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Kassandra Mines

Visitor guide

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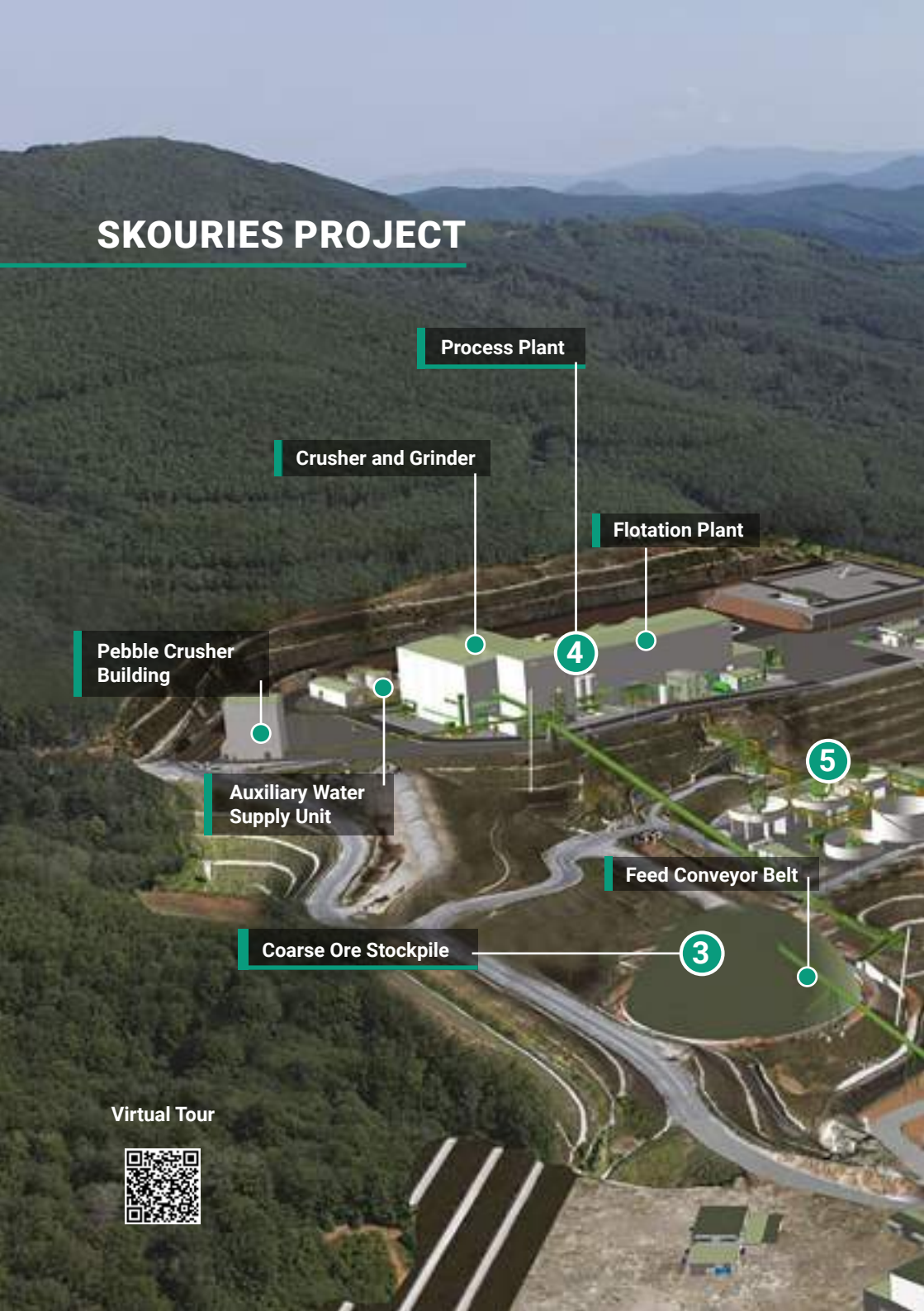
The Kassandra Mines Complex is located in NE Halkidiki within the administrative boundaries of Aristotle Municipality. It is a modern mining centre comprised of the following facilities:

- The world-class copper-gold **Skouries** Project.
- The **Olympias** gold, silver, lead and zinc producing mine.
- The state-of-the-art **Kokkinolakkas Tailings Management Facility (TMF).**
- The **Stratoni - Mavres Petres** mining facilities, which include the underground mine of Mavres Petres and the Stratoni facility (under care and maintenance since 2021, now hosting Hellas Gold's Training Centre) as well as port and storage facilities.

SKOURIES PROJECT



Virtual Tour


Machinery Workshop/Warehouses/Offices
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Key facts

Processing method:
Open pit & underground

Deposit:
Copper-gold porphyry

Proven & Probable Reserves (Sept. 2023):
740,000 tonnes of copper and 3.6 million oz. of gold

Estimated annual copper production: 67 million lb

Estimated annual gold production:
140,000 oz.

Products:
Copper and gold concentrates

Production start date:
Expected in the third quarter of 2025

Expected initial mine life:
20 years, based on Proven & Probable Mineral Reserves as of September 30, 2023

Skouries is a world-class porphyry copper-gold deposit that will be mined using a combination of open pit and underground mining. It is expected to generate significant economic and social value both at local and national levels. Once the mine becomes operational, Greece will rank as one of Europe's leading gold producers and our copper production will have the potential to help the EU transition towards a circular economy.

Mine

Main facilities

1 Mine

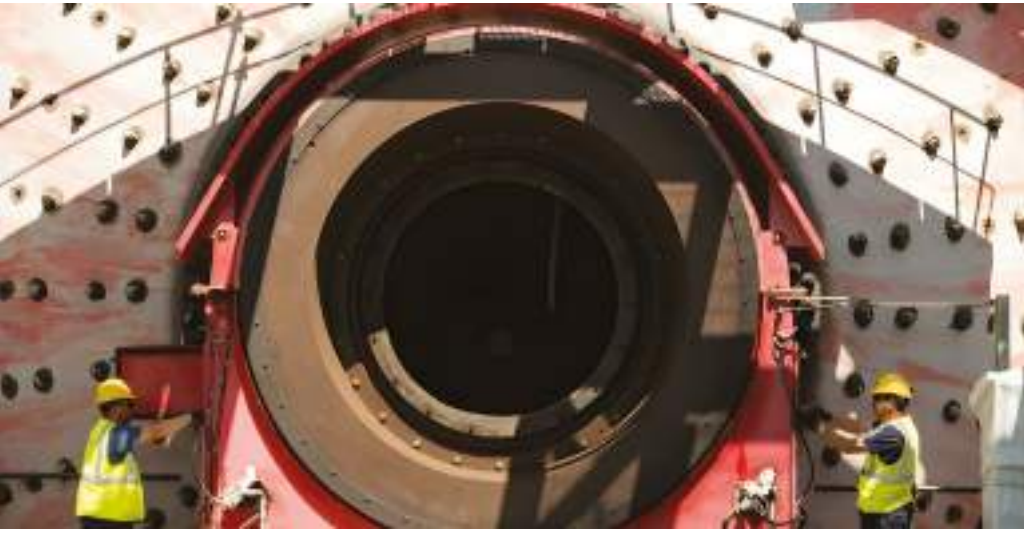
Phase one operations include a combination of open pit and underground mining lasting around nine years. During phase two, underground mining operations will continue for at least an additional 11 years. Once in operation, the Skouries mine is expected to be digital, and will also incorporate various international best practices in the fields of technology, exploration and extraction, safety and environmental protection.

2 Primary crusher

Ore from both the underground and open pit will be conveyed to the primary crusher where it will undergo the first step in processing to reduce the ore in size.

