

Largest pipeline in U.S. crosses northeast Kansas

With price tags reported ranging up to \$4 to \$4.5 billion, the Rockies Express natural gas pipeline being constructed in 2007 is the largest pipeline project ever undertaken in the U.S. Construction of the pipeline crosses rural water districts in Washington, Marshall, Nemaha, Brown and Doniphan Counties.

Rockies Express, or REX as it is nicknamed, is a joint project by Kinder Morgan Energy Partners L.P., Sempra Energy and Conoco-Phillips. The new pipeline will link producing areas in the Rocky Mountain region to the upper Midwest and Eastern U.S.

The Rockies Express pipeline is being constructed with 42-inch diameter pipe and sufficient compression and associated facilities to provide transportation capacity of 1.8 billion cubic feet per day. Rockies Express Pipeline Project-West is a 713-mile natural gas pipeline project from Weld County, Colo., to Audrain Co., Mo.

REX-West is a part of the Rockies Express Pipeline, the 1,679-mile-long pipeline under construction from Colorado to Clarington, Ohio. Work on the pipeline also is under way in other states.

A recent media tour was attended by Pete Koenig of Kansas Rural Water. The tour included watching internal and external welding on the pipe with the most modern welding equipment in operation and observing a road bore operation in an area east of Oketo and north of Home City in Marshall County. Those attending learned that the current status of construction activities for the

Rockies Express Pipeline System is as follows:

- Meeker Hub to Cheyenne Hub – in service
- Cheyenne Hub to Audrain County, Mo. – federal regulatory authorization received; construction underway with a proposed completion of December 2007.
- Audrain County, Mo. to Clarington, Ohio – federal regulatory application filed April 30, 2007.

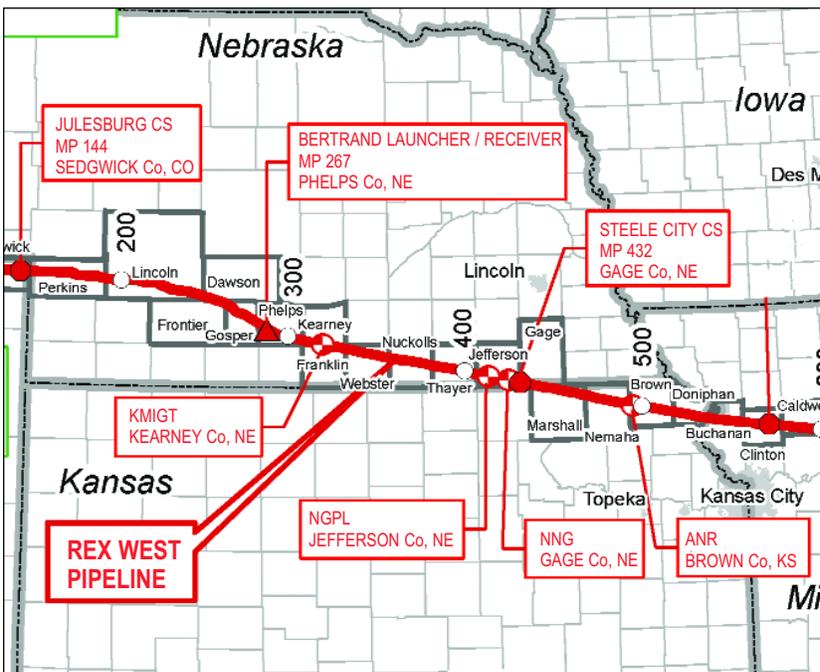
The pipeline will include more than 25 interconnects to intrastate and interstate pipelines. The pipeline is being built in three phases, with the last phase scheduled for completion by June 2009, given timely regulatory approvals.

The first 136-mile segment from Colorado's Western Slope into western Wyoming opened in February 2006. The second phase was recently opened; it runs 192 miles from western Wyoming to Weld County, north of Denver.

The next segment, dubbed the Rockies Express-West, will run 713 miles from Weld County to Audrain County in eastern Missouri; it's expected to be complete in 2007.

The last segment, called Rockies Express-East, will extend 622 miles from eastern Missouri to Ohio and is expected to be completed in the first half of 2009, according to the company Web site.

Virtually all of the Rockies Express-West pipeline route parallels existing pipeline and utility corridors, using siting



This graphic illustrates the magnitude of the western section of the new Rockies Express pipeline under construction across northeast Kansas.

guidelines from the Federal Energy Regulatory commission, which helps minimize the amount of new land that is affected. In Kansas, REX is following the Platte Pipeline route. The Platte system delivers Canadian and U.S. Rocky Mountain oil to markets in Kansas and Illinois, and other inter-connecting carriers. It is connected at Casper, Wyo., to the Express system which takes crude oil produced at Hardisty, Alberta Canada and delivers it to market in Montana, Wyoming, Utah and Colorado. In operation since 1952, the existing 12-inch Platte Pipeline runs 895 miles from Casper to Wood River, Ill.

A typical right-of-way is 75 feet for temporary workspace and 50 feet for permanent right-of-way. The pipe will have 3 feet of cover. Latex Construction Company, Conyers, Ga., is the project contractor.

A 42-inch-diameter high-strength steel is being used for the pipeline. The project fills a national

access the natural gas supplies. Experts claim use of natural gas in the U.S will increase 50% by 2020.

