



THE DOE RUN COMPANY

2021

Sustainability
Report



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2021 Letter from the CEO

<https://doerun.com/media/news/2021-letter-from-the-ceo/>

Dear Stakeholders:

Welcome to our annual Sustainability Report. In my 13 years at Doe Run, I have watched this Report grow into the informative body of work that it is today. A tremendous amount of effort goes into this Report so we can share information about our operations with our stakeholders and so we all see the metrics that help drive our social, economic and environmental performance. As president and CEO of Doe Run, I look forward to driving our sustainability efforts forward.

In 2021, the world continued to adapt to the ongoing challenges brought about by the pandemic, including supply chain issues and a tight employment market. At Doe Run, we are not immune to these impacts. As a lead, copper and zinc mining company and a recycler of valuable metals, we are at both the beginning and the end of the global supply chain.

The ability to readily mine, process and ship our products depends on a skilled workforce and on transportation infrastructure. We managed through absences and employee availability during the pandemic, followed CDC protocols, and modified how we delivered more than 15,000 hours of training.

The pandemic also contributed to sharp increases in global transportation costs and hindered our ability to export our products. However, we were able to minimize the extent of the impact by planning ahead and working with our customers and vendors to avoid delays. While we anticipate these areas will continue to be challenges in the future, we are constantly adapting as markets shift.

Addressing Reliance on Foreign Minerals

A key lesson of the pandemic is that the U.S. is overly dependent on foreign imports, especially the metals required to increase production of clean energy technologies, such as solar and wind energy facilities, battery storage and electric vehicles. In its **Net Zero by 2050 report**, the International Energy Agency (IEA) projects the world will need up to six times the current demand for minerals in the next three decades to achieve clean energy goals.

Governments across the globe recognize mineral scarcity vulnerabilities. One way in which the U.S. federal government plans to address these vulnerabilities is through the funding of domestic projects – whether research, demonstration plants or commercialization of technologies – to improve mineral access through processing of key metals. Doe Run has devoted resources to identifying the government programs available for a number of Doe Run projects and innovations. The Defense Production Act and programs offered through the Bipartisan Infrastructure Law, including the Electric Drive Vehicle Battery Recycling and Second-Life Applications Program and the Battery Materials



**Doe Run president and CEO,
Matthew Wohl**

Processing and Battery Manufacturing Program, are some examples of the opportunities potentially available to help fund our initiatives. To learn more about the demand for critical minerals, I invite you to read [The Future of U.S. Critical and Base Minerals](#).

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Lead Batteries' Role in Cleaner Technologies

The lead we mine and produce will continue to be integral as society's need for clean energy technologies and energy storage grows. Doe Run's lead is predominately used to support SLI batteries that start nearly every vehicle in the world, whether powered by internal combustion or battery. Today's cars have more than 150 individual electronic functions, such as driver assist support, lights, computers, door and window locks, steering and braking. Safe, effective and recyclable lead batteries keep safety systems functioning even if a high-voltage lithium battery that powers mobility fails, enabling drivers to safely pull over.

Even with a relatively modest adoption of electric vehicles in the U.S. (only about 4% of new cars sold in the U.S. were full EVs or plug-in EVs), start/stop electric vehicles are **reducing greenhouse gases by nearly 6.7 million tons per year**. Lead batteries also support energy storage for renewable energy, as well as for battery charging stations, data back-up and many other diverse applications. Although we produce lead, zinc and copper concentrates, they are not our only minerals assets. Our ore body also contains cobalt and nickel – two minerals that, along with zinc, are on the U.S. Critical Minerals list. Several of our projects under development can provide access to these battery-centric critical minerals.

The battery technologies of tomorrow will be developed by today's students. That's why Doe Run supports STEM education by providing free minerals educational materials to grade schools, sponsoring STEM education grants to elementary and middle schools, providing scholarships and equipment donations to colleges and universities, and supporting paid internships and summer student programs. In 2021, Doe Run had the **largest intern program** in recent history, enabling more people to begin their careers in the mining industry.

Operating Responsibly

We also continue to minimize our operations' impact on the environment. Our **environmental data** shows our year-over-year performance. We also disclose annual **data related to workforce trends, employee safety and economic impact**.

As proud as I am of the many projects we have underway, I'm most proud of our employees' hard work, dedication and commitment to safety. When we focus on keeping one another safe, I believe everything else falls into place for our employees and their families, our neighbors and communities, and society at large.

I invite you to review our Sustainability Report in full and share your comments with me via this [survey](#). We welcome your feedback.

Sincerely,
Matthew D. Wohl

Preparing Students for Mining Careers

<https://doerun.com/media/news/preparing-students-for-mining-careers/>



Doe Run welcomed more than 30 interns in 2021, providing them with valuable hands-on experience in geology, engineering and mining careers.

Doe Run is preparing students for mining careers through internships and STEM education support.

Our most important resource isn't what we mine – it's the people we employ. Employment in the mining sector is expected to grow by more than 17% by 2030. We strive to provide opportunities for the next generation of mining professionals in real-world scenarios, so they are prepared to take on mining careers that support companies like Doe Run in the coming years.

“The mining industry is facing some major workforce gaps as our industry experiences increased retirements,” said Jan Lott, vice president – human resources. “Many of these jobs are highly specialized, so it's critical that we encourage more students to pursue degrees in mine engineering, metallurgy and geology, and that we do our part to give them training opportunities that prepare them to take on these careers.”

Doe Run's summer internship program is designed to give students and recent graduates hands-on experience in the mining industry. The intern class in 2021 was one of the largest in years: more than 30 undergraduate, graduate and doctoral students – pursuing careers in geology, mining and engineering – came to Doe Run from 16 colleges and universities across 10 states. Sixteen of these students were from local Missouri schools. The interns supported a variety of departments, including exploration, mine engineering and environmental management.

Drilling Deeper into Geology Careers

Most of the interns worked in our Exploration department, analyzing and digitizing drilling data that Doe Run has been collecting since the 1960s. This data, which had been kept in paper drill logs, provides insights on where certain minerals exist throughout our area, helping us determine where we might want to extend our mining operations. Moving data to a digital format provides a better purview of the mineral resources available in the Viburnum Trend.



Geology interns assisted with analyzing and digitizing paper drill logs to create a better line of sight into available mineral resources.

Several interns assisted with this data conversion over the summer. Sam Hatfield, a geological engineering student at the South Dakota School of Mines & Technology, became so adept at data analysis and geological modeling that we invited him to continue to work for us remotely while finishing his degree.

“As someone with no prior experience in the field of metals mining, working at Doe Run was a good opportunity to know if I wanted to pursue a career in this industry,” Sam said. “Wherever my career takes me in the future, I will surely be drawing from the knowledge that Doe Run has given me.”

Solving Real-World Problems

At our Southeast Missouri Mining and Milling Division (SEMO), interns worked closely alongside our employees on projects that impact our operations. Environmental engineering major Nathan Mehrer had the opportunity to support our environmental team by reviewing groundwater data to better understand water interactions and fluctuations. While he is still completing his degree at Missouri University of Science & Technology (Missouri S&T), Nathan has continued to work with Doe Run part time to develop a training program for our water management initiative and to support the development of a new tool to track training hours for SEMO employees.

Our Resource Recycling interns also played a part in contributing to operational improvements. For example, Corey Smith, a chemical engineering major from Missouri S&T, worked on optimizing the blast furnace slag treatment plant. Corey conducted multiple tests and outside research to come up with a solution that increased the effectiveness of the slag treatment plant by removing more water from the slag, which improved management of the material.

“Through our internship program, students like Sam, Nathan and Corey are getting the chance to “try on” mining careers – and Doe Run itself – to see if it will be a good fit for their interests. And in turn, we get the opportunity to build an employment pipeline and foster valuable relationships with promising talent.”

– Jan Lott, vice president – human resources

We’ve already hired five full time geologists from the summer 2021 intern program – which accounts for more than 30% of our current geology team. We hope to have the opportunity to welcome back other interns as they graduate.

“Our teams love working with students; they bring so much energy, enthusiasm and excitement, reminding us what we love about our jobs” Jan said. “Even if we aren’t able to hire them all, I know I’m helping to create good ambassadors for the mining industry and giving them a better understanding of how we provide minerals and metals to the world in an environmentally and socially responsible manner.”

