

CORPORATE RESPONSIBILITY REPORT APPENDIX 2017-18



OUR MAJOR OPERATING COMPANIES, SUBSIDIARIES AND OPERATING UNITS

Exploration and Production (E&P) Operations and Services

- SWN Production (Arkansas), LLC, also known as SEECO, conducts exploration, drilling and production, exclusively in Arkansas
- SWN Production Company, LLC, also known as SEPCO, conducts exploration, drilling and production in Pennsylvania, Arkansas, Louisiana and elsewhere
- SWN E&P Services, LLC, provides oilfield products and services
- SWN Drilling Company, LLC, operates drilling rigs

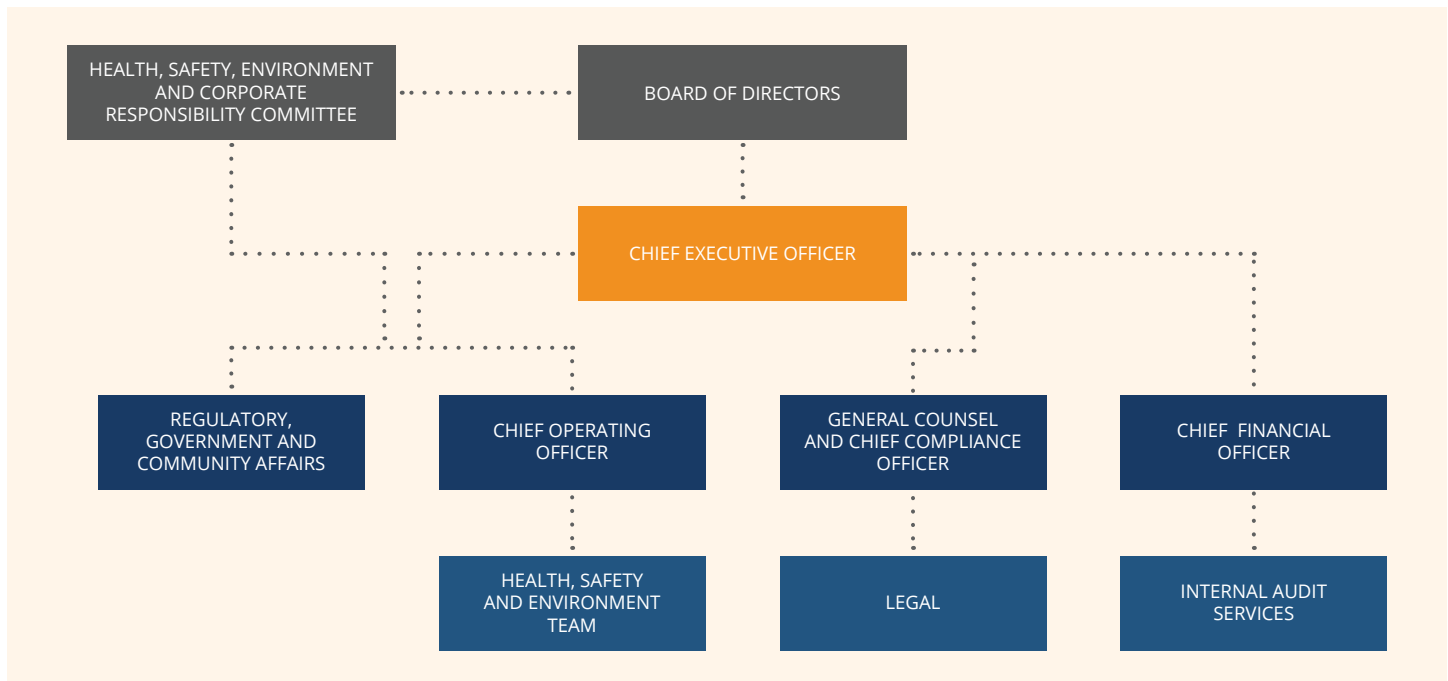
Midstream Services

SWN Midstream Services Company, LLC, oversees the gathering, marketing and transport of natural gas, through the following subsidiaries:

- DeSoto Gathering Company, LLC, engages in natural gas gathering activities in Arkansas for SWN and other natural gas producers
- Angelina Gathering Company, LLC, engages in natural gas gathering activities in Arkansas, Pennsylvania and Louisiana, primarily for SWN but also for other producers
- SWN Energy Services Company, LLC, markets and transports natural gas, crude oil and natural gas liquids, primarily for SWN but also for other producers

CORPORATE RESPONSIBILITY OVERSIGHT

The following graphic illustrates corporate responsibility oversight at SWN, including how authority is delegated from the Board to senior executives. Note that the Health, Safety, Environment and Corporate Responsibility Committee has three independent members.



HEALTH, SAFETY AND ENVIRONMENT OVERSIGHT

Within SWN's Health, Safety and Environment (HSE) department are the HSE Training team, Corporate HSE Compliance team and Corporate HSE Management team, as well as HSE teams that support each of our operating divisions. HSE operations staff members are embedded in all key business units and provide guidance and support on day-to-day HSE activities and programs. Our corporate HSE steering committee – which includes management representation from all business units and relevant corporate functions – guides policy and procedures for compliance and continuous improvement. In addition, each operating division or business unit has its own HSE committee, which reports to the steering committee, implements programs and monitors HSE performance and activities within its division. Business unit HSE committees include local management, HSE professionals and field operators. All of our HSE requirements apply to our employees and are minimum requirements for our third-party contractors.

GLOBAL REPORTING INITIATIVE INDEX

Southwestern Energy's 2017-18 corporate responsibility report was developed in accordance with the Global Reporting Initiative (GRI) Sustainability Reporting Standards at the Core level. We also used non-GRI indicators – specifically, those from the [IPIECA oil and gas industry guidance](#) on voluntary sustainability reporting, from [Disclosing the Facts \(DTE\)](#), which was developed by the Investor Environmental Health Network, As You Sow and Boston Common Asset Management, and from the [Sustainability Accounting Standards Board \(SASB\) Oil and Gas Exploration and Production Sustainability Accounting Standard](#) – when they were more relevant to the aspect reported than the GRI indicator or when they added additional transparency relevant for our industry. Fully reported indicators are noted in dark blue and partially reported indicators are in light blue. The financial data drawn from our Form 10-K have been externally assured; while other data haven't been externally assured, they have been subject to internal quality assurance procedures.

GENERAL DISCLOSURES	
INDICATOR	PAGE/RESPONSE/OMISSION
Organizational Profile	
102-1	Who We Are
102-2	Operations Overview See also the note for Indigenous Rights 103-2.
102-3	Spring, Texas
102-4	Areas of Operation 2017 10-K, pp. 5-13
102-5	Southwestern Energy is a publicly held company. Our common stock is traded on the New York Stock Exchange under the symbol "SWN."
102-6	Operations Overview
102-7	Areas of Operation 2017 10-K, pp. 5-13, 24, 46-47
SASB EM-EP-000.A	Areas of Operation 2017 10-K, pp. 10-13, 39-40
SASB EM-EP-000.C	2017 10-K, pp. 10-13, 39-40
102-8	Workforce/Diversity Data/Workforce See the Workforce section for an overview of our approach to working with contractors. SWN does not employ a significant number of seasonal workers.
102-9	As SWN is a vertically integrated company supplying a basic commodity product, we do not have a long supply chain. We do purchase equipment (e.g., steel casing pipe, valves, vehicles) from a variety of manufacturers, and we use contractors for some aspects of our work. We utilize approximately 1,400 outside suppliers. Of these, 66% are contractors/service suppliers, 20% supply materials, 7% are consultants and 15% provide transportation. An estimated 99% of our suppliers are U.S.-based and 1% are based elsewhere. The estimated annual value of payments made to suppliers in 2017 was approximately \$855 million.
102-10	2017 10-K, p. 10-13
102-11	Approach/Strategy and Governance We do not apply this principle formally across all of our risk management decisions, but it does inform our thinking.

GENERAL DISCLOSURES	
INDICATOR	PAGE/RESPONSE/OMISSION
102-12	Environment/Air Appalachian Shale Recommended Practices Group
102-13	Main national and international organizations SWN is a member of or supports: <ul style="list-style-type: none"> • American Exploration & Production Council • International Gas Union • American Petroleum Institute • Gas Processors Association • International Association of Directional Drilling • International Facility Management Association • Leadership in Energy and Environmental Design • National Petroleum Council • Society of Petroleum Engineers • The Nature Conservancy
Strategy	
102-14	Approach/Message from the CEO
102-15	Approach/Message from the CEO Approach/Strategy and Governance Approach/Key Issues
Ethics and Integrity	
102-16	Responsibility home page Approach/Message from the CEO Approach/Strategy and Governance Business Conduct Guidelines We have a code of ethics that applies specifically to our CEO, Chief Financial Officer and Chief Accounting Officer. Also, our approach to corporate responsibility includes responsible development of America's abundant supply of natural gas as an essential part of achieving a secure, low-carbon energy future for our country. For Southwestern, the proper development of this resource means balancing the economic, environmental and social impacts of our activities.
102-17	Business Conduct Guidelines Also, we have developed a detailed, confidential complaint procedure to facilitate the reporting of concerns or complaints by our employees and other interested parties regarding the company's accounting practices.
SASB EM-EP-510a.2	Anti-Corruption Compliance Policy

GENERAL DISCLOSURES	
INDICATOR	PAGE/RESPONSE/OMISSION
Governance	
102-18	Approach/Strategy and Governance This 2017-18 Corporate Responsibility Report Appendix (hereinafter "Appendix"), p. 1 2018 Proxy Statement, p. 24
102-19	Approach/Strategy and Governance Appendix, p. 1
102-20	Approach/Strategy and Governance
102-21	Approach/Strategy and Governance
102-22	2018 Proxy Statement, pp. 14-24 Board of Directors Also note, as of year-end 2017, eight of ten of our Board members have had long careers with companies in oil and gas exploration and production, where they encountered and addressed the wide range of environmental, health, safety and social issues applicable to that industry.
102-23	2018 Proxy Statement, p. 16 The Chairman of the Board is not an executive officer.
102-24	2018 Proxy Statement, pp. 14, 25-26 Corporate Governance Guidelines, pp. 5-8
102-25	2018 Proxy Statement, p. 26-27 Our Board members are subject to our business conduct guidelines, which cover conflicts of interest and also limit membership on other boards. Board members are also subject to the independence requirements of the New York Stock Exchange, including the strengthened requirements relating to Audit, Compensation, Governance, and Nominating committees.
102-26	Approach/Strategy and Governance 2018 Proxy Statement, p. 21 Corporate Governance Guidelines, pp. 1-2
102-29	2018 Proxy Statement, p. 23
102-30	2017 Proxy Statement, p. 23 To manage risks related to economic, social, environmental and other topics, we have an enterprise risk management committee made up of senior managers from throughout the company. The committee regularly assesses and discusses the risks facing the company and presents its findings to the Audit Committee at least once a year. Based on the committee's analysis and recommendations, the Board sets the direction of the company to manage these risks.
102-31	2018 Proxy Statement, p. 23 See note for 102-30
102-32	Approach/Strategy and Governance

GENERAL DISCLOSURES	
INDICATOR	PAGE/RESPONSE/OMISSION
102-33	Approach/Strategy and Governance 2018 Proxy Statement, p. 24 Contact the Board Also, as part of our internal control procedures, our Audit Services department conducts regular internal audits. These audits address a range of compliance issues, including compliance with our business conduct guidelines and code of ethics. Concerns raised by these audits are forwarded to our Chief Compliance Officer and the Audit Committee for disposition.
102-35	2018 Proxy Statement, pp. 29-50
102-36	2018 Proxy Statement, pp. 29-50
Stakeholder Engagement	
102-40	Approach/Stakeholders
102-41	None of our employees are covered by collective bargaining agreements.
102-42	Approach/Stakeholders Communities/Engagement
102-43	Approach/Stakeholders 2018 Proxy Statement, pp. 24-26, 36-37
102-44	Approach/Key Issues Environment/Water Environment/Air Communities/Addressing Concerns 2018 Proxy Statement, p. 37
Reporting Practice	
102-45	Appendix, p. 1 There are no entities in the consolidated financial statement that are not covered in this report.
102-46	Approach/Key Issues
102-47	Approach/Key Issues Appendix, p. 11
102-48	All material restatements of CR performance are provided in notes to the data in the Data section.
102-49	There have been no significant changes in the report scope or aspect boundaries since our last report.
102-50	Responsibility home page
102-51	2016
102-52	Annually
102-53	Southwestern Energy 10000 Energy Drive Spring, TX 77389 832.796.1000 community@swn.com
102-54	This report has been prepared in accordance with the GRI Standards: Core option
102-55	This index
102-56	Appendix, p. 2

TOPIC-SPECIFIC DISCLOSURES	
INDICATOR	PAGE/RESPONSE/OMISSION
GRI 201: Economic Performance (2016)	
103-1	Approach/Key Issues Appendix, p. 11
103-2	Approach/Strategy and Governance Communities/Addressing Concerns 2017 10-K, pp. 48-60
103-3 ¹	Approach/Strategy and Governance
201-1	Data 2017 10-K, pp. 48-60
201-2	Approach/Strategy and Governance Approach/Key Issues Environment/Air Environment/Climate Change and Scenario Analysis 2017 10-K, pp. 21, 22, 33 See mission statement in note for 102-16.
201-3	2017 10-K, pp. 98-102
IPIECA SE6	Communities/Economic Impacts
GRI 203: Indirect Economic Impacts (2016)	
103-1	Approach/Key Issues Appendix, p. 11
103-2	Approach/Strategy and Governance Communities/Economic Impacts Communities/Giving and Volunteering Communities/Addressing Concerns Appendix, p. 1
103-3 ¹	Approach/Strategy and Governance
203-1	Communities/Economic Impacts Communities/Giving and Volunteering
203-2	Communities/Economic Impacts
GRI 204: Procurement Practices (2016)	
103-2	Approach/Strategy and Governance Communities/Economic Impacts Communities/Addressing Concerns Appendix, p. 1 SWN makes every effort to work with local suppliers at significant locations of operations. However, we do not record a percentage at this time.
103-3 ¹	Approach/Strategy and Governance
204-1	See note for Procurement Practices 103-2.
OG1	Data 2017 10-K, pp. 5-9
GRI 205: Anti-Corruption (2016)	
103-2	Approach/Strategy and Governance Business Conduct Guidelines
103-3 ¹	Approach/Strategy and Governance Business Conduct Guidelines

TOPIC-SPECIFIC DISCLOSURES	
INDICATOR	PAGE/RESPONSE/OMISSION
GRI 301: Materials (2016)	
103-2	Approach/Strategy and Governance Environment/Water/Protection Communities/Addressing Concerns Appendix, p. 1
103-3 ¹	Approach/Strategy and Governance
301-1	Environment/Water/Protection The part of this indicator that is relevant to SWN relates to the use of chemicals in our hydraulic fracturing fluids. SWN discloses that information to the FracFocus database .
DTF-21 Fracturing fluid toxicity reduction	Environment/Water/Protection SWN has implemented an internally developed program, called Right Products , that provides standards that chemical suppliers must meet prior to a product's use in our operations. The Right Products program is designed to drive the assessment of all chemical products SWN uses in hydraulic fracturing through an effective decision-making process aimed at minimizing the toxicity of fracture fluids. Since inception in 2014 through 2017, our Right Products program has processed 275 products across four corporate divisions and 20 service providers. Of the 275 products evaluated, 177 have been approved after the hazard assessment, 47 have been approved after further evaluation and risk assessment, and 51 have been denied for use in SWN operations. The Right Products program demonstrates our commitment to do the right thing in order to responsibly develop our resources. The program and work flow are described in more detail in a paper – Choosing the “Right Products” SPE-189891-MS – that we presented at a conference of the Society for Petroleum Engineers.
DTF-22 Use of dry hydraulic fracturing chemicals	Through our Right Products program we assess possible hazardous characteristics of chemicals – dry and liquid – that may be identified for use in our operations prior to using them in hydraulic fracturing. Our selection of chemical products, whether liquid or dry media, is based on this hazard assessment and our goal to minimize the toxicity of the products approved for use.
DTF-23 Use of BTEX	Environment/Water/Protection

¹ We review management of economic, social and environmental issues as part of our regular business performance review processes and make changes as needed based on these evaluations.

TOPIC-SPECIFIC DISCLOSURES

INDICATOR	PAGE/RESPONSE/OMISSION
DTF-24 Confidential business information (CBI) re: supplier fracturing fluid	Environment/Water/Protection
DTF-25 Measures to reduce CBI claims for fracturing fluid	Environment/Water/Protection Collaborating with our chemical suppliers is key to the success of SWN's Right Products program . The program quantifies the risk of both public and proprietary chemical formulations by using an independent, third-party Ph.D. toxicologist to conduct the assessments. The integrity of the intellectual property is therefore maintained and assured by confidentiality agreements between the consulting toxicologist and the chemical suppliers. Implementing this system of collaboration, disclosure and compliance enables SWN to effectively communicate our chemical product expectations and assessment methodology to our service providers. This approach also ensures we can hold our service providers accountable to only use the products and product formulations that have been assessed and deemed acceptable by SWN.

GRI 302: Energy (2016)

103-2	Environment/Air Communities/Addressing Concerns Appendix, p. 1
103-3 ¹	Approach/Strategy and Governance Environment/Air
302-4	The Environment/Air page of the report reflects our focus as a company on reducing greenhouse gas (GHG) emissions throughout our operations. Many of these efforts have also had the positive effect of reducing energy use – for example, employing a fleet of fuel-efficient, lean-burn compressor engines and utilizing dual-fuel drilling rigs. We have also reduced energy use in our administrative operations by moving to a LEED-certified headquarters building in Spring, Texas, and by operating out of a LEED-certified building in Conway, Arkansas.

GRI 303: Water (2016)

103-1	Approach/Key Issues Appendix, p. 11
103-2	Approach/Strategy and Governance Environment/Water Communities/Addressing Concerns Appendix, p. 1
103-3 ¹	Approach/Strategy and Governance Environment/Water Health and Safety/HSE Management

TOPIC-SPECIFIC DISCLOSURES

INDICATOR	PAGE/RESPONSE/OMISSION
303-1	Environment/Water/Reduction Data/Environment
303-2	No water source is significantly affected by SWN's water withdrawals. We follow state-imposed guidelines for stopping withdrawal from surface water sources during low-flow periods to minimize impacts. We also obtain permits and follow regulatory requirements for water sources to ensure we are considering local needs and impacts.
303-3	Environment/Water/Reduction Data/Environment
SASB EM-EP-140a.1	Environment/Water Data/Environment Appendix, pp. 13-16 None of SWN's primary operating areas are located in areas of high or extremely high baseline water stress, as defined by the World Resources Institute's Aqueduct water risk mapping tool .
SASB M-EP-140a.2	Environment/Water/Reduction Data/Environment Appendix, pp. 13-15 There are no hydrocarbons in the water SWN discharges.
SASB M-EP-140a.3	Environment/Water/Protection
SASB EM-EP-140a.4	Environment/Water/Protection Appendix, p. 12 SWN performs baseline (pre-drill) water quality testing before beginning drilling operations in Pennsylvania, West Virginia, Colorado and the Brown Dense play. Pre-drill water quality sampling is conducted in Arkansas if requested by a landowner. Post-drill sampling is conducted in Colorado at intervals specified by state regulations. We perform post-drill testing in all areas in response to water well complaints, if requested by landowners, or in cases where it is written into a lease agreement.
DTF-2 Well integrity failures releasing to environment	Environment/Water/Protection Environment/Land/Preventing Spills Appendix, p. 12 In 2017 and 2018, SWN has drilled and completed over 250 wells. Only one well had a wellbore integrity issue and that did not have a proven release to the environment.
DTF-4 Avoiding impacts to nearby wells	Environment/Water/Protection

TOPIC-SPECIFIC DISCLOSURES

INDICATOR	PAGE/RESPONSE/OMISSION
DTF-6 Pre-drilling water quality testing	See note for SASB EM-EP-140a.4 above.
DTF-7 Post-drilling water quality testing	See note for SASB EM-EP-140a.4 above.
DTF-8 Operations in water scarce areas	See note for SASB EM-EP-140a.1 above.
DTF-9 Aggregate quantity of water used for operations	Appendix, pp. 13-16
DTF-10 Use of fresh-water vs. non-freshwater	Appendix, p. 13
DTF-11 Water sourced by play	Appendix, pp. 13-16
DTF-12 Produced and/or flowback water recycling	Appendix, pp. 14-16 We recycle produced water in each of our operating areas to the extent it is technically practical to do so.
DTF 13 Reducing use of freshwater	Environment/Water
DTF-14 Volume of wastewater	Environment/Water/Reduction Appendix, p. 14-16
GRI 304: Biodiversity (2016)	
103-2	Approach/Strategy and Governance Environment/Land/Protecting Biodiversity Communities/Addressing Concerns Appendix, p. 1
103-3 ¹	Approach/Strategy and Governance
304-2	Environment/Water
304-3	Environment/Water Environment/Land
304-4	Environment/Land
SASB EM-EP-160a.1	Environment/Land

TOPIC-SPECIFIC DISCLOSURES

INDICATOR	PAGE/RESPONSE/OMISSION
GRI 305: Emissions (2016)	
103-1	Approach/Key Issues Environment/Air Appendix, p. 11
103-2	Environment/Air Communities/Addressing Concerns Health and Safety/HSE Management Appendix, p. 1
103-3 ¹	Approach/Strategy and Governance Health and Safety/HSE Management
305-1	Environment/Air Data/Environment
SASB EM-EP-110a.1	Environment/Air Data/Environment
305-4	Environment/Air Data/Environment
305-5	Environment/Air Data/Environment
SASB EM-EP-110a.3	Environment/Air Data/Environment
GRI 306: Effluents and Waste (2016)	
103-1	Approach/Key Issues Environment/Water Environment/Land Appendix, p. 11
103-2	Environment/Water Environment/Land Communities/Addressing Concerns Health and Safety/HSE Management Appendix p. 1
103-3 ¹	Approach/Strategy and Governance Environment/Water Health and Safety/HSE Management
306-1	Environment/Water
306-3	Data/Environment
OG5	Environment/Water Appendix, pp. 13-16
SASB EM-EP-540a.1	Data/Environment

TOPIC-SPECIFIC DISCLOSURES

INDICATOR	PAGE/RESPONSE/OMISSION
DTF-1 Maintaining well integrity	<u>Environment/Water/Protection</u> Regulatory requirements vary in the multiple basins in which we operate. Regardless of local requirements, SWN follows industry best management practices for wellbore integrity throughout the full life of the well. As a result, we meet regulatory requirements at a minimum and go beyond those requirements in some areas. During the initial drilling and completion of our wells, we use cement bond logs whenever required by state regulations. In addition, we use cement bond logging tools to evaluate wellbore construction integrity whenever shortcomings in the cementing process of casings is considered possible. When using cement bond logs, we rerun the testing/logging process with pressure on the casing to test for good bonding. In addition, SWN places pressure gauges on all wellbore annuli for the life of the well and monitors these gauges remotely and through daily human interface to ensure wellbore integrity at all times. This allows any wellbore integrity issues to be detected early in the life of an issue.
DTF-15 Wastewater storage	<u>Environment/Water/Reduction</u> SWN uses a range of options to store produced water, including frac tanks, aboveground storage tanks, and impoundments. We consider multiple factors to determine the appropriate storage method – most importantly, the safety for personnel and the environment. Other key considerations include regulations and permitting, topography, soil and subgrade suitability, surface footprint, the quality and quantity of the produced water to be stored, secondary containment, monitoring and/or leak detection, operational support services (i.e., trucking, pipeline, etc.), proximity to disposal, economics (capital and operating expenses) and closure requirements. We also consider if the storage is to be temporary or a fixed, centralized facility.
DTF-16 Wastewater storage protection measures	<u>Environment/Water/Reduction</u> <u>Environment/Land/Preventing Spills</u>
DTF-17 Drilling residuals	<u>Environment/Land/Solid Waste</u>
DTF-18 Naturally occurring radioactive materials	<u>Environment/Land/Solid Waste</u> <u>Health and Safety/Industrial Hygiene</u>

TOPIC-SPECIFIC DISCLOSURES

INDICATOR	PAGE/RESPONSE/OMISSION
DTF-19 Managing inactive wells	Inactive wells are managed to comply with local regulatory requirements, at a minimum. This includes periodic surveillance and integrity management testing. Wells that no longer have a future use are plugged and abandoned per local regulatory guidelines.
DTF-20 Waste product reuse	<u>Environment/Water/Reduction</u> Produced water is either properly reused in operations or appropriately disposed of following best management practices for disposal and regulatory requirements.
GRI 307: Environmental Compliance (2016)	
103-1	<u>Approach/Key Issues</u> <u>Appendix, p. 11</u>
103-2	<u>Approach/Strategy and Governance</u> <u>Communities/Addressing Concerns</u> <u>Health and Safety/HSE Management</u> <u>Appendix, p. 1</u>
103-3 ¹	<u>Approach/Strategy and Governance</u> <u>Health and Safety/HSE Management</u>
307-1	In 2017 we had no significant fines and no significant nonmonetary sanctions for noncompliance with environmental laws and regulations.
GRI 308: Supplier Environmental Assessment (2016)	
103-2	<u>Workforce/Contractors</u> <u>Communities/Addressing Concerns</u> <u>Appendix, p. 1</u>
103-3 ¹	<u>Approach/Strategy and Governance</u> <u>Health and Safety/HSE Programs and Training</u> <u>Workforce/Contractors</u>
308-1	<u>Health and Safety/HSE Programs and Training</u> <u>Workforce/Contractors</u> We review contractor HSE management programs and performance, including on environmental issues, as part of a robust HSE audit program.
GRI 401: Employment (2016)	
103-1	<u>Approach/Key Issues</u> <u>Workforce/Talent Acquisition and Development</u> <u>Health and Safety/Health and Well-Being</u> <u>Appendix, p. 11</u>
103-2	<u>Approach/Strategy and Governance</u> <u>Workforce/Talent Acquisition and Development</u> <u>Health and Safety/Health and Well-Being</u> <u>Appendix, p. 1</u>
103-3 ¹	<u>Approach/Strategy and Governance</u> <u>Workforce/Talent Acquisition and Development</u>

TOPIC-SPECIFIC DISCLOSURES

INDICATOR	PAGE/RESPONSE/OMISSION
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401-2	Health and Safety/Health and Well-Being We offer competitive pay and benefits. In addition to a base salary, our compensation program includes variable pay, stock-based awards, a 401(k) and pension plans. Beyond financial compensation, SWN provides challenging work assignments, potential for advancement, training specific to each role and a competitive benefits package. Our benefit offerings include high-quality health and dental insurance plans; leaves of absence, including family and medical leave, personal leave, military leave, workers' compensation and short-term and long-term disability benefits; life and accidental death and dismemberment insurance; long-term care insurance; employee assistance programs; and optional supplemental insurance. We also offer a high-deductible insurance option and personal health savings accounts, which the company will help to fund. We also have implemented on-site health screenings and other health and wellness education and encouragement programs. All employees who work 20 hours or more are eligible for benefits. For more on our benefits programs see our website .
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IPIECA SE16	Workforce/Talent Acquisition and Development
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GRI 403: Occupational Health and Safety (2016)

103-1	Approach/Key Issues Health and Safety Appendix, p. 11
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103-2	Approach/Strategy and Governance Health and Safety Health and Safety/HSE Management Appendix, p. 1
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103-3 ¹	Approach/Strategy and Governance Health and Safety/HSE Management
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403-1	Health and Safety/HSE Programs and Training
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403-2	Health and Safety/Metrics and Performance Data/Health and Safety We report industry-standard data related to health and safety to the American Exploration and Product Council on an annual basis.
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SASB EM-EP-320a.1	Health and Safety Health and Safety/Metrics and Performance Data/Health and Safety
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SASB EM-EP-320a.2	Health and Safety Workforce/Contractors
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TOPIC-SPECIFIC DISCLOSURES

INDICATOR	PAGE/RESPONSE/OMISSION
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DTF-3 Tracking near misses	Health and Safety/Metrics and Performance SWN has evolved its data system for tracking and acting on near hits for leaks, spills and accidents to improve the safety practices of the company. As part of our incident management system, SWN reports on near hits on a daily basis. On a weekly basis, these near hits are analyzed for trends and corrective actions. Also, certain critical or "high potential" near hits are designated for senior management discussion. At this level, formal investigations are completed on the high-potential near hits, including root cause analysis, corrective actions and communication across the company in the form of alert memos to minimize recurrence.
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IPIECA HS1	Health and Safety/HSE Programs and Training Health and Safety/Spotlight: Our ONE Team Culture Workforce/Contractors
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IPIECA HS2	Health and Safety/HSE Programs and Training
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GRI 404: Training and Education (2016)

103-1	Approach/Key Issues Health and Safety/HSE Programs and Training Workforce/Talent Acquisition and Development Appendix, p. 11
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103-2	Approach/Strategy and Governance Health and Safety/HSE Programs and Training Workforce/Talent Acquisition and Development Appendix, p. 1
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103-3 ¹	Approach/Strategy and Governance
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404-1	Health and Safety
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404-2	Health and Safety/HSE Programs and Training Workforce/Talent Acquisition and Development
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404-3	Workforce/Talent Acquisition and Development
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GRI 405: Diversity and Equal Opportunity (2016)

103-2	Approach/Strategy and Governance Workforce/Diversity Careers/Equal Opportunity Appendix, p. 1
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103-3 ¹	Approach/Strategy and Governance Careers/Equal Opportunity
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TOPIC-SPECIFIC DISCLOSURES

