Empty Capline Signals Changing Louisiana Crude Flows

Midwest refiners no longer need Gulf Coast supplies.

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Data Sources for This Publication
U.S. Energy Information Administration
Louisiana Department of Natural Resources
U.S. Customs
Bureau of Ocean Energy Management
To discover more about the data sources used, click here.

Heading for Export Docks

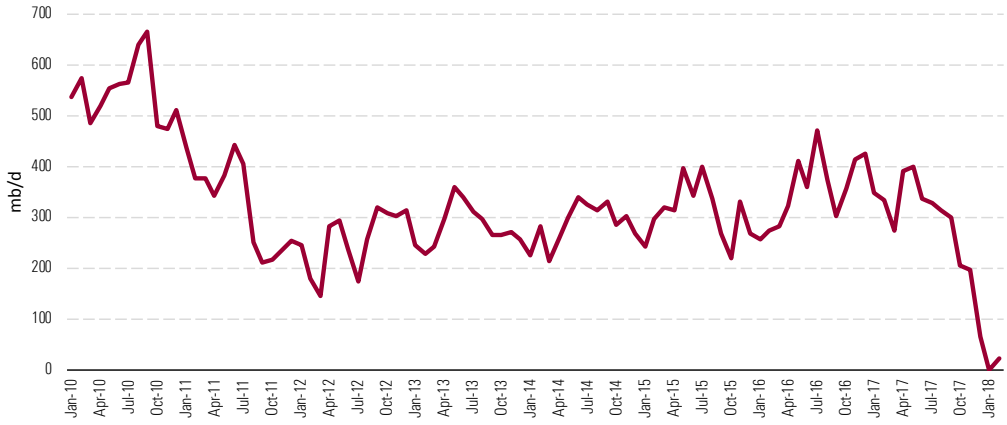
February volumes on the 1.2 million barrel/day Capline pipeline from St. James, Louisiana, to Patoka, Illinois, were just 22 thousand barrels/day, up from a low of below 1 mb/d in January 2018 but still significantly below the average of 291 mb/d during 2017, according to the Louisiana Department of Natural Resources. Declining Capline flows are a symptom of changing crude dynamics in the eastern Gulf Coast region. Midwest refineries get their crude supplies from Canada or shale crude from North Dakota. Yet Louisiana still receives over 1 mmb/d of crude supply more than what the state's refineries can process. This note—the second of a three-part series—looks at why Capline is running empty and why Louisiana's surplus will be heading for export docks.

The previous note in this series (see "Capline Empties as Louisiana Crude Market Evolves") provided an overview of Louisiana's crude supply/demand balance over the 13 years from 2005 to 2017. About 65% of the state's crude supply came from imports in 2005, but that has declined to 37% in 2017, replaced with increasing offshore Gulf of Mexico production and a fourfold increase in shale imports from Texas since 2012. The focus of crude flows in Louisiana is feeding local refineries with 3.8 mmb/d capacity, but excess supplies have traditionally been shipped north out of the state on the Capline pipeline to the Midwest. The focal point of crude trading has been the St. James hub, which has 38 million barrels of storage and pipeline connections to offshore and onshore production as well as imports.

Plummeting Flows

Exhibit 1 shows declining crude flows on the 1.2 mmb/d Capline pipeline from St. James to Patoka, operated by Marathon and owned by Marathon (33%), Plains All American (54%) and BP (18%), based on data provided by the Louisiana Department of Natural Resources. Shipments fell from an average 547 mb/d in 2010 to 291 mb/d in 2017 and then plummeted to less than 1 mb/d in January 2018 and 22 mb/d in February.

Exhibit 1 Capline Crude Flows



Source: LDNR, Morningstar

Capline has been shipping crude to Midwest refineries since 1981. It receives the majority of its payload in St. James, where it's connected via the LOCAP pipeline to the Louisiana Offshore Oil Port deep-water terminal in the Gulf of Mexico (see our August note "Reversing LOOP Would Boost Crude Exports" for more on LOOP). LOOP offloads crude imports from tankers holding upward of 2 million barrels as well as smaller domestic vessels delivering Eagle Ford shale crude from Corpus Christi. The onshore LOOP storage facility at Clovelly and several other onshore terminals in Louisiana receive Gulf of Mexico production crude that can be delivered into Capline at St. James. The Shell Midstream Partners 300 mb/d Zydeco pipeline delivers crude to St. James from terminals in Houston and Nederland, Texas. Additional offshore production flows into St. James on the Shell Ship Shoal and Exxon North Line systems. The soon-to-be-completed 480 mb/d Bayou Bridge pipeline will bring additional crude to St. James from Nederland, where it is supplied by the Dakota Access pipeline from North Dakota as well as Permian and Eagle Ford crude from Texas and Canadian and domestic blends from Cushing, Oklahoma, via TransCanada's Cushing Marketlink pipeline.

