

PARTNER UPDATE

SUMMER 2005



Using GOADS to Reduce Methane Emissions

As a means to develop an emissions inventory for the region, the Minerals Management Service (MMS) mandated that all offshore operators in the Gulf of Mexico conduct annual surveys (in 2000 and 2005) of the following criteria pollutants—nitrous oxides, carbon monoxide, volatile organic compounds, sulfur dioxide, particulate matter, and hydrogen sulfide—and greenhouse gases—carbon dioxide and methane. As part of the effort in 2000, MMS supported the development of the Gulfwide Offshore Activities Data System (GOADS)—an inventory of air emissions from platforms operating in the Western Gulf of Mexico. Companies participating in GOADS not only meet regulatory requirements, but can also identify cost-effective emission reduction opportunities (which, if the methane is captured, could help companies recover GOADS compliance costs and increase overall revenue). Therefore, Natural Gas STAR suggests that partners evaluate their GOADS data for opportunities to recover methane.

GOADS—Quick Facts

- ★ All facilities in the Gulf of Mexico
- ★ Monthly data collection
- ★ Annual report of quarterly data
- ★ VOC sources are required

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Summer 2005

Partner Profile

NiSource Inc.—Linking Gas STAR and Other Voluntary Climate Change Activities



While Natural Gas STAR Partners have reduced methane emissions by 338 billion cubic feet (Bcf) since the program began in 1993, they can also make additional gains and receive greater benefits

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NiSource Inc.—Linking Gas STAR and Other Voluntary Climate Change Activities

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through other EPA voluntary partnership programs. One such program is EPA's Climate Leaders Program—an industry-government partnership that works with companies to develop long-term comprehensive climate change strategies. Partners in both programs are recognized as corporate environmental leaders and become well-informed participants in the climate change discussion.

The methane emissions reduction activities that partners undertake as part of Natural Gas STAR would be captured in an overall greenhouse gas (GHG) inventory that Climate Leaders partners are asked to develop. In addition to methane emissions, Climate Leaders focuses on emissions of carbon dioxide, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Because of this overlap, the emissions reduction and tracking activities partners develop as part of both programs are complimentary to each other, creating a clear link between the programs.

NiSource Inc.—a partner in both in Natural Gas STAR and Climate Leaders—has recognized the importance of this link and has demonstrated its commitment to climate change issues by active participation in both programs.

For More Information

Climate Leaders—epa.gov/climateleaders

As the fourth largest pipeline company and third largest natural gas distribution company in the United States, NiSource has subsidiaries that engage in natural gas transmission, storage, and distribution as well as electric generation, transmission, and distribution. It delivers energy to 3.7 million customers in the Midwest, Mid-Atlantic, and New England regions and has 8,600 employees. The company and its subsidiaries have been

involved in Natural Gas STAR since the inception of the Program and joined Climate Leaders in December 2003. Prior to its involvement in Natural Gas STAR, NiSource had already taken steps to determine its corporate-wide GHG emissions and investigate ways to reduce these emissions. As a result of these activities, becoming involved in Natural Gas STAR made good business sense.

"We applaud NiSource leadership for joining Climate Leaders and committing to complete a GHG inventory and working with EPA to set an aggressive long-term GHG reduction target. NiSource is helping set the standard for GHG management within the energy sector."

— Cynthia Cummis,
EPA-Climate Leaders

Over the years, as NiSource continued its partnership in Natural Gas STAR and other climate change activities, the next logical step was to become a Climate Leaders partner. The work that the company had done to reduce methane emissions tied in perfectly with the activities it would undertake as a Climate Leaders partner. For instance, the methane emissions reductions that NiSource reports

each year as part of Natural Gas STAR would play a significant role in helping meet its Climate Leaders GHG emissions reduction goal.

"The goals of these partnership programs are consistent with the business and sustainability philosophies of NiSource. Becoming involved in both Natural Gas STAR and Climate Leaders was a logical extension of our existing programs," said Allison Berkowitz, a Team Leader for NiSource.

