The Doe Run Company • 2018 Sustainability Report

Performance Data

THE DOE RUN COMPANY

THE DOE RUN COMPANY

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 sets its maximum limit at 30 µg/dL. If any employee has a blood-lead average that reaches 30 µg/dL, they are temporarily reassigned to other work.

(in µg/dL)	2016	2017	2018
Southeast Missouri Mining and Milling Division (SEMO), including remediation and demonstration plant	8.28	8.10	**6.51**
Metals Division (Resource Recycling, Herculaneum, Glover)[2]	14.83	13.35	**10.12**
Corporate Headquarters[3]	N/A	N/A	**N/A**
Fabricated Products Inc. (FPI)	7.60[4]	6.80[4]	**7.40[5]**
Average	**10.20**	**9.64**	**7.63**

Employee Blood-Lead Data

Doe Run monitors and reports the number of employees with a blood-lead average 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 30 µg/dL.

(# of employees with blood-lead levels >19 ug/dL)	2016	2017	2018
SEMO	23	5[6]	**4[6]**
Metals Division (Resource Recycling, Herculaneum, Glover)[2]	134	26[6]	**11[6]**
Corporate Headquarters[3]	N/A	N/A	**N/A**
FPI	2	1	**1[5]**
Total	**159**	**32[6]**	**16[6]**

Total Lost-Time Accidents

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 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.

(number of employees)	2016	2017	2018
SEMO (includes Glover)	7	3	**3**
Metals Division (Resource Recycling, Herculaneum)	6	4	**5**
Corporate Headquarters	0	0	**0**
FPI	0	0	**0**
Total number of work-related fatalities, companywide	**0**	**0**	**0**
Total	**13**	**7**	**8**

THE DOE RUN COMPANY

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)	2016	2017	2018
SEMO (includes Glover)	33	21	**23**
Metals Division (Resource Recycling, Herculaneum)	34	29	**21**
Corporate Headquarters	0	0	**0**
FPI	1	0	1
Total	**68**	**50**	**45**

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)	2016	2017	2018
SEMO (includes Glover)	4.3	3.0	**3.2**
Metals Division (Resource Recycling, Herculaneum)	9.7	11.3(7)	**5.7**
Corporate Headquarters	0.0	0.0	**0.0**
FPI	2.4	0.0	**2.4**
Total Company	**5.5**	**4.2(7)**	**3.8**

(1) The OSHA General Industry Lead Standard is written in units of µg of Pb/100g of whole blood. Doe Run reports their blood lead values in µg of Pb/dL of whole blood, and all values in this report are presented as µg/dL. The conversion used is 1 µg/100g = 1.05 µg/dL
(2) Glover is included in the Metals Division for blood-lead data only due to the nature of their work.
(3) Employees at corporate headquarters are not required to be tested.
(4) Some 2016 and 2017 data has been corrected here.
(5) Due to an analytical testing issue at an outside lab, FPI blood-lead data is reported as of July 31. All other blood-lead data is representative of the full calendar year. FPI calculations exclude the last quarter of inaccurate test data.
(6) Significant reductions in blood-lead levels >19 resulted from continued focus on employee hygiene and housekeeping procedures, and equipment changes at Resource Recycling and SEMO.
(7) Adjustments have been made for consistent rounding compared to 2017 published data.

THE DOE RUN COMPANY

Workforce Summary

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

(number of employees)[1]	2016	2017	2018
Southeast Missouri Mining and Milling Division (SEMO)	700	705	727
Metals Division (Resource Recycling and Herculaneum)	313	322	329
Corporate Headquarters[2]	130	142	150
Fabricated Products Inc. (FPI)	41	40	39
Total Number of Employees[1]	**1,184**	**1,209**	**1,245**

2018 Male and Female Employees by Division (Calendar Year)

	2016	2016	2017	2017	2018	2018
(number of employees)	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**
SEMO	652	48	656	49	**671**	**56**
Metals Division	296	17	301	21	**306**	**23**
Corporate Headquarters	76	54	87	55	**98**	**52**
FPI	35	6	34	6	**34**	**5**
Total Number of Employees	**1,059**	**125**	**1,078**	**131**	**1,109**	**136**

Number of Employees by Employment Type (Calendar Year)

(number of positions)	2016	2017	2018
Permanent Hourly Positions	846	854	**871**
Permanent Salary Positions	331	351	**367**
Temporary Positions	3	0	**4**
Contracted Positions	4	4	**3**
Total Number of Employees	**1,184**	**1,209**	**1,245**

2018 Male and Female Employees by Employment Type (Calendar Year)

(number of employees)	2016 Male	2016 Female	2017 Male	2017 Female	2018 Male	2018 Female
Permanent Hourly Positions	822[2]	24	832	22	**850**	**21**
Permanent Salary Positions	232[2]	99[2]	242	109	**254**	**113**
Temporary Positions	1	2	0	0	**2**	**2**
Contracted Positions	4	0	4	0	**3**	**0**
Total Number of Employees	**1,059**	**125**	**1,078**	**131**	**1,109**	**136**

(1) Employee counts for G4-10 include all categories of employees.
(2) In 2017, the Remediation Department headcount was moved from SEMO Division to Corporate Headquarters.

