swn
Southwestern Energy®

R2A→V+®

DELIVERING
ON OUR COMMITMENTS

Corporate Responsibility Report 2015–16

WELCOME

Southwestern Energy Company (SWN) is committed to providing the energy that powers our world, today and into the future. Creating Value+ is SWN's core goal (see our Formula below), with a clear focus on continuous improvement, innovation, integrity and responsibility. The company seeks to create value for our shareholders while providing a safe and healthy workplace for our people, acting as good environmental stewards and being respected members of the communities in which we operate. This corporate responsibility report provides insight into our operations, goals, strategy and performance.

OUR FORMULA

SWN's mission is to create Value+ by providing energy to our world. Our Formula represents the essence of our corporate philosophy and how we operate.

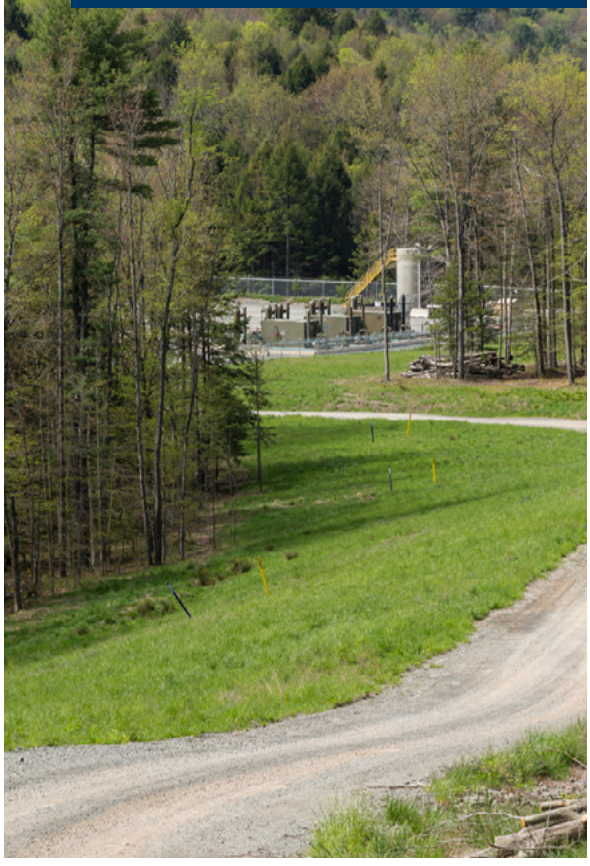
$$\frac{R^2}{A} \rightarrow V+^{\circledR}$$

- **R²** — The Right People doing the Right Things™
- **A** — Wisely investing the cash flow from our underlying Assets
- **V+** — Will create Value+

ABOUT THIS REPORT

This is SWN's second corporate responsibility report. It was prepared by our V+ Development Solutions team, with assistance from subject matter experts from across the company. Prior to publication, the report was reviewed and approved by SWN's leadership team and approved by the Board of Directors.

The report was developed in accordance with the Global Reporting Initiative (GRI) G4 Guidelines at the Core level. It includes 2015 data as well as prior years' data and context around our most material issues. Unless otherwise noted, the data cover all of our assets and operations. A summary report and a separate appendix, including a GRI index and specific reporting boundaries, can be found at www.swn.com/cr.



MESSAGE FROM OUR CEO

This report focuses on how we manage the potential benefits and impacts of our business on our stakeholders. Its theme is "Delivering on Our Commitments." Although we are in a cyclical market, we remain sharply focused on our commitment to a balanced approach to create long-term value-plus for all of our stakeholders, including shareholders, employees, regulators and the communities where we live and work.

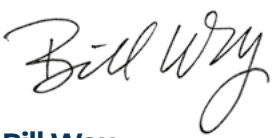
SWN's corporate strategy and the decisions and actions we take to deliver value are built on our strong core values and are inspired by our Formula – "The Right People doing the Right Things, wisely investing the cash flow from our underlying Assets will create Value+."

SWN is a key industry leader in the development of unconventional resources, and our innovative culture is a significant driver behind the execution and success of our operations. We have some of the best people in the industry working safely on our behalf to unlock value-adding ideas through their curiosity and experiences. They are creating solutions to ensure that natural gas development and production address the concerns of the communities where we operate and live, while protecting our environment and conserving our precious natural resources, including air and water.

A good example of this is our Fall Brook Treatment project in Pennsylvania, where we collaborated with multiple stakeholders to mitigate pollution from historical mining activity, allowing the community to enjoy clean water and renewed aquatic life in the stream.

The people of SWN apply that same innovative spirit to solving challenges in our industry. It's not just about competitive advantage; it's about finding enduring solutions for the entire industry. Our long-term vision is for safe and responsible development of America's abundant supply of natural gas to remain an essential part of the mix in a lower-carbon energy future. We will achieve this through the same kind of innovation and discipline that we have brought to managing near-term challenges.

From solving water-quality problems in a single community, to working with experts to understand and plan for our company's place in a lower-carbon energy future, I truly believe in the opportunities we have in front of us and in the future success of our company.



Bill Way
President and Chief Executive Officer

"Welcome to Southwestern Energy, a company whose legacy of curiosity and innovation has enabled us to become one of the largest producers of natural gas in the continental U.S. and to support the renaissance of manufacturing in this country."

ABOUT SWN

SWN is an independent energy company engaged in natural gas and crude oil exploration, development, production, gathering and marketing. In 2015, our production was 92 percent natural gas, primarily from three unconventional[1] reservoirs in the United States (see map). We also hold exploration leases for about 4.3 million acres that are undeveloped, primarily in Colorado, Louisiana and New Brunswick, Canada.[2]

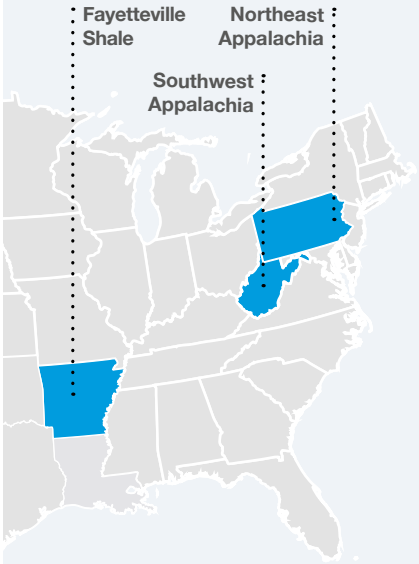
2,597 employees
(as of Dec. 31, 2015)

27% increase in net gas production compared to 2014

976 billion cubic feet equivalent in net gas production

$3.1 billion in operating revenues

WHERE WE OPERATE



RESERVES & PRODUCTION

2015 Reserves: **6,215 Bcfe**
2015 Production: **976 Bcfe**
2016 Estimated production: **815–835 Bcfe**

NORTHEAST APPALACHIA

2015 Reserves: **2,319 Bcf** (37%)
2015 Production: **360 Bcf** (37%
Net acres: **270,335** (12/31/15)

SOUTHWEST APPALACHIA

2015 Reserves: **611 Bcfe** (10%)
2015 Production: **143 Bcfe** (15%)
Net acres: **425,098** (12/31/15)

FAYETTEVILLE SHALE

2015 Reserves: **3,281 Bcf** (53%)
2015 Production: **465 Bcf** (48%)
Net acres: **957,641** (12/31/15)

KEY DATA SUMMARY

	2013	2014	2015
Operating Revenues (millions of U.S. dollars)	$3,371	$4,038	$3,133
Net Gas Production (billion cubic feet equivalent (Bcfe))	657	768	976
Number of Gross Producing Wells[3]	5,213	6,887	6,147
Estimated Proved Oil and Gas Reserves[3] (Bcfe)	6,976	10,747	6,215[4]
Net Undeveloped Acres[3]	4.6 million	4.9 million	4.3 million
Number of Employees[3]	2,621	2,781	2,597
Percentage of Flowback and Produced Water that We Recycled (%)	92.9%	99.4%	92.4%
Greenhouse Gas Emissions Intensity (kilograms of carbon dioxide equivalents per million BTUs of gas produced)	3.17	3.00	2.64
Methane Leak/Loss Rate (%)	0.180%	0.185%	0.184%
Volume of Tier 1 Unplanned Discharges (barrels)	103	193	534[5]
Charitable Giving (millions of U.S. dollars)	$1.80	$3.35	$2.48
Total Recordable Incident Rate for Employees (per 100 employees)	1.18	1.14	0.65
Total Recordable Incident Rate for Contractors (per 100 contractors)	1.25	1.17	0.76

1 *Conventional* oil and gas resources can be extracted relatively easily using vertical wells. *Unconventional* resources are more difficult to extract, such as that trapped deep underground in shale formations and requiring horizontal drilling and hydraulic fracturing. Nearly all of our natural gas operations in the Fayetteville Shale and Appalachia are unconventional.

2 A list of our major operating companies and subsidiaries is included online in the separate appendix to this report. Our website also includes a brief history of our company and a graphic that provides insight into our current activities at each stage of our value chain. See www.swn.com/cr for the appendix, www.swn.com/aboutswn/Pages/ourhistory.aspx for our history, and www.swn.com/responsibility/Documents/ValueChain.pdf for the value chain graphic.

3 These data points are as of December 31 for the given year.

4 The decrease in estimated reserves from 2014 to 2015 represents principally a reduction in economically producible reserves due to the dramatic drop in commodity prices.

5 See p. 27 for a discussion of the increase in 2015.

FOCUSED
ON OUR APPROACH

The SWN Formula $\frac{R^2}{A} \sim V^{+^\circ}$ incorporates our values and is the foundation for our business strategy and approach to corporate responsibility. We have identified our key corporate responsibility issues and set ambitious goals to address water use and methane leaks. From the boardroom to the drilling pad, our governance systems enable sound management of corporate responsibility challenges and opportunities.

p. 7

V+ DEVELOPMENT SOLUTIONS
Our V+ Development Solutions division, whose President reports to our CEO, was formed to apply innovative thinking to achieving balance among SWN's economic, environmental and social impacts.

p. 9

ENSURING ACCOUNTABILITY
SWN employees' incentive pay targets are based in part on meeting safety and environmental goals, in addition to economic and operational goals.

p. 10

PUBLIC POLICY ENGAGEMENT
We support science-based, smart regulations that foster prudent practices for our industry and are implemented in a consistent manner.

STRATEGY

SWN's business strategy and corporate responsibility efforts are both rooted in our Formula (see p. 3) and the values it represents.

The natural gas industry currently faces tremendous challenges, primarily due to volatile commodity prices. We aim to be adaptable and resilient to these challenges by operating with excellence, efficiency and responsibility, while also delivering sustainable margin improvement. The key elements of our business strategy are as follows:

Maintain a Strong Balance Sheet and Liquidity to Enhance Long-Term Shareholder Value

A strong balance sheet and liquidity position are important to our long-term value creation and valuable in challenging pricing environments, helping to preserve options and flexibility. As commodity prices fell during 2015, we reduced our capital program. We are committed to investing within cash flow and will invest in line with commodity price changes.

Exercise Capital Discipline

SWN prepares economic analyses for our drilling programs and other investments based on the expected net present value added for each dollar to be invested, which we refer to as the Present Value Index, or PVI. We target creating an average of at least $1.30 of present value in our projects for every dollar invested, using a 10 percent discount rate (1.3 PVI).

Maximize Margins and Production Available

By concentrating our operations in large, scalable positions in Northeast Appalachia, Southwest Appalachia and the Fayetteville Shale, and by vertically integrating in key aspects of drilling and completion, we have gained efficiency and economies of scale.

Our corporate responsibility strategy focuses on the health and safety of our workforce, environmental stewardship, community engagement and the identification of emerging strategic challenges and opportunities.

Protecting the health and safety of our employees, contractors and communities is a core value at SWN. In recent years we have strengthened our health and safety management culture. As a result, total recordable injury rates for both employees and contractors greatly improved in 2015.

Two goals address the key environmental impacts of our operations:

- **Achieve "freshwater neutral" by the end of 2016 through our Energy Conserving Water, or ECH$_2$O®, initiative. We achieved this goal in the Fayetteville Shale in 2015 and are on track to do the same company-wide by year-end 2016.**
- **Keep our methane leak/loss rate below 0.36 percent of production, consistent with our position as a co-founder and active member of the ONE Future coalition.[6] In 2015, we achieved a rate of 0.184 percent.**

In our communities, we cultivate ongoing dialogue with local officials, community members, businesses, nonprofit organizations, emergency responders and land/mineral owners. These dialogues help to address the needs of communities and provide stakeholders with a better understanding of our operations. We also proactively seek out stakeholders at the regional and national levels to engage in problem-solving dialogues and productive partnerships.

Our V+ Development Solutions division oversees much of this corporate responsibility work. It was formed to apply innovative thinking to find and build solutions for achieving balance among our economic, environmental and social impacts. V+ Development Solutions focuses in particular on advancing the development of America's abundant supply of natural gas as an essential part of future energy sources.

Mark Boling,
President,
V+ Development Solutions

"Through innovation and collaboration, SWN has shown we can deal effectively with important challenges, including reducing water use and shrinking the greenhouse gas footprint of our operations. Now we're looking at what may be the biggest challenge of all: defining our place in the l ow-carbon energy future. We believe natural gas has a vital role to play as both a component of the low-carbon future and as a foundational source of energy to secure and sustain that future for generations to come."

6 See www.ONEFuture.us for more information about the coalition and how the industry segment and company targets are being set.