NiSource's involvement in both of these partnership programs is a group effort that has spread across the company. Although a small number of employees are the "public face" of the company's involvement, there are numerous employees behind the scenes who contribute to the company's success. Environmental health and safety staff, as well as operations staff and support functions (such as accounting), are involved in the work it takes to be a successful partner. Successful involvement requires coordination and the participation of all these employees throughout the company.

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Natural Gas STAR is pleased to welcome five new partners this quarter:



Noble Energy Inc.—Noble Energy is a worldwide leader in the oil and gas industry and ranks as one of the largest independent exploration and production companies in the United States. The company is noted for its substantial domestic oil and gas assets, located primarily offshore (deepwater and deep shelf) in the Gulf of Mexico and onshore in the Gulf Coast region. The company is based out of Houston, Texas, and has significant projects in Equatorial Guinea, Israel, Ecuador, the North Sea, China, and Argentina. Visit the company's Web site at nobleenergyinc.com.



Northern Plains Natural Gas—Northern Plains Natural Gas Company, LLC, a subsidiary of ONEOK, is the operator of Northern Border Pipeline Company, Northwestern Gas Transmission Company, Viking Gas Transmission Company, and Guardian Pipeline. Northern Border Pipeline Company owns a 1249-mile natural gas transmission pipeline that transports gas from the Montana-Saskatchewan border to interconnecting pipelines in the upper Midwestern United States. Northwestern Gas Transmission Company consists of 350 miles of 30-inch natural gas transmission pipeline, extending from near Portland, Tennessee, to near Joliet, Illinois. Viking Gas Transmission Company owns 499 miles of interstate pipeline. The Viking system extends from near Emerson, Manitoba, to near Marshfield, Wisconsin. Guardian Pipeline is a 141-mile interstate natural gas pipeline that extends from Joliet, Illinois, to a point west of Milwaukee, Wisconsin. Visit the company's Web site at northernborderpartners.com.



Public Service of New Mexico (PNM)—PNM serves more than 400,000 electric customers and nearly 460,000 natural gas customers in about 100 communities and also sells electricity on the wholesale market. The company, New Mexico's largest electricity and natural gas provider, is based in Albuquerque and has offices in more than 20 cities. PNM is the principal subsidiary of Public Service Company of New Mexico, which provides electricity and natural gas to more than 1.3 million people in New Mexico. Visit the company's Web site at pnm.com.



Southwestern Energy Company—Southwestern is headquartered in Houston, Texas, and primarily focuses on the exploration for and production of natural gas. The company is involved in natural gas and oil exploration, development, and production in Arkansas, Oklahoma, Texas, New Mexico, and Louisiana. Its utility subsidiary, Arkansas Western Gas Company, is engaged in the gathering, distribution, and transmission of natural gas to approximately 144,000 customers in northern Arkansas. Southwestern also provides natural gas marketing and transportation services through its wholly-owned subsidiary, Southwestern Energy Services Company. Additionally, Southwestern Energy Pipeline Company owns a 25 percent interest in the Ozark Gas Transmission System, comprised of 723-miles of interstate natural gas transmission lines. Visit the company's Web site at swn.com.



Venoco, Inc.—Venoco is one of the largest California-based independent oil and gas producers and was founded in 1992. Venoco conducts its production activities in sensitive areas such as offshore California in the Santa Barbara Channel, in the Hagerman National Wildlife Refuge in Texas, on the campus of Beverly Hills High School, and in rice-growing regions of the Sacramento Basin. The company's 2004 oil and gas reserves were approximately 51.6 million barrels of oil equivalent and its natural gas production totaled 5.4 billion cubic feet. Visit the company's Web site at venocoinc.com.

Using GOADS to Reduce Methane Emissions

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In 2000, MMS funded the development of GOADS-2000—software that assists offshore operators in submitting their methane emission reduction data. For 2005, MMS has made improvements and released GOADS-2005 as an MS Access database. The database requires detailed, descriptive, monthly activity data on the following emission sources for the 2005 calendar year:

- ★ Pneumatic devices (pressure/level controllers, gas actuated pumps)
- ★ Glycol dehydrators
- ★ Losses of gas from flashing
- ★ Cold vents and flares
- ★ Crude/condensate storage tanks
- ★ Engines
- ★ Heaters, reboilers, boilers
- ★ Compressor seals (turbines)
- ★ Loading/unloading facilities
- ★ Amine gas sweetening units
- ★ Fugitive emissions

The descriptive information that GOADS-2005 will be collecting includes: source identification, make and model, capacities (e.g., horsepower, volume), process flow, operating parameters (e.g., pressure and temperature), chemical composition of gas flared or vented, and emission controls installed. Depending on the emission source, the activity data collected will include: runtimes, fuel used, throughput, and volumes of gas flared or vented.

The GOADS data provides detailed information that operators can use to identify profitable opportunities to recover methane. Although all emission sources have potential for methane recovery, the following might have the greatest potential for Gas STAR partners (additional information on recovering methane emissions is available online at epa.gov/gasstar/resources/lessons.htm):

1. Pneumatic devices using natural gas
2. Losses of gas from flashing
3. Glycol dehydrators
4. Cold vents and flares
5. Crude/condensate storage tanks

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Methane to Markets Partnership— Private Sector Outreach Workshop

June 9, 2005
Madison Hotel
1155 15th Street, NW
Washington, DC



Methane to Markets

The United States Government in conjunction with the American Petroleum Institute, Solid Waste Association of North America, and National Mining Association, is conducting a one-day workshop to engage private sector entities interested in developing methane emissions reduction and use projects internationally. The purpose of this event is to bring together members of the oil, gas, coal, and landfill industries with representatives of federal agencies to:

- ★ Provide an overview and update on the Methane to Markets Partnership's activities.
- ★ Discuss mechanisms, such as USAID's Global Development Alliance (GDA), that can support private sector projects and activities.
- ★ Allow the opportunity for direct input from Project Network members on how U.S. government activities could best advance private sector methane activities and investment.

An important goal of this meeting is to present the GDA business model as one mechanism by which the private sector can develop Methane to Markets projects. This mechanism mobilizes the ideas, efforts, and resources of governments, businesses, and civil society by forging public-private alliances. For more information on the GDA mechanism please visit usaid.gov/our_work/global_partnerships/gda.

Registration for this workshop is on a first come, first served basis. Interested parties can contact Andrew Dicello at adicello@usaid.gov.



Technology Spotlight

Installing Flow Wolf® Leak Locks to Reduce Methane Emissions

ANR Pipeline Company, a subsidiary of El Paso Corporation, identified a simple, cost-effective strategy to simultaneously reduce methane emissions, protect field personnel, and reduce costs. The company worked with Sealweld (a vendor of valve sealants, lubricants, and adapters) to identify Flow Wolf® leak lock adapter installation opportunities for ANR's pipelines.

Sealweld Flow Wolf® leak lock adapters function as check valves that attach to the grease fitting and eliminate fugitive emissions. Over time, dirt and debris can corrode the fitting and damage the seal, eventually causing a leak. Field personnel can eliminate these emissions by simply screwing leak locks onto the grease fitting, therefore creating a sealed device. Leak locks allow field personnel to install a temporary repair to a leaking valve fitting externally while the valve remains in service. ANR Pipeline engineers can then wait until the valve is out of service to inspect and replace the fitting and thus keep the gas flowing. According to Darrel Loghry, an operations supervisor in the Plains Division of ANR Pipeline, "The leak lock gives us the opportunity to stop a leak quickly and without a line blowdown." In addition, the locks eliminate fugitive methane emissions from valves, which could otherwise be a potential hazard for field personnel.

The use of leak locks is an important element of ANR Pipeline's operations. They are an inexpensive option for reducing methane emissions, reducing lost gas and decreasing unnecessary down time for a pipeline. The cost benefits also go beyond gas savings. Each leak lock costs approximately \$30, can be installed in less than a minute, and does

not require any regular scheduled maintenance. Once installed, the locks function without servicing until they are removed to repair the underlying valve fitting.

In 2004, Loghry encountered 12 leaks in various pipeline valves and installed 12 locks—costing a total of \$300. The locks stopped any leaks and prevented the loss of an estimated 2,000 Mcf of lost natural gas on an annualized basis. According to Loghry, "ANR's participation in Gas STAR has greatly increased our awareness of the need to reduce methane emissions. The leak lock is a very simple way to do just that."

According to John Cordaway, Natural Gas STAR Implementation Manager for El Paso Pipeline Group, the benefits of using leak locks are applicable to all sectors of the natural gas system—production, distribution, and transmission. The locks can be used on many different types of valves since fittings and grease buttons are typically universal. In the future, the leak locks will likely play a larger role at El Paso due to the company's recent initiation of the Engine and Compressor Health and Optimization (ECHO) program. This field-driven program places particular emphasis on increasing operational efficiency at compression facilities. In addition to leak locks, efficiency improvements include ensuring that engines and compressors are operated and maintained according to OEM standards, and identifying dispatching efficiency opportunities wherever possible.



Costs and Benefits for Leak Lock Installation

Capital Costs (including installation): \$30 per lock

Operating and Maintenance Costs (Annual): \$0

Methane Savings: Dependent on leak size

Payback (Years): 0-1

NiSource Inc.—Linking Gas STAR and Other Voluntary Climate Change Activities

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Both staff-level employees and management are involved in these partnership programs. Every few months, lead staff members brief management on recent emissions reductions activities, progress toward the company's goals, and new issues on the horizon. Management is kept informed each step of the way as staff works on emissions inventories and annual reports for both programs and provides support and feedback on the company's efforts. This high level of management involvement contributes to the success of NiSource's participation in these programs. Staff are able to effectively set and meet emissions reductions goals because management supports and encourages these voluntary activities that benefit the company's bottom line and climate change activities.

“These partnerships take on additional significance as natural gas is increasing in value as a fuel for use in generation equipment with the highest energy efficiency.”

— Allison Berkowitz, NiSource Inc

In addition to being involved in both Natural Gas STAR and Climate Leaders, NiSource also participates in the SF₆ Emissions Reduction Partnership for Electric Power Systems and the Combined Heat and Power Partnership, both through EPA. According to Berkowitz, the company's involvement in all of these programs makes good business sense because they address relevant issues that NiSource deals with on a daily basis.

NiSource has made great strides during its involvement in both Natural Gas STAR and Climate Leaders. In 2004, NiSource Distribution Operations was recognized as the Natural Gas STAR Distribution Partner of the Year, and two NiSource affiliated companies—Columbia Gas Transmission Company and Columbia Gulf Transmission Company—were recognized as the Transmission Partner of the Year. Collectively, these entities are responsible for reducing methane emissions by nearly 40 Bcf since 1993.

In addition to these accomplishments, NiSource reached the first milestone of its Climate Leaders partnership in May 2005, by submitting its initial emissions inventory and inventory management plan to EPA.

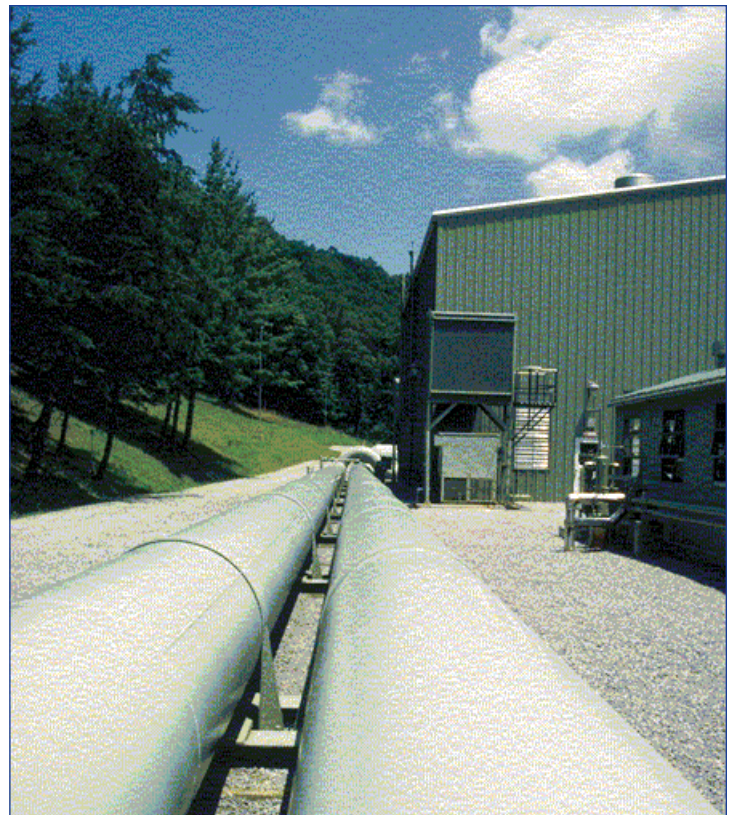
NiSource credits its success in both of these programs to the fact that its environmental initiatives are embodied in both the environmental health and safety and operations divisions of the company. This high level of integration contributes to the company's success and demonstrates its high level of commitment to climate change issues.

For More Information

SF₆ Emissions Reduction Partnership for Electric Power Systems—epa.gov/highgwp/electricpower-sf6

Combined Heat and Power Partnership—epa.gov/chp

“These programs are a great opportunity for us to partner with a government agency on issues and programs that are mutually beneficial. They allow us to look at our GHG emissions footprint and evaluate our emissions, while having access to people who are experts in the field of climate change. In addition, we have the opportunity to work with EPA and others to advocate reasonable climate change policy,” said Berkowitz.





In the News

Methane to Markets Update



Methane to Markets

Two Upcoming Workshops

Russia Oil and Gas Methane Emissions Reduction Workshop Hosted by the Russian Academy of Sciences and the Methane to Markets Initiative September 14-16, 2005, in Novosibirsk, Russia

This workshop will focus on the identification and quantification of oil and gas sector methane emissions and cost-effective technologies and techniques to reduce these emissions within the Russian and Ukrainian oil and natural gas industry. Presentations will include actual methane emissions identification and quantification activities and studies conducted in Russia and Ukraine focusing on the natural gas production, processing and transmission sectors and most importantly, proven cost-effective technologies and techniques to reduce these emissions.

Workshop attendees will include members of the Russian and Ukrainian natural gas production, processing, and transmission sectors. Participants are welcome from all interested countries and companies. This workshop will be conducted with simultaneous Russian and English translation.

Oil and Gas-Sector Methane Emissions Reduction Workshop Hosted by Occidental Petroleum, Colombian Ministries of Energy and Environment and the Methane to Markets Initiative October 6-7, 2005, in Bogotá, Colombia

This workshop will focus on the identification and quantification of methane emissions and cost-effective technologies and techniques to reduce methane emissions within the Central and South American oil and natural gas industry. Presentations will include methane emissions identification and quantification and most importantly,

technologies and techniques to cost-effectively reduce methane emissions in the natural gas production, processing, and transmission sectors.

Attendees will include members of the Argentinean, Brazilian, Colombian, and Mexican natural gas production, processing, and transmission sectors. Participants are welcome from all interested countries and companies. This workshop will be conducted with simultaneous Spanish and English translation.

Concept Paper Released

The U.S. government has submitted a concept paper recommending the creation of a mechanism for soliciting project ideas from the Methane to Markets Project Network members. Through this mechanism, project ideas and proposals would be made available to partner countries and other members of the Project Network for their consideration. The concept paper is available online at methanetomarkets.org/docs/usg_position.pdf.

Underground Coal Mine Technical Subcommittee Meeting

The Underground Coal Mine Technical Subcommittee met April 27-28, 2005, at the offices of The United Nations Economic Commission for Europe (UNECE) in Geneva, Switzerland. The committee discussed the Country Profiles and the Action Plan and other activities and projects for 2005, and refined and finalized a communications strategy. The committee also began to identify concrete actions the Partnership can take to spur additional mine methane recovery and promote avenues for cooperation and support between the member countries and the Project Network. Further information on this meeting is available online at methanetomarkets.org.

Using GOADS to Reduce Methane Emissions

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As previously mentioned, Natural Gas STAR partners can use GOADS data to identify cost-effective methane emission reduction opportunities. The following is an example of steps an operator can take to do so:

1. Assign a consultant or an in-house staff member to review the GOADS data for methane emission reduction opportunities.
2. Rank the company's facilities in order of the greatest emissions reduction potential.
3. Select—from the GOADS data—facilities with the highest oil and gas production, in addition to facilities with the most venting sources.
4. Identify sources to target for estimating emissions before optimization. Estimate or measure emissions from targeted sources.
5. Determine the Gas STAR BMPs you will implement (visit epa.gov/gasstar/resources.htm for more information).

6. Execute Natural Gas STAR BMPs and report the savings to Gas STAR.
7. In the case of a new technology or technique application, work with Gas STAR to develop a new PRO Fact Sheet to share activities with industry peers.

Options for Gas STAR partners to consider include converting pneumatic devices to compressed air (or using low-bleed models) and using vapor recovery (for losses from flashing, glycol dehydrators, gas vented/flared, and storage tanks). Since many platforms route several venting sources to a common vent system, it is easy to measure the potential profits and recover the gas with a vapor recovery system.

For more information on GOADS data and using it to further your Gas STAR-related efforts, please contact Roger Fernandez at fernandez.roger@epa.gov or (202) 343-9386.





2005 GAS STAR TECHNOLOGY TRANSFER WORKSHOPS

★ **Transmission Workshop**

June 8, 2005
 Midland, Texas
 Co-sponsored by Northern Natural Gas Company, Interstate Natural Gas Association of America, CECO, Heath Consultants, and Texas Commission on Environmental Quality.

★ **Producers Workshop**

October 27, 2005
 Houston, Texas
 Co-sponsored by Marathon Oil Corporation.

★ **Producers Workshop**

Date TBD
 Gillette, Wyoming
 Sponsored by Devon Energy Corporation.

For more information or to register for the Gas STAR workshops, please visit epa.gov/gasstar.



THE 12TH ANNUAL NATURAL GAS STAR IMPLEMENTATION WORKSHOP

October 24-26, 2005 ★ InterContinental Hotel ★ Houston, Texas



OTHER NATURAL GAS-RELATED EVENTS

★ **Air & Waste Management Association (AWMA)—Gas STAR Presentation**

June 7, 2005
 Furr's Family Dining
 Albuquerque, New Mexico
 For more information, contact Michael L Du Mond at mldumon@sandia.gov or (505) 845-7914.

on Environmental Quality. For more details and registration, visit energyconnect.com/pttc/workshops.htm.

★ **Innovative Technologies for the Oil & Gas Industry**

June 22, 2005
 Denver, Colorado
 Adam's Mark Denver
 Co-sponsored by the Colorado Oil & Gas Association and the Air Pollution Control Division of the Colorado Department of Public Health & Environment. For more information, contact Cindy Allen at cindy.allen@state.co.us.

★ **PTTC Texas Region Half-day Workshop—Turning Emission Losses into Dollars**

June 14, 2005
 Fort Worth, Texas
 Fort Worth Petroleum Club
 Co-sponsored by Hy-Bon Engineering Company, EPA's Natural Gas STAR Program, and the Texas Commission

★ **PTTC Texas Region Half-day Workshop—Turning Emission Losses into Dollars**

June 16, 2005
 Corpus Christi, Texas
 Corpus Christi Town Club
 Co-sponsored by Hy-Bon Engineering Company, EPA's Natural Gas STAR Program, and the Texas Commission on Environmental Quality. For more details and registration, visit energyconnect.com/pttc/workshops.htm.

★ **SGA 2005 Environmental Roundtable**

June 29-July 1, 2005
 Nashville, Tennessee
 The Renaissance Hotel
 Further information available at southerngas.org.

Devon—Spreading the Natural Gas STAR Message

Devon Energy Corporation continues to excel as a Natural Gas STAR partner. Last fall the company asked Gas STAR for a newsletter template (similar to the Partner Update) that it could use to disseminate Gas STAR-related news throughout the company. The template was created (and is available for all partners to use) and so far, Devon has distributed six newsletters. The blank template, as well as Devon's sample newsletters, are available in the Gas STAR Online Communications Toolkit at epa.gov/gasstar/resources/toolkit.htm.



The distribution of this internal communications piece is an exceptional example of intra-company Gas STAR communication. As always, Gas STAR partners are encouraged to share their accomplishments with EPA throughout the year.



Q: What GOADS emission sources offer the greatest promise for methane recovery?

A: Losses from flashing, storage tanks, glycol dehydrators, and pneumatic devices using natural gas.



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