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The New Search for Natural Gas in East Texas



Helicopters ferry GSRs to their deployment stations.

Many of the celebrated Texas wildcatters made their fortunes 80 years ago chasing crude oil in East Texas fields like the “Black Giant.” Today, another search is on in East Texas – the search for natural gas. Like the huge Barnett Shale play that developed around Fort Worth, the search for gas in East Texas is benefitting from technical advances in everything from seismic acquisition to hydraulic fracturing.

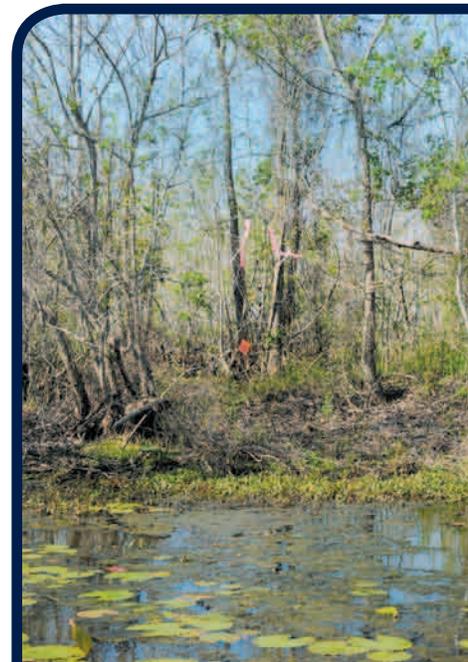
For over 55 years Dawson Geophysical has been a key seismic contractor in the forefront of the search for oil and gas throughout the lower 48 states. They have been responsible for imaging the new giant gas plays like the Barnett Shale where they not only brought new technology, but the ability to manage complex survey operations without interrupting the bustling schedule of the Dallas-Fort Worth (DFW) airport.

Today, Dawson is again bringing new seismic techniques into play as it helps companies take a “new look” at the Carthage Gas Field in Panola County, the largest producing gas field in Texas prior to Barnett Shale production in 2004.

The Carthage field has a unique and entirely different set of imaging challenges. First, it is a producing gas field with surface equipment and pipeline interconnections seemingly everywhere in Panola County. Second, it encompasses every kind of terrain East Texas can throw at you – from cypress swamps through piney forests along with the Sabine River, which is fed by the twisting channels of numerous creeks and bayous. In

this forested flood plain environment, it can be dry or very, very wet as downed trees create logjams that easily flood the low-lying area.

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To image this area, Dawson is using vibrators, airguns and dynamite sources – whichever is appropriate to the varying conditions in the field. For receivers, they’ve used the Aram system in the transition zone and now are completing the land portion of the survey using OYO’s Geospace Seismic Recorders (GSRs).

In April, Dawson’s survey spread had over 13,000 channels actively recording – notable because it is the largest GSR deployment to date, and demonstrates that the scalability of the GSR system is unlimited.

Dawson is using helicopters to help manage the massively complex and time-consuming logistics of this survey. Not only is the helicopter used to deploy and retrieve GSRs, but it is also used to rapidly fly the receiver lines and “line-view” (monitor) each GSR’s operational status during deployment – a significant time, personnel and cost-saving operation. The lightweight GSR, with its 30-day battery life has become a reliable component of Dawson’s acquisition operations.

“With more than 13,000 active channels, spread management can be quite a challenge,” said Steve Jumper, Dawson’s CEO. “But with our helicopter operations and the reliability and battery life of the GSR, we are able to acquire over 600 shots a day in very challenging territory.”

So today, the fields in Panola and Freestone counties are being reborn, as new technologies such as the GSR enable the search in East Texas to shift from the mature oil fields that shaped Texas’ history to the natural gas fields that will help shape our energy future.



PRESIDENT'S PAGE



Gary Owens

Searching for Earthquake Answers In Japan

The heartbreaking March earthquake and tsunami and the resulting ongoing nuclear crisis have the Japanese nation and its people on our minds and in our prayers. I'm grateful to report that OYO personnel on the ground during the quake and its aftermath made it home safely.

The team was working near the Hamaoka Nuclear Power Plant, which lies on Japan's east coast about 120 miles southwest of Tokyo and far to the south of the crippled Fukushima Daiichi nuclear facility. Managed by the Chubu Electric Power Company (Chubu), the plant is situated among low green hills overlooking a stretch of picturesque coastline. Field service engineer James Kasperek describes it as place you might take your family for a picnic. But below ground, the region's terrain is anything but peaceful.