The Federal Energy Regulatory Commission is the lead federal agency in developing an

check for leaks, unauthorized construction and other factors that may affect safety. Pipelines are protected against corrosion by using cathodic protection – which employs an electric field to halt

In Kansas, REX is following the Platte Pipeline route. The Platte system delivers Canadian and U.S. Rocky Mountain oil to markets in Kansas and Illinois, and other inter-connecting carriers.

environmental impact statement for approving and overseeing the project. To build interstate pipeline facilities or operate pipelines, companies must obtain a certificate of public convenience and necessity from the regulatory commission.

Certificates are awarded only after it is demonstrated that a pipeline will benefit consumers, is compatible with the environment and will minimize interference with

corrosion. Before pipelines are placed into service, they are tested by filling the pipeline with water under great pressure to ensure the strength and integrity of the line. In-line or internal inspections are done by using “smart pigs,” mechanical devices that travel inside the pipe to check for deformities, pipe-wall metal loss caused by corrosion or other factors that could cause a failure.



energy need, company spokespersons stated on the recent media tour. The project is a significant investment in the U.S. energy infrastructure and will help meet the nation’s need for energy, company reps said. Local communities along the pipeline route will have the opportunity to



the public and landowners along the pipeline rights of way. The commission also oversees the public participation process to ensure that affected citizens are informed and have the opportunity to be heard.

Rights-of-way are routinely inspected by pipeline personnel to



Left: Latex Construction, Conyers, Ga., is the general contractor installing the Rockies Express pipeline which will carry natural gas from Wyoming to Audrain County, Mo. and eventually further east to Clarington, Ohio.

Center: This worker is pre-heating the pipe prior to the next joint being butted for welding.

Right: Workers insert the internal welding robot and bring the next section into alignment.



TransCanada to seek approval to build \$2.1 billion Keystone Oil Pipeline

Another pipeline, the Keystone Oil Pipeline, is proposed to parallel the Rockies Express along the same easement route in northeast Kansas. Keystone would be the third pipeline on the Platte easement, which was established in the early 1950s, as mentioned earlier. Keystone is also proposed to spur off at the Kansas-

Nebraska border to go south across Kansas to end at Cushing, Okla. The proposed route will involve easements in Washington, Clay, Dickinson, Marion, Butler and Cowley counties.

The proposed \$2.1 billion Keystone Pipeline will be capable of transporting approximately 435,000

Left: A worker rubs flux around the joint as the pipeline is being welded from the inside.

Center: This shack provides a better environment so that workers can complete six external welds. The shacks are air-conditioned.

Right: It all looks so simple! This section of pipeline is ready for installation, complete with correct bends matching the profile of the landscape.

barrels per day of crude from Hardisty, Alberta to Patoka, Ill. through a 1,830-mile pipeline system. The pipeline can be

Pipes crossing pipes

Rural water districts that serve areas surrounding the new REX pipeline have been impressed with the concern shown by the Latex Construction crews for existing rural water pipelines.

"Even though the new gas line is 42-inches in diameter, they will be going under most of our existing rural water lines," says Paul Strathman, Manager of Nemaha County RWD 3. Strathman and other RWDs in Washington and Marshall counties have been pleased with the diligence and concern that Latex has afforded the water districts.

"We have very good locations of where our rural water lines are; it's a pleasure to work with a contractor that sends out crews to help spot our lines," Strathman says. "They bring in a Vac-Tron (water jetting/vacuum equipment) and backhoe to spot our pipelines and expose them," Strathman says. The installation of the new gas line will involve boring of most of the RWD lines, but in some cases will involve exposure and support with steel beams while the new gas line is placed below the waterline. Nemaha RWD 3 has waterlines serving an area 32 miles from east to west and 26 miles north to south; the new pipeline is crossing the width of the RWD diagonally from northwest to southeast and involves crossing Nemaha RWD 3 lines at 26 different locations.



Above: Workers bore a township road to install a segment of the REX pipeline. This machine drives an auger inside the casing; workers clear the drilling from the machine. *Inset:* What's the secret? Dawn's liquid soap is applied for lubricant as the bore is made.

expanded to 590,000 barrels per day with additional pump stations. In addition to approximately 1,070 miles of new pipeline construction in the United States, the Canadian portion calls for approximately 230 miles of new pipeline and the conversion of approximately 530 miles of existing TransCanada pipeline facilities from natural gas to crude oil transmission, according to the owner, TransCanada pipeline.

Additional commercial commitments support the expansion of the Keystone Pipeline to a capacity of approximately 590,000 barrels per day and will involve the construction of a 294-mile extension of the U.S. portion of the pipeline from the Nebraska/Kansas border to a hub near Cushing, Okla. The expansion and extension target in-service date is fourth quarter 2010.

Keystone will be a 30-inch diameter pipeline with a minimum depth of cover of four feet, depending on land use. The

Proposed Keystone Pipeline



The proposed Keystone Pipeline is being planned for the same right-of-way as the Platte and Rockies Express pipeline across northeast Kansas. It will be a 30-inch diameter line and will carry crude oil from Hardisty, Alberta, Canada to Patoka, Ill. Another segment is proposed to split off from Washington County, cross Kansas and end in Cushing, Okla.

estimated operating pressure will be 1,440 psi; the Cushing extension that will cross Kansas will be 36-inch diameter pipe.

The company held hearings to receive public comments in September with one at Seneca on Sept. 17.

Nitrates Got You Blue?



Advanced
AMBERPACK™
Municipal

State of the Art System
Removes Nitrate from Groundwater

- Advanced ion exchange technology
- Low brine waste system
- Fully automated, modular, skid-mounted, space-saving plants



Call about pilot study evaluations

Layne Christensen Company • 913-321-5000
treatment@laynechristensen.com