

BETWEEN MINING EXPLOITATION AND HERITAGE PROTECTION: THE CASE OF CERRO RICO IN POTOSÍ, BOLIVIA

ENTRE LA EXPLOTACIÓN MINERA Y LA PRESERVACIÓN DEL PATRIMONIO: EL
CASO DEL CERRO RICO DE POTOSI, BOLIVIA

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Abstract

The Cerro Rico de Potosí (Sumaj Ork'o) has the quality of being a Natural and Cultural Heritage of Humanity, declared in 1987 by UNESCO, however, during the last years its exploitation has increased to a level never seen before; which has brought the loss of its conical structure and subsidence of considerable dimension, putting at risk of loss not only to that quality, but all the history that encloses its splendor. Its history is a reflection of the failure of Mining Law in terms of its restriction of care in the case of historical monuments declared by law, and a manifestation of the enormous institutional weakness to enforce the special regulations for the protection of the site by the Bolivian State, however, a hope arises, from the flank of Environmental Law, in relation to the enjoyment and care of this natural heritage, for future generations, through exploitation with a vision of sustainability.

Keywords: Cerro Rico de Potosí; Environmental law; Mineral exploration; Cultural and Natural Heritage of Humanity; Sustainable development.

Resumen

El Cerro Rico de Potosí (Sumaj Ork'o) tiene la calidad de ser Patrimonio Natural y Cultural de la Humanidad, declarado en 1987 por la UNESCO, sin embargo, durante los últimos años su explotación se ha incrementado a un nivel nunca antes visto; lo que ha traído la pérdida de su estructura cónica y hundimientos de considerable dimensión, poniendo en riesgo de pérdida no sólo a esa calidad, sino toda la historia que encierra su esplendor. Su historia es un reflejo del fracaso de la Ley de Minería en cuanto a su restricción del cuidado en el caso de los monumentos históricos declarados por ley, y una manifestación de la enorme debilidad institucional para hacer cumplir la normativa especial de protección del sitio por parte del Estado boliviano, sin embargo, surge una esperanza, desde el flanco del Derecho Ambiental, en relación al disfrute y cuidado de este patrimonio natural, para las generaciones futuras, a través de una explotación con visión de sostenibilidad.

Palabras clave: Cerro Rico de Potosí; Derecho ambiental; Explotación minera; Patrimonio Cultural y Natural de la Humanidad; Desarrollo sostenible.

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1. Introduction

From the legal world, there are few documents that refer to the legal status of Cerro Rico de Potosí and the accelerated extraction of its mineral resources. For some time now, a social, economic, environmental and heritage conflict has been brewing in relation to this resource, which can be attributed to the excessive permissiveness by the State of its exploitation, without legislative compliance, without supervision of the works inside and outside the mine, with the advance of exploitation in prohibited areas that leads to the death of many mining workers and above all, without considering the stability of the gradients on the surface and the pits left in the past, for the stability of the Hill in its tunnels, which are the basis of heritage conservation.

The need to address this complex issue calls for action, since future generations have the right to enjoy and contemplate the world heritage. The peculiarity of this document is the inclusion of a macro variable, Environmental Law, as a protection mechanism for Sumaj Ork'ó. In this sense, to understand the current state of affairs, we will first address its regulatory precedents, its patrimonial quality, the causality of the threats and the transversal role that we consider Environmental Law must play in the protection of this legal asset in danger.

2. Analytical Framework

2.a Legal status of Cerro Rico de Potosí

At the end of the 19th century, special laws of the mining sector established the way of working in the Cerro de Potosí, among them, the Mining Law of October 13, 1880, government of Narciso Campero, in its Article 16 recognized that in the place the system of entrance to the mine, whether it is a tunnel, borehole or mine and not the ownership, was applied¹, later the Saavedra Mining Code of 1925 in its Article 41 determined:

“In the Cerros de Potosí, Machacamarca and others, which the Ministry of Industry will catalogue in due time, where the mining property cannot be constituted as appurtenances, due to the existence of overlapping works, the award will be made by mine entrances, carrying out the procedures as for the other awards”².

