

MEMORY OF THE WORLD REGISTER

Mining maps and plans of the Main Chamber - Count Office in Banská Štiavnica

REF NO 2006-04

PART A – ESSENTIAL INFORMATION

1. SUMMARY

The documentary heritage “Mining maps and plans of the Main Chamber - Count Office in Banská Štiavnica” represents a collection of almost 20 thousand of items from the 17th century up to the early years of the 20th century, which are an essential part of the archival fonds of this the most significant authority for mining, metallurgy and minting in the Hungarian part of the Austro-Hungarian Empire. The maps and plans display underground mining works as well as above-ground objects in all the mining regions of Slovakia or abroad (Hungary, Transylvania, Banat, Slovenia and many others). Some of the maps display mining works and other technical sights, including a unique system of water reservoirs, in the town Banská Štiavnica and its surroundings, which was inscribed on the UNESCO World Heritage List in 1993. The collection of maps also contains new patterns for drawing of mining maps and construction plans designed by Gabriel Svaiczer and Anton Péch the most important officials of the Main Chamber - Count Office in Banská Štiavnica (MCHO). The work of mining surveyors was carried out according to these patterns both in the Austro-Hungarian Empire and Germany. New methods were implemented not only by administrative regulations but were also introduced by so-called “trainees” or thousands of students who studied in the Mining and Forestry Academy in Banská Štiavnica from 1764 to 1918. The students came from a great number of regions of the Austro-Hungarian Empire or Europe.

The mentioned facts suggest that the mining cartography in Slovakia significantly affected the development of mining mapping in the Habsburg kingdom and abroad.

The fact that recently all the documents are placed in the vice-chancellor’s building of the first world mining university remains really remarkable. A great interest of researchers in the documents definitely highlights and proves their irreplaceable value for plenty of historical studies as well as for practical mining, constructing and preservation projects. However, frequent manipulation causes considerable damage to originals. In order to prevent from their complete deterioration and not to limit researchers’ access to them we suggest making the oldest and most valuable items accessible in digital form.

2 DETAILS OF THE NOMINATOR

2.1 Name /person and organisation

The State Central Mining Archives in Banská Štiavnica - Štátny ústredný banský archív v Banskej Štiavnici

2.2 Relationship to the documentary heritage nominated

The State Central Mining Archives administerr, registers, preserves nominated maps and plans and enables access by the public.

2.3 Contact person

Elena Kašiarová, Director
Lucia Krchňáková, department chief

2.4 Contact details /including address, phone, fax, email/

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3 IDENTITY AND DESCRIPTION OF THE DOCUMENTARY HERITAGE

3.1 Name and identification details of the items being nominated

The mining maps and plans from the MCHO archival fonds from 1641-1918, in Banská Štiavnica held by the office of mining administration on the territory of Slovakia and some other parts of the former Austro-Hungarian Empire. These include 19,977 items from about 1,800 authors.

3.2 Description

The State Central Mining Archives in Banská Štiavnica is the only specialized state mining Archives on the territory of the former Austro-Hungarian Empire. According to Act No 395/2002 Coll. of Acts on Archives and Registries and Amendments of other Acts as well as according to its Decree, the Archives are entitled to acquire records from competent authorities in the mining, metallurgical, geological and other related industries situated on the territory of the Slovak Republic. Currently, there are registered 309 archival fonds of various mining, metallurgy, forestry offices and many other related organizations, factories, schools, associations from the end of the 15th century up to the present. Archival fonds contain written records and picture documents (maps and plans) and enable mutual complementation of information when used. With reference to the past integration of Slovakia in the Austro-Hungarian Empire there are documents in the archival fonds related to many European countries, mostly Central Europe. The MCHO archival fonds in Banská Štiavnica is the most significant archival fonds of the State Central Mining Archives; the maps and plans represent its fundamental part in number and importance.

4 JUSTIFICATION FOR INCLUSION / ASSESSMENT AGAINST CRITERIA

4.1 Authenticity

In MCHO in Banská Štiavnica and in its subordinated offices or factories, dozens of mining officials worked described mining works under the ground and workshop buildings above the ground in order to register their real state and opportunities for perspective extractions; to achieve a credible document for ownership evidence or resolution of controversial matters; to provide picture documentary information to headquarters, regional mining authorities, mining courts, imperial inspection commissions of Chamber Court in Vienna, etc. The Main Surveyorship Office in Vindšachta near Banská Štiavnica was established within the Mining Office, the management office of mining and metallurgy factories in Banská Štiavnica and Hodruša mining region/. Later it became an organizational part of MCHO and from the 18th to the 20th centuries it was the leading coordinator of regional measurement works, a supplier of surveyorship equipment and drawing tools to subordinated factories, a distributor of new methods and an official place of mining surveyorship education for the Mining Academy students. The authors of maps and plans preserved in manuscripts, coloured manuscripts and occasionally in printed forms are about 1,800 people from all parts of the Austro-Hungarian Empire.

