Air Emission Event Reporting Datab

Texas Commission on Environmental Quality

Regulated entity name	ARKEMA CROSBY PLANT	**Physical location**	
Regulated entity RN number	RN100210301	**City, County**	CROSBY, HARRIS
Type(s) of air emissions event:	EMISSIONS EVENT	**Event began:**	08/29/2017 12:00PM
This is based on the:	FINAL REPORT	**Event ended:**	08/29/2017 6:06PM
Cause	On 08/25/17, the City of Houston and its surrounding areas experienced wide spread flooding as a result of Hurricane Harvey. Due to extensive flooding that took place within the plant due to inclement weather assoicated with Hurricane Harvey, both tanks accumulated large amounts of rain water which exceeded the tanks' capacity which caused it contents to overflow into the tanks' containment dike. Due to the widespread amounts of flooding waters within the plant, the flood waters began to overflow within the tanks' containment dike which consumed a portion of the dike's capacity along with the overflow from the tanks. The containment dike exceeded its capacity which resulted in the release of storm water containing mineral spirits and residual organics into/onto the flood waters within the plant.		
Action taken	Any mineral spirit and residual organic sheen identified on the plant property has been collected and will be properly disposed. Any mineral spirit and residual organic sheen identified within the tank containment dike and/or in the associated tanks will be properly removed and disposed as well. Currently water samples are being taken at and near the containment dike, within the plant's sump system(s), and at and near the plant's storm water outfalls to confirm whether there are any dissolved constituents present for purposes of storm water management.		
Emissions estimation method	Engineering estimates were based on known quantities of organics measured in the tanks prior to the storm events, and waste profiles were used for speciation. A conservative assumption was made that all organic material was released to the air.Initial report records prepared and maintained per August 28, 2017 TCEQ regulatory guidance on Suspension of TCEQ Rules related to Hurricane Harvey.Please note the event duration was based on the Atacosita Fire Station data, 6:06p last reading showing rainfall accumulation. Additionally, please note the		

	following is additional information regarding the list of air contaminants compounds: VOC-unspeciated:2,5 Dimethyl-2,5 Di(T-Butyl Peroxy)Hexane- 698.46 lbs. and T-Amyl alcohol- 2,793.85 lbs. Organic Peroxides: Di-T-Butyl Peroxide- 698.46 lbs. and Di-T-Amyl Peroxide- 698.46 lbs.

Source 1: 14-T-2A and 14-T-2B , FIN number

Source 2: WWTANKS , EPN number

Contaminant	Authorization	Limit	Amount Released
Ethylbenzene	No specific emissions authorizations for this facility	0.0	558.77 lbs (est.)
Mineral Spirit	No specific emissions authorizations for this facility	0.0	11175.39 lbs (est.)
Naphtha	No specific emissions authorizations for this facility	0.0	558.77 lbs (est.)
Naphthalene	No specific emissions authorizations for this facility	0.0	558.77 lbs (est.)
Peroxide, organic	No specific emissions authorizations for this facility	0.0	1396.92 lbs (est.)
Trimethylbenzene, 1,2,4-	No specific emissions authorizations for this facility	0.0	3073.23 lbs (est.)
Unspeciated VOCs	No specific emissions authorizations for this facility	0.0	3492.31 lbs (est.)
tert-butyl alcohol	No specific emissions authorizations for this facility	0.0	2793.85 lbs (est.)

Source 3: Wastewater Treatment Plant , FIN number

No other sources

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Regulated entity RN number	RN100210301	**City, County**	CROSBY, HARRIS
Type(s) of air emissions event:	EMISSIONS EVENT	**Event began:**	08/31/2017 2:00AM
This is based on the:	FINAL REPORT	**Event ended:**	08/31/2017 4:00AM
Cause	Due to inclement weather conditions associated with Hurricane Harvey, the plant accumulated an unprecedented six (6) to eight (8) feet of water within the facility. Arkema's investigation to date indicates that as the water level continued to rise within the plant over the course of several days, the plant was unable to use its primary power, its emergency backup power, and later its nitrogen cooling system. As a result, plant personnel removed the containers of organic peroxides from storage and placed them in refrigerated trailers. Ultimately, the refrigeration of the organic peroxide products in the trailer involved in this emissions event was also compromised by the flood waters, which led to product decomposition, ignition and a subsequent fire.		
Action taken	As agreed with the TCEQ, EPA, and Harris County Pollution Control, and due to the instability of the products in the absence of refrigeration and safety concerns of trying to fight a fire of this nature, the trailer and products were allowed to burn to completion. This event was beyond Arkema's reasonable control, and Arkema Inc. closely coordinated the response to this event with the local, state, and national authorities. Precautionary evacuations were implemented as part of the unified command response plan.		
Emissions estimation method	Engineering estimates were based on known quantities of organic peroxide products stored in the trailer, product packaging, and the trailer construction materials, USEPA and TCEQ emission factors, and expected decomposition products.Please note the following is additional information regarding the list of air contaminants compounds: VOC-unspeciated: OMS- 1,398.97 lbs., 2-Ethyl hexanal-171.72 lbs., and the remainder reflects Naphtha (petroleum), hydrotreated heavy, Naphtha (petroleum), heavy alkylate, and VOC emissions from diesel fuel combustion- 1,699.49 lbs. For particulate matter: PM- 1,014.45, PM10- 1,014.54 lbs., and PM2.5- 1,014.54 lbs.		

Source 1: Refrig.Trailer storing organic peroxide @ Bldg. 21, EPN number

Contaminant	Authorization	Limit	Amount Released
2-Ethylhexanol	No specific emissions authorizations for this facility	0.0	527.41 lbs (est.)
Acetone	No specific emissions authorizations for this facility	0.0	284.84 lbs (est.)
Acetophenone	No specific emissions authorizations for this facility	0.0	1376.21 lbs (est.)
Carbon Monoxide	No specific emissions authorizations for this facility	0.0	1589.46 lbs (est.)
Ethane	No specific emissions authorizations for this facility	0.0	23.0 lbs (est.)
Nitrogen dioxide	No specific emissions authorizations for this facility	0.0	98.76 lbs (est.)
Nonane	No specific emissions authorizations for this facility	0.0	1573.6 lbs (est.)
Nonene	No specific emissions authorizations for this facility	0.0	518.76 lbs (est.)
Particulate Matter	No specific emissions authorizations for this facility	0.0	3043.53 lbs (est.)
Sulfur dioxide	No specific emissions authorizations for this facility	0.0	1.78 lbs (est.)
Unspeciated VOCs	No specific emissions authorizations for this facility	0.0	3270.18 lbs (est.)

Source 2: Refrig.Trailer storing organic peroxide @ Bldg. 21, FIN number

Source 3: Refrig.Trailer storing organic peroxide @ Bldg. 21, FIN number

No other sources

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Regulated entity name	ARKEMA CROSBY PLANT	**Physical location**	
Regulated entity RN number	RN100210301	**City, County**	CROSBY, HARRIS
Type(s) of air emissions event:	EMISSIONS EVENT	**Event began:**	09/01/2017 5:00PM
This is based on the:	FINAL REPORT	**Event ended:**	09/01/2017 7:00PM
Cause	Due to inclement weather conditions associated with Hurricane Harvey, the plant accumulated an unprecedented six (6) to eight (8) feet of water within the facility. Arkema's investigation to date indicates that as the water level continued to rise within the plant over the course of several days, the plant was unable to use its primary power, its emergency backup power, and later its nitrogen cooling system. As a result, plant personnel removed the containers of organic peroxides from storage and placed them in refrigerated trailers. Ultimately, the refrigeration of the organic peroxide products in the two trailers involved in this emissions event was also compromised by the flood waters, which led to product decomposition, ignition and a subsequent fire.		
Action taken	As agreed with the TCEQ, EPA, and Harris County Pollution Control, and due to the instability of the products in the absence of refrigeration and safety concerns of trying to fight a fire of this nature, the trailers and products were allowed to burn to completion. This event was beyond Arkema's reasonable control, and Arkema Inc. closely coordinated the response to this event with the local, state, and national authorities. Precautionary evacuations were implemented as part of the unified command response plan.		
Emissions estimation method	Engineering estimates were based on known quantities of organic peroxide products stored in the trailers, product packaging, and the trailer construction materials, USEPA and TCEQ emission factors, and expected decomposition products.Please note the following additional information regarding the list of air contaminants compounds: VOC-unspeciated: OMS- 932.44 lbs. and the remainder reflects Naphtha (petroleum), hydrotreated heavy, Naphtha (petroleum), heavy alkylate, and VOC emissions from combustion- 2,021.54 lbs. For		

	particulate matter: PM- 1,407.47 lbs., PM10- 1407.63 lbs., and PM2.5- 1,407.63 lbs.