3 Coarse Ore Stockpile

After the primary crusher, the ore is temporarily stored in a dome, called the coarse ore stockpile, to protect it from weather conditions and to mitigate dust until the ore is conveyed into the main process plant.



4 Flotation plant

The ore undergoes further **crushing** to a smaller size in the SAG mill. This is followed by **grinding** in the ball mill to bring the ore to the size of fine-grained sand. Water is then added and mixed creating a pulp. That pulp is then directed to the **flotation** cells where copper and gold concentrates (products) and processing residues — in other words the pulp that does not contain economic minerals (tailings) — are separated out.

5 Thickeners

The water added during the grinding and flotation process is removed by high pressure thickeners and filter presses, resulting in a sandy material which is then stacked and compressed. Moisture content can be adjusted depending on weather conditions.

6 Water Management Facility

The water that comes into contact with the extractive process, called contact water, is cleaned at the water treatment plant. It is either used within the process circuit, re-used in day-to-day operations, without being released into the environment, or is re-injected into the subsoil.

7 Tailings Management Facility

At Skouries, one downstream embankment is required for the tailings. Thanks to the use of advanced tailings filtering technology, which is the safest method and best practice recognized internationally in tailings management, we have achieved a 40% smaller environmental footprint compared to the initial conventional tailings design; removal of up to approximately 90% of water from tailings; water savings through recycling and re-use in the production cycle; as well as geotechnical stability by depositing solids.

8 Parallel Rehabilitation

Due to the process of dry stacking and the solid form of the tailings, it is possible to gradually regenerate the disposal facilities in parallel with mining activities. This means that the site will be rehabilitated and ready to hand back to the local community sooner after the end of mining activity. Additionally, part of the pre-strip material from the open pit is used to build the waste rock dam, water management ponds and various other site infrastructure works. The excess will be used to gradually rehabilitate the filtered tailings facility. Mining tailings will be used to fill in the areas that were mined out in the underground mine, as well as the open pit to restore the original terrain.


OLYMPIAS
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Flotation Plant
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Product Filtering Facilities
(thickeners)
Filtering Facilities
(lead and zinc filter presses)
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Filtered Tailings Facility
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Virtual Tour


Underground Mine
1
Crusher
3
Filtering Facilities
(lead filter presses)
5

Key Facts

Processing method:
Underground

Deposit:
Polymetallic carbonate replacement

Products:
Gold, silver, lead and zinc concentrates

Proven & probable reserves (Sept. 2023):
1.9 million oz. of gold, 35.8 million oz. of silver, 374,000 tons of lead, 468,000 tons of zinc

Production rate:
500,000 tonnes/year

Expected mine life:
15 years, based on Proven & Probable Mineral Reserves as of September 30, 2023

The mining facilities at Olympias are undergoing continuous improvement across different levels of operations: from the education and training of the workforce through to upgrading the facilities and operating systems. The innovative 4G/LTE network we have installed at the underground mine allows for direct communication between workers in the underground mine and operators of transport equipment and machinery with our control room on surface. Additionally, the upgraded network also allows applications to be developed that enhance safety, productivity, energy consumption optimization, such as remote mucking, mobile equipment telemetry and ventilation on demand.

Main facilities

1 Underground Mine

The underground gold, silver, lead and zinc mine was modernized and commenced commercial production in 2017.

New technologies and modern practices are used to drive continuous improvements in safety, increased productivity and constant modernization of the mine.

2 Ore Sorting Facilities

Ore from the underground mine is transported to the surface ore bins and sorting area and stored according to either its precious metal content or based on the zone from where it was mined. From that point, blending strategies are implemented to supply the crushing units with front-end wheel loaders. The ore is then fed into a grinding mill before proceeding to the flotation circuit.

3 Crusher

Ore undergoes primary, secondary and tertiary crushing into smaller pieces to reduce its size and is then directed to the final grinding stage in the ball mill.

4 Flotation Plant

After grinding, the ore, now a fine, sand like consistency, is directed to a series of flotation cells along with water, where the flotation process takes place across various tanks. During this process, specialized reagents allow for the separation of the metal concentrate, bringing it to the surface and facilitating the recovery of valuable minerals.

