

# THE VALLAURIA MINE

*Silver mine in the Mercantour*



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## ***Preface***

*The contemporary history of La Minière is, above all, one of passion: that of Christian Le Martelot, Solange, and their loved ones, who have succeeded in bringing back to life this historic site in the municipality of Tende, the entry point to the legendary and magnificent Vallée des Merveilles (Valley of Wonders). Their relentless work has transformed this site, where the very first miners toiled hard in the 11th century, into a peaceful haven for visitors in the 21st century!*

*Meticulously and humbly, they have worked hard over the seasons in keeping with the architecture, materials, and History of the site.*

*Humbly... Because I had the privilege of witnessing the very start of the adventure and have followed its progress as the work of the young volunteers hosted at La Minière has advanced during the summer months. The result is truly awe-inspiring! Yet, Christian and his team are driven solely by a wish to share “their” Minière and offer as many people as possible the chance to visit it.*

*What monumental work has been achieved to ensure that the mine’s galleries can now be visited!*

*They have been assisted in this project by Bruno Ancel, a brilliant and dedicated mining archaeologist, who has brought more than 30 years of expertise in research, archaeological excavation and caving to the project.*

*For me, it was essential for the municipality of Tende to be part of this initiative, especially through its financial support over the years.*

*This accessible and educational booklet is the result of painstaking work that will help readers to better understand the depth of this passion.*

*On behalf of the municipality, I thank the entire team for this journey into a land of Wonders.*

*Jean-Pierre VASSALLO  
Mayor of Tende*



## Introduction

*Be amazed by this industrial heritage, a place where generations of miners used to live and work!*

*In the 11th and 12th centuries, the miners in Vallauria used the fire-setting technique to mine the lead-silver vein thus creating vast chambers.*

*Mining resumed in the middle of the 18th century. Several companies succeeded one another up until 1930 when the mining site was closed once and for all. Over these two centuries, about 20 km of galleries were excavated with explosives, spanning a height of about 160 m. The hamlet of La Minière was created to manage the site's isolation: the workers lived on site and worked underground or in the ore processing workshops.*

*After serving as barracks for the Italian army in 1939, the buildings were abandoned before being purchased by the association "Neige et Merveilles" on 18 May 1961. Today, the site offers an activity and sustainable tourism centre.*

*Today, the work initiated by archaeologists in 2009 helps us to understand this mining site, the largest in the Southern Alps! This short guide reveals the secrets of this exceptional site that can be discovered above and below ground.*





# 1

## SOME HISTORY

It is likely that humans have passed through La Minière valley since ancient times. The mine is located not far from the Vallée des Merveilles and the Vallée de Fontanalbe where about 50,000 cave paintings have been found,

area before the Middle Ages. Contrary to popular belief, neither the Phoenicians, the Romans, nor the Saracens appear to have visited the site!

Mining at the Vallauria site commenced around the middle of the 11th century. At the time, the region was part of the splintering County of Ventimiglia. Although the exploitation of the mine by different owners appears to have come to an end around the end of the 12th century, the community continued to do homage to the Count of Ventimiglia while the County of Tende was gradually taking shape. The powerful Lascaris family, which controlled the County from the middle of the 13th century up until 1581, was not interested in the old mine. Only the toponym "Alman di Vallauria" can be found in written



1. Map of the concession requested by Sebastien Grandis, 1797. At the time, the area was French for about twenty years

dating from between 3,500 BC and Prehistoric times, recounting the social and cultural practices of those who travelled these valleys at the time. However, there is no sign of mining activities in the





sources dating from 1405 in reference to the presence of a cave or a rock shelter which

### ► *A recent border*

*The entire modern mining activity took place in an “Italian” context. This explains why the names of the galleries and the different parts of La Minière are in Piedmontese or Italian in all the archive documents relating to the mine.*

may have been formed by the abandoned mine.

It was only in the middle of the 18th century that mining resumed with the

area now belonging to the House of Savoy and a short French period followed from 1796 to 1814. In 1860, despite the annexation of the County of Nice by France, the municipality of Tende remained under Italian control right up until 1947. The mine exploited by various managers and companies from several nations (France, Belgium, Italy, etc.) throughout the 19th century was closed for good in 1930. ●

2. Workers posing outside La Minière in about 1910



# GEOLOGY OF LA MINIÈRE

The La Minière valley lies in the heart of the Argentera-Mercantour massif, a well-known and exceptional geological formation.

The subsoil of Vallauria is made up of gneiss, a metamorphic rock formed during the Precambrian (540 million years ago). In La Minière, it is the host rock, namely the rock which

layer of green mudstone, commonly referred to as schist, from the Permian period (270 million years ago). This layer comes from lake sediment which, at the time, settled in an alluvial plain. It was at the time of the uplift of the Alps, about 30-50 million years ago, that a vein mainly of blende (zinc ore) and galena (silver lead ore), just below the contact point between the bedrock (gneiss) and the cover (mudstone), was formed. Cracks filled with mineralised water, forming a vein up to 30 metres thick, but with rich ore veins not exceeding 5 metres in the parts that were mined from the Middle Ages onwards. The cracks guided the mineralisation and carved out the ore deposits, also called "lenses". The vein contains different types of useful mineral resources:



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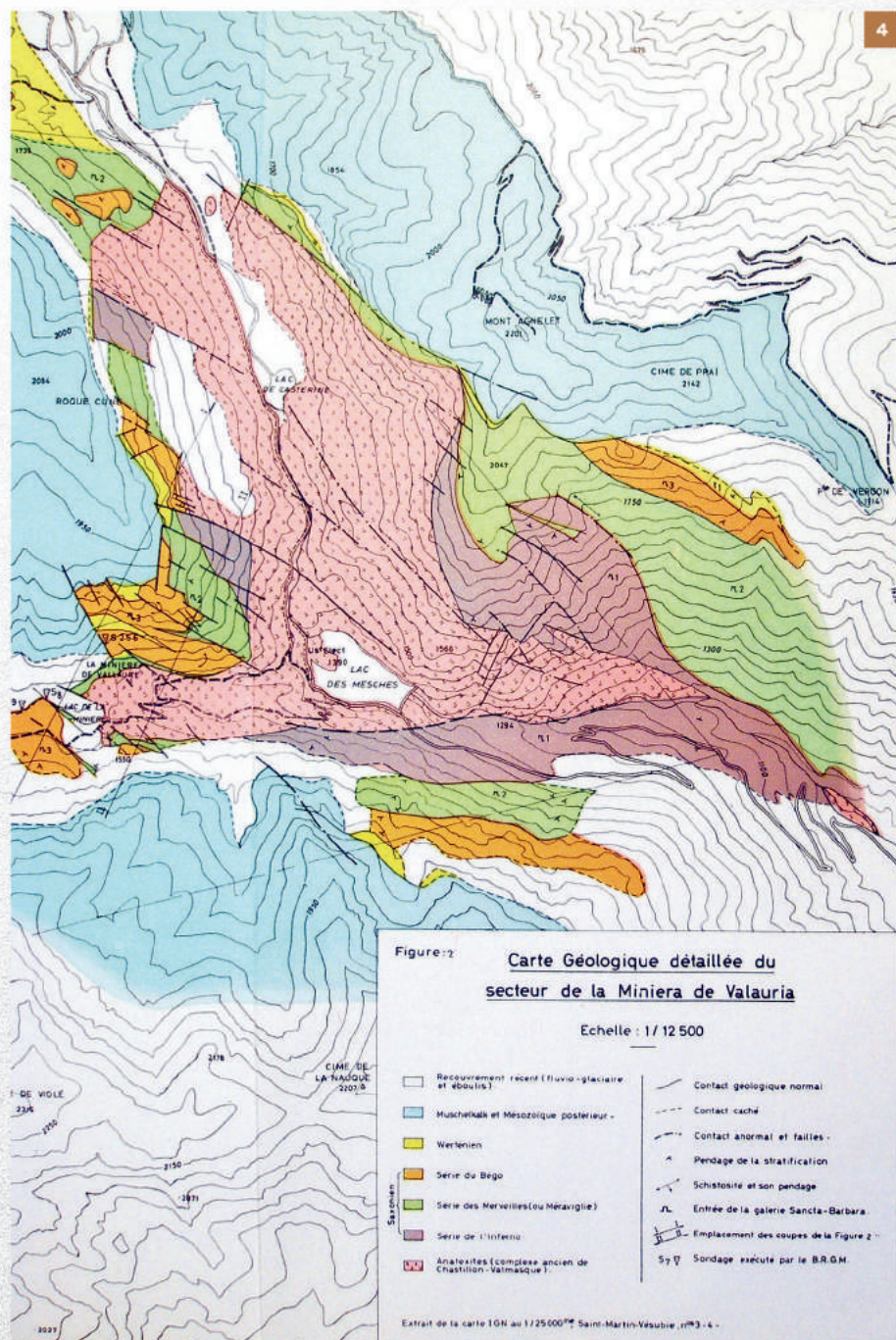
## ► Production in a few figures

