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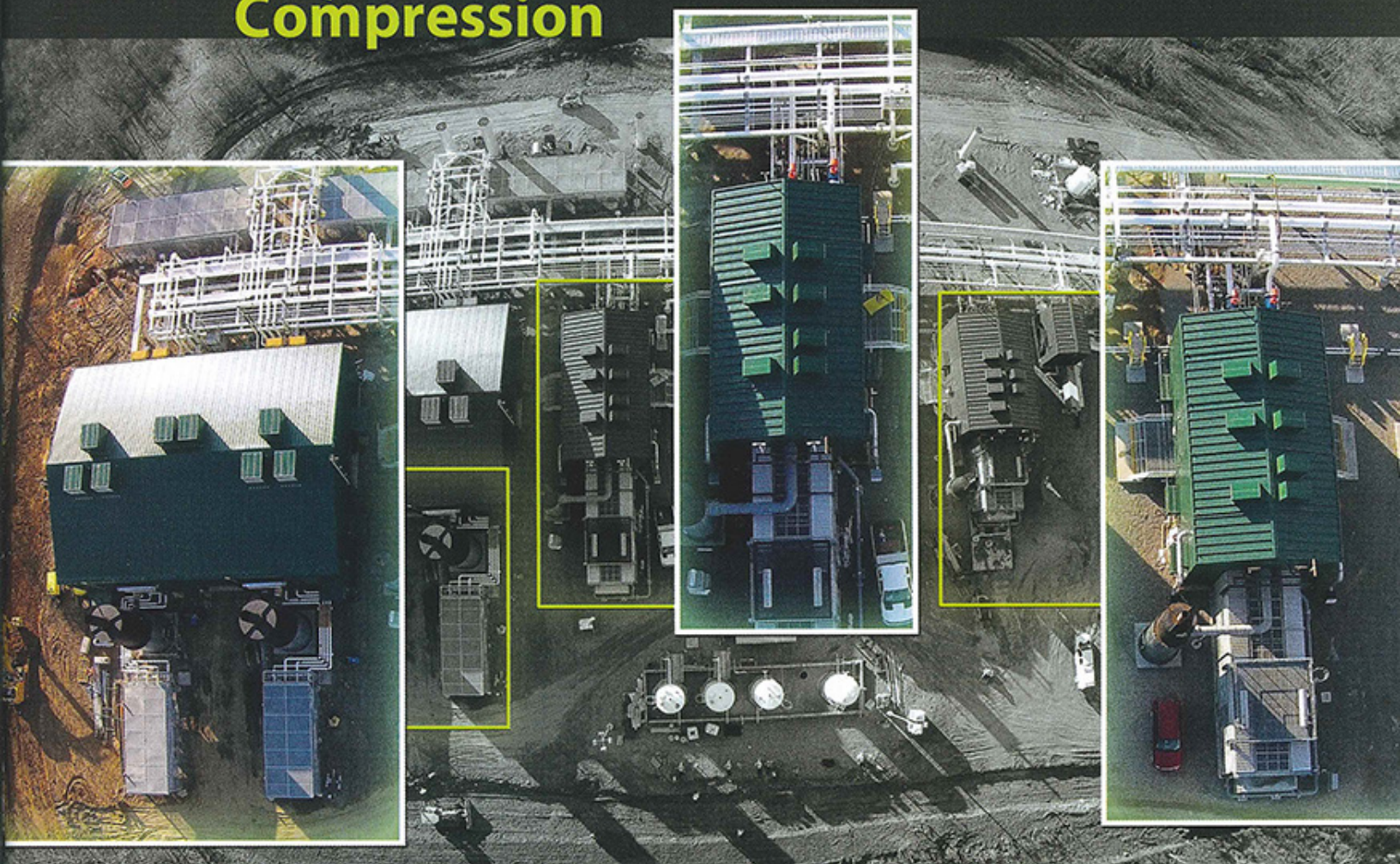
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# COMPRESSOR<sup>tech<sup>2</sup></sup>

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## Quiet Compression



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**Hoerbiger's New Gas-Tight  
Compressor Packings**

■ Noise Solutions' range of customizable equipment spans acoustic buildings, walls, enclosures and ventilation to engine exhaust silencers and cooler fan silencers.

■ The red structures feature cooler fan silencers from Noise Solutions. The company's manufacturing catalog ranges from acoustic buildings, walls, enclosures and ventilation to engine exhaust and cooler fan silencers.

## All Quiet On The Eastern Front >

Noise abatement specialists tackle compressor stations

BY DJ SLATER

Compressor stations have frequently been cropping up along the eastern region of the United States over the last few years, a fact that's not lost on those who call the area home.

As more stations emerge, so does the backlash. Residential complaints span the gambit from emissions and aesthetics to safety and noise. While the correlation between the two may never change, companies like Steel Nation Inc. and Noise Solutions hope to mitigate the moans by softening the decibels.

"Compressor stations get lumped in with ruining our water and our piece of mind," said Mark Caskey, president of Steel Nation. "If we can build these things as quiet as possible, then yes, I think we can (change public perception)."

Caskey was thrust into the natural gas landscape back in 2006, when he witnessed Range Resources drilling the Marcellus Shale's first well at the Renz Farm near Hickory, Pennsylvania. At the time, Caskey was working in the coal industry, building preparation plants with a strong emphasis on sound attenuation.

One year later, Caskey paid a visit to one of the first Marcellus compressor stations.

"I couldn't believe how loud that station was," he said, adding that the early E&P and midstream companies were not used to building stations close to suburban homes. "That was my eureka moment."

Caskey quit his job and formed Steel Nation, based out of Washington, Pennsylvania, that same year. With a new focus, he started knocking on doors hoping to drum up sound attenuation work in the natural gas industry. Atlas Energy answered, giving Steel Nation a work order for 10 structures.

"Once we got that first (order), it was an avalanche of business," Caskey said. His company builds pre-engineered metal buildings for the gas compression industry.

Steve Morgan, the executive vice president of Noise Solutions, was exposed to the natural gas industry in a different way. In 1997, Noise Solutions, headquartered in Calgary, Alberta, Canada, was a small company with muffler expertise.

Morgan came onboard 11 years ago, and the company has grown into a noise control specialist for the energy, mining, power generation and aerospace industries. Its range of customizable equipment spans acoustic buildings, walls, enclosures and ventilation to engine exhaust silencers and cooler fan silencers.

"We have grown as experts in low-frequency noise," Morgan said. "That tends to be the driving factor of noise complaints."

The natural gas boom brought several companies rushing to the eastern United States, many of which were used to working in the open spaces of Colorado, Oklahoma, Texas and Louisiana, Caskey said. When they started building

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■ An aerial view of the Seneca compressor station in Northern Pennsylvania.

compressor stations on the eastern terrain, however, enclosures and sound control weren't on their mind, and the complaints rolled in.

"Once your brain hears the sound of the compressor engine, you will never get that sound out of your brain," Caskey said. "You'll still be able to hear it like you did from day one."

Resorting to basic noise control solutions is one method some companies rely on to silence the grumbles, but those techniques come with pitfalls, Morgan said.

"Some companies will just put up a wall," he said. "If you're behind the wall in the shadow of it, you're good. But if it's on a hill, it may be in compliance with-

out having any positive impact for the residents. Our focus has always been trying to bring harmony between residents and businesses."

Keeping noise at reasonable levels, though, is a tricky matter. On the federal level, noise restrictions are clear cut; the Federal Energy Regulatory Commission (FERC) does not allow noise from a new or existing compressor station to emit sound above 55 decibels in noise-sensitive areas, such as schools, hospitals or residences. The same restrictions apply to compressor stations that undergo modifications or improvements.

On a statewide level, however, sound restrictions are inconsistent. Caskey said that in Pennsylvania, there are more than 60 counties, with anywhere from 30 to 40 townships within a county. Each one of those townships has its own legislation regarding compressor stations and sound attenuation.

"You could have 2000 jurisdictions that could issue permits," Caskey said. "Our goal is to not build a compressor station over 50 decibels."

According to the California Department of Transportation, 50 decibels

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■ The MarkWest Seneca Lake processing plant in Seneca Lake, Ohio, features sound attenuation technology from Steel Nation.

Photo courtesy of Midstream Energy and Photography LLC



■ The Dominion Transmission turbine compressor station in Waynesburg, Pennsylvania, is equipped with sound attenuation technology from Steel Nation.

is comparable to a quiet urban area during daytime hours or a dishwasher in the next room of a home. Sixty decibels is similar to the noise from heavy traffic at 300 ft. (91 m).

Morgan has also experienced the multiple township terrain in Pennsylvania, saying that in order for the playing field to level out, statewide regulations should be implemented.

That's not the case in Alberta, however. The province has the Alberta Energy Regulator (AER), a government entity designed to make decisions on applications for energy development, monitoring for compliance assurance. The AER regulates more than 178,000 operating wells, 261,597 mi. (421,000 km) of pipelines, 782 gas processing plants and nine oil sand mines among others.

"They (AER) look after all those things and enforce regulations," Morgan said. "What we find in Pennsylvania is that regulations are broken into townships. They need to figure out how to bring it all together."

Morgan is also used to hitting tighter benchmarks in Canada when it comes to sound regulations. While the FERC

aims to keep noise below 55 decibels, the AER drops that number to 40 decibels, Morgan said. That sound level is comparable to a quiet suburban neighborhood at night or the background noise in a large conference room, according to the California Department of Transportation.

Despite the cluster of inconsistent regulations in Pennsylvania, it's where Noise Solutions and Steel Nation see the most business. Noise Solutions has more than 80,000 sq.ft. (7432 m<sup>2</sup>) of manufacturing space in the United States and Canada. In 2013, the company opened a 55,000 sq.ft. (5110 m<sup>2</sup>) manufacturing facility in Sharon, Pennsylvania.

"As the popularity of the Marcellus Shale grows, the industry footprint will continue to set itself well into Pennsylvania and Ohio," Morgan said. "That impacts people, and it also will help refine the regulations over time."

Steel Nation has more than 300 stations that feature its sound attenuation equipment, many of them also in Pennsylvania, though Ohio is also becoming a hot spot for business, Caskey said. The company's average workload is 50 compressor stations a year.

With each project, Caskey makes sure Steel Nation works with industry leaders, community leaders and residents to build and maintain positive relationships.

"A lot of times, we go to permit meetings with our client," Caskey said. "We have models that we bring along and we tell them what we do to make those buildings as quiet as possible."

As more companies tap into the shale plays, noise abatement will become an even bigger priority than it is today, Morgan said, adding that new technology will play a role in keeping everyone satisfied.

"At one time, the engines in these stations were so loud that you could not stand and talk anywhere near them," he said. "Now, new technology can drop those noise levels 30 to 40%. Is there a way to cancel noise completely? Those are things we are looking at now." **CT2**