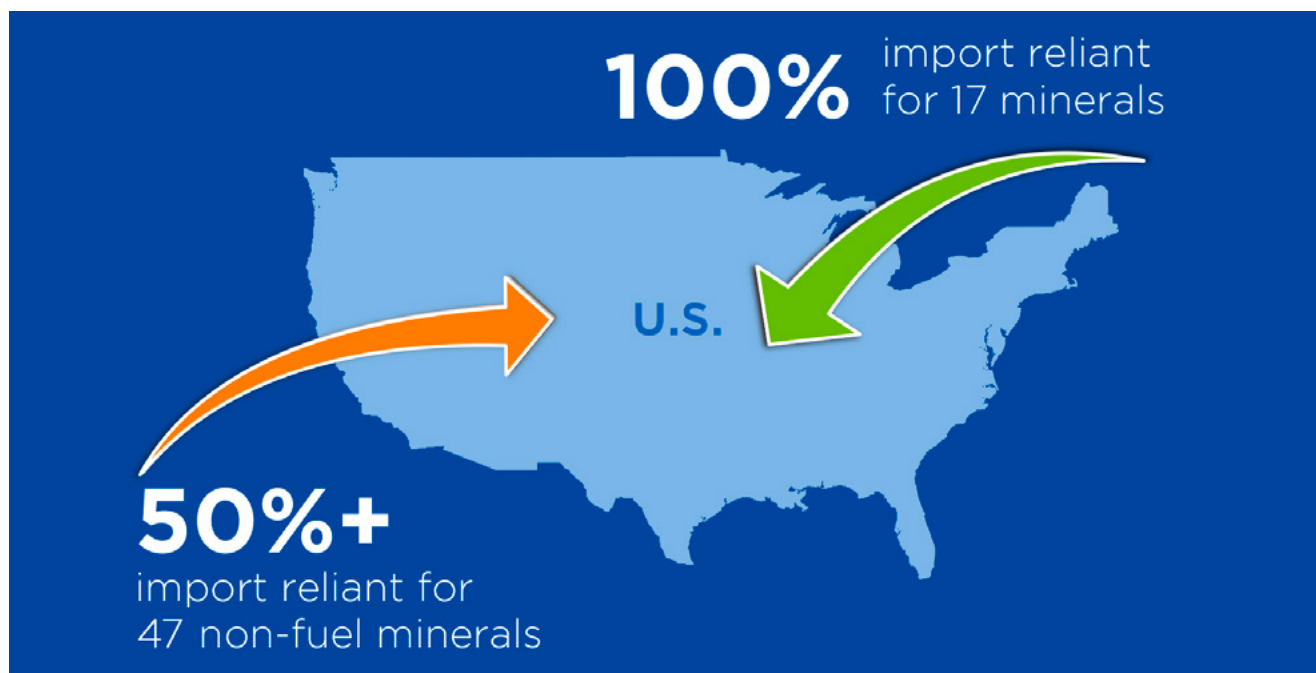
Supporting STEM Education for Missouri Students

Interest in STEM careers, like those in the mining industry, starts when children are young. Doe Run does its part to introduce students to STEM through its minerals education program, which provides fun activities designed to help children at local schools understand the importance of mining and minerals – and hopefully inspire them to one day pursue a career in mining. In 2021, we delivered kits to 18 elementary school classrooms, which included instructions for two minerals-themed activities and a gift card for teachers to purchase the materials needed to complete them.

Also in 2021, we donated \$16,000 in scholarships to college students pursuing STEM careers, as well as \$44,000 to Missouri S&T to purchase equipment for its experimental mine, allowing students to safely learn to use the latest industry technologies.

The Future of U.S. Critical and Base Minerals

<https://doerun.com/media/news/the-future-of-u-s-critical-and-base-minerals/>



The U.S. is overly reliant on imports to meet our mineral needs. We need to remove barriers to domestic mineral access and utilize the natural resources available here.

The U.S. is 50% or more reliant on imports for 47 different minerals, even though we have abundant natural resources domestically.

Critical and base minerals, like the lead, copper and zinc mined by Doe Run, are essential to technology innovations and countless products we use every day. Our ability to rebuild the nation's infrastructure and move to a cleaner energy future requires mineral access. But the U.S. is at risk of being overly reliant on other countries to supply our needs.

Our domestic supply chain for minerals is suffering. The U.S. was the world's top producer of minerals in 1990. Today, the U.S. is 50% or more reliant on imports for 47 different minerals, with China as the major source for 23 of them.

“The U.S. has tremendous natural resources and the ability to extract them using some of the world's best technologies,” said Jose Hansen, vice president – sales and marketing at Doe Run. “But inconsistent energy policies and a lack of information sharing across the government often results in a regulatory landscape that hinders rather than helps new technologies. In the last several decades, the U.S. has lost the ability to process many of its materials and turn them into value-added metals. Lead, zinc and nickel are three examples of lost domestic metal production. This negatively impacts the entire supply chain for manufacturers utilizing those metals.”

Removing Barriers to Domestic Mineral Access

The use of lead and other minerals in applications and products to address climate change is just one example of the significant ways minerals will address the needs of the future. The U.S., however, will continue to be dependent on other countries to meet these needs until we remove some of the barriers to accessing our own minerals and converting those to metal.

Part of this starts with increasing investment in mineral exploration. Our land is rich with an estimated \$6.2 trillion worth of minerals, but the U.S. only accounts for 11% of worldwide spending on mineral exploration – a missed opportunity to utilize the natural resources right under our feet.

One of the reasons this investment is low is because of the arduous process to permit a new mine. While permitting takes approximately two years in major mining countries, like Canada or Australia, it takes up to 10 years in the U.S. This prolonged process often results in the mine losing about one-third to one-half of its value before production even begins. Other regulatory challenges also hinder mineral processing companies from pursuing innovations.

“Our research and technology center has developed hydromet lead metal processing technologies that can be applied to battery recycling as well as to concentrates.” said Jose. “These hydromet technologies significantly reduce air emissions, and also can produce antimony and tin from recycled batteries as well as recover cobalt and nickel from complex concentrates here in Missouri. Developing these technologies requires better cooperation among the industry and regulators to reduce the unpredictability and uncertainty that hinders investment in these innovations.”

For companies like ours to be able to take advantage of these technologies and help the U.S. reclaim its position as a global leader in mineral extraction and processing, we need increased attention in four key areas:

- **Permitting:** Establish a clear, consistent and transparent path to the permitting of new mines and processing facilities.
- **Processing:** Revitalize U.S. mineral processing and recycling.
- **Permission:** Redefine the industry’s relationship with regulators and the public to work in greater collaboration toward sustainable mineral and metal production.
- **People:** Investment in mining and metallurgy programs to train the next generation of the mining workforce.

With properly educated people and the government providing a clear, transparent and timely permitting process for mines and processing facilities, the U.S. can better reap the full value chain of our natural resources and once again become the pre-eminent mineral and metal producer in the world. Only then can we provide the critical materials necessary to meet the challenges of tomorrow.



The U.S. was the world’s top producer of minerals in 1990. Today, the U.S. is 50% or more reliant on imports for 47 different minerals.

Lead Batteries: An Integral Part of the Global Clean Energy Solution

<https://doerun.com/media/news/lead-batteries-an-integral-part-of-the-global-clean-energy-solution/>



Demand for lead batteries is expected to increase as renewable wind and solar energy grows in the coming years to meet net-zero carbon emission goals.

Lead batteries store energy generated by wind turbines and solar panels and can help supply electricity at EV chargers.

Experts predict the mineral requirements necessary to reach net-zero carbon goals by 2050 – to produce more electric cars, for example, and transition to more wind and solar energy generation – may be six times what is required today. Lead batteries are one of the most environmentally sustainable of all battery technologies, which makes them ideal for moving toward greener technologies, like electric vehicles (EVs).

The same battery chemistry that powered the automotive age is now helping to drive the transition to cleaner energy. These new, advanced lead batteries are helping to reduce greenhouse gases, mobilize low- to mid-income countries, and store and release renewable forms of energy.

The transportation industry is the largest contributor to greenhouse gases, according to the Environmental Protection Agency (EPA). But the adoption of more electrified vehicles will dramatically reduce this impact. Even hybrid electric cars, which combine electrification with internal combustion engines, provide dramatic reductions in greenhouse gases. Stop/start vehicles eliminate over 6 million tons of greenhouse gas emissions in the U.S. each year.

Over their lifetime, EVs produce less greenhouse gases than gasoline cars, even accounting for the electricity it takes to power them.

“Doe Run lead plays an important role in supporting the green energy revolution,” said Maggie Crocker, environmental, health and safety manager. “When you consider their 99% recycle rate, lead batteries are the most environmentally sustainable battery technology. Their safe and clean operation makes them an ideal application for technologies like carbon-free transportation and renewable energy storage. At Doe Run, more than 70% of our production is destined for the battery industry.”

Driving Electric Vehicle Adoption

It’s estimated that 100,000 fast-charging ports will be needed to support the growing EV adoption in the U.S. by 2030. The industry is piloting applications for lead batteries to support EV charging stations. The Missouri Division of Energy funded a feasibility study with the Consortium of Battery Innovation to deploy lead batteries at EV charging points at gas stations. Advanced lead battery energy storage, linked to EV charging stations, can help manage fluctuations in electricity demand charges by storing electricity when it is less costly to generate, then supplying it when drivers need to recharge.



Lead batteries are vital to help start EVs and provide auxiliary power, as well as store electricity at charging stations.

“Lead batteries are critical to starting every car that drives our roads today. As automotive manufacturers transition to producing more EVs, lead batteries will continue to be vital to help them start, as well as provide auxiliary power for various features. We’re proud that lead will play a part in dramatically reducing the overall carbon emissions created by cars and other vehicles.”

– Maggie Crocker, environmental, health and safety manager

Harnessing Natural Power

Transitioning to cleaner sources of energy will also utilize lead batteries, which are used to store energy generated by wind and solar facilities. In 2021, approximately 20% of U.S. energy generation came from renewable sources, according to the U.S. Energy Information Administration. The International Energy Agency predicts that renewable energy capacity will grow 50% faster over the next five years, especially as more utilities make significant investments in wind and solar projects to offset fossil fuels and reach net-zero carbon emissions goals by 2050.

Currently, lead batteries store power for many of these renewable wind and solar facilities. We expect to see the reliance on lead batteries increase significantly as more of these facilities are brought online in the coming years.

Similarly, lead batteries are also being used in remote, small-scale hydro-electric systems to bring clean electricity to many of the 1 billion people in areas with no access to the power grid. Since nearly 25% of the population of developing countries have no access to electricity, this application can be a game changer in bringing more modern technologies, like communications and refrigeration, to remote regions.

Leading the Way in a Circular Economy

One of the primary reasons lead batteries are considered more sustainable than other battery technologies is because of their high rate of recyclability. Approximately 99% of all lead batteries are recycled according to the EPA, yet less than 15% of lithium-ion batteries are recycled. At our Resource Recycling facility, we recycle more than 8 million batteries each year, keeping them out of landfills.

“In a circular economy model, we’re focused on how to source, use, reuse and manage materials in the most sustainable way possible,” said Maggie. “For lead batteries, this means recycling spent batteries and reusing the lead, plastic and other materials to make new batteries. A typical lead battery is made up of more than 80% recycled materials, so our product continues to live on and on, providing sustainable power to the world.”

Remediation Updates

<https://doerun.com/media/news/remediation-updates/>



The former smelter site in Herculaneum, Missouri, is now the home of a thriving river port. Doe Run moved the refinery, the last remaining operations, in 2021.

Doe Run continues to make progress on several remediation projects.

Signs of Missouri’s rich mining legacy are visible throughout the state, such as in the names of towns, like Leadwood. In fact, Bonne Terre, Desloge and Leadington sprang up as a result of the mining industry. Today, Doe Run is the only lead mining company left in Missouri, and a major focus of our environmental work has been addressing clean-up efforts at historic mine sites and other areas to prepare them for the future.

“As the last lead mining company in the area, we are often called upon to clean up legacy mining projects,” said Chris Neaville, asset and business development director at Doe Run. “We have a team of more than 40 remediation specialists dedicated to returning these sites to nature or readying them for new uses.”

Old Lead Belt

Much of Missouri's mining remediation occurs in the Old Lead Belt, where settlers began lead mining more than 300 years ago. In 2021, the Soil & Land Services (S&L) team safely remediated 275 yards in St. Francois County – 83% more than in any previous year, despite a wet spring and pandemic-related delays in hiring and equipment purchases. To handle the higher volume, the team hired 20 new employees and relied on local contractors for additional support. The remediation work, which is part of a 13-year program, has received positive feedback from community leaders and homeowners, some of whom sent holiday cards and cooked breakfasts for the crews.



Soil & Land Services remediated 275 yards in St. Francois County in 2021.

In 2021, Doe Run also completed a project to seal five legacy drill holes to eliminate ongoing discharge into the Big River near Owl Creek Park.

Herculaneum

This past year marked a major milestone at the Herculaneum site. In August, we shut down the refinery, the only remaining process in operation at the 129-year-old facility. We now refine lead metal at the Resource Recycling facility in Boss, Missouri.

“[The S&L] crews finished work on our property in November and we could not be happier with the results. They were always careful in doing their work and meticulous in their clean up.”

– Desloge Mayor David Shaw

The Riverview Commerce Park, LLC (RCP) river port continues to thrive. Located on 18 acres of riverfront property once owned by Doe Run, the site has become important for shipping bulk materials along the Mississippi River. Future development of the site may include a port facility for vessels carrying shipping containers from Louisiana up the Mississippi River. The inland shipping route would help alleviate supply chain issues, like those experienced in 2021 at shipping ports along the east and west coast.

Viburnum Trend

Doe Run currently mines in the New Lead Belt, also known as the Viburnum Trend. Mining in the Viburnum Trend began in the 1960s.

“Regulations and technology have evolved a great deal in the past 60 years,” said Chris. “A few years ago, we entered into an agreement with the Missouri Department of Natural Resources, U.S. Forest Service and U.S. Fish and Wildlife Service to perform environmental restoration projects in the Viburnum Trend.”

Doe Run completed the following projects in 2021:

- **Viburnum Trend Haul Route:** Along with other companies that used to operate in the area, we replaced soil in yards located along the roads that were historically used to transport lead, zinc and copper concentrates from the mills. We sampled 208 yards along the road, and only 17% of the yards sampled required partial replacements. This project was completed in 2021.
- **Stream Restoration:** We sampled water in 10 miles of local streams, including Indian Creek, Big Creek, Crooked Creek, Strother Creek, Bills Creek, Sweetwater Creek and Adair Creek. About 70% of the areas sampled required no action. The remaining areas will be restored through excavating sediment and resampling the area as necessary.
- **Sweetwater Mill Vegetation:** We completed the first year of a 10-year project to restore native vegetation along 30 acres of land at our Sweetwater Mill. It will take several years to cultivate these plants so they can flourish.
- **Land Donation:** As part of the agreement with state and federal agencies mentioned above, Doe Run donated nearly 1,100 acres of land for conservation purposes. Four of these properties, including the dense forest of the Irish Wilderness and a beautiful natural glade known as the Silvey property, were donated to the U.S. Forest Service. In January 2022, two properties along the Joachim Creek in Herculaneum were transferred to the Land Learning Center at the request of U.S. Fish and Wildlife Service. A final parcel was donated in early 2022 to the Ozark Land Trust. This property sits adjacent to existing conservation land and will be given to the Missouri Department of Conservation.



Several years ago, we rerouted part of the West Fork Stream due to a land depression that occurred in the stream. In 2021, we filled in the old creek bed to keep out rainwater and stream overflow. The rerouted stream shows abundant aquatic life.

In the coming year, we'll continue remediation efforts in the Viburnum Trend by beginning stream restoration efforts and kicking off a three-year project to replace soil at approximately 60 yards located throughout the city of Viburnum.

Doe Run also works diligently to minimize the impact of our current operations on the environment. Learn more by reviewing our [environmental performance data](#).

Performance Data

<https://doerun.com/sustainability/performance-data/>

Environmental Performance

301-2 (EN2) Direct Recycled Input Materials (Fiscal Year)

Units and Substances Key

Metric Ton(s): mt

Source (mt)	2019	2020	2021
Slag	4,903	7,368	7,433
Batteries (mt of Pb)	91,051	87,466	83,706
Lead-Bearing Material	46,511	38,867	31,103
Iron-Containing Material	11,382	11,589	11,991
Total Materials Used⁽¹⁾	153,847	145,290	134,233

(1) Materials used vary annually with market demand and plant operating conditions.

302-1 (EN3) Energy Consumption (Calendar Year)

Units and Substances Key

Gigajoule(s): GJ

Direct Non-Renewable Energy Source	2019	2020	2021
Coke	534,908	560,110	540,977
Explosives	27,239	30,499	28,832
Natural Gas	131,598	130,942	65,210 ⁽¹⁾
Petroleum Fuel	273,890	256,341	253,057
Propane	590,101	564,155	610,002
Total Direct Energy Consumption⁽¹⁾	1,557,736	1,542,047	1,498,078

Indirect Non-Renewable Energy Source	2019	2020	2021
Electricity	1,512,100	1,538,055	1,518,487
Total Energy Use	3,069,836	3,080,102	3,016,565

(1) 2021 drop in natural gas usage is due to the shutdown of the Herculaneum refinery.

302-3 (EN5) Energy Intensity of All Sources (Calendar Year)

Units and Substances Key

Metric Ton(s): mt

Gigajoule(s): GJ

Ore: Ore milled at mining operations

Pb: Lead produced at alloying, casting, and secondary smelting and fabricating operations

Division	Units	2019	2020	2021
Southeast Missouri Mining and Milling Division (SEMO)	GJ/mt Ore milled	0.3	0.3	0.3
Metals Division (Resource Recycling and Herculeaneum)	GJ/mt Pb produced	10.5	12.1	10.7
Fabricated Products Inc. (FPI)	GJ/mt Pb produced	1.2	1.1	1.1

305-1 (EN15) Total Direct Greenhouse Gas Emissions (Calendar Year)

Units and Substances Key

Metric Ton(s) of Carbon Dioxide Equivalent (mt CO2e)

	2019	2020	2021
Scope 1 (direct emissions of Greenhouse Gases, Carbon Disclosure Project, e.g., direct combustion of fuels)	124,430	109,775	115,198

305-2 (EN16) Total Indirect Greenhouse Gas Emissions (Calendar Year)

Units and Substances Key

Metric Ton(s) of Carbon Dioxide Equivalent (mt CO2e)

	2019	2020	2021
Scope 2 (emissions from direct purchase of energy, e.g., electricity)	356,371	349,287	344,106

305-3 (EN17) Other Relevant Indirect Greenhouse Gas Emissions (Calendar Year)

Units and Substances Key

Metric Ton(s) of Carbon Dioxide Equivalent (mt CO₂e)

	2019	2020	2021
Scope 3 (indirect emissions from transportation and employees' commute, etc.)	14,972	19,341 ⁽¹⁾	20,141

(1) In 2020, we applied a new methodology to calculate Scope 3 emissions. This new methodology captured commuter data that was not included in 2019. Had we applied this method in 2019, the values would have been similar to 2020.

305-4 (EN18) Greenhouse Gas Emission Intensity⁽¹⁾

Units and Substances Key

Metric Ton(s): mt

Carbon Dioxide Equivalent: CO₂e

Ore: Ore milled at mining operations

Pb: Lead produced at alloying, casting, and secondary smelting and fabricating operations

Division	Units	2019	2020	2021
Southeast Missouri Mining and Milling Division (SEMO)	mt CO ₂ e/mt Ore milled	0.06	0.06	0.06
Metals Division (Resource Recycling and Herculaneum)	mt CO ₂ e/mt Pb produced	0.70	0.50	0.80
Fabricated Products Inc. (FPI)	mt CO ₂ e/mt Pb produced	0.38	0.13	0.16

(1) The fluctuation from year to year is due to changes in product mix.

305-7 (EN21) Significant Air Emissions (Calendar Year)

Units and Substances Key

Metric Ton(s): mt

Source (mt by type and weight)	2019	2020	2021
Ammonia (NH ₃)	0.05	0.05	0.04
Antimony (Sb)	0.00	0.00	0.00
Arsenic (As)	0.36	0.32	0.32
Cadmium (Cd)	0.21	0.04	0.03
Carbon Monoxide (CO)	13,552.00	16,348.00	13,884.28
Copper (Cu)	0.21	0.19	0.18
Hazardous Air Pollutants (HAP)	0.89	0.75	0.74
Lead (Pb)	4.99	4.45	3.21
Nickel (Ni)	0.04	0.03	0.03
Nitrogen Oxides (NO _x)	42.96	35.42	36.97
Particulate Matter (PM)	189.00	195.00	191.06
Sulfur Dioxide (SO ₂)	2,590.00	2,388.00	2,373.25
Sulfuric Acid (H ₂ SO ₄)	0.65	0.55	0.55
Volatile Organic Compounds (VOC)	10.00	9.19	8.82
Zinc (Zn)	0.91	0.59	0.55
Total	16,392.27	18,983.73	16,500.04

Environmental Spending

306-1 (EN22) Total Water Discharge (Calendar Year)

Units and Substances Key

ppb: parts per billion

Source (average ppb)	2019	2020	2021
Lead	12	5	6
Zinc	302	168	141
Copper	2	2	2
Total water discharge (million gallons/year)	27,857	21,373	22,107

EN31 Total Fiscal Environmental Spending

	2019	2020	2021
Total Capital Spending and Operating Expense	36,972,565	33,345,224	45,245,647⁽³⁾
Remediation Spending ⁽¹⁾			
Historic Properties	3,141,743	1,838,434 ⁽²⁾	3,594,810
Operating Properties	2,541,314	1,595,373 ⁽²⁾	1,727,752
Total Remediation Spending	5,683,057	3,433,707	5,322,562
Total Fiscal Environmental Spending, Including Remediation	42,655,622	36,778,931	50,568,209

(1) Remediation spending fluctuates based on completed work each year.

(2) Reduced spending in 2020 represents approved postponement of some remediation projects in light of the pandemic. These projects reconvened in 2021.

(3) Increased capital and operating expenses in 2021 are related to the startup of new process at Resource Recycling and capital improvements at SEMO.

Workforce Summary

G4-10 (102-8) Number of Employees by Division (Calendar Year)

(number of employees) ⁽¹⁾	2019	2020 ⁽²⁾	2021
Southeast Missouri Mining and Milling Division (SEMO)	724	675	689
Metals Division (Resource Recycling, Herculaneum)	326	312	321
Corporate and Other Non-Operations Employees	139	123	171 ⁽³⁾
Fabricated Products Inc. (FPI)	38	35	33
Total Number of Employees⁽¹⁾	1,227	1,145	1,214

Male and Female Employees by Division (Calendar Year)

(number of employees)	2019		2020 ⁽²⁾		2021	
	Male	Female	Male	Female	Male	Female
SEMO	663	61	621	54	637	52
Metals Division	300	26	288	24	293	28
Corporate and Other Non-Operations Employees	96	43	88	35	120	51
FPI	34	4	32	3	30	3
Total Number of Employees⁽¹⁾	1,093	134	1,029	116	1,080	134

Number of Employees by Employment Type (Calendar Year)

(number of positions)	2019 ⁽⁴⁾	2020 ⁽²⁾	2021
Permanent Hourly Positions	850	815	839
Permanent Salary Positions	370	327	366
Temporary Positions	4	2	8 ⁽⁵⁾
Contracted Positions	3	1	1
Total Number of Employees⁽¹⁾	1,227	1,145	1,214

Male and Female Employees by Employment Type (Calendar Year)

(number of employees)	2019		2020 ⁽²⁾		2021	
	Male	Female	Male	Female	Male	Female
Permanent Hourly Positions	829	21	795	20	818	21
Permanent Salary Positions	258	112	231	96	255	111
Temporary Positions	4	0	2	0	6	2
Contracted Positions	2	1	1	0	1	0
Total Number of Employees⁽¹⁾	1,093	134	1,029	116	1,080	134

(1) Employee counts for G4-10 include all categories of employees as of the end of the calendar year.

(2) 2020 employee counts impacted by staffing reduction.

(3) Increase represents additional remediation staff, employees reassigned to corporate and expanding internships in Exploration department.

(4) 2019 numbers were corrected.

(5) Increase represents expanding internships in Exploration department.

LA1 (401-1) New Employee Hires by Gender (Calendar Year)

Total number⁽¹⁾ and rate of new employee hires entering employment during the reporting period broken down by gender. New hires do not necessarily represent an increase in workforce.

	2019		2020		2021	
	Number	Rate	Number	Rate	Number	Rate
Male	134	84.3%	113	91.1%	242	84.6%
Female	25	15.7%	11	8.9%	44	15.4%
Total Number of Employees	159		124⁽²⁾		286	

(1) Employee counts exclude hiring and termination of temporary employees.

(2) 2020 employee counts impacted by staffing reduction.

Employees Leaving by Gender (Calendar Year)

Total number⁽¹⁾ and rate of employees leaving employment during the reporting period broken down by gender.

	2019		2020		2021	
	Number	Rate	Number	Rate	Number	Rate
Male	145	86.8%	151	83.4%	206	88.4%
Female	22	13.2%	30	16.6%	27	11.6%
Total Number of Employees	167		181⁽²⁾		233	

(1) Employee counts exclude hiring and termination of temporary employees.

(2) 2020 employee counts impacted by staffing reduction.

New Employee Hires by Age Group (Calendar Year)

Total number⁽¹⁾ and rate of new employee hires entering employment during the reporting period broken down by age group. New hires do not necessarily represent an increase in workforce.

	2019		2020		2021	
	Number	Rate	Number	Rate	Number	Rate
30 or younger	82	51.6%	70	56.5%	138	48.2%
31 to 40	43	27.0%	30	24.2%	68	23.8%
41 to 50	16	10.1%	13	10.5%	46	16.1%
51 and above	18	11.3%	11	8.9%	34	11.9%
Total Number of Employees	159		124⁽²⁾		286	

(1) Employee counts exclude hiring and termination of temporary employees.

(2) 2020 employee counts impacted by staffing reduction.

Employees Leaving by Age Group (Calendar Year)

Total number⁽¹⁾ and rate of employees leaving employment during the reporting period broken down by age group.

	2019		2020		2021	
	Number	Rate	Number	Rate	Number	Rate
30 or younger	35	20.9%	45	24.9%	68	29.2%
31 to 40	33	19.8%	37	20.4%	54	23.2%
41 to 50	33	19.8%	19	10.5%	30	12.9%
51 and above	66	39.5%	80	44.2%	81	34.7%
Total Number of Employees	167		181⁽²⁾		233	

(1) Employee counts exclude hiring and termination of temporary employees.

(2) 2020 employee counts impacted by staffing reduction.

Health and Safety Performance

403-1 (LA6) Occupational Safety and Health

Employee Blood-Lead Average

The adjusted Occupational Health and Safety Administration's (OSHA) standard for medical reassignment of an employee is 53 micrograms of lead per deciliter of whole blood ("µg/dL").⁽¹⁾ Doe Run has reduced its medical reassignment maximum limit to 25µg/dL. If any employee has a blood-lead level that reaches 25 µg/dL, they are temporarily reassigned to other work.

(in µg/dL)	2019	2020	2021
Southeast Missouri Mining and Milling Division (SEMO)	5.05 ⁽²⁾	6.68	6.13
Metals Division ⁽³⁾	10.34	10.46	10.58
Corporate and Other Non-Operations Employees	N/A	N/A	3.32⁽⁴⁾
Fabricated Products Inc. (FPI)	6.70	5.60	6.10
Average⁽⁵⁾	7.36	8.53	7.29

Employee Blood-Lead Data

Doe Run monitors and reports the number of employees with a blood-lead level greater than 19 µg/dL in the calendar year. The adjusted OSHA standard for medical reassignment of an employee is 53 µg/dL.⁽¹⁾ Doe Run sets its maximum limit at 25 µg/dL.

(# of employees with blood-lead levels >19 µg/dL)	2019	2020	2021
SEMO	1 ⁽²⁾	1	2
Metals Division ⁽³⁾	10	13	18
Corporate and Other Non-Operations Employees	N/A	N/A	0⁽⁴⁾
FPI	1	0	0
Total	12	14	20

Total Lost-Time Accidents and Fatalities

According to OSHA, lost time is defined as a nonfatal traumatic injury that causes any loss of time from work beyond the day or shift it occurred, or a nonfatal nontraumatic illness/disease that causes disability at any time. According to the Mine Safety and Health Administration (MSHA), lost time is defined as days which the employee would have worked, but could not because of an occupational injury or an occupational illness. A fatality is not counted as a lost-time accident.

(number of injuries)	2019	2020	2021
SEMO	4	5	5
Metals Division	3	2	4
Corporate and Other Non-Operations Employees	0	0	0
FPI	0	0	0
Total	7	7	9
Total number of work-related fatalities, companywide	1	0	0

Total OSHA Recordables and MSHA Reportables

Total OSHA recordables and MSHA reportables are incidents that require lost time, restricted duty, prescription medication, involve broken bones or stitches, involve imbedded matter in the eye, or burns of a defined size and severity.

(number of incidents)	2019	2020	2021
SEMO	21	32	27
Metals Division	32	16	29
Corporate and Other Non-Operations Employees	0	0	2⁽⁴⁾
FPI	0	0	1
Total	53	48	59

Total Case Incident Rate (TCIR)

TCIR is the number of OSHA recordable and MSHA reportable incidents per 200,000 personnel hours worked. OSHA recordables and MSHA reportables are incidents that require lost time, restricted duty, prescription medication, involve broken bones or stitches, involve imbedded matter in the eye, or burns of a defined size and severity.

