



St Barbara

Sustainability Report

Environmental • Social • Governance
For the year ended 30 June 2019

Addendum November 2019

This addendum provides additional information requested by some Environmental, Social and Governance (ESG) analysts to be publicly disclosed but which has not previously been included in the Sustainability Report, as the information contained herein is not considered material under Global Reporting Initiative (GRI) disclosures.

Carbon Disclosure Project (CDP) participation:

- Climate – since 2018
- Forest – since 2019
- Water – not applicable, not invited to participate
- Score – Climate 2018 = D

CDP Climate information

Risk management procedures for climate change are reviewed three times per year.

Climate change risk and opportunities are identified and assessed in the enterprise wide risk management system.

The enterprise wide risk management system defines equivalency levels for financial, compliance, environment and reputation impacts.

The Board has determined it will retain oversight of climate change related issues rather than delegate them to a Board sub-committee.

The Company risk management procedures monitor risks greater than six years into the future.

CDP Forestry information

The Company has no forestry or plantation operations outside of those related to meeting closure revegetation and community obligations.

The Company has no operations in High Conservation Value areas.

The Company must rehabilitate all disturbed lands as part of closure requirements and has audited provisions on its balance sheet appropriate for this commitment.

Diversity

All employees receive annual training regarding the importance of diversity and the Group's policies, resources and strategy concerning it.

The Group has had a Women's Internal Network and mentoring system since 2012.

Electricity generation

In the 2019 financial year, the Company produced 124 GWh at Gwalia in WA, and 84 GWh at Simberi in PNG.

Energy conservation

The Simberi PNG aerial rope conveyor ('Ropecon', which uses the weight of ore to power a conveyor) saves ~A\$2.3 million, 90,000 GJ and 7,000 CO₂t equiv., per annum. The Gwalia absorption chiller (converting waste heat from gas power generators into mine ventilation cooling) saves ~A\$1 million (gas variable costs only), 96,000 GJ and 5,000 CO₂t per annum.

Fleet Economy

The Company has a strong focus on fleet economy, monitoring diesel litres usage per TKMs (tonne kilometres). We allow global underground truck manufacturers to test their newest and most efficient models at our Gwalia WA mine. At the manufacturers' invitation, we attend various tests of the most recent electric underground mining trucks and have an ongoing watching brief on this generally. At the Simberi mine, with the current mine plan anticipating closure in 2022, there is no defined fleet economy strategy.

We have no absolute fleet economy targets. Our strategy is to target remaining in the top quartile for gold production greenhouse gas (GHG) efficiency overall, inclusive of trucking. This provides opportunity for trade-off studies between trucking and fixed conveyor options (such as the above mentioned 'Ropecon').

In financial year 2019, fleet emissions were 54 kt CO₂e (Gwalia WA, 18 kt CO₂e, 7 ML of diesel, Simberi 36 kt CO₂e, 12 ML of diesel), around 40% of the total (141 kt CO₂e) emissions. No fleet related emissions are derived from renewable sources.

Greenhouse gas (GHG) emissions other than CO₂ and other air pollutants

The Company has not been the subject of any air pollution related complaints. Both mines are in remote, isolated settings.

In reporting, the Company converts all other greenhouse gas emission into their CO₂ equivalent according to the Australian Federal Government NGERs formula and has no specific reduction strategies for non CO₂ GHGs. On CO₂ equivalent basis, 99.7% of GHG emissions are CO₂. Less than 0.2% are methane, less than 0.2% is N₂O, 0.01% is Sulphur Hexafluoride.

Grid power

The Company derives no material power from an electricity grid, with grid power only used for offices and the Leonora Western Australia mine accommodation camp (less than 0.5% of total scope 1 and 2).

Human Rights

The Company has policies for Equal Opportunity, Diversity and Inclusion and Community Relations, protecting employees from discrimination based on race, age, union affiliation, ethnicity, religion, gender, sexual orientation, disability, family and marital status, nationality and political belief.

www.stbarbara.com.au/about_us/governance/Diversity-and-Inclusion-Policy

www.stbarbara.com.au/about_us/governance/Equal-Employment-Opportunity-Policy-Statement

www.stbarbara.com.au/about_us/governance/community-relations-policy-statement

Renewable energy and power

The Company derives no material energy or power from renewable sources. Solar hot water heating is utilised at the Leonora Western Australia mine accommodation camp. 12 kt CO₂e is derived from co-generation sources.