*The total production of the Vallauria vein, all periods combined, is estimated to be about 20,000 tonnes of zinc, 10,000 tonnes of lead, and 50 tonnes of silver, making it the largest deposit in the Southern Alps!*

encloses the mineralised vein. This gneiss platform is covered by a sedimentary

3. Galena









- 4. Geological map of mining activity drawn by BRGM, 1966
- 5. Runs of zinc

ore (blende and galena), and non-mined mineral resources: gangue (quartz, calcite, and barite) which was removed during the first sorting and washing steps. Next, the glaciers of the Quaternary carved out a deep valley in the sedimentary layer down to the level of the gneiss bedrock. During the last glacial period that ended

10,000 years before our age, a 200 to 300 metre layer of thick ice covered the valley stretching as far as Saint-Dalmas-de-Tende! It was this erosion that caused the uppermost part of the deposit to appear on the surface. When the glaciers retreated, morainal deposits accumulated on the sides of the valley, masking part of the deposit's outcrop. ●

## Mineralogy

*Galena is a lead sulphide (PbS) which, in Vallauria, indicates the presence of dispersed silver (silver lead ore). Blende is a zinc sulphide (ZnS), the main mineral of zinc. The mineral composition of La Minière's vein includes low levels of chalcopyrite and pyrite.*

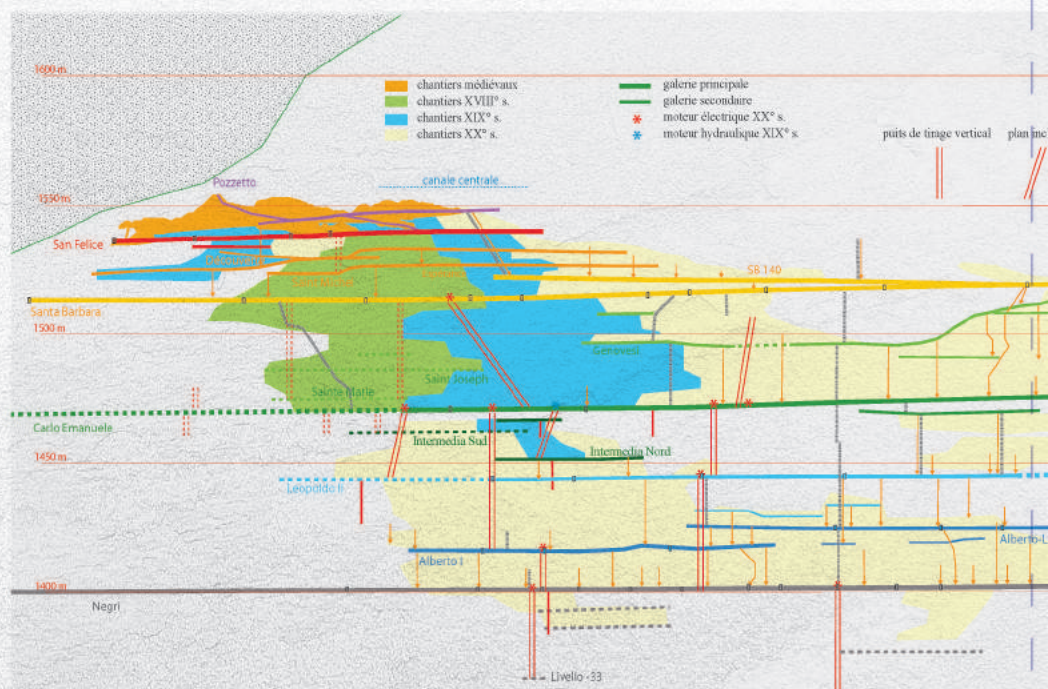


# 3

## LA MINIERE DE VALLAURIA

The deposit is located in the municipality of Tende, in the Mont Bego massif, on the left bank of La Minière valley along which flows the Inferno, a mountain stream that runs down from the Merveilles lakes. The entrances to the

former mine, cut into the mountainside, are located at an altitude of between 1,350m and 1,550m. A place where the miners used to live and work, this industrial heritage in the heart of the mountains included all the facilities







required to process the ore before it was exported in the form of ingots (lead, silver) up until the start of the 19th century, then in the form of concentrated ore in the 19th century. The hamlet of La Minière, largely rebuilt and reorganised in the 20th century, offers a glimpse of the mining site's complete infrastructure above and below ground.

Probably originally covered with forests, the valley was largely cleared for farming and, in particular, for producing the timber used in

6. Section of the mine viewed from the south-west highlighting the different mining periods, equipment and functions of the main galleries  
© B. Ancel

7. General view of La Minière





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8. Plan of the Vallauria mine  
© B. Ancel

large quantities in the Middle Ages to hollow out the galleries. Medieval mining started in the open air, on the outcrop of the vein located above the present-day buildings of "Neige & Merveilles". The modern and contemporary mine,

excavated by dynamite from 1750 onwards, featured five entrances that are visible on the surface, although only two of them are still open. The consumption of wood from the surrounding forests was still very high at this time, on the one hand



*"All these old works which, for that matter, were very regular, have the sombre appearance of a cathedral with its arches and naves".*

Cited in Victor JUGE,  
Mémoire sur la richesse  
minérale des Alpes-  
Maritimes, 1844 - Ecole  
des Mines de Paris

for construction (carpentry, shoring, rails, etc.), but also for fuel (wood and coal fires for the forge and metal-

working operations), which sometimes led to disputes with the municipality of Tende. ●

9. Medieval fire-setting works (11th - 12th centuries)

## *The organisation of the mine*

*Fire-setting works were completed by the excavation of sterile rock and various structures designed to meet needs:*

- galleries equipped with tracks for the horizontal circulation of material
- shafts equipped with hoists for raising the ore to an evacuation gallery
- ore passes that use gravity to descend the ore, with a hopper at the base for filling the trolleys
- passageways equipped with stairs or ladders for the circulation of workers and for ventilation
- a base gallery for managing water from seepage and pumping, the Carlo Emanuele gallery in the 18th and 19th centuries, then the Negri gallery in 1915



# 4

## THE MEDIEVAL MINE

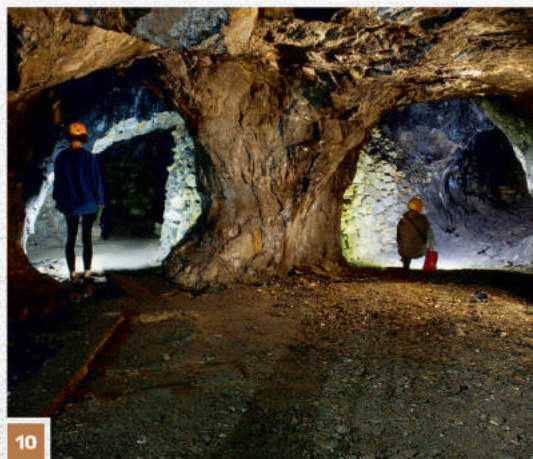
In the Middle Ages, the mining appears to have started on the mountainside, on the outcrop of the vein. According to archaeologists, the medieval mine probably had a row of two to four

of the medieval mining period, and erosion in the ravine, which would explain why references to the mine disappeared from archive sources between the 12th and 18th century.

The deposit was probably shared between 5 companies, each one with a 20-metre right on the outcrop. Fire-setting works followed the sloping vein up to 100 metres below the slope. Short galleries were tunnelled into the sterile rock to evacuate seepage from each concession.

The interior of the medieval mine was impressive with its huge cavities, some of which were up to 6.5 metres high and 5 metres wide! The galleries' vaults, blackened by soot, bear witness to the mining technique used in Vallauria from 1050 onwards. At the time,

10. Medieval galleries blackened by soot



gaping holes several metres high separated by a few supporting pillars. Today, all this is hidden by a complete collapse in the area, probably at the end



## *A fastidious excavation technique*

To extract the galena from the gneiss, the host rock, the miners built huge fires (over 1 cubic metre) in front of the area to be tunnelled. These large fires offered the advantage of ensuring relatively quick progress compared to small fires, but they produced a large amount of sterile and consumed a great deal of timber (larch, spruce, juniper, etc.).

Following mining regulations, fire-setting was closely supervised and could last for a week in the case of large fires, including installation and cleaning afterwards. Once the smoke had dispersed and the temperature had dropped, the miners collected the rubble that had broken off from the effect of the heat (rock cracks at about 600 °C, a process referred to as “thermal shock”) and then, used hammers to remove any crumbling rock. In Vallauria, the variation in the height of the vaults over a distance of 2 to 5 metres suggest that the miners worked practically

all year round. The highest ceilings were obtained in the winter months, when the air flow in the gallery was at a peak favouring very strong fires, unlike in the summer. Experimental archaeology and the many tests carried out at the Fournel mine in Argentière-la-Bessée (05) confirm this hypothesis.



11. Fire-setting, experimental archaeology test at the Fournel mine in Argentière-la-Bessée (05)



## A note on dating

The old steriles contain large amounts of charcoal and sometimes entire slabs of rock are partially vitrified. The remains of fires found on site have also been studied. The best preserved ones point at the use of huge fires. Laboratory analyses (radiocarbon dating, tree-ring dating, anthracology, etc.) have been performed on many samples of charcoal. Carbon-14 dating suggests that the trees were felled between 1030 and 1170.



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12. Pieces of charcoal found in the soil during excavation. 2014

13. Opening of a mine, wood engraving. 1518



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fire-setting was used to excavate the rock. Requiring large amounts of wood, this technique allowed miners to progress a few centimetres

a week. Archaeologists have shown that the miners only progressed 2 to 5 metres a year! Mining is believed to have stopped at the end of the 12th century with the exhaustion of the ore lens and flooding in the deep works.

The miners probably had to live and process the ore not far from the mine in view of its isolated location. However, no visible archaeological remains bear witness to any such occupation above ground. ●



# THE MODERN MINE

After a long period during which the mine fell into ruin, initial explorations started from the old medieval galleries. In 1758, the administration of the Kingdom of Piedmont-Sardinia granted a royal mining permit and the

mining adventure speeded up. This time, the galleries were excavated with explosives. The main galleries of San Felice (1760), Santa Barbara (1770) and Carlo Emmanuele (1780) were tunnelled. The latter was secured with timber frames. On the surface, the Vallon de la Minière was transformed: many structures were built for processing the ore (sorting, grinding, washing, foundry). At the end of the 18th century, there were about 80 workers at La Minière, some of whom lived there with their families. Several entrepreneurs succeeded one another, including Guiseppe Felice Chauletti and Sébastien Grandis. In the middle of the 19th century, the mine had several owners, including Grandis' son. The silver-

14. Plan of the mine, 1844







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15. Gallery  
tunnelled with  
explosives
16. Hydraulic pump  
found during  
excavations

lead ore was sent to Nice and then transported to the ports in Marseille and Genoa. Despite major works, the vein of argentiferous

galena appears to have been exhausted. Many infrastructure and tools from this period remain (hoppers, channels,

### *Evacuating the water.*

*In a mine, two aspects are essential: ventilation and the evacuation of water. At the level of the San Felice gallery, archaeologists found a hydraulic pump used to dry out levels of the mine flooded by seepage. Relatively rare, this type of equipment, built partly in wood, is well-preserved thanks to the damp and stable conditions inside the mine.*



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17. Hopper  
18. Entrance to  
the Santa  
Barbara gallery,  
about 1906

trolleys, pumps). Some galleries still have the remains of tracks that allowed the ore and sterile rubble to be removed. A large wooden trolley was even found during the excavation works! The sterile rock rubble was emptied outside forming piles of stones clearly visible on old photographs and even today. Mining and dewatering galleries were excavated one below the other over the years under the direction of the successive entrepreneurs that took over the site.

Hoppers, sorts of silos, were used to remove material to a lower level. Vertical circulation at the sites was also ensured by shafts



(ventilation and circulation), stairs and ladders. Some old galleries that had already



**19.** The areas excavated with explosives were huge and many miners could work on the terraces, as can be seen in this engraving by Daubuisson in 1819.

**20.** Miners at work in a timbered gallery



been mined were filled to prevent collapses. At the start of the 20th century, operations started again, this time in order to mine zinc. The Negri gallery was opened, its entrance is located at the level of Les Mesches. The site was partially electrified for the transport of ore in 1908 although the Les Mesches dam was only built in 1916. At its zenith, the mine, below and above ground, employed about 300 people! ●