Identifying Our Key Issues

SWN's most important corporate responsibility issues are discussed in this report update. We interviewed stakeholders and reviewed documents representing the views of SWN, the company's employees and major external stakeholders, including investors, suppliers, local communities, regulators and nongovernmental organizations. The documents we reviewed outlined stakeholders' views about SWN's activities specifically and energy development generally. We also analyzed the value chain of SWN's operations to ensure we considered impacts and stakeholders at each value chain stage.

Based on the updated analysis, we identified key issues and grouped them into six categories:

- economic performance
- health and safety
- communities
- governance
- environment
- workforce

This value chain analysis was used to determine whether the impacts occurred primarily internally or externally to the organization and which stakeholders were most affected by each issue.

The resulting matrix of key corporate responsibility issues is similar to that in our previous report. Some issues did move in priority, reflecting changes in company and stakeholder perceptions. Also, some new issues emerged or were unbundled from other issues; these included the low energy price environment and its impacts on stakeholders, community health and safety, employee health and wellness, and employee morale and satisfaction. Several issues moved down in importance because they were viewed as well managed.

We used this analysis as a basis for selecting the GRI indicators to report. We believe this process for determining the content for this report meets the requirements of the GRI G4 Guidelines at the Core level and satisfies the GRI principles for defining report content, sustainability context, materiality, completeness and stakeholder inclusiveness. The analysis will be reviewed and updated in the future as appropriate.

KEY ISSUES[7]

INCREASING CONCERN TO STAKEHOLDERS

High

Governance
– Reporting/transparency

Environment
– Chemical use and management
– Non-greenhouse gas (GHG) emissions

Economic Performance
– Company financial health
– Shareholder return
– Low gas price/long-term price volatility

Governance
– Setting appropriate metrics and incentives
– Risk management

Health and Safety
– Safe working conditions and training

Environment
– Environmental management, policies, targets and metrics
– Regulation/compliance
– Well construction integrity
– Water quality, sourcing and wastewater management
– GHG emissions, methane, energy use
– Impacts of transporting materials

Communities
– Economic impact in local communities
– Social license to operate
– Proactive community engagement
– Impacts on community infrastructure

Workforce
– Managing contractors
– Employee training, development, career transitions

Governance
– Stakeholder engagement

Health and Safety
– Employee health and wellness

Environment
– Environmental monitoring
– Waste
– Site impacts/site development
– Seismic activity
– Threatened and endangered species
– Naturally occurring radioactive materials

Communities
– Working with indigenous/ sensitive populations

Workforce
– Employee diversity

Economic Performance
– Linking environmental, social and economic performance

Governance
– Corporate responsibility strategy and governance
– Regulatory engagement

Health and Safety
– Community health and safety

Workforce
– Talent attraction and retention, local hiring

Medium

Medium ····· INCREASING IMPACT ON SWN ····· High ►

7 Within each quadrant, the categories are listed in the order they are discussed in the report, not in order of importance. Also, the matrix includes only those issues found to be of high or medium impact on SWN and/or concern to stakeholders, with the issues of highest importance in the upper-right quadrant.

GOVERNANCE[8]

SWN's Board of Directors, which is elected by our shareholders, has ultimate responsibility for the governance of our company. As of mid-May 2016, our Board has eight members, seven of whom are independent under the standards of the New York Stock Exchange, the eighth being our CEO.

The Board reviews the company's strategic plans and objectives and principal risk exposures. The Board also selects our CEO and approves senior management appointments, who in turn run SWN's day-to-day business, inform the Board of the status of operations and seek guidance and input as needed.

The Board discharges its duties in part through four standing committees: the Audit Committee, the Compensation Committee, the Nominating and Governance Committee, and the Health, Safety, Environment and Corporate Responsibility (HSE&CR) Committee.

The HSE&CR Committee oversees:

- health, safety and environmental issues arising out of the company's operations and their impacts on employees, contractors and communities, and
- current and emerging social, political and public policy issues and trends that may affect the company, its business and its reputation.

The full Board hears reports from the HSE&CR Committee, which oversees compliance with our HSE management system and applicable laws and regulations.

SWN's V+ Development Solutions division provides company-wide guidance on government affairs, community relations and major environmental issues such as methane emissions and water management. The President of V+ Development Solutions reports to our CEO and presents to the HSE&CR Committee regularly, to keep them apprised of key issues.

Our Health, Safety, Environmental and Regulatory (HSER) team develops policies, programs and training related to employee and contractor health and safety, industrial hygiene and environment, and regulatory compliance. SWN's Vice President of HSER reports to our CEO. Our operating divisions – Fayetteville, Northeast Appalachia, Southwest Appalachia, Exploration, Midstream, and Operations Support – manage HSER issues at the site level.

SWN's General Counsel, who is also the Chief Compliance Officer, oversees issues relating to ethics and non-operational compliance. The Chief Financial Officer oversees internal audit services.

To ensure that our employees and Board members conduct their work in an ethical manner and in line with applicable laws and regulations, we have a detailed set of business conduct guidelines and train employees on them regularly. The guidelines cover topics such as conflicts of interest, bribery and corruption, antitrust matters, insider trading and more.

Health, Safety and Environmental Management

SWN's HSE policy states our commitment to protecting the natural environment and resources in all areas where we conduct business. Our HSER team seeks to ensure that the company meets all applicable safety and environmental standards – both those outlined in laws and regulations as well as SWN's own standards and culture.

Safety and environmental goals and metrics are included in our annual incentive program, and as a result employees have specific incentives to drive improvements in HSE performance. We measure leadership engagement in HSE using a balanced scorecard, which includes both leading indicators (e.g., management participation in safety meetings) and lagging indicators (e.g., recordable injury rate).

An internal HSE incident reporting system provides key safety information on HSE incidents, including near misses. These incidents are thoroughly investigated, and corrective measures are identified, implemented and shared to minimize recurrence. Also, incident trends are tracked to enable a focus on prevention. For more on our HSE management system, which was updated in 2015, see p. 13.

8 See our website (www.swn.com/corporategovernance/Pages/default.aspx) for a full list of current Board members and executive officers; copies of our corporate governance guidelines, business conduct guidelines and Board committee charters; many of our other policies, including those covering business ethics and anti-corruption; and information about how stakeholders can contact our Board of Directors.

PUBLIC POLICY ENGAGEMENT

SWN's senior executives manage the company's engagement in the regulatory process. In several cases we have worked proactively with policymakers and other stakeholders to craft guidance for regulations that will be effective and workable in practice.

For example, the methane reduction approach developed by the ONE Future coalition, which we co-founded, was endorsed by the U.S. Environmental Protection Agency (EPA) and is likely to be a component of their new Natural Gas STAR Methane Challenge. We also worked with the Environmental Defense Fund (EDF) to create a model regulatory framework that has been used by several states to guide development of regulations governing hydraulic fracturing.

The Southwestern Energy Company Political Action Committee (SWN PAC) accepts voluntary contributions from eligible SWN employees. The SWN PAC operates two funds, one focused at the federal level and the other for Arkansas only. The Arkansas fund accepts annual contributions of up to $5,000 from certain of SWN's subsidiaries, in addition to employee contributions, as allowed by Arkansas law. SWN's political contributions policy and a list of all political contributions made by SWN or the SWN PAC are available on our website.[9]

SWN supports science-based, smart regulations that foster prudent practices for our industry and are implemented in a consistent manner. Such regulations promote common standards and accountability, which in turn assures we are able to maintain our social license to operate.

9 www.swn.com/corporategovernance/Pages/politicalactions.aspx

STAKEHOLDER ENGAGEMENT

Regular engagement with a wide range of stakeholders – including critics of our company and the industry – helps us to understand their positions, gain insights and share information about our operations.

SWN is committed to transparency and openness, and we proactively seek out stakeholders to engage in problem-solving dialogues and productive partnerships. The table below includes examples of our interaction with stakeholders. Frequency of engagement is ad hoc unless otherwise stated.

Stakeholder Type	How We Engage with These Stakeholders	
Investors	Financial reports and teleconferences (annually and quarterly) Meetings with institutional investors (more than 850 in 2015) Direct contact with Board members	Investor conferences and bus tours (54 in 2015) Additional regular contact through our Investor Relations function
Employees	SWNet (internal internet) Town-hall style meetings (quarterly by division, and quarterly with our CEO) Support and networking groups Safety training Performance management	*Connection* (triennial employee newsletter) Surveys Leadership and professional development programs Ethics hotline Day-to-day interactions
Contractors	Safety Stand Down days and safety training Project meetings at SWN sites to address specific HSE issues and corrective actions Operational reviews by division management	Vendor forums and audits *SWNlink* communications, including operational announcements and quarterly newsletters
Customers	Regular contact through our Marketing group	
Landowners and Holders of Mineral Rights	Direct, individual conversations and negotiations Monthly payment statements to royalty owners	Biannual newsletters Landowner hotline
Local Communities (including residents, elected officials, community groups, chambers of commerce, emergency responders)	Regular contact via SWN community liaisons Everyday Heroes events (annually in our operating areas) Employee volunteerism (typically monthly) Safety Stand Down days and safety training	Hotlines to field concerns and questions Fundraisers and charitable giving Crisis drills (annually)
State- and Federal-Level Government Officials	Open and direct communications Educational sessions Legislative and regulatory engagement	
Environmental Organizations and Universities	Participation in and funding of specific partnership projects Joint research projects Resources for technical assistance Direct communication with relevant SWN employees	

FOCUSED
ON HEALTH AND SAFETY

Protecting the health and safety of employees, contractors and communities is a core value for SWN. Safe behavior is a condition of employment for anyone who works for us, including vendors working on our behalf. We recently implemented a behavior-based safety program and enhanced our health, safety and environmental management system and culture, leading to a breakthrough year in safety performance.

p. 13

HSE ASSESSMENTS
In 2015, we finalized our HSE assurance process. We assessed the on-the-ground HSE performance and management systems of 129 contractors, 68 waste facilities and two internal operations.

p. 16

HEALTH AND WELLNESS
Employee health and wellness is a key element of our approach. We focus on both reducing occupational health risks and helping our people stay healthy off the job.

p. 16

PERFORMANCE
In 2015, we greatly improved our total recordable injury rates for both employees and contractors, with reductions of 43 percent and 35 percent, respectively, compared to 2014.

ADVANCING HEALTH AND SAFETY MANAGEMENT

During the past two years, we have refined and strengthened our culture of health and safety. As a result, our management system, the focus of senior leaders and employees, and our performance are sharper than ever before.

Completed 199 assessments in 2015, including:

129
contractors

68
waste facilities

2
internal operations

The company is becoming even more proactive, working in a formalized and iterative way to eliminate incidents before they happen and improving communication across the company. In 2015, we reported record performance improvements in several key safety metrics.

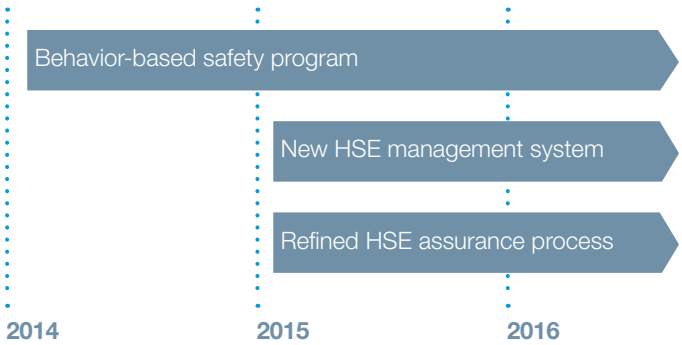
The first step in changing our health and safety culture was implementing a behavior-based safety program. Every employee at every level of the company was trained to operate from the belief that all injuries can be prevented and that we each have the power and the responsibility to prevent them.

Also, in 2015 we initiated a new HSE management system. This system has improved and integrated our policies, programs, procedures, training and incentives for health, safety and environmental management and performance across all operating regions and divisions. The system is designed to drive continuous improvement and foster management and employee commitment and accountability. It includes recurring goal-setting and evaluation processes; improved performance metrics that focus on leading rather than lagging indicators; and clear guidance on actions and processes for protecting the health and safety of employees, contractors, communities and the environment.

We also refined our HSE assurance process in 2015. The assurance process requires regular assessments of SWN and contractor operations and third-party waste facilities. Through these assessments, we review compliance with federal, state and local regulations and company programs and policies, to ensure that on-the-ground performance meets SWN's requirements and expectations.

Like SWN's HSE management system, this assurance process gives the company a proactive way to help stop incidents before they happen, by encouraging employees to identify deficiencies in HSE systems or performance before incidents occur. If a deficiency is identified, we develop a corrective action plan and a deadline for its implementation. The assurance assessments also enable feedback on HSE performance and management protocols, bring to our attention best practices we could reproduce and potential risks we should avoid in other areas of our operations, and help us identify contractors with effective HSE systems so we can work with them more frequently. In 2015, SWN completed 199 assessments, including 129 contractor assessments, 68 waste facility assessments and two internal assessments.

Refining Our Health and Safety Management



Perspectives on Our HSE Management Improvements

Bobby Barnett
Staff Coordinator, Health, Safety and Environment, SWN

"Committing to continuous improvement is easy to say, but hard to achieve. To accomplish it, we are making the honest evaluation of our culture, performance and processes a core part of daily operations. Employees and managers at every level are tasked with continuously looking for problems and risks before incidents occur. When we identify a risk, we implement a plan to deal with it, and then regularly evaluate how that plan is working. We're also developing goals, metrics and accountability systems that focus on the things we need to do to achieve world-class safety performance. Our performance goals include leading and lagging indicators, including metrics for things like training, leadership commitment and employee involvement, the quality of incident investigations and risk reduction. These leading indicators will help drive continuous improvement in our safety performance."