(TCIR rate)	2019	2020	2021
SEMO	3.4	4.64	3.73
Metals Division	6.6	5.28	10.15
Corporate and Other Non-Operations Employees	0.0	0.00	1.90⁽⁴⁾
FPI	0.0	0.00	3.69
Total Company	4.8	3.31	5.24

- (1) The OSHA General Industry Lead Standard is written in units of μg of Pb/100g of whole blood. The conversion used is $1 \text{ ug}/100\text{g} = 1.05 \mu\text{g}/\text{dL}$.
- (2) 2019 data represents only mandated testing due to a change in providers.
- (3) For 2019 and 2020 data, Glover is included in the Metals Division for blood-lead data only due to the nature of their work.
- (4) 2021 data includes all employees who are not affiliated with a production operation to match our workforce breakdown; 2019 and 2020 data was not updated and reflects only employees working at corporate headquarters.
- (5) Average is calculated based on the number of employees who receive testing.

Workforce Training

404-1 (LA9) Average Hours of Training Per Employee (Calendar Year)

(number of training hours)	2019	2020	2021
Total number of training hours	15,148	15,914	15,343
Total number of employees	1,227	1,145	1,045
Average number of training hours per employee	12.35	13.90	14.68

Economic Impact

201-1 (EC1) Financial Highlights (Fiscal Year)

(dollars in thousands)	2019	2020	2021
Property Taxes	\$6,799	\$6,869	\$6,675
Compensation	\$120,632	\$115,154	\$115,027
Community Investment ⁽¹⁾	\$164	\$173	\$155
Environmental Spending ⁽²⁾	\$42,656	\$36,779	\$50,568
Research and Development	\$3,564	\$4,494	\$3,562
Royalties to Governments	\$7,430	\$6,819	\$9,110
Capital Spending (excluding environmental capital expenditures)	\$34,107	\$14,783	\$18,778

(1) Community investment includes donations, scholarships and tuition reimbursement.

(2) Reduced environmental spending in 2020 represents approved postponement of some remediation projects in light of the pandemic. These projects resumed in 2021. 2021 environmental spending also included increased capital and operating expenses related to the startup of new process at Resource Recycling and capital improvements at SEMO.

Management Approaches

<https://doerun.com/sustainability/management-approaches/>

Read below to learn more about how we manage our social, environmental and economic commitments.

Social

Community Engagement

Doe Run operates with the consent of the community. We recognize the importance of their goodwill and the responsibility we have to operate safely, economically, soundly and in an environmentally sustainable manner. Our local communities expect us to be a fair and responsible community member that provides jobs at a fair rate, sources materials from local vendors where possible, supports community organizations, and includes their concerns in our decision-making process.

When we developed our Sustainability Principles, it was important to us that we address being a good neighbor, specifically:

- We respect community values, priorities and interests in our business decisions.
- We provide enduring benefits that enhance our communities.
- We maximize the economic benefits we provide to our stakeholders.

Each of our operations has community engagement plans that guide community outreach, communication and support. We are able to provide both immediate and lasting benefits to the community by:

- Purchasing locally wherever possible.
- Providing supplier procurement programs that help local vendors operate more sustainably.
- Hiring locally where possible, and paying higher-than-average wages.
- Paying royalties to governments and private landholders, as well as our fair share of taxes.
- Supporting educational opportunities through STEM curriculum in area schools, tours when possible, internships, summer jobs, doctoral candidate projects, and academic scholarships.
- Providing donations to local charities that improve the quality of life for people in our community.

We also aim to share information in a transparent and proactive manner. Although we are a privately held company, we report annually on our social, economic and environmental performance in our Sustainability Report, so community members, customers, legislators and other stakeholders know how we are doing. We also regularly conduct surveys to determine the interests, concerns and disposition toward our company of those living nearest to our operations. In this way, we can adjust our community engagement and communications efforts to better meet the community's needs.

By sharing information openly, being an active member and supporter of the community, living in and near the communities in which we operate, and engaging in two-way dialogue, we believe we can support the sustainability of the local communities, and produce and deliver our products more efficiently.

Employment

The Doe Run Company's values – safety, integrity, collaboration, respect, stewardship and sustainability – affirm our organization's culture and commitment to sound and ethical business practices. This starts with how we treat our employees and employee candidates. Our goal is to attract and retain the best employees in order to help us achieve our goals, so it is important that we strive to respect and invest in our people and consider workforce and industry best practices.

Our approach to employment and workers follows the principles of equal employment opportunity and affirmative action in all employment policies and practices, including our recruiting, hiring, compensation, benefits, transfers, training, promotions, company-sponsored events, and other employment activities. We track and report on employment rates annually, as well as employee health and safety monthly (see Management Approach to Health and Safety) to ensure we're meeting those principles.

An employee handbook outlines our business code of conduct, hiring practices, time and attendance policies, anti-harassment policies, compensation and pay practices, benefit and leave policies, and more. We provide helpful resources, such as the Your Voice 24-Hour Hotline to support all employees if they would like to report anything that might be illegal, unethical or a violation of company policy. We introduce all new employees to these materials during orientation, and regularly review them with employees when and if changes are made to a policy, or if a need is identified.

We support a culture of respect, continuous improvement and safety by identifying competencies that are aligned directly to our values and have built them into our talent management practices. We assess and review talent for our critical positions companywide on an annual basis, and offer tools for learning to plan for succession and prepare our workforce for future success. We recognize and respect that every employee has a voice and opinion that matters; diversity in experience, thought and idea is encouraged.

Building a culture of respect and investment in our people is a strategic priority, but it's increasingly important as the entire mining industry faces a growing demand for talent. Employment in the mining sector is expected to grow by more than 17% by 2030, according to the Bureau of Labor Statistics. How we attract, build and retain top talent will directly impact our long-term success as a company and an industry. That's why we aim to be viewed a preferred employer of choice by promoting a culture of safety and environmental compliance, teamwork and collaboration, fairness and consistency, oversight and standardization, communication, and advocacy.

Health and Safety

We depend on one another to operate safely and to protect each other, the community and the environment. Safety is our most foundational value and our employees, their families, local communities and the government want to know how we are meeting our safety goals.

Doe Run's approach to employee health and safety includes continual training and protective standards that meet or exceed industry and regulatory expectations. Training is critical to helping us keep our employees safe and is required to meet certain compliance and regulatory guidelines, as well as to cover essential work-related skills, techniques and knowledge. We ensure that our employees possess the right skills to help our business succeed, and conduct refreshers to address changes in guidelines, technology, processes, etc.

As a part of training, Doe Run also provides employee development opportunities, which are important to help employees perform their best, develop new skills and enable the company to thrive. We believe this approach fosters greater employee satisfaction, so that they stay with us, become great at what they do and help others become so, too.

We track our training hours for each employee, along with course titles and dates of completion. This data is collected by the training facilitator/subject matter expert, verified and entered into our training database. Supervisors are responsible for confirming that all employees receive required trainings, annual refreshers and/or continuing education, as needed. In 2021, employees participated in more than 15,000 hours of environmental, health and safety training.

Doe Run also tracks and reports on key health and safety metrics on a monthly and annual basis to identify opportunities for improvement. We track our workforce's blood-lead levels (the trace amount of lead the body may absorb through exposure), accidents and incident rates. Monthly reports are shared all the way up through the executive level.

Our mining, milling and recycling activities have the potential for employees to be exposed to airborne lead particles. Doe Run employees are trained in proper lead handling and personal hygiene processes to reduce their exposure. Personal protective equipment, like respirators, are worn in areas of exposure, and employees who work in certain areas are required to wash thoroughly and change clothes and shoes before eating or going home each day.

Doe Run's standards for workforce exposure to lead are more stringent than government requirements, and monthly progress is measured to the microgram, one millionth of a gram. The lead industry voluntarily self-monitors and self-reports the number of employees tested with greater than 19 micrograms of lead per deciliter of whole blood ("µg/dL"). Doe Run reports this information in our Sustainability Report. In addition, on a monthly basis, we track and monitor internally those employees whose blood-lead levels are greater than 14 µg/dL. Doe Run counsels employees who cross a certain threshold to identify particular areas of exposure, and work on individualized plans to address those areas. Employees who exceed 25 µg/dL are temporarily reassigned to a job area with reduced exposure. By comparison, the adjusted OSHA standard for medical reassignment of an employee is 53 µg/dL.

Safety is a core value. We use a variety of mining and manufacturing tools to assist in identifying safety improvement opportunities, and we involve employees to develop solutions to address them. Some examples of routine safety steps employees take include daily work inspections of their work areas to identify any potential hazards and reporting near misses – situations that could have resulted in an accident but did not – to help prevent potential injuries.

Doe Run has won the prestigious Sentinels of Safety mine safety award 28 times and has operations that have surpassed decades without a lost-time incident. We also have two award-winning mine rescue teams that undergo monthly training and compete in mine rescue competitions to keep skills sharp in case they need to aid employees during a real mine emergency. Safely returning our workers home to their families and loved ones at the end of each day is the ultimate goal of our safety and training programs.

Environmental

Emissions

One of the reasons we report on our environmental performance each year is to be transparent about our environmental impacts and to keep our neighbors and other stakeholders informed of our efforts to minimize the environmental impact of our operations.

Doe Run's mining, milling and recycling activities involve emissions from operations to the air, water or land. Such emissions are monitored and reported, as appropriate, to regulatory bodies, including the Missouri Department of Natural Resources and the United States Environmental Protection Agency.