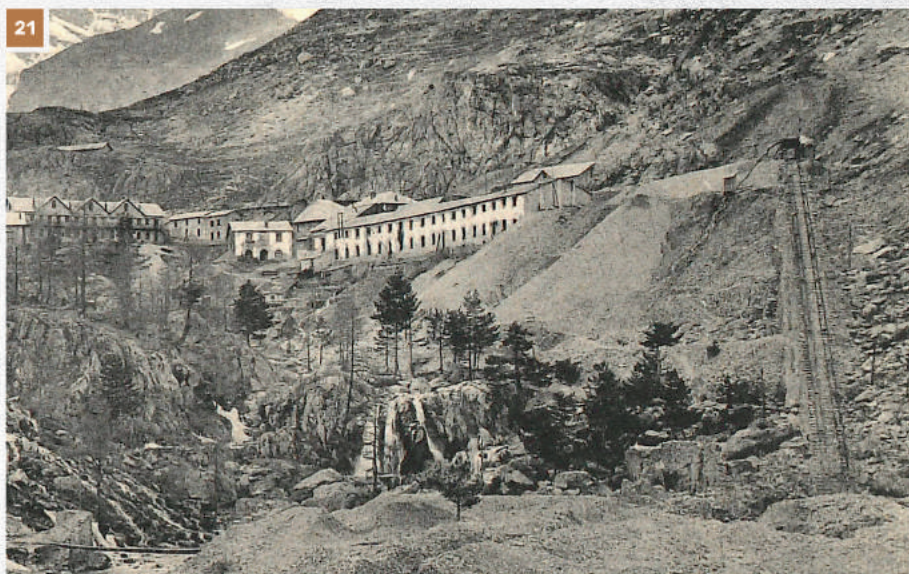


## 6

# LIFE IN LA MINIÈRE

In about 1757, the Vallauria site was revived and an ore processing plant was built there. Several small collective buildings, in

but there were also some individual houses. Workers often came from far afield, usually from mining regions: the south of the Tyrol, or



21. General view of La Minière in about 1906.

particular on the upper floor of the processing buildings, were created to house workers, of which there were sometimes as many as 150 in the summer season,

the Piedmont; only a small number of them were locals. The miners' living conditions in La Minière were harsh, especially in the winter when there were frequent





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**22.** Caserma Reale, in about 1906

**23.** The chapel and the school in about 1912 and the plant in the mist in the background.

and sometimes deadly avalanches, such as in 1805 and 1915. The residents used to buy their own food or dine at a canteen. Archives

show a high consumption of cornmeal, "meliga", and there was a mill on site for producing flour. For the company's success, it was advisable to provide the most favourable working and living conditions possible so as to increase the loyalty of the workers, both men and women. At the start of the 20th century, the installation of families was encouraged. In 1905, the company had two almost



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N° COMPAGNIA IMPRESE ELETTRICHE LIGURI — MINIERA VALLAURIA  
180 — C.I.E.L.I. — CHIESA E PANORAMA DELL'ABITATO



identical barracks built, each one with about forty accommodation units: on the left bank of the valley, the "caserma Reale"; on the right bank, the "caserma Magou". Inside, each worker or family had a 3.50 m x 4 m cell. A new chapel dedicated to Saint Barbara was built, as well as a school with accommodation for the

### ► *A note on the daily schedule!*

*In the mine, the men worked three 8-hour shifts 6 days a week. At the plant, the women and children worked two 10-hour shifts. In 1905, the 106 workers included 15 women, 6 children from 13 to 14 years, and 20 teenagers from 15 to 20 years. Children were schooled by the company up until their 13th birthday.*

teacher. Thus, the right bank became a proper hamlet for workers that was separate from the plant; only the canteen, "il Ristorante", was close to the work site on the left bank. The imposing



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Manager's house also stood on this bank and dominated the workshops.

In 1915, with the transfer of the ore processing plant to Les Mesches, La Minière was used solely for residential purposes. Even the school was moved! In the event of large snow storms, the children could return to La Minière via the mine's galleries and the 120 metres of underground staircases. ●

**24.** *Avalanche at La Minière de Tende, Domenica del Corriere, February 1915*



# 7

## PROCESSING THE ORE

Despite the many changes, the present-day layout is largely similar to the site's layout after the large-scale works in 1906. On the surface, the workers processed the ore in the different workshops: these were the mineral processing operations required prior to smelting or exporting. The site also included other

structures: a forge for the production and maintenance of tools, warehouses, a stable, a Manager's house, etc.

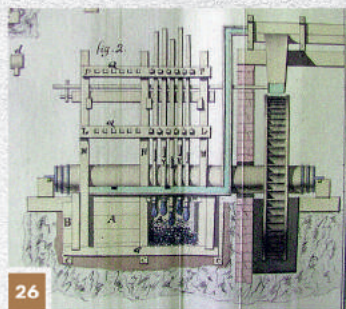
The quality of the ore extracted from the mine was very variable: almost pure, mixed or dispersed in the sterile rock. A first step involved removing the sterile material. The large

25. Plan from 1844: legend 9. Foundry 8. Forge 7. Wash house 6. Mill or Pesta 5. Sorting 4. Manager's house 2. Sainte Barbe entrance



25





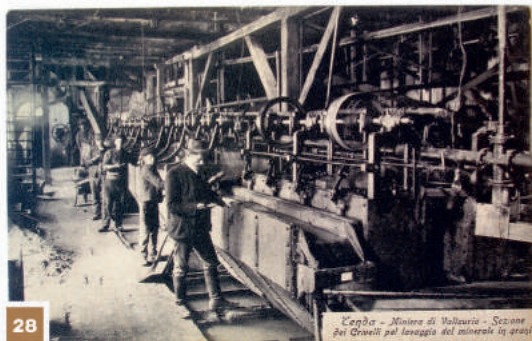
blocks were broken up using sledgehammers and were then washed in a sorting area. On the sorting tables, the women continued breaking up the rock with hammers and sorted the fragments by hand according to colour and density. The richest ore was then sent directly to the wash house and the rest was sent to the mill to be crushed. Located at the end of the intake canal, the mill (or Pesta) was powered by a large hydraulic wheel, 10 metres in diameter located outside the building with a drive shaft inside. With each rotation, it lifted the beams that were equipped with an iron power hammer. When these fell, the power hammer crushed the ore. In the 18th

century, the mill comprised 12 power hammers. In the 19th century, there was a total of four power hammers on site. Gradually, new crushing machines appeared and the technique disappeared in the 1870s. The wash house, initially located on the site of the large courtyard near the present-day reception area of "Neige et Merveilles", was where the ore was gathered together using machines. The ore and sterile could be separated with water owing to their different density: the lead ore is much heavier than the rock around the vein. Between the 18th and 20th centuries, the washing machines changed a great deal: among the most

26. Mill in Arts des Mines, by Duhamel, 1789  
27. Women sorting the ore, about 1900







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Cengia - Miniera di Vallauria - Sezione dei Graveli per lavaggio del minerale in grossi

common ones were the "tables jumelles" and then the "tables à secousses", followed by the "vibrating

### ► In a few figures

*During the fifty-year period that the foundry in Vallauria was in operation, about 20 to 100 tonnes of lead and 50 to 150 kg of silver were produced each year!*

screen", the "round-buddles", and finally, the "spitz-kasten". In 1915, everything was

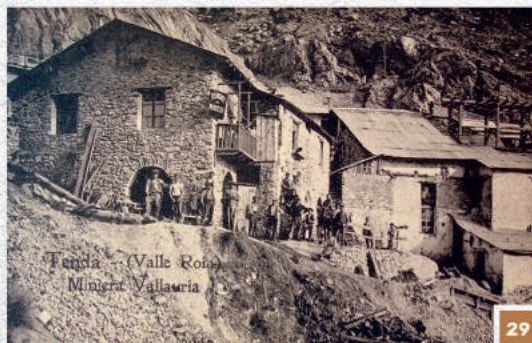
transferred to the new plant in Les Mesches, and the building was destroyed.

In 1925, an electrolytic processing

plant was built in Saint-Dalmas-de-Tende, very modern for the time, it was turned into a chlorine plant after the mine's closure, then, more recently, into housing and an industrial park.

Between 1761 and 1817, La Minière had its own foundry. Only one wall of this building remains on the left bank of the valley. The foundry had three main floors: roasting (elimination of sulphur), fusion of the roasted ore (elimination of oxygen and impurities), then refining (separation of silver and lead). After 1817, ore was no longer processed at the site and it was exported directly after the mineral processing operations. ●

- 28. The vibrating screen in the large wash house in about 1906
- 29. "La Pesta" became "Ristorante" in about 1906



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# 8

## THE SITE AFTER CLOSURE

When the site closed in 1930, it was gradually abandoned and left to scrap metal merchants. During the Second World War, Italian

workers from the Renault plant in Billancourt, dreaming of a change of scenery and of creating a place where people could meet and be welcomed, visited the area. In 1957, Raymond Hirzel, the founder of the future association "Neige & Merveilles", discovered the ruins of the Hamlet of La Minière de Vallauria. Completely captivated by the site, he started out on the project to rebuild it. Three years later, the association "Neige & Merveilles" was created in reference to the values of popular education. The first voluntary reconstruction work project started a year later with volunteers from around the world. The association now manages an Activity and Sustainable Tourism Centre, which includes an accommodation centre and



30. Ruins of La Minière, 1957

soldiers from Caposaldo 20 used the buildings as a support base on the front-line. The miners' collective housing was turned into barracks. "Caserna Reale" was renamed "San Sebastiano" and "Magou" became the "Authion" barracks. In the 1950s, a group of friends, metal





educational activities. In the 1960s, geological studies of the deposit were carried out by the Bureau de Recherche Géologique et Minière (BRGM) with a view to a return to zinc mining, but this project never came to fruition because of a lack of a sufficiently large deposit. However, the BRGM's intervention did offer a very

precise geological map of the site. In about 1978, the entrance to the San Felice gallery was temporarily turned into a geophysical station.

The "Neige & Merveilles" association, which has always been in close contact with the mining site and the researchers who have worked there (mining geologists, mineralogists, archaeologists, cavers) launched a vast project in 2009 to research and promote the old mine. Today, this work has led to the opening of the old Vallauria mine to the public, an exceptional and relatively unknown heritage in the Roya valley. ●

- 31.** *Reconstruction of the hamlet by the association Neiges et Merveilles, 1961*
- 32.** *Group of visitors in La Minière*





# 9

## VALLAURIA TODAY: AN INDUSTRIAL ARCHAEOLOGY SITE

The site of La Minière has been the subject of archaeological diagnoses



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**33.** *Exploration of a flooded gallery, 2009*

since 1994 with the site attracting the interest of many researchers. After a historical study of archive sources in 2009,

then surveys in 2010, the Vallauria mine has undergone excavation works programmed every year since 2011 that have enabled a multi-disciplinary and detailed study of the site under the direction of Bruno Ancel, a mining archaeologist, from the Municipal Culture Service in Argentières-La-Bessée (05). This systematic research work has enabled the study of the historic documentation, plotting on the surface and underground, and an analysis of some of the remains and excavations on the surface and in the depths of the mine. Many specialist researchers intervene in Vallauria, thus helping to refine dating and our





understanding of the site. Every year, thanks to the “Neige et Merveilles”

### ► ***Between archaeology and potholing***

*Underground archaeology also involves potholing! It is not easy exploring tunnels before they have been cleared, and water sometimes invades the galleries that are largely filled or which have collapsed. Each part of the mine is subject to topographical surveys that are compared with old maps and existing data in order to draw up a precise cartography of mining and its evolution.*

**34.** Excavation of the outcrop in 2012.

voluntary projects, the large quantities of rubble that have accumulated in the galleries

are evacuated in order to analyse the soil and the elevations of the galleries and continue to make headway. These projects also aim to secure access by redefining paths, rebuilding supporting walls in the most fragile zones, and closing areas deemed to be too dangerous. With 15 km of tunnels now having been explored and mapped, visitors are able to follow a 900-metre circuit that allows them to learn more about this medieval and modern mine in the heart of the Mercantour National Park. ●



## *Some questions to Bruno Ancel, mining archaeologist*

Compared to other Alpine mines, such as the Fournel mine in Argentière-la-Bessée (05), what are the specific features of Vallauria?

*The first spectacular thing is the scale of the medieval works which 19th century visitors used to compare to cathedral naves. The good state of conservation and the legibility of the vaults excavated using fire-setting help us to reconstruct the progress of the works, from the outcrop to the cutting face, and we can see that the mining area was shared between 4 or 5 independent mining concessions in accordance with the mining regulations of the time. For the modern mine, the extraordinary thing is the excellent state of conservation of the wooden equipment - hoppers, shaft headframes - for which it has been possible to create a typology.*

Compared to a surface excavation, what are the constraints of an underground excavation?

*The underground excavation is more limited because of the*

*dark, the damp and the cold. The excavation produces rubble that has to be put somewhere: sometimes, it is possible to remove it and dispose of it on the surface, but, generally, you have to find a way to store it underground by building supporting walls. The old rubble is used to fill sectors that have been exhausted and filled with material cleared from neighbouring sectors in the process of being mined: above all, we proceed by drawing up stratigraphic sections that allow us to recount the succession of events in the mine.*



**35.** Removal of rubble from a medieval gallery during the 2019 excavation



## Staying at Neige et Merveilles

The association, which now manages a reception and sustainable tourism centre offers you the chance to stay on site. It is open to all and can accommodate up to 120 people, families, groups, with half-board accommodation, bedrooms for two or four people, activity rooms, and a bistro, etc.



**For information: [www.neige-merveilles.com](http://www.neige-merveilles.com)**

## Acknowledgements

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- Mr Jean Feraud, geologist.
- François-Xavier Asso for his historical research work, his support, and his availability.
- The hundreds of young international volunteers and their supervisors who worked to restore the site with the support of the partners of these young voluntary work projects (the Direction Régionale de la Jeunesse, des Sports et de la Cohésion Sociale, the Direction Régionale des Affaires Culturelles, and the Région Provence Alpes Côte d'Azur).
- The hundred or so archaeology students who excavated the mine: Vanessa Py, Chiara Rota, Vincent Labbas...
- And, Mr. Bruno Ancel, mining archaeologist, for his commitment and his experience in the field, who ensured that we never doubted this utopian adventure!

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Old photos: collection Neige et Merveilles;

Photos: Bruno Ancel, Michel Clément, Dominique Edon