Sonny Bryan
Vice President, Operations Support, SWN

"Being willing to acknowledge a problem before it's technically a 'reportable incident' is how we will prevent incidents. But this kind of openness is challenging. People are often afraid to speak up, because it's uncomfortable, or they are afraid they'll get in trouble or it will make their group look bad. Nurturing a culture where this kind of honesty is encouraged and rewarded is a key element of the HSE management system. For example, our behavior-based safety program gives employees the responsibility and the tools to identify and respond to safety issues. Similarly, we require reporting on near hits, because they are a key way we can identify potential risks and figure out how to avoid them. By doing this, we're saying, 'you're not going to get in trouble for a near hit, you're going to help us stay safe.'"

Casey Harbison
HSE Supervisor, SWN

"When people hear about HSE performance assessments, they often think it's a punitive measure. It's true we hold members of the SWN team – be they SWN employees, contractors or waste facility providers – accountable for following HSE expectations and standards. But more importantly, these assessments are used as a way to foster communication and help people improve. When deficiencies are found, we help contractors fix them, providing support to make the required corrective actions. And, we often learn things from contractors that SWN can adopt and share with other contractors to help them improve. Most of the contractors we have assessed tell us the process was very positive and beneficial. They recognize that implementing the corrective actions will make them a better company. At SWN, we are One Team with our contractors. Our approach to assessments is proactive and a great example of how we operate better when we work as a team."

ACTIVITIES AND PROGRAMS

Our comprehensive HSE training system gives employees the knowledge and skills they need to perform their jobs safely.

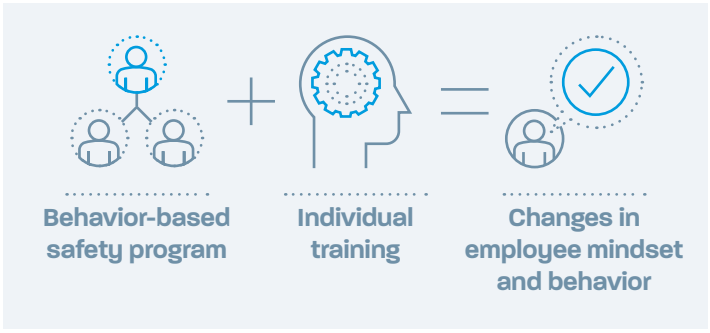
The company's approach to HSE training meets regulatory requirements and builds a positive HSE culture in which healthy, safe work and protecting the environment are second nature to employees. Many trainings are repeated regularly to reinforce and refresh knowledge on key topics. Over the past few years, the format and content of our training programs has been updated to make them more effective and engaging – in part by making them more interactive, appealing to multiple learning styles and using scenario-based learning. SWN's key programs are described on p. 15.

In 2015, SWN employees completed 46,000 hours of HSE training, or nearly 18 hours per employee.[10]

10 This includes facilitator-led and online compliance training. It does not include the many additional hours of safety training that occurs during informal safety meetings and pre-job safety meetings.

Behavior-Based Safety

SWN's behavior-based safety program is grounded in evidence that the vast majority of incidents are caused by human behavior rather than work conditions (such as equipment malfunctions or site hazards) and our conviction that all incidents are preventable. In 2015, SWN fully implemented the STOP® For Each Other program. The core principle of this program is that all employees are responsible for safety and are expected to keep themselves and others safe. Employees were trained to identify safe and unsafe behaviors among their co-workers and to engage in critical conversations about the behaviors they observe, based on mutual respect and care for one another's safety. Employees can report their observations about safety issues both online and through a mobile app. By early 2016, more than 5,000 observations had been submitted. We are using this information to identify and mitigate risks across our operations, preventing safety incidents before they happen.



Emergency Preparedness and Crisis Drills

The company works with local emergency responders to develop preparedness, response and business resumption plans for SWN facilities. In all of our operating locations, key personnel are trained for and conduct crisis drills. Local emergency responders also take part in the drills, which helps employees better understand what they need from SWN during an emergency and helps them understand our operations so they can respond appropriately. In 2015, we undertook hurricane preparedness training with local emergency responders and SWN employees in Houston. We also introduced a company-wide email system that alerts employees about potentially hazardous weather and how to prepare for it.

In 2015:

21% decrease in our vehicle incidents

60% reduction in our automotive insurance claims

Driver Safety Training

In 2015, the company's total vehicle incidents decreased 21 percent and automotive insurance claims decreased 60 percent compared to 2014, even though our miles traveled increased slightly. These results stem from continuous improvements in SWN's approach to driver safety training. For example, we updated our safe driving policy in 2014 and presented it in a simple, one-page format titled "Rules of the Road at SWN." All employees who operate a vehicle for company business must take an initial driver training course and pass a test on what they learned. An annual refresher course is also required. In addition, interactive vehicle feedback systems in company-owned and -leased vehicles track driver performance and provide verbal coaching if drivers engage in unsafe behaviors, such as exceeding the speed limit or aggressive braking. We also developed an enforcement and incident tracking system to help managers apply consequences consistently across the company.

Life Saver Pictograms

A cross-functional SWN team identified the highest-risk activities associated with SWN operations and catalogued existing safe work practices – and developed new ones – to help employees and contractors complete the activities without incident. The key safe work practices are displayed as easy-to-interpret pictograms, like the examples shown above. Personnel are also given tip sheets and pocket guides to help identify and assess hazards and avoid them.

Training Assurance Program (TAP)

TAP communicates SWN's HSE expectations and requirements to contractors. All contractors who engage in operations-related activities at any SWN location are required to participate in TAP.

Recognizing Excellent Safety Performance

In 2015, we implemented an annual President's Award for Health, Safety and Environment, which recognizes employees who illustrate how HSE is a core value of our corporate culture by identifying and mitigating health and safety risks. One winner was recognized for creating a driver safety program entitled "360 Walk Around," the other for being "the guardian of co-worker safety."

EMPLOYEE HEALTH AND WELLNESS

Helping employees stay healthy on and off the job is a key element of our approach to health and safety.

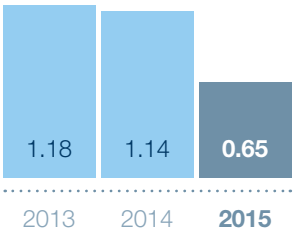
To address occupational health hazards, our industrial hygiene team assesses and manages potential on-the-job exposures to chemical, physical and biological risks. For example, we have worked to reduce the potential for silicosis, a respiratory disease related to exposure to silica dust, which can be present in the sand used in hydraulic fracturing. We established a field monitoring program and are educating employees, developing controls and partnering with government and industry organizations to find ways to minimize silica exposure. Also, we are working with the National Institute for Occupational Safety and Health to identify tasks that pose the highest risk for chemical exposure and develop solutions to reducing such exposure.

To support employee health and wellness off the job, SWN offers wellness programs, mammograms, free biometric screenings and an onsite health clinic in our new Houston office. Our employees have access to Priority Care 365, a dedicated, toll-free number through which employees can speak with a bilingual Registered Nurse 24 hours a day, 365 days a year regarding work-related medical issues. We also send each employee and his or her family a quarterly magazine, *Family Safety & Health*, with health and safety tips for around the home and in personal and recreational activities.

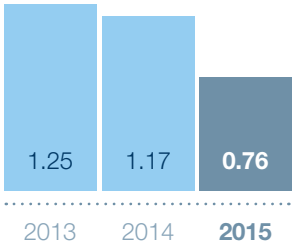
HEALTH AND SAFETY PERFORMANCE SUMMARY[11]

In 2015, we made significant improvements in our health and safety performance, as shown below. These metrics are standard for our industry and reported voluntarily to the American Exploration and Production Council each year.

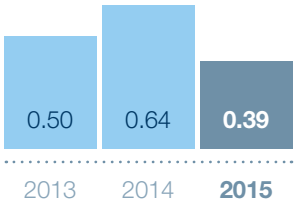
↑ OSHA Total Recordable Incident Rate (TRIR)[12]
(per 100 employees)



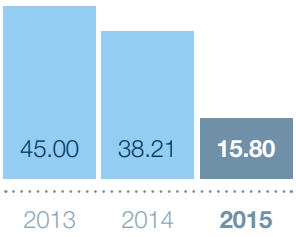
↑ Contractors OSHA Total Recordable Incident Rate (TRIR)
(per 100 employees)



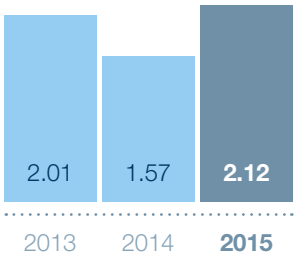
↑ DART Incident Rate[13]
(per 100 employees)



↑ Severity Rate (Man-Hour Method)[14]
(per 100 employees)



↓ Preventable Vehicle Incident Rate
(per million miles)



Key

↑ Performance improvement

↓ Decline in performance

11 All rates are based on 100 employees working 200,000 hours (full time for one year) according to standard methodology of the U.S. Occupational Safety and Health Administration (OSHA) (see www.bls.gov/iif/osheval.htm) – except for the Preventable Vehicle Incident Rate, which measures total preventable vehicle incidents multiplied by 1 million and divided by total mileage. All data points are specific to SWN employees only, except for the Contractors OSHA TRIR, which is specific to SWN contractors only and does not include SWN employees. Also note, certain data points were misstated in last year's report due to calculation errors and/or information that came in after publication. We have corrected the figures in this table.

12 An incident is considered recordable if it results in death, days away from work, restricted work or transfer to another job, medical treatment beyond first aid, loss of consciousness or other significant injury or illness diagnosed by a physician or other licensed health care professional.

13 The DART Incident Rate measures days away from work and days of restricted duty or job transfer.

14 The man-hour method calculates severity by total number of man-hours.

SWN remains steadfast in its commitment to act according to our Formula and the values it represents, regardless of the economic climate. We seek to be good stewards of the environment – including air, water and land resources – in all regions in which we do business.

FOCUSED
ON OUR ENVIRONMENT

p. 18

AIR
By working to identify solutions throughout the natural gas industry, SWN aspires to help reduce methane emissions across the natural gas value chain to less than 1 percent of gross production by 2025.

p. 21

WATER
SWN achieved freshwater neutral in the Fayetteville Shale in 2015. We expect to achieve this goal company-wide in 2016.

p. 27

LAND
Our Streamsmart™ training and other initiatives drive us to prevent erosion and spills, protect biodiversity and handle waste responsibly.

AIR

Methane, the primary component of natural gas, is a short-lived, high-global-warming potential greenhouse gas (GHG) when emitted. Excessive methane leakage can partially offset the benefits of natural gas as a lower-carbon fossil fuel. SWN is a proponent of innovative, performance-based programs to address methane emissions from the oil and gas sector.

In 2015, our leak/loss rate was 0.184 percent of production. In early 2016, we committed to maintaining a leak/loss rate below 0.36 percent of production. This goal aligns with the mission of the ONE Future coalition, which was co-founded by SWN and is helping to decrease emissions across the natural gas value chain.

The company also tracks absolute GHG emissions and emissions intensity. Compared to 2014, our GHG emissions intensity (i.e., per unit produced) in 2015 decreased 12 percent. Our absolute GHG emissions rose 21 percent for upstream operations, principally due to a significant increase in production. See p. 20 for our complete air emissions data.

Emissions Sources

Like other natural gas companies, SWN's GHG emissions consist primarily of methane and carbon dioxide (CO_2), with minor amounts of nitrous oxide (N_2O). The methane is mostly from fugitive emissions (e.g., leaking valves or connectors), vented emissions (e.g., natural-gas-powered pneumatic controllers, compressor blowdowns), occasional flaring, and the combustion of natural gas as fuel.

CO_2 and N_2O are primarily associated with fuel combustion. SWN uses diesel and natural gas to run drilling rigs, frac pumps, compressor engines, glycol reboilers and heaters. We also use amine treating systems to remove hydrogen sulfide and CO_2 from the gas stream. These systems vent small amounts of CO_2 into the atmosphere.

Our non-GHG air emissions include nitrogen oxides (NO_x) and carbon monoxide (CO), most of which stem from the combustion of fuels to drive our equipment. Our new operations in West Virginia also emit some volatile organic compounds (VOCs), as the gas produced there is "wet" – i.e., contains some natural gas liquids. In Arkansas and northeast Pennsylvania, we produce dry, pipeline-quality gas that contains negligible quantities of VOCs.

Emission-Reduction Efforts

SWN is being proactive in addressing methane emissions, through several voluntary efforts. First, we engaged with the scientific community and technology vendors to assess our methane emissions profile. These studies led us to deploy a company-wide leak detection and repair (LDAR) program beginning in 2014. This program includes annual instrument surveys (using optical gas imaging cameras or laser-based analyzers), leak detection surveys, leak repairs, re-surveys and recordkeeping sufficient to track and trend leaks. In 2015, we acquired Bacharach Hi-Flow measurement devices, which enable us to quantify the emissions detected. In addition, we have implemented preventative maintenance, which has resulted in significantly fewer leaks as the program has continued.

All told, in 2015 SWN staff conducted instrument leak detection surveys on approximately 88 percent of our total well count and 85 percent of our Midstream-operated compressor stations. Leaks were identified and repaired. Midstream operations achieved a 60 percent decrease in total leak observations from 2014 to 2015.

12% reduction in greenhouse gas emissions intensity in 2015

Checking pressures using a digital pressure gauge.

One learning from these efforts is that tracking leaks helps to identify trends (e.g., leak type, equipment, area), which allows the implementation of preventative maintenance practices. We have observed, as a result, year-to-year reductions in both the number and volume of leaks on a per-facility basis.

SWN has also engaged in field trials to evaluate new and emerging methane emission-detection technologies (e.g., the Picarro Surveyor and Rebellion Photonics Gas Cloud Imaging). And, we are participating in EDF's Methane Detector Challenge and the ARPA-E program run by the U.S. Department of Energy (DOE) to develop low-cost methane sensors.