We have a number of measures in place to minimize, treat or prevent emissions in order to ensure a healthy environment and meet regulatory requirements with respect to water, air, and soil quality. Water released from our property must meet limits established in facility-specific operating permits. Air emissions also must meet standards. Doe Run utilizes baghouses, scrubbers, ventilation systems and enclosures, among other methods, to manage these emissions. Our air emissions are regularly monitored and reported, including by air monitors designed to measure concentrations on-site as well as beyond our property line. We also use a system that enables us to monitor air emissions continuously and adjust our processes in real time to reduce our impact.

The vast majority of our emissions impacting land are tailings (ground-up rock that is the byproduct of milling and mining), which are stored in permitted areas of our property. Active Doe Run facilities work to continuously improve processes to minimize waste generation through programs such as recycling of cardboard and shrink wrap from raw material packaging.

To further monitor and improve in this area, we maintain International Organization for Standardization (ISO) environmental management certifications covering multiple facilities.

Energy

Our Sustainability Principles, reflect that Doe Run is a steward of not only the minerals we extract, but also the energy we use in our operations. Energy consumption constitutes one of our largest operating costs for both the mining and metals divisions. Doe Run is one of the largest electricity consumers in Missouri because electric motors run much of our operations, including conveyors, pumps, ventilation fans, rock crushers and hoisting equipment. Total energy consumption includes electricity, fuels (furnace coke, diesel, propane, gasoline), and explosives. Most of the energy consumed is derived from fossil fuels, which produce carbon emissions. Energy usage and costs are tracked and reported monthly for each of the operations.

We continue to explore other ways to conserve energy and use cleaner energy options for the good of the environment, society and the health of the company. We formed an energy team in 2016 with members from both the mining and metals divisions. The team was charged with evaluating energy efficiency and conservation opportunities. The team initiated several energy efficiency projects, including LED lighting replacements, installing variable-frequency drives on vent fan motors, and installing shut-off switches on pumps that do not need to run continuously. We also installed an electric underground hauling system to significantly reduce the use of diesel trucks above ground at one of our sites. As mines age, transportation efficiency over longer haul distances becomes even more important. Conserving energy, reducing costs and/or looking for alternative energy sources are critical to the future of our mines and the economic value they bring our stakeholders.

Materials

One of our Sustainability Principles is to “minimize the impact of our operations on the environment.” Understanding our product streams, as well as the amount of materials we are able to recycle through our process, helps us measure and manage the resources we consume.

Our stakeholders care about the environment and jobs, so effectively managing natural resources and providing value to the local community by sourcing locally are two examples of steps we take to address those concerns. Another important topic for our industry is the reuse of materials to limit waste, which is why we report on 301-1 (EN2). We recycle an average of 8 million batteries per year, along with other lead-bearing materials, at our Resource Recycling facility. These materials are sourced from battery manufacturers and other business partners. The recovered materials are able to be reused again and again, as part of a circular economy.

We measure all materials we use so we can better evaluate purchasing habits, material sourcing and product options, among other material needs. We continue to look for opportunities for improvement, such as sourcing more materials locally (which can reduce shipping impacts) and choosing alternative renewable materials where feasible.

Doe Run utilizes this data to inform our purchasing decisions, evaluate contracts and select vendors who share our vision for sustainability. By working together, we are able to improve efficiencies throughout our supply chain and source cost-effective materials. Preferences are put on materials that deliver value to the organization, support jobs in local communities and have as little environmental impact as is possible.

Water

Water is particularly important in Southeast Missouri, where many creeks, streams and river tributaries run near our operations. These waterways provide recreation for the community, and responsible use of these resources is important to us, as well as our neighbors.

We measure our water discharge data to track our progress in returning clean water to the environment. Approximately 59 million gallons of water come in contact with our operations every day, naturally flowing through our mines, falling as rain on our property or used in our process. We pump water that comes from the mines and mills to large tailings storage facilities on our property, where water is stored prior to treatment in our site specific water treatment facilities.

Five water treatment plants process water from mine tailings storage facilities and three water treatment plants cover our Herculaneum, Glover and Resource Recycling facilities. Our water treatment plants use a chemical technology, similar to municipal water treatment plants, to remove metals and impurities. We monitor the water to ensure it meets regulatory requirements administered by the State of Missouri, prior to discharging to local waterways.

Our water management approach with these high-tech facilities allows Doe Run to process and discharge water more efficiently and meet more stringent water quality standards. The water treatment plants have also increased our capacity to handle high surges of water from heavy storms.

At Fabricated Products, Inc. – a wholly owned subsidiary of Doe Run – we rely on two retention basins to collect rainwater runoff at the lead fabrication plant in Casa Grande, Arizona. This reduces the load on the municipal storm water and sewer system.

Additionally, we keep the quality of water in mind when remediating historic mine sites. At some remediation sites, we have improved streams and created stormwater diversions to manage water quality. We have also capped slag and chat piles, and taken other measures to reduce wind and water erosion, to limit or prevent such materials from being carried into nearby water sources.

Economic

Compliance

Our activities are subject to a wide range of laws and regulations governing worker health and safety, land use, environmental protections, and many other areas. Compliance in this regulatory environment is crucial to our business and our reputation.

Our commitment to conduct business in a manner that adheres to all applicable laws and regulations is stated in our Business Code of Conduct and supported by our policies and standards.

We also participate in key voluntary compliance and reporting programs to demonstrate our commitment to transparency and good governance. We hold International Organization for Standardization (ISO) certifications at nine of our facilities to help us maintain environmental (ISO 14001) and product (ISO 9001) quality standards. These sites undergo third-party certification to ensure ISO standards are met. Our Environmental Management System (EMS) follows ISO standards to help Doe Run ensure that measures are properly implemented to meet environmental regulations. Within this program is the Environmental Task Management System (ETMS), which integrates our environmental tasks into a calendar system with reminders that allows us to track the completion of reoccurring tasks, such as sampling events. This system is critical to our ability to manage compliance efforts and meet ISO standards.

In addition to internal efforts to verify performance, regulators in each regulatory regime in which we operate, closely monitor our activities. Sites are frequently inspected by state and federal government agencies that review our operational, health and safety, and environmental performance. Our mines are subject to regulation by the federal Mine Safety and Health Administration (MSHA). MSHA personnel conduct inspections on a regular basis.

Financial Management

Doe Run generates financial value by mining and milling lead, copper, and zinc ore, producing concentrates, and recovering lead metal through the recycling of 8 million lead batteries each year.

We engage in a rigorous planning process each year in which we allocate the resources generated by the business. During that process, we try to balance our investments in a way that is most fair to all of our stakeholders by reinvesting in our business and employees, protecting the environment, improving the local economy, and providing a return to our investors.

Doe Run takes this approach in order to appropriately allocate resources to each of our priorities, balancing the changing needs of each one. This will allow us to continue serving a valuable role in the community for years to come.

- We strive to ensure that we invest sufficiently in the community, through paying taxes and royalties, donating to local causes, and paying fair wages to employees.
- It is important that we continue to reinvest in our operations to ensure our long-term sustainability.
- We are also committed to the environment in which we live and operate, and invest significant resources into monitoring, mitigating and improving our impact on the environment.

Doe Run follows rigorous procedures for its internal control systems. These procedures include conscientious design of systems, with a focus on segregation of duties wherever practicable, and proper documentation and annual testing of the operations of these systems. Doe Run also undergoes external audits by an independent accounting firm, which adheres to Generally Accepted Auditing Standards (GAAS) as established by the **American Institute of Certified Public Accountants**. Doe Run has written procedures and policies in place to ensure the accuracy and completeness of our financial records and the effectiveness of our internal control systems, particularly in such areas as accounting, purchasing, vendor receipts and customer transactions. In addition, the legal department reviews contracts for legal risks to the business, and our standard vendor setup packet identifies any personal relationships to Doe Run employees that could pose a conflict of interest. The decision to take these steps is consistent with our desire to conduct business ethically and responsibly.

Corporate Governance

<https://doerun.com/sustainability/corporate-governance/>

The Doe Run Resources Corporation, doing business as The Doe Run Company (Doe Run), is ultimately held by the private, New York-based **The Renco Group, Inc.**

As a global supplier of lead, copper, and zinc concentrates and lead metals and alloys, Doe Run is guided by an eight-member executive team.[1] The team consists of the president and chief executive officer; executive vice president – finance, chief financial officer and treasurer; vice president – law and general counsel; vice president – sales and marketing; vice president – metals and exploration; vice president – environmental health and safety; vice president – human resources; and vice president – mining and milling. The executive team is 75% male and encompasses an age range of 38-63 years. The team is 88% Caucasian and includes one person of Hispanic heritage. Their compensation is determined using market-based data and standard industry practices.

These individuals are responsible for setting the business strategy and organizational structure of Doe Run, as well as the company's economic, social, and environmental policies, goals and performance. On a regular basis, they review each division's environmental, health and safety performance, as well as broader economic performance by division and for the company and its subsidiaries.

As a part of our annual profit planning process, the executive team sets company goals and identifies projects, including those that further implement sustainability in the company's operations. Company projects must align to company goals and have specific metrics. Company projects are reviewed continuously. Many of the projects are reported upon in the Sustainability Report, which is prepared by a team of employees across all divisions, as assigned by the executive team. The full executive team reviews and approves Doe Run's Sustainability Report. Other executives and senior leaders may review sections pertaining to their areas of responsibility.

In addition, a Sustainability Governance Committee provides recommendations to the executive team related to sustainability matters. The Committee includes executives and senior leader-level employees from across the organization.

Policies, Procedures and Practices

Doe Run's board of directors expects management to keep pace with best practices in corporate governance. To accomplish this goal, Doe Run utilizes a stringent set of corporate governance policies, procedures and practices to ensure that the business is properly directed, administered and controlled. For example:

- Doe Run follows rigorous procedures for our internal control systems. These procedures include conscientious design of systems, with a focus on segregation of duties wherever practicable, and proper documentation and annual testing of the operations of these systems. Doe Run also undergoes external audits, including

testing of internal controls, by an independent accounting firm, which is required to adhere to Generally Accepted Auditing Standards (GAAS) as established by the **American Institute of Certified Public Accountants**. Doe Run has written procedures and policies in place to ensure the accuracy and completeness of our financial records and the effectiveness of our internal control systems, particularly in such areas as accounting, purchasing, vendor receipts and customer transactions. In addition, the legal department reviews contracts for legal risks to the business, and our standard vendor setup packet identifies any personal relationships to Doe Run employees that could pose a conflict of interest. The decision to take these steps is consistent with our desire to conduct business ethically and responsibly. Following this control framework also supports our efforts to maintain **International Organization for Standardization** (ISO) certifications at **several operating sites**, including the Resource Recycling facility and the Vancouver, Washington-based Fabricated Products Inc. site, which are all certified under the ISO 9001 Quality Management program. This certification verifies that strong, quality procedures are in place. Doe Run's Sweetwater Mine and Mill, Fletcher Mine and Mill, Brushy Creek Mine and Mill, Buick Mill, Casteel Mine, Mine 29, and Resource Recycling facility hold ISO 14001 certification, which focuses on environmental management. Specifics related to these certifications are included on our **website**.

- As a federal sub-contractor, Doe Run adheres to the requirements of the Office of Federal Contract Compliance Programs (OFCCP). In doing so, Doe Run develops annual affirmative action plans, which support the principles of equal employment opportunity and affirmative action in all of our vendor agreements, as well as employment policies and practices, including recruiting, hiring, compensation, benefits, transfers, training, promotions, social recreation programs, company-sponsored events, and in other terms and conditions of employment.
- Doe Run strives to maintain open communication with important audiences both inside and outside the company. As described within the Reporting Practice, Doe Run holds regular meetings with employees and engages in ongoing conversations with external stakeholders. We also periodically survey employees and community stakeholders. Through our corporate office, Doe Run provides our operating sites with guidance and education about community engagement. Sites then implement programs based on the specific needs of local communities. These programs include regular community outreach, facility tours, public meetings and ongoing dialogue with local communities. You can share feedback with the company through any of these forums, or by contacting **communityinfo@doerun.com**.
- In addition to providing on-site HR support, we also provide our employees with a mechanism to anonymously share issues or concerns via a hotline system managed by an outside third party. Once an employee makes a report, the third-party firm notifies human resources and legal department leadership. Timely investigations are conducted for all reports made to the hotline. Any necessary communication between the reporter and the company is handled through the third-party system, unless an employee elects otherwise, to resolve issues as discretely as possible.

Those interested in employment can begin learning about the company's expectations, values and sustainability policy from our website, recruitment ads, new-hire orientation and leadership development programs. In addition, the company's Standards of Business Conduct and Company Values, Vision, Mission and Business Strategy are reviewed formally during the onboarding process and throughout our leadership development programs. Prior to joining Doe Run, employees receive the Doe Run Employee Handbook and Standards of Business Conduct to review, and have the

opportunity to ask questions. Employees are required to sign an acknowledgment that they have received and reviewed these documents. Employees receive updated versions of the Employee Handbook and Standards of Business Conduct as revisions are made, and also can access these documents online.

Our core values are defined by the executive team and reinforced daily in conversations, business processes, as part of employee development, as well as throughout our internal and external communications.

We believe we can enhance the quality of life for our stakeholders through:

- **Safety:** Protecting one another.
- **Integrity:** Demonstrating transparency and honesty in all we say and do.
- **Collaboration:** Working together with employees, and external stakeholders, to realize shared goals.
- **Respect:** Recognizing that every employee has a voice and opinion that matters; diversity of experience, thought and ideas is encouraged.
- **Stewardship:** Conserving, managing and making the most of the natural resources in our care.
- **Sustainability:** Balancing social, environmental and economic considerations with a relentless focus on improving our processes.

To ensure that we stay current on corporate governance and corporate responsibility trends, we maintain memberships in several industry-related trade associations. These **associations** support and educate members about such issues as community engagement, environmental stewardship and sustainability. Company leaders serve on executive committee and/or hold **board positions** in many of these organizations.

We believe that corporate governance is an evolving process. We are committed to continuous improvement in setting sustainability targets and in our reporting, so we can continue to operate responsibly and with integrity.

[1] As this 2021 report was being finalized, Doe Run made changes to the executive team by promoting some members and adding others. See the current executive team [here](#).

Reporting Practice

<https://doerun.com/sustainability/reporting-practice/>

Based on the Global Reporting Initiative (GRI) definition of materiality, The Doe Run Company (Doe Run) determines what information to include in its Sustainability Report based on a variety of methods, which may include quantitative and qualitative research, one-on-one conversations, community meetings, tours, online surveys, and special events. We include progress we have made on projects, processes or challenges that have significant economic, environmental and social impact (both positive and negative) on our company, our stakeholders and the industries that depend on lead-based products.

Doe Run initially adopted the GRI framework in 2009 as a response to research that indicated audiences wanted to know more about the company, its efforts to operate safely and its investments to limit its environmental impact. The executive team reviews and implements programs and processes to further implement sustainability in the company's operations. Each year, the executive team assigns individuals from the various divisions to collect data and prepare the company's Sustainability Report.

Doe Run continues to refine the topics we cover in our Sustainability Reports based on what our stakeholders consider material.

Over the past decade, we have periodically conducted quantitative and qualitative research within the Missouri communities in which we operate. The research identified the major issues facing citizens in the community during that time. Some of the most common responses we have heard over the years include the state of the local economy, the availability of good jobs, Doe Run's environmental responsibility, the safety of Doe Run operations, and the company's involvement in the community. Responses also showed concern about Doe Run's tax appeals in Reynolds and Iron Counties.

Based on these insights and ongoing conversations with our stakeholders, Doe Run prioritized which aspects and data indicators are material both inside and outside the organization, and should be the focus of the 2021 report:

- Community involvement at all operations
- Employee health and safety at all operations
- Environmental capital investment and performance, which relates to all operations
- Remediation progress and land conservation
- Workforce data for all operations
- Direct economic impact from all operations and indirect economic impact from operations and supply chain

Identification and Selection of Stakeholders

Based on input and continued dialogue with our employees, communities, industry groups and regulatory bodies, we've determined that in addition to our shareholders and employees, our stakeholders consist of the following: community groups and leaders; neighboring property owners and residents; current and retired employees; local, state and federal government; business groups; nearby schools; and industry organizations.

Stakeholder Groups

Community Groups and Leaders

Key Interests and Concerns

Seek information related to local jobs, taxes and other support.

Engagement Methods

- Host an online survey available through our sustainability website each year.
- Provide feedback mechanism via annual Sustainability Report.
- Maintain ongoing engagement through a number of community events (our typical public events did not take place in 2021 due to the COVID-19 pandemic).
- Maintain involvement in various community organizations, including Viburnum Economic Development Area Corporation, Viburnum Lions Club, Salem Chamber of Commerce, Council for a Healthy Dent County, Reynolds County Rotary Club, Teen Challenge of St. Louis, the United Way of Greater St. Louis, local school district organizations, and community sports teams.
- Support local nonprofits through donations, including Iron County Sheriff's Department, Ellington Chamber of Commerce, Salem Area Community Betterment Association, Bunker Lions Club, Bunker Fire Department, Valley Lions Club, Disabled Citizens Alliance for Independence Food Pantry, local churches, and other organizations.
- Share company updates via news releases and annual Sustainability Report.
- Provide free tours annually during Old Miners' Days (canceled in 2021 due to the pandemic).

Neighboring Property Owners and Residents

Key Interests and Concerns

Seek information related to the potential impact of Doe Run's operations on their land, such as environmental precautions, traffic, noise, etc. Also interested in employee safety.

Engagement Methods

- Communicate directly with nearby residents if a situation arose.
- Share company updates via news releases, local newspaper and radio interviews, and annual Sustainability Report.
- Provide free tours annually during Old Miners' Days (canceled in 2020 due to the pandemic).

Employees

Key Interests and Concerns

Seek information about business goals, operational performance, employee training, and health and safety.

Engagement Methods

- Conducted employee surveys in 2017, 2014 and 2012, and one is slated for 2022.
- Hold regular meetings with hourly employees.
- Hold regular employee meetings with managers.
- Established cascading process to share information with employees and to surface feedback from employees.
- Publish regular employee newsletter mailed to homes to share company updates.
- Gather informal information at annual company-sponsored events, including Old Miners' Days and Fall Rocks (canceled in 2020 due to the COVID-19 pandemic).

Local, State and Federal Government and Regulatory Agencies

Key Interests and Concerns

Both groups seek information about operational performance, specifically around environmental impact and health and safety. Local and state government is also deeply interested in the company's economic impact, including jobs and taxes.

Engagement Methods

- Hosted Doe Run Day at the Capitol to interact with legislators in Jefferson City, Missouri, in 2020, 2017 and 2015.
- Hosted a legislator tour of Doe Run operations in June 2019, and planning another for freshman legislators in 2022.
- Hosted an EPA tour of Doe Run operations in July 2021.
- Meet regularly with federal and state legislators to provide updates on company operations, environmental performance and future plans.
- Regularly invite elected and regulatory officials to tour operations.
- Post online annual Sustainability Reports with detailed data on environmental, health and safety performance.
- Meet regularly to address legacy issues and ongoing operations with Missouri Department of Natural Resources, EPA Region 7, U.S. Forest Service and Natural Resources Trustees.

