



Rail Comes Of Age

Shipping crude by rail has emerged as one critical link in a growing, interlinked supply chain.

By Gregory DL Morris

In just a few years, crude oil transportation by rail has moved quickly from stopgap expedient, to booming growth industry, to beleaguered necessity. A few, high-profile accidents have cost both lives and credibility, but have also brought shippers and carriers together to establish best practices, and the first fruits of that has been new standards for tank cars. Those are being phased in over the coming years.

That is good because behind the lurid headlines, volumes of crude oil moved by rail have continued to grow.

Producers and refiners reiterate that it has become an essential part of the supply chain, while railroads and terminal operators continue to invest in infrastructure to handle higher volumes. Beyond the pure numbers, many operators are expanding into full intermodal services, linking road, rail, pipeline, and waterborne transportation.

Terminal model

Far out in the New Mexico desert may be an example of the intermodal future of crude handling.

When the Rangeland Integrated Oil (RIO) terminal comes into service near Loving, N.M., in the fourth quarter, it will be the first of a new type of intermodal facility. The integrated system of terminals and pipeline is designed to aggregate crude oil and condensate at the RIO Hub and deliver it by pipeline to the market center at Midland, Texas, for transport to the Cushing, Okla., oil trading hub or the Gulf Coast—or transport it by rail to refining centers and other markets across North America.

The RIO Hub lies in the center of the Delaware Basin's rapidly growing horizontal drilling activity. The facility is situated on a 300-acre site in Eddy County, N.M. Served by the BNSF Railway, the rail

terminal will handle inbound frack sand and outbound crude and condensate. Outbound service will be provided via rail and pipeline.

Crude oil will come into the RIO Hub via truck and pipeline. Rangeland Energy is supported by an initial \$200 million equity commitment from EnCap Flatrock Midstream.

Transloading between truck and rail was to begin in October. Initial throughput capacity for outbound crude oil and condensate will be 10,000 barrels per day (bbl/d). As demand increases, Rangeland will build high-speed unit train loading facilities to take capacity to more than 100,000 bbl/d.

The facility will also have the capacity to accommodate more than 500,000 tons of frack sand per year. When unit train service begins and demand increases, Rangeland will expand sand infrastructure to more than 1 million tons per year.



Despite multiple challenges, the dawn of crude by rail grows brighter. These tank cars wait for loads at the COLT Hub terminal in Epping, N.D.
Source: Crestwood Midstream Partners LP

Rangeland is negotiating now with an oilfield services company to provide frack sand rail unloading, storage and distribution, Chris Keene, president and CEO of Rangeland Energy LLC, told Hart Energy.

“We are in advanced discussions with several refiners, marketers and producers to provide outbound service for crude oil and condensate,” he added.

The first 30-mile leg of the RIO Pipeline will connect the terminal to Rangeland’s State Line Terminal, a gathering hub at the Texas-New Mexico border where the company will provide tankage and truck unloading facilities. A bi-directional pipeline will allow for the movement of crude from the State Line Terminal north to the Rio Hub or east along a 104-mile route to the Midland Terminal, which will provide connections to existing and planned interstate pipelines to Cushing and Gulf Coast markets.

That’s all very impressive. But note: This complex will serve Permian Basin producers—not the rail-centric Bakken play.

And RIO will not be alone. Nearby, Murex LLC and Cetane Energy LLC recently agreed to capital improvements at their Cetane transloading terminal at Carlsbad, N.M., that will double the facility’s operational capacity. The existing unit train terminal was to begin improvements in the late third quarter that will allow for the loading of 40,000 bbl/d of oil following completion in July 2015.

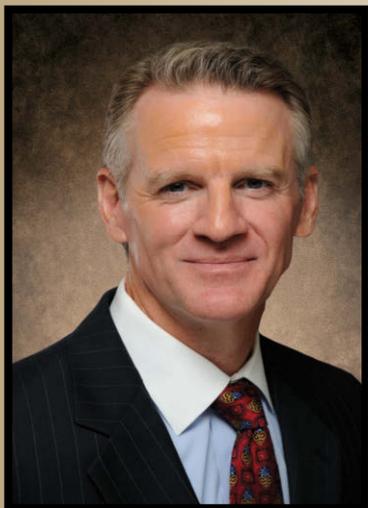
Initially, Murex and Cetane installed 40,000 bbl of crude oil storage, 12 tank truck offloading stations and more than 18,000 feet of track to accommodate unit train loading at the facility, which shipped its first oil in December 2013. The expansion will include additional on-site storage, further rail track

enhancements and increased capacity for truck offloading and rail car loading.

More connections

Rangeland expects to establish connections to various pipelines due to come on line late this year.

“When we decided to enter the Delaware Basin we looked to current drilling activity and production,” said Keene, “but we paid even more attention to where we think production will be five to 10 years from now. We want to be in the heart of that activity with the ability to touch the majority of production occurring within a 75-mile radius of the RIO site. We’re very bullish on the geology in the Delaware. With eight or more pay zones, we continue to believe that drilling programs will extend for 20 to 30 years. We are even more confident about our forecasting today.”



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For capacity to match production, that strategic view is essential. But for markets, the focus has got to be much more tactical.

“The Gulf Coast market has been flooded with light, sweet crude,” added Keene. “Rail has opened options that were otherwise limited. Sending condensate to Canada for use as a diluent for bitumen is one option. Accessing the West Coast by rail is another alternative for light crudes and condensate.”

Open the Golden Gate

Production volumes will continue to grow, Keene is sure, “and producers will seek the destinations that offer the highest netbacks. Production will find its way to a refinery, or to a [condensate] splitter for export, or directly to an export terminal to pursue the option of a higher-value international market, now that the export ban has been relaxed for condensate. Now that it has been, we may see export terminals on the West Coast crop up to serve Latin American or Asian markets.”

Plains Marketing, a subsidiary of Plains All American Pipelines, operates five crude-oil loading facilities with total capacity of 210,000 bbl/d, and two unloading terminals with total capacity of 280,000 bbl/d. A new unloading facility is under construction at Bakersfield, Calif. It will have an initial capacity of 70,000 bbl/d, or roughly one unit train per day when it comes into service, scheduled in October.

The West Coast, both northwest and southwest, are the emerging destination markets, John Keffer, vice president of terminals for Plains, told Hart Energy.

“The Bakersfield terminal will connect to our existing pipeline structure, including southbound lines to the Los Angeles area and northbound lines up to the San Francisco area. Our current permit is for one train a day, but we are building the operation to be able to expand. There is a great deal of interest in California, which is still dependent on waterborne crude from Alaska and South America.”

Here to stay

Continued investment on the part of Plains and other operators is a clear indication that crude by rail (CBR) is not just a temporary expedient to get stranded barrels out of the Bakken.

“It may have started as an interim solution, but from our perspective it is a permanent part of the supply chain,” said Keffer. “In any event, it has been more robust than we originally anticipated.”

He elaborated: “Our expectations were less than what we have seen. The Bakken and the Rockies have just grown and grown and the need for additional facilities has grown substantially. We would like to see even more volume moving by rail, but everyone is looking for more space on the rails.”

Keffer notes that all the Class 1 railroads are making capital investments that will benefit all traffic—not just crude.

Total throughput for Plains as an organization is 3.7 million bbl/d of crude, NGL and refined petroleum products, and the company is exploring every intermodal option for shippers: rail, truck, pipeline, water and all combinations of those.

“Producers are very much focused on takeaway capacity, however that can be achieved,” said Keffer. “Rail has added options for them, and not just in the Bakken, in Colorado, West Texas, South Texas and Canada.”

Refiners, in contrast, are often more limited.

“The East Coast in particular is not really very flexible. They primarily receive from the water,” Keffer added. He notes that interests in the Gulf Coast are developing an idea to load ocean-going barges to supply East Coast refiners.

“Crude by rail has opened the door for refiners to optimize their feedslates with lots of different crudes,” he said.

Plains is also expanding its fleet of railcars available for shippers to lease. “Our current fleet is 3,500 cars in crude service and 3,900 for NGLs,” said Keffer. “Of the crude cars, only 9% are the older DOT-111s and those are being phased out. We have ordered about 1,800 new cars and the first of those will start arriving in the third quarter of 2015.”

Big plans and small

Other midstream operators plan to move crude to the west, as well as north, south and east. Supply-chain operations firm Savage, based in Salt Lake City, has recently doubled the size of its Trenton, N.D., crude loading terminal to ship two unit trains per day and has also brought into service two other facilities in response to a shortage of outbound capacity in western Canada.

The Northern Sunrise Crude Terminal northeast of Grande Prairie, Alberta, in the Peace River Region, has direct access to the Canadian National Railway (CN). The terminal’s first phase transloading capacity is 25,000 bbl/d, or 1,500 cars per month, of crude on a manifest basis. A second phase will allow unit train operations. Northern Sunrise also has 160 storage spots with inbound and outbound track access.

The Unity Petroleum Rail Terminal in Unity, Saskatchewan, has direct access to the Canadian Pacific Railway (CP) and

has 45 rail car spots for capacity of 5,000 bbl/d or 275 cars a month.

“We continue to see growth in origins,” Nathan Savage, senior vice president of the Savage oil and gas midstream group, told Hart Energy. “But there are also a lot of refineries now building direct receiving facilities. That is directly displacing imported crude.”

Kirk Aubry, president and COO at Savage, added, “We are very confident about the role of crude by rail in the supply chain. This part of the business is still sorting itself out, but it’s maturing very quickly.”

Savage and refining and marketing company Tesoro Corp. have proposed a new terminal at the port of Vancouver, Wash.—across the Columbia River from Portland, Ore.—where as much as 360,000 bbl/d of oil could be transferred from rail to marine vessels for final deliveries to refineries all along the West Coast. Tesoro is a major West Coast downstream operator with refineries at Anacortes, Wash., and Martinez and Los Angeles,

Calif. It also has a refinery at Kenai, Alaska. The refineries serve an extensive retail fuel operation west of the Rockies.

Savage suggests such a facility could displace about 30% of crude currently imported for use on the West Coast. “It’s a large project with big implications for crude by rail in the Northwest,” he said. Alaska

North Slope crude has been the dominant feedstock for West Coast refiners for years with some trans-Pacific shipments from Indonesia and elsewhere.

More than differentials

As a firm with a large transloading presence, Savage is agnostic about mode, but

Savage recently doubled the size of its Trenton, N.D., crude terminal, which can now handle two unit trains per day. *Source: Savage*



BNSF dominates crude-by-rail shipments out of the Williston Basin. This unit train races through snowy Wisconsin countryside, moving more oil to market. *Source: BNSF Railway Co.*

Savage would like to put to rest the idea that CBR can't coexist with pipeline.

"As a practical matter it is not either/or. It's both. They are complementary. Both producers and refiners like to have options. There are locations that cannot send or receive by pipeline and the way rail has evolved has given those shippers all kinds of new possibilities," Savage explained.

He adds that supply chain efficiencies, more so than crude differentials, are going to make the difference for refiners.

"The crude buyers know what is out there, it's not like there are a lot of secret crudes. They have done a great job of taking advantage of what is now available to them," he added. In addition to its own several crude loading terminals, Savage operates unloading facilities at several refineries, including some of Tesoro's plants.

The maturation process of which Aubry spoke was only accelerated by the Lac-Mégantic, Quebec, tragedy last year.

"We are seeing a leaning-out among the operators," he observed. "You can't dabble in this business. You are in or out. If you are in, you have to have the equipment and the training to do it safely, to work with all the regulators and trade groups. One thing the accidents have done is to bring together the industry to look at the safety of the

supply chain. And we are an important conduit between the shippers and carriers. As the field leans out, you will see more folks like us who are committed," he added.

The takeaway priority

"In macroeconomic terms, crude by rail is absolutely here to stay," Brian Freed, vice president of crude logistics at Crestwood Midstream Partners LP, told Hart Energy. Crestwood owns and operates the sprawling COLT Hub Terminal in Epping, N.D., just northeast of Williston as well as a 50% interest in the Powder River Basin Industrial Complex terminal in Douglas, Wyo. He said that CBR on its own—and as part of an integrated supply chain with terminals, water, road, and pipeline connections—is "working well for many people and is rapidly maturing." He emphasized that CBR is maturing, with all the implications of that word.

Freed was present at the creation of CBR as it is known today: He led the development team for Rangeland Energy when it built and opened the COLT terminal in June 2012. It was one of the first major, purpose-built Bakken facilities, built as the unconventional shale play rapidly increased production. It was given an appropriately prosaic name: Crude Oil Loading Terminal, or COLT.