Also, the company participates in the EPA's Natural Gas STAR Program, which encourages companies to voluntarily recover or reduce methane emissions. Our cumulative reported reductions since beginning that program in 2006 are more than 41.2 billion cubic feet.

Performing an LDAR survey with an optical gas imaging camera.

Technologies/Practices SWN Uses to Minimize Emissions, by Operational Phase

Well Drilling

- Catalytic converters
- Low-sulfur diesel fuel
- Engines that run on a mixture of diesel and natural gas

Well Completions/ Workovers

- Catalytic converters
- Low-sulfur diesel fuel
- Green completions and re-completions

Production Activities

- Maintenance practices
- Low NO_x burners
- Vapor recovery
- Leak detection, including use of infrared (FLIR®) cameras to identify leaks
- Low-emitting gas lift systems
- Solar-powered instruments
- Intermittent-bleed pneumatic controllers

Gas Gathering/ Treatment

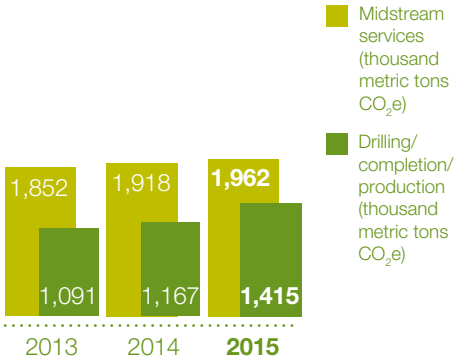
- Lean burn engines
- Catalytic converters
- Vapor recovery
- Leak detection, including use of infrared (FLIR®) cameras to identify leaks
- Closed-loop systems on compression equipment
- Flash tank vessels on glycoil reboilers
- Air/fuel ratio controllers

Miscellaneous

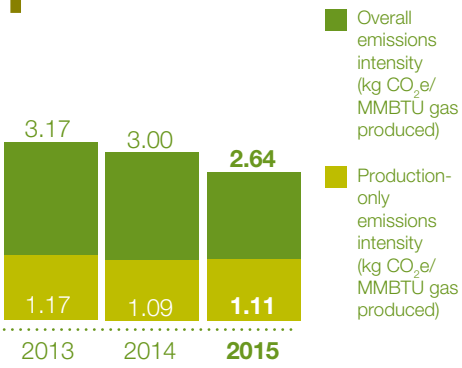
- Conversion of fleet vehicles (field trucks) from gasoline/diesel to compressed natural gas (CNG)
- Installation of CNG refueling stations for public use

Air Data[15]

Absolute GHG Emissions

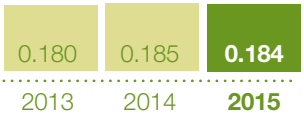


GHG Emissions Intensity[16]



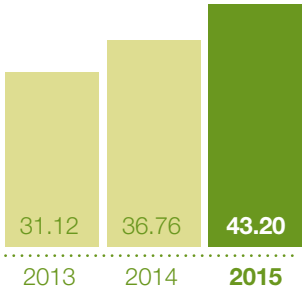
Methane Leak/Loss Rate[17]

(% (SWN production operations only))



Total Methane Emitted[18]

(gigagrams (SWN production operations only))



Key

Performance improvement

Decline in performance

Key Collaborative Efforts

In 2014, SWN co-founded the Our Nation's Energy (ONE) Future coalition, a group of eight companies dedicated to reducing methane emissions across the natural gas value chain. ONE Future seeks to reduce emissions to an average annual leak/loss rate of no more than 1 percent of gross U.S. natural gas production by 2025. (The EPA's 2012 National Greenhouse Gas Inventory estimated the industry's leak/loss rate at 1.3 percent.)

In 2015, SWN joined the Climate and Clean Air Coalition Oil and Gas Methane Partnership (CCACOGMP), an international program also intended to reduce methane emissions from the oil and gas sector. Participants share best practices for controlling and reducing emissions from certain sources (e.g., venting and flaring during the completion process). Government entities look to the CCACOGMP for guidance when establishing national policies and regulations on methane emissions. SWN is one of seven operating companies (and the only principally U.S. domestic operating company) participating in the CCACOGMP.

15 The emissions intensity and leak/loss rate data are based on gross operated production. The GHG calculations – reported in carbon dioxide equivalents, or CO_2e – include CO_2, CH_4 (methane) and N_2O (nitrous oxide). Certain GHG emissions are based on EPA emissions factors. The production CO_2e emissions reflect emissions reported to the EPA under Subpart W of the Greenhouse Gas Mandatory Reporting Rule (GHGMRR). Approximately 99 percent of our production operations are subject to reporting under Subpart W. In 2015 we have also included GHG emissions for our Sandwash (Colorado) operations (which are not subject to the GHGMRR) based on Subpart W emissions factors, as well as for our newly acquired West Virginia operations. The Midstream CO_2e emissions data are for combustion sources. They include emissions from SWN's Midstream operations reported to the EPA under Subpart C of the GHGMRR, as well as those not meeting threshold levels and thus not reported to the EPA. Some of the data points have been restated slightly from last year's report, due to changes and advancements in our data collection and analysis methodologies.

16 The metric used to calculate the intensity ratio is millions of standard cubic feet (MMscf) of gas. We assumed a 1,000 BTU/scf heating value of natural gas for emissions intensity. The GHG emissions included in the intensity ratio are all direct (Scope 1).

17 The methane leak/loss rate (mass percentage) is calculated by dividing the gigagrams of methane emissions by the oil and gas gross production (cubic feet converted to gigagrams).

18 For 2013, the gigagrams of methane are the total reported methane emissions under EPA GHGMRR Subpart W. For 2014 and 2015, the gigagrams of methane reflect the Subpart W reported emissions revised (reduced) to reflect actual fugitive equipment leaks observed as a result of our leak detection and repair program. A gigagram is equivalent to a thousand metric tons.

WATER

Fresh, clean water is a precious natural resource that is critical to natural ecosystems and human communities. Because water is also necessary for our operations, we developed the Energy Conserving Water initiative, or ECH_2O®, a holistic approach to water management with four components: reduction, innovation, conservation and protection.

The primary goal of ECH_2O has been to achieve "freshwater neutral" by the end of 2016. That is, for every gallon of fresh water we use, we aim to offset or replenish that gallon through water-quality improvement projects or treatment technologies that return fresh water to the environment. We met this goal in our Fayetteville Shale play in 2015 – a year early – and we expect to meet it company-wide in 2016.

How We Measure Progress Toward Our Freshwater Neutral Goal

Total Water Used − Alternative and Non-Freshwater Used ≤ **Operational Offsets + Conservation Offsets**

Reduction

To reach our freshwater neutral goal, we have been working to optimize water usage, reduce reliance on freshwater sources and increase use of alternative water sources (such as recycled produced water) for hydraulic fracturing.

Hydraulic fracturing requires more water than any other aspect of our operations. Specifically, the water is needed for formulating the fracturing fluid used for well stimulation. We also use fresh water to create well cement and drilling mud, control dust, pressure-test pipelines, cool compressor stations and conduct other minor operational functions. To efficiently meet our water needs, we have developed extensive infrastructure for storing and transporting water.

The company has made excellent progress decreasing our water use while still delivering high-producing wells. Since beginning the ECH_2O program in 2012, our average water volume per foot of completed lateral[19] dropped 30 percent in the Fayetteville Shale region and 8 percent in Northeast Appalachia. Our company-wide freshwater withdrawals decreased by 44 percent during that same time period. (See p. 22 for complete water data.)

Produced Water Recycling

Our water needs vary by play, due to differences in reservoir rock, well depth, lateral length and other factors. In 2015, water demand per well in the Fayetteville Shale was about 100,000 barrels, in northeast Pennsylvania about 150,000 barrels and in West Virginia about 200,000 barrels.

Between 5 and 20 percent of this water – again, depending on operating area – flows back out of the well after hydraulic fracturing and during production. We recycle this flowback and produced water[20] into fracturing fluid.

At the end of 2015, we were recycling 92.4 percent of flowback and produced water company-wide. This recycled water made up 40.6 percent of the total water we sourced for our operations in 2015, compared to 38.2 percent in 2014.

In West Virginia, the assets we acquired in late 2014 and early 2015 had not been recycling their produced water. So, the new water team for the division developed a blend of produced and fresh water suitable for fracturing in that region.

Produced water often must be stored until it is needed for fracturing another well. In Arkansas, we use permitted, double-lined impoundments to store this water. These impoundments have leak-detection monitoring zones between the two synthetic liners. We have reduced our number of produced water impoundments in Arkansas from 175 in 2013 to 75 in 2015. In West Virginia, we use above-ground tanks to store produced water. In Pennsylvania, we use both lined impoundments and tanks.

In Arkansas, we have two water recycling facilities that are permitted as Centralized Waste Treatment facilities for industrial water and wastewater. The Arkansas Department of Environmental Quality and the EPA determined that flowback and produced water generated by our operations may be collected and transferred to these facilities. The facilities are permitted to treat flowback and produced water and to discharge treated water that meets the stringent National Pollutant Discharge Elimination System limits assigned to each facility. In 2015, an approved water treatment system operated at one of these facilities; the other facility has only been used to store water prior to reuse or disposal.

While the company is legally permitted to discharge the treated water, our preference is to reuse it for drilling operations and compressor station cooling. In our freshwater neutral calculations, we refer to this treated, recycled water as operational offsets. We do not send any produced water to municipal treatment facilities.

30% reduction achieved in freshwater withdrawls in 2015

19 The *lateral* being the horizontal portion of the well, which is deep underground.

20 The terms *flowback water* and *produced water* are defined in state regulations, and the definitions can differ in each state.

Wastewater Disposal

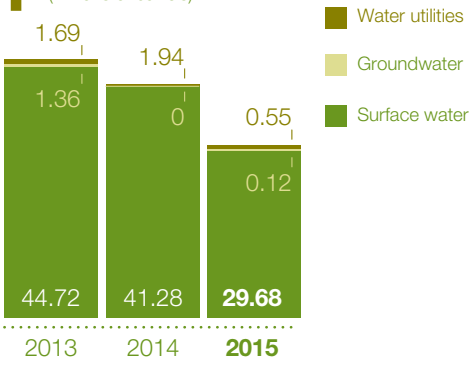
Historically, much of the water from oil and gas drilling and production operations, including flowback and produced water, has been disposed in injection wells. Our commitment to recycling has allowed us to do very little injection disposal in recent years.

Beginning in late 2015, as we began curtailing drilling and completions in response to the steep decline in natural gas prices, we found ourselves with fewer opportunities for recycling water. While our existing wells are still delivering produced water, we do not need it for fracturing fluid, since we are not fracturing wells. For the time being then, our focus has shifted from the recycling of produced water to its cost-effective and environmentally sound treatment or disposal. We injected 2.2 million barrels of wastewater in 2015, compared to 653,000 barrels in 2014.

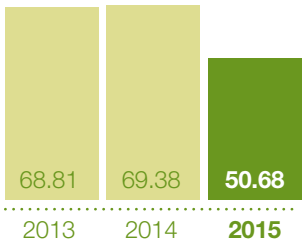
In Arkansas, we inject produced water into our own permitted injection wells. In West Virginia, a portion of our produced water is trucked to other oil and gas operators that are still completing wells, and the remainder is injected. In northeast Pennsylvania, we are similarly transporting a portion to other operators, with the balance sent to a third-party facility for treatment and discharge. We do not inject in Pennsylvania.

Water Use and Recycling Data[21]

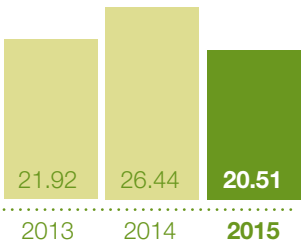
↑ Fresh Water Withdrawal by Source[22] (millions of barrels)



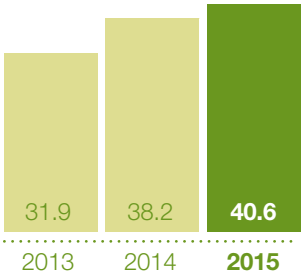
↑ Total Water Sourced (millions of barrels)



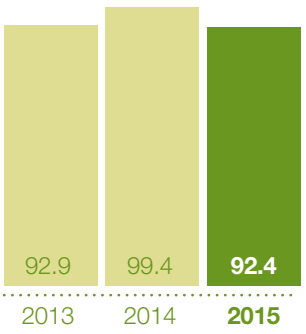
↓ Total Volume that Is Recycled or Reused Downhole[23] (millions of barrels)



↑ Total Water Sourced that Is Recycled Water (%)



↓ Flowback and Produced Water that We Recycled[24] (%)



Key

↑ Performance improvement

↓ Decline in performance

21 The water data cover our drilling, completions, production and midstream services. The 2014 data include water used by SWN for the assets we purchased in Pennsylvania and West Virginia in late 2014, for the short period at the end of the year when we owned them. The 2015 data include those assets as well as additional Pennsylvania and West Virginia assets we purchased in early 2015. None of the data include our sand plant. All water used at our sand plant (except for drinking water) is sourced on location, from the facility's lake and four groundwater wells. This water is recirculated for reuse or, for a small portion, returned to the environment via evaporation. Finally, numbers in the tables may not sum, due to rounding. And, data for all years have been restated compared to our last report, due to improvements in data gathering and analysis.

22 Water data collection depends on records maintained for internal benchmarking or reporting to regulatory agencies. Volumes purchased from commercial, third-party water suppliers are included under "water utilities" unless greater water source granularity is available. "Surface water" can include natural ponds, lakes, rivers and freshwater impoundments. No water was pulled from isolated wetlands or oceans for the years in scope.