Business Groups

Key Interests and Concerns

Seek information related to the company's economic impact in the area, including supplier partnerships.

Engagement Methods

- Maintain involvement with local business groups, including Viburnum Economic Development Area Corporation, Viburnum Lions Club, Washington County Chamber of Commerce, Salem Chamber of Commerce, and Associated Industries of Missouri.
- Share company updates via news releases and the annual Sustainability Report.

Nearby School Districts and Colleges

Key Interests and Concerns

Seek information related to funding that benefits schools. Also seek information to inform and educate students about mining and minerals, and training for students who want to enter the mining profession.

Engagement Methods

- Maintain ongoing partnerships with local colleges, such as the Missouri University of Science and Technology, Southwest Baptist College and Mineral Area College, including scholarships and/or donations toward key programs.
- Provide financial support for STEM-related education in **local schools**, including materials that encourage active learning, creative problem-solving and enhanced curriculum at area school districts and scholarships for students studying STEM fields.
- Offer minerals education curriculum and materials to local school districts.
- Offer internships and job training.
- Engage in informal conversations with teachers and administrators through involvement in mineral education workshops, Career Days and other partnerships with schools.
- Share company updates via news releases and the annual Sustainability Report.

Industry Organizations

Key Interests and Concerns

Seek information and best practices related to economic, environmental and social performance.

Engagement Methods

- Hold multiple board or executive committee positions with **industry trade associations**.
- Assist industry organizations, and their educational campaigns, such as **Essential Energy Everyday**, with initiatives to further the industry.

Open communication with our internal and external stakeholders helps us share achievements and challenges. It also helps Doe Run understand what actions and information our stakeholders desire from us. We strive to maintain open communication with stakeholders both inside and outside the company. Our Sustainability Reports and our online survey are two channels for this communication.

To share feedback with Doe Run, contact communityinfo@doerun.com, and please consider answering a few questions via our online survey. To share feedback with Doe Run, contact communityinfo@doerun.com, and please consider answering a few questions via our **online survey**.

GRI Index

<https://doerun.com/sustainability/gri-index/>

This report contains Standard Disclosures from the GRI Sustainability Reporting Guidelines. A list of the reported Standard Disclosures is listed below. All information is fully disclosed, unless otherwise indicated.

Organizational Profile

102-1 (G4-3)	Name of the organization	The Doe Run Resources Corporation/DBA The Doe Run Company
102-2 (G4-4)	Primary brands, products, and services	What We Do
102-3 (G4-5)	Location of the organization's headquarters	St. Louis, Missouri, United States
102-4 (G4-6)	Countries where the organization operates	United States
102-5 (G4-7)	Nature of ownership and legal form	The Doe Run Resources Corporation is a corporation, which is an indirect subsidiary of The Renco Group, Inc.
102-6 (G4-8)	Markets served	Primary customers served include battery manufacturers in the U.S.; concentrates are sold globally. What We Do
102-7 (G4-9)	Scale of the reporting organization	What We Do Financial Highlights As a private company, net sales, net revenue and total capitalization is proprietary information and viewed as business confidential.
102-8 (G4-10)	Total workforce by employment type, employment contract, and region, broken down by gender	Workforce Summary
102-9 (G4-12)	Organization's supply chain	Doe Run partners with its local vendors to create a more sustainable supply chain and support local economic vitality where possible. Its supplier practices guided more than \$164 million in spending to Missouri-based suppliers in 2020, representing 43% of Doe Run's overall supplier spending.
102-10 (G4-13)	Significant changes during the reporting period	Letter from the CEO

102-12 (G4-15)	Externally developed economic, environmental and social charters, principles, or other initiatives to which the organization subscribes or which it endorses	The Doe Run Company, through its membership with the International Lead Association, subscribes to the principles of the Shared Lead Action 21 Program . We aim for the safe production and use of lead now and in the future while safeguarding human health and limiting operational impact on the natural environment. In addition, many of Doe Run's operations have achieved and maintain ISO certifications to minimize our environmental impact.
102-13 (G4-16)	Memberships of associations or organizations	The Doe Run Company participates on the boards and/or committee activities for a variety of industry organizations, including: International Lead Association International Zinc Association Battery Council International Consortium of Battery Innovation Society of Mining, Metallurgy and Exploration

Strategy

102-14 (G4-1)	Statement from the most senior decision-maker of the organization	Letter from the CEO
102-15 (G4-2)	Description of key impacts, risks and opportunities	Letter from the CEO

Ethics and Integrity

102-16 (G4-56)	Organization's values, principles, standards and norms of behavior	Core Values
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Governance

102-18 (G4-34)	Governance structure of the organization	Corporate Governance
102-19 (G4-35)	Process for delegating authority to address economic, environmental and social topics	Corporate Governance
102-20 (G4-36)	Position responsible for economic, environmental and social topics	Corporate Governance

102-22 (G4-38)	Composition of the company's highest governing body	Corporate Governance (Partially Disclosed)
102-23 (G4-39)	Indicate whether the Chair of the highest governance body is also an executive officer	No
102-26 (G4-42)	Report the highest governance body's and executives' roles in developing, approving and updating the organization's purpose, mission, strategies, policies and goals related to sustainability	Corporate Governance
102-32 (G4-48)	Highest position that formally reviews and approves the sustainability report	President and CEO

Stakeholder Engagement

102-40 (G4-24)	List of stakeholder groups engaged by the organization	Reporting Practice
102-41 (G4-11)	Percentage of total employees covered by collective bargaining agreements	The company has no union employees.
102-42 (G4-25)	Basis for identification and selection of stakeholders with whom to engage	Reporting Practice
102-43 (G4-26)	Approach to stakeholder engagement	Reporting Practice
102-44 (G4-27)	Key topics and concerns that have been raised through stakeholder engagement	Reporting Practice

Reporting Practice

102-45 (G4-17)	Entities included in the organization's consolidated financial statements or equivalent documents	All Doe Run entities have been reported. What We Do
102-46 (G4-18)	Process for defining report content	Reporting Practice
102-47 (G4-19)	Material aspects identified for defining report content	Reporting Practice

102-48 (G4-22)	Restatements of information provided in previous reports, and the reasons for such	None
102-49 (G4-23)	Report significant changes from previous reporting periods in the Scope and Aspect Boundaries	None
102-50 (G4-28)	Reporting period	2021 Calendar (Fiscal year reporting is noted where appropriate)
102-51 (G4-29)	Date of most recent previous report	Published in August 2021
102-52 (G4-30)	Reporting cycle	Annual
102-53 (G4-31)	Contact point	corporateinfo@doerun.com
102-54 (G4-32)	Reporting in accordance with GRI Standards	This report contains Standard Disclosures from the GRI Sustainability Reporting Guidelines.
102-55 (G4-32)	GRI Content Index	The GRI content index is outlined on this page.

Management Approach

103-1 (G4-20 and G4-21)	Explanation of materials topics and their boundaries	Management Approaches
103-2	Explanation of how the organization manages each topic	Management Approaches
103-3	Explanation of how the organization evaluates the management approach	Management Approaches

Economic

201-1 (G4-EC1)	Direct economic value generated and distributed	Financial Highlights (Partially Disclosed)
203-1 (G4-EC7)	Development and impact of infrastructure investments and services supported	Preparing Students for Mining Careers Remediation Updates In 2021, Doe Run employees completed more than 315 volunteer hours.
204-1 (G4-EC9)	Proportion of spending on local suppliers at significant locations of operation	In 2021, Doe Run supported Missouri businesses by spending more than \$188 million with 665 Missouri vendors. This accounts for 44% of total company spending.

Environmental

301-2 (G4-EN2)	Percentage of materials used that are recycled input materials	Environmental Performance
302-1 (G4-EN3)	Energy consumption within the organization	Environmental Performance
302-3 (G4-EN5)	Energy intensity	Environmental Performance
305-1 (G4-EN15)	Direct greenhouse gas (GHG) emissions (Scope 1)	Environmental Performance
305-2 (G4-EN16)	Energy indirect greenhouse gas (GHG) emissions (Scope 2)	Environmental Performance
305-3 (G4-EN17)	Other indirect greenhouse gas (GHG) emissions (Scope 3)	Environmental Performance
305-4 (G4-EN18)	Greenhouse gas (GHG) emissions intensity	Environmental Performance
305-7 (G4-EN21)	NOx, SOx, and other significant air emissions	Environmental Performance
306-1 (G4-EN22)	Total water discharge by quality and destination	Environmental Performance
307-1 (G4-EN29)	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations	In 2021, Doe Run paid \$400,000 to settle allegations of non-compliance of environmental laws and regulations.

Employment

401-1 (G4-LA2)	New employee hires and employee turnover	Workforce Summary (Partially Disclosed)
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Occupational Health and Safety

403-1 (G4-LA6)	Type and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities by region and by gender	Health and Safety Performance (Partially Disclosed)
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Training and Education

404-1 (G4-LA9)	Average hours of training per year per employee by gender and employee category	Workforce Summary (Partially Disclosed)
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Local Communities

413-1 (G4-SO1)	Local community engagement, impact assessments, and development programs	All operations implement a localized community engagement plan.
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Preparing Students for Mining Careers

Socioeconomic Compliance

419-1 (G4-SO8 and G4-PR9)	Non-compliance with laws and regulations in the social and economic area	In 2021, Doe Run paid approximately \$108,000 in fines related to allegations of noncompliance with social laws and regulations. In 2021, Doe Run paid no (\$0) significant fines for noncompliance concerning provision and use of products and services. (Partially Disclosed)
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THE
DOE RUN
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