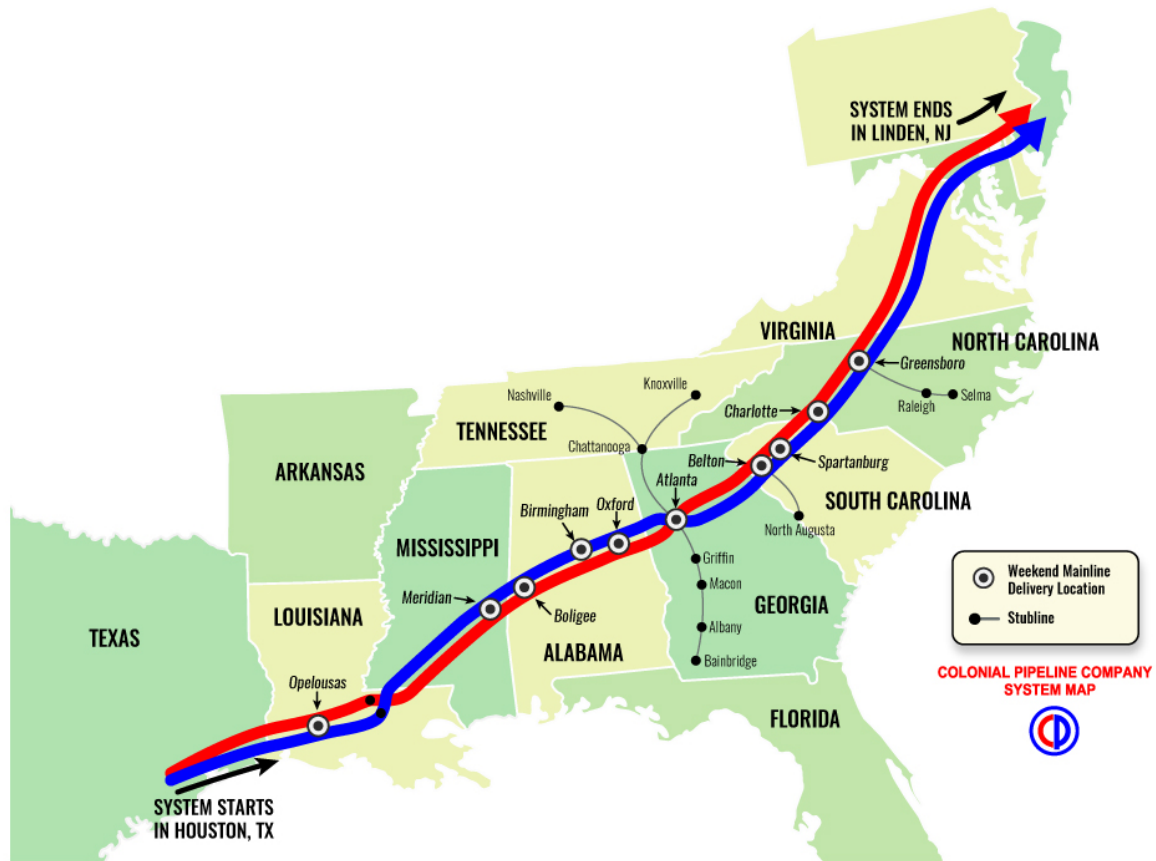


POLICY ISSUE

COLONIAL PIPELINE SYSTEM



System map showing the Colonial pipeline system composed of line 1 and line 2. Colonial is one of two pipelines serving the southeast and mid-atlantic regions of the country. (Image courtesy of Colonial Pipeline Company).

Last Update: November 29, 2016

SUMMARY

Colonial Pipeline Company shutdown Line 1 of its system following notification on September 9th that a leak spilled gasoline in Shelby County, Alabama which is located thirty miles southeast of Birmingham. According to Colonial, it delivers 100 million gallons of refined products every day. Its network of pipelines top 5,500 miles with Line

1 carrying gasoline products, and Line 2 carrying distillates. The system itself is comprised of 4 lines. and serves as a critical piece of U.S. energy infrastructure. Line was eventually restarted on September 21 but the slowdown in delivering led to shortages and price increases in several southeastern states.

REPORT

The leak was discovered on September 9 by an Alabama Surface Mining Commission (ASMC) employee working in the Shelby County, Alabama. The incident was immediately deemed a significant event as the pipeline normally delivers approximately 2.6 million barrels (approximately 110 million gallons) of gasoline, diesel and jet fuel each day, with Line 1 accounting for half of this volume. Thus even a temporary shutdown of Line 1 created genuine supply concerns for many.¹

The early shortage was reduced as the company initiated alternative transportation: Colonial shipped part of the gasoline shipments over to Line 2 to help mitigate the impact of the service interruption to Line 1, and transferred the rest via maritime and rail transportation to the five most affected States (Alabama, Georgia, North Carolina, South Carolina, and Tennessee). Initial estimates pegged the spill size at 6,000 barrels; however, this figure was adjusted upward to approximately 8,000 barrels.

On September 15 Gov. Robert Bentley, Alabama and Georgia Gov. Nathan Deal issued a state of emergency for fuel shortages and prices increase. The orders allowed fuel delivery truck drivers to surpass the maximum hour limits established by the U.S. Department of Transportation.

While the economic impact costs remain unclear the AAA motor club on September 19 (10 days after the leak's discovery) declared a week-over-week increase of 7 cents or more in Georgia, North Carolina, South Carolina, and Tennessee. The regional

¹ Colonial and Plantation pipelines supply nearly one hundred percent of all refined product (gasoline, diesel, jet, kerosene and related products) used by southern and east coast customers.

fluctuation raised the national average price of gasoline to \$2.21 per gallon, 3 cents more than the previous week and 8 cents more expensive than the previous month. Moreover, the fuel tracking website GasBuddy estimated that gas prices might not return to normal for two to four weeks.

Line 1 service was restarted on September 21, with the approval of The Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA). The installation of a new section of pipe bypassed the broken part of the pipeline. Despite the delay, Gov. Bentley declared to be impressed with the company's response to the incident.

The exact cause and timing of the leak is still unknown. Colonial had run computerized internal inspection devices commonly referred to as a “smart pig” in accordance to federal regulations, likewise, excavations and onsite inspections appeared to have complied with applicable regulations. We would however expect the root cause analysis not to be completed for at least nine to twelve months.

The environmental impacts of the spill led to a response action involving the Alabama Department of Environmental Management (ADEM), Alabama Emergency Management Agency (EMA), and EPA in a Unified Command with State agencies. On September 26, a 72-hour operational action began to remove the gasoline and the spilled material from rural Shelby County. EPA officials stated the spill did not reach the Cahaba River because the leak was able to be contained in the pond. Additionally, EPA action-coordinator Chuck Berry affirmed there was no danger for the population as the nearest home is about 2.5 miles away and the spill site is not accessible by regular roads.

CNN broadcast a picture of the pond but the media-effect was primarily focused on the potential for shortages and price spikes, as evidenced by the most popular twitter hashtag was #GasCrisis2016.



Photo showing affected area around initial accident site. (2016 Cox Media Group)

CONCLUSION

Despite the limited amount of gasoline spilled from the line, the leak amplified special interest group opposition to new pipeline infrastructure projects. Environmental and renewable advocates have attempted to use the Colonial case to advance their anti-pipeline campaign, in support of the controversial idea that pipelines are highly fragile.

However, the event can be beneficial to the argument supporting the need for pipelines. The Colonial leak showed that alternative means of transportation are expensive and have an immediate impact on the economy. Shortages were caused by an interruption of a system that under normal circumstances is fast and efficient. Any other form of refined products delivery will slow the system, leading to fears that will generate a self-fulfilling crisis. Additionally, alternative means of transportation are not sustainable in terms of energy and environment: the transportation capacity is reduced while the power consumption is increased, and there is a higher risk of environmental disasters.

Despite the fact pipelines require periodic inspections, and high standards through the use of advanced technology, currently, they are the more secure and long-term sustainable system. Technological tools have significantly improved with advances in technology but still require human analysis to validate potential areas of concern. As the main transportation system for gasoline, crude oil and natural gas, pipelines have been in service in the U.S. for nearly a century and are considered by experts to be robust and efficient.

However, research and development give hope for a future centered on advanced infrastructure and improved delivery systems that will allow to minimize risks and to contain eventual crisis.

Updates to Original Analysis

Update - November 5, 2016

Line 1 was again shutdown on October 31, after an accident killed one person and injured five others in western Shelby County, Alabama.

A team of contractors working to make repair to Line 1 appears to have accidentally struck the line itself with a backhoe, setting off a fire. The area has been immediately closed, evacuated, and securitized. The fire was allowed to burn off in order to most effectively remove the spilled volume. Once extinguished, crews will be able to ascertain the exact extent of damage to the line. The accident occurred in the area next to the Cahaba River which is seen as essential for the local supply of drinking water. The company is currently monitoring the waterways, drainage paths, and air's quality. Supply shortages remain contained through the use of Line 2. On November 3, remaining product was completely removed from the line and Colonial announced the complete restart of Line 1 would occur before Monday, November 7.

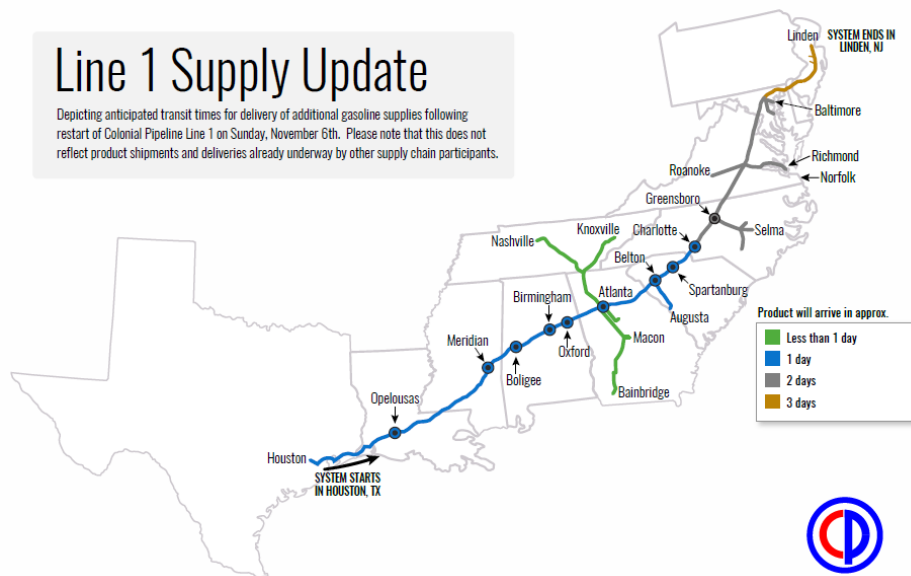
On November 4, the National Transportation Safety Board (NTSB) announced, through a press release, an investigation of the pipeline accident. The investigations are led by Rogers Evans in coordination with PHMSA.

Following this second accident, the main concerns appear to be again price increases and shortages. The day following the explosion, prices increased as much as 16 cents a gallon but, according to an AAA analysis, prices dropped after Colonial announced the restart of Line 1 in less than one week from the accident.

Update - November 6, 2016

Line 1 Restarted

Line 1 was restarted one day earlier than planned. While delivery volume is still less than under full operation, the company expects to return to normal capacity within the next week.



END OF UPDATES