THE DOE RUN COMPANY

Workforce Summary

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

Total number[1] and rate[2] of new employee hires entering employment during the reporting period broken down by gender.

	2016		2017		2018	
	Number	**Rate**	**Number**	**Rate**	**Number**	**Rate**
Male	85	96.6%	129	87.8%	**159**	**89.8%**
Female	3	3.4%	18	12.2%	**18**	**10.2%**
Total Number of Employees	**88[3]**		**147[3]**		**177[3]**	

(1) Employee counts exclude hiring and termination of temporary employees. Historically, the majority of the hourly workforce has been drawn from the temporary pool of employees.
(2) The rate is calculated by dividing the hires by gender by the total number of hires.
(3) Increased hiring year-over-year reflects new hires primarily replacing those who retired or left voluntarily.

Employees Leaving by Gender (Calendar Year)

Total number[1] and rate[2] of employees leaving employment during the reporting period broken down by gender.

	2016		2017		2018	
	Number	**Rate**	**Number**	**Rate**	**Number**	**Rate**
Male	132	86.8%	109	90.8%	**132**	**89.8%**
Female	20	13.1%	11	9.2%	**15**	**10.2%**
Total Number of Employees	**152**		**120**		**147**	

(1) Employee counts exclude hiring and termination of temporary employees. Historically, the majority of the hourly workforce has been drawn from the temporary pool of employees.
(2) The rate is calculated by dividing the terminations by gender by the total number of terminations.

New Employee Hires by Age Group (Calendar Year)

Total number[1] and rate[2] of new employee hires entering employment during the reporting period broken down by age group.

	2016		2017		2018	
	Number	**Rate**	**Number**	**Rate**	**Number**	**Rate**
30 or younger	47	53.4%	65	44.2%	**85**	**48.0%**
31 to 40	16	18.2%	45	30.6%	**45**	**25.4%**
41 to 50	18	20.5%	26	17.7%	**29**	**16.4%**
51 and above	7	8.0%	11	7.5%	**18**	**10.2%**
Total Number of Employees	**88[3]**		**147[3]**		**177[3]**	

(1) Employee counts exclude hiring and termination of temporary employees. Historically, the majority of the hourly workforce has been drawn from the temporary pool of employees.
(2) The rate is calculated by dividing hires by age group by the total number of hires.
(3) New hires primarily replaced those who retired or left voluntarily.

THE DOE RUN COMPANY

Employees Leaving by Age Group (Calendar Year)

Total number[1] and rate[2] of employees leaving employment during the reporting period broken down by age group.

	2016		2017		2018	
	Number	**Rate[4]**	**Number**	**Rate[4]**	**Number**	**Rate[4]**
30 or younger	20	13.1%	18	15.0%	**40**	**27.2%**
31 to 40	27	17.6%	35	29.2%	**34**	**23.1%**
41 to 50	29	19.0%	20	16.7%	**23**	**15.7%**
51 and above[3]	76	50.3%	47	39.2%	**50**	**34.0%**
Total Number of Employees	**152**		**120**		**147**	

(1) Employee counts exclude hiring and termination of temporary employees. Historically, the majority of the hourly workforce has been drawn from the temporary pool of employees.

(2) The rate is calculated by dividing the terminations by age group by the total number of terminations.

(3) In 2016, 55% of departures reflect retirement. In 2017, 79% of departures reflect retirement. In 2018, 27% of departures reflect retirement. A competitive workforce and job opportunities in more urban areas contributes to turnover.

(4) Doe Run continues to strive to accurately measure its environmental, economic and social data. Due to rounding, some percentage totals may not always equal 100%, but are accurate.

THE DOE RUN COMPANY

Workforce Training

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

(number of training hours)	2016	2017	2018
Total number of training hours	16,745[2]	16,146[2]	**31,245**
Total number of employees[1]	1,333	1,208	**1,245**
Average number of training hours per employee	**12.56[2]**	**13.36[2]**	**25.09[3]**

(1) Total number of employees reflects total number of employees who received training during annual training periods and may not reflect year-end employee counts.
(2) Training hours for 2016 and 2017 are a conservative estimate due to changes in the training hours recording system.
(3) In 2018, leadership development training was conducted for all employees with direct reports, which accounts for increased hours. Additionally, an increase in new hires resulted in more new employee trainings.