23 These volumes include flowback and produced water, encountered water during drilling, and rainwater naturally captured in facility containments. Reuse water can include volumes generated during drilling that have been treated off-site and returned for additional use.

24 The drop in 2015 was due to changes in our drilling activity – especially the slowing of new well stimulation at the end of the year – which provided fewer opportunities for recycling flowback water.

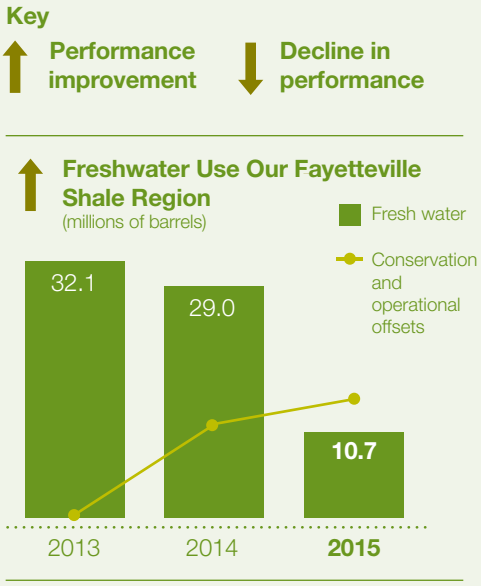
How We Achieved Freshwater Neutral in the Fayetteville Shale

The Fayetteville Shale region is where we have operated the longest and developed a number of industry-leading water management practices. So it makes sense that Fayetteville is where we proved the feasibility of our ambitious freshwater neutral goal.

The chart at right shows how our freshwater use in the Fayetteville Shale has decreased, even as conservation and operational offsets have increased – leading our operations in this region to meet, and surpass, freshwater neutral in 2015.

Our Fayetteville Shale completions team reduced freshwater use for hydraulic fracturing by 58 percent per well from 2012 to 2015, by optimizing water volumes and by recycling and reusing produced water for fracturing fluid.

To offset the remaining freshwater use, we implemented conservation projects that a third-party expert rated as equivalent to 582.5 million gallons in 2015 alone. These projects included channel and habitat restoration on the Archey Fork River and reforestation of the banks of the Upper Little Red River. An additional 4 million gallons in operational offsets were created by treating and reusing water from one of our water treatment facilities.



Innovation

Innovation has been a critical part of ECH$_2$O from its inception. Our engineers have sought creative ways to reduce freshwater use, from instituting new operational practices to piloting alternative water sources and treatment technologies.

For example, we found we could decrease the amount of water per well during a completion by ramping up the flow of sand more quickly while taking steps to reduce friction in the well. This change saved 35,000 to 60,000 barrels of water for an average well.

SWN has also been researching water treatment technologies, anticipating the need for alternatives to injection. Innovations currently being tested include technologies that would evaporate a portion of the water at the well pad or a centralized facility, leaving only a concentrated brine to dispose. We are also researching alternative proppants that might allow further water use reductions.[25]

Conservation

Conservation projects provide the water-quantity benefits that offset our remaining use of fresh water. In these projects, we work with government and nonprofit partners to restore wetlands and stream flows, improve water availability and quality, and positively affect watersheds and biodiversity. A recognized third-party company with relevant expertise quantifies the volumetric benefits for us in terms of gallons of water conserved.

The Fall Brook project in Blossburg, Pennsylvania, discussed on p. 24, provides the latest example of our conservation work. In a separate project also near Blossburg, we removed a dam in 2015 that had been badly damaged by Superstorm Sandy. We also removed sediment buildup behind the dam and restored the stream channel, which will improve trout habitat. In Arkansas, we are funding the restoration of more than 1,000 acres of wetlands at the Ed Gordon Point Remove Wildlife Management Area, to improve duck habitat.

25 *Proppant* is the material used to hold open the cracks in hydraulically fractured shale, so that the hydrocarbons can more easily flow into the well. We currently use sand as a proppant.

Bringing a Stream Back to Life

Entirely devoid of aquatic life and with a streambed stained orange, Fall Brook has hardly been an asset to its community. Located in north central Pennsylvania, Fall Brook is a tributary of the Tioga River, which flows into the Susquehanna River and ultimately into Chesapeake Bay. It has been severely affected over the years by acid mine drainage (AMD) – water runoff contaminated with iron, manganese and aluminum due to past coal mining.[26]

SWN first considered using the AMD runoff as an alternative to fresh water for drilling and completions in the region. But we realized that would not provide a complete nor permanent solution for the community, so we joined with ten other organizations – seven government bodies and three nonprofit groups – that had been seeking solutions to Fall Brook's AMD problem for years. We took a lead role in what became known as the Fall Brook AMD Treatment and Restoration Project, agreeing to fund and oversee construction of a water treatment system and establish a trust fund for ongoing maintenance.

The project has involved collecting, transporting and treating the largest individual AMD discharges entering the upper Fall Brook watershed. In 2015, two passive treatment facilities, each with limestone beds, were constructed. The AMD discharge sources are now being diverted nearly a mile via pipeline into the limestone beds, where heavy metal is precipitated out and collected in a flush pond, and the treated water, absent the contaminants, is discharged back into Fall Brook.

The Fall Brook project will provide significant benefits to the community through increased recreational opportunities, improved aesthetics and property values, and clearer, cleaner water flowing all the way to the Chesapeake Bay. Fish restocking is planned for 2017. Our third-party expert calculates the volumetric benefit of this project at 10.7 million barrels per year.

Charlie Andrews,
Tioga County Concerned Citizens Committee

"Over the 15 years that we've been working on Fall Brook, we've had a lot of different companies out there looking at the river, trying to do something with the water. None of it worked out until Southwestern Energy came into the picture."

26 This water surfaces from coal mines operated by companies no longer in business and unaffiliated with SWN in any way.

Protection[27]

SWN is committed to protecting groundwater in our areas of operation. Focusing on the "protection" element of ECH$_2$O not only helps to safeguard this resource, but strengthens our social license to operate.

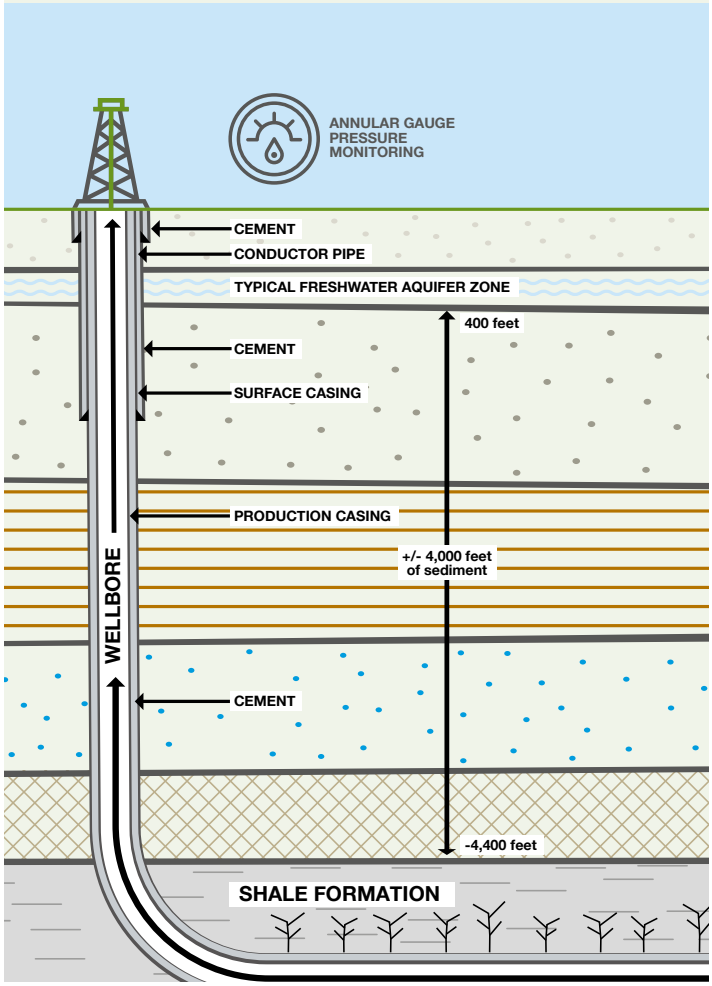
Hydraulic fracturing occurs thousands of feet below ground, well below any freshwater aquifer zone and with layers of impermeable rock in between (or else the gas and oil would have seeped through long ago). Our wellbores do pass through freshwater zones, however, so we take comprehensive measures to ensure that the contents of our wells never come into contact with this water.

Company employees and contractors utilize industry best management practices (BMPs) for well construction, drilling, completion and maintenance to ensure the integrity and soundness of our wellbores. These BMPs meet and often exceed applicable regulations and are updated regularly as new technologies, practices and information become available. Examples of BMPs include baseline water-quality testing whenever possible; monitoring each phase of drilling, completion and production; and verifying the mechanical integrity of the steel casings.[28]

Also, during well planning, teams investigate historical drilling activity in the vicinity to ensure we avoid affecting nearby wells. This investigation includes a search of public records for permitted oil and gas exploration wells and permitted water wells drilled by certified water well drillers. SWN representatives also communicate with landowners about their knowledge of previous drilling, since not all water wells are permitted and of public record. Even some oil and gas exploration wells are not of public record, if they were drilled prior to state permitting requirements.

In 2015, SWN successfully completed the closing of an "orphan" well with the guidance of the Pennsylvania Department of Environmental Protection (DEP). The old well – drilled by another operator but which was in the vicinity of our planned operations – had not been properly abandoned according to current standards. SWN has been working with the Pennsylvania DEP on the issue of older wells that were drilled by other operators and improperly abandoned. The DEP is considering adopting "Good Samaritan" regulatory procedures, which would allow SWN and other operators to properly plug such wells without assuming historical liability.

Ensuring Wellbore Integrity in a Typical Fayetteville Shale Well



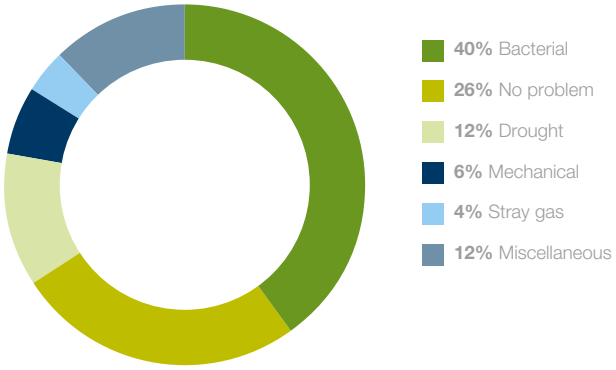
27 This section focuses on the protection of underground water. We are also committed to protecting surface water, as discussed on p. 27.

28 A *casing* is a hollow steel pipe. See www.swn.com/mediaroom/pages/Player_640_360.htm?video=%2Fmediaroom%2FVideo%2Fhsd.flv for a video that details our horizontal drilling and fracturing practices and how we seek to ensure wellbore integrity.

Our Record

SWN takes very seriously any landowner or community concern about possible impaired groundwater, and we investigate every one. We drilled approximately 385 unconventional wells during 2015 and have drilled a total of about 5,335 unconventional wells as of year-end 2015. Since 2005, we have recorded 195 instances (i.e., approximately 3.7 percent of wells drilled) in which individuals have questioned whether our exploration and production operations may have affected their privately owned groundwater wells. Of those, 164 were in Arkansas, 26 in Pennsylvania, four in West Virginia and one in Colorado. Investigations revealed that, in more than a quarter of all the claims, there were no actual water-quality problems at all. As the pie chart illustrates, the majority of the claims were attributable to naturally occurring conditions (such as nuisance bacteria), mechanical failure of the landowners' water wells or drought conditions. And, as in all petroleum basins, naturally occurring stray gas or methane is common throughout our operational area and can affect groundwater.[29] Of all of the instances for which a cause was determined, in only one were SWN operations a contributor.

Well Water Impairment Claim Findings 2005–15[30]



Fracturing Fluid

Fracturing fluid used in the company's operations is 99.9 percent water and sand. The remaining percentage is made up of chemicals necessary for safe and effective fracturing, including biocides, friction reducers, hydrochloric acid, scale inhibitors and corrosion inhibitors. The chemical additives do not include benzene, toluene, ethylbenzene or xylenes (BTEX). In addition, we do not use diesel in our stimulation fluids.

SWN was one of the first companies to report fracturing fluid composition for 100 percent of our hydraulically fractured wells to the voluntary FracFocus Chemical Disclosure Registry.[31] We have adopted this disclosure as a continuing practice. Chemical suppliers sometimes state that the exact makeup of their products is confidential business information (CBI), which in those cases limits the detail in our FracFocus disclosures.

Fortunately, our Right Products program has enabled us to honor suppliers' right to protect CBI while also improving the environmental profiles of our fracturing fluid additives. Through Right Products, each fracturing fluid chemical is assessed against key environmental and health hazards (e.g., toxicity, bioaccumulation potential, appearance on a regulatory list of chemicals of concern, etc.). We avoid the CBI issue by using a third-party toxicologist to conduct the hazard assessments and give each product a numerical score. Our suppliers provide the toxicologist with full detail on each products' chemical makeup, but we simply receive the final score and a summary of why it received that score.

If a product receives a high score and there's not a ready substitute, we conduct a risk assessment, which considers potential exposure in addition to hazard. Risk assessment findings are presented to an internal Chemical Advisory Board for a decision and are elevated to senior management if needed. Only a handful of risk assessments have been conducted to date.