4.2 World significance, uniqueness and irreplaceability

The world significance, uniqueness and irreplaceability of maps and plans from the MCHO archival fonds in Banská Štiavnica originate from their content, geographic cover, time extent, and complex relationship to written records and other archival fonds. We cannot forget displays of mining works and subjects in many significant mining centres in Central Europe and multinational origin of their authors, which definitely contributed to their uniqueness. They display also several pioneer methods or inventions improving mining, metallurgy and related industries or science in general. For example, Austrian mathematician and physicist Kristian Doppler discovered the maps of mining works in Banská Štiavnica as an important source of observing changes in magnetic declination; or J.K.Hell's water pumping device which greatly improved pumping water from underground shafts and which was implemented in other European mining regions. We can also mention his air-pumping device, which preceded its time and whose principle is used for pumping oil even today.

The MCHO mining maps reflect the development of mine mapping, for example - construction of geognostic maps designed by chamber earl Gabriel Svaiczler in 1839; the new method of map construction by mining manager Anton Péch in 1875, which was successfully used also in the 20th century; the theodolit measurement device - constructed in 1798 by mining surveyor Ján Lang von Hanstadt as well as his plane table. General and innovative methods and recorded also in schoolbooks on mining surveyorship written by the Mining Academy professors and used by students in theoretical education and practical activities, for example K.T.Delius: *Einleitung zu der Bergbaukunst*, Vienna 1773. J.Mohling: *Anleitung zur Markschiedekunst*, Budapest 1835., J. Grimm: *Praktische Anleitung zur Bergbaukunde für den Siebenburger Bergmann, insbesondere für die Zöglinge der Nagyager Bergschule*, Vienna 1839.

Deterioration of the heritage would bring a great loss to us and successive generations. Although we imagine that several mining maps and plans related to central Slovakia territory form a part of the Chamber Court Archives in Vienna (Hofkammerarchiv), the maps and plans would have been constructed only in one copy especially to the request of this institution. We might claim the maps from Hofkammerarchiv could complete the above collection of maps and plans in MCHO in Banská Štiavnica.

4.3 Criteria of (a) time (b) place (c) people (d) subject and theme (e) form and style

a – Time:

The oldest original mining map of MCHO fonds is a well-arranged map of the Horná Biberová Gallery from 1641. It displays mining works and technical equipment of the main mining enterprise in Banská Štiavnica. Another remarkable map of the enterprise dates back to 1695. A map of mining works in Nová Baňa from 1631 has been preserved in manuscript copy from 1776. Several maps come from the 17th century but the highest number of them represents the late 18th century and the beginning of the 19th century. At that time, mining and mining techniques in Slovak mining regions were blooming and in many cases they stood at the apex of the world's development. A number of records and documents register mining activities and new original methods of mining maps construction up until the fall of the Austro-Hungarian Empire and the establishment of Czechoslovakia in 1918.

b – Place:

Banská Štiavnica is an important mining town in the history of Slovakia. Many significant mining authorities were situated here, out of them we can introduce the longest working Main Chamber - Count Office: 1496, 1598-1873, 1918. In the year 1735 the secondary mining school was founded in Banská Štiavnica and it has been educating students up to today. According to the decree of Empress Maria Theresa in 1762 the Mining Academy - the first world's mining university – was established in Banská Štiavnica. The academy finished its activity in the town in 1919. New more efficient methods, for example, European amalgamation by I.Born for compaction of gold and silver containing ores via “wet” method – mercury, were introduced and newer more efficient technical devices were designed (inventions by engineer J.K.Hell). In 1786, an international scientific association for mining development was founded in the town. All these facts are reflected by archives and preserved tangible

sites and it was appreciated by inscribing Banská Štiavnica and technical sites of its surroundings on the UNESCO World Heritage List in 1993.

c- People:

As Banská Štiavnica was a centre of mining, mining authorities, field education, which prepared secondary and university educated staff for all countries of the Habsburg Monarchy the best experts from the whole country were active in the town. Their advantage was connecting theory and practice, which influenced improvements in working methods, more efficient technical equipment and better surveyorship methods or tools. The most significant mining surveyors, teachers of surveyorship and designers of cartography methods are Samuel Mikovini, K. T. Delius, J. Mohling, J. Lang von Handstadt, G. Sveiczler, and A. Péch. Others must be added to the list as well: J. K. Hell - a co-designer of water management system, the constructor of extracting and water pumping devices; Jozef Mrak - the most important mining expert in mercury mines in Idria, Slovenia in the last half of the 18th century, the constructor of the world known "klavze" (mountain dams for wood rafting); P. Rittinger, who introduced fundamental changes in ore metallurgy and new measurement methods in mines; J. Schitko, who improved construction of water pumping devices and ore metallurgy methods. We may also mention another representative of science, F. J. Mullner from Austria, the discoverer of tellurium. The list of map authors offers great opportunities for discovering further remarkable European experts as it contains about 1,800 names.

d - Subject and theme:

In the past centuries, mining was one of the most important industries. Sources of gold, silver and copper in the territory of Slovakia were among the richest in the world. The necessity to gain sufficient amounts of precious metals for the needs of the Habsburg Monarchy forced miners to overcome inconvenient natural conditions by improving extraction methods and development of mining techniques. For example, in 1749, Matej Ziser introduced a more efficient cross extraction method -the world's primacy- in the main Špitáľ vein in Banská Štiavnica. Lack of energy for running extraction and water pumping devices motivated construction of artificial water reservoirs, so-called "tajch", drainage canals and gradual establishment of remarkable Štiavnica's water management system. Consequently, procurement of water energy enabled the development of advanced mining techniques and ore procession technology etc. Overall, the mining cartography in Slovakia recorded a great progress from the last half of the 18th century due to complex ore conditions in Štiavnica's mining regions. The introduced facts as well as progressive methods and technical inventions from foreign regions are reflected in the preserved maps and plans of the Main Chamber - Count Office in Banská Štiavnica.

e - Form and style:

The vast majority of MCHO maps and plans in Banská Štiavnica is represented by manuscripts. Apart from basic features of form and style of any selected period, which are described later, the maps and plans reflect the advancement of technical measurement and artistic feelings of their authors. Many of them are precious works of art because, apart from precise technical documentation of mining works or equipment, they display a variety of miners' and smelters' work, technical equipment in mines, work and tools of mining surveyors, design of mining towns, miners' clothes etc. The maps from the last half of the 18th century and beginning of the 19th century are distinguished by high aesthetic level. The 19th century is characterized by not including supplementary drawings in the maps. The maps designed by Sveiczler and Péch represent an outstanding technical level of mining works display, their placement and geological conditions. The graphic part is completed by a map/plan title and a description of displayed subjects. They are introduced in German. From 1867 Hungarian began to be implemented more frequently (more rarely comments use another language). The used terms are definitely precious documents of the field mining terminology.

Map and plan forms are various: measures from 31 x 19 cm or 398 x 227 cm, orientation in all directions - a compass or an arrow stand for the north; formation is black and white or coloured. Other peculiarities are represented by layer segmented maps according to horizons or two maps where ore veins are marked with ore grit. Some plans are completed with cut out and glued parts of equipment to enable better visualization etc.

Mining in the Austro-Hungarian Empire was managed from Vienna and after the Austrian-Hungarian settlement in 1867 mining in the territory of Hungary was subordinated to the Ministry of Finance in Pest. However, it did not mean an absolute power suspension and mining towns waiting for central directions. The towns themselves were looking for better ways of work. Well-established methods and improvements were implemented in several other mining regions by the Viennese chamber or the Ministry in Pest. The same method was used in implementation of new maps and plans improvements.

1st stage – the development of Slovak mining cartography is displayed on maps from the 16th century to the 40's of the 18th century. The period is famous for displaying mining works, mainly shafts, with a simple line, coloured distinguished horizons /height levels of extraction/, a verbal description of geological conditions (not yet geographic display) a graphic display of extraction, a number of miners, transport and an inevitable running commentary. The period is typical for the lowest number of foreign influences on home cartographic work.

2nd stage –the period from the 40's of the 18th century to the 30's of the 19th century. It is famous for technically perfect maps providing precise pictures of mining works in a particular enterprise or the whole picture either under or above the ground. But only occasionally did they provide a real picture of the geological situation. Two kinds of maps were the most crucial - partial maps (maps of particular mining works or smaller units) and well-arranged maps (maps of bigger mining units). The following items were also additionally marked on mining maps: related mining fields, extracted space, sometimes years of using up the units. Maps were colourized and completed with drawings of supporting buildings and facilities, for example, water pumping from flooded shafts. Maps were artistically decorated and drawing a graticule was introduced gradually.

3rd stage – lasted from the 30's to 70's of the 19th century. Compared to the previous period, when the condition of mining works (shafts and mines) was preferably marked on maps, greater attention was paid to displaying geological situations - ore veins (direction, thickness, declination) and surrounding rocks. The methods of their extraction were also indicated on maps. The proposal by G. Sveiczler from 1839 was definitely a turning point. The Viennese Chamber distributed it to all mining authorities in the realm to be put into practice. The proposal was also provided to mining regions in Germany.

4th stage – from the second half of the 19th century to the year 1918, it brought a considerable progress in displaying methods of under- and above-ground mining objects. The final design of maps reflected patterns by A. Péch from 1875, who set basic criteria such as arrangement and relevance. He suggested creating five kinds of maps for each mining work: a situational surface map, a well arranged mining map, a detailed map of each horizon, a map of vertical cuts and a map of extractions. With the support of the Ministry of Finance in Budapest, Pech's patterns were spread to all mining authorities in Hungary, private mining entrepreneurs and anybody interested from abroad, for example, mining academies in Freiberg and Leoben. In fact, Péch's manual consisting of 21 examples contains everything that a mining map can and should say without any running comment. It is not a surprise that mining maps were being created, more or less according to his pattern, even during the 20th century.

A scale and a map orientation are marked on mining maps from each period. Mostly, they are marked graphically, placed differently and decorated. In the Central Slovakian mining region a special linear measure -Štiavnica's mining fathom (2.0258 m)- was used. From the second half of the 19th century the Viennese fathom (.8964 m) started to be preferred.

4.4 Issues of rarity, integrity, threat and management

The described collection of maps and plans of the State Central Mining Archives in Banská Štiavnica represents a great and integral basis of documents from the 17th to 19th centuries on finding data about milestones in the development of science and techniques, mutual influence of close and distant regions, implementation of new special school forms, character and changes of the country in mining regions, depleted ore sources and possible resources for perspective extractions, design of particular technical sights etc.

The basic documents are related to the whole territory of Central Europe and, in some aspects, to the whole world.

5 LEGAL INFORMATION

5.1 Owner of the documentary heritage (name and contact details)

The Slovak Republic
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5.2 Custodian of the documentary heritage (name and contact details, if different to owner)

5.3 Legal status:

(a) Category of ownership

- state ownership

(b) Accessibility

Maps and plans of the State Central Mining Archives are accessible to public for study in a “research room” of the Archives. The Archives shall enable access to them by execution of transcripts, abstracts, certificates and copies. In some exceptional cases they are a subject of public exhibition as well.

(c) Copyright status

The Ministry of the Interior of the Slovak Republic – The State Central Mining Archives

(d) Responsible administration

The Ministry of the Interior of the Slovak Republic – The State Central Mining Archives

6 MANAGEMENT PLAN

6.1 Preservation of mining and aboveground maps and plans of the State Central Mining Archives in Banská Štiavnica and their accessibility is stipulated by Act No 395/2002 on Archives and Registries and on the Amendments of Certain Acts and the Decree of the Ministry of Interior of the Slovak Republic No 628/2002 Coll. of Acts, by which Certain Provisions of the Act on Archives and Registries and on the Amendments of Certain Acts are executed. These obligations have been committed to the State Central Mining Archives in Banská Štiavnica. The Archives gradually improve its personnel, professional abilities, information, technical and special equipment and storage premises. Until recently, a suitable map and plan storage presented some problems in respect of the historical character of places. However, all available measures are taken to create an environment approaching prescribed lighting, temperature and humidity parameters. Building new storage areas for maps and plans is considered to be ideal. This should enable the storage of particular maps and plans of various measures in optimal conditions.

7 CONSULTATION

7.1 Mining and aboveground maps and plans of the Main Chamber - Count Office in Banská Štiavnica are used by researchers in studying history of mining, metallurgy and related industries, in observation

of technique development in the industry and activities of significant celebrities. Recent mining enterprises use the documents for creating extraction plans. The documents are irreplaceable sources of information for projects on technical sight use for museum purposes, on preservation of subjects or on environmental protection activities. The documents are particular subjects of artistic-historical research and under exceptional conditions they are exhibited to public etc. Greater accessibility of above mentioned or some other kinds of use would be enabled by digitization, access on Internet and publication in separate brochures.

PART B SUBSIDIARY INFORMATION

8 ASSESSMENT OF RISK

Although the inventories of the collected mining maps and plans of the Main Chamber Earl Office in Banská Štiavnica exist, they are available in the Archives in Banská Štiavnica and in the Ministry of the Interior of the Slovak Republic, which makes their access for public even more difficult. Allowing researchers the opportunity to study originals causes some damage, even when handled with much care. The basic research reports on mining maps in Slovakia are studies by Dr. Jozef Vozár: “The Development of Mine Mapping in Slovakia” and “The Development and Types of Mining Maps in Slovakia from the 60’s of the last century”.

Though the State Central Mining Archives in Banská Štiavnica owns about 70 thousand mining maps and plans, which are included into archival fonds of various mining authorities, damage or destruction of mining maps and plans from the fonds “The Main Chamber - Count Office in Banská Štiavnica” means irreplaceable loss of our archival heritage (documents or authors) for the Slovak Republic, related countries or the whole of mankind.

This cultural heritage of priceless value is protected by fire extinguishing equipment, electric alarm and fire signalling systems, which are installed in the storage areas for the maps and plans of the State Central Mining Archives in Banská Štiavnica, protecting maps and plans against loss, damage or destruction. The historical building was revitalized for the purposes of the Archives and passed to use in 1993. The storage areas are equipped with metal lattices on the windows and doors. Safe manipulation of maps and plans during their use in “research rooms” is ensured as well. The possibility of mechanical damage due to frequent use of originals by researchers still remains high as well as non-completed creation of optimal environment -temperature, humidity and the way of storing subjects with extended measures- in recent deposits in every year.

9 ASSESSMENT OF PRESERVATION

9.1 Detail preservation context of the documentary heritage

The Act No 395/2002, Coll. of Acts on Archives and Registries defines the protection of archives as a complex of specialised activities executed by Archives the purpose of which is to complete the archival heritage. The obligation of Archives to register the acquired archives is an essential requirement. Mining and above-ground maps and plans are registered in the accession book of the Archives and in the register cards of the archival fonds “The Main Chamber - Count Office in Banská Štiavnica”. The lost items are registered in the diminution book. All the documents are registered in the Central Register of the archival heritage of the Slovak Republic kept by the Ministry of the Interior of the Slovak Republic in Bratislava. The maps and plans have been made accessible to public through inventories. An inventory record of every item or collection consists of an inventory number, name of item or a short description, the year of its origin, the author’s name, data on the scale and the method of creation, language and measures. There are 7 inventories, the oldest one from 1966 and the newest from 2006. The maps and plans are stored in protective covers of appropriate shape and size and which are made of cardboard, which are placed in special metal map drawers. Large-scale items are folded and placed in wrappings or rolled up and placed into standards. The conditions in storage areas are checked by thermometers, the humidity is checked as well; the physical conditions are regulated by electric heating in winter, ventilation by open windows, shadowing the windows by roller blinds

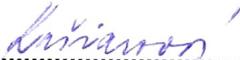
and maintaining cleanliness in the storage areas. The building of a special storage area for maps and plans is planned.

Some maps and plans are partially damaged due to their original use as well as long storage under inappropriate conditions before being moved. Just a few maps have been completely restored in the Department of Archive Protection in the Slovak National Archive in Bratislava. The State Central Mining Archives puts an enormous effort to prevent deterioration of their physical condition by mounting them with the tape NESCHEN. The development strategy of the State Archives until 2015 takes into account the possibility to establish a special department for preservation and restoration in the State Central Mining Archives as well as a central department for microfilming and digitization of maps and plans. The Archives aim is to complete technical equipment of the research rooms in order to improve efficiency of access and protection of the most demanded and endangered archives.

PART C – LODGEMENT

This nomination is lodged by: MV SR – Štátny ústredný banský archív
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(Please print name)..... Elena Kašiarová.....

(Signature)  (Date) 20. February 2006

Ministerstvo vnútra Slovenskej republiky

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