THE DOE RUN COMPANY

Environmental Performance

301-1 (EN1) Materials Consumed (Fiscal Year)

Units and Substances Key

Metric Ton(s): mt

Direct/Indirect Source (mt)	**2016**	**2017**	**2018**
Direct Materials Used	31,489	34,117	**27,452**
Indirect Materials Used	54,043	48,850	**58,928**
Total Materials Used	**85,532**	**82,967**	**86,380**
Renewable/Non-Renewable Source (mt)			
Renewable Materials Used	97	84	**58**
Non-Renewable Materials Used	85,435	82,883	**86,322**
Total Materials Used	**85,532**	**82,967**	**86,380**

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

Units and Substances Key

Metric Ton(s): mt

Source (mt)	**2016**	**2017**	**2018**
Slag	13,480	12,317	**3,467**
Batteries (mt of Pb)	86,091	97,929	**107,928**
Lead-Bearing Material	36,622	44,422	**44,731**
Iron-Containing Material	8,812	6,643	**14,028**
Total	**145,005**	**161,311**	**170,154**
Percentage of materials used that are recycled input materials	**63%**	**65%**	**66%**

THE DOE RUN COMPANY

Environmental Performance

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

Units and Substances Key

Gigajoule(s): GJ

Direct Non-Renewable Energy Source[1]	2016	2017	2018
Coke	529,612	416,868[2]	**483,741**
Explosives	24,486	25,773	**24,836**
Natural Gas	131,663	197,148[2]	**237,801**
Petroleum Fuel	265,809	270,620	**280,588**
Propane	486,552	507,154[2]	**614,485**
Total Direct Energy Consumption[1]	**1,438,122**	**1,417,563[2]**	**1,641,451**

Indirect Non-Renewable Energy Source	2016	2017	2018
Electricity	1,434,721	1,417,864	**1,447,947**
Total Energy Use	**2,872,843**	**2,835,427[2]**	**3,089,398**

(1) Annual variations reflect changes in production requirements year to year.
(2) Some 2017 data has been corrected here.

THE DOE RUN COMPANY

Environmental Performance

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	2016	2017	2018
Southeast Missouri Mining and Milling Division (SEMO)	GJ/mt Ore milled	0.4[1]	0.3[1]	**0.3**
Metals Division (Resource Recycling and Herculaneum)	GJ/mt Pb produced	10.4[1]	6.7[1,2,3]	**8.5**
Fabricated Products Inc. (FPI)	GJ/mt Pb produced	1.4[1]	3.5[1,3]	**4.4**

(1) 2016 and 2017 values were previously reported to two decimal places.
(2) Reduction due to changes in the battery breaker process at Resource Recycling.
(3) Some 2017 data has been corrected here.

THE DOE RUN COMPANY

Environmental Performance

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

Units and Substances Key

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

	2016	2017	2018
Scope 1 (direct emissions of Greenhouse Gases, Carbon Disclosure Project, e.g., direct combustion of fuels)	144,778	104,816[1,2]	**115,896[3]**

(1) 2017 data has been corrected here.
(2) Reduction in 2017 is due to variable production requirements at Resource Recycling.
(3) Increase due to a colder winter and increased production at Resource Recycling.

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

Units and Substances Key

Metric Ton(s) of Carbon Dioxide Equivalent (mt CO_2e)

	2016	2017	2018
Scope 2 (emissions from direct purchase of energy, e.g., electricity)	293,131	319,052	**330,370**

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

Units and Substances Key

Metric Ton(s) of Carbon Dioxide Equivalent (mt CO_2e)

	2016	2017	2018
Scope 3 (indirect emissions from transportation and employees' commute, etc.)	13,197	20,057[1]	**16,795**

(1) Increase in 2017 is due to increased miles traveled by employees on company business expenses.

THE DOE RUN COMPANY

Environmental Performance

305-4 (EN18) Greenhouse Gas Emission Intensity

Units and Substances Key

Metric Ton(s): mt
Carbon Dioxide Equivalent: CO_2e
Ore: Ore milled at mining operations
Pb: Lead produced at alloying, casting, and secondary smelting and fabricating operations

Division	Units	2016	2017	2018
Southeast Missouri Mining and Milling Division (SEMO)	mt CO_2e/mt Ore milled	0.06	0.05	**0.05**
Metals Division (Resource Recycling and Herculaneum)	mt CO_2e /mt Pb produced	1.40	0.77(1,2)	**0.80(1)**
Fabricated Products Inc. (FPI)	mt CO_2e /mt Pb produced	0.09	0.15(3)	**0.16**

(1) Reduction in 2017 and 2018 is due to variable production requirements at Resource Recycling.
(2) Value has been updated from 2017 report to reflect more accurate rounding.
(3) 2017 data was previously misreported and has been corrected here.