He joined Inergy when it acquired the COLT Hub in late 2012, prior to Inergy's merger with Crestwood Midstream in October 2013.

"We built the first terminal from scratch, so I have seen that maturation process firsthand. There is some pride of ownership, or at least of authorship," said Freed, adding that the model is evolving from toll-throughput to integrated services.

What has not changed for CBR is a focus on long-term contractual business with specific shippers and consignees.

"The majority of our customers are actually refineries. They are buying barrels in the field as close as they can get to the wellhead. We have dedicated tanks, dedicated truck racks, and pipeline connections. The closest we get to spot business is when a contractual customer asks for increased volume," he explained.

And volumes are rising, said Freed. Acknowledging reports that Bakken production has begun to show fluctuation, he says terminal throughput is still rising.

"We are moving record volumes. Our peak was not 2012 or '13 but the last four months [of 2014]."

Expedient to necessity

The reason for that, Freed said, is that while CBR began as an expedient, it has quickly become a necessity.

Tanks cars await filling at the new Black Thunder terminal in Campbell County, Wyo. A joint project of Meritage Midstream Services LLC and Arch Coal Inc., the operation draws on existing rail infrastructure built to handle the Powder River Basin's extensive coal output, served in part by the high-speed coal loadout in the distance.

Source: Meritage Midstream



“To get to the Northeast or to the Pacific Northwest, there are no pipelines in existence or even proposed. What are the chances of a pipeline across the Rockies? Slim to none. Pipeline to Philadelphia? Slim to none. That is why the West and East Coast refiners have invested in receiving terminals, so they can bring in the best barrels for their facilities,” he said.

At an increasing rate, Freed added, he is seeing “disintermediation. The refiners are hooking up with the producers directly. And it’s not just in the Bakken, it’s in the Niobrara, the Powder River Basin and Canada.”

That said, the process has not been entirely smooth, nor could it be.

“This process of getting crude in motion is a basin-by-basin process. Some basins are already over-served, at least at present, but others are not.” Taking a step back, Freed noted that “over-served” only pertains to the midstream. “For producers, the priority is always takeaway capacity. There really is no such thing as too much.”

The same goes for refiners.

It’s all relative

But even in the midstream, over-served is relative.

“The desirability of Bakken crude has a lot to do with the arbitrage vs. Brent.



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*vice president of crude logistics,
Crestwood Midstream Partners LP*

At an arb of \$7 a bbl or less, then sure, there is probably too much takeaway capacity. But we saw production from North Dakota increase 30,000 bbl/d from April to May. There are ebbs and flows now, it’s not a straight line any more. But this is hardly slowing,” Freed said.

Adding time brings a fourth dimension to the CBR calculus.

“It could be fair to say that there is more takeaway capacity in the Bakken than is needed at this moment. But there are limited pipeline increases coming

until 2016. So if you want to say there is too much for 2014, fine, but can you say that for 2015?” he asked

As with any large-scale industrial operation, capacity additions will always come in large chunks while demand changes incrementally—and rarely are the two evenly matched.

“It is likely that someone will build another terminal,” said Freed, “but it is definitely easier and more economical to expand existing facilities than it is to build a new one from scratch.”





“Our planned expansions will be needed for the terminal to accommodate the prolific drilling and production activity taking place in the area.”

**– Steve Huckaby, CEO,
Meritage Midstream Services LLC**

As proof of that Freed added, “Since the day we came in service we have pretty much always had some kind of construction on-site. Most recently, we have added new tanks, increased our pump sizes and added loading arms. We are also adding release tracks to expand our railcar capacity. You could call it debottlenecking or adding incremental capacity.”

Canadian heavy oil

Rail traffic in CBR continues to rise for Canada’s heavy crudes as well as the light oil produced by U.S. unconventional shale plays. CN is the dominant rail service provider in northern Alberta where Canada’s heavy oil sands lie.

The line hoped to double its crude oil shipments in 2013 from 30,000 carloads in 2012. The result? It moved almost 74,000 carloads last year—and already moved 60,000 just in the first half of 2014. Not only are absolute volumes booming, but so is revenue.

“The length of haul is growing,” says James Cairns, vice president of petroleum and chemicals for CN, told Hart Energy. “Heavy crude by rail by nature is farther from tidewater markets than light crudes and means a longer distance.”