The Hamaoka plant is built near the intersection of several tectonic plates, and like most parts of Japan, these fault lines are subject to regular seismic activity. Unlike its cousin to the north, the plant weathered the recent devastating quake without significant damage, but a smaller quake in August of 2009 caused the plant to shut down two of its reactors.

Even before this year's earthquake and deadly Tsunami, Chubu had been looking for ways to better map and monitor seismic activity around Hamaoka.

That initiative is what brought Hanshin Consultants and OYO together last summer. Hanshin Consultants chose OYO GSR and Downhole DS-250/150 equipment to help them image the complex geology around the plant. An OYO team went to Japan in the summer of 2010, and after eight months of imaging, Hanshin contracted Schlumberger to provide an even more detailed picture of the subsurface. Their plan was to image between a single well and four observation wells.

Before the second well could be imaged, the massive March 11 earthquake struck, sending huge waves slamming into the 24-ft seawall below the plant, but otherwise leaving the facility unharmed.

After a brief evacuation, personnel returned to the site and resumed work on the survey. The imaging of the second of four wells was completed when Schlumberger elected to move all personnel out of the country a week later.

These events offer a valuable reminder that safety means being ready for the unexpected - at home and overseas. We're fortunate to have our colleagues home safe, and I know their families feel the same.

Ground Zero on March 11

After a long night shift at the Hamaoka survey project, field service engineer **James Kasperek** spent the afternoon of March 11 sleeping - until he was jolted awake by Japan's largest-ever earthquake. James was prepared to expect tremors during this training and support assignment, but with this quake, he knew he wouldn't be going back to sleep.

He got dressed and turned on the TV, watching the tragedy unfold in real time.

"Seeing the helicopter footage of the wave rolling in and tossing huge ships around, I knew there was no way they could have prepared for this - it was just incredibly sad," says Kasperek. "It was like all the devastation of Katrina happening in ten minutes - we were all helpless."

When the call came that the crew would be evacuated home, Kasperek boarded the Shinkansen - Japan's famous bullet train network - to Osaka. "In the middle of the week, the train was packed full of families with their children heading south," he recalls. "That image really stuck with me."



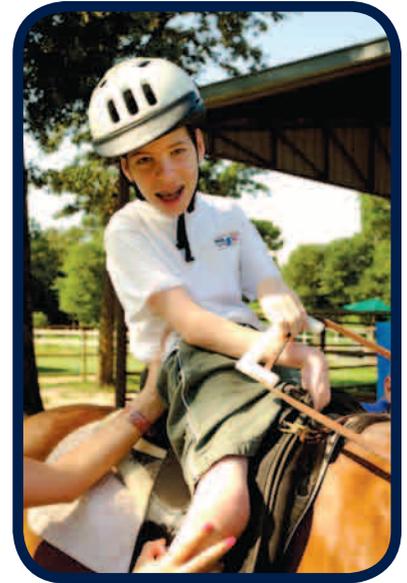
Gary Owens boots up for SIRE

At SIRE therapeutic equestrian centers, children and adults with disabilities, wounded warriors and others have the chance to experience the unique freedom and exhilaration that comes with riding and bonding with a horse. Their programs help clients build confidence, strength and simply have fun through horseback riding and related activities.

One way SIRE funds its mission is through its annual Boots & Bonnets Gala. OYO's Gary Owens served as the event's Honorary Chairman, and the May 7 gala honored long-time SIRE supporter and OYO Board Member Richard White and his wife Nancy.

The afternoon event was a salute to the Kentucky Derby and to the horses of SIRE.

To learn more about therapeutic horseback riding, visit SIRE at sire-htec.org.



OYO Board Member Richard White (left) and Gary Owens, OYO President.



Benefits of equestrian therapy are physical, psychological, educational, emotional and social. And there is a benefit that is more difficult to measure but is easy to see: on the back of a horse, a rider who may use crutches or a wheelchair is now taller than everyone else and no longer has to look up at everyone. Full of confidence, there is a sense of control and freedom that comes from making that large animal respond to the rider's direction. In the clinical setting, the disability can never be forgotten, but on the back of a horse, it quite often becomes "invisible," allowing the rider to experience a sense of accomplishment and reward.

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