Vendor Code of Conduct

This is available at <https://stbarbara.com.au/wp-content/uploads/2019/11/supplier-code-of-conduct.pdf>

Touquoy Tailings Management Facility (TMF)**Construction:**

- Type of TMF: Downstream raise
- Rock dam with clay core and 2 filter layers
- Water Management: tailings pond, effluent treatment plant (ETP), polishing pond and engineered wetland

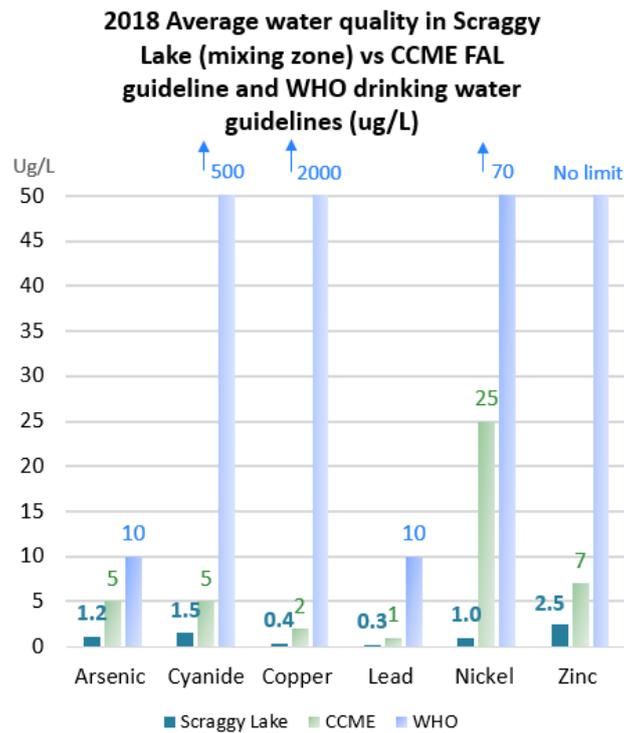
Metrics:

- Elevation: 125 masl
- Current wall height: 19 m
- Projected final wall height: 24 m
- Tailings deposition rate (water volume): 7,263 m³/d
- Reclaim (water recycling) rate 6,845 m³/d
- Deposited dry density: 1.49 t/m³ as per design
- Total capacity: 9.3 Mt
- Cyanide treatment – destruction via INCO sulphur dioxide treatment in processing plant
- Arsenic treatment – two stage – initially in processing plant via oxygen reduction with ferric sulphate (~80%). At Effluent Treatment Plant (ETP), with peroxide and ferric sulphate, capture of precipitate with 'geo-bags'/tubes
- 94% of Touquoy water requirements are extracted from the TMF. Remaining 6% is extracted from Scraggy Lake (which is also final discharge point)
- Built to Canadian Dam Association (CDA, member of ICOLD) guidelines.



Touquoy TMF – Governance

- Engineer of Record & Independent Tailings Review Board in place
 - A dam safety management x2 annual dam safety inspections and a dam safety review in Year 5.
 - Groundwater testing performed at multiple locations and depths, reported to regulators
- Historic tailings permanently stored within an engineered containment cell. Historic contaminated water captured and treated.
- Potential for acid rock drainage is low
- Multiple protection plans (including Wetland, Groundwater, Wildlife) in place and audited.
- A regulatory mine closure plan is in place, which includes rehabilitation of the TMF.



ug/L = micro grams per litre, equivalent of 'parts per billion'.

Canadian Council of Ministers of the Environment (CCME) Freshwater Aquatic Life (FAL) guidelines:

https://www.ccme.ca/en/resources/canadian_environmental_quality_guidelines/index.html

World Health Organisation (WHO) Drinking water guidelines:

<https://apps.who.int/iris/bitstream/handle/10665/254637/9789241549950-eng.pdf;jsessionid=18E95BF6E26AFCE8850979910EA1E428?sequence=1>

Note for Cyanide, CCME uses WAD, WHO uses Total.