By year-end 2015, 99 percent of the chemicals we use in hydraulic fracturing had been evaluated through Right Products. Greener alternatives were identified for 20 chemicals previously used, out of 175 total. We are now evaluating the chemicals used in other phases of our operations.

The Energy Water Initiative

SWN is an active member of the Energy Water Initiative (EWI), a collaborative effort among 18 companies in the U.S. unconventional oil and natural gas industry to improve lifecycle water use and management. The EWI is an informal forum through which companies can participate in projects and open dialogue about responsible water management.

29 See, for example, http://pubs.usgs.gov/sir/2012/5273/.

30 In the pie chart, "Miscellaneous" includes situations such as when no diagnosis was possible (e.g., due to lack of landowner permission to sample the well), claims pending resolution, brine contamination and dimunition; "mechanical" refers to a mechanical or equipment problem with the water well; "stray gas" is without regard as whether biogenic or thermogenic; "no problem" includes situations where complaint is only due to aesthetics (e.g., naturally occurring iron or manganese).

31 See www.fracfocus.org.

LAND

At SWN, we treat land with respect. We aim to minimize site impacts (including erosion and spills), reduce waste and protect biodiversity. We also use LEED building standards for our office buildings.

Site Impacts

We minimize our land-based footprint by drilling multiple wells on each gravel well pad (up to 10 wells per pad), where technically feasible. When the time comes to close the final well on a pad, we restore the location to its original condition, unless the landowner requests that the pad be left in place. Because most of our wells will produce for decades to come, our well closures at present are mostly older conventional wells that have ceased producing and exploratory wells that prove unsuccessful. We employ best practices that guide the development and ultimate closure of our well pad sites and ensure we comply with applicable regulations.

Avoiding Erosion

Erosion can deplete topsoil and affect the quality of nearby surface waters. Our Streamsmart™ program – developed in 2013 with The Nature Conservancy (TNC) – trains SWN employees and contractors how to control erosion and sedimentation near well pads. The half-day workshop is delivered jointly by representatives from SWN and TNC. In 2015, we involved state and local regulatory agency representatives as well, as both trainers and trainees. More than 200 individuals took the Streamsmart training in 2015.

Zac Watson, Staff Coordinator, Health, Safety and Environment, Fayetteville Shale Division, SWN

"I've worked for SWN for nine years, but before that I worked for the Arkansas Department of Environmental Quality as an inspector. I've seen a lot of evidence of companies that don't take the time to comply with environmental regulations. I feel fortunate to work for a company that makes that effort – that has a good track record and also a good relationship with state agencies. Even during these challenging times for our industry, I haven't heard anything from our leadership about straying from our values or from compliance. Nobody is even questioning that."

Preventing Spills

We handle a variety of liquids in our operations, including fracturing fluid, flowback and produced water, and condensate. Our operational practices help ensure these liquids stay off the ground and out of waterways. We have comprehensive spill response plans in place and regularly conduct spill response drills. Our West Virginia operations, which must manage natural gas liquids, have spill prevention countermeasure and control plans for every site, as required by law.

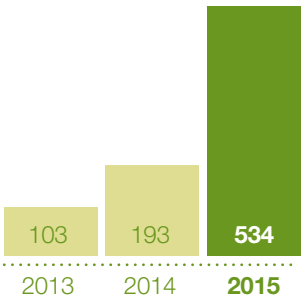
In all of our regions, catch basins under drilling rigs contain any fluid that may fall, and the base area around each rig is covered with a heavy polyethylene liner. Shutoff valves on rigs enable us to immediately stop any leak or rupture. We keep records of every spill below reportable size – even if it is fresh water that spills – and record near misses, so we can learn from those events and put preventative measures in place.

As seen in the chart below, we experienced an increase in Tier 1 spills in 2015. We define Tier 1 spills as those that either contain a federally reportable quantity of a hazardous substance or impact a water body. The increase is partially attributable to our expansion into new production areas in southwest Pennsylvania and West Virginia. Also, with the maturity of the development of the Fayetteville Shale and increased density of wells, we have observed a higher level of offset producing well disturbances and monitoring device failures during new well hydraulic fracturing operations. This led to three incidents in which the majority of the 2015 volumes were spilled.

In response to the increase, we developed new best practice leak-testing procedures, established new well isolation and monitoring procedures for offset wells, put enhanced monitoring measures in place for producing and shut-in wells, and updated some of our job safety analysis procedures for water transfer.

Tier 1 spills data have long been included as a performance measure affecting SWN employees' compensation and bonuses, to help ensure accountability. In 2016, we will be including Tier 2 spills as a performance measure as well. We define Tier 2 spills as those that escape containment and move out of a SWN-maintained area, but do not affect a water body and are not of a federally reportable size.

Tier 1 Unplanned Discharges (Spills)
(total volume in barrels)



Biodiversity

SWN's efforts to reduce site impacts help to protect plants, animals and ecosystems. We take particular care regarding species listed as threatened or endangered.

The company's West Virginia assets overlap with habitat of the northern long-eared bat, which in 2015 was classified by the U.S. Fish and Wildlife Service (FWS) as threatened. In response, we have joined an industry coalition developing a multi-state habitat conservation plan (HCP) for this species as well as two other, already-listed bat species. Once approved by the FWS, the HCP will act like a permit, with terms and conditions governing operations in West Virginia, Pennsylvania and Ohio.

In Colorado, about half of our leases overlap with habitat of the greater sage grouse, a species not listed as threatened or endangered. We previously participated in the Colorado Habitat Exchange (a consortium of representatives from the oil and gas industry, agriculture, environmental groups and the state of Colorado) working to develop market-based strategies to protect the bird. SWN recently ceased drilling operations in the state due to low commodity prices, and as a result has suspended active involvement in the Exchange.

Also in Colorado, as an offset to our anticipated operations, we signed a four-year commitment with the Colorado Water Trust: If snowpack does not provide enough water in the Yampa River for trout, we will purchase water from a reservoir to increase stream flows. Although our drilling activity has been suspended, we are continuing to follow through on this commitment.

Solid Waste

Compared to many industries, SWN generates minimal solid waste. The primary waste stream is the mixture of rock cuttings and oil-based drilling mud that comes out of a well as it is being drilled.

SWN operations use closed-loop systems to manage drilling mud. That is, all cuttings and associated drilling fluids are captured and then separated. After separation, the liquid mud is reused for drilling and the solids are removed from the well pad in covered, lined trucks. This material is further processed and then disposed of in landfills. We ensure that each landfill meets state regulatory standards and SWN standards for this type of waste. Before choosing a landfill, our HSER team conducts a rigorous audit, as well as periodic follow-up audits.

In the Appalachian Basin, naturally occurring radioactive material (NORM) can occur in very small concentrations in some rock formations. In our operations, NORM has occasionally been found in scale and sludge as barium sulfate, deposited in production tubulars and surface equipment, as well as in gas form. Our NORM management program specifies procedures for detecting, managing and disposing of NORM-affected materials. All remediation or decommissioning of NORM waste is conducted by a third-party company licensed for that purpose.

In 2015, we detected NORM when cleaning sediment out of a produced water impoundment in Pennsylvania. Approximately 2,700 tons of sludge material was removed by the third-party company and safely delivered to a designated disposal facility in Michigan.

Office Buildings

SWN's corporate headquarters are located in Spring, Texas, in a LEED Gold certified building completed in 2014.[32] The building features LEED elements such as a natural-gas-fueled generator that provides power to the data center. The building operates according to LEED standards as well – for example, using green cleaning products and water-smart landscaping practices. We're achieving excellent energy-efficiency performance, using 5–10 percent less energy than expected.

The new building earned one of the *Houston Business Journal's* 2015 Landmark Awards, which recognize notable commercial real estate projects. It also earned a merit award in the *Engineering News-Record*'s Best Projects award program. That recognition highlighted the building's sustainability features, such as rainwater harvesting and energy-efficient heating and cooling.

SWN's Arkansas staff operates out of a LEED Gold certified building in Conway, Arkansas. The company's field offices use the LEED-EB standard (i.e., LEED for existing buildings) as a guide when renovating existing facilities.

32 LEED stands for Leadership in Energy & Environmental Design and is the premier "green" building standards system.

EXTERNAL RESEARCH SUPPORT

SWN participates in and helps to fund multi-party research aimed at progressing scientific knowledge, developing sound data and testing cutting-edge technologies. We believe this kind of research can support the development of effective and science-based policies and practices, for our operations as well as the rest of the industry. The following is a partial list of recent research we've supported.

Methane Detector Challenge

With EDF and others, we are working to develop the next generation of low-cost methane leak detectors. In this project, two vendors have cleared the pilot testing phase and moved into field testing.

Methane Study, Gathering and Processing Sector

Also with EDF and Colorado State University (CSU), we participated in a study that examined methane emissions from the gathering and processing segment of the natural gas supply system. The results were published in 2015.

Top-Down/Bottom-Up Emissions Study

We participated in a field-measurement methane study in the Fayetteville Shale region involving several partners: CSU, the DOE's Research Partnership to Secure Energy for America (RPSEA), the National Renewable Energy Laboratory, the National Oceanic and Atmospheric Administration and the Colorado School of Mines. The study was designed to reconcile top-down and bottom-up methane emission estimates.

Optical Sensors Development

We worked on an IBM-led research team, funded by the DOE's Advanced Research Projects Agency–Energy (ARPA-E), to develop a new, low-cost optical sensors network that will enable enhanced methane leak detection.

Water Monitoring Study

In Pennsylvania, Yale University researchers drilled eight shallow groundwater monitoring wells near future SWN well sites (prior to drilling or fracturing) and will independently sample and monitor these groundwater wells over the next several years, before and after each phase of development.

Membrane Desalination Study

We are sponsoring research, to be completed in 2016, by the Membrane Science, Engineering and Technology Center at the University of Arkansas (part of a National Science Foundation-sponsored organization headquartered at the University of Colorado – Boulder) looking at the use of membrane technology for desalinating flowback water.

Wellbore Isolation Research

Together with CSI Technology, we received a research grant from RPSEA to assess methods of isolating wellbores during construction and preventing and remediating sustained casing pressure. The research was completed in 2015.

At SWN, working with and contributing to communities is not a separate, philanthropic function. It is integrated into our corporate mission to create Value+ as part of the work we do every day. SWN is committed to being a valued part of each community in which we operate.

FOCUSED
ON COMMUNITIES

p. 31

ENGAGING PROACTIVELY
Where we work is where we live, and being a good neighbor is how we do business. We engage with communities proactively and share information openly.

p. 34

CONTRIBUTING TO LOCAL ECONOMIES
SWN's operations have created billions of dollars in direct and indirect economic benefits through higher-than-average wages, royalty payments, property taxes and more.

p. 35

GIVING BACK
In 2015, SWN donated nearly $2.5 million to schools and nonprofits in our focus areas of education, environment, health and nutrition and emergency response.

PROACTIVE COMMUNITY ENGAGEMENT

SWN people engage proactively and regularly with the communities in which we work, during all phases of our operations.

No matter where we operate, the key elements of our community engagement efforts remain the same: We share information openly, seek community feedback and work to understand, anticipate and resolve questions and concerns. In doing so, we develop cooperative, two-way dialogue with local officials, citizens, businesses, nonprofit organizations, emergency responders and land and mineral owners.

Every community is unique, so we tailor our approach to community engagement as appropriate. In Arkansas and Pennsylvania, where our operations are more mature, we address community concerns as they arise, aid local nonprofits and support schools and emergency responders. In West Virginia, where we purchased assets in late 2014 and early 2015, we have been addressing community issues, helping residents learn about our company and its culture, building a local workforce and engaging with nonprofits, schools and community groups. In areas such as Colorado, where we are in the exploration phase, we have been developing relationships and identifying issues of interest to community members.

In all regions, we inform local residents about our operations so they understand in advance what we will be doing and what outcomes they can expect. For example, recognizing that water quality is a concern for many residents, we hosted a seminar for SWN leaseholders in Tioga County, Pennsylvania, with Penn State University Extension. Extension employees taught residents how to test their drinking water and interpret the test results, and encouraged them to test the water before drilling and on an ongoing basis. We believe this will provide residents with extra assurance that our operations are not affecting their water.

Each of our primary operating regions employ community engagement staff. These individuals work with community members to understand local concerns and needs and learn how we can address them. Through our How to Speak SWN training program, launched in 2014, all employees learn how to communicate with the public about our company and our industry. We also ask employees to listen to local residents and share what they learn with us. This proactive approach has helped us achieve positive relationships and a good reputation in the communities where we operate, and has helped eliminate many community concerns.

Through our How to Speak SWN training program, launched in 2014, all employees learn how to communicate with the public about our company and our industry.

Addressing the Economic Slowdown

Our commitment to doing the Right Things is especially important when it means doing difficult things, such as helping communities understand the impacts of dramatically lower natural gas prices and associated reductions in drilling activity. We know this affects local employment and economic activity, just as it affects our company. We have engaged with elected officials, business leaders and residents to explain the slowdown in our operations and reiterate the years of production remaining in our long-lived assets.

In many cases, we have updated local officials about issues in their area, such as when we have to reduce work with a large local vendor, so they can make better-informed decisions. This proactive and honest engagement is the right thing to do and will help us all get through these times more effectively. As the result of this kind of relationship building, the Chamber of Commerce in Conway, Arkansas, held a job fair for SWN employees to help them cope with our drilling slowdown.

How We Handle Complaints

The company tries to understand and handle community concerns before any issue escalates to a complaint. When complaints are received, we take them seriously and address every one. SWN developed our approach in Arkansas and has expanded and adapted it to the other regions in which all employees now work.

When a community member contacts SWN with an issue, we put that individual in touch with an employee who has the knowledge and authority to take the concern up with the right people in our company and ensure it is addressed. Furthermore, we follow up on every issue, to let the person who contacted us know what we are doing in response.

A new routing and tracking system is being implemented for all complaints. The system will document the nature of the complaint, where it was received and how it was addressed. This system, which will help us better understand and avoid issues, will be in place across our operations by the end of 2016.

RESPONDING TO COMMUNITY CONCERNS

Road and traffic issues, noise and environmental stewardship are some of the most common issues community members raise about our operations. On these issues and others, we operate as good neighbors and have worked with residents to develop solutions that benefit both SWN and communities.

Road Use

Safe, well-maintained roads are critical to communities and also essential to our business. We have programs to promote safe driving practices, control traffic and dust and maintain the condition of the roads we use, as described in the box below.

Safe Driving Practices

Roadway safety is a top priority for SWN. Not only do we want to keep our employees and contractors safe, but our local reputation depends in part on our drivers being cautious and courteous. We have developed training and monitoring programs to encourage employees and contractors to follow safe driving practices. In addition, we foster a safe roadway culture in the following ways:

Giving School Buses the Road

In West Virginia, where roads are often narrow, winding and steep, we prohibit employees and vendors from hauling large loads on local roads during school bus pickup and drop-off hours.

Escort Vehicles

Also in West Virginia, we use escort vehicles as needed to move large trucks safely along the roadways.

Community Driver Training

In Arkansas, Pennsylvania, Texas and West Virginia, we work with the National Safety Council to implement the Alive at 25 Defensive Driving Course. Through this program, SWN covers the cost of training employees' children and local students (ages 15–24) in defensive driving.

Dust

We employ several methods to keep down the dust created by large trucks traveling on gravel or dirt roads. Some of these methods can keep dust down for several months, even during high-volume activity. In addition, we staff a 24-hour call center to address dust-related concerns and encourage all residents and SWN contractors to identify and report areas in need of dust control.

Traffic

Over the years, we have reduced the number of trucks on local roads through three key practices:

Multiple Well Drilling Pads

We drill up to 10 wells on one pad, sliding the rig to a new location on the pad without using roads to relocate it. Each new well drilled using this technique eliminates 650 truckloads of equipment and construction material.

Pipeline Systems for Water Transport

In northeast Pennsylvania, we installed an underground pipeline system that transports nearly 100 percent of our water in that operating area, eliminating 200 to 250 truckloads per well and reducing truck traffic by about half. In Arkansas, we transport nearly all of our fresh water via a ground-surface pipeline system, which eliminates approximately 1,000 truckloads per well.

Centralized Logistics Operations Centers

Our logistics center for Arkansas and Pennsylvania reduces SWN and contractor truck traffic and congestion by consolidating trips and optimizing routes. In addition, the logistics center reduces impact on roads by maximizing loads to minimize mileage and avoiding roads and bridges that are not equipped to handle heavy-duty trucks. All told, the logistics center has reduced our operational truckloads by an estimated 14,787 trips, eliminating 331,120 miles traveled.

Maintenance

In some areas, the roads are not designed to accommodate heavy-duty trucks and the high volume of traffic needed to support our operations, and so they may require continued maintenance. Each year, SWN and the natural gas industry pay millions of dollars in state taxes and maintenance fees, which are often used to restore and maintain highways and secondary roads.

Compressor Noise

Compressors increase the pressure of natural gas, enabling it to be transported through pipelines and delivered to consumers. We operate both centralized compressor stations and smaller, temporary units on well pads. Noise from compressors is sometimes an issue of concern among local residents. Our new compressor facilities are designed to meet any applicable noise limits – usually by a comfortable margin.

We use a range of methods to control the sound levels of stationary compressors used by our Midstream operations, as possible based on location and system requirements. For example:

- Siting compressor stations away from residences and other occupied areas and not placing compressors in certain terrains and cultural features such as parks, historic sites and wetlands
- Regularly using nonstandard compressor exhaust systems with extra sound-reduction capabilities
- Using high-efficiency coolers with fans that run at slower speeds to reduce noise
- Installing larger piping than is typically used, to keep gas velocity low and reduce high-pitched sounds
- Constructing buildings or sound walls around compressor equipment

COMMUNITY ECONOMIC IMPACTS

SWN's operations have brought significant direct and indirect economic benefits to our communities.

The company recognizes that low natural gas prices and the resulting slowdown in our drilling activities have reduced our contributions to local economies in 2015. We nonetheless remain committed to making long-term, positive economic contributions in the communities where we operate.

Third-party studies[33] have found that the natural gas industry has created billions of dollars in positive economic impacts in the Fayetteville Shale and the Marcellus Shale, where most of SWN's wells are located. Our operations contribute to local economies directly by producing jobs with higher-than-average wages and making direct payments to community members through mineral leases and royalty payments. And, we support government services and schools through property taxes, income taxes, severance fees, road impact fees and other direct payments. Over the past five years in Arkansas, for example, SWN has paid more than $336 million in taxes, including severance tax, property tax and sales tax. Our total payroll in Arkansas during that period exceeded $470 million.

Some of these taxes and fees are used to pay for road projects, which support our operations. But they also support local schools and pay for community projects, including water and sewer infrastructure, emergency preparedness and public safety, affordable housing and tax reductions. For example, approximately 70 percent of the property taxes from our operations in West Virginia go to local schools. We also make significant direct contributions to schools, nonprofits and community groups through our charitable giving.

SWN's operations have brought indirect economic benefits by stimulating job growth in industries that support natural gas production, as well as supporting business and job growth throughout the community.

Developing a Local Workforce

Hiring locally is good for our communities and our company. It creates well-paying jobs for residents and ensures that employees have a local perspective on community needs and concerns. To support our commitment to local hiring and expand the pool of qualified candidates, we develop and support programs that generate interest in the oil and gas industry and provide educational opportunities for those who wish to pursue careers in the industry.

In West Virginia, we began working to build a local workforce as soon as we purchased assets in the area in late 2014. We donated $250,000 each to Pierpont Community and Technical College and West Virginia Northern Community College to endow scholarships for students in the schools' petroleum technology degree programs. We have hired three graduates from these programs to date. These employees joined more than 100 local West Virginians we have hired since beginning operations in the state. A field operators intern program, through which students from the community colleges do paid, two-month rotations through field jobs during the summer, has also provided local employees. We hired six interns through this program in 2015.

33 Sources include: IHS (a global data and analysis provider), the Marcellus Shale Coalition, the Pennsylvania Department of Revenue and Pennsylvania Public Utility Commission, Duke Energy Initiative. See for example, http://cber.uark.edu/files/Executive_Summary_Revisiting_the_Economic_Impact_of_the_Fayetteville_Shale.pdf; http://marcelluscoalition.org/2014/07/msc-issues-annual-workforce-survey-results/; https://energy.duke.edu/shalepublicfinance; and http://www.workstats.dli.pa.gov/Documents/Marcellus%20Shale/Marcellus%20Shale%20Update.pdf.

In Pennsylvania, we support Lackawanna College's School of Petroleum and Natural Gas, which offers a two-year training program for students pursuing careers as compressor mechanics or well pumpers. We also established a scholarship fund for students who graduate from high schools within our operating area and are entering the Lackawanna College program. The first scholarship was awarded for the 2014/15 academic year; going forward, we plan to award two $10,000 scholarships each year. SWN also provides summer internships for students in the program and has hired multiple program graduates.

In Arkansas, our oldest operating region, we have made significant commitments to building a local workforce. In 2006, we worked with the University of Arkansas Community College at Morrilton (UACCM) to establish and fund the first two-year petroleum technology program in the state. By year-end 2015, the program had awarded 443 Certificates of Proficiency, 374 Technical Certificates and 325 Associate degrees. SWN also worked with others in the oil and gas industry to start the Fayetteville Shale Scholarship Fund for students in the UACCM program. The Fund has provided 640 scholarships totaling nearly $423,000 since 2006. We will continue to fund these programs as relevant based on job opportunities in the industry.

The company works to build a local workforce by supporting science, technology, engineering and math (STEM) education at the middle- and high-school levels. We hope these efforts, described on p. 36, will encourage local children to consider jobs in our industry; we know they will help expand students' opportunities and employability, whatever careers they pursue.

Pennsylvania Governor Recognizes SWN for Making a Positive Community Impact

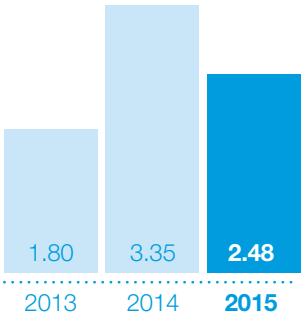
In 2015, SWN received the Community ImPAct Award from the Governor of Pennsylvania. This award recognizes companies that show a sustained commitment to the growth and development of their employees and communities. We were honored to receive this award, which we believe highlights the importance of our Value+ approach.

CHARITABLE CONTRIBUTIONS AND VOLUNTEERING

SWN's charitable giving and volunteer efforts concentrate on specific needs in the communities where we operate.

The primary focus areas are education, the environment, health and nutrition and emergency response. The current economic realities of our industry have affected the level of contributions we can make in the short term. But we continue to make donations in our primary focus areas and have been looking for creative ways to do more with less.

Charitable Giving (millions of U.S. dollars)



Education

SWN believes in the transformative power of education, and we work with a number of organizations[34] to enhance schools and provide opportunities for students. STEM programs are a focus area, as noted below, as they can help students gain access to high-skill, high-wage jobs. Our employees are also important ambassadors for STEM education and careers. Through programs such as "take your child to work day" and classroom volunteering, SWN employees help local kids see the opportunities and benefits of working in STEM-related careers.

Science and Engineering Fairs

Since 2009, SWN has sponsored the Southwestern Energy Arkansas Science and Engineering Fair, which draws more than 200 students each year. We contributed $20,000 per year toward this program from 2010 to 2014. Beginning in 2015, we increased our contribution to $30,000 per year for the next five years. Also in 2015, we contributed $25,000 to the Northern Panhandle Regional Science Fair in West Virginia.

Model STEM School

In 2015, SWN helped to fund the development of a model STEM program at Wheeling Park High School in West Virginia. Wheeling Park was one of eight West Virginia schools chosen for the STEM Network Schools program, which is organized and overseen by the Education Alliance. Wheeling Park's program will focus on inquiry-based science and math education, project-based group learning and career awareness. With a $56,000 grant from SWN, the school will become a demonstration site for innovative STEM practices that boost student achievement.

School Grants Program

The SWN grants program, introduced in 2008, provides equipment and assistance for programs that support science, math and technology at schools in Arkansas. Between 2008 and 2015, we contributed $387,000 through this program.

Junior Achievement (JA)

Since 2007 in Arkansas, 110 SWN employees have served as JA classroom volunteers, providing more than 3,650 hours of instruction to more than 10,000 students. We've pledged to donate more than $500,000 between 2007 and 2016 to help fund JA classroom activities in that region. In the Houston area, we contribute volunteer time to JA, donate funds and materials, and host "JA in a Day" programs at a local elementary school. And in northeast Pennsylvania we support JA by participating in its Careers in Energy Program in local school districts and sponsoring a variety of community events and programs.

Mark Bland, President,
Arkansas Science Fair Association

"When the State Science Fair Board first approached Southwestern Energy about contributing to the science fair in 2009, the fair was in danger of being canceled due to lack of funds. SWN's generous contributions each year since have sustained the event and funded prizes for individual and team winners. SWN's support has also catalyzed interest and participation in the fair: Participation has increased 26 percent since SWN began contributing six years ago. SWN's commitment to increase support for the next five years will further encourage regional science fair participation and has generated renewed interest in the sciences for teachers and students by providing funding to help Arkansas educators host regional science fairs in areas where they are not currently available and by sponsoring student projects. The money will also go toward college scholarships for high school seniors who participate in the Southwestern Energy Arkansas Science and Engineering Fair and plan to major in a STEM discipline at an Arkansas college."

34 www.swn.com/responsibility/Pages/education.aspx

Environment

SWN supports numerous projects that benefit the environment in the communities where we work, as discussed in the Environment section. Over the past five years, we have contributed approximately $2.6 million and 520 volunteer hours to support environmental programs that protect and restore waterways and wildlife habitats.

Health and Nutrition

SWN has been working to reduce food insecurity in our communities for many years. Over the past three years, we have pledged more than $340,000 and 2,400 volunteer hours to food banks and other organizations working to reduce hunger. In 2015, we initiated a new focused week of employee giving, described on p. 38, aimed at supporting local food banks.

$340,000 and 2,400 volunteer hours donated to food banks over the past three years

In Pennsylvania and West Virginia, we partner with Hunters Sharing the Harvest. This organization coordinates with hunters, butchers and food banks to distribute venison to hungry families. Support from SWN and the natural gas industry helps cover the processing fees for the deer.

We also support health- and safety-related nonprofits and charitable events in all of our operating areas. In Houston, for example, we support the March of Dimes' March for Babies health run, the MS 150 and the Leukemia & Lymphoma Society's Light the Night events. In Pennsylvania in 2015, we worked with the Pennsylvania Department of Transportation to give out bike helmets and safety information to nearly 300 children. Also, we hosted a Red Cross blood drive at our Pennsylvania office and collected more than 50 pints of blood.

300 children given bike helmets and safety education in 2015

Emergency Response and Disaster Relief

SWN's Everyday Heroes program[35] supports local public safety organizations in Arkansas and Pennsylvania. In 2015, we donated $25,000 to fire departments and ambulance services through this program. Since 2008, we have distributed approximately $700,000. These grants are used to purchase equipment, such as radios and lifesaving medical equipment, for improving operations.