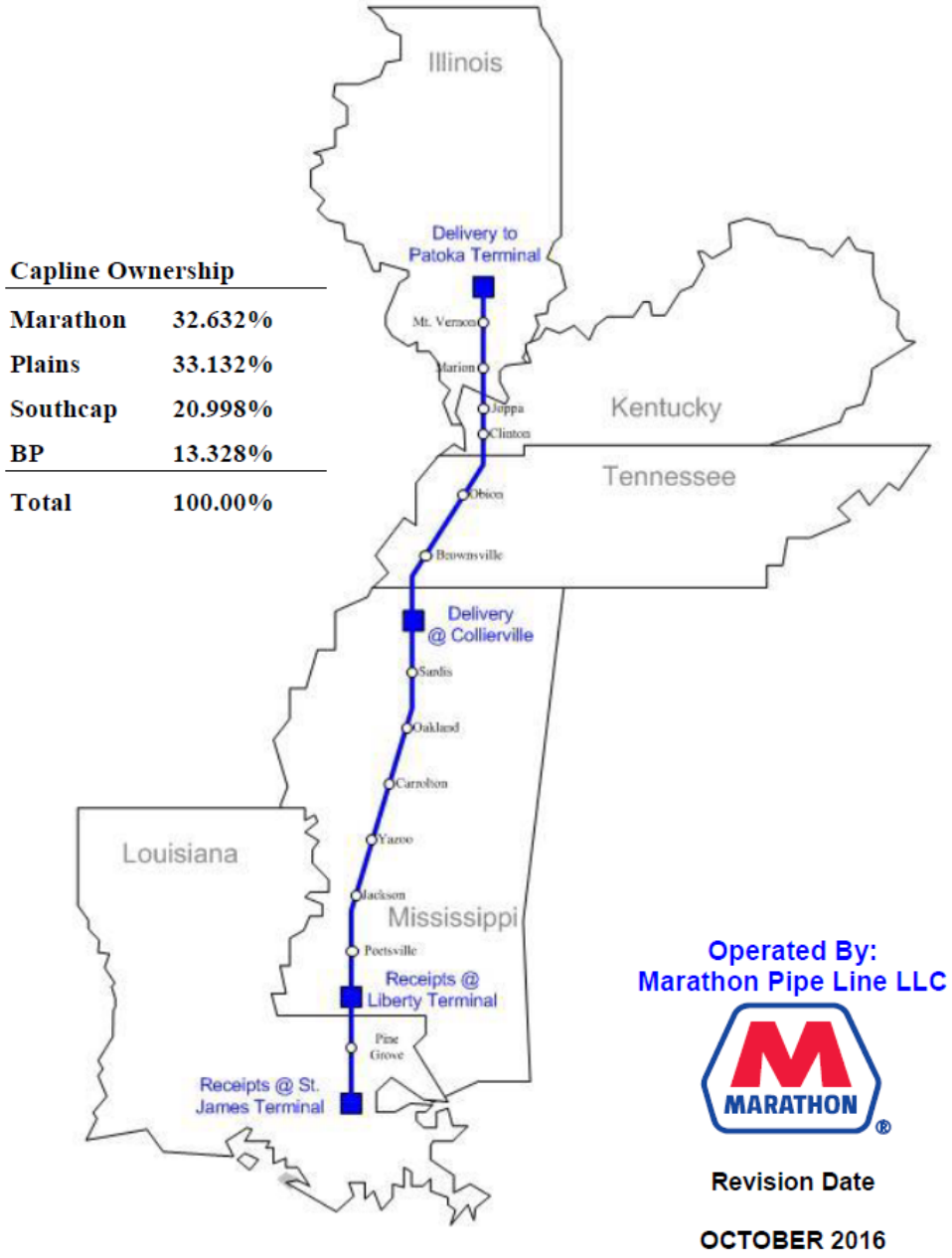
Now Capline is effectively running empty, and its owners are soliciting shipper interest in reversing it. So far there has been no public announcement of a formal open season for such a Capline reversal, but the plan is to do so in 2020 and will probably involve shipping up to 300 mb/d of heavy Canadian crude south to St. James from Patoka (see our October 2017 note "Cautious Capline Proposal Reflects Low Demand"). Before we get to the consequences for the Louisiana crude market of shutting or reversing Capline, we'll briefly explain why shippers have deserted this previously important artery.