5 Product and Filtered Tailings Facilities

The water introduced during the grinding and flotation processes is removed using high-pressure thickeners and filter presses. This ensures that the concentrates and tailings achieve an appropriate moisture content.

6 Paste Plant

At the end of the production process, after the excess water has been removed, the tailings are utilized to backfill the tunnels where mining operations have been completed. This means that only a small fraction of these materials is transported to the state-of-the-art Kokkinolakkas Tailings Management Facility for safe disposal as solids.

Environmental Rehabilitation - Olympias Nursery

Long before our investment plan to develop the Kassandra Mines was approved, we made an investment of over €100 million to completely rehabilitate the entire site of Olympias and the historical mining operations (1976-1995) of former site owners. Over an area of 30 hectares, we removed 4 million tonnes of tailings. One illustrative example of this is the old 15 hectares disposal site located in front of the Olympias flotation plant, which was converted into one of the largest nurseries in Greece with over 1 million species of plants both endemic and native, which are being used both to rehabilitate the areas where we operate and to meet the needs of the local community.

KOKKINOLAKKAS TAILINGS MANAGEMENT FACILITY

Virtual Tour

Key facts

Operation:
Safe storage of dry-stack tailings

Location:
Madem Lakkos mining facilities

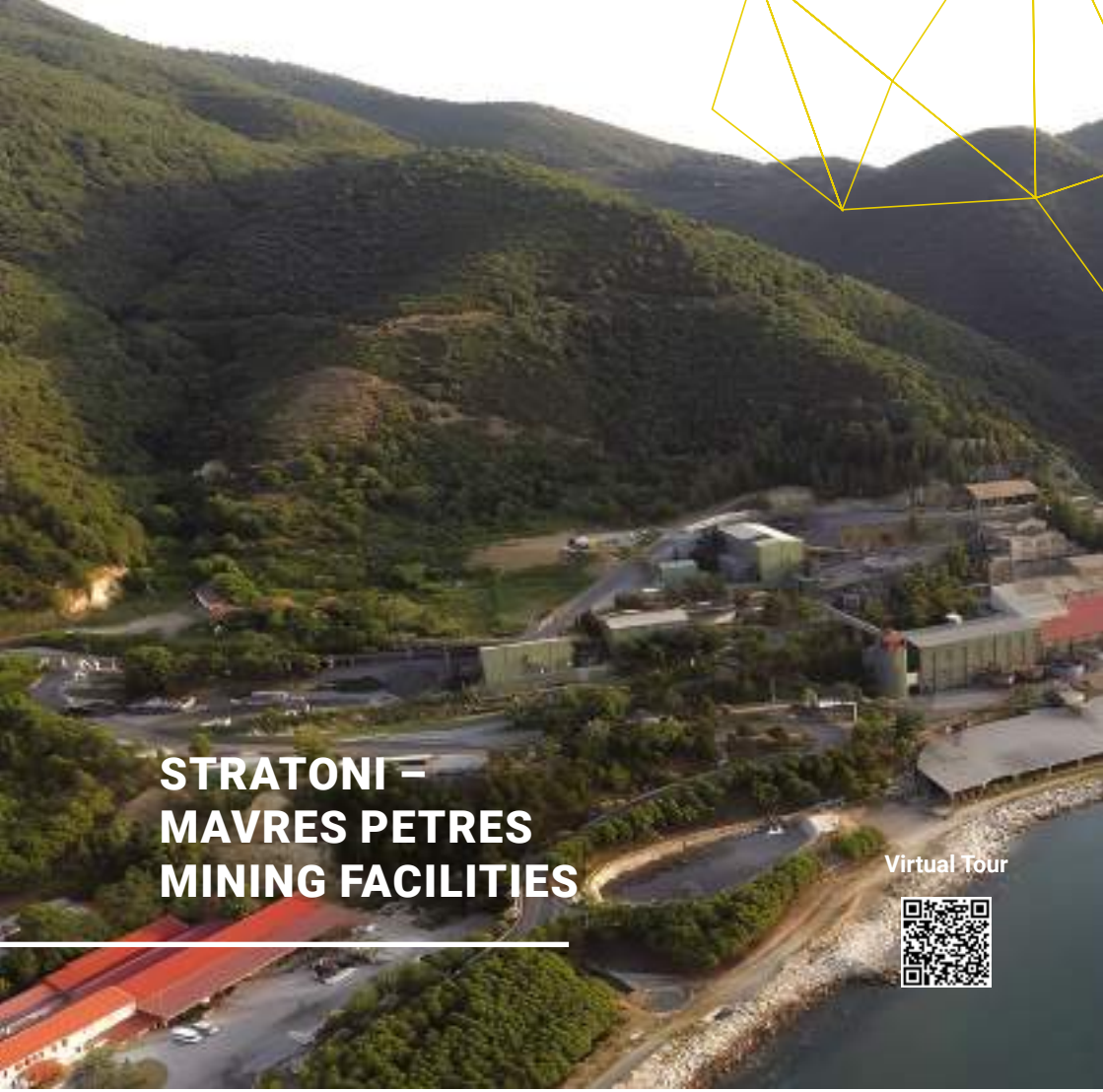
Expected life cycle:
20 years

Capacity:
10.65 million m3

Design:
Four-layer impermeable lining with integrated drainage channels to direct non-contact water away from the Kokkinolakkas facility, keeping tailings immobile, while preventing water contamination.

Kokkinolakkas Tailings Management Facility ("TMF")

The Kokkinolakkas Tailings Management Facility (TMF) is an integrated protected tailings storage area using best available technology in waste management. The development and operation of the site is a project that supports both active operations and rehabilitation of the area, it is used to safely stack not only tailings generated during current production at the Olympias mine after excess water is removed, but also historical deposits which have existed in the area for decades from previous mining activities (1969-1995).