In a classic example of economies of scale, higher profitability for the railroad does not necessarily mean higher prices for shippers. In general, industry experts note that a longer single-line

haul is often less expensive and takes significantly less time than a rail interchange of the same length.

In that, the CN has a significant advantage over all of the Class I railroads in North America. “We are unique as the only North American railway that reaches all three coasts [Atlantic, Pacific, and Gulf of Mexico] as well all the oil-producing regions of Canada,” said Cairns. “We can get from northern Alberta to the Gulf Coast all on our own rights of way.” CN added to its existing transcontinental network across Canada and routes into the U.S. Midwest and New England in 1998 by acquiring the Illinois Central Railroad, which linked the continent’s Chicago rail hub with New Orleans and the Gulf Coast.

That vantage point also puts the railway in a position to note changes in patterns of flow.

“There has been high demand for crude by rail from refineries in eastern Canada, in PADD 1 [eastern U.S.], and in the Gulf Coast,” said Cairns. “The big sea change is that Canadian shipments are moving from manifest freight [single cars or blocks of cars] to unit trains. That is accelerating.”

The distances crude is travelling by rail is matched by the variety.

“We move everything from neat bit, bitumen, that has an API gravity of 8°, and Peace River Heavy, to rail bit that is about 15% diluent, to fully diluted pipeline-spec crude that moves pipe to

rail or rail to pipe, to traditional light barrels,” Cairns said. “Not only does rail reach crudes that have no access to pipeline, there is actually an economic advantage to moving heavy crudes, neat, by rail without diluent.”

New cars, new terminals

The list of types of crude moving by rail prompted Cairns to dispel a misconception about CBR. “The Bakken is unique in the fact that so much of the production is moving by rail. Outside of the Bakken, rail is really just a bite of a slice of the pie.” As a result, he explained, there are many avenues to growth all along the supply chain. “Rail is still such a small player, overall, in the crude supply picture that we can see big changes in volume.”

As that volume grows, the CN remains vigilant about corridor risks, both in terms of population and environmental exposures.

“Following the Lac-Mégantic tragedy, the industry strengthened train-securing practices,” said Cairns. “Within the CN, we voluntarily extended U.S. Department of Transportation rules about transloading to all of our Canadian operations. We already have an annual program to wayside detection, and have committed CA\$10 million (US\$9.2 million) to additional monitoring equipment.”

While the vast majority of the tank car fleets in the U.S. and Canada is owned or leased by shippers—not by the railroads—the carriers are doing what they can above the rails.

“We have been very clear in supporting changes to U.S. and Canadian rail car regulations, and are already seeing the phase out of low-pressure DOT-111 cars in crude service. We are also reaching out to all emergency responders to help provide training all along the line,” Cairns said.

As old tank cars are phased out, new terminals are phased in. The new Black Thunder Terminal in Wyoming’s Powder River Basin came into service in March and is already operating at slightly above expectations.

“We are transloading about 8,000 bbl/d at Black Thunder,” Steve Huckaby, CEO at Meritage Midstream Services LLC, told Hart Energy. “We are slightly

above our initial forecasts for throughput. We have been attracting barrels based on the combination of the terminal's location and rail economics."

Huckaby said he expects the facility to be at capacity of 15,000 bbl/d by year end. "Our planned expansions will be needed for the terminal to accommodate the prolific drilling and production activity taking place in the area," he added.

Black Thunder booms

Black Thunder Terminal is a joint venture between Meritage and Arch Coal Inc., and

was built at Arch's Black Thunder mining complex in Campbell County, Wyo., 11 miles southeast of Wright, Wyo. Meritage is pursuing long-term arrangements with various refiners and third-party marketing companies and working with various pipeline companies to develop direct connections.

Black Thunder has significant railroad infrastructure in place already to serve Arch Coal's big Powder River mines. Adding CBR handling will be comparatively easy. A big plus for shippers comes from Black Thunder's dual rail service by

the two largest carriers in the western U.S., BNSF and Union Pacific.

"Based on current production, export capacity and production in the Powder River Basin seem to be at equilibrium" said Huckaby. "We believe that equilibrium will be disrupted by the inability of current rail infrastructure to keep up with production. We are launching a phased approach to expansion. The first step will bring throughput capacity at Black Thunder to 20,000 to 25,000 bbl/d by installing five to 10 loading arms, five truck offload bays,

Custom Blending May Be Next

The flexibility of crude by rail for crude buyers has given more than a few people thoughts about the potential for even more thorough integration of the supply chain from producer through terminals, railroads and refiners. Some refiners have floated the idea of optimizing their refineries by custom blending a feedslate.

