

The Value of Vapors

WHY THREE PROPANE INDUSTRY STALWARTS TURN TO BLACKMER® RECIPROCATING GAS COMPRESSORS TO ENHANCE THEIR VAPOR-RECOVERY PROGRAMS AND THE RETURN ON INVESTMENT FOR THEIR CLIENTS

By Glenn Webb



Blackmer LB161 Series Reciprocating Gas Compressors installed at Kingston Oil Supply Corporation's Saugerties, NY, facility for propane gas vapor recovery. The system was installed by Duck Harbor Energy Consultants, LLC, Equinink, PA.

Legend has it that a common rallying cry among the brave souls who ventured west to seek their fortune in the 1840s and 1850s during the California Gold Rush was: "There's gold in them thar hills." Though much less dramatic, it wouldn't be out of bounds for those involved in the propane business these days to exclaim: "There's gold in them thar vapors."

It has long been an accepted fact of life in the propane business that when purging propane storage or transport tanks—whether for their maintenance, refurbishment, end-of-life disposal or after an accident—that a small amount of propane would either escape, need to be burned off or just vented into the atmosphere. But a number of factors have recently begun to combine to put this practice under increased scrutiny. One, the price of propane has increased dramatically over the past two decades, meaning that any of the gas that is lost to the atmosphere is money spent that

cannot be recouped, or potential future revenue that will never be realized. Secondly, the U.S. Environmental Protection Agency (EPA) has begun to take a much closer look at what is being released into the atmosphere; with that in mind, can some form of enhanced vapor-release regulation from the EPA be far behind?

"What we're seeing is that when the price of propane spiked, it increased the interest in vapor-recovery systems," explained Mark Wenik, Product Manager, Plant and Industrial Equipment for Ray Murray, Inc., a distributor of propane-gas equipment and appliances headquartered in Bensalem, PA. "At \$2 a gallon, there's more incentive to invest in a recovery system than when it's less than a dollar a gallon. With the economy the way it is, every dollar saved is significant and every gallon recovered is another gallon you don't have to buy."



“Also, what we’re seeing is a lot of bulk plants were originally in industrial or commercial areas with very few neighbors. Now, there is an encroachment of industries and businesses around the bulk plants. Before, a marketer could vent gas without issue. Now, the neighbors complain about smelling the gas when a tank is being vented or blown down and they’re now concerned about it being a hazard.”

So, while there may be “gold” in recovering propane vapors in the form of saved or additional revenues, the practice can also result in increased employee safety, greater concern for the residents of surrounding communities and a healthier environment. This article will take a closer look at how three different companies have recently begun using propane vapor-recovery systems to enhance their businesses, while also doing the best for their communities.

“Bluhming” Success

Bluhms Gas Sales, Laceyville, PA, has been supplying propane to residential and commercial customers in northeastern Pennsylvania since 1965. As such, Bluhms has a network of propane storage tanks in the field. When these tanks need to be repaired or have parts upgraded, they are brought into the shop where any residual propane in them would need to be purged. As the cost of propane continued to increase, however, management came to the conclusion that this was a process that could not be continued.

“Our problem was that for the past 20 years in the process of changing valves and repairing tanks that have some gas in them we had to manually flip the tank upside-down and transfer the product to an empty ASME tank,” said Greg Smith, Operations Manager for Bluhms Gas Sales. “To do that, we had to balance the pressure and when the tank was finally drained we had to burn the tank off to get rid of the



The LB Series Reciprocating Gas Compressor from Blackmer is the focal point of Bluhms Gas Sales’ vapor-recovery system.



Bluhms installed a designated vapor-recovery pad in 2008 to capture all of the vapors from any tank being serviced. Bluhms estimates that they’ve recovered 40,000 to 50,000 gallons of gas since installing the system.

pressure, which was a long process. As the cost of fuel went crazy, \$2 or \$3 a gallon, when we were burning or blowing the tanks off we were losing so much propane that we realized that we needed another solution.”

For that solution, Smith and Bluhms turned to Ray Murray, Inc. Since its humble beginnings in 1973, the company, thanks to an almost fanatical commitment to complete customer care, has grown into one of the largest gas-equipment distributors in the United States. Working with Wenik, in 2008 Smith chose an LB Series Reciprocating Gas Compressor from Blackmer®, Grand Rapids, MI, as the focal point of Bluhms’ new vapor-recovery system.

“Using the Blackmer compressor, we built a designated pad, installed a 500-gallon storage tank, installed the piping, installed a 100- and 420-pound tank-flipper—which means we no longer have a safety concern with someone manually flipping the tanks—and began using it for a wide variety of tank-purging applications,” said Smith.

Specifically, when Bluhms sees a tank in the field that is an eyesore, they will now bring it in, perform any equipment repairs, refurbish the tank, paint it and send it back out looking like new. Blackmer’s oil-free LB compressors are perfect for this job because they have been designed to deliver high efficiency in handling propane and are ideal for vapor-recovery applications.

“When we looked at the numbers of buying the compressor, a pump, the piping and a tank-flipper, it was a substantial amount of money, but compared to the amount of propane we were losing, it turned out to be pretty easy math,” said Smith. “We’ve actually been able to increase profits, not only in losing gas, but in bringing gas back that was cheaper

when we purchased it and selling it at a higher price. We've probably pumped 40,000 to 45,000 gallons of gas back to our storage tank since we started using the Blackmer compressor. This is the best investment we've made in a long time for plant equipment. It not only saves us money on one end, it makes us money on the other."

Wenik can vouch for that. "Within a year they saved enough money to pay for the system," he said. "They are extremely happy. We even brought in a customer from the Midwest who wanted to see how the system worked and they just raved about it."

Twice As Nice

In business since 1999, Hydrostat, Inc., is a hydrostatic tester and requalifier of industrial cylinders based in Rice, MN. In this capacity, Hydrostat has the capabilities to inspect, test and recondition a wide variety of cylinders, among them propane. Following in the wake of a plant expansion in 2008, Hydrostat turned to Ray Murray, a long-time Blackmer distributor and leading solution provider in the propane industry, in early 2009 for a solution to the propane it was losing when reconditioning tanks. Again, the solution was a Blackmer LB compressor.

"Hydrostat buys used propane tanks and refurbishes them to resell them, or they refurbish them as a service to their customers," said Wenik. "They'll find tanks that are for sale from another company, buy the tanks, evacuate them of product, take the valving out, clean them up, repaint them, revalve them and sell them as a refurbished tank. Or a customer who has his own tanks and doesn't want to clean them up will send them to Hydrostat and they'll do it for him."

Personnel from Ray Murray were hands-on in the installation of Hydrostat's 10-rack vapor-recovery system, which has unloaded tanks on a daily basis, without a single operational glitch reported in the first six months of using the Blackmer compressors.

"The entire project for us, overall, was really a no-brainer," said Hydrostat Owner Stacy Schraut. "We had all these cylinders coming in with product left in them. We started crunching the numbers and found that there would be an 18-month payback for the system just in the savings for natural gas that we were recovering for heating our building. Rather than blowing gas into the atmosphere and wasting it, the recovered propane is going into a 1,990-gallon tank that's piped right into our makeup air unit and heating unit."

This aspect of the project was such a unique and positive one for both the company and the environment that Schraut applied for grant money from Benton County, MN, where Hydrostat is located, to help fund the project.

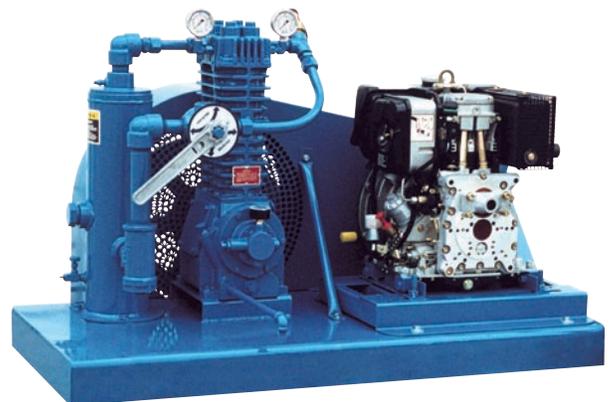
"The county approached us and said it had grant money available for recycling," Schraut explained. "We told them that we were not only recycling propane, but also conserving energy because we weren't using natural gas. They reviewed our application, I made a presentation to the board and told them, No. 1 this helps the environment, No. 2, we're recycling the propane and, No. 3, we're conserving energy because we won't be using natural gas to heat the building. After that, they came back and said the project qualified for grant money."

Within 60 days of the project's completion earlier this year, Hydrostat received a grant check from Benton County in the amount of 50% of the project's cost, meaning that Hydrostat's actual payback on its investment will be less than 12 months.

Ducks In A Row

After working for Ray Murray for more than 20 years, John Hart left in 2008 to found his own consulting service, which he dubbed Duck Harbor Energy Consultants, LLC, and located in Equinink, PA. Realizing that there was no future in letting propane vapors escape into the atmosphere during the tank-purging process, Hart has made vapor recovery a key component of the services that he now offers his growing client base.

"In years gone by, you would just blow the tank off or flare it, but since 9/11, you see much less tank flaring because people are much more nervous about things like that," said Hart. "Also, back when we'd flare, the product cost 20 cents a gallon; now it's \$2 a gallon. The economics are much different now than they were then."



Blackmer LB161 Series Reciprocating Gas Compressor skid

Not surprisingly, Duck Harbor uses Blackmer LB series compressors as the fulcrum of its vapor-recovery operations, which are widely varied. Among the projects that Duck Harbor has already undertaken in its short history are evacuating product from a bulk plant with tanks as large as 60,000 gallons; creating a system of compressor manifolds that are used to recover propane from railcars; and building a mobile compressor skid that can be taken to accident sites where a transport or bobtail might need to be evacuated before it can be uprighted and removed.

“You can get a compressor anywhere, but Blackmer is the industry standard,” said Hart. “They work well in the field, they hold up well and the company stands by its equipment. They’ve been around and they’ll be around, which is an important consideration when you’re making an investment like this.”

Conclusion

The landscape of propane production, transportation, delivery and handling has changed in so many ways over the past few decades. What was once the accepted practice of venting or burning off excess propane into the atmosphere—mainly because there was no recognizable way to efficiently recover and reuse it—is now considered harmful in so many ways.

Simple self-preservation dictates that if you can’t do it anymore, you have to find a way to overcome it. Thanks to the operational efficiencies and reliability of Blackmer’s many lines of Oil-Free Reciprocating Gas Compressors, businesses that make their livings handling propane now have a top-notch solution to the quandary of propane-vapor recovery. Whether the evacuation is as simple as refurbishing a propane cylinder used on a gas barbecue grill, or as complex as evacuating the vapors at a multi-tank bulk-storage facility, Blackmer compressors will continue to play a prominent role in improving the bottom line, the safety of plant employees and the health of the environment.

2011 and Beyond...

The date July 1, 2011, is already circled on the calendars of everyone in the propane industry. It is on that date that the National Fire Protection Association’s Section 58 pipeline-safety regulation will go into effect. This regulation will require all bulk-storage facilities with an aggregate volume of more than 4,000 gallons water capacity to be fitted with internal valves and an Emergency Shutoff Valve that is located near the inlet or outlet of the storage tanks.

This regulation will dramatically alter the equipment that can be legally used in propane-gas systems. Since there will be no exceptions to the rule, and no classes of “grandfather” exemptions have been created, operators of propane storage facilities that fall under the purview of NFPA Section 58 are hurrying to get their tanks upgraded before the deadline.



This creates opportunities for companies like Bluhms Gas Sales, Hydrostat and Duck Harbor Energy Consultants, since these operators will need to call in the experts to get their tanks upgraded. Many facilities could also possibly use this new regulation to perform a complete upgrade to their storage facilities, complete with propane compressors, so they can perform their own vapor-recovery operations in the future. Vapor-recovery units that feature Blackmer LB Series Reciprocating Gas Compressors are designed specifically for this application.

Glenn Webb is a Senior Product Specialist for Blackmer Compressors within Dover Corporation’s Pump Solutions Group (PSG™). PSG is comprised of six leading pump companies—Wilden®, Blackmer®, Griswold™, Neptune™, Almatec® and Mouvex®. You can find more information on PSG at www.pumpsg.com. Mr. Webb can be reached at (616) 475-9354 or Glenn.Webb@pumpsg.com. For more information on Blackmer’s full line of pumps and compressors, please go to www.blackmer.com or call (616) 241-1611.



World Headquarters

1809 Century Avenue SW
Grand Rapids, MI 49503-1530 USA
T 616.241.1611 F 616.241.3752