Years later, Supreme Decree 3223 of 1952, under the government of Victor Paz Estensoro, marked a transcendental fact regarding the custodian and owner of Cerro de Potosí, in the so-called Decree of Nationalization for reasons of national utility of the mines and assets of the companies that formed the *Patiño*, *Hochschild* and *Aramayo groups*, which included, among others, the Unified Mining Company of Cerro de Potosí of *Hochschild*, now entrusted to the Mining Corporation of Bolivia (COMIBOL) its administration and operation of the nationalized mines of the site, as established in its Article 2³. On July 7, 1955, by Supreme Decree 4113, it was declared that all waste, slag, tailings from mines and establishments that previously belonged to and formed part of the *Patiño*, *Hochschild* and *Aramayo groups were included in the decree of nationalization of the mines*, consequently prohibiting their allocation to individuals

1 BOLIVIA. Mining Law of October 13, 1880. Lexivox. 2015. Available at: <https://acortar.link/9ThH2k>

2 BOLIVIA. Bautista Saavedra Mining Code of February 13, 1925. Ministry of Government and Justice, p. 17. Available at: <https://acortar.link/SIVYSy>

3 BOLIVIA. Supreme Decree No. 3223 of April 15, 1952. Official Gazette of Bolivia GOB-61, October 31, 1952, p.6.

or third parties in accordance with Article 1⁴; in this way, COMIBOL is in charge of their exploitation at the time it deems appropriate. With the validity of the Mining Code of 1965, the following was determined through Article 383: “A special law will define the legal status of concessions for mine entrances in Cerro de Potosí, respecting established rights”. Unfortunately, this special law never came into legal existence.

Note that the Mining Code of René Barrientos Ortuño applied the system of ownership, characterized in its Article 33 as follows:

“The unit of measurement in exploitation concessions is the property. The property is a pyramid-shaped volume, with a square base of one hundred meters on each side, measured horizontally on the ground, and whose vertex is located at the center of the earth”⁵.

In 1997, during the government of Gonzalo Sánchez de Lozada, a new Mining Code came into force through Law 1777. In relation to Cerro de Potosí, Article 91, paragraph e) established that;

“... the Bolivian Mining Corporation directs and administers, without directly carrying out mining activities, and only through shared risk contracts, provision of services or leasing, Cerro Rico de Potosí, its mine entrances, waste rock, tailings, slag, tailings, pallacos and free lands thereof, respecting pre-established rights”⁶.

According to Martín Quirós:

“... the Bolivian Mining Corporation holds mining rights over concessions for appurtenances and grids and administers the mine entrances owned by the

4 BOLIVIA. Supreme Decree No. 4113 of July 7, 1955. Official Gazette of Bolivia. Available at: <https://acortar.link/YU9pXu>

5 BOLIVIA. DL No. 07148 of May 7. Mining Code of 1965. Official Gazette of Bolivia, May 12, 1965, Ed. 243.

6 BOLIVIA. Law No. 1777 of March 17. Mining Code of 1997. Official Gazette of Bolivia, Ed. 1987

State and existing in Cerro Rico de Potosí”⁷.

The novelty brought by the aforementioned Mining Code is the change of the geodetic system for the application of mining concessions, whose unit of measurement is the so-called mining grid, characterized in Article 6 of the aforementioned legal provision, as follows:

“The grid is the unit of measurement of the mining concession. It has the shape of an inverted pyramidal volume, whose lower vertex is the centre of the earth and its outer limit is the surface of the ground corresponding planimetrically to a square of five hundred metres on each side with a total area of twenty-five hectares. Its surface vertices are determined by means of coordinates of the Universal and Transverse Mercator Projection (UTM), referred to the World Geodetic System (WGS–84)”.

In this way, two geodetic systems were used in the country, the appurtenance system and the grid system, since the Mining Code itself established the validity of the activities that existed before the validity of the Code, that is, not to nullify the concessions granted by the appurtenance system, a system applied in the Mining Code of 1965. Let’s see this dynamic in the following image.

7 QUIROS ALCALÁ Martín. Titled Mining Code Concordant with Jurisprudence and Commented. Ed. First. La Paz. Editorial Atenea SRL 2005.

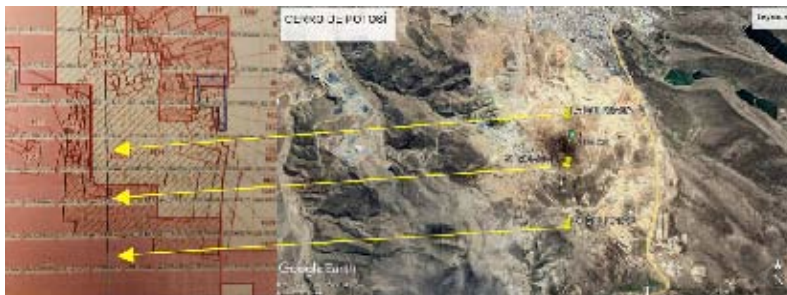


Image 1. The left image shows the concessions by both the ownership system and the grid system in the Cerro de Potosí, the nationalized area La Boliviana with an extension of 713 hectares, the Stromboli area with an extension of 18 hectares and the Solution area with an extension of 70 grids, all under the ownership of COMIBOL, covering almost the entire Cerro de Potosí. The satellite image on the right is supported by Google Earth.