"Custom blending is a story that is unfolding in the Powder River Basin," Steve Huckaby, CEO at Meritage Midstream Services LLC, told Hart Energy, adding, "as we learn more about the quality of crude production coming from the play's multiple stacked formations and the blends that are available, both now and in the future. Currently, we send samples and assays to refineries and they make selections based on their current requirements, but custom blending is something we'll continue to explore."

Custom blending is something that the refining industry has been doing for a long time, said Chris Keene, president and CEO of Rangeland Energy LLC. "Whether at the refinery or at the point of origin, blending often generates a feedstock that maximizes yield. Now we're seeing terminals like RIO serve refiners as direct customers. This is a trend that has grown over the last few years so custom blending at the terminal can make good sense in some situations. This will be an ongoing discussion with the RIO Hub's customers."

Keene added, "One area we're looking at with our customers is stabilizing condensate to remove the light ends to create a more stable product. The economics of doing that at a centralized point in the supply chain are attractive, so we are exploring building stabilizing infrastructure at RIO and providing those services." ■

—Gregory DL Morris





The Port of Vancouver, Wash., has its West Vancouver Freight Access Project underway to cut rail congestion as traffic grows at the port, located across the Columbia River from Portland, Ore. The project, scheduled for a 2017 completion, includes a proposal by Tesoro Refining & Marketing and Savage Cos. for a crude terminal to serve Pacific refiners. The proposal has drawn strong opposition from some Pacific Northwest environmental groups.

Source: Port of Vancouver

and one 100,000-bbl storage tank. At the completion of Phase II, we expect to reach total storage capacity of 400,000 bbl and throughput capacity of 70,000 bbl/d with a 15-arm loading rack capable of loading 15 to 18 cars per hour and 16 truck offload bays. Target load time is a full unit train in less than 24 hours.”

A key name in CBR terminalling is Strobel Starostka. Its Strobel Starostka Construction (SSC) has designed and built many of the loading and unloading terminals through which the CBR boom is building and its affiliate, Strobel Starostka Transfer (SST), operates a number of transload facilities across the country, including three in North Dakota’s Bakken Shale and two in Wyoming’s Powder River Basin: Crestwood’s COLT Hub; the Bakken Oil Express terminal near Dickinson, N.D.; the Dakota Plains terminal near New Town, N.D.; Meritage Midstream’s Black Thunder Terminal; and Eighty-Eight Oil’s terminal at Fort Laramie, Wyo.

“We handle 35% of the crude moving out of the Bakken by rail,” Travis Brock, vice president of commercial development and strategy for both SSC and SST, told Hart Energy. “And of the more than

400,000 tank cars loaded with crude in the country last year, we loaded approximately 100,000 of them.”

But importantly, neither SSC nor SST own any of the terminals they design, build or operate. Brock could not provide any specifics on new projects, other than to say with a smile in his voice, “We are very, very busy. Each terminal is still a custom job, especially the loading facilities. The ability to go rail-to-pipe and pipe-to-rail, integration of heavy oil, scale, they all make each design different. Destination terminals are a little simpler, but not much.”

East and West

That experience gives Brock broad insights on the CBR trend. Brock relates that “the East Coast is still building out a bit, but the real attention is shifting to the West Coast. That is the last frontier for crude by rail. People say that a pipeline could not be built through the Rockies, but the mountains might be the easy part compared to permitting in California.”

For similar reasons, he suggested that Canadian crude exports may come through the U.S. Gulf Coast. Brock explained that while CBR already reaches

both the Atlantic and Pacific ports in Canada, pipelines are facing fierce opposition from environmental groups and the native First Nations. Tanker traffic is likely to get the same reception. Meanwhile, Canadian crude is already moving by pipeline and rail to Gulf Coast refiners.

“There are already folks in Texas and Louisiana working on how to get Canadian crude on the water without comingling it with U.S. domestic crude, which cannot by law be exported,” Brock said.