Final Nail in the Coffin

The Capline system (Exhibit 2) was built to supply Midwest refineries that relied on imported crude during the 1980s as U.S. onshore production declined. Since then, however, Canadian crude production has increased significantly, and many Midwest refiners have taken advantage of access to supplies of heavy oil sands crude delivered from Alberta by pipeline. In many cases—notably BP's 414 mb/d Whiting, Indiana, facility—refiners invested billions of dollars to reconfigure their plants to process heavy Canadian crude. So far those investments have paid dividends, as transport constraints out of Canada caused big crude price discounts (see our January note "Can Rail Handle Canadian Crude?").

Then shale crude production began to surge in the summer of 2011 and supplies of North Dakota Bakken crude flooded the Midwest by 2013. Midwest refiners previously importing light crude via LOOP and Capline tapped into cheap domestic supplies. As pipeline infrastructure was built out to carry Bakken crude further east to refineries in the Chicago region, dependence on Capline fell further. The opening of the Dakota Access pipeline in June 2017 from North Dakota to Patoka (as well as to the Gulf Coast at Nederland) was particularly instrumental in making Capline obsolete. The completion of the Plains-Valero joint venture 200 mb/d Diamond pipeline from Cushing to Valero's 180 mb/d Memphis, Tennessee, refinery can be considered the final nail in Capline's coffin, since it replaced supplies delivered on a Capline lateral from the Collierville terminal in Mississippi. The result is virtually no demand to ship crude north on Capline except in abnormal circumstances, such as a February 2018 shipment of Iraqi crude providing relief for refiners affected by reduced flows of Canadian crude to Patoka on the injured Keystone pipeline.

Exhibit 2 Capline System Map



Source: Capline

Absent Capline, St. James still provides crude blending and pipeline distribution service to six Mississippi River refineries with 1.65 mmb/d capacity (detailed in our previous note), including the recently completed SemGroup Maurepas pipeline feeding Shell's Norco, Louisiana, refinery. These flows are expected to continue. However, the decline in Capline shipments indicates that surplus barrels at St. James will now need to find a new home in case the pipeline is reversed or closed by its owners. The obvious destination for crude surplus in Louisiana is the export market.

No New Domestic Home

Although Louisiana only produced an average 137 mb/d of onshore crude in 2017 (according to the Energy Information Administration), offshore crude flows into the state were as much as 1.6 mmb/d from the central area of the Gulf of Mexico (according to the Bureau of Ocean Energy Management), and net imports from Texas last year averaged 1.2 mmb/d. Completion of the second stage of the 480 mb/d Bayou Bridge pipeline could result in additional flows of 300 mb/d from Texas on top of 150 mb/d average flows so far to Lake Charles, Louisiana, on stage one of the pipeline, according to the LDNR. Louisiana ports also imported 1.7 mmb/d of overseas crude on average during 2017, and this total is not expected to decline significantly. All told, that adds up to an estimated 5.2 mmb/d Louisiana crude supply by the end of 2018, with refinery demand at most 3.7 mmb/d based on maximum throughput capacity. That leaves a greater than 1 mmb/d surplus. That surplus will grow if—as expected—Gulf of Mexico production and shipments of crude from Texas increase. Although some of that surplus will find its way to out of state refineries via Mississippi and Arkansas, the demise of Capline flows suggests there is now no new domestic home for incremental Louisiana barrels.

Exports Will Balance the Market

In these circumstances, exports will balance the market in Louisiana, just as they have done in Texas (see our December 2017 note "Permian Makes and the World Takes"). Crude exports from Louisiana have increased slowly since the end of federal restrictions in December 2015, with an average 41 mb/d shipped overseas in 2016 rising to an average 108 mb/d in 2017, according to U.S. Customs. A crucial step in cranking up Louisiana export volumes occurred with the February 2018 opening of LOOP terminal export capacity. Two very large crude carriers loaded at LOOP have since shipped cargoes to the Far East. LOOP is unique among Gulf Coast ports in its ability to load a very large crude carrier holding over 2 million barrels of crude directly. That makes Louisiana very attractive in the competitive crude export market, since freight rates for larger cargoes are far lower, and loading a VLCC from a smaller port requires costly transshipment on smaller vessels. As Louisiana export volumes increase, we expect to see greater crude flows south from St. James to the Gulf Coast. As a result, the crude trading role currently played by the St. James storage and distribution hub will also migrate south to the Clovelly storage hub connected to LOOP.

In the third note in this series, we'll discuss the impact of Louisiana's changing focus toward the crude export market and regional crude pricing, including the Light Louisiana Sweet market.

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