It should be remembered that COMIBOL manages the existing mine entrances in Cerro de Potosí, according to the 2018 census carried out by the aforementioned state institution, above the 4,400 masl mark there are 56 mine entrances that have been ceded for exploitation through leasing contracts to different mining cooperatives, therefore, to date the mine entrance system continues to be applied. Consequently, in the entire structure of Cerro de Potosí, there are approximately 579 old mine entrances.

On July 24, 2002, through Law 2400, Article 91 of Law 1777 was supplemented, incorporating the term exploitation in favor of a direct, full and definitive administration of mining and metallurgical activities, consisting of the right of prospecting, exploration, exploitation, concentration, smelting, refining and marketing, among other aspects, in the Cerro Rico de Potosí, by COMIBOL, respecting pre-established rights⁸. Two years later, through Supreme Decree 27787, the Special Regulation for mining activities in the Cerro Rico de Potosí, pre-existing to the date of validity of Law 1777 (Mining Code of 1997), whose purpose was to regulate section c) of Article 44 of the aforementioned Mining

8 BOLIVIA. Law No. 2400 of July 24, 2002. Supplement to Chapter II, Article 91 of the Mining Code. Official Gazette of Bolivia, p. 1.

Code, with respect to the exploration and exploitation of Sumaj Ork'ó, which seeks to reconcile the interests of economic and social development with the preservation of Cerro de Potosí, as a historical–cultural heritage and national monument. Thus, Article 2 of the aforementioned regulation prohibits the carrying out of new mining exploration and exploitation activities in the entire configuration of the Hill, with the exception of mining activities pre-existing to the validity of the Mining Code of 1997. Therefore, at that time, the holders of pre-existing activities already had the obligation not to cause damage to the stability of the Hill and its morphological structure made up of solid rock, or to the firmness of the land, nor to cause damage to the historical–cultural heritage whose quality already held the title of National Relic as a symbol of independence on the occasion of the visit to its summit by the liberator *Simón Bolívar*; it also required having the environmental license. More precisely, Supreme Decree 27787 establishes a security zone from 4,700 meters above sea level to the top of Cerro Rico de Potosí, in which surface mining cannot be carried out; between 4,400 meters above sea level and 4,700 meters above sea level only exploration, evaluation, exploitation and removal of waste rock, *pallacos* and *sucus may be carried out*, without affecting hard rock; below 4,400 meters above sea level, exploration, evaluation, exploitation and removal of waste rock in general, as well as *pallacos*, may be carried out without affecting hard rock. However, all authorization must be given by COMIBOL⁹.

Article 8 of the aforementioned Supreme Decree expressly mandates that mining operators are required to stabilize the gradient of the Hill, preserving its rocky morphological structure and the stability of the land in accordance with the schedule established in their environmental license. In relation to underground exploitation, none may exceed the limit of the safety zone; between the elevation of 4,400 meters above sea level and 4,700 meters above sea level, exploration, development and exploitation activities may be carried out, including access, extraction, ventilation and service galleries, which are part of the Project for the Exploitation of Minerals in Oxidized Solids, which have the authorization of COMIBOL and which strictly observe the preservation of the stability of the

9 BOLIVIA. Supreme Decree No. 27787 of October 8, 2004. Special Regulations for Mining Activities in Cerro Rico, Potosí. Official Gazette of Bolivia, p.7.

Hill and its morphological structure, having to implement geotechnical stability systems, such as hydraulic filling. Below the 4,400 m elevation, underground exploration, development and exploitation of complex minerals can be carried out by mining cooperatives and small-scale mining in own and leased mines authorized by COMIBOL.

In terms of heritage, Article 14 of the Decree under study determines that all the mine entrances located from the Socavón del Rey level to the top of the Cerro must be preserved in their original characteristics, hence no (colonial) mine entrance located above the 4,400 m above sea level may be used for development, exploitation and mineral extraction. However, the protection regime of Supreme Decree 27787 has been questioned by UNESCO, through Decision 37 COM 7B.91, requesting the following from the Bolivian State.

“a) Clarify whether Article 6 of Supreme Decree 27787 of October 2004 has been modