



2017 SUSTAINABILITY REPORT

## CONTENTS

- 3 A year in review
- 4 Chair and CEO's address

### THE SANDFIRE STORY 6

- 7 Business overview
- 7 Our business model
- 8 Our values
- 8 Our copper concentrate
- 9 Our supply chain
- 9 External memberships

### OUR SUSTAINABILITY PRIORITIES 10

- 11 Focus areas
- 12 Sandfire and the Sustainable Development Goals
- 12 Operating responsibly
- 13 Supporting economic development
- 13 A safe and supportive workforce
- 14 Respect and accountability
- 14 Sandfire targets

### REPORTING WHAT MATTERS 18

- 19 Our material issues
- 21 Our reporting
- 21 Boundary and limitations
- 21 External assurance

### RESPECT AND ACCOUNTABILITY 22

- 22 Our aim
- 23 Board structure
- 23 Governance systems
- 24 How we govern sustainability
- 24 How we manage risk
- 24 Our social licence to operate
- 25 How we engage with our stakeholders
- 26 Native title group engagement

### SUPPORTING ECONOMIC DEVELOPMENT 28

- 28 Our aim
- 29 Our economic contribution
- 30 Local procurement
- 31 Employment
- 32 Aboriginal employment
- 32 Community investments and partnerships
- 34 Taxes and government payment
- 35 Mine closure – leaving a positive legacy

### BUILDING A SAFE AND SUPPORTIVE WORKPLACE 36

- 36 Our aim
- 36 Our people
- 40 Diversity and inclusion
- 40 Gender diversity
- 41 Health and safety
- 41 Safety performance and management
- 44 Health and wellness

### OPERATING RESPONSIBLY 46

- 46 Our aim
- 47 Energy, carbon and renewable energy generation
- 51 Water and management
- 56 Mine closure planning and management

### APPENDIX 1 GRI INDEX 58

### APPENDIX 2 GLOSSARY 65

### APPENDIX 3 ASSURANCE STATEMENT 66

### APPENDIX 4 DATA TABLES 68

## YEAR IN REVIEW

Sales  
Revenue  
**\$513.2M**

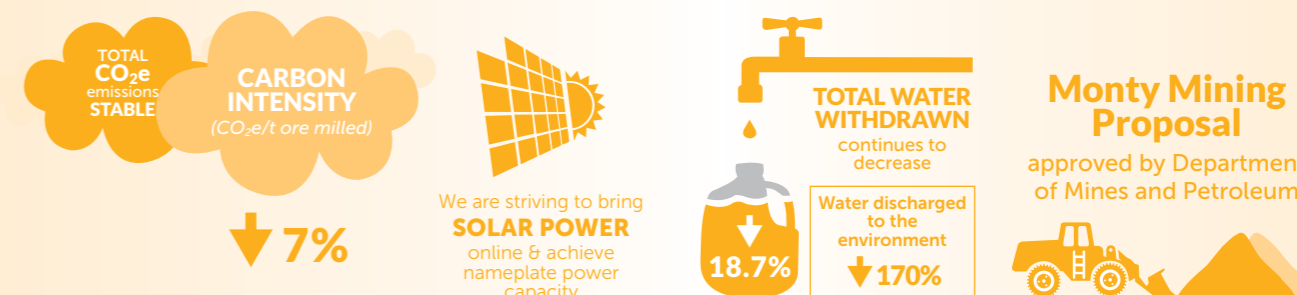
Copper  
Production  
**67,088  
TONNES**

Gold  
Production  
**38,623  
OUNCES**

Spent  
**\$33.1M**  
on  
EXPLORATION  
PROGRAMS

**227**  
Direct  
Sandfire  
Employees

### OPERATING RESPONSIBLY



### SUPPORTING ECONOMIC DEVELOPMENT



### STRIVING FOR A SAFE & SUPPORTIVE WORKPLACE



### CONDUCTING OUR BUSINESS WITH RESPECT & ACCOUNTABILITY



# CHAIR & CEO'S ADDRESS

Welcome to our third sustainability report, which marks a year of significant progress in our journey, both as a successful mid-tier Australian mining company and as an organisation working to contribute to a more sustainable future for society.

During the 2017 financial year, we emerged from a period of subdued prices for our commodities with a refreshed internal structure, a pipeline of projects in both the approval and exploration stages, and a strong financial result. From a sustainability perspective, we continued to see our efforts deliver measurable value for our business and society.

As a business, we achieved our production targets at the DeGrussa Copper-Gold Mine in Western Australia while keeping costs at the lower end of our published guidance. Copper prices improved during the year and combined with other factors to enable us to maintain a strong operating margin, achieve a net profit after tax of \$75 million for the year and grow our consolidated group cash and deposits to \$127 million at year-end.

Our strong balance sheet ensures that we can continue to invest strongly in the future growth and sustainability of our business.

Looking to the future, we advanced the pipeline of development projects that will provide an avenue for Sandfire's growth. The mining proposal and mine closure plan for our high-grade Monty copper-gold project, part of the Springfield Joint Venture with Talisman Mining, was approved in July 2017, paving the way for development work to commence.

Approval for the mine – one of the first in Western Australia to be assessed under the State's new Mining Proposal Guidelines – was achieved in under three months, a credit to our exploration and development team and supporting consultants. We estimate that this should enable the mine to be in production in the first half of FY2019.

In central Montana, USA, the Black Butte copper project, in which we now hold a 78 per cent interest, is progressing through environmental and other approvals. To protect the natural environment of the surrounding area, the proposed underground mine will have a minimal surface footprint.

Our pipeline of exploration opportunities includes ongoing work in the Greater Doolgunna area near the DeGrussa and Monty operations, and an extensive portfolio of base metal exploration projects across Australia's Eastern Seaboard. At the Donnington prospect in Temora, New South Wales (NSW), we discovered a zone of porphyry copper-gold mineralisation during the year. Follow-up drilling is underway to establish the extent of the mineralisation. We are also actively investing in exploration and business development asset identification and assessment.

Continuing to invest in these projects is important to us given the current life cycle of our DeGrussa mine. With the end of mine life approaching in 2021 (providing no discoveries or acquisitions are made), we remain focused on managing the impact of mine closure not only on our operations and people, but on the communities in the region.

Financial sustainability is an important element in our overall sustainability. Our experience in reporting our sustainability performance shows that it can uncover opportunities for improvement and efficiencies that help us to reduce costs or boost performance. In turn, the better our financial performance, the greater our ability to invest in the communities in which we operate, and the more we are able to generate value – economically, environmentally and socially.

The value that we create is demonstrated by our growing local procurement and support of the economic development of Western Australia as well as the Midwest Economic Area in which we operate. During the year, 77 per cent of our total spend on goods and services went to suppliers in Western Australia and five per cent of this was spent in the Midwest region.

This support is important to the ongoing viability of many local communities and we are committed to boosting our local procurement spend. A good example was the award of an \$8.2 million contract for civil and earth works at the new Monty Project to the Yagahong Alliance – a joint venture between Geraldton's Central Earthmoving Company and the Yugunga-Nya people. This contract will help to grow the Yagahong business and provide much-needed training and employment opportunities for the Yugunga-Nya people.

We also contribute to the Midwest in other tangible ways. During the year, we signed two partnership agreements to support local community projects that are aimed at bridging the gap in education in remote communities. Overall we more than doubled our total community investment compared with the previous year.

Our focus on sustainability is evidenced by the continued improvement in the key environmental outcomes generated by our business. Our carbon emissions intensity for FY2017 was 51.3kg CO<sub>2</sub>-e (carbon dioxide equivalent) per tonne of ore produced, a reduction of seven per cent on the prior year despite the additional energy requirements as the DeGrussa mine reaches greater depth. This can be attributed to the generation of renewable energy and improved operational efficiency. However, we were unable to meet our target of a 10 per cent reduction in emissions intensity as our DeGrussa solar facility was offline for part of the year due to ongoing optimisation in its first year of operation. Further detail is provided on page 48.

During the year we investigated setting an internal price on carbon emissions. The result of this investigation was that given the current time horizon for our DeGrussa operations and existing efforts to minimise emissions there, the most appropriate approach would be to factor a carbon price into our investment decision making. We will implement this approach in FY2018 and continue to monitor developments on carbon pricing in Australia and globally.

Another pleasing achievement during the year was our safety performance. Our focus on safety has seen total reportable injury frequency rates continue to decline. While any reportable injury is one too many, we believe that our ongoing efforts to live our 'Don't Walk Past' philosophy and improve safety leadership, culture and assurance of critical controls are paying off.

We also focused on creating opportunities for greater female participation in what has traditionally been a male dominated industry. Our female participation rates are above the industry average, and we will continue to address attraction and retention rates for female employees to achieve our goals in this area.

Last year we committed to developing a long-term sustainability strategy to guide our efforts across the business. Our 2017-2021 sustainability strategy is detailed on page 10 of this report. In developing the strategy, we considered our identified material issues, the key risks and opportunities for Sandfire, issues that are significant for our industry and the particular context in which we operate.

The four key focus areas of our strategy are Respect and accountability, Supporting economic development, Building a safe and supportive workplace and Operating responsibly. These support our overall business strategy and vision. They also help everyone at Sandfire to answer the question: what does sustainability mean for how I go about my work?

The strategy also references the UN Sustainable Development Goals, aimed at achieving a more sustainable world by 2030. The goals encompass a set of targets for business, governments and civil society to work towards. Sandfire is committed to contributing to the achievement of these goals, with a focus on our key areas of impact, both social and environmental. For more details see page 12 of this report.

We set improvement goals in energy, water and waste management, safety, gender equality and staff retention as well as local procurement as part of our sustainability strategy implementation. These are detailed on page 14 of this report.

In accordance with our focus area of Respect and accountability, we are committed to providing high quality disclosures to our stakeholders. Greater transparency will continue to help us build and maintain trust and support our continued growth. We are proud of the relationships we have developed with communities in the Midwest of Western Australia and are working hard to establish similarly strong relationships in all areas we do business.

It takes a great team to build these strong relationships and we acknowledge here the dedication, hard work and positive values of the Sandfire team, and our consultants, partners and contractors. Their efforts enable us to tackle our challenges, improve our performance and look to the future with optimism.



**Derek La Ferla**  
Chair  
Board of Directors



**Karl Simich**  
CEO  
Managing Director and CEO

# THE SANDFIRE STORY

Sandfire Resources NL is a mid-tier Australian mining and exploration company based in Perth, Western Australia and listed on the Australian Securities Exchange (ASX:SFR). We produce copper, and gold and silver from our 100 per cent-owned DeGrussa Copper-Gold Mine.

## BUSINESS OVERVIEW

The DeGrussa mine produces high quality copper in concentrate with significant gold and silver credits which is sold to customers around the world. Production for FY2018 is forecast at 63-66,000 tonnes of copper and 35-38,000 ounces of gold at a C1 cash cost of US\$1.00 – 1.05 per pound. In June 2015, we made a new high-grade VMS copper-gold discovery at the Monty Project, located 10 kilometres east of DeGrussa. The most recent resource inventory for DeGrussa and Monty can be viewed on our website at <http://www.sandfire.com.au/operations/degrussa/mineral-resources-ore-reserves-and-mine-plan.html>

Since we discovered DeGrussa, Sandfire has remained steadfast in its conviction that the Doolgunna region, the 5,846 square kilometre tenement package surrounding DeGrussa, has the potential to yield multiple further high-grade mineral discoveries. The discovery at Monty is the first significant accumulation of high-grade copper-gold mineralisation to be identified outside of DeGrussa, and represents a compelling breakthrough for our exploration team.

At the end of March, 2017, a Mining Lease for the Monty Project was granted by the Western Australian Department of Mines and Petroleum (DMP). We are now progressing site works to develop the Project.

Sandfire has a substantial ongoing exploration commitment within the Doolgunna region. We also manage a portfolio of exploration joint

ventures and initiatives in prospective mineral provinces in Australia and overseas.

During FY2016, Sandfire conducted exploration activities in Australia within the Bryah Basin region of Western Australia, the Mt Isa Inlier in Queensland, the Lachlan Fold Belt of New South Wales, and the McArthur Basin of the Northern Territory.

Internationally, Sandfire is developing exploration and growth opportunities in the state of Montana in the United States of America. In November 2015 Sandfire increased its stake in the Toronto Stock Exchange Listed Tintina Resources – (TSX-V: TAU) from 38 per cent to 57 per cent– and this stake was further increased to 78 per cent in July 2017. A Mine Operating Permit (MOP) application was submitted to the Montana Department of Environmental Quality in December 2015. The MOP was deemed to be ‘complete and compliant’ by the DEQ in August 2017. Sandfire also has a 38 per cent interest in WCB Resources Ltd (TSX-V: WCD), which is a copper-gold explorer listed on the Toronto Stock Exchange.

Sandfire discloses its sustainability performance as part of the Corporate Governance Principles and Recommendations (3rd edition) published by the ASX Corporate Governance Council, Australian Government’s National Greenhouse and Energy Reporting Scheme, the National Pollution Index and the Carbon Disclosure Project (CDP).

## OUR BUSINESS MODEL

We are in the business of producing base and precious metals safely and profitably from our operations for the benefit of our shareholders and stakeholders.

Our focus in on three business elements:



1	The Sandfire Story
2	Our Sustainability Priorities
3	Reporting What Matters
4	Respect and Accountability
5	Supporting Economic Development
6	Building a Safe and Supportive Workplace
7	Operating Responsibly

OUR VALUES

Our core values are:

- SAFETY**  
Act safely and with care for the environment
- COMMUNITIES**  
Work with communities for mutual benefit
- PEOPLE**  
Attract the best people and reward performance
- TEAMWORK**  
Encourage teamwork, respect and integrity
- IMPROVEMENT**  
Value continuous improvement, technical excellence and innovation
- PROFITABILITY**  
Optimise profitability through effective operating practices and cost consciousness



OUR COPPER CONCENTRATE

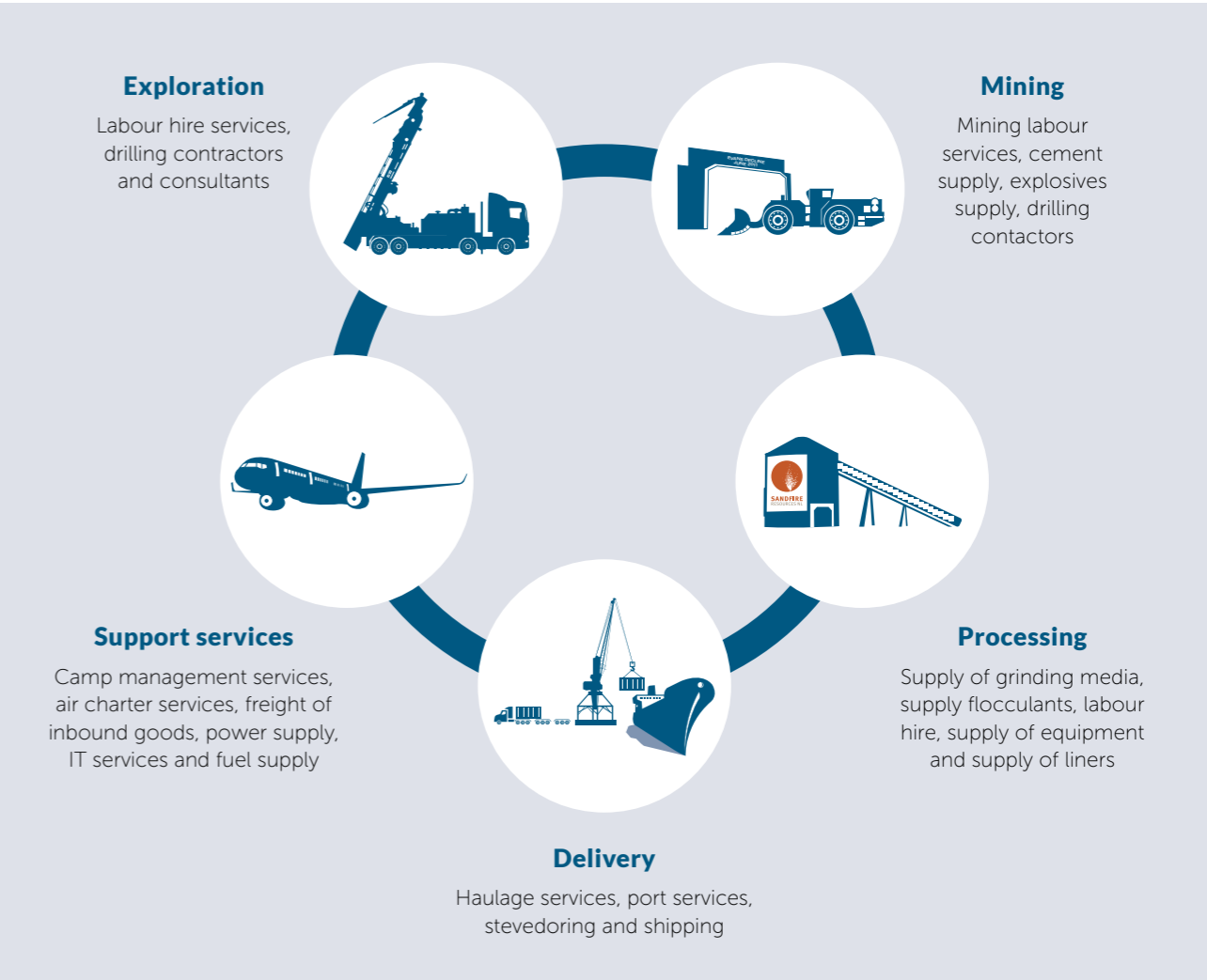
Sandfire produces copper concentrate from which copper is extracted for use in electrical products, machinery and equipment, building construction and transport. In addition to its conductive properties, copper is an integral component in renewable energy production systems. Due to its antimicrobial properties copper is also used in medical facilities to stop the spread of germs.

The Copper Alliance states that the copper industry is critical to sustainable development and to a higher quality of life for people around the globe. It posits that copper will be integral to meeting the UN Sustainable Development Goals for climate change mitigation and adaptation, energy efficiency and energy security, water quality, renewable energy, energy access, public health and others<sup>1</sup>.

<sup>1</sup> sustainablecopper.org/en/

OUR SUPPLY CHAIN

Contractors and suppliers are a crucial part of our business and we rely on them to ensure that we meet our overall operating strategy and maximise efficiencies. Our supply chain includes:



Sandfire’s suppliers and contractors are primarily located in Australia. A breakdown of our procurement spend is provided on page 30.

EXTERNAL MEMBERSHIPS

Sandfire is an active member of the Association of Mining and Exploration Companies (AMEC) and holds a position on the Environment and Water committee.

Our Managing Director and Chief Executive Officer, Mr Karl Simich, is a member of the Board of the International Copper Association Australia (ICAA), the peak body for the copper industry in Australia, the ICAA, represents some of the country’s most influential companies in mining, manufacturing, production, and recycling. The Copper Alliance™, led by the ICAA, represents a network of regional copper centres and their industry-leading members. The mission of the Copper Alliance is to ‘defend and grow markets for copper based on its superior technical performance and contribution to a higher quality of life worldwide’. As global issues such as energy, climate change and health become more urgent, copper plays an important role in almost every industry.

The Chair of our Board, Derek La Ferla is a member of the Australian Institute of Company Directors Council (WA division).

# OUR SUSTAINABILITY PRIORITIES



In 2017 we developed a sustainability strategy to guide Sandfire over the period 2017-2021. The strategy links the numerous activities supporting sustainable development throughout the company and connects them to broader goals. It also supports our business strategy, underscoring how sustainability fits with our business objectives including growth, supporting our people and safety.

The strategy takes into account our material issues, topics raised by stakeholders and the United Nations Sustainable Development Goals (SDGs), among others.

In developing our strategy we articulated an overarching goal for our sustainability activities:

Sandfire aims to achieve high standards in safety, environmental management, productivity, governance and transparency whilst also delivering positive outcomes for society.

## FOCUS AREAS

Considering our key sustainability issues, we identified four priority focus areas for our strategy, these are shown in the diagram below. For each area, we developed actions and goals.

We focused on areas in which we have the skills and resources to allow us to make a meaningful impact and positively contribute to the achievement of sustainable development.



1	The Sandfire Story
2	Our Sustainability Priorities
3	Reporting What Matters
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SANDFIRE AND THE SUSTAINABLE DEVELOPMENTS GOALS

The United Nations launched the Sustainable Development Goals (SDGs) in September 2015. They consist of 17 ambitious goals dedicated to social inclusion, environmental sustainability and economic development. The success of these goals depends on collaboration and cooperation between governments, NGOs, communities and business.

At Sandfire, we recognise that we have a part to play in the achievement of the SDGs. Through our business activities we can support economic growth by employing people and purchasing goods and services that have a multiplier effect in the communities in which we operate. We support social inclusion by developing the skillset of our workforce, investing in the education of people in our communities and by striving to increase indigenous and female participation in the workforce. We support environmental sustainability by operating our business responsibly, minimising our negative impacts and seeking ways to leave a positive environmental legacy.

We have mapped the SDGs (depicted by the icons<sup>2</sup> in each section) to our strategy focus areas to align our strategy with where we can have the most impact, including what will create value for our business, and support our expansion plans.

OPERATING RESPONSIBLY

We will undertake our work in a manner that respects and supports people and the environment by minimising negative impacts and supporting positive outcomes.

This area encompasses compliance and management systems relating to water, waste, carbon emissions management and biodiversity protection. It includes responsible behavior in all activities from exploration and project development through to mine closure planning. It also encourages us to focus our attention to those areas outside our direct control such as an ethical supply chain and understanding the impacts of transport and processing.

Our goals are to:

- manage performance at or above compliance with applicable laws and regulations
- responsibly manage water
- manage mineral and non-mineral waste to minimise negative impacts
- engage local communities in mine closure planning
- ensure responsible stewardship of land used for operations and exploration, with closure objectives in place; and
- identify our carbon footprint and emissions efficiency.



SUPPORTING ECONOMIC DEVELOPMENT

We acknowledge that our success supports the economic empowerment of individuals and communities and we aim to maximise benefits and minimise negative impacts of our economic influence.

This focus area includes how Sandfire facilitates regional economic development through local procurement and employment (both of local and Aboriginal people). It also encompasses how we respect and engage with local communities where we operate, aspects of mine closure planning, and our social and community investment.

Our goals are to:

- ensure communities in the region of our operations have opportunities to benefit economically from our activities
- develop a local workforce capacity where possible
- preference local workers for jobs at all Sandfire operations
- support the employment of Aboriginal people at our operations
- engage local communities to understand their community investment priorities
- meet community needs for infrastructure and social support
- direct local community support to sustainable programs that can endure post operations; and
- provide avenues for local business to supply to Sandfire.



A SAFE AND SUPPORTIVE WORKPLACE

We place the highest emphasis on providing a safe and inclusive workplace. We aim to enable all employees to develop the skills they need to reach their potential in our organisation.

Safety is fundamental to our business. Topics covered under this focus area include occupational health and safety and employee wellbeing, anti-discrimination and commitment to diversity. Also covered are inclusion, training and development and ethical workplace practices.

Our goals are to:

- ensure our people always go home safely to their loved ones
- continuously improve our safety performance
- inspire our employees to give their best each day and have a sense of wellbeing and belonging
- invest in the growth and development of our people
- be an employer of choice
- prevent discrimination at work, in all its forms
- have a diverse and; and
- maintain ethical workplace practices.



RESPECT AND ACCOUNTABILITY

We will engage respectfully with our stakeholders, behave ethically and with integrity at all times in our work and meet stakeholder expectations for accountability and transparency.

This focus area includes our commitments to respect and engage with our stakeholders, to good governance, risk identification and management, transparency and communication, anti-corruption and our contribution to governments and public debate.

Our goals are to:

- establish and maintain our social licence to operate
- ensure our code of conduct is well understood and followed by all who work for us
- effectively identify and manage risk including climate change risk
- communicate with all stakeholders in an open and transparent manner
- listen and be responsive to our stakeholders
- be transparent in our contributions to all governments by reporting on taxes and royalties paid and being open about our engagement with public policy; and
- ensure we have strong governance systems to avoid corruption in the first instance, but also adept to identify and remedy if necessary.



<sup>2</sup> Icons = UN SDGs. Please refer to <http://www.un.org/sustainabledevelopment/sustainable-development-goals/> for more information on the SDGs

SANDFIRE TARGETS

	Area	Target	When	Progress
Operating Responsibly	Excellence	No fines or sanctions for non-compliance with regulatory requirements	Ongoing	Achieved in FY2017
	Water	Water withdrawal and discharge to the environment in accordance with limits set in our licences	Ongoing	Achieved in FY2017
		Continue to increase our understanding of the underground aquifers at our operation and develop ways to use water more efficiently	Ongoing	Achieved. See page 51 for more detail
	Waste	Reduce quantity of waste to landfill from 8,800m <sup>3</sup> to 7,500 <sup>3</sup>	FY2018	To be implemented in FY2018
		Undertake independent reviews of our tailings management	Ongoing	Independent review was undertaken during the year and is detailed on page 52

SANDFIRE TARGETS

	Area	Target	When	Progress
Operating Responsibly	Mine Closure	Local communities and stakeholders are engaged in our mine closure planning	Ongoing	Continuous process
		Mine closure plans approved	Ongoing	Mine closure plans for Monty and DeGrussa have been approved by Western Australia Regulatory authorities
	Ethical Supply Chain	Map supply chain to understand risks in the supply chain	Ongoing	All new suppliers in FY2017 provided detail of their sustainability programs
				Major contractors will be required to provide information in FY2018
				Sandfire will continue to undertake risk assessments to identify risk in the supply chain
	Product Stewardship	Measure the impacts of transport	Ongoing	Transport contractors required to provide Scope 3 emissions
	Responsible exploration and project development	Implement an internal price on carbon in evaluation of business development opportunities	FY2018	Will be implemented in FY2018
	Climate Change	Reduce our emissions intensity at DeGrussa operation by 10 per cent	Ongoing	Achieved a 7 per cent reduction in emissions intensity
Support Economic Development		20 per cent of energy from renewable sources at DeGrussa Operations	Ongoing	Did not achieve in FY2017 due to solar facility being offline during its first year of operation. Please see page 48 for further detail
	Facilitate regional economic development	Advertise all contracts locally with native title groups	Ongoing	Native title groups were notified of all major contracts in FY2017
		Increase procurement spend in regional areas to eight per cent of total procurement spend by FY2018	FY2018	Achieved. See page 29
		Develop mechanism for supporting and prioritising local procurement	FY2018	Work to commence in FY2018
	Support employment of Aboriginal people at major places of operation	Maintain Indigenous employment at > five per cent	Ongoing	Achieved

1 The Sandfire Story
2 Our Sustainability Priorities
3 Reporting What Matters
4 Respect and Accountability
5 Supporting Economic Development
6 Building a Safe and Supportive Workplace
7 Operating Responsibly

SANDFIRE TARGETS

	Area	Target	When	Progress
Support Economic Development	Support employment of Aboriginal people at major places of operation	Request major contractors maintain five per cent of their workforce as Indigenous	FY2018	Will be implemented in FY2018
	Respect and engage local communities	Implement stakeholder engagement plans for all projects and operations	Ongoing	All projects have stakeholder engagement plans. These will be reviewed in FY2018
	Social and community investment	Donate \$500,000 per annum, both direct and in-kind, to projects which will have a long term positive and sustainable effect in the communities in which we operate	FY2018	Target to be assessed each year. Sandfire donated a total of \$495,000 (both direct and in-kind) in FY2017
Safe and Supportive Workplace	Occupational health and safety	No fatalities or significant incidents	Ongoing	No fatalities or significant incidents occurred. This will always be our number one priority
		Reduce TRIFR year on year	Ongoing	Sandfire's TRIFR target of 5 for FY2017 was met. This was a reduction from 7.8 in the previous year. Target for FY2018 is 4.5
		Report all serious potential hazards	Ongoing	Achieved
	Employee engagement and wellbeing	Increase employee engagement levels by 20 per cent by 2019 based on survey undertaken in 2017	FY2019	Survey was taken at the end of FY2017 and was being analysed at the end of the reporting period. Initial results are detailed on page 38. The next survey is scheduled for FY2019
		Increase average living of Sandfire values to 4 out of 5 employees by 2019	FY2018	This will be measured in the end of year performance reviews in 2017
		Maintain and improve female representation	Ongoing	Female representation decreased slightly, however remains above industry average. See page 40 for more detail
	Diversity and Inclusion	Continue to meet or exceed industry standards	Ongoing	Achieved
		80 per cent of shortlists for management and professional roles to include at least 1 female candidate	Ongoing	To be implemented in FY2018

SANDFIRE TARGETS

	Area	Target	When	Progress
Safe and Supportive Workplace	Diversity and Inclusion	Maintain Indigenous employment at >5%	Ongoing	Achieved
	Training and Development	All employees have performance reviews with development plans established	Ongoing	Will be implemented in December 2017
	Ethical Workplace	Review Sandfire's policies to ensure our commitment to ethical workplace practices is clear	FY2018	Work to begin in FY2018
Respect and Accountability	Respect and engage stakeholders	Engage stakeholders in mine closure process	Ongoing	Continuing efforts. Please refer to page 35 for details of engagement
		Investigate and respond to all grievances	Ongoing	No grievances received in FY2017
		Consult with stakeholders on issues which impact them	Ongoing	This will be measured in FY2018
	Organisational governance	No breaches of code of conduct	Ongoing	No breaches of code of conduct or incidents of bribery or corruption in FY2017
		No incidents of bribery or corruption	Ongoing	
	Risk management	Review climate change risks in line with Taskforce on Climate-Related Disclosures recommendations	FY2018	TCFD recommendations will be reviewed in early FY2018  Please see page 49 for disclosure of climate change risks identified
	Transparency and communication	Increase communication effectiveness with our internal stakeholders by 20 per cent by 2018 (as measured by staff perception survey)	FY2018	The results from the Employee engagement survey taken in June 2017 will be used as the baseline. Initial results from the survey are detailed on page 38
		External stakeholders rate sustainability reporting and disclosure practices as high	Ongoing	This will be measured in FY2018
	Contributions to governments, political parties and public debate	Disclose all contributions to governments	Ongoing	Achieved. Please see page 34

1	The Sandfire Story
2	Our Sustainability Priorities
3	Reporting What Matters
4	Respect and Accountability
5	Supporting Economic Development
6	Building a Safe and Supportive Workplace
7	Operating Responsibly

# REPORTING WHAT MATTERS



## OUR MATERIAL ISSUES

This year we conducted a review to ensure that the content of our report met the information needs of our stakeholders and reflected our most significant impacts.

To understand perceptions of our sustainability performance and key issues we engaged an external consultant to interview community representatives, suppliers, employees, investors and native title group representatives. The discussions covered their perceptions of the significant impacts and issues for Sandfire across the environment, our economic impact, employees, society, product stewardship and ethical business practices.

The resulting list of topics was reviewed internally and prioritised by senior managers and subsequently validated by the Sandfire executive team. Discussions in these forums included consideration of the impacts of each topic, and this enabled us to set the boundary for each topic where the impact occurred. The validation process provided an opportunity to check that the proposed report content would adhere to the Global Reporting Initiative (GRI) Reporting Principles of sustainability context, completeness and materiality.



The table below shows the material sustainability topics for Sandfire.

Topic	Description	Impacts
Mine closure	The environmental and economic impacts of the closure of DeGrussa and the activities and initiatives post-closure, including opportunities for locals to be employed in closure activities. Encompasses closure planning and land management/biodiversity.	At our DeGrussa and Monty sites in Western Australia, impacting our workforce and local communities.
Regional economic development	This includes Aboriginal employment, local employment and procurement, social and community investment, FIFO (fly in fly out workforce) and (to some extent) community engagement.	<p>The impacts from our operations are felt particularly in local communities in the Midwest economic region of Western Australia. Our economic impact also extends to the Western Australian economy generally. FIFO has both positive and negative economic impacts – positive for those communities where the works are located, but potentially negative for those communities where labour is not sourced.</p> <p>Where we progress other projects and operations, regional economic development impacts will also be important.</p>
Employee health and wellbeing	How Sandfire is working to keep its workforce safe and encourage wellbeing.	Impacts are felt by the workforce (employees and contractor personnel) at our operation and exploration sites.
Water and waste management	How Sandfire manages water and waste, in particular tailings management.	At our DeGrussa operations and for our development projects Monty, and potentially Black Butte.
Carbon management and investment in renewables	How Sandfire manages its carbon emissions and works to reduce emissions intensity, given that mining is energy intensive.	At existing and planned future operations.
Exploration and future development	This is about the next steps for Sandfire and can be seen in the context of the DeGrussa closure and the Company's expansion into other areas.	The impacts are particularly felt by our workforce at DeGrussa, and by our investors who want to understand our ability to create value into the future.

All of these topics are addressed through this Sustainability Report, we have covered in greater depth the topics that we assessed as having more significant impacts and those which have a strong influence on stakeholder assessments of Sandfire.

These topics are discussed with relevant stakeholders at meetings to allow all affected and interested parties the opportunity to collaborate on making decisions to address the issues and develop ways in which we can further improve our performance. We remain open to engaging in a dialogue on our performance and invite all stakeholders to engage with us directly.



OUR REPORTING

This report has been prepared in accordance with the GRI Standards Core option. For more information about the Standards, please see [www.globalreporting.org](http://www.globalreporting.org)

We have reported against all our material issues, some of which relate to more than one of the Standards. We have also included additional information about other issues which were not assessed as significant material topics, but which we believe our stakeholders expect we are managing in a responsible manner. An example of this is the land management and biodiversity topic.

All dollar figures reported are in Australian currency, unless otherwise stated.

We welcome your feedback on our report. For further information about our sustainability program, or to provide feedback about this report please email [sustainability@sandfire.com.au](mailto:sustainability@sandfire.com.au) or contact +61(08) 6430 3800.

Boundary and limitations

The report period spans the financial year from 1 July 2016 to 30 June 2017 (FY2017) and covers our DeGrussa Copper Mine (DeGrussa) in Australia and exploration activities in Australia. In July 2017, Sandfire increased its ownership in North American copper company Tintina Resources Inc. (TSX-V: TAU) to 78 per cent. As Tintina remains an independent listed company, we have provided limited reporting on page 53 and will provide more information on this emerging operation in the future. Further information about this project can be found on the project's website [www.blackbutte.com](http://www.blackbutte.com). Please see our website and accompanying Annual Report available at <http://www.sandfire.com.au/investor/reports/annual-reports.html> for more information about our company activities.

EXTERNAL ASSURANCE

Bureau Veritas, a third party audit and assurance provider, was engaged to provide limited assurance on selected assertions and selected performance information included in our Sustainability Report for the year ended 30 June 2017. The full text of Bureau Veritas's assurance statement can be found on page 66.



# RESPECT AND ACCOUNTABILITY

Our aim is to engage respectfully with our stakeholders, behave ethically and with integrity at all times in our work and meet stakeholder expectations for accountability and transparency. We value our stakeholder relationships and our approach is focused on open dialogue and trust.



## NO FINES OR SANCTIONS RECEIVED FROM REGULATORS

We continue to operate within the requirements of our licences and approvals

## CONTINUED DISCLOSURE OF SUSTAINABILITY PERFORMANCE

This year marks our third year of sustainability reporting and responding to CDP

## 100% OF OUR OPERATIONS HAVE STAKEHOLDER ENGAGEMENT PLANS

That identify our stakeholders, how we will engage with them and on what topics

### BOARD STRUCTURE

As of 30 June 2017, the Board was comprised of six directors, who were selected for their skills and knowledge of the resource industry and various aspects of corporate governance and management. The Board fulfils its mandate directly and through its committees at regularly scheduled meetings or as required. These Board committees currently consist of the Audit and Risk Committee, the Remuneration and Nomination Committee, and the Sustainability Committee. These committees are chaired by directors and all committees report directly to the Board.

### GOVERNANCE SYSTEMS

Sandfire has specific policies in place to meet our commitments to ethical business practice and strong corporate governance. These help govern business activities by providing clear expectations regarding our practices. Sandfire’s policies are available on our website.

Sandfire’s Sustainability Committee, Audit and Risk Committee and Remuneration and Nomination Committee are tasked with responsibilities and functions in accordance with each Committees’ Charter. The Chief Executive Officer (CEO), who is also a member of the Board, has operational responsibility for sustainability issues. Management, through the CEO, is responsible for the day-to-day design and implementation of the company’s risk management and internal control system.



1	The Sandfire Story
2	Our Sustainability Priorities
3	Reporting What Matters
4	Respect and Accountability
5	Supporting Economic Development
6	Building a Safe and Supportive Workplace
7	Operating Responsibly



HOW WE GOVERN SUSTAINABILITY

The Board of Directors oversees Sandfire’s sustainability strategy and performance and considers sustainability risks and opportunities as part of this process. The primary function of the Board’s Sustainability Committee is to oversee the health and safety, environmental and community policies and activities of Sandfire on behalf of the Board.

During FY2017, the Sustainability Committee considered, reviewed or approved:

- the FY2016 Sustainability Report and recommended that the Board approve its release
- the Carbon Disclosure Project submission and recommended that the Board approve its release
- the development of the FY2017 Sustainability Report and identified material issues
- updates on sustainability, Indigenous affairs, health and safety, wellness and environment
- undertook site visits to DeGrussa and regional exploration sites as part of its ongoing assurance activities
- updates on Sandfire’s sustainability strategy
- partnerships, donations and sponsorships
- environmental, social and governance risks; and
- reports from ESG analysts and investor bodies.

HOW WE MANAGE RISK

The Board is responsible for overseeing the risk management strategy for Sandfire and ensures the company has an appropriate corporate governance structure, to support the achievement of business objectives. The Audit and Risk Committee undertakes an annual assessment of the effectiveness of risk management and internal controls.

Management implements Sandfire’s risk management and internal control system, and reports to the Board on Sandfire’s key risks, and the extent to which it believes that risks are being adequately managed.

Sandfire applies a whole-of-business approach to risk management that considers all categories of risks - including health and safety, strategic, business, environmental, social and governance areas. The company’s risk framework is used to identify, assess, evaluate, treat, monitor, and communicate risks, and is aligned with the international standard of risk management, ISO Standard 31000:2009. The process consists of steps that, when implemented sequentially, effectively identify and manage materials risks and enable continuous improvement.



OUR SOCIAL LICENCE TO OPERATE

We are committed to establishing and maintaining our social licence to operate in all areas that we operate. To us, this means going beyond regulatory compliance and community acceptance and we strive to establish trust with our communities. This requires an understanding and response to a wide range of issues that matter to our stakeholders, and relies on respectful relationships with all parties involved to address concerns and create mutually beneficial opportunities.

We understand that a social licence to operate in one community provides no guarantee in other jurisdictions. This is why we are invested in making a positive impact through our operations and subscribing to a high level of ethics and governance in everything that we do.



HOW WE ENGAGE WITH OUR STAKEHOLDERS

Close collaboration with stakeholders is essential for our business and we are committed to early, active and continuous engagement. We rely on strong and open dialogue with our stakeholders to access resources, obtain and maintain our regulatory and social licence to operate, as well as deliver mutual benefit to our communities.

Our stakeholders are those people or organisations who are directly or indirectly affected by, or have an interest in, our business. We prioritise stakeholders based on their ability to impact our business and our ability to impact their lives or activities. Significant stakeholders are our employees, local communities, native title claimant groups, suppliers, contractors, governments, NGOs and investor bodies.

We regularly engage stakeholders through a variety of mechanisms to ensure that

we meet their needs including reporting responsively. Our Sustainability Management Committee leads our approach and reports to the Board Sustainability Committee. This committee identifies important stakeholders and ensures that we manage relationships in a consistent and accountable way. It maps all our stakeholders, the level of impact we have on them, and set outs a plan for how we should engage with them.

For information about our stakeholder groups and engagement mechanism please see [http://www.sandfire.com.au/images/Our\\_Stakeholders.pdf](http://www.sandfire.com.au/images/Our_Stakeholders.pdf).

In FY2016 we established a Grievance Mechanism Procedure, which is available at [http://www.sandfire.com.au/images/Grievance\\_Mechanism\\_Procedure.pdf](http://www.sandfire.com.au/images/Grievance_Mechanism_Procedure.pdf). To date no grievances have been received. We remain committed to reporting all grievances and how they have been addressed.

1	The Sandfire Story
2	Our Sustainability Priorities
3	Reporting What Matters
4	Respect and Accountability
5	Supporting Economic Development
6	Building a Safe and Supportive Workplace
7	Operating Responsibly

NATIVE TITLE CLAIMANT GROUP ENGAGEMENT

Aboriginal people are among Sandfire’s key stakeholders, as employees, local community members and custodians of the land where we operate. We actively engage with our Aboriginal stakeholders through open and constructive dialogue and aim to maintain strong and mutually-beneficial relationships. We acknowledge and respect the rights and culture, as well as the connection to country, language and traditions of the different Aboriginal native title groups near our projects.

All Sandfire employees are required to undertake cultural awareness training which aims to embed understanding and strengthen positive engagement with Aboriginal people across our business and in communities. By strengthening our relationships, Sandfire can in turn better understand and ensure the protection of local Aboriginal culture. Engagement with native title groups helps us to develop strong working relationships and protect culturally significant or sensitive areas by taking appropriate measures to mitigate potential impact risks.

Sandfire has six projects across Australia on land that:

- is subject to 11 native title claims; and
- has five determined native title claims.

There are wide-ranging Cultural Heritage Protection Agreements and Land Access Agreements in place that protect cultural heritage sites and can offer opportunities for employment, education and commercial contracts.

- Two Land Access Agreements in WA (for mining) with the Yugunga-Nya Native Title Claim Group and the Gingirana Native Title Claim Group provide for royalties, employment opportunities, contracting opportunities, scholarships and land access payments.
- One Settlement, Consultation and Heritage Deed (for exploration) with the Nharnuwannga Wajarri and Ngarlawangga Native Title Claim Group which is represented by the Jidi Jidi Aboriginal Corporation. This provides for consultation meetings and heritage surveys.
- Two Heritage Agreements (for exploration) in Queensland with Yulluna Native Title Determination and the Mitakoodi Mayi People. These provide for heritage surveys.

- One heritage agreement (for exploration) with the Wajarri Yamatji Native Title Claimant Group (WA). This provides for heritage surveys.
- One heritage agreement (for exploration) with the Gingirana Native Title Claimant Group (WA). This provides for heritage surveys.
- Six Heritage Agreements (for exploration) with the Yugunga-Nya Native Title Claimant Group (WA). These provide for heritage surveys.

Sandfire has completed over 75 cultural heritage surveys across its projects in Australia while engaging with the relevant native title groups. During the reporting period, we undertook three cultural heritage surveys.

We hold bi-annual Liaison Committee meetings with the Yugunga-Nya people, who are the recognised native title claimant group for the land on which the DeGrussa mine is located. These meetings are an open discussion on employment, education and training and commercial opportunities, as well as any heritage and environmental concerns that the group may have in relation to our activities.

We have similar discussions with the Gingirana people who are a recognised native title claim group on certain tenements adjacent to the DeGrussa mine. We also hold bi-annual meetings with the Jidi-Jidi people in relation to mutually beneficial employment, education, training and commercial opportunities on their claim group land on which we explore or may explore.

**Sandfire hopes that the legacy of its operations in the region will be greater opportunities for Aboriginal people, including education and employment. In support of this aim, we established scholarship funds for the Yugunga-Nya and Gingirana People. The scholarships provide for public or private school education, TAFE courses, university courses and programs and sporting programs where the applicant shows particular aptitude for a sporting endeavour. Two applications approved during the reporting period.**



CASE STUDY  
VEGETABLE GARDEN IN THE YULGA JINNA COMMUNITY

The Nharnuwannga Wajarri and Ngarlawangga (NWN) People reside in the Yulga Jinna Aboriginal community, located approximately 100km north of the nearest town Meekatharra. The remoteness of the community means that they have to drive a significant distance to purchase fresh fruit and vegetables.

Through our regular engagement with the NWN People, we reached an agreement to assist with the installation of a community garden that will allow the NWN People and the broader Yulga Jinna community to be partially self-sustainable with the ability to grow their own fresh produce.

We agreed to supply all materials for the reticulation system, including pipes, sprinkler heads, construction materials, and solar powered pumps. The labour for the project such as earthworks, trenching, electrical and plumbing was provided by Sandfire personnel from the DeGrussa mine site.



1	The Sandfire Story
2	Our Sustainability Priorities
3	Reporting What Matters
4	Respect and Accountability
5	Supporting Economic Development
6	Building a Safe and Supportive Workplace
7	Operating Responsibly

# SUPPORTING ECONOMIC DEVELOPMENT

**Our Aim:** We acknowledge that our success supports the economic development of individuals and communities and we aim to maximise benefits and minimise negative impacts of our economic influence. Our vision is to create sustainable, enduring value for our communities that continues after our activities cease.



## 89% OF EMPLOYEES ARE LOCAL

with FIFO from Perth

## APPROXIMATELY 96% OF GOODS AND SERVICES

were purchased within Australia

## \$0.5 MILLION CONTRIBUTED TO COMMUNITY

and we signed additional partnership agreements aimed at bridging the education gap in rural communities

### OUR ECONOMIC CONTRIBUTION

We have the ability to impact the local and regional economies around our operations and we aim to create value that will go beyond our life of mine whilst avoiding creating a legacy of dependence. We contribute to economic development through a variety of methods. Our approach includes local procurement and employment as well as community investments and partnerships. We also make a contribution through our payment of taxes and royalties to government.

In FY2017 our direct economic contribution consisted of:

REVENUES FROM SALES OF OUR PRODUCTS - **\$513.2 MILLION**

TAXES PAYMENTS TO STATE AND FEDERAL GOVERNMENT - **\$29.9 MILLION**

ROYALTIES TO NATIVE TITLE GROUPS OF THE LAND IN WHICH WE OPERATE - **\$2.4 MILLION**

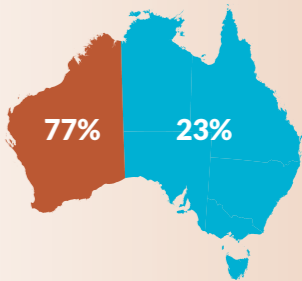
ROYALTIES TO WESTERN AUSTRALIA STATE GOVERNMENT - **\$22.2 MILLION**

COMMUNITY INVESTMENTS AND PARTNERSHIPS, INCLUDING IN-KIND DONATIONS - **\$495,000**

EMPLOYEE RELATED EXPENSES INCLUDING SALARIES PAID TO EMPLOYEES - **\$45.2 MILLION**; AND

PAYMENTS TO OUR CONTRACTORS AND SUPPLIERS - **\$272.5 MILLION.**

Of the total cash payments<sup>3</sup> to our contractors and suppliers, 77 per cent was spent in Western Australia, where our operation and head office is based and where the majority of our service contracts are located. Eight per cent of total cash payments was spent in regional and remote areas with almost half of the regional expenditure spent in the Midwest region of Western Australia where our DeGrussa Copper Mine is located.



We take a tiered approach to our definition of local with:

- **TIER 1** meaning the regional economic area in which our operations are located. Currently with one operation, this means the Midwest region of Western Australia
- **TIER 2** meaning the state in which our operations are located. This is Western Australia; and
- **TIER 3** meaning Australia.

<sup>3</sup> We determine our procurement spend by cash paid to contractors and suppliers in economic regions of Western Australia, metro and non-metro areas across Australia. These regions are defined by their postcode. This has some limitations:

(i) It is based on cash paid to contractors and suppliers so will differ from the total paid to contractors and suppliers which is calculated on an accruals basis

(ii) Postcodes of contractors and suppliers are recorded in our accounting system based on head office address. This might not accurately reflect the economic benefits of purchasing from a company that has multiple sites.

LOCAL PROCUREMENT

We recognise that one of the biggest contributions we can make to regional economies is through the procurement of local goods and services. This has the potential for economic multipliers and can boost supplier capacity. The mining industry in Australia typically expects high standards of health and safety as well as compliance with environmental regulations. We believe there is an opportunity to work with local suppliers to boost their ability to meet these requirements.

In FY2016, we began documenting our procurement spend in regional economic areas, including the Midwest region of Western Australia which is where our operation is located. This has enabled us to set targets for local procurement. This is important to us as we believe that the communities in which we operate should share in the benefits of our success.

To enable us to meet our targets we will look at innovative ways to engage local suppliers through collaboration with industry associations, advertising contracts locally and developing mechanisms to allow us to provide preference to local contractors or contractors who will employ local people and purchase local goods where possible. Under our Land Access Agreements with the Yugunga-Nya People and the Gingirana People we are required to provide tender opportunities. All our tenders and upcoming contracts are advertised. We look favourably on organisations that enable us to fulfil our obligations by partnering with native title groups. An example of this is the Yagahong Alliance, a joint venture between Central Earthmoving and the Yugunga-Nya People. We first engaged with this organisation in 2015. Since then the alliance has continued to grow its capabilities and has increased the scope of work undertaken for Sandfire (see the case study this section).

EMPLOYMENT

Our total workforce at 30 June 2017 was approximately 502 including 274 permanent contractor personnel who work at the DeGrussa mine. Our direct workforce is 227, an 8.6 per cent decrease on 30 June 2016.

Most of our direct employees are drawn from Western Australia with 1.7% residing in the Midwest Economic region, 89% in Western Australia and another 8.3% living elsewhere in Australia. Our DeGrussa workforce is predominantly fly-in fly-out from Perth. The nearest town to DeGrussa is Meekatharra, located 150 kilometres south of our operation. For safety reasons we prefer workers from Meekatharra to drive in and stay on site for their roster. Where possible we will consider candidates from local communities, subject to availability and skills, but in effect these make up a very small proportion of our workforce.

We engage contractors to provide services at our DeGrussa operation and at our exploration sites, and to supplement expertise in key areas of our operations. We have several long term agreements with contractors who undertake critical components of our operation including:

- our underground mining contractor provides labour to undertake mining operations
- our catering and village services contractor employs cleaners and cooks
- our haulage, freight and employee transport requirements are contracted out to specialists; and
- drilling and shutdown maintenance work is performed by contractors.



CASE STUDY  
YAGAHONG ALLIANCE

In FY2015, Sandfire awarded a contract to the Yagahong Alliance, a joint venture between Central Earthmoving and the Yugunga-Nya People. Central Earthmoving is headquartered in Geraldton in the Midwest region and the Yugunga-Nya people are the traditional owners of the DeGrussa project area.

This contract commenced on 1 July 2015 and since then the Yagahong Alliance has increased its scope of work at DeGrussa, also taking on the water cartage services.

In FY2017 Sandfire awarded a second major contract to the Yagahong Alliance for the civil construction work at the nearby Monty Project. The \$8.2 million contract was awarded after a competitive tender process. The alliance currently employs 18 Aboriginal people at the DeGrussa site and it is expected this will reach 48 with the inclusion of the work at Monty.

The aim of the alliance is to build the capacity of the local Aboriginal people and to ultimately transfer ownership of the organisation to them. This is dependent on the purchase of equipment, number of employees and developing management talent. We are proud to be playing a part in supporting the growth of this organisation.



Aboriginal Employment

Our goal has been to grow and retain our Aboriginal workforce, including amongst our contractors. Our year-on-year target is for five per cent of our total workforce to be Aboriginal people.

At 30 June 2017, our Aboriginal workforce was 26 which includes three people directly employed by Sandfire. This represents 5.7 per cent of our total workforce. We ask the contractors who are the biggest employers on our site to help us meet this target, as they have the ability to offer a large variety of roles. Contractors whose personnel represent a larger proportion of the workforce are contractually obligated to reach a minimum of five per cent Aboriginal employment. Sandfire employs a fulltime Aboriginal Liaison Co-Ordinator who assists Sandfire and our contractors to engage Aboriginal people within our community and is responsible for onsite mentoring of Aboriginal employees.



COMMUNITY INVESTMENTS AND PARTNERSHIPS

We contribute to communities through sponsorships and in-kind donations. Our Donations, Sponsorship and Partnership Policy, available at <http://www.sandfire.com.au/sustainability/sponsorship-guidelines.html>, outlines our approach to community investment.

Our preference is to support programs that have benefits in our host communities that will last after our operations have ceased and that will not create a legacy of dependency. This approach came about through consultation with stakeholders in our communities who stressed the importance of community investment programs having longevity. In FY2016, we began to develop strategic partnerships that met the identified needs of our communities. In FY2017 we continued this approach, signing partnership agreements with two organisations that seek to bridge the education gap in rural communities - Teach Learn Grow and Shooting Stars. See the case study in this section.

In FY2017, we invested a total of \$495,000 into community programs and partnerships, including direct funding and in-kind donation of time and resources. The largest portion of this investment was to programs which support education and health.

Recipients and details of this year's donations are available on our website.

CASE STUDY ADDRESSING THE EDUCATION GAP IN REMOTE COMMUNITIES

At the end of 2016, Sandfire signed a three-year partnership agreement with a not-for-profit organisation Teach Learn Grow to support their Rural Program at schools along Sandfire's transport route. Their Rural Program sends volunteers twice a year to rural WA communities to conduct one-on-one tutoring of school children. More information can be found on their website [www.teachlearngrow.org.au](http://www.teachlearngrow.org.au).

In early 2017, Sandfire partnered with Shooting Stars, an initiative of Netball WA and Glass Jar Australia which uses netball as a vehicle to encourage greater engagement and school attendance by young Aboriginal women living in WA's remote communities and regional towns.

Sandfire's support funds the employment of a program co-ordinator who is based at the Meekatharra District High School as well as associated costs of sporting equipment and health and wellbeing activity costs.



CASE STUDY ADDRESSING MENTAL HEALTH OF CHILDREN IN REMOTE COMMUNITIES

Last year, we partnered with contractors Orlando Drilling Pty Ltd, Qube Bulk Pty Ltd, DDH1 Drilling Pty Ltd, Byrnecut Australia and CaterCare Pty Ltd to provide funding to employ a fulltime counsellor at Meekatharra District High School for three years.

The need for this position was identified by the school as a priority to address the mental health of at-risk children.

The counsellor commenced work at the school in Term 1 of 2017 and has focused on building rapport with children and providing support for their social and emotional wellbeing. Positive change has been reported from teachers and parents. Sandfire is committed to providing ongoing support to the school and the counsellor.

1	The Sandfire Story
2	Our Sustainability Priorities
3	Reporting What Matters
4	Respect and Accountability
5	Supporting Economic Development
6	Building a Safe and Supportive Workplace
7	Operating Responsibly



**CASE STUDY**  
**DEMONSTRATING OPPORTUNITIES POST SCHOOL**

In February 2017, the Meekatharra District High School (MDHS) invited industry partners, local business and sport coaches from Geraldton, located in the Midwest region of WA, to run an event aimed at showing children the value of staying in school, where their learning can take them and the wide range of opportunities available to them.

Sandfire collaborated with MDHS, the Central Regional TAFE - a trainer provider in Geraldton, the Yagahong Alliance and other local businesses to run the three day event at the school. The event was set up as a hands on session and students were exposed to a wide range of skills and trades. Stations were set up at the school and students could try their hand at bricklaying, heavy machinery operation, carpentry, gardening, art, music, plumbing and sports.

Sandfire’s contribution was through the provision of heavy machinery and volunteer time of our people.

**TAXES AND ROYALTIES**

Through our materiality review, we found that our stakeholders want more transparency about the taxes and royalties payments that Sandfire pays. To date we have publicly reported on our total taxes and royalties paid and this year provide disclosure of payments in more detail.

Our contributions are as follows:

- FEDERAL INCOME TAX PAYMENTS - \$27.6M**
- PAYROLL TAX PAYMENTS TO WEST AUSTRALIAN STATE GOVERNMENT - \$2.2M (PLUS OTHER STATES \$60,000)**
- PAYMENTS TO STATE GOVERNMENT DEPARTMENTS AND SHIRES - \$1.1M**

**MINE CLOSURE – LEAVING A POSITIVE LEGACY**

During mine life, mining employs people directly, makes large capital investments, pays taxes and royalties and engages with contractors who in turn employ a large workforce. Historically, in boom times, this has meant a major injection of funds into communities adjacent to mines. Large community spending has the potential to create dependency, especially in towns that were built around mining. More recently the mining downturn in WA has left many people out of work with non-transferrable skills. Mine life is always finite and so none of these are new issues. However, the impacts of closure are potentially exacerbated due to the recent overall downturn in WA and the cumulative effects of other mines closing.

Managing the socio-economic risks and impacts of mine closure is one of the key responsibilities we have. Based on our current mine plan, mining activities at the DeGrussa Copper Mine and Monty project will cease in 2021.

We want to make sure that we adequately address the socio-economic risks of closure and are dedicated to ensuring that we consult with all stakeholders about how closure may impact them. We have identified possible negative impacts on our direct workforce and the local community in Meekatharra. Our mine closure planning process, see page 56, has enabled us to identify that Traditional Owners are interested in employment opportunities during the closure phase. We are working closely with them to develop options for participation. From FY2018, we will ensure that mine closure is discussed with all affected parties.

Another way that we aim to mitigate the impacts of impending closure is to prioritise donations and sponsorship of programs that identify community needs, and can have lifelong positive impacts. This will be a continued focus for us.

To address the impacts on our employees, we are increasing our focus on training and development opportunities and ensuring our employees have skills that are transferrable.

To further support retention of key people we are actively pursuing strategies to offer an attractive proposition for working through until closure.

Our active ongoing program of exploration and investment in potential development opportunities are also aimed at supporting continuity of operation. We believe the Doolgunna area is highly prospective and we continue to progress a tightly focused, multi-disciplinary exploration campaign to test for extensions to the known cluster of VMS and structurally hosted copper deposits.

Beyond this, we are pursuing growth and business development initiatives through a series of strategic investments, farm-in joint ventures and exploration alliances. Across Australia, Sandfire is pursuing new growth opportunities through a series of low-risk, low-cost farm-in joint ventures – each with the potential to deliver a major new discovery. The Company has an annual exploration and business development budget of A\$20 million for its Australian regional and international exploration projects.

In North America, Sandfire has a 78.1 per cent interest in Tintina Resources (TSX-V: TAU), a growth-focused Vancouver-based copper company which is developing the 100 per cent owned and leased Black Butte Copper Project, located in central Montana, USA – one of the highest grade undeveloped copper projects in North America.

Sandfire also holds a 38 per cent interest in WCB Resources (TSX-V: WCB), a Toronto-listed copper-gold explorer which is earning a 70 per cent interest in the Misima Copper-Gold Project, located on Misima Island in Papua New Guinea, where it is targeting a potential Tier-1 copper-gold porphyry discovery.

More information can be found within our Annual Report and our website.

We will continue to consult with our stakeholders on our growth progress and what opportunities this may present.

1	The Sandfire Story
2	Our Sustainability Priorities
3	Reporting What Matters
4	Respect and Accountability
5	Supporting Economic Development
6	Building a Safe and Supportive Workplace
7	Operating Responsibly

# BUILDING A SAFE AND SUPPORTIVE WORKPLACE

Our Aim: We place the highest emphasis on providing a safe and inclusive workplace. We aim to enable all our employees to develop the skills they need to reach their potential in our organisation.



## 5.7% OF OUR TOTAL WORKFORCE IS COMPOSED OF ABORIGINAL PEOPLE

Out of approximately 550 direct employees and permanent contractor personnel at year end

## 21% OF OUR DIRECT WORKFORCE IS FEMALE

Year on year we have had higher levels of female representation than the industry average

## WE REDUCED OUR INJURY FREQUENCY RATE TO 5

Compared to 7.08 in the previous year

### OUR PEOPLE

People are our number one resource, which is why we are dedicated to maintaining the highest standards of safety, integrity and quality in all that we do. We take pride in teamwork and believe that each employee contributes to Sandfire’s growth and success.

It is imperative that our people are fit for the work that they perform in a supportive, productive, and harmonious workplace.

Our strategy is to:

- focus on the health and wellness of our people
- attract and retain quality people who are appropriately skilled and fit to undertake assigned tasks
- commit to equal opportunity and a workplace free of discrimination, harassment and bullying
- ensure that all staff are treated with dignity, courtesy and respect and recognise the importance of valuing the many differences in background, cultures and demographic characteristics of employees, including their family responsibilities
- train and develop our employees so that all staff at all sites are competent to carry out their work safely and to their full capacity
- encourage career development, supporting ongoing training, personal development and further education; and
- regularly review policies, procedures and practices.

A suite of policies and programs guides our approach. These include the Sandfire code of conduct, Aboriginal employment policy, Fitness for work policy, Equal employment opportunity, Anti-discrimination harassment and bullying policy, and our Employee assistance program.



Recruitment, retention and turnover

Our focus is firmly on attracting and retaining top talent who share our values. We are developing strategies to be innovative in this area. We continue to build on and enhance our existing performance development and exit interview processes in order to ensure we proactively manage our people.

Our inaugural Employee Survey was run in 2015 and conducted again in 2017. The survey responses helped us identify opportunities to engage our people in their own development and to improve understanding of Sandfire’s rewards and recognition, as well as to improve our internal communications on site. In our first employee engagement survey, employees indicated that they felt there were few opportunities for growth within the organisation and our materiality review indicated that this could be attributed to the impending DeGrussa mine closure. In response, we have committed to develop better communications with all stakeholders about mine closure plans. We will also continue to develop employee awareness of strategies for growth within Sandfire.

During the year we undertook a review of our organisation to ensure Sandfire continues to be best placed to meet its business goals. We made the decision to restructure our organisation and this resulted in an overall reduction in our workforce.

One of our priorities during the restructure was the safety and wellbeing of our people and to undertake this process with as little disruption to people and operations as possible. Nonetheless, the period of restructure was a challenge as our people adjusted to the changes. At a management level, we saw the restructure as an opportunity

to adjust our business structure and drive change as we work towards finding and developing new projects while preparing for the end of mine life.

Please refer to our workforce data on page 68 of the Appendix for more detail.

Learning and Development

Sandfire supports all employees to strive to achieve their full potential within our organisation. We aim to provide clear career development pathways and ensure that all employees and contractors have the skills and knowledge to match their individual responsibilities.

We encourage career development through continuing professional development, formal training and opportunities for on-the-job experience. Managers and employees are jointly responsible for identifying individual development and learning opportunities through our performance management process. A formal review of development plans and training will be undertaken with follow-up after end of year appraisals in December 2018.

We provide a wide range of training opportunities including on-the-job training, external training and relevant further education sponsorship.

Our total training hours in FY2017 were 1,090 and each of our employees received on average 4.75 hours of training per year. This includes all site based training. In addition, employees were supported to undertake external training relevant to their roles.

In FY2017, 11 employees took advantage of our further education support, which allows employees to access sponsorship of up to 75 per cent of course fees as well as dedicated study leave.

EMPLOYEE ENGAGEMENT SURVEY

In November 2015, we conducted our first employee engagement survey to measure job-related attitudes and overall morale engagement levels. We reran the survey in June 2017 and were pleased to see that, based on initial results, overall morale remains positive albeit with a slight reduction.

We took the opportunity to utilise an electronic survey tool utilising exactly the same data set. All of our direct employees received a questionnaire and we achieved a 65 per cent participation rate.

We will communicate the results and actions arising from the survey in early FY2018.

CAREER PLANNING WORKSHOPS

During the year we held ‘Managing your Career’ workshops. These were aimed at giving people practical tools for how to take control of their career and develop career plans. The key message was that Sandfire will support our people to reach their full potential with access to training programs and further study, although ultimately each individual is responsible for identifying their own path. The workshops were attended by people at all levels across the organisation and were held in an open forum where people could share stories of their own career paths and how they have reached their current role.

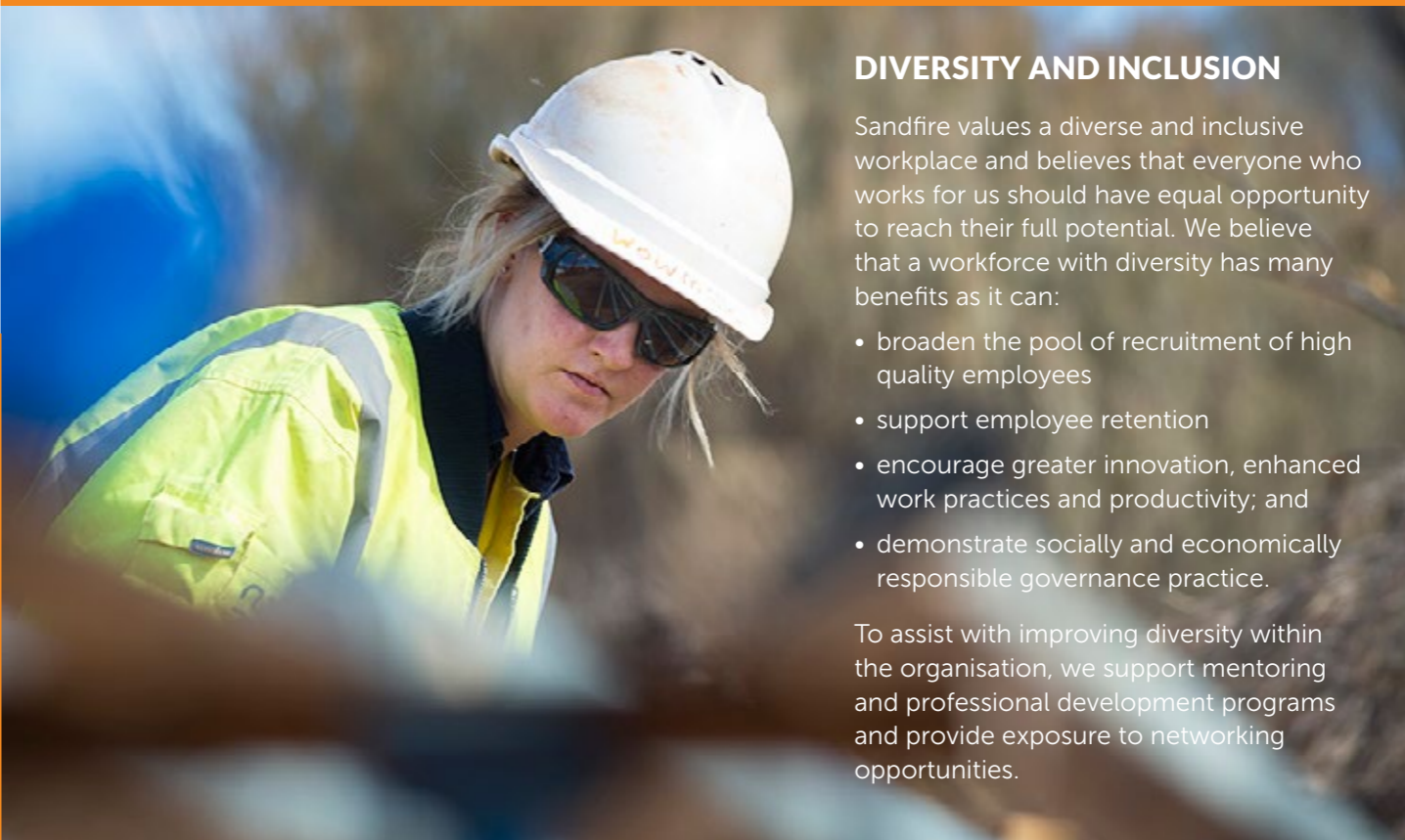


DIVERSITY AND INCLUSION

Sandfire values a diverse and inclusive workplace and believes that everyone who works for us should have equal opportunity to reach their full potential. We believe that a workforce with diversity has many benefits as it can:

- broaden the pool of recruitment of high quality employees
- support employee retention
- encourage greater innovation, enhanced work practices and productivity; and
- demonstrate socially and economically responsible governance practice.

To assist with improving diversity within the organisation, we support mentoring and professional development programs and provide exposure to networking opportunities.



1	The Sandfire Story
2	Our Sustainability Priorities
3	Reporting What Matters
4	Respect and Accountability
5	Supporting Economic Development
6	Building a Safe and Supportive Workplace
7	Operating Responsibly

Gender Diversity

During the year we formed the Sandfire Diversity Committee. This is chaired by Karl Simich, our Chief Executive Officer and reports to the General Management Team and Board. The committee aims to assist the business develop and implement initiatives and objectives that seek to embed a culture of diversity and inclusiveness. Its members come from across the business and oversee the development and implementation of our diversity strategy.

We engaged a third party to undertake a gender diversity status review. As part of this review, our senior management team were surveyed on diversity, our company policies were reviewed and we self-evaluated ourselves against the Workplace Gender Equality Agency's<sup>4</sup> gender equality diagnostic tool, ranking ourselves in the programmatic stage<sup>5</sup>.

The study found that, whilst our female representation is above industry representation and there is strong support for gender pay equity, Sandfire's overall representation differed from industry data in that, our female appointments and promotions were lower than industry average and female resignations were higher than industry averages. In addition the study highlighted inconsistencies across the business in relation to the perceived value of diversity and the need to undertake an alternate pay equity review due to the size of the organisation and the inability to compare like for like roles in some areas.

Key actions for FY2018 are:

- create and embed a diversity and inclusion strategy
- raise awareness of the strategy and Sandfire's diversity and inclusion vision with our managers and employees and engaging them in the discussion around the business case for diversity and inclusion
- set metrics for regular reporting to the executive team and managers
- report regularly to executive team and managers on diversity and inclusion measures, initiatives and actions
- undertake a gender pay review against industry data; and
- undertake unconscious bias training across the business.

At 2017, the latest available data showed that approximately 13 per cent of employees in the resources industry are female. Sandfire outperforms this with 21 per cent of our direct employees being female. However, female representation has decreased for both Sandfire and the industry since last year (Sandfire 2016: 24 per cent; industry 2016: 17 per cent).

HEALTH AND SAFETY

Safety performance and management

Embedding a proactive safety culture is a key objective to enable us to keep our people safe. We want our safety systems to be simple and easily understood by our people. Our ultimate priority is for no fatalities or serious incidents to occur. To achieve this we have structured our safety systems around the identification of principal hazards and controls to reduce the risks arising from those principal hazards.

We have identified principal hazards as those hazards that have a significant fatality risk and have identified critical controls to address areas of concern. Our principal hazards include:

- vehicle to vehicle interaction, vehicle to person interaction, single vehicle incident, vehicle recovery
- dropped load, working at height, fall of ground, engulfment
- interaction with electrical energy
- crush, entanglement, fire and explosives
- chemicals in confined space; and
- working alone.

To ensure our people understand how to identify hazards at work – particularly those with a significant fatality risk – and know how to implement critical controls (actions to mitigate the risks arising from those hazards), we have been undertaking an awareness program with our workforce. Last year, to progress this work, our senior leadership reviewed our assurance monitoring program to ensure critical controls were effective and active. This program is reviewed annually and progress is reported to the Board.

In addition to our assurance reporting, we now review our principal hazards and critical controls each quarter with risk owners. The purpose of these reviews are to verify the effectiveness of controls and to confirm we are still focused on monitoring the right controls in the right way, to provide sufficient information to understand our risk profile and implement improvements ongoing as required.

Effective assessment of risk is a crucial element of keeping our people safe. Our emphasis is on the importance of prevention by mitigating risk. Our priority has been to improve how our suite of risk management tools are used by our people. In particular, we have focused on improving the ability

of our people to identify risk in their area of work, with hazards and controls adequately identified. Supervisors review hazard and control identification by workers and individuals are provided with coaching to improve. Since this program began, we have seen a significant improvement in understanding hazards and implementing controls.

Overall our safety performance has improved year on year. There were no fatalities or serious disabling injuries or illnesses in FY2017 and our total recordable injury frequency rate (TRIFR) per million hours worked was 5 against a target of 5. This compares to 7.08 in the previous year. The LTIFR per million hours worked was 0.8, compared to 0.71 in the previous year.

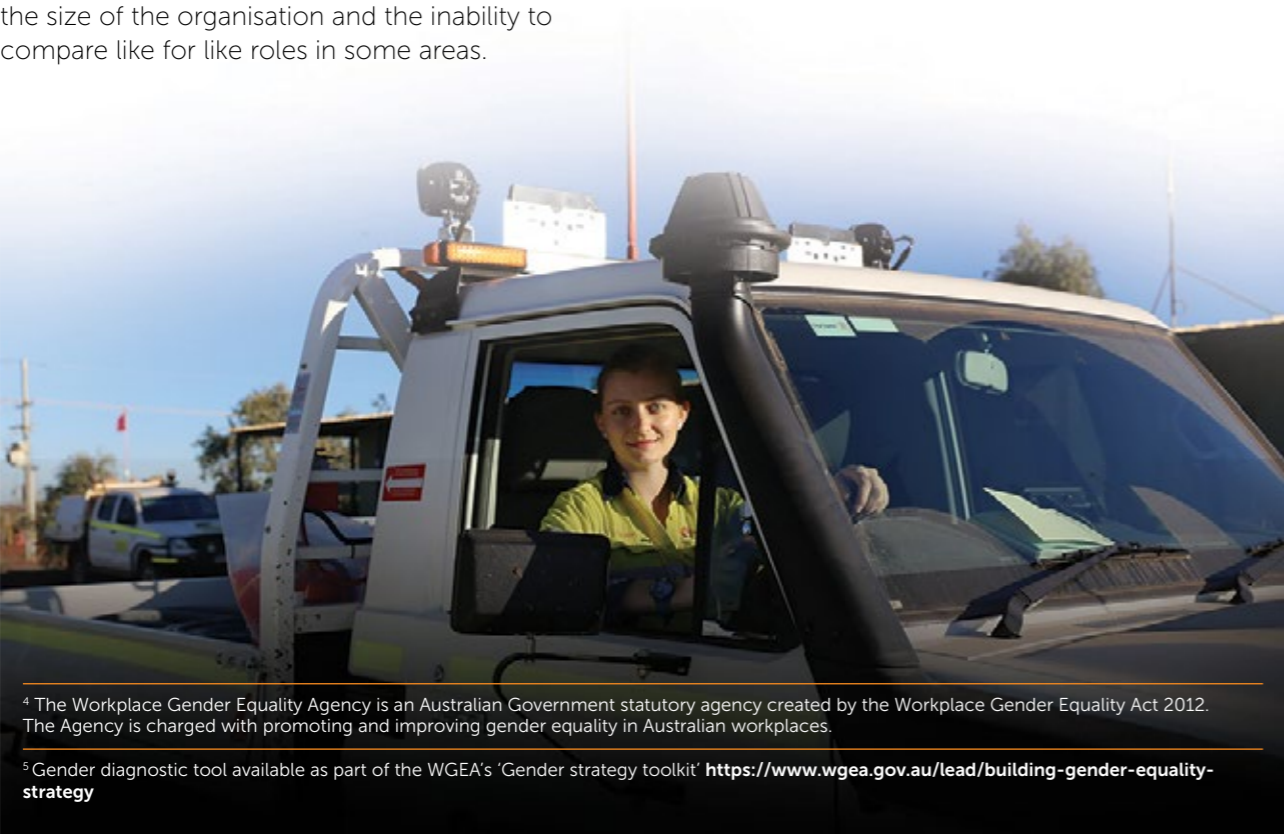
Reporting and investigating injuries and incidents and communicating lessons learned to our people is a key function of our management approach. We reinforce the importance of reporting all incidents and this is directly linked to our 'Don't Walk Past Culture'.

In FY2017 our injuries were primarily made up of sprains and strains, fractures and lacerations. We found that there was a common theme of incorrect manual handling and improper technique.

Our improved health and safety performance can be attributed to:

- continued focus and improvement of our risk assessments and verifying critical controls
- additional improvements made to our assurance reporting process to enable better monitoring of risk, hazards and critical controls; and
- continued auditing of contractor health and safety management plans (annually for existing companies and during the tendering processes for new suppliers) to determine selection and award of contracts.

Our management strategy includes the use of proactive safety measures, so we monitor positive performance indicators to reduce hazards, incidents and injuries. Each area of the business has targets that are measured and monitored on a monthly basis. These measures include Leader Safety Observations, quality reviews, audits, inspections and action close out.



<sup>4</sup> The Workplace Gender Equality Agency is an Australian Government statutory agency created by the Workplace Gender Equality Act 2012. The Agency is charged with promoting and improving gender equality in Australian workplaces.

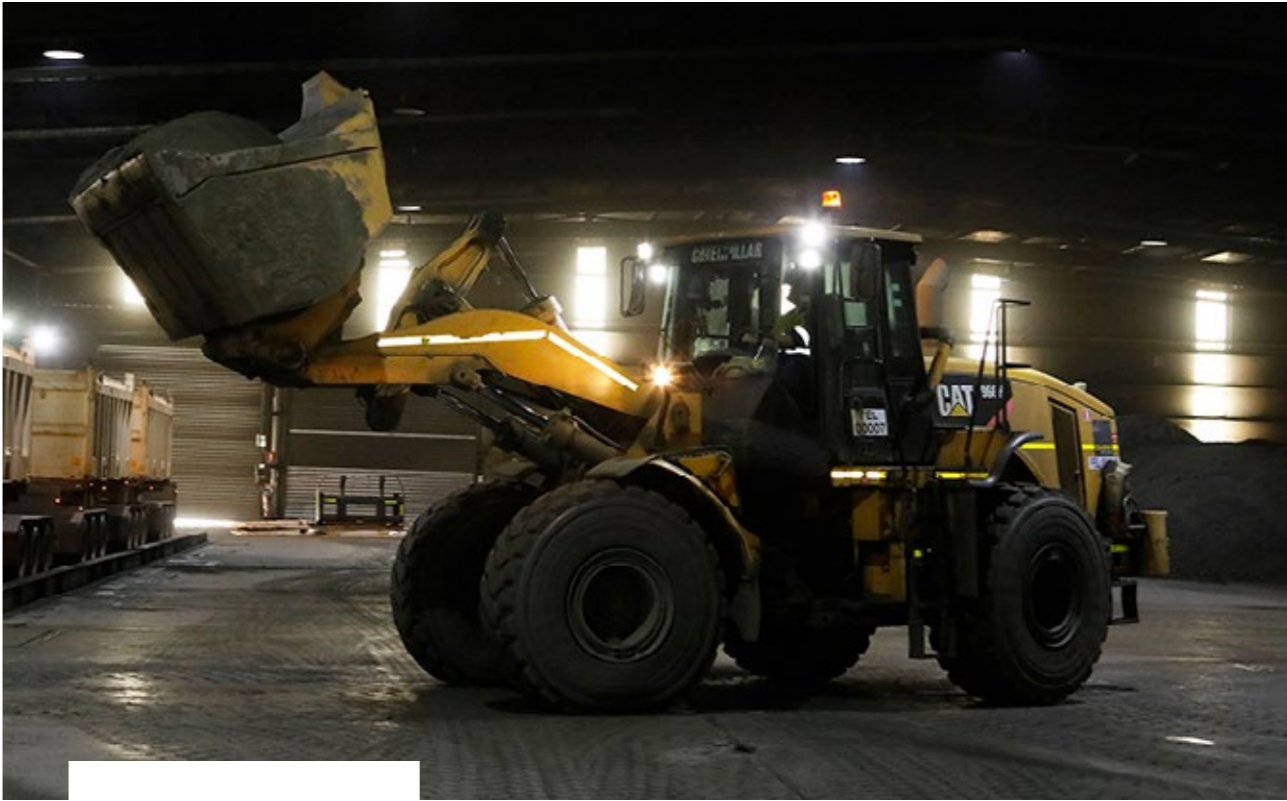
<sup>5</sup> Gender diagnostic tool available as part of the WGEA's 'Gender strategy toolkit' <https://www.wgea.gov.au/lead/building-gender-equality-strategy>



**CASE STUDY**  
**RISK MANAGEMENT IMPROVEMENTS – CRITICAL CONTROL REVIEW**

We have spent the last few years ensuring our people understand hazard identification with a primary focus on fatality prevention. We call our potential fatality risks principal hazards and the non-negotiable controls needed to protect people from these hazards, critical controls. At Sandfire we pay particular attention to identifying our principal hazards and understanding what our controls are for those hazards. Each year, we review our risk assessments to ensure the risks and controls are relevant and appropriate.

Over this financial year we completed an audit of our assurance processes including our principal hazards and critical controls. The audit indicated we had too many critical controls, some of which were being monitored too frequently and some which were not adequately defined to ensure consistency when monitoring. To improve this, we held a review workshop with risk owners. This review resulted in a 70 per cent reduction in our critical controls and the ability to focus our efforts on verifying that the right controls are effective. We also developed critical control checklists for our principal hazards to ensure any person reviewing a critical control uses the same criteria to verify effectiveness.



**CASE STUDY**  
**LONE WORKER IN CONCENTRATE SHED**

At DeGrussa, we have a concentrate storage shed which stockpiles our concentrate prior to haulage. The concentrate shed is managed by our contractor Qube Bulk, which employs a site foreman to load trucks and reclaim concentrate from the bunker using a front end loader to create stockpiles. These activities are carried out inside the concentrate shed with the doors closed, essentially providing a lone worker environment for several hours at a time. Risks present to a lone worker in the concentrate shed include:

- SO2 and H2S gas exposure, resulting from a concentrate self-heating event
- fire, resulting from a concentrate self-heating event
- engulfment under the filter press discharge chutes; and
- falling from heights during access and egress from the catwalk or mobile plant.

A risk assessment in 2016 identified this work as a principal hazard. A number of controls were instigated immediately to address the lone worker hazard, the first being a control room to more effectively record and manage entry and exit to the concentrate shed. At the same time Qube initiated a system of welfare checks on their personnel working alone in the concentrate shed. These checks remain in place today. In the last 12 months Qube has engaged with industry to acquire a man down alarm system called the Care Tracker which provides for two-way voice communications, SOS call/email alerts and non-movement detection email alerts. The Care Tracker is mandatory Personal Protective Equipment for Qube personnel working alone in the concentrate shed. A recent enhancement to the Care Tracker is full-time monitoring by the Qube Fleet Monitoring Centre (FMC), located in their head office in West Perth.

In response to the hazard, Sandfire has also installed a CCTV system in the concentrate shed, providing a 24/7 video feed to the DCM Process Control Room. Sandfire will always provide the first response to a person down situation in the concentrate shed, either alerted by the Care Tracker monitored through the Qube FMC or by the CCTV system monitored by the Process Control Room. A further enhancement being considered is to extend the CCTV system feed to the Qube FMC in West Perth.

Health and wellness

We recognise that there is more to health and safety than just preventing injuries. It is important that all our people are fit, health and ready to perform work. Our priority is that our workforce is physically conditioned and provided with an environment that will allow them to undergo work tasks to the best of their ability.

Within the mining industry, there is a risk that people will be exposed to occupational diseases, which are diseases that are caused by working conditions. The most prevalent within the industry stem from exposure to dust and noise, fatigue and vibration. We have assessed the risk of exposure to occupational disease as low at both DeGrussa and our exploration sites, however we conduct ongoing assessment to ensure it remains low.

A hygiene monitoring program monitors exposure to noise, dust, diesel particulates, welding fumes and fibres to ensure that no adverse health effects are experienced by our workers. To date we have had no cases of exposure. Our management plan stipulates people in roles with a high risk of exposure must undergo medical checks on a two yearly basis to ensure their overall health is not compromised. Please refer to the hygiene monitoring case study for more.

This year we rolled out a new initiative - 'fit testing'. Our people are tested against national standards to ensure they are correctly fitting both hearing and respiratory protection thereby giving them the expected protection against airborne contaminants and noise. This also provides a forum for individuals to test which type of personal protective equipment suits them best and will therefore provide the best protection.



CASE STUDY  
MENTAL HEALTH AWARENESS

In FY2017 LifelineWA, in conjunction with Lifeskills, our employee assistance program provider, provided mental health awareness sessions. LifelineWA ran information sessions focused on the mental health issues that are prevalent in FIFO and the mining industry. Our people were given practical tools for identifying situations where someone could be in need of help and how to respond effectively. Managers were provided with additional training focused on assessing the mental health needs of their workforce. This reiterated our 'Don't Walk Past' philosophy which applies equally to our mental health and wellbeing. A representative from our Employee Assistance Program provider was on site to answer questions and provide direct counselling.

The end of these sessions culminated in a fundraising event held on site with RedFM, which broadcast live from our wet mess at DeGrussa. RedFM is a radio station aimed at miners and broadcast across regional WA. The theme of the event was mental health awareness and all funds raised on the night were donated to LifelineWA. Sandfire committed to matching all funds raised and a total of \$10,000 was donated.



CASE STUDY  
HYGIENE MONITORING

Occupational health is a cross-disciplinary, medical-based science concerned with protecting both the immediate and long-term health and welfare of people in the work environment.

Managing occupational health in the workplace involves a number of screening processes and information sources to identify, control and where possible, eliminate any potential or real risks. At Sandfire, the main processes include:

- information from occupational hygiene programmes
- assessment of employee suitability for the role required of them
- regular checks on employees' health status throughout the duration of their employment; and
- education, training and testing throughout the duration of their employment.

Occupational hygiene (also known as industrial hygiene) is the science involved in the prevention of ill health and maintenance of well-being through the anticipation, recognition, evaluation and control of workplace hazards.

At Sandfire, we have appointed a hygienist to undertake regular hygiene monitoring in alignment with the requirements of the WA Department of Mines, Industry Regulation and Safety. This is a critical aspect to ensure that the workforce is not exposed to any harmful elements that may impact their long term health. We monitor for an array of elements including respirable dust, inhalable dust, fibrous minerals, diesel particulates, welding fumes and noise levels.

This continual monitoring allows Sandfire to observe any changing trends in exposure levels and therefore ensure that appropriate controls are put in place to safeguard against any potential health impacts experienced while working at our operation.



# OPERATING RESPONSIBLY

Our Aim: We undertake our work in a manner that respects and supports people and the environment by minimising negative impacts and supporting positive outcomes. We aim to avoid, reduce or mitigate negative environmental impacts at every stage of the mining life cycle.

## ACHIEVED A 7% REDUCTION IN EMISSIONS INTENSITY

Due to renewable energy and improvements made to mill efficiency

## DEGRUSSA AND MONTY MINE CLOSURE PLANS APPROVED

by Department of Mines and Petroleum

## WE HAVE RESPONSIBLY MANAGED OUR WATER SOURCE WITH 41% RECLAIMED FOR USE IN OUR PROCESSING FACILITY

Total withdrawal decreased by 244ml, discharge decreased by 206 ML since FY2016

### ENERGY, CARBON AND RENEWABLE ENERGY GENERATION

Our DeGrussa Project uses large quantities of diesel fuel in its underground operations and in transporting our raw materials, waste rock and concentrate. Electricity consumption is also essential for our mineral processing facility. The combustion of these fuels results in the release of greenhouse gases.

DeGrussa’s energy use during FY2017 was 1,609,072 gigajoules which is slightly less than the FY2016 reporting period. Purchased diesel continued to be the dominant energy source at DeGrussa. Our solar power facility (see the solar facility case study) experienced challenges in continuous supply in its first year of operation and we were unable to meet our target of 20 per cent of power coming from renewable sources this year. The solar facility generated 1.8 per cent of energy usage at DeGrussa in the period.

Our approach is to improve energy efficiency where clear value to the business can be demonstrated. Our challenge is that as we increase our mining depth, this in turn increases haulage distances more power is needed to supply ventilation underground and we require more energy. The nature of the ore may also change and become harder requiring extra processing, which again increases energy use.

We aim to reduce the amount of power that is used where we can, as this has a clear cost benefit to our business. This year we made improvements to our milling circuit which reduced the power

consumption rate and this resulted in our power usage remaining fairly stable in FY2017, at 1,610,497 gigajoules compared with 1,617,719 in the previous year, despite the additional services required to support the increased mine depth.

In FY2018, we plan to implement a project to quantify the energy savings that are associated with our cost savings initiatives. We will put in place measures to progressively understand the success of these programs.

While our operations are energy intensive we look for ways to be less emissions intensive. Sandfire’s total Scope 1 and Scope 2 greenhouse gas emissions for FY2017 were equivalent to 83,167 tonnes of carbon dioxide and were a four per cent decrease in total emissions since last year. We made a commitment to reduce our emissions intensity by ten per cent year-on-year. We define emissions intensity as tonnes of CO2-e per tonne of ore processed. In FY2017 we were able to achieve a seven per cent reduction in emission intensity, this can be attributed to the use of solar power and increased efficiency to the milling circuit.

During the period, we met our ongoing reporting commitments under the National Greenhouse and Energy Reporting Scheme and National Pollutant Inventory, and we participated in the Carbon Disclosure Project for the third consecutive year.



CASE STUDY  
SOLAR FACILITY

Mining is energy intensive. A significant portion of our operational costs are attributable to energy and energy use accounts for most of Sandfire’s emissions. At DeGrussa the cost of generating energy is 7.5 per cent of our total operational costs and accounts for 82 per cent of our total emissions. Many mines, such as DeGrussa, are located in remote areas where diesel is the most commonly used source of power generation. This is expensive and a major source of carbon emissions. To support responsible mining and for mines to become less emissions intensive, Sandfire believes that renewables must be part of the energy mix to enable mining to play a role in sustainable development.

The DeGrussa solar project is an industry first for its use of renewable energy in mines requiring off-grid power systems. This has benefits beyond the mining industry and contributes to making solar a viable option for power supply for other off-grid applications. We support the move towards decarbonisation of the mining industry and believe DeGrussa is a good case study. We are committed to sharing knowledge with any interested parties. We have presented outcomes of the project at various conferences and during the year we hosted a site visit and tour of the facility as part of the annual Energy and Mines Summit in conjunction with NEOEN, the solar project financier.

As this is a new application for solar, it is not without challenges. Delivery of continuous power is critical for mining operations, since even a short power outage can cause significant interruptions. This is a safety risk as continuous power is required to deliver ventilation to the underground mine. During the year, we continued to work on optimising the solar facility so that it can seamlessly integrate with our power plant and respond quickly to the power requirements of our processing facility and mine.

Because safety is our number one priority, we made the decision to turn the facility off while we worked through issues with the delivery of continuous power. At the end of the financial year, the solar facility was back on line and we continued to work on bringing it to nameplate capacity. We are committed to this project and confident in the value it brings to our operations and the wider industry.

Despite not achieving full capacity during its first year of operation, we were able to achieve an estimated reduction of 5,735 tonnes of CO2-e. This compares to the 12,000 tonnes of CO2-e that we estimated we would achieve if we had achieved continuous solar operation.

Climate change risks and opportunities

In FY2016, we committed to consider implementing an internal price on carbon through our reporting to the Carbon Disclosure Project. Companies have been urged to adopt a price on carbon as a way of supporting efforts to meet the targets set by the international community through the Paris Agreement, which is aimed at limiting global warming to less than two degrees Celsius by 2050.

During the year our management team assessed the applicability of an internal price on carbon for our business based on our strategy, goals and current mine life at DeGrussa. Our DeGrussa operation is due to close in 2021 and our energy requirements are likely to increase due to greater depths to extract ore. It is currently not economical to change fuel sources within the remaining mine life. However, our appetite for growth and expansion beyond Australia means that we are likely to be exposed to not only the physical carbon risks but also non-physical, such as carbon pricing. We therefore believe the most relevant course of action for our business is to integrate a shadow price on carbon into risk assessment and evaluation of potential investments. This will commence in early FY2018. We plan to set our carbon price in line with international benchmarks and will continue to monitor Australian and international developments in carbon pricing and emissions reduction technology.

In June 2017, the Financial Stability Board’s Task Force on Climate-Related Disclosures released its full report and recommendations. We intend

to review this framework and the associated materials industry supplement and understand whether our future disclosures of climate change risks align with the recommendations. We believe an internal carbon price will allow us to better identify and articulate these risks and we remain committed to managing the regulatory, reputational and market risk related to climate change. The climate change related risks and opportunities we have identified to date are presented in Table 1.

In FY2018 we will undertake emissions modelling of our DeGrussa operation for life of mine to understand our emissions intensity. We will also put in place mechanisms to reduce this where possible so we can meet our target to reduce emissions intensity by 10 per cent. Our focus as we approach mine closure is to identify opportunities that will reduce costs and allow us to operate more efficiently. In FY2017 we were able to achieve savings through solar and also increased mill efficiency.

As part of our commitment to understanding our total carbon footprint, during the year we requested our air transport, freight, fuel delivery and concentrate haulage suppliers to provide us with data on Scope 3 emissions. This will allow us to better understand the risks that may occur in our supply chain – such as how spikes in energy and fuel prices may impact us. We are hoping this will also allow us to identify opportunities for energy efficiency and to implement sustainability initiatives.

Risk	Description	Potential Opportunities
Regulatory changes in Australia	Amendments to the Safeguard mechanism. This is the Australian Government's replacement for the carbon tax and covers facilities emitting above 100,000 tonnes of CO2-e. Each facility in the scheme is given a baseline CO2-e figure and once facilities exceed this baseline they are required to offset their excess emissions. Last year, DeGrussa emitted 85,000 tonnes of CO2-e. However, our future mine plan might put us over the threshold and the emissions modelling will allow us to determine this. There is also the risk that the Government may decide to lower the threshold.	Undertake emissions modelling to life of mine to understand our total footprint and identify emissions savings.  Ensure Sandfire understands regulatory changes.
Increased emissions at DeGrussa	As above, this may put DeGrussa operations over the threshold for the Safeguard mechanism. It could also result in an increase in costs.	Undertake emissions modelling to understand our total footprint and identify emissions savings.
Physical impacts	Extreme weather events such as prolonged heatwaves and flooding events that have the potential to disrupt mining operations and impact the safety and health of our workforce.	Ensure there is appropriate emergency response plans in place at all potentially affected operations.
Regulatory changes outside of Australia	Introduction of a carbon price in other jurisdictions impacting on supply chain and potential business opportunities	Map supply chain  Apply shadow price on carbon to prospective business opportunities.
Increased scrutiny from stakeholders and investors	Stakeholders and investors requesting more transparency and disclosure	Continue to report and publicly disclose emissions and energy use through our sustainability reporting, Carbon Disclosure Project and NPI and NGERS.  Adopt TCFD disclosure recommendations as appropriate.



WATER AND WASTE MANAGEMENT

Water

Mining and minerals extraction are water-intensive processes and the efficient performance of our DeGrussa operation relies on our ability to source water of appropriate quality and quantity, without impacting on the surrounding environment. We are continuously looking for opportunities to reduce our impacts on water resources from our extraction and discharge activities.

With an annual average rainfall of 230mm and situated in a semi-arid area, DeGrussa's water is sourced from local aquifers in accordance with licences issued under the WA Rights in Water and Irrigation Act 1914. During the reporting period we extracted 1,218ML of groundwater to support mining operations, which was a 17 per cent reduction from the previous year.

When operations commenced at DeGrussa in 2011, the majority of water was sourced from within a paleochannel aquifer within the Gascoyne South River system, located approximately seven kilometres to the west of the mine. As operations have progressed, Sandfire's reliance on this paleochannel aquifer system has reduced as water is now sourced primarily from a fractured rock aquifer system in the vicinity of the orebody. Extraction from both aquifer systems decreased during the reporting period, however the paleochannel aquifer saw a significant reduction of 45 per cent.

Water is required to process copper ore. This process produces a slurry waste product, known as tailings, and is typically a mixture of finely ground solids, process water and residual reagents. Tailings enter the lined Tailings Storage Facility (TSF) through evenly spaced pipe outlets around the perimeter of the TSF. The tailings solids settle to form a gently sloping 'beach' angled towards the centre of the TSF; while the water in the slurry pools in the centre creating a decant pond.

At the end of the year we increased our focus on reducing the TSF decant pond and bringing the water back into the proces plant for reuse. We will be able to monitor the success of these initiatives in FY2018 however early indications show they are having a positive impact.

Sandfire is focused on continual improvement of site-wide water supply and use. We have Surface and Groundwater Management Plans which are aligned with Sandfire's Environmental Management System, and site-based water operating strategies incorporating groundwater monitoring and review requirements. As part of DeGrussa's water and operating licences/ approvals, quality and quantity thresholds have been set and maintained and reported to regulators in Annual Environmental Reports.

Sandfire has continued to invest in research to further develop its understanding of the fractured rock groundwater systems that surround both the DeGrussa and Monty projects, and this work will continue into FY2018. During FY2017, we installed 12 additional monitoring bores at seven sites near DeGrussa, and two monitoring bores at Monty, to provide a more regional coverage of the potential impacts of dewatering on local and regional groundwater systems and to gain a better understanding of the regional distribution of the main aquifer systems.

Regionally, there were no changes in groundwater levels during the reporting period.

Sandfire regularly monitors vegetation communities within predicted groundwater drawdown zones to ensure that groundwater abstraction is not affecting groundwater dependent ecosystems in the local region. No influence on these ecosystems has been or is expected to be detected.



1 The Sandfire Story
2 Our Sustainability Priorities
3 Reporting What Matters
4 Respect and Accountability
5 Supporting Economic Development
6 Building a Safe and Supportive Workforce
7 Operating Responsibly

Mineral Rock Waste Management

Waste rock and tailings are Sandfire’s two largest waste streams, which we manage on an ongoing basis to facilitate long-term geochemical and physical stability.

Tailings

Mine waste management is under heightened public scrutiny as a result of mine legacy sites and major tailings dam failures around the world in recent years. We recognise tailings management as a significant issue shared by us and some of our stakeholders. Our commitment is to manage tailings in a way that effectively mitigates environmental, public health and safety, and community impacts while maximising the long-term security of the tailings facility and sustainable land use options.

Our approach is to ensure good practice in construction, operation, maintenance, monitoring and, ultimately, closure of our tailings storage facilities.

Tailings stewardship ensures planning, design, construction, operation and closure of our tailings storage and water retention facilities will be carried out in a manner such that:

- structures are physically stable under all anticipated conditions
- solids and water are managed within designated areas
- facilities meet or exceed regulatory or standard engineering guidelines
- facilities are chemically stable so that the quality of any seepage or surface runoff does not endanger human health or the environment; and
- facilities can be closed in a manner that is compatible with the surrounding land use and that will have a manageable impact on the environment.

Waste rock

Waste rock management is also a key environmental aspect of our operations, as much of the waste material extracted from our underground mines is placed into a surface landform. At the end of the mine’s life, the waste rock dump will be re-contoured and re-vegetated to provide stable, long-term containment of the material. Backfill of waste rock is also used at our operations to provide stabilisation of underground workings and allow the extraction of ore from adjacent stopes.

To prevent or minimise the potential environmental impacts associated with waste rock and tailings disposal, we implement a number of strategies during project development and operations, led by our environmental policy and our waste rock and tailings management standards. In addition, we consider mine closure and rehabilitation requirements for the mine allows for proactive forward planning and design to further improve closure outcomes and minimise costs. They include geochemical characterisation of potential acid forming (PAF) materials, resource modelling, selective handling and encapsulation of PAF waste rock, disposal of tailings into our specially designed and engineered TSF, and linking operational planning to closure management objectives.

During our feasibility study of the Monty project, we made the decision to return PAF waste underground as a priority, so that no PAF waste will remain on the surface when mining ceases. This management approach will assist us to achieve our mine closure objectives and nominated post-closure land use, while also reducing closure costs.

A small non-acid forming (NAF) waste surplus will remain at the Monty mine closure and we will design a waste rock landform to ensure physical stability (reducing erosion) and biological stability (establishment of sustainable native vegetation communities and functioning ecosystems).

Annual reviews of the DeGrussa TSF are conducted by specialist engineers and are undertaken in accordance with Department of Mines, Industry Regulation and Safety and the Australian National Committee on Large Dams. The reviews cover aspects of groundwater monitoring, geotechnical stability and tailings management practices. The most recent audit was completed in November 2016 and found that the overall operation and management of the tailings storage facility is satisfactory, in accordance with the design intent and it operates in compliance with the approved mining proposal.

CASE STUDY  
BLACK BUTTE PROJECT – MONTANA  
– GETTING IT RIGHT FROM THE BEGINNING

Sandfire is working closely with Tintina Resources in the development of the Black Butte project, located in the USA State of Montana. We support Tintina both financially and by contributing operational expertise with the development of the project. Together we are committed to ensuring the protection of the natural environment in the area surrounding the proposed mine.

The proposed copper mine will be wholly underground with a minimal surface footprint. A new approach to managing tailings and waste rock for this site has been taken to ensure stringent environmental standards are applied. In a first for a new facility, the project will use pumped paste to store tailings in a dry, double lined tailings facility. This system was especially designed for this location, and is one of the safest tailings management systems ever designed.

The production of copper concentrate produces a waste product called tailings. At Black Butte 100 per cent of the tails will be mixed with cement and sinter to create a paste product, a process used in many underground mines. Approximately half of the paste will be incrementally returned underground to fill mined out areas, called stopes, which will harden and remain underground. This process will ensure the integrity of the mine to prevent the collapse of open stopes and to block uncontrolled flow of groundwater.

The remaining approximately 50 per cent of the tailings produced, mixed with the cement in the paste will be pumped to a high-density polyethylene double lined tailings facility which will solidify into an impermeable block. All waste rock produced during mining will also be stored within the tailings facility. At closure all material on site will be placed in the tails facility, sealed under an HDPE liner, covered by topsoils and returned to grazing.

Extensive testing has classified all rock that will be mined underground at Black Butte. The studies found that the majority of the waste rock is non-acid generating but all of the material will be treated as if it were potentially acid generating and stored in the highest security cemented tailings facility.

Water management will be undertaken at the highest standard with all water leaving site treated before discharge, no impact to flows in the area and at closure no change to the pre-mining hydrological system.

Key Project Details<sup>7</sup>

- Robust high grade underground mining operation with forecast life of mine production of ~ 30,000tpa of copper in concentrate over a mine life of ~11 years
- Measured and indicated resources totalling 15.7 million tonnes grading 3.4% Cu, 0.1% Co and 14g/t Ag for 533,600 tonnes of contained copper
- Inferred Resources totalling 2.3 million tonnes grading 2.8% Cu, 0.09% Co and 14g/t Ag for 63,500 tonnes of contained copper<sup>8</sup>
- Expected to employ over 240 people from the area

More information can be found at [www.blackbuttecopper.com](http://www.blackbuttecopper.com)

<sup>7</sup> Based on An Updated Technical Report and Preliminary Economic Assessment (PEA) completed by Tintina Resources in July 2013 available at [http://www.tintinaresources.com/assets/docs/TAU-UpdatedPEA\\_07-12-2013.pdf](http://www.tintinaresources.com/assets/docs/TAU-UpdatedPEA_07-12-2013.pdf)

<sup>8</sup> calculated using a 1.6% copper cut-off grade for the Johnny Lee Upper Zone and Lowry deposits, and a 1.5% Cu cut-off for the Johnny Lee Lower Zone

LAND AND BIODIVERSITY  
MANAGEMENT

Sandfire is committed to the management of operations in a sustainable manner and to protect and preserve areas of importance or biodiversity sensitive areas wherever possible.

The land use impacts of Sandfire’s operations are managed in accordance with our environmental policy, Environmental Management System, Biodiversity Management Plan and our Landform and Rehabilitation Standard.

All projects must conduct baseline assessments that identify potential impacts of our activities on biodiversity and ecosystems, with particular attention to biodiversity values that are key to the specific area.

In FY2016 and FY2017 we undertook:

- flora, fauna, subterranean fauna and soil survey studies (and non-biodiversity studies including waste rock characterisation, surface water, hydrogeology) for the Monty project.
- flora surveys at exploration sites at Doolgunna; and
- our continued monitoring program at DeGrussa which includes priority flora identification, weed management, opportunistic surface water monitoring, dust monitoring, groundwater monitoring and vegetation health assessments.

We engage third party specialists, such as botanists, to undertake these studies. Our site environmental management involves opportunistic recordings such as weed populations (although weeds are not an issue at DeGrussa, it is something we keep an eye on as part of our monitoring program).

Outcomes from these assessments help to shape project development; for example the findings from biodiversity assessments were incorporated into the planning for the Monty project by:

- ongoing liaison with the Department of Biodiversity, Conservation and Attractions (as land managers for the proposed Doolgunna conservation park) throughout Monty project development on issues affecting biodiversity; and
- avoiding or minimising disturbance to areas of identified higher biodiversity value, such as breakaway habitats and major drainage channel habitats.



CASE STUDY  
HAULAGE ROAD TO MONTY

While planning for the development of the Monty Project, we conducted comprehensive environmental assessments to determine the scale of impact of our proposed operations. These assessments identified that an ephemeral watercourse traversed the 10 kilometre stretch between DeGrussa and Monty. It was evident from flora and fauna assessments that the watercourse supported dense acacia shrubland and eucalypt woodland habitats and would be a haven for local wildlife, particularly birds.

After we completed our baseline studies, we consulted with external stakeholders and established that the design of the haul road for the project would be placed well away from this high value habitat. We also considered indirect impacts such as altered hydrology and developed management strategies to avoid impacts where appropriate. As a result, we designed a 14 kilometre curving haul road over sparse acacia shrublands. Floodways will be installed along the route to ensure surface water flows are not significantly altered. The haul road will cross a minor tributary of the watercourse and a number of performance criteria have been established as part of the regulatory approvals process to ensure that any potential impacts during construction are minimised.

Our archaeological survey team also identified some areas of artefact scatters on the proposed haul road route, and we redesigned the road to avoid them.

Identifying areas of higher environmental and heritage risk and subsequent consultation with stakeholders during project development provides positive outcomes that run throughout operations right through to closure and project relinquishment, particularly as this area is located on a proposed conservation reserve.

During FY2018, we will implement a Sandfire Biodiversity Standard that includes the mitigation hierarchy of avoidance, minimisation, rehabilitation, restoration and offset. This will drive a consistent approach to biodiversity conservation and resource stewardship, and will enable us to better measure our performance.

1	The Sandfire Story
2	Our Sustainability Priorities
3	Reporting What Matters
4	Respect and Accountability
5	Supporting Economic Development
6	Building a Safe and Supportive Workplace
7	Operating Responsibly



CASE STUDY  
UPDATE ON MINIMAL IMPACT DRILLING

During FY2016 Sandfire, in collaboration with its contractor Bostech Drilling, developed a mechanism for air core drilling that leaves little to no impact on pastoral land. This was detailed in our FY2016 Sustainability Report. This project was a finalist for an award in the 2016 New South Wales (NSW) Mining, Health, Safety, Environment and Community Awards. The minimal impact drilling techniques are now being used across all projects in NSW. We returned to drill sites in FY2017 and have found that the areas have been successfully rehabilitated and in a much shorter time than from previous methods.

MINE CLOSURE PLANNING  
AND MANAGEMENT

Mining in Western Australia has been undertaken for more than 150 years, and over these years cumulative legacy issues have arisen from abandoned or poorly closed mines. Until recent times ‘mine closure’ - which we define as decommissioning, rehabilitation and reclamation - was not considered by mining companies, thereby leaving considerable environmental impacts.

We follow a responsible approach to mine closure planning, with the principal aim being to design, develop and operate our mines with mine closure objectives in place from the beginning with the aim to reinstate the pre-mining environmental values of the area.

Our operations are situated predominantly on unallocated Crown land. The prior land use was as the Doolgunna Pastoral Station which was purchased by the State Government in 2001. The proposed future land use is a conservation park that will be managed by the Department of Biodiversity, Conservation and Attractions (DBCA). Our mine closure and rehabilitation strategies have been designed to promote conservation of native flora, fauna and ecosystems. Some of our land sits on the boundary of a local pastoral station and a rehabilitation program is set up to ensure pastoral activities can be reinstated post closure. Rehabilitation and closure criteria are developed in consultation with both DBCA and the pastoralist. DBCA visited DeGrussa in August 2016 to discuss mine closure expectations for the long-term management and closure of the site. We continue to consult with DBCA for both the DeGrussa and Monty operations as part of our stakeholder engagement.

Strong stakeholder engagement on mine closure is crucial throughout operations to ensure we have agreed closure objectives. As part of our mine closure planning, we have developed a stakeholder engagement strategy which identifies our key stakeholders and the closure topics we consult them on. This engagement is ongoing throughout the life of each mine.

Our identified closure objectives are to ensure:

- the closure plan is developed with input from stakeholders
- the area is safe for post closure land users
- the visual amenity of the rehabilitated landforms match the surrounding topography
- the rehabilitated areas provide long term resistance against significant erosion and geotechnical instability
- the rehabilitated areas do not contain potentially hazardous materials and do not release environmental contaminants
- rehabilitated landforms support sustainable functioning ecosystems with biodiversity trending towards similar local sites
- impacts to availability and quality of groundwater are minimised and do not impede the proposed post closure land uses
- impacts to surface water are minimal; and
- progressive rehabilitation is carried out throughout the mine life.

We regularly conduct environmental studies and surveys, and collect data that will contribute to the success of our mine closure. We are increasing

our knowledge of biodiversity, hydrogeology, hydrology, materials characterisation and rehabilitation at the sites in which we operate.

We also progressively rehabilitate areas that have been disturbed. At our DeGrussa operations, we have conducted rehabilitation earthworks on the sloping Integrated Waste Landform (IWL) and a number of flat areas including old roads and construction sites. During 2016 we continued our Ecosystem Function Analysis (EFA) assessment which provides data relating to landscape function, vegetation establishment, erosion and habitat development. The data collected is compared to similar local sites. Plant density on the IWL slopes was found to have significantly increased since 2013, however there was evidence of some erosion which has the potential to affect stability of the final landform at closure. We are working towards remediating the areas of erosion on the IWL in FY2018.

Both the DeGrussa and Monty projects have approved Mine Closure Plans as required by the WA Mining Act 1978. These plans are developed to a level of detail that reflects the

stage of each mine’s life cycle, and they are updated every three years, or when required due to operational changes. During FY2017, we updated the DeGrussa Mine Closure Plan, and developed one for the Monty Project.

Under the Mine Rehabilitation Fund Act 2012, companies are obligated to set aside funds for rehabilitation. The calculation of the liability is conducted annually.

Based on the current business plan, mining and processing at DeGrussa and Monty is expected to cease in 2021. Although progressive rehabilitation is undertaken during the life of mine, most closure works will be initiated once activities cease. We have estimated an active closure period of six months, which will entail closure earthworks and infrastructure demolition works. The passive closure phase will begin after this and will require a caretaker to undertake monitoring and maintenance work prior to the relinquishment of the mining lease. Relinquishment will only be granted once all the obligations of our Mine Closure Plan have been achieved.

1	The Sandfire Story
2	Our Sustainability Priorities
3	Reporting What Matters
4	Respect and Accountability
5	Supporting Economic Development
6	Building a Safe and Supportive Workplace
7	Operating Responsibly

APPENDIX – GRI INDEX

GRI STANDARD	DISCLOSURE	REFERENCE OR RESPONSE	OMISSIONS	REASON FOR OMISSIONS	SDGS	ASSURED (Y/N)	REFERENCE (PAGE)
GENERAL DISCLOSURES							
GRI 102: General Disclosures	102-1	Name of the organisation	The Sandfire Story - Business Overview			Y	6
	102-2	Primary brands, products and services	The Sandfire Story - Business Overview			Y	7
	102-3	Location of headquarters	The Sandfire Story - Business Overview			Y	7
	102-4	Location of operations	The Sandfire Story - Business Overview			Y	7
	102-5	Ownership and legal form	The Sandfire Story - Business Overview			Y	7
	102-6	Markets served	The Sandfire Story - Business Overview			Y	7
	102-7	Scale of the organisation	The Sandfire Story - Business Overview Supporting Economic Development - Our Economic Contribution Chair's Address			Y	7
	102-8	Information on employees and other workers	Data tables			Y	Appendix
	102-9	Supply chain	The Sandfire Story - Our Supply Chain			Y	9
	102-10	Significant changes to the organisation and its supply chain	The Sandfire Story - Our Supply Chain No significant changes in the reporting year to the organisation or its supply chain			Y	-
	102-11	Adoption of the precautionary approach	Whilst our risk management processes do not explicitly address this, in practice, we observe the precautionary principle in our management approach			Y	-
	102-12	External initiatives	The Sandfire Story - Business Overview		17. Partnerships for the goals	Y	9+12
	102-13	Memberships of associations	The Sandfire Story - Business Overview		17. Partnerships for the goals	Y	9
	102-14	Statement from senior decision maker	Chair's Address			Y	4-5
	102-16	Values, code of conduct and code of ethics	The Sandfire Story - Our Values			Y	8
	102-18	Governance structure	Respect and Accountability - Board Structure - Governance Systems			Y	23
	102-20	Executive-level responsibility for economic, environmental, and social topics.	Respect and Accountability - Governance Systems			Y	23
	102-30	Effectiveness of risk management processes	Respect and Accountability - How We Govern Sustainability			Y	24
	102-32	Highest governance body's role in sustainability reporting	Respect and Accountability - How We Govern Sustainability			Y	24

GRI STANDARD	DISCLOSURE	REFERENCE OR RESPONSE	OMISSIONS	REASON FOR OMISSIONS	SDGS	ASSURED (Y/N)	REFERENCE (PAGE)
GENERAL DISCLOSURES							
	102-40	Stakeholder groups engaged	<a href="http://www.sandfire.com.au/images/Our_Stakeholders.pdf">http://www.sandfire.com.au/images/Our_Stakeholders.pdf</a> .			Y	-
	102-41	Collective bargaining agreements	All direct employees are employed on individual contracts in line with National Employment Standards. Sandfire has no collective bargaining arrangements			Y	-
	102-42	Identifying and selecting stakeholder groups	Respect and Accountability - How We Engage With Our Stakeholders			Y	25
	102-43	Approach to stakeholder engagement	Reporting What Matters - Our Material Issues			Y	19
	102-44	Key topics and concerns raised	Respect and Accountability - How We Engage With Our Stakeholders <a href="http://www.sandfire.com.au/images/Our_Stakeholders.pdf">http://www.sandfire.com.au/images/Our_Stakeholders.pdf</a> .			Y	25
	102-45	Entities included in the consolidated financial statements	Please see our FY2017 Annual Report <a href="http://www.sandfire.com.au/investor/reports/annual-reports.html">http://www.sandfire.com.au/investor/reports/annual-reports.html</a>			Y	-
	102-46	Defining report content and topic boundaries	Reporting What Matters - Our Material Issues			Y	19
	102-47	List of material topics	Reporting What Matters - Our Material Issues			Y	20
	102-48	Restatements of information	Water data reported for FY2016 and FY2015 has been restated in this year's sustainability report following verification. Please see GRI 303 in the data tables			Y	-
	102-49	Changes in reporting	Following our materiality review we made changes to our material issues. This year's material issues are defined in: Reporting What Matters - Our Material Issues Regional economic development is a new material topic for us this year			Y	-
	102-50	Reporting period	FY2017			Y	-
	102-51	Date of most recent previous report	FY2016			Y	-
	102-52	Reporting cycle	Annual			Y	-
	102-53	Contact point for questions	Reporting What Matters - Our reporting			Y	21

APPENDIX – GRI INDEX

GRI STANDARD	DISCLOSURE	REFERENCE OR RESPONSE	OMISSIONS	REASON FOR OMISSIONS	SDGS	ASSURED (Y/N)	REFERENCE (PAGE)
MATERIAL TOPICS							
REGIONAL ECONOMIC DEVELOPMENT							
	102-54	Claims of reporting in accordance with the GRI Standards	Reporting What Matters - Our reporting			Y	21
	102-55	GRI content index	This index			Y	-
	102-56	External assurance	Reporting What Matters - External assurance and appendix 4			Y	21+60
GRI 103: Management Approach	103-1	Explanation of the material topic and its Boundaries	Reporting What Matters - Our Material Issues Supporting Economic Development - Our Aim			Y	20+28
	103-2	The management approach and its components	Supporting Economic Development - Local Procurement - Employment - Community Investments and Partnerships - Taxes and Royalties		8. Good jobs and economic growth	Y	29-33
	103-3	Evaluation of the management approach	Our approach in this area is new and we have not fully developed an evaluation approach however, intend to develop in the coming year			Y	-
GRI 201: Economic Performance	201-1	Direct economic value generated and distributed	Supporting Economic Development - Our Economic Contribution - Taxes and Royalties		8. Good jobs and economic growth	Y	29+34
GRI 203: Indirect Economic Impacts	201-2	Significant indirect economic impacts	Respect and Accountability - Native Title Claimant Group Engagement		8. Good jobs and economic growth	Y	26
GRI 204: Procurement Practices	204-1	Proportion of spending on local suppliers	Supporting Economic Development - Our Economic Contribution		8. Good jobs and economic growth	Y	29
MINE CLOSURE							
GRI 103: Management Approach	103-1	Explanation of the material topic and its Boundaries	Reporting What Matters - Our Material Issues Supporting Economic Development - Mine Closure - Leaving a Positive Legacy Operating Responsibly - Mine closure planning and management			Y	20, 35, 56-57

GRI STANDARD	DISCLOSURE	REFERENCE OR RESPONSE	OMISSIONS	REASON FOR OMISSIONS	SDGS	ASSURED (Y/N)	REFERENCE (PAGE)
MATERIAL TOPICS							
MINE CLOSURE							
	103-2	The management approach and its components	Supporting Economic Development - Mine Closure - Leaving a Positive Legacy Operating Responsibly - Mine closure planning and management		10. Reduced inequalities 11. Sustainable cities and communities 15. Life on land	Y	35, 56-57
	103-3	Evaluation of the management approach	Operating Responsibly - Mine closure planning and management			Y	56-57
Land management and closure planning	MM1	Amount of land (owned or leased, and managed for production activities or extractive use) disturbed or rehabilitated	Data tables		15. Life on land	Y	Appendix
	MM2	Number and percentage of total sites identified as requiring biodiversity management plans according to stated criteria, and the number (%) of those sites with plans in place	Data tables or Content index		15. Life on land	Y	Appendix
GRI 413: Local Communities	413-1	Operations with local community engagement, impact assessments, and development programs	100% of our operations have community engagement programs			Y	-
	MM5	Total number of operations taking place in or adjacent to Indigenous Peoples' territories and number and percentage of operations or sites where there are formal agreements with Indigenous Peoples' communities	Respect and Accountability - Native Title Claimant Group Engagement		10. Reduced inequalities 11. Sustainable cities and communities	Y	26
	MM10	Number and percentage of operations with closure plans	Operating Responsibly - Mine closure planning and management			Y	56
EMPLOYEE HEALTH AND WELLBEING							
GRI 103: Management Approach	103-1	Explanation of the material topic and its Boundaries	Reporting What Matters - Our Material Issues Health and Safety - Safety Performance and Management - Health and Wellness Building a safe and supportive workplace - Our Aim			Y	20, 36, 41, 45
	103-2	The management approach and its components	Health and Safety - Safety Performance and Management - Health and Wellness		8. Decent work and economic growth 3. Good health and wellbeing	Y	41, 45

APPENDIX – GRI INDEX

GRI STANDARD	DISCLOSURE	REFERENCE OR RESPONSE	OMISSIONS	REASON FOR OMISSIONS	SDGS	ASSURED (Y/N)	REFERENCE (PAGE)
MATERIAL TOPICS							
DIVERSITY							
	103-3	Evaluation of the management approach		We undertake regular employee engagement surveys and we conduct exit interviews		Y	-
GRI 401: Employment	401-1	New employee hires and employee turnover	Our Employees - Recruitment and Turnover Data tables	Data was not captured for FY2015	Our collection system was not set up to capture this data in FY2015	8. Decent work and economic growth	Y Appendix
GRI 403-2 Occupational Health and Safety		Types and rates of injury, occupational diseases, lost days and absenteeism and the number of work-related fatalities	Data tables	Does not cover absenteeism		3. Good health and wellbeing	Y Appendix
GRI 403: Occupational Health and Safety	401-3	Workers with high incidence or high risk of diseases related to their occupation	Health and Safety - Health and Wellness Data tables			3. Good health and wellbeing	Y 44, 61
GRI 103: Management Approach	103-1	Explanation of the material topic and its Boundaries	Building a Safe and Supportive Workplace - Diversity and Inclusion				Y 39
	103-2	The management approach and its components	Building a Safe and Supportive Workplace - Gender Diversity			4. Quality education 8. Decent work and economic growth	Y 40
	103-3	Evaluation of the management approach		As part of the employee engagement survey, analysis is undertaken in respect to gender and other based differences. We will be developing our evaluation approach further in the next year			Y -
GRI 405: Diversity and Equal Opportunity	405-1	Diversity of governance bodies and employees	Building a Safe and Supportive Workplace - Gender Diversity Data tables			5. Gender equality	Y 40
GRI 406: Non-discrimination	406-1	Incidents of discrimination and corrective actions taken	Data tables			8. Decent work and economic growth	Y Appendix
TRAINING AND EDUCATION							
GRI 103: Management Approach	103-1	Explanation of the material topic and its Boundaries	Our employees - Learning and development				Y 38
	103-2	The management approach and its components	Our employees - Learning and development				Y 38
	103-3	Evaluation of the management approach	Our employees - Learning and development				Y 38
GRI 404: Training and education	404-1	Average hours of training per year per employee	Our employees - Learning and development Data tables			4. Quality education	Y 38 + Appendix
	404-3	Percentage of employees receiving regular performance and career development reviews	Data tables			4. Quality education	Y Appendix

GRI STANDARD	DISCLOSURE	REFERENCE OR RESPONSE	OMISSIONS	REASON FOR OMISSIONS	SDGS	ASSURED (Y/N)	REFERENCE (PAGE)
MATERIAL TOPICS							
WATER AND WASTE MANAGEMENT							
GRI 103: Management Approach	103-1	Explanation of the material topic and its Boundaries	Reporting What Matters - Our Material Issues				Y 20
	103-2	The management approach and its components	Water and Waste Management - Water		6. Clean water and sanitation 12. Responsible consumption and production.	Y	51
	103-3	Evaluation of the management approach	Water and Waste Management - Water			Y	51
GRI 303: Water	303-1	Water withdrawal by source	Water and Waste Management - Water		6. Clean water and sanitation	Y	51
	303-3	Water recycled and reused	Water and Waste Management - Water		6. Clean water and sanitation	Y	51
GRI 306: Effluents and waste	306-1	Total water discharge by quality and destination	Water and Waste Management - Water Data tables		6. Clean water and sanitation	N	51
	306-3	Significant spills	Data tables		12. Responsible consumption and production	N	Appendix
	MM3	Total amounts of overburden, rock, tailings, and sludges and associated risks	Data tables			Y	Appendix
CARBON MANAGEMENT AND INVESTMENT IN RENEWABLES							
GRI 103: Management Approach	103-1	Explanation of the material topic and its Boundaries	Reporting What Matters - Our Material Issues Operating Responsibly - Energy, Carbon and Renewable Energy Generation - Climate change risks and opportunities			Y	20, 47, 49
	103-2	The management approach and its components	Operating Responsibly - Our Aim - Energy, Carbon and Renewable Energy - Climate change risks and opportunities		13. Climate action 7. Affordable and clean energy	Y	46, 47, 49
	103-3	Evaluation of the management approach	Our approach in this area is new and we have not fully developed an evaluation approach however, intend to develop in the coming year			Y	-
GRI 302: Energy	302-1	Energy consumption within the organisation	Operating Responsibly - Energy, Carbon and Renewable Energy Data tables		7. Affordable and clean energy 13. Climate action	Y	47
	302-2	Energy consumption outside of the organisation	Data tables		7. Affordable and clean energy 13. Climate action	N	Appendix

APPENDIX – GRI INDEX

GRI STANDARD	DISCLOSURE	REFERENCE OR RESPONSE	OMISSIONS	REASON FOR OMISSIONS	SDGS	ASSURED (Y/N)	REFERENCE (PAGE)
MATERIAL TOPICS							
CARBON MANAGEMENT AND INVESTMENT IN RENEWABLES							
GRI 305: Emissions	302-3	Energy intensity	Data tables		7. Affordable and clean energy 13. Climate action	Y	Appendix
	302-4	Reduction of energy consumption	Data tables		7. Affordable and clean energy 13. Climate action	Y	Appendix
	201-2	Financial implications and other risks and opportunities due to climate change	Energy, Carbon and Renewable Energy - Climate Change Risks and Opportunities		7. Affordable and clean energy 13. Climate action	Y	47, 49
	305-1	Direct (Scope 1) GHG emissions	Operating Responsibility - Energy, Carbon and Renewable Energy Data tables		7. Affordable and clean energy 13. Climate action	Y	47
	305-2	Energy indirect (Scope 2) GHG emissions	Operating Responsibility - Energy, Carbon and Renewable Energy Data tables		7. Affordable and clean energy 13. Climate action	Y	47
	305-3	Other indirect (Scope 3) GHG emissions	We have requested our haulage, air charter, freight and fuel delivery contractor provide Scope 3 emissions. We will provide this in FY2018 report		7. Affordable and clean energy 13. Climate action	N	-
	305-4	Greenhouse gas (GHG) emissions intensity	Operating Responsibility - Energy, Carbon and Renewable Energy Data tables		7. Affordable and clean energy 13. Climate action	Y	47
	305-5	Reduction of greenhouse gas (GHG) emissions	Operating Responsibility - Energy, Carbon and Renewable Energy Data tables		7. Affordable and clean energy 13. Climate action	Y	47
	BIODIVERSITY AND LAND MANAGEMENT						
	103-1	Explanation of the material topic and its Boundaries	Land and biodiversity management			Y	54
GRI 304: Biodiversity	103-2	The management approach and its components	Land and biodiversity management		15. Life on land	Y	54
	103-3	Evaluation of the management approach	Land and biodiversity management			Y	54
	MM1	Land disturbed or rehabilitated (hectares)	Data tables	Data for Jan 2017 to June 2017 has not been provided	Data is currently calculated on a calendar year basis and so only 6 months worth of data is provided for 2017. This will be addressed in future reporting	Y	Appendix
	MM2	Sites requiring biodiversity plans	Data tables			Y	Appendix

APPENDIX – GLOSSARY

TERM	DEFINITION
Aircore (AC) drilling	A drilling technique that forces compressed air down a drill hole to lift rock chips to the surface.
C1 cash operating cost	The costs of mining, milling and concentrating, onsite administration and general expenses, property and production royalties not related to revenues or profits, metal concentrate treatment charges, and freight and marketing costs less the net value of the by-product credits.
Group Management Team (GMT)	Comprised of the following members; Chief Executive Officer, Chief Operating Officer, Chief Financial Officer, Chief Commercial Officer and Chief Exploration and Business Development Officer
Integrated waste landform (IWL)	The waste rock dump and the tailing storage facility are one facility known as an integrated waste landform. The waste rock dump surrounds the tailings storage facility.
Lost time injury (LTI)	An injury which results in the person being declared (by a medical practitioner) as being unfit to perform their normal duties for a shift, after the shift in which the injuries were sustained.
Lost time injury frequency rate (LTIFR)	The total number of lost time injuries (for the 12 month period/ total hours worked for the 12 month period) multiplied by 1,000,000 hours.
Native title	The communal, group or individual rights and interests of Aboriginal peoples and Torres Strait Islanders in relation to land and waters, possessed under traditional law and custom, by which those people have a connection with an area which is recognised under Australian law (s 223 NTA).
Native title claimant group	Indigenous party who have made an application for the legal recognition of native title rights and interests held by Indigenous Australians
Native title determination group	Indigenous party whose right to native title has been established by an Australian court or other recognised body.
Potentially acid forming (PAF)	A characterisation of waste rock that has the potential to be acid forming.
Principal hazard	Principal hazards are potential fatality risks.
Recordable injury	The combination of fatalities, lost time injuries, restricted work injuries and medically treated injuries.
Significant near miss	An unplanned event that did not result in significant injury, illness or damage, but had the potential to do so. Significant is defined as having an actual or potential risk rating of > 18 in Sandfire’s Risk Matrix.
Tailings	Tailings are finely ground rock and mineral waste products of mineral processing operations.
Tailings storage facility (TSF)	Purpose built retaining embankment to store tailings for the life of mine.
Total recordable injury frequency rate (TRIFR)	The total number of recordable injuries (for the 12 month period/ total hours worked for the 12 month period) multiplied by 1,000,000 hours
Volcanogenic massive sulphide (VMS)	A type of metal sulphide ore deposit which has been created by volcanic-associated hydrothermal events in submarine environments. Most significant VMS deposits occur in clusters that define major sources of copper, zinc, lead etc.
Waste Rock	Waste rock is material that contains minerals in concentrations considered too low to be extracted at a profit

# APPENDIX – ASSURANCE STATEMENT

## INDEPENDENT ASSURANCE STATEMENT

To: The Stakeholders of Sandfire Resources NL



### Introduction and objectives of work

Bureau Veritas Australia Pty Ltd was engaged by Sandfire Resources NL ("Sandfire") to provide independent limited assurance of its 2017 Sustainability Report ("the Report"). This Assurance Statement applies to the related information included within the scope of assurance described below.

This information and its presentation in the Sustainability Report 2017 are the sole responsibility of the management of Sandfire. Bureau Veritas was not involved in the drafting of the Report. Our sole responsibility was to provide independent assurance of the accuracy of information included. This is the first year in which we have provided limited assurance over the Sandfire Sustainability Report.

### Scope of Assurance

Sandfire requested Bureau Veritas to verify the accuracy of the data and information included in the Report in accordance with both the "Core" GRI Standard Disclosures and with identified material aspects from the "Mining and Metals Sector" Disclosures from GRI G4. The complete list of assured elements is referred to within the Content Index of the Report.

The scope of work was limited to the data, related to the activities of DeGrussa mining operations in Western Australia, exploration sites (four active sites) in Australia and offices, available at the Corporate Head Office in Western Australia, for the period of 1<sup>st</sup> July 2016 to 30<sup>th</sup> June 2017.

### Methodology

As part of its independent limited assurance, Bureau Veritas undertook the following activities:

- Interviews and follow-up communication with relevant personnel;
- Review of documentary evidence produced by Sandfire representatives;
- Audit of performance data and factual information including source verification;
- Review of Sandfire's processes for identification, aggregation and analysis of relevant information, report content and performance data from mining and exploration activities.

Our work was planned and executed in a manner designed to produce a limited level of assurance and to provide a sound basis for our conclusions.

Our assurance process is aligned with and informed by Bureau Veritas' standard procedures and guidelines for external verification of sustainability reports, GRI Sustainability Reporting Standards 2016, GRI G4 "Mining and Metals Sector" Disclosures and the International Standard for Assurance Engagements (ISAE) 3000.

### Our findings

On the basis of our methodology and the activities described above, we provide limited assurance that:

- Nothing has come to our attention to indicate that the reviewed statements within the scope of our verification are inaccurate and the information included therein is not fairly stated;
- It is our opinion that Sandfire Resources NL has established systems for the collection, aggregation and analysis of relevant information and quantitative data.



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### Evaluation against the Global Reporting Initiative Sustainability Reporting Standards 2016 (GRI Standards)

Sandfire's Sustainability Report 2017 has been prepared in accordance with both the "Core" Standard Disclosures of the GRI Standards 2016 and the "Mining and Metals Sector" Disclosures of the GRI G4 Guidelines, including appropriate consideration of the Reporting Principles, profile disclosures, management approach disclosures and performance indicators.

Bureau Veritas' evaluation of Sandfire's Sustainability Report 2017 included cross checking the GRI Content Index against all the reference documents.

### Limitations and Exclusions

Excluded from the scope of our work is any assurance of information relating to:

- Activities outside the defined reporting period;
- Statements of commitment to, or intention to undertake future actions by Sandfire;
- Statements of position, opinion, belief and/or aspiration by Sandfire;
- Financial data audited by an external third party;
- Other sites and activities not included in the scope.

This independent assurance statement should not be relied upon to detect all errors, omissions or misstatements that may exist within the 2017 Sustainability Report.

### Statement of independence, impartiality and competence

Bureau Veritas is an independent professional services company that specialises in Quality, Health, Safety, Social and Environmental management with almost 180 years history in providing independent assurance services.

Bureau Veritas has implemented a Code of Ethics across the business to maintain high ethical standards among staff in their day to day business activities. We are particularly vigilant in the prevention of conflicts of interest.

No member of the assurance team has a business relationship with Sandfire Resources NL, its Directors or Managers beyond that required of this assignment. We have conducted this assurance independently, and there has been no conflict of interest.

The independent assurance team has extensive experience in conducting assurance over environmental, social, security, safety, health and ethical information, systems and processes, and through its combined experience in this field, an excellent understanding of Bureau Veritas standard methodology for the Assurance of Sustainability Reports.

**Bureau Veritas Australia Pty Ltd**  
27<sup>th</sup> September 2017

**Jeremy Leu**  
Manager - Sustainability Services



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## APPENDIX – DATA TABLES

Please see our website for the Data Tables appendix.

[http://www.sandfire.com.au/images/sustainability\\_report\\_2017.pdf](http://www.sandfire.com.au/images/sustainability_report_2017.pdf)



[SANDFIRE.COM.AU](http://SANDFIRE.COM.AU)

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