Source 1: 2-Refrg.Trailrs storing organic peroxide @ Bldg.27, EPN number

Contaminant	Authorization	Limit	Amount Released
2-Ethylhexanol	No specific emissions authorizations for this facility	0.0	301.38 lbs (est.)
2-ethylhexaldehyde	No specific emissions authorizations for the facility	0.0	98.13 lbs (est.)
Acetone	No specific emissions authorizations for this facility	0.0	752.32 lbs (est.)
Acetophenone	No specific emissions authorizations for this facility	0.0	654.81 lbs (est.)
Carbon Monoxide	No specific emissions authorizations for this facility	0.0	2059.54 lbs (est.)
Ethane	No specific emissions authorizations for this facility	0.0	23.0 lbs (est.)
Nitrogen dioxide	No specific emissions authorizations for this facility	0.0	110.65 lbs (est.)
Nonane	No specific emissions authorizations for this facility	0.0	1770.34 lbs (est.)
Nonene	No specific emissions authorizations for this facility	0.0	582.02 lbs (est.)
Particulate Matter	No specific emissions authorizations for this facility	0.0	4222.73 lbs (est.)
Sulfur dioxide	No specific emissions authorizations for this facility	0.0	3.55 lbs (est.)
Unspeciated VOCs	No specific emissions authorizations for this facility	0.0	2953.98 lbs (est.)

Source 2: 2-Refrg.Trailrs storing organic peroxide @ Bldg.27, FIN number

Source 3: 2-Refrg.Trailrs storing organic peroxide @ Bldg.27, FIN number

No other sources

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Texas Commission on Environmental Quality

Regulated entity name	ARKEMA CROSBY PLANT	**Physical location**	
Regulated entity RN number	RN100210301	**City, County**	CROSBY, HARRIS
Type(s) of air emissions event:	EMISSIONS EVENT	**Event began:**	09/03/2017 3:40PM
This is based on the:	FINAL REPORT	**Event ended:**	09/03/2017 5:40PM
Cause	Due to inclement weather conditions associated with Hurricane Harvey, the plant accumulated an unprecedented six (6) to eight (8) feet of water within the facility. Arkema's investigation to date indicates that as the water level continued to rise within the plant over the course of several days, the plant was unable to use its primary power, its emergency backup power, and later its nitrogen cooling system. As a result, plant personnel removed the containers of organic peroxides from storage and placed them in refrigerated trailers. Ultimately, the refrigeration of the organic peroxide products in the six trailers involved in this emissions event was also compromised by the flood waters, which led to product decomposition. In this specific event and in coordination with federal, state and local authorities, a controlled ignition of the trailers and fire occurred.		
Action taken	As agreed with the TCEQ, EPA, and Harris County Pollution Control, and due to the instability of the products in the absence of refrigeration and safety concerns of trying to fight a fire of this nature, the trailers and products were allowed to burn to completion. This event was beyond Arkema's reasonable control, and Arkema Inc. closely coordinated the response to this event with the local, state, and national authorities. Precautionary evacuations were implemented as part of the unified command response plan.		
Emissions estimation method	Engineering estimates were based on known quantities of organic peroxide products stored in the trailers, product packaging, and the trailer construction materials, USEPA and TCEQ emission factors, and expected decomposition products.Please note the following additional information regarding the list of air contaminants compounds: VOC-unspeciated: n-propanal- 20.72 lbs., sec-butanol- 93.51 lbs., sec-butanone- 30.32 lbs., OMS- 1,342.10 lbs., and the remainder reflects Naphtha (petroleum), hydrotreated heavy and Naphtha (petroleum),		

	heavy alkylate and combustion products- 6,046.53 lbs. For particulate matter: PM- 4,304.58 lbs., PM10- 4,304.58 lbs., and PM2.5- 4,304.58 lbs.

Source 1: 6-Refrg.Tralrs storing organic peroxide-behind MPU, EPN number

Contaminant	Authorization	Limit	Amount Released
2-Ethylhexanol	No specific emissions authorizations for this facility	0.0	1458.89 lbs (est.)
2-ethylhexaldehyde	No specific emissions authorizations for this facility	0.0	475.0 lbs (est.)
Acetone	No specific emissions authorizations for this facility	0.0	1117.59 lbs (est.)
Acetophenone	No specific emissions authorizations for this facility	0.0	641.86 lbs (est.)
Carbon Monoxide	No specific emissions authorizations for this facility	0.0	6333.98 lbs (est.)
Ethane	No specific emissions authorizations for this facility	0.0	14.7 lbs (est.)
Isobutane	No specific emissions authorizations for this facility	0.0	242.0 lbs (est.)
Isobutene	No specific emissions authorizations for this facility	0.0	77.87 lbs (est.)
Nitrogen dioxide	No specific emissions authorizations for this facility	0.0	344.75 lbs (est.)
Nonane	No specific emissions authorizations for this facility	0.0	1830.98 lbs (est.)
Nonene	No specific emissions authorizations for this facility	0.0	601.89 lbs (est.)
Particulate Matter	No specific emissions authorizations for this facility	0.0	12913.74 lbs (est.)
Unspeciated VOCs	No specific emissions authorizations for this facility	0.0	7533.18 lbs (est.)
n-propanol	No specific emissions authorizations for this facility	0.0	64.32 lbs (est.)

Source 2: 6-Refrg.Tralrs storing organic peroxide-behind MPU, FIN number