



# Tropical Depression Harvey

## Event Report (Update #13)

<b>REPORT TIME &amp; DATE:</b>	10:00 AM EDT   Friday, September 1, 2017
<b>INCIDENT START DATE:</b>	Friday, August 25, 2017
<b>PRIMARY LOCATION(S):</b>	Gulf Coast (Texas and Louisiana)
<b>REPORT DISTRIBUTION:</b>	Public @ <a href="https://energy.gov/oe/downloads/hurricane-harvey-situation-reports-august-2017">https://energy.gov/oe/downloads/hurricane-harvey-situation-reports-august-2017</a>

### EXECUTIVE SUMMARY

Tropical Depression Harvey is continuing to weaken and is now 40 miles southwest of Nashville, Tennessee moving northeast with maximum sustained winds of 30 MPH (tropical depression). Harvey is beginning to lose tropical characteristics as it continues to move northeast toward the Ohio valley and is expected to weaken over the coming days. Widespread flooding is expected to continue in and around Houston, Beaumont, Port Arthur, Orange, and toward the Louisiana border through the weekend and may impede electrical and fuel restoration.

### Electricity Sector Impacts (as of 7:30 AM EDT)

- Texas
  - As of 7:30 AM EDT, September 1, the State of Texas has 162,541 customer outages according to EAGLE-I and additional utilities not captured in EAGLE-I. This represents 1.4% of customers in the state.
    - AEP Texas estimates that those in Corpus Christi will have power restored by 10 PM EDT, Saturday, September 2, if not sooner.
    - CenterPoint Energy is reporting 98.91% of customers have power. High water continues to be a factor in restoration, including Brazoria County.
- Louisiana
  - As of 7:30 AM EDT, September 1, the State of Louisiana has 10,508 customer outages according to EAGLE-I and additional utilities not captured in EAGLE-I. This represents <1% of customers in the state.

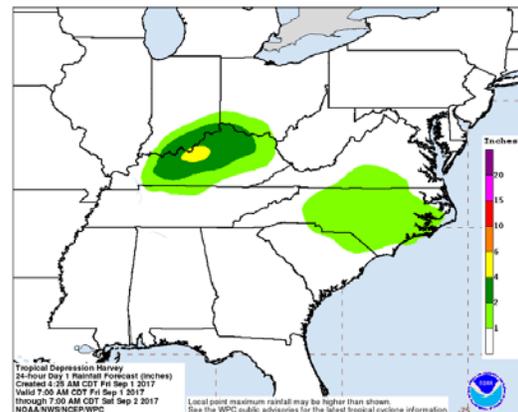
### Oil and Natural Gas Sector Impacts (as of 7:30 AM EDT)

- Four refineries in the Gulf Coast region were operating at reduced rates (an increase of 2). The refineries have a combined capacity of 1,104,776, b/d, equal to 11.4% of total Gulf Coast (PADD 3) refining capacity and 6% of total U.S. refining capacity.
- Colonial Pipeline’s gasoline Line 1 and distillate Line 2 continues to operate intermittently from Lake Charles east to Greensboro, NC and are dependent on terminal and refinery supply. The lines remain down from Houston to Hebert due to impacts from Harvey.
  - Aerial overflights were conducted 8/31 from Hebert to Houston and no indications of integrity issues were reported. Colonial employees are attempting to map out accessible routes in affected areas to reach additional facilities.
  - Many roads (including Interstate I-10) remained closed in Louisiana and parts of Texas. DOE ESF #12 is working with local authorities to facilitate access for Colonial restoration crews to reach facilities to restore the lines.

