Waste Management

China's most recently implemented 5-year plan is a call to action for a country wide transition to a low-carbon industrial society. The plan calls for the reduction of emissions, pollutants, and waste through the implementation of sustainable initiatives, development, and technology in order to cap carbon emissions and eventually reach carbon neutrality. For mining companies, this transition will bring with it the establishment of sustainable waste management practices and economic systems, as well as the necessary maximization of their resources.

A billion tonnes of tailings and waste rock are generated each year in China and produce a series of environmental issues, such as land usage, vegetation destruction, and air pollution. The mining activities at the Ying Mining District have historically produced volumes of waste rock that require a substantial amount of land for storage. Through the use of a treatment plant, waste rock can be converted to sand and gravel aggregate thereby reducing the consumption of primary resources, land, environmental risks, and overall costs.

In April 2020, Silvercorp, in conjunction with Luoning City Investment Company, commenced construction of a one million tonne per year aggregate waste rock treatment plant. The plant was designed to reduce the Ying Mining District's surface waste rock impoundments on-site and maximize the recovery and recycling processes. Silvercorp provided approximately USD$4.4 million to construct the plant and will recoup its capital costs prior to the plant's profits being distributed to the partners, providing an additional economic benefit to the local community through the commercialization of the sand and gravel for the construction industry of Luoning County and neighbouring areas. The aggregate production line was officially commissioned in April 2021.

The development of a low-carbon system that reduces waste, land use, and costs was a key consideration in improving the waste rock management practices at the Ying Mining District. Adherence to high national and provincial standards for emissions guided the construction and design of the plant. As a result, the Company is pleased to report that the plant will be classified as an "ultra-low emission" facility. In building the plant, the main goal was to maximize the recovery and recycling processes through efficient development. Key processes of the plant include: a vertical shaft impact crusher, an automated PLC production control system, and a fully enclosed production line.

At Silvercorp's GC Mine in Guangdong Province, waste rock recycling processes have been in place since the mine's construction. The GC mine has not accumulated any waste rock in surface stockpiles, as over 90% of the waste rock produced is donated to the local community for processing at their aggregate production facilities, with the balance being used as backfill. Silvercorp has also purchased the end products for its construction projects periodically. In addition, in Q3 Fiscal 2021, Silvercorp completed the construction of a paste backfill plant at the GC mine at a cost of USD$1.5 million, where approximately 40% of the mine's dewatered tailings are mixed with cement and pumped underground to fill mined out stopes, with the balance stored in a dry stack TMF. This investment enables the GC mine to return a significant portion of the tailings back underground as fill for mined out areas, which is expected to reduce the future costs and risks associated with the operation of above ground tailings facilities. In Guangdong Province, the waste rock generated by the GC Mine is transported and processed by the Gaocun Town Development Corporation and used for infrastructure construction in the mining area and local social construction. The comprehensive utilization rate of the waste rock reached 90.4% in Fiscal 2021.

Overburden, Rock, and Tailings	Fiscal 2021		
	Ying	GC	Total
Total amount of tailings (tonnes)	595,638	271,442	867,080
Total amount of waste rock (tonnes)	716,541 Note1	239,099	955,640
Tailings used as backfill (tonnes)	-	65,625	65,625
Waste rock recycled (tonnes)	232,115	216,130	448,245
Tailings not used as backfill (tonnes)	595,638	205,817	801,455
Waste rock not recycled or used as backfill (tonnes)	484,426	22,969	507,395

Note 1: The amount of waste rock is the waste rock accumulated during the construction of the Hongfa Building Material Factory from April 2020 to December 2020. Since the factory was put into operation, the waste rock has been reused as a raw material for production.

The ore mining and milling processes produce a large volume of tailings, waste rock, and other solid wastes, which not only occupy land but also reduce the comprehensive utilization rate of mineral resources. In compliance with the Law of the People's Republic of China on the Prevention and Control of Solid Waste Pollution (revised in 2020), the Directory of National Hazardous Wastes, the Standard for pollution control on the non-hazardous industrial solid waste storage and landfill (GB18599-2020) and the Standard for Pollution Control on Hazardous Waste Storage (GB18597-2001), we have formulated the Stationary Waste Management Regulations. We classify wastes generated during production and operations and explore the comprehensive utilization of solid wastes based the principle of "unified collection, classified disposal, and elimination of hazards" to achieve the goal of waste reduction, recycling, and safe disposal.

Non-hazardous waste	Carrying out comprehensive utilization of waste rock through reasonable storage to reduce environmental footprint and improve economic benefits.
Hazardous waste	Signing the Hazardous Waste Commissioned Disposal Contract with a qualified third party, entrusting the transfer and disposal of the hazardous waste generated.
Household waste	Signing the Household Waste Transfer and Disposal Agreement with a government-qualified third party, entrusting the cleaning and transfer of household waste.

Domestic waste classification

Waste Discharge and Disposal	Fiscal 2021		
	Ying	GC	Total
Hazardous waste (tonnes)	21.08	1.80	22.88
Including: Waste oil (tonnes)	1.16	1.80	2.96
Waste batteries (tonnes)	19.92	0	19.92
Non-hazardous waste (tonnes) Note 1	1,080,358	228,919	1,309,277
Including: Tailings not used as backfill (tonnes)	595,638	205,817	801,455
Waste rock not recycled or used as backfill (tonnes)	484,426	22.969	507,395
Other non-hazardous waste(tonnes)Note 2	294	133	427
Domestic waste to landfill (tonnes)	740	51	791

Note 1: According to Identification Standards for Solid Wastes General Rules (GB34330-2017), tailings and mining waste rock are non-hazardous wastes. In fiscal 2021 sustainability report, we included tailings and mining waste rock as non-hazardous waste indicators. The relevant data is subject to the fiscal 2021 sustainability report.
Note 2: Including waste tires, steel and other production materials. This indicator is in line with the indicator Non-hazardous Waste disclosed in the fiscal 2020 sustainability report.

Noise Management

The main sources of noise from our mining processes include: mine blasting, ventilation equipment, processing plant crushing, screening equipment operations, and motor vehicle engines. Our overall approach to managing noise pollution is governed by the Law of the People's Republic of China on the Prevention and Control of Ambient Noise Pollution; we implement the three standards set in the Emission Standard for Industrial Enterprises Noise at Boundary (GB12348-2008) and carry out quarterly noise monitoring in the production plants. To mitigate the noise created by our operations, we purchase low-noise equipment whenever possible and incorporate shock absorption and isolation into production equipment such as crushers, ball mills, and flotation machines to reduce noise at the source, and minimize nighttime operations and transportation so that neighboring residents are not disturbed at night. We also provide workers with PPE such as ear plugs, ear protectors, and other protective equipment, in addition to providing annual occupational health examinations and institute a rotation system for posts exposed to serious noise to keep our frontline workers safe.