STRATONI – MAVRES PETRES MINING FACILITIES

Virtual Tour

The Stratoni mining facilities include the Mavres Petres underground non-producing mine and the Stratoni flotation plant that entered care and maintenance in 2022. While in operation, the underground mine produced lead, silver and zinc concentrates while the Mavres Petres facilities now host Hellas Gold's Training Centre.

Today, the facilities at Stratoni are home to our offices, the Quality Control Laboratory, as well as storage and port facilities.

Quality Control Lab

The Quality Control Lab carries out daily checks on samples and determines metal concentrations during the entire production process (from ore extraction to flotation and sale of concentrates) to ensure that strict quality standards are complied with throughout the entire production cycle.

Port and storage facilities

The Stratoni port serves as a connection point between Hellas Gold and other, primarily European, markets. Here, bulk concentrates are loaded onto ships to be exported. It is estimated that each year 75,000 tonnes of concentrates are exported from the port at Stratoni to markets outside Greece. The port facilities at Stratoni host the company's storage facilities, where bulk concentrates are stored, until loaded and shipped to their final destination.

TRAINING CENTRE

Key facts

Location: Mavres Petres mining facilities

Investment to date: ~ €1 million

Technological equipment: Virtual and augmented reality simulators

Purpose: To improve employees' digital and traditional skills by providing them with realistic, hands-on experience in a completely safe and controlled environment, without affecting the mine's production cycle.

Operation: Simulation of different types of machinery, accurate 3D representation of the company's mining facilities plus a range of scenarios featuring situations employees could encounter at work. This includes fire-fighting simulators, and light and heavy-duty truck simulators.

As part of our drive to modernize facilities, we are upgrading existing building infrastructure and fitting it out with high-tech training equipment. We are investing in creating and maintaining a modern Training Centre focused on reskilling, upskilling and further developing the skills of our people, as they are the core of safe and sustainable operations.

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