- Following the receipt of EPA and state waivers of RVP and some reformulated gasoline requirements, Colonial began accepting winter grade (11.5 RVP) conventional gasoline into its pipeline system 8/31 and will begin commingling 7.8, 9.0, and 11.5 RVP grades. In addition, Colonial will begin commingling reformulated blendstock (RBOB) with conventional gasoline for delivery into tank farms south of Greensboro, NC.
- Colonial currently estimates that it will be able to return to service from Houston Sunday, September 3, following an evaluation of its infrastructure and successful execution of its startup plan.
- The port of Corpus Christi is now in Port Condition Recovery. Open with restrictions. Allowing vessels up to 43’ draft to transit during daytime hours only. Larger vessels allowed one-way transits during daylight hours only.
- Seven states have declared state emergencies due to Harvey. These declarations automatically waive select Federal Motor Carrier Safety Regulations (FMCSRs), including hours-of-service (HOS) regulations, for motor carriers hauling resources to aid in restoration efforts. On August 31, the FMCSA expanded the Regional Emergency Declaration to additional states and Washington, DC. DOE will coordinate with states to leverage this declaration to increase number of trucks available to transport fuel.
- As reported yesterday afternoon, the SPR was authorized to negotiate and execute two emergency exchange agreements with the Phillips 66 Lake Charles Refinery. This decision will authorize a total of 400,000 barrels of sweet crude oil and 600,000 barrels of sour crude oil to be drawn down from SPR’s West Hackberry site and delivered via pipeline to the Phillips 66.

**INCIDENT OVERVIEW**

- As of 5:00 AM EDT, Harvey was 40 miles southwest of Nashville, Tennessee moving northeast at 16 MPH, with maximum sustained winds of 30 MPH (tropical depression). Harvey is beginning to lose tropical characteristics as it continues to move northeast toward the Ohio valley and is expected to weaken over the coming days.
- Harvey is expected to produce additional rainfall accumulations of 1 to 3 inches from western to central Tennessee and western to central Kentucky into southeastern Indiana, southern Ohio, and west-central West Virginia, with isolated amounts up to 5 inches. These rains will enhance the risk of flash flooding across these areas. Widespread flooding is expected to continue in and around Houston, Beaumont, Port Arthur, Orange, and toward the Louisiana border through the weekend and may impede electrical and fuel restoration.



**ELECTRICITY SECTOR**

**OVERVIEW**

ELECTRICITY OUTAGES AS OF 2:30 PM EDT 08/31/2017			
Impacted State	Current Confirmed Customer Outages	Percent of Confirmed State Customers without Power	24-hr Peak Customer Outages
Louisiana	9,116	<1%	22,636
Texas	186,969	1.6%	277,973
<b>Total</b>		-	*

*\*There is no sum of the Peak Customer Outage column because peaks for individual utilities occur at different times; a total would not reflect peak outages.*

- Louisiana
  - As of 7:30 AM EDT, September 1, the State of Louisiana has 10,508 customer outages according to EAGLE-I and additional utilities not captured in EAGLE-I. This represents <1% of customers in the state.
    - Entergy Louisiana has 9,647 customer outages. This is a 201% Increase from last report.
    - Beauregard Electric Coop (BECi) has 626 customer outages. This is a 35.7% decrease from last report.
    - CLECO Power Inc. has 138 customer outages. This is a 91% decrease from last report.
    - Southwestern Electric Power Co. (SWEPCO) has 93 customer outages. This is a 97% decrease from last report.
  - As previously anticipated, Entergy Louisiana is reporting nearly all customers restored. The exceptions include those customers affected by flooding in parts of Calcasieu Parish caused by rising waters from the Calcasieu and Sabine rivers.
  
- Tennessee
  - As of 7:30 AM EDT, September 1, the State of Tennessee has 20,255 customer outages according to EAGLE-I and additional utilities not captured in EAGLE-I. This represents <1% of customers in the state.
    - Memphis Light Gas and Water has 16,352 customer outages.
    - Southwest Tennessee EMC has 1,748 customer outages.
    - Nashville Electric Service has 1,106 customer outages.
  
- Texas
  - As of 7:30 AM EDT, September 1, the State of Texas has 162,541 customer outages according to EAGLE-I and additional utilities not captured in EAGLE-I. This represents 1.4% of customers in the state.
    - AEP Texas has 68,897 customer outages. This is a 20% decrease from last report.



- Entergy Texas has 56,479 customer outages. This is a 3.3% increase from last report.
- CenterPoint Energy has 25,838 customer outages. This is a 33.5% decrease from last report.
- Sam Houston Electric Coop has 9,188 customer outages. This is a 160% increase from last report.
- AEP Texas estimates that those in Corpus Christi will have power restored by 10 PM EDT, Saturday, September 2, if not sooner.
- AEP Texas has released preliminary Estimated Restoration Times (ETR) for 10 communities, including Rockport and Port Aransas. Those ETRs range from 11 PM EDT Thursday to 11 PM EDT Friday, September 8. ETRs are still being determined for other communities and will be released at a later time.
- AEP Texas has restored power to approximately two-thirds of the customers left without power as a result of the storm and continue working towards the 95% restoration level originally projected for the night of Wednesday, September 6.
- AEP Texas estimates at least 3,100 distribution poles down and 500 transmission structures were damaged or completely knocked down by the storm. Crews had reenergized 208 distribution circuits by Wednesday afternoon, and approximately 111 circuits remain off line.
- AEP Texas currently has over 4,600 resources from around the country working in the Coastal Bend area to restore power to customers.
- CenterPoint Energy is reporting 98.91% of customers have power. High water continues to be a factor in restoration, including Brazoria County.
- CenterPoint Energy has received aid from over 800 mutual assistance resources from Westar Energy, Duke Energy, KCP&L, Alabama Power, and others.
- CenterPoint Energy is operating three staging sites around Houston to mobilize restoration crews.
- Entergy Texas has reported their Lewis Creek Dam remains stable and secure due to recent hardening efforts and increased inspections of the facility. Reservoir levels remain within the normal range of control.
- Texas-New Mexico Power continue to estimate most of its customers will be restored by 7 PM EDT Sunday, September 3. Areas in Dickinson, Friendswood, and western Brazoria County cannot be restored due to flood waters.
- Texas-New Mexico Power does NOT have plans to shut off power to the City of Dickinson or other portions of its service territory despite public speculation.

## OIL & GAS SECTOR

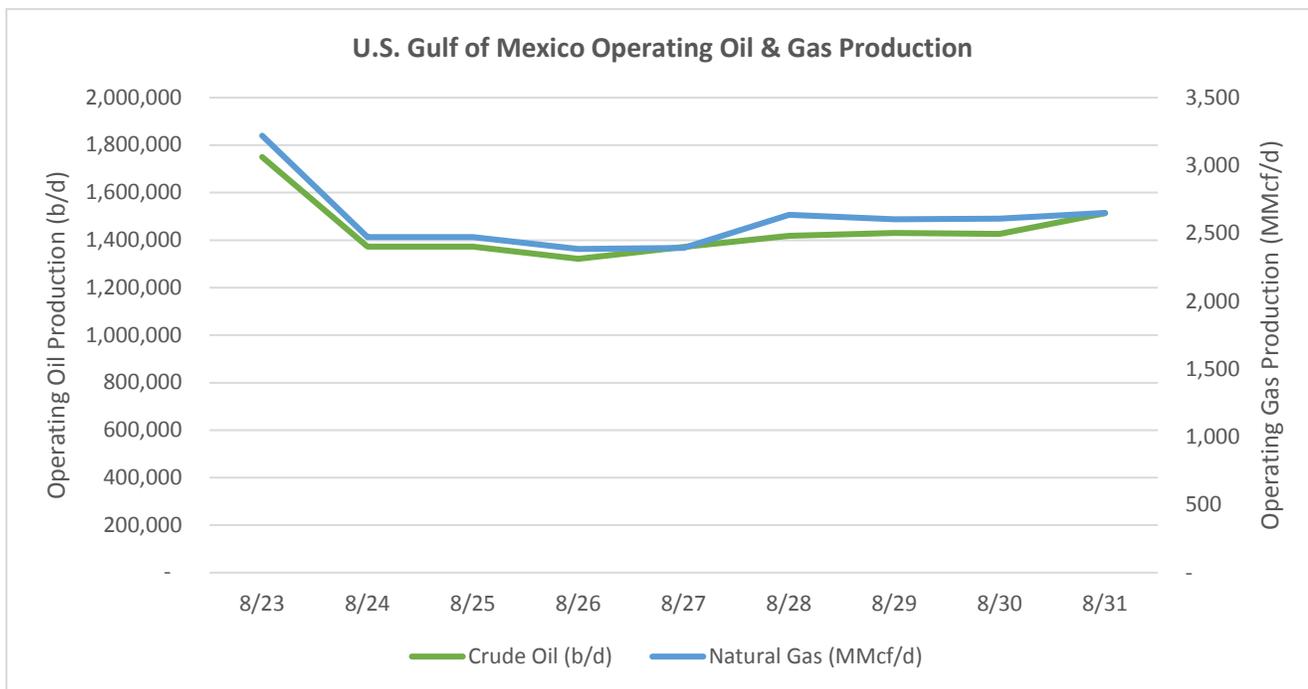
### OFFSHORE PRODUCTION

- As of 12:30 PM EDT, August 31, 236,115 b/d (13.49%) of the oil production and 568.09 MMcf/d (17.64%) of the natural gas production in the federally administered areas of the U.S. Gulf of Mexico are shut-in, according to estimates by the Bureau of Safety and Environmental Enforcement (BSEE).



U.S. Gulf of Mexico Oil & Gas Production Status <i>as of 12:30 PM EDT 08/31/2017</i>			
Production	Pre-Event	Shut-In (08/30)	Shut-In (08/31)
Crude Oil (b/d)	1,750,000	323,760	236,115
Natural Gas (MMcf/d)	3,220	611.09	568.09
Infrastructure	Pre-Event Count	Evacuated (08/30)	Evacuated (08/31)
Manned Platforms	737	102	94
Rigs	31	5	5

Source: BSEE



Source: BSEE

**ONSHORE PRODUCTION**

- On August 26, the Texas Railroad Commission estimated that approximately 300,000 to 500,000 b/d of crude production had been shut-in in the Eagle Ford region from a pre-storm production estimate of 870,000 b/d. In addition, approximately 3.0 Bcf/d of natural gas production had been shut-in from a pre-storm production estimate of about 6.0 Bcf/d. The Commission had expected most idled production to come back online in the next few days.

**PETROLEUM REFINERIES**

- Four refineries in the Gulf Coast region were operating at reduced rates (an increase of two). The refineries have a combined capacity of 1,104,776, b/d, equal to 11.4% of total Gulf Coast (PADD 3) refining capacity and 6% of total U.S. refining capacity.



- Six refineries had begun the process of restarting from being shut down, which may take a several days or weeks to start producing product, depending whether they have been damaged. These refineries have a combined capacity of 1,269,720 b/d, equal to 13.1% of total Gulf Coast (PADD 3) refining capacity and 4.2% of total U.S. refining capacity.
- As of 08:00 AM EDT, September 1, 10 refineries in the Gulf Coast region were shut down, according to public reports. These refineries have a combined refining capacity of 3,075,229 b/d, equal to 31.7% of total Gulf Coast (PADD 3) refining capacity and 16.6% of total U.S. refining capacity.

**PORTS**

- The U.S. Coast Guard has set the following conditions for ports and waterways in the U.S. Gulf Coast region as a result of Harvey.
- On August 30, Louisiana Offshore Oil Port (LOOP) facilities, and pipeline receipts and deliveries at the Clovelly Hub were operating normally. Vessel operations were also continuing as sea conditions allow. LOOP indicated this would be the last Hurricane Harvey advisory update.

Status of Texas and Louisiana Gulf Coast Ports <i>as of 8:00 AM EDT 09/01/2017</i>		
Port	Status	Date Stamp
<b>Sector Corpus Christi</b>		
Brownsville	Open.	08/26/17
Corpus Christi	Port Condition Recovery. Open with restrictions. Allowing vessels up to 43’ draft to transit during daytime hours only. Larger vessels allowed one-way transits during daylight hours only.	08/31/17
<b>Sector Houston and Galveston</b>		
Freeport	Port Condition Recovery. Open with restrictions.	08/30/17
Galveston	Port Condition Recovery. Open with restrictions.	08/30/17
Houston	Port Condition Recovery. Open with restrictions. Upper Houston Ship Channel (HSC) from Morgan’s Point inbound to the Turning Basin remains closed for vessel traffic until weather conditions improve. Heavy current at HSC is making it unsafe to bring in vessels.	08/31/17
Texas City	Port Condition Recovery. Open with restrictions.	08/30/17
<b>Sector Port Arthur and Lake Charles</b>		
Beaumont	Port Condition Zulu. Closed. Coast guard allowing vessel transit on protected inland waterways.	08/30/17
Lake Charles	Port Condition Zulu. Closed. Coast guard allowing vessel transit on protected inland waterways.	08/30/17
Nederland	Port Condition Zulu. Closed. Coast guard allowing vessel transit on protected inland waterways.	08/30/17
Orange	Port Condition Zulu. Closed. Coast guard allowing vessel transit on protected inland waterways.	08/30/17
Port Arthur	Port Condition Zulu. Closed. Coast guard allowing vessel transit on protected inland waterways.	08/30/17



Port Neches	Port Condition Zulu. Closed. Coast guard allowing vessel transit on protected inland waterways.	08/30/17
Sabine Pass	Port Condition Zulu. Closed. Unprecedented currents on the Neches River preventing movements for several more days.	08/30/17
<b>Sector Morgan City</b>		
Houma	Houma navigational channel and Bayou Grand Caillou Floodgates have reopened.	08/31/17
Berwick	Open with restrictions. Temporary emergency vehicle controls in effect.	08/30/17
Morgan City	Open with restrictions. Temporary emergency vehicle controls in effect.	08/30/17
<b>Sector Lower Mississippi River</b>		
All ports	Due to heavy weather, mariners are advised by the COTP to transit the lower Mississippi, Arkansas, Red, Black, and Ouachita rivers and other river tributaries with caution.	08/30/17

Source: U.S. Coast Guard

**RAIL**

- Rail is critical for the delivery of ethanol to petroleum product terminals for gasoline blending and for the movement of refinery byproducts, including propane, butanes, and sulfur out of refineries. The following rail lines have reported disruptions:

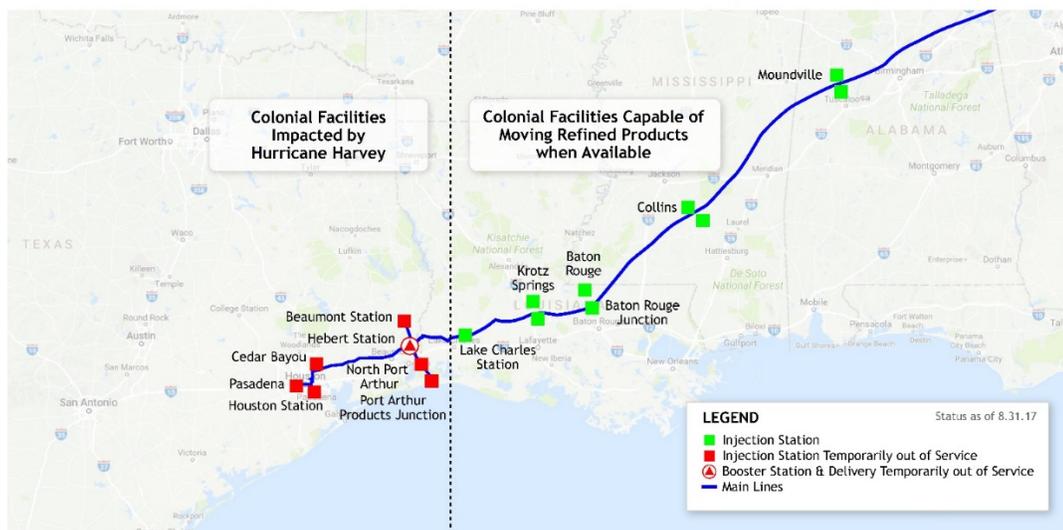
<b>Status of Texas and Louisiana Gulf Coast Rail Infrastructure as of 8:00 AM EDT 09/01/2017</b>		
<b>Rail Company</b>	<b>Status</b>	<b>Date Stamp</b>
Kansas City Southern Railway	Force majeure and an embargo on network in Texas affected by Harvey.	08/28/17
Union Pacific	Routes through San Antonio opened up allowing for trains to be run both north and south between San Antonio and Hearne, TX. Reorganizing major rail yards at Settegast, and Englewood. Repairs complete on some infrastructure in Houston and South Texas. Cleanup operations underway at Houston yards 8/31.	08/31/17
BNSF	Major disruptions due to washouts. All Houston operations remain suspended (including Pearland Intermodal and Automotive facilities). Normal train flows not expected for an "extended period."	08/31/17
CSX Corp.	Closely watching weather conditions in Louisiana and the southwestern portion of its operating network.	08/30/17
YRC Freight	Houston terminal closed.	08/29/17



**COLONIAL PIPELINE**

- Colonial’s gasoline Line 1 and distillate Line 2 (combined capacity: 2.5 million b/d) continue to operate intermittently from Lake Charles east to Greensboro, NC and are dependent on terminal and refinery supply. The lines remain down from Colonial’s Houston and Hebert area origins.
- Facility updates include:
  - Pasadena: flood waters have receded. Assessments ongoing.
  - Houston Station: flood waters have. Initial inspections complete.
  - Cedar Bayou: Personnel were able to reach the station 8/31, but more than 6’ of water still surrounds the area. Preliminary assessments have begun.
  - Shiloh Booster Station: Crews reached the station on the morning of 8/31 and began assessments. Waters have receded and the station is dry; commercial power restored.
- Aerial overflights were conducted 8/31 from Hebert to Houston and no indications of integrity issues were reported. Colonial employees are attempting to map out accessible routes in affected areas to reach additional facilities. Many roads (including Interstate I-10) remained closed in Louisiana and parts of Texas.
- DOE ESF #12 is working with local authorities to facilitate access for Colonial restoration crews to reach facilities to restore the lines.
- Colonial currently estimates that it will be able to return to service from Houston Sunday, September 3, following an evaluation of its infrastructure and successful.
- Shipments on downstream lines, including multi-product Lines 3 and 4 from Greensboro, NC to the U.S. Northeast, are also impacted.
- Following the receipt of EPA and state waivers of RVP and some reformulated gasoline requirements, Colonial began accepting winter grade (11.5 RVP) conventional gasoline into its pipeline system 8/31 and will begin commingling 7.8, 9.0, and 11.5 RVP grades.
- DOE remains in daily contact with Colonial regarding updates, and is working with local jurisdictions through FEMA to facilitate access to sites to expedite restoration.

 **Colonial Pipeline Gulf Coast Status Map**



Source: Colonial Pipeline Company: <https://harvey.colonialresponse.com/>

**WAIVERS**

- The table below lists fuel-related waivers issued by the U.S. Environmental Protection Agency (U.S. EPA) and State agencies.
- On August 30, U.S. EPA issued a multi-state (13 states) waiver for requirements of low-RVP conventional gasoline and reformulated gasoline (RFG). Later in the day, the waiver was expanded to include 38 states and Washington, DC.

State Fuel Waivers as of 8:00 AM EDT 09/01/2017					
State	Waiver	Issued By	Effective Dates		Status
			Start	End	
Multi-state waiver	<p><b>RVP</b> standard waived for gasoline sold in affected counties where low-RVP gasoline is required (9.0 RVP or lower). Allows sale of gasoline up to 11.5 psi RVP in all east coast states located in PADD 1 – Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont, Delaware, District of Columbia, Maryland, New Jersey, New York, and Pennsylvania, Florida, Georgia, North Carolina, South Carolina, Virginia, and West Virginia; all Midwestern states located in PADD 2 - Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Nebraska, North Dakota, South Dakota, Ohio, Oklahoma, Tennessee, and Wisconsin; and all Gulf coast states located in PADD 3 – Alabama, Arkansas, Louisiana, Mississippi, New Mexico, and Texas. The waiver supersedes and expands the areas covered by the August 30 waiver.</p> <p><b>RFG</b> standard is also waived in the designated states and D.C. Also waived are provisions prohibiting the blending of RFG blendstock with conventional gasolines or blendstocks.</p>	U.S. EPA	08/30/17 Expanded: 08/31/17	09/15/17	Active
TX	<p><b>RFG</b> requirement waived in Houston-Galveston-Brazoria areas. Waiver expanded to four-county Dallas-Fort Worth RFG area 8/26. Allows the sale or distribution of conventional gasoline.</p>	U.S. EPA	08/25/17	09/15/17	Active
TX	<p><b>7.8 psi RVP</b> standard waived for gasoline sold in 20 counties where low-RVP gasoline is required and are also under the Governor’s Disaster Declaration. Waiver expanded to 98</p>	U.S. EPA	08/25/17	09/15/17	Active



	counties required to use low-RVP fuel 8/26. Allows sale of gasoline up to 9.0 psi RVP.				
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Sources: [U.S. Department of Transportation](#); Governor Office Websites

- Seven states have declared state emergencies due to Harvey. These declarations automatically waive select Federal Motor Carrier Safety Regulations (FMCSRs), including hours-of-service (HOS) regulations, for motor carriers hauling resources to aid in restoration efforts. The declarations exempt FCMSR in every state along the motor carrier’s route as long as the final destination is with the declared disaster areas in Texas or Louisiana.
- In addition, the Federal Motor Carrier Safety Administration (FMCSA) declared that issued a Regional Emergency Declaration exempting FMCSRs in the States of Texas and Louisiana. On August 31, the FMCSA expanded the Regional Emergency Declaration to additional states and Washington, DC.
- The table below summarizes emergency declarations and HOS waivers issued by states.

State Emergency Declarations and HOS Waivers <i>as of 8:00 AM EDT 09/01/2017</i>				
State	Details	Effective Dates		Status
		Start	End	
<b>Regional (Multi-State)</b>	Regional Emergency Declaration and FMCSR waiver issued by FMCSA. Applies to Alabama, Arkansas, Colorado, Connecticut, Delaware, Florida, Georgia, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maryland, Mississippi, Missouri, New Jersey, New York, North Carolina, Ohio, Oklahoma, Pennsylvania, Tennessee, Texas, South Carolina, Virginia, Washington, D.C. and West Virginia	08/25/17 Expanded 08/31/17	10/26/17	Active
Texas	State of Disaster declared for Aransas, Austin, Bee, Calhoun, Chambers, Colorado, Brazoria, DeWitt, Fayette, Fort Bend, Galveston, Goliad, Gonzales, Harris, Jackson, Jefferson, Jim Wells, Karnes, Kleberg, Lavaca, Liberty, Live Oak, Matagorda, Nueces, Refugio, San Patricio, Victoria, Waller, Wharton, and Wilson counties.	08/23/17	TBD	Active
Louisiana	State of Emergency declared.	08/23/17	TBD	Active
Kentucky	HOS waiver issued for transporters of food, water, medicine, fuel and other commodities within the affected areas to aid in emergency response of affected areas. All economic requirements normally associated with interstate motor	08/28/17	09/27/17	Active



	transportation for all vehicles providing relief supplies to affected areas.			
Alabama	State of Emergency/HOS waiver issued for petroleum products and petroleum-related supplies, goods, and services in and through the State.	08/30/17	09/29/17	Active
Georgia	State of Emergency/HOS waiver issued for petroleum products through the State.	08/30/17	09/20/17	Active
Kansas	Governor acknowledged state of emergency in Texas and declared that licensing rules, registration and fuel tax permits, and oversize vehicle permit fees are waived for motor carriers and persons operating motor vehicles directly participating in the relief and restoration effort.	08/30/17	09/20/17	Active
South Carolina	State of Emergency/HOS waiver issued for petroleum products through the state.	08/31/17	09/30/17	Active

Sources: [U.S. Department of Transportation](#); Governor Office Websites

**DOE Strategic Petroleum Reserve Status (from the Office of Fossil Energy)**

DOE Strategic Petroleum Reserve Site Status <i>(as of 8/31/2017)</i>				
	Bayou Choctaw Site	West Hackberry Site	Big Hill Site	Bryan Mound Site
<b>Commercial Power Availability</b>	Available	Available	Available	Available
<b>Drawdown Capability</b>	Drawdown Ready	Drawdown Ready	Drawdown Ready	Drawdown Ready

- In response to the impacts from Hurricane Harvey, the U.S. Secretary of Energy has authorized the Strategic Petroleum Reserve (SPR) to negotiate and execute two emergency exchange agreements with the Phillips 66 Lake Charles Refinery. This decision will authorize a total of 400,000 barrels of sweet crude oil and 600,000 barrels of sour crude oil to be drawn down from SPR’s West Hackberry site and delivered via pipeline to the Phillips 66 refinery.
- The Department will continue to provide assistance as deemed necessary, and will continue to review incoming requests for SPR crude oil. Should the Secretary decide to approve additional requests for an emergency exchange of crude oil from the SPR, the public will be notified.