THE DOE RUN COMPANY

Environmental Performance

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

Units and Substances Key

Metric Ton(s): mt

Source (mt by type and weight)	**2016**	**2017**	**2018**
Ammonia (NH_3)	0.06	0.12	**0.12**
Antimony (Sb)	0.00	0.00	**0.00**
Arsenic (As)	0.26	0.29	**0.31**
Cadmium (Cd)	0.17	0.19	**0.20**
Carbon Monoxide (CO)(1)	15,497.00	13,584.00	**21,919.00**
Copper (Cu)	0.33	0.22	**0.18**
Hazardous Air Pollutants (HAP)	1.08	0.94	**0.89**
Lead (Pb)	5.10	4.45	**4.47**
Nickel (Ni)	0.03	0.03	**0.04**
Nitrogen Oxides (NO_X)(2)	36.00	40.00	**55.00**
Particulate Matter (PM)	199.00	151.00	**206.00**
Sulfur Dioxide (SO_2)	2,199.00	2,374.00	**2,130.00**
Sulfuric Acid (H_2SO_4)(3)	2.60	1.82	**0.74**
Volatile Organic Compounds (VOC)	8.00	9.40	**10.20**
Zinc (Zn)	0.85	0.67	**0.57**
Total	**17,950.00**	**16,167.00**	**24,328.00**

(1) Annual carbon monoxide variations reflect changes in production requirements year to year.
(2) Increase in nitrogen oxides is due to additional combustion processes.
(3) Decrease in sulfuric acid from 2017 to 2018 is due to an updated stack test emission factor.

THE DOE RUN COMPANY

Environmental Performance

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

Units and Substances Key

ppb: parts per billion

Source (average ppb/year)[1]	2016	2017	2018
Lead	56	21[3,4]	**15[3]**
Zinc	336	258[3,4]	**242[3]**
Copper	4	3[3]	**3[3]**
Total water discharge (million gallons/year)	**19,775[2]**	**18,264**	**19,870**

(1) All data sources represented are reported in average ppb/year to be consistent with permit reporting requirements.
(2) 2016 total water discharge was previously misreported and has been corrected here.
(3) The final of five SEMO water treatment plants was put into operation in August 2017. These plants helped reduce the metals contained in water discharges.
(4) Corrections were made in 2017 calculations to represent actual reductions.

THE DOE RUN COMPANY

Environmental Spending

EN31 Total Fiscal Environmental Spending

	2016	2017	2018
Total Capital Spending and Operating Expense	**60,525,088[1]**	**48,248,765**	**39,422,485**
Remediation Spending			
Historic Properties	1,065,582	4,544,150	**6,424,264**
Operating Properties	8,891,423	5,001,595[2]	**5,057,746**
Total Remediation Spending	**9,957,005**	**9,545,745**	**11,482,010**
Total Fiscal Environmental Spending, Including Remediation	**70,482,093[1]**	**57,794,509**	**50,904,495**

(1) 2016 capital and operating costs were updated from previous reports to include operating expenses not previously included and remove the double counting of some expenses.

(2) Remediation spending decreased in 2017 and 2018 at Herculaneum as the remediation work progresses.

THE DOE RUN COMPANY

Economic Impact

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

(dollars in thousands)	2016	2017	2018
Property Taxes	$6,818	$6,188	**$1,962**[1]
Compensation	$114,005	$127,361	**$121,362**
Community Investment[2]	$211	$182	**$178**
Environmental Spending	$70,482[3]	$57,795[4]	**$50,904**
Research and Development	$1,405	$2,095	**$2,533**
Royalties to Governments	$7,924	$9,236	**$9,303**
Capital Spending (excluding environmental capital expenditures)	$24,165	$21,371	**$46,908**[5]

(1) Lower property tax spending in 2018 is due to overpaying taxes since 2011.
(2) Includes donations, scholarships and tuition reimbursement.
(3) Environmental spending totals for 2016 were updated from previous reports to include operating expenses not previously included and remove the double counting of some expenses between divisions.
(4) Decrease in environmental spending is due to the completion of several environmental projects at Southeast Missouri Mining and Milling Division and Metals Division.
(5) Higher investment in mine development and mobile equipment was made in 2018.