$25,000 donated to fire departments and ambulance services in 2015

When a disaster hits one of our communities, we help emergency responders respond and neighbors recover through financial donations and employee volunteers. In recent years, we've provided labor and funding toward cleanup efforts following tornadoes in Arkansas and flooding in Pennsylvania, and we provided water to fight fires in Arkansas. In 2015, we were recognized by the Arkansas state legislature for providing the equipment and manpower necessary to remove trees and storm debris from access roads to ensure emergency vehicles could get through, after the 2014 tornadoes in Mayflower and Vilonia, Arkansas.

35 www.swn.com/responsibility/Pages/publicsafety.aspx

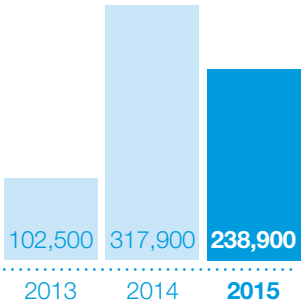
Employee Giving and Volunteering

SWN employees have always generously given time and money to support their communities. In the face of difficult economic times in our industry and communities, we are working to support our employees' charitable efforts even more.

In 2015, our employees recorded nearly 3,000 hours of volunteer service. We encourage employee volunteering through SWN Community Heroes,[36] a program to recognize up to 10 employees each year for their outstanding volunteer achievements. Through this program, we grant $2,000 awards to each of the organizations at which the winning volunteers have focused their time. From its launch in 2010 through the end of 2015, we have donated $120,000 through this program.

Our Social Energy program rewards employees' passion for community causes by providing additional funds to nonprofits based on our employees' giving and volunteer efforts. Through Social Energy, SWN matches employee donations to qualified nonprofits dollar for dollar, up to $15,000 per employee per year. Since 2011, we have contributed nearly $856,000 in matching funds to educational and nonprofit organizations.

SWN Matching Gifts (U.S. dollars)



SWN Week of Giving

In September 2015, we initiated a company-wide, week-long event focused on volunteering. During the SWN Week of Giving, hundreds of SWN employees volunteered their time in soup kitchens and food banks in Texas, Pennsylvania, Arkansas, West Virginia and Colorado. Employees logged nearly 500 volunteer hours and fed more than 97,000 men, women and children in our communities. Of course, many employee volunteer efforts are ongoing, year-round. In Pennsylvania, for example, teams of more than a dozen employees volunteer at a local food bank at least once a month.

Employee-Led Charitable Events

Company employees often take the lead in developing and implementing volunteer and charitable activities. Several years ago, for example, one of our Pennsylvania employees had the idea to host a golf tournament, with participants from SWN and other natural gas companies, to benefit the local United Way chapter. That idea grew into the Marcellus Open, and each year the event has proven more successful than the last. Pennsylvania employees also started a clay shooting tournament for charity, which they have held each year since 2013. In 2015, these two events raised more than $150,000. Similarly, in West Virginia, SWN heard that a local food bank was at risk of closing due to lack of funding. Our employees organized a golf tournament for SWN employees and vendors that raised $120,000 for the food bank. West Virginia employees also organized a clay shooting tournament to raise money for a children's cancer hospital. In 2015, a group of SWN military veterans and other employees organized a Veterans Day event that raised $40,000 for a nonprofit that serves veterans. In response to the success of this event, we plan to host Veterans Day events company-wide in 2016 to raise charitable dollars for veterans' organizations.

36 www.swn.com/responsibility/Pages/communityheroes.aspx

Our workforce is at the core of how we deliver Value+; they are the Right People doing the Right Things™. We are focused on supporting our employees while fostering a rewarding work environment.

FOCUSED
ON OUR WORKFORCE

p. 41

EMPLOYEE TRAINING
We offer programs to support employees' career advancement goals, build their commitment to our company values and goals, and ensure we are building leaders for SWN as well as the community.

p. 42

EMPLOYEE SATISFACTION
SWN employee satisfaction has continued to improve. In the span of two years, we rose from 25th to 5th place in the 2015 *Houston Chronicle*'s Top Work Places survey.

p. 42

MANAGING CONTRACTORS
We require our contractors to follow our own high standards for responsible operations, and we help them do so through rigorous training, assessment and oversight.

EMPLOYEES

SWN values every team member for their capability, their diversity of thought and experience and their commitment.

The company's culture is designed to foster employees' ability to innovate, persevere, find efficiencies and safely deliver results, while also growing into leaders for SWN, our industry and our communities.

The SWN Formula provides a compass to help us stay on course to provide Value+ in all we do, in good times as well as challenging ones. In late 2015 and early 2016, faced with the lowest natural gas prices in decades, we dramatically reduced our drilling and completions work. Regrettably, in early 2016 we also adjusted staffing levels across the company and said goodbye to approximately 1,100 employees (~40 percent) who were severed from SWN. This decision was not a reflection of these employees not being the Right People. Quite the contrary. A prime driver for creating and building Value+ for our shareholders now and in the future lies in "wisely investing our cash flow from our underlying Assets" and this means balancing investment with available cash flow. Although an extremely difficult step, it was necessary to reposition SWN for the future and was vital to sustain ongoing shareholder value. Our Formula guided our commitment to do the Right Thing for all the employees impacted by the reduction in force.

Supporting Our Employees

SWN is committed to helping our employees lead through these uncertain times in our industry. For example, our employees participated in training sessions to gain skills and resources to be mentally, physically and emotionally resilient in the face of stressful times. In early 2016, our leaders – including executive management – also received training on how to lead effectively through transitions, and they are sharing these skills with their teams.

Managers and employees at all levels of the company are being encouraged to foster an environment of collaboration and innovation. We have to do more with less, and we know the best way to do that is to empower employees to find solutions together that will advance our business and corporate responsibility strategies.

SWN employees receive a wide range of traditional employee benefits, including competitive pay, high-quality health insurance options and paid leave for all full-time employees.[37] In addition, we offer flexible work hours, an employee assistance program, scholarships for dependents and matching higher-education contributions. We are also continuing to support education programs in petroleum technology, so that when hiring begins again we will have a strong pool of local, qualified talent (see pp. 34–35).

Connecting with Our Employees

Maintaining open, two-way dialogue with our employees is a core value for SWN. We communicate frequently about management decisions, company plans and industry issues, to help employees understand current economic realities and how we will address them as a team.

SWN leadership uses a variety of platforms to disseminate information, from face-to-face communication during town hall meetings, to the company intranet, to our employee magazine *Connection*. Our communication efforts are designed to not only inform employees, but also solicit their ideas and feedback, which aid in management decision making.

Providing employees with clear feedback on their performance and how they contribute to the company's success is another way we build connection and commitment. Regular performance discussions and employee development programs help employees set career goals and priorities and monitor progress and achievement.

37 Part-time employees must work 30 hours or more per week to qualify for benefits.

Training and Development

Our employee training and development programs are aimed at building understanding of and commitment to SWN values and supporting employees in their career advancement goals.

Leading with SWN Values

SWN uses a "Head, Heart and Guts" leadership framework to help managers lead effectively and implement our core value of doing the Right Things. Our managers operate from their "head" by thinking strategically and using good judgment, from their "heart" by building a collaborative work environment and inspiring passion and energy in their teams, and from their "guts" by stepping up to challenges and making difficult decisions while remaining humble and open to other points of view. All employees participate in our R2 (Right People doing the Right Things) training program, which provides a comprehensive look at who we are as a company, how we got where we are today and where we are heading in the future.

Career Development and Educational Assistance

The company offers training opportunities for employees to support their professional growth as related to their careers at SWN. We also offer a reimbursement program for employees who take courses at accredited colleges or universities. And, we pay for employees' memberships and subscriptions to relevant professional development organizations.

Safety Training

SWN requires comprehensive safety training for employees and contractors, as discussed on pp. 14–15.

Diversity

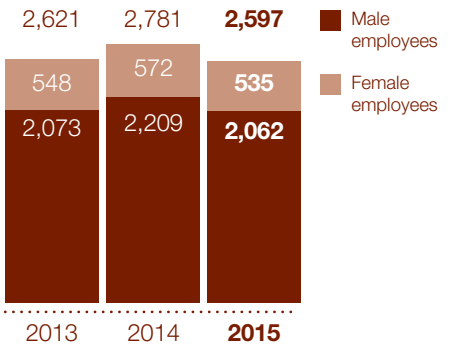
We believe that a diverse workforce – one that includes a variety of backgrounds, experiences and schools of thought – creates the diversity of perspectives needed to thrive as a company. Sound relationships among SWN employees are essential to achieving and maintaining productivity and good business conduct. Basic to these relationships is SWN's recognition of the value of every employee and belief that every person should be treated fairly and with respect and that every employment-related decision should be based on an individual's merits and qualifications, including capability, performance and reflection of our corporate mission and values.

All decisions regarding recruiting, hiring, training, evaluation, assignment, advancement and termination of employment must be made without unlawful discrimination on the basis of race, color, national origin, ancestry, citizenship, sex, sexual orientation, gender identity or expression, religion, age, pregnancy, disability, present military status or veteran status, genetic information, marital status or any other factor that the law protects from employment discrimination. We also forbid harassment or intimidation on any of these bases. A list all unacceptable bases for discrimination, harassment and intimidation could never be made; in employment matters, like everything, we turn to a key element of our Formula: "Doing the Right Things."

We understand the value of gender balance in our workforce, and we value fairness as it relates to opportunity and pay. Through our SWomeN initiatives we actively seek to retain and develop SWN's female talent. As part of this program, women at SWN have built an internal support network and participate in professional development activities such as external conferences. SWN is also a corporate sponsor of the Women's Energy Network. And we target some of our support for STEM programs to build the diversity of students pursuing a STEM education in our operating areas.

Pay at SWN is based on several primary factors, including but not limited to: skills, years of experience, time in position, performance and market data. Using 2015 compensation information, the average of all women's salaries was 97 percent of the average of all men's salaries. Broken down by job classification, the average of all women's salaries varied from 90 percent to 105 percent of the average for men in the same classification.

Employees by Gender[38]



38 All data are as of year's end. Data include interns and seasonal employees. However, temporary, part-time and seasonal employees accounted for less than 1 percent of our workforce during these years. Part-time is defined as less than 30 hours per week.

Employee Satisfaction

Based on our performance in regular internal and external surveys, employee satisfaction with SWN is good and improving. In the *Houston Chronicle's* Top Work Places survey, SWN improved from 25th place in 2013 to 11th in 2014 and 5th in 2015. In addition, SWN improved in all categories from 2013 to 2015, including employee satisfaction with the content of their work, work/life balance, compensation and benefits, collaborative and effective work environment, connection to SWN and support for our culture and leadership.

In the *Houston Chronicle's* Top Work Places survey, SWN improved from 25th place in 2013 to 11th in 2014 and 5th in 2015

CONTRACTORS

In our industry, it is standard practice to use contractors for a wide range of specialized services, many of which require working on our sites and alongside our employees.

Contractors' performance directly affects our financial, social and environmental performance, as well as our reputation. Therefore, all contractors and their employees are held to the same high standards required of our own employees. Anyone working on our behalf must hold to our unwavering commitment to safety for employees, contractors, the communities in which we work and live, and the environment.

Contractor Assessment and Management

We have stringent requirements and processes for selecting, training and evaluating contractors (illustrated in the graphic on p. 43) to ensure they meet our high safety, environmental and other operating standards. In 2016, we are implementing an internal dashboard to provide SWN employees easy access to current contractor performance metrics, including safety and environmental performance and adherence to training and qualification requirements. We also hold regular training sessions for SWN employees to assist with contractor selection and management.

In 2015, we significantly increased the number of contractor performance assessments we conducted (see p. 13), to ensure that contractors are adhering to our operating standards. To prioritize these assessments – and management attention – we also implemented a protocol to assess the level of safety and environmental risks associated with the work different contractors do for SWN.

Connecting with Contractors

Doing the Right Things is important for our contractors as well as our employees. We share our culture and way of operating with contractors through the Training Assurance Program, which is a requirement for all contractors who work at a SWN location. This helps ensure that they will – at a minimum – meet our operating standards. It also encourages contractors to be proactive and effective team members in continually improving our collective performance.

We hold regular contractor forums to share our expectations with contractors and listen to their ideas for how we can all improve. For example, during our 2015 forums we presented a range of challenging operational scenarios and asked contractors how they would handle them. Their feedback was used to improve our management processes and best practices. These forums also allow us to communicate with contractors about the economic situation of the industry. To reward contractors who go above and beyond requirements, and to encourage others to do so, we are doing more to publicly recognize high-performing contractors.

Contractor Management Process

Qualification

Working with a third party, we evaluate potential contractors' technical skills, capabilities, past performance, insurance and health and safety records.

Performance Assessment

We assess contractor performance continually while they are on the job and perform a post-job assessment if an HSE incident occurs, or if there are repeated observations or warnings by SWN personnel on job sites.

Project Preparation

During project planning, we work with contractors to assess their scope of work and any possible hazards associated with the project. Contractors must provide details of their plans to mitigate hazards before beginning work.

We engage our contractors directly to communicate expectations and solicit feedback.

Job Oversight

On SWN job sites, contractors hold daily safety briefings. SWN employees and authorized contractors monitor job activity, verify compliance with HSE requirements, document noncompliance and corrective action and conduct inspections to avoid recurrence of any incidents.

Pre-Job Activities

Before starting work on a SWN job site, all contractors must complete our Training Assurance Program and sign an HSE/TAP training acknowledgment form.

swn
Southwestern Energy®

10000 Energy Drive
Spring, TX 77389
832.796.1000

community@swn.com

Content: BuzzWord, Inc.
Design and production: Flag