The biggest shift in CBR, according to Brock, is that refiners are taking ownership of the supply chain, echoing the trend mentioned by Crestwood’s Freed. “They are buying crude all the way back to the wellhead,” he said. “It is such a change. The traders took the lead on crude by rail, and most refiners sat back and watched. But now they are jumping in and taking the lead. The arbitrage opportunities for stranded barrels is pretty much gone, so now the incremental advantage is owning the supply chain. Eventually the cost of crude by rail will just be absorbed into the refinery crack spread. The big refiners have the money to play that.”

Next generation

The Williston Basin will see new terminal capacity as crude production ticks upward. Dakota Gold Transfer LLC plans to develop a crude transload facility, Dakota Gold Transfer Plaza LLC, in Mountrail County near Plaza, N.D., to serve production from Bakken and Three Forks producers.

Dakota Gold is a joint venture between its president and CEO, Cody Moe, and the TrailStone Group. TrailStone is an energy asset investor and manager owned by Riverstone Holdings, a \$27 billion private equity firm specializing in energy. Moe is a crude trucking and construction entrepreneur with seven years of experience in the Bakken.

The new terminal will be served by the CP, the distant No. 2 handler of Bakken crude behind BNSF, and will aggregate crude produced in Mountrail and neighboring counties via gathering pipelines and trucks. Outbound service will be provided via rail and pipeline.

It will have a capacity of 70,000 bbl/d and storage capacity of more than 300,000 bbl, with expansion to 600,000 bbl during a planned second phase. The terminal's design includes two loop tracks with an additional spur for train storage, a covered loading barn, a 14-arm system capable of loading a unit train in about 14 hours, 15 truck unloading bays and three 103,000-bbl storage tanks.

"We are very encouraged by the response we are receiving from customers and anticipate that construction will begin later this year," Moe told Hart Energy. Initial truck-to-rail transload service may begin about 90 days after construction begins with storage and high-speed rail loading service expected in the second half of 2015 along with outbound pipeline service. Permitting and engineering are underway. Dakota Gold is also in discussions with various pipeline companies to develop outbound pipeline service from the Plaza Terminal to multiple pipeline markets.

Dakota Gold hired a familiar name, Strobel Starostka Construction, to conduct the FEED study. It is expected SSC will build the terminal and that Strobel Starostka Transfer will operate it.

"The rapid expansion of rail delivery of Bakken crude has created a significant congestion issue in the play," said Moe. "Congestion is an issue we addressed when we were siting the Plaza Terminal. First, we believe that Dakota Gold's decision to invest on the east side of the play will substantially increase the efficiency of flows and traffic patterns. Also, the CP Railway is making a substantial capital investment in the Bakken and on the New Town sub line in particular. That will allow the Plaza Terminal to more effectively

realize its design capabilities, and will have a material impact on some of the congestion issues experienced by all railroads."

Clear signal

New, multimillion dollar projects like the Dakota Gold terminal prove CBR has a green signal and clear track ahead for the foreseeable future. New tank car standards and railroad operating procedures may clear up lingering safety questions. Intermodal operations continue to grow—making North America's already impressive midstream infrastructure even more efficient.

Even California with its nearly impossible review and permitting processes may be climbing on board.

Kern County, Calif., recently approved a CBR terminal at Alon USA Energy's Bakersfield, Calif., refinery. Alon shuttered the plant in 2012, throwing dozens of employees out of work, and has sought to build a rail terminal that would allow it to bring in price-advantaged domestic crudes.

The proposed terminal would have a capacity of 140,000 bbl/d and replace the plant's small, 13,000 bbl/d unloading rack. Alon has indicated it may use a completed terminal on a standalone basis without reopening the refinery. That might work, given that Bakersfield serves as the center of California's in-state oil production with significant pipelines and other midstream infrastructure in place.

Valero Energy Corp., the nation's largest independent refiner, gave up efforts to obtain permits for its refineries in the San Francisco and Los Angeles areas after strong protests and long delays by permitting agencies. Kinder Morgan Energy Partners operates a 72,000 bbl/d terminal at Richmond, Calif., across the bay from San Francisco—by far the largest CBR operation in the state—and has fought off efforts by environmentalists to shut it down.

But despite such concerns about environmental and safety issues, the growing importance of rail as one of many links in the crude supply chain seems secure. ■

Paul Hart, editor-in-chief of Midstream Business, contributed to this article.



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