-bbox="560 1249 803 1333"> <p>Concentration</p> <ul style="list-style-type: none"> ☑ 0.75 ppm (PAC-3 - AEGL-3 [60 min]) ☑ 0.3 ppm (PAC-2 - AEGL-2 [60 min]) ☑ 0.03 ppm (PAC-1 - TEEL-1 [60 min]) </div> <div data-bbox="820 1249 1063 1333"> <p>Thermal radiation</p> <ul style="list-style-type: none"> ☑ 10000 W/m² (Potentially lethal within 60 seconds) ☑ 5000 W/m² (Second-degree burns within 60 seconds) ☑ 2000 W/m² (Pain within 60 seconds) </div> <div data-bbox="1079 1249 1323 1333"> <p>Overpressure</p> <ul style="list-style-type: none"> ☑ 0.54 atm (Destruction of buildings) ☑ 0.24 atm (Serious injury likely) ☑ 0.07 atm (Shatters glass) </div> </div>																										
<p>Google Maps base integration for displaying the threat zones and assessing the impacted manual receptors. Scenario history for managing current and past modeling runs, along with basic reporting surpassing ALOHA capabilities.</p>	<table border="1" data-bbox="1128 1375 1502 1690"> <thead> <tr> <th>NAME</th> <th>RELEASE TIME</th> <th>END AT</th> </tr> </thead> <tbody> <tr> <td>Public - Evaporating Puddle</td> <td>7 Sep 2020 20:51</td> <td>7 Sep 2020 20:52</td> </tr> <tr> <td>Public - Evaporating Puddle</td> <td>7 Sep 2020 20:51</td> <td>7 Sep 2020 20:52</td> </tr> <tr> <td>Public - Evaporating Puddle</td> <td>7 Sep 2020 20:51</td> <td>7 Sep 2020 20:51</td> </tr> <tr> <td>Direct</td> <td>7 Sep 2020 20:42</td> <td>7 Sep 2020 20:51</td> </tr> <tr> <td>Direct</td> <td>7 Sep 2020 20:42</td> <td>7 Sep 2020 20:43</td> </tr> <tr> <td>DIRECT - Test</td> <td>4 Sep 2019 10:20</td> <td>4 Sep 2019 10:21</td> </tr> <tr> <td>DIRECT - Test</td> <td>4 Sep 2019 10:20</td> <td>4 Sep 2019 10:20</td> </tr> </tbody> </table>			NAME	RELEASE TIME	END AT	Public - Evaporating Puddle	7 Sep 2020 20:51	7 Sep 2020 20:52	Public - Evaporating Puddle	7 Sep 2020 20:51	7 Sep 2020 20:52	Public - Evaporating Puddle	7 Sep 2020 20:51	7 Sep 2020 20:51	Direct	7 Sep 2020 20:42	7 Sep 2020 20:51	Direct	7 Sep 2020 20:42	7 Sep 2020 20:43	DIRECT - Test	4 Sep 2019 10:20	4 Sep 2019 10:21	DIRECT - Test	4 Sep 2019 10:20	4 Sep 2019 10:20
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CERES PRO

Additional map functionality: Live traffic, Street view, Live current location, Map ruler, Drawing tools, Google Places for automatic generation and assessment of impacted receptors; KML/KMZ and custom imagery (satellite imagery) import.

Scenario Output

Direct Release at September 07, 2020 9:06 PM

9000 Clinton Dr, Houston, TX 77026, USA
28.7271°N, 95.2303°W, 4.49 m

Atmospheric Data

79% Humidity
92.8 °F Peak Max: 105.1 °F
High-L, Partly Cloudy (5 km/h)
"F" Stability

Wind speed and direction measured at 32.81 ft height
Ground roughness is 3.28 ft and no inversion height

Source Details

Chemical: AMMONIA
Direct Careless Source: 908 lbs
Source Height: 0
Release Duration: 60 min
Release Rate: 26,992.67 lb/min
Total Amount Released: 1,799,560.94 lb

*This chemical may flash boil and/or result in two phase flow. Use both dispersion modules to investigate its potential behavior.

View ERG or CANED Chemicals Data

Scenario Warnings

Access live meteorological data for modeling by selecting nearby internet weather stations or user provided local fixed or portable met stations and compare model results against gas sensor concentrations.

Alarms

Direct Release at September 07, 2020 10:08 PM
Update atmospheric options

Red Water Site

79% Humidity, 1.02 atm Pressure
6.3 °C feels like: 6.3 °C
High-L, Clear (0.002 W/m²)
"F" Stability

Wind speed and direction measured at 10 m height
Ground roughness is 1 m and no inversion height

Use Alerts at: 07 Sep 2020 10:08 PM

Date	Wind Speed	Wind Dir	Temp
10:01 PM	5.4 km/h	184° S	6.3 °C
10:02 PM	5.3 km/h	183° S	6.3 °C
10:03 PM	5.4 km/h	180° S	6.3 °C
10:04 PM	5.5 km/h	177° S	6.3 °C
10:05 PM	5.5 km/h	175° S	6.3 °C
10:06 PM	5.4 km/h	175° S	6.3 °C
10:07 PM	5.5 km/h	175° S	6.3 °C
10:08 PM	5.5 km/h	170° S	6.3 °C

Red Water Site

Red Water Site, 7 Sep 2020 22:08

ELK ISLAND NAT PARK, ALTA - 22.65 km, 7 Sep 2020 21:00 (NMS - SYNOP)

OLIVER AGDM, ALTA - 27.12 km, 7 Sep 2020 10:08 PM

Date	Wind Speed	Wind Dir	Temp
10:01 PM	5.4 km/h	184° S	6.3 °C
10:02 PM	5.3 km/h	183° S	6.3 °C
10:03 PM	5.4 km/h	180° S	6.3 °C
10:04 PM	5.5 km/h	177° S	6.3 °C
10:05 PM	5.5 km/h	175° S	6.3 °C
10:06 PM	5.4 km/h	175° S	6.3 °C
10:07 PM	5.5 km/h	175° S	6.3 °C
10:08 PM	5.5 km/h	170° S	6.3 °C

Predefined scenario library management; prioritized library highlighting "my chemicals"; extended chemical library (LPG, Gasoline, Formaldehyde) and chemical creation service.

Predefined Scenarios

NAME	TYPE	CHEMICAL	GROUP NAME	CREATED DATE	RUN
BLEVE (Ammonia Tanker)	Tank	AMMONIA		20 Nov 2019 20:27	
Rail Car Rupture (Sulfur Dioxide)	Tank	SULFUR DIOXIDE		17 Nov 2019 19:51	
Jet Fire (Propane Tank)	Tank	PROPANE	Propane Tank	17 Nov 2019 08:16	
BLEVE (Methane Tank)	Tank	METHANE	Methane Tank	17 Nov 2019 07:37	
BLEVE (Propane Tank)	Tank	PROPANE	Propane Tank	17 Nov 2019 07:28	
Short Pipe Failure (Propane Tank)	Tank	PROPANE	Propane Tank	16 Nov 2019 20:07	
Tank Failure (Refrigerated Ammonia Tank)	Puddle	AMMONIA	Refrigerated Ammonia Tank	16 Nov 2019 18:52	
Flange Plug Failure (Chlorine Tank)	Tank	CHLORINE	Chlorine Tank	14 Nov 2019 13:52	
Nozzle Failure (Refrigerated Ammonia Tank)	Tank	AMMONIA	Refrigerated Ammonia Tank	14 Nov 2019 13:11	

Chemicals List

NAME	MY CHEMICAL
GASOLINE	<input checked="" type="checkbox"/>
GEOSOL	<input type="checkbox"/>
GLUTARALDEHYDE	<input type="checkbox"/>
GLYCEROL, ALPHA-MONOOCHLOROHYDRIN	<input type="checkbox"/>
GLYCIDALDEHYDE	<input type="checkbox"/>
GLYCIDOL	<input type="checkbox"/>
GLYOXAL	<input type="checkbox"/>
HALOTHANE	<input type="checkbox"/>
1-HEPTANETHIOL	<input type="checkbox"/>



APPLICATION FACT SHEET

Creation and management of multiple areas of interests. Multi-users sharing the same area of interest, predefined scenarios. Incident report / data sharing by email or incident link to facilitate scenario sharing and team collaboration.



NAME	EMAIL	ROLE
<input type="checkbox"/> Cristian Stoichina	cstoichina@vlahi.com	Company Manager
<input type="checkbox"/> Cristian Nutten Runner1	cstoichina-nutten_runner@vlahi.com	DAQ
<input type="checkbox"/> Cristian Nutten Runner2	cstoichina-nutten_runner2@vlahi.com	Scenario Runner
<input type="checkbox"/> Ubuntu1 DAQ For Redwater Alberta	cstoichina-daqrwater@vlahi.com	DAQ

Advanced reporting including impacted zone map imagery, impacted border, area and point receptors and KMZ impact zone export. Report option for infiltration analysis for multiple impacted receptors.

CERES 2.0.4289 ALOHA® 5.4.7

Threat at point: Fort Saskatchewan Elementary
 Address: 9802 101 St, Fort Saskatchewan, AB T8L 1V4, Canada
 Phone: (780) 998-7771
 Type: Education
 Location: 53.70856N, 113.21261W
 Building Air Exchanges Per Hour: 1.5

Max Concentration:
 Outdoor: 2,120 ppm
 Indoor: 398 ppm

CERES 2.0.4289 ALOHA® 5.4.7

Impacted Places

Impact	Type	Name	Distance	Address	Phone
High	Religious	Josephburg United Church of Christ	0.18 km	10208 100 Ave, Fort Saskatchewan, AB T8L 1Y8, Canada	
High	Education	Careers In Transition	0.22 km	10211 100 Ave, Fort Saskatchewan, AB T8L 1Y7, Canada	(780) 589-4700
Medium	Government	City of Fort Saskatchewan City Hall	0.13 km	10005 102 St, Fort Saskatchewan, AB T8L 2C5, Canada	(780) 992-6200
Medium	Fire Station	Fort Saskatchewan Fire Department	1.45 km	10059 93 Ave, Fort Saskatchewan, AB T8L 1N5, Canada	(780) 998-4858
Low	Education	Music for Young Children	0.52 km	9808 103 St, Fort Saskatchewan, AB T8L 4L5, Canada	
Low	Education	Fort Saskatchewan Elementary	0.62 km	9802 101 St, Fort Saskatchewan, AB T8L 1V4, Canada	(780) 998-7771
Low	Religious	Bridge Church	1.96 km	10101 86 Ave #401, Fort Saskatchewan, AB T8L 4P4, Canada	(780) 850-2247

Monitor meteorological and fixed/mobile gas sensors data acquisition and display, Quick Response mode for immediate identification of receptors downwind from the event when the chemical or release rate is unknown as well as optimizing gas sensor deployment locations during an event. Visual and audible alarms.

Weather from RedWater Site at 4:30 PM
 44.2% Humidity, 1.07 atm Pressure
 22° W, 30.3 KM/H
 19.8 °C feels like: 19.8 °C
 Dry, Clear (247.6 km/h²)
 D Stability

Using AMMONIA for VOC / LEL sensors

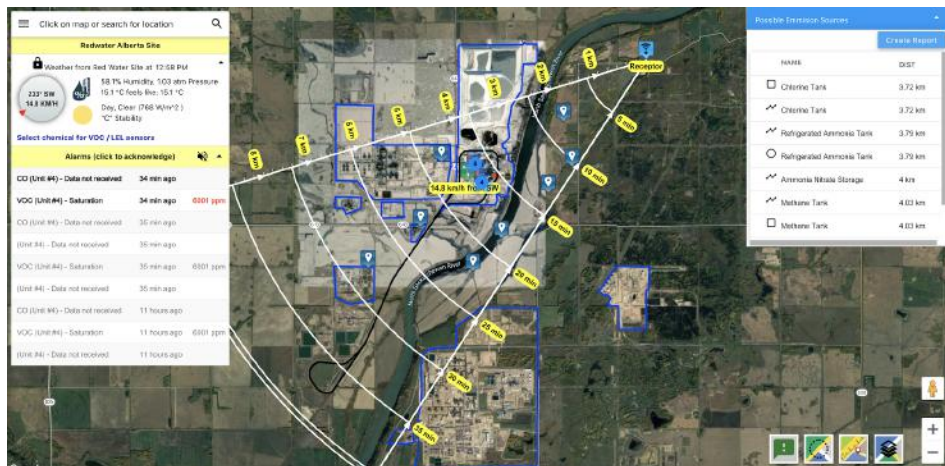
Alarms (click to acknowledge)

- CO [Unit#] - Data not received 13 min ago
- VOC [Unit#] - Saturates 13 min ago 58008.7 ppm
- [Unit #1] - Data not received 14 min ago
- [Unit #2] - Data not received 14 min ago
- [Unit #3] - Data not received 14 min ago
- [Unit #4] - Data not received 14 min ago
- CO [Unit#] - Data not received 14 min ago
- VOC [Unit#] - Saturates 14 min ago 58025.7 ppm
- [Unit #1] - Data not received 14 min ago
- [Unit #2] - Data not received 15 min ago
- [Unit #3] - Data not received 15 min ago
- [Unit #4] - Data not received 15 min ago
- [Unit #5] - Data not received 15 min ago
- [Unit #6] - Data not received 15 min ago
- [Unit #7] - Data not received 15 min ago
- CO [Unit#] - Data not received 15 min ago

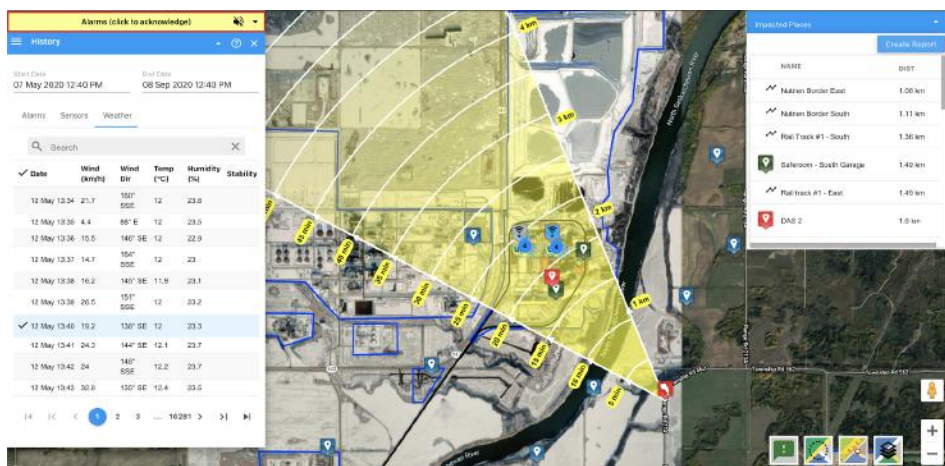


APPLICATION FACT SHEET

Fugitive Emission Corridor (upwind corridor) to help identify likely / possible emission sources to assist with odor complaint investigation, regulatory compliance and claims management.



Meteorological and gas sensor historical data and alarm history archives, time interval reporting and meteorological wind rose.



Wide area map / system coverage to support running manual input and pre-defined scenarios for transportation emergency response. Run your scenarios anywhere in your country.