INDICATOR	PAGE/RESPONSE/OMISSION
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405-1	<u>Workforce/Diversity Data/Workforce</u> Of our 10 Board of Directors members, one is female and all are over 50 years of age. We do not track ethnic background.
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405-2	<u>Workforce/Diversity</u>
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GRI 406: Non-Discrimination (2016)

103-2	<u>Approach/Strategy and Governance Workforce/Diversity Careers/Equal Opportunity Appendix, p. 1</u>
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103-3 ¹	<u>Approach/Strategy and Governance Careers/Equal Opportunity</u>
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GRI 411: Rights of Indigenous Peoples (2016)

103-2	<u>Communities/Engagement Communities/Addressing Concerns</u> In 2010, SWN was awarded licenses to explore in the Canadian province of New Brunswick. After receiving those licenses, the province implemented an on-going moratorium on hydraulic fracturing. Any future work in New Brunswick will include a hiring policy that supports strong representation of First Nations within our workforce and due diligence that focuses on First Nations' concerns.
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103-3 ¹	<u>Approach/Strategy and Governance</u>
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SASB EM-EP-210a.3	<u>Communities/Engagement Communities/Addressing Concerns</u> See also note for Indigenous Rights 103-2.
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TOPIC-SPECIFIC DISCLOSURES

INDICATOR	PAGE/RESPONSE/OMISSION
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GRI 413: Local Communities (2016)

103-1	<u>Approach/Key Issues Communities Appendix, p. 11</u>
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103-2	<u>Approach/Strategy and Governance Approach/Stakeholders Communities Appendix, p. 1</u>
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103-3 ¹	<u>Approach/Strategy and Governance Communities</u>
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413-1	<u>Approach/Stakeholders Communities Environment/Water Environment/Land Health and Safety/HSE Programs and Training</u>
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413-2	<u>Communities/Addressing Concerns</u>
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SASB EM-EP-210b.1	<u>Communities</u>
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IPIECA SE1	<u>Communities</u>
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DTF-5 Avoiding seismic activity	<u>Environment/Water Reduction Health and Safety/HSE Training and Programs/Assurance and Assessments</u>
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IPIECA SE4	<u>Communities/Economic Impacts Communities/Giving and Volunteering</u>
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GRI 414: Supplier Social Assessment (2016)

103-2	<u>Approach/Strategy and Governance Workforce/Contractors Health and Safety/HSE Management Health and Safety/HSE Programs and Training Appendix, p. 1</u>
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103-3 ¹	<u>Approach/Strategy and Governance Workforce/Contractors Health and Safety/Spotlight: Our ONE Team Culture</u>
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GRI 415: Public Policy (2016)

103-2	<u>Approach/Strategy and Governance</u>
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103-3 ¹	<u>Approach/Strategy and Governance SWN's Political Activities</u>
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415-1	<u>SWN's Political Activities</u>
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IPIECA SE14	<u>Approach/Strategy and Governance</u>
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ADDITIONAL MATERIAL TOPICS AND DISCLOSURES

INDICATOR	PAGE/RESPONSE/OMISSION
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Setting Appropriate Targets and Metrics

103-1	Approach/Key Issues Health and Safety/Metrics and Performance Environment/Air Appendix, p. 11
103-2	Approach/Strategy and Governance Health and Safety/Metrics and Performance Environment/Air Appendix, p. 1
103-3 ¹	Approach/Strategy and Governance

Managing Contractors

103-1	Approach/Key Issues Workforce/Contractors Health and Safety/Spotlight: Our ONE Team Culture Appendix, p. 11
103-2	Approach/Strategy and Governance Workforce/Contractors Health and Safety/HSE Management Health and Safety/HSE Programs and Training Health and Safety/Spotlight: Our ONE Team Culture Appendix, p. 1
103-3 ¹	Approach/Strategy and Governance Health and Safety/HSE Management

Social License to Operate

103-1	Approach/Key Issues Communities Environment Appendix, p. 11
103-2	Approach/Strategy and Governance Communities Environment Appendix, p. 1
103-3 ¹	Approach/Strategy and Governance Health and Safety/HSE Management

REPORT BOUNDARIES

The following table lists SWN's most material issues and their boundaries. As part of our analysis of [material issues](#), we analyzed the value chain of SWN's operations to ensure we considered impacts and stakeholders at each value chain stage. This value chain analysis was used to determine whether the impacts occurred primarily internally or externally to the organization and which stakeholders were most associated with each issue, which we then used as the basis for defining the boundaries of each material issue.

SWN MATERIAL ISSUE	GRI STANDARD	MATERIAL WITHIN THE ORGANIZATION ²	MATERIAL OUTSIDE THE ORGANIZATION ³
Economic Performance			
Company financial health	GRI 201 - Economic performance	Exploration, development, gathering and processing	Local operations and stakeholders
Shareholder return	GRI 201 - Economic performance	Exploration, development, gathering and processing	Investors
Gas price volatility	GRI 201 - Economic performance	Exploration, development, gathering and processing	Investors, local operations and stakeholders, use phase
Governance			
Setting appropriate metrics and incentives	None	Exploration, development, gathering and processing	Contractors
Risk management	GRI 103 - Management approach	Exploration, development, gathering and processing	Investors, local operations and stakeholders
Health and Safety			
Safe working conditions and training	GRI 403 - Occupational health and safety	Exploration, development, gathering and processing	Contractors
Environment			
Environmental management, policies, targets and metrics	GRI 103 - Environment-related management approaches	Exploration, development, gathering and processing	Contractors
Environmental monitoring	GRI 303 - Water GRI 305 - Emissions	Exploration, development, gathering and processing	Local communities
GHG emissions and methane	GRI 305 - Emissions	Exploration, development, gathering and processing	Use phase
Impacts of transporting materials	GRI 305 - Emissions GRI 306 - Effluents and Waste	Exploration and development	Local operations and stakeholders
Regulation/compliance	GRI 307 - Environmental compliance	Exploration, development, gathering and processing	Local operations and stakeholders
Water quality, sourcing and wastewater management	GRI 303 - Water GRI 306 - Effluents and waste	Exploration, development, gathering and processing	Local operations and stakeholders
Well construction integrity	GRI 303 - Water GRI 306 - Effluents and waste GRI 413 - Local communities	Exploration and development	Local operations and stakeholders
Communities			
Community health and safety	GRI 413 - Local communities	Exploration, development, gathering and processing	Local communities
Economic impact in local communities	GRI 413 - Local communities	Exploration, development, gathering and processing	Local operations and stakeholders
Impacts on community infrastructure	GRI 413 - Local communities	Exploration, development, gathering and processing	Local communities
Proactive community engagement	GRI 413 - Local communities	Exploration, development, gathering and processing	Local communities
Social license to operate	None	Exploration, development, gathering and processing	Local operations and stakeholders
Workforce			
Employee training, development and career transitions	GRI 404 - Training and education	Exploration, development, gathering and processing	Contractors
Talent attraction and retention	GRI 401 - Employment	Exploration, development, gathering and processing	None
Managing contractors	None	Exploration, development, gathering and processing	Contractors

² Defined by [value chain stage](#).

³ Defined by [value chain stage](#) and/or stakeholders directly affected. "Local operations and stakeholders" includes local communities, contractors and landowners/holders of mineral rights.

ADDITIONAL DATA⁴

Water Well Impairment Claims, 2005–2017

All Operating Regions	Number (up through 2017) ⁵	% of Total
Bacterial	85	40
No Problem	57	27
Drought	25	12
Mechanical	13	6
Stray Gas	7	4
Miscellaneous	22	11

Southwest Appalachia	Number (up through 2017) ⁵	% of Total
Bacterial	4	67
No Problem	1	17
Drought	1	17
Mechanical	0	0
Stray Gas	0	0
Miscellaneous	0	0

Northeast Appalachia	Number (up through 2017) ⁵	% of Total
Bacterial	14	42
No Problem	13	41
Drought	0	0
Mechanical	1	2
Stray Gas	1	3
Miscellaneous	4	13

Fayetteville Shale	Number (up through 2017) ⁵	% of Total
Bacterial	68	40
No Problem	43	25
Drought	24	14
Mechanical	12	7
Stray Gas	6	4
Miscellaneous	17	10

Sandwash	Number (up through 2017) ⁵	% of Total
Bacterial	0	0
No Problem	0	0
Drought	0	0
Mechanical	0	0
Stray Gas	0	0
Miscellaneous	1	100

Number of Unconventional Wells Drilled

	2014	2015	2016	2017
Fayetteville Shale	450	254	31	23
Southwest Appalachia	NA	38	17	50
Northeast Appalachia	90	93	35	78
Production-Only Plays	1	1	0	1
All Regions	541	386	83	152

⁴ Much of the data in this section is broken down according to our major operating divisions. Our Fayetteville Shale division includes operations in Arkansas; Northeast Appalachia includes operations in northeast Pennsylvania; and Southwest Appalachia includes operations in West Virginia and southwest Pennsylvania. Our production-only plays include the Sandwash Basin in Colorado, the Brown Dense in southern Arkansas and Northern Louisiana, and ArkLaTex in parts of Arkansas, Louisiana and Texas. The water use, water recycling and water disposal data in this section cover our drilling, completions, production and midstream services. The 2014 data include water used at 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.

⁵ The number of claims may not always be a round number because more than one cause may be assigned to a case (for instance, where a problem was found to be caused by both drought and a mechanical problem).

Freshwater Withdrawal by Source (in barrels)

All Regions ⁶	2014	2015	2016	2017
Surface Water (for hydraulic fracturing)	40,854,982	29,380,312	11,394,634	29,705,112
Surface Water (for nonfracturing completion operations)	423,580	301,180	64,740	113,500
Surface Water, Total	41,278,562	29,681,492	11,459,374	29,818,612
Groundwater	0	119,709	52,928	154,158
Water Utilities	1,942,447	550,762	118,275	207,750
Total Freshwater Withdrawals	43,221,009	30,351,963	11,630,577	30,180,520
Fayetteville Shale	2014	2015	2016	2017
Surface Water (for hydraulic fracturing)	26,935,054	10,163,625	1,359,930	985,916
Surface Water (for nonfracturing completion operations)	351,000	198,120	24,180	17,250
Surface Water, Total	27,286,054	10,361,745	1,384,110	1,003,166
Groundwater	0	0	0	0
Water Utilities	1,759,896	361,950	44,175	31,050
Total Freshwater Withdrawals	29,045,950	10,723,695	1,428,285	1,034,216
Southwest Appalachia	2014	2015	2016	2017
Surface Water (for hydraulic fracturing)	NA	7,677,394	4,547,806	12,451,608
Surface Water (for nonfracturing completion operations)	NA	29,640	13,260	37,500
Surface Water, Total	NA	7,707,034	4,561,066	12,489,108
Groundwater	NA	0	0	0
Water Utilities	NA	54,150	24,225	67,500
Total Freshwater Withdrawals	NA	7,761,184	4,585,291	12,556,608
Northeast Appalachia	2014	2015	2016	2017
Surface Water (for hydraulic fracturing)	13,626,900	11,281,756	5,486,898	16,248,869
Surface Water (for nonfracturing completion operations)	70,200	72,540	27,300	58,500
Surface Water, Total	13,697,100	11,354,296	5,514,198	16,307,369
Groundwater	0	119,709	52,928	152,911
Water Utilities	128,250	132,525	49,875	109,200
Total Freshwater Withdrawals	13,825,350	11,606,530	5,617,001	16,569,480
Production-Only Plays (Sandwash, Brown Dense, ArkLaTex)	2014	2015	2016	2017
Surface Water (for hydraulic fracturing)	293,028	257,537	0	18,719
Surface Water (for nonfracturing completion operations)	2,380	880	0	250
Surface Water, Total	295,408	258,417	0	18,969
Groundwater	0	0	0	1,247
Water Utilities	54,301	2,137	0	0
Total Freshwater Withdrawals	349,709	260,554	0	20,216

⁶ Includes production-only plays

Water Recycling

All Operating Regions	2014	2015	2016	2017
Total Water Sourced [Fresh + Reuse] (barrels)	69,377,437	50,683,879	17,266,338	35,015,041
Total Volume that Is Recycled or Reused Downhole (barrels) ⁷	26,436,627	20,508,600	5,635,761	4,854,737
Total Volume that Is Recycled to Other Operations (Drilling and Midstream) ⁸	69,510	83,870	0	0
Total Volume that Is Recycled to Other Operators (recycling with other companies) ⁹	0	0	708,251	843,827
Percentage of Total Water Sourced that Is Recycled Water (%)	38.20%	40.60%	36.7%	16.27%
Percentage of Flowback and Produced Water that SWN Recycled (%)	99.40%	92.40%	43.4%	39.86%
Fayetteville Shale	2014	2015	2016	2017
Total Water Sourced [Fresh + Reuse] (barrels)	54,131,167	28,243,928	4,690,823	3,514,751
Total Volume that Is Recycled or Reused Downhole (barrels) ⁷	25,015,707	17,436,363	3,262,538	2,480,535
Total Volume that Is Recycled to Other Operations (Drilling and Midstream) ⁸	69,510	83,870	0	0
Total Volume that Is Recycled to Other Operators (recycling with other companies) ⁹	0	0	0	0
Percentage of Total Water Sourced that Is Recycled Water (%)	43.34%	62.03%	69.55%	70.57%
Percentage of Flowback and Produced Water that SWN Recycled (%)	99.33%	98.26%	33.03%	26.58%
Southwest Appalachia	2014	2015	2016	2017
Total Water Sourced [Fresh + Reuse] (barrels)	NA	8,168,294	5,175,514	13,143,038
Total Volume that Is Recycled or Reused Downhole (barrels) ⁷	NA	407,110	590,223	586,430
Total Volume that Is Recycled to Other Operations (Drilling and Midstream) ⁸	NA	0	0	0
Total Volume that Is Recycled to Other Operators (recycling with other companies) ⁹	0	0	230,588	616,934
Percentage of Total Water Sourced that Is Recycled Water (%)	NA	5.0%	15.9%	9.16%
Percentage of Flowback and Produced Water that SWN Recycled (%)	NA	22.7%	33.2%	41.04%

⁷ 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. It excludes recycled flowback and produced water that is supplied to other operators for their downhole hydraulic fracturing operations.

⁸ The volumes for other operational support have been treated prior to use with drilling or midstream. The water sources may include flowback and produced water, encountered water from drilling and rainwater naturally captured in facility containments.

⁹ Volumes shared from SWN to other operating companies, which they use in their operations in place of fresh water.

Northeast Appalachia	2014	2015	2016	2017
Total Water Sourced [Fresh + Reuse] (barrels)	15,246,270	14,271,657	7,400,001	18,357,252
Total Volume that Is Recycled or Reused Downhole (barrels) ⁷	1,420,920	2,665,127	1,783,000	1,787,772
Total Volume that Is Recycled to Other Operations (Drilling and Midstream) ⁸	0	0	0	0
Total Volume that Is Recycled to Other Operators (recycling with other companies) ⁹	0	0	477,663	226,893
Percentage of Total Water Sourced that Is Recycled Water (%)	9.30%	18.70%	30.5%	10.97%
Percentage of Flowback and Produced Water that SWN Recycled (%)	100.00%	100.00%	99.8%	99.16%

Water Intensity (gallons/million BTUs (MMBTUs))

All Operations	2014	2015	2016	2017 ¹⁰
Water Use to Produce Unit Energy	1.17	1.04	0.89	0.63
Fayetteville Shale	2014	2015	2016	2017
Water Use to Produce Unit Energy	1.52	1.40	2.44	1.56
Southwest Appalachia	2014	2015	2016	2017
Water Use to Produce Unit Energy	NA	0.91	0.90	0.51
Northeast Appalachia	2014	2015	2016	2017
Water Use to Produce Unit Energy	0.65	0.73	0.63	0.69

Water Use per Well (barrels/well)

Fayetteville Shale	2014	2015	2016	2017
Downhole Fresh Water per Well	59,856	40,014	43,869	42,866
Downhole Reuse Water per Well ¹¹	55,590	68,647	105,243	107,849
Downhole Water per Well	115,446	108,661	149,112	150,715
Total Operational Water per Well	120,291	111,197	151,317	152,815
Southwest Appalachia	2014	2015	2016	2017
Downhole Fresh Water per Well	NA	202,037	267,518	249,032
Downhole Reuse Water per Well ¹¹	NA	10,713	34,719	11,729
Downhole Water per Well	NA	212,750	302,237	260,761
Total Operational Water per Well	NA	214,955	304,442	262,861
Northeast Appalachia	2014	2015	2016	2017
Downhole Fresh Water per Well	151,410	122,596	158,281	210,279
Downhole Reuse Water per Well ¹¹	15,788	28,657	50,943	22,920
Downhole Water per Well	167,198	151,254	209,224	233,199
Total Operational Water per Well	169,403	153,459	211,429	235,349

¹⁰ Water intensity values reflect estimated ultimate recovery from 2017 stimulated wells.

¹¹ Excluding recycled flowback and produced water that is supplied to other operators for their downhole hydraulic fracturing operations.

Water Use per Foot of Completed Lateral (CLAT) (barrels/foot)

	2014	2015	2016	2017
Fayetteville Shale	23.3	21.1	25.0	23.2
Southwest Appalachia	NA	32.2	40.3	36.5
Northeast Appalachia	27.6	28	34.6	37.6

Water Disposal (barrels)

	2014	2015	2016	2017
Fayetteville Shale	170,299	310,523	6,616,325	6,850,191
Southwest Appalachia	NA	1,383,101	1,653,336	1,729,041
Northeast Appalachia	0	0	3,422	17,111
Total Water Disposal for Primary Production Regions Only	170,299	1,693,624	8,273,083	8,596,343
Sandwash Basin	91,736	121,303	63,145	39,973
Brown Dense	73,356	23,153	9,143	8,023
ArkLaTex	317,196	158,598	NA	NA
Total Water Disposal All Operating Regions	652,587	1,996,678	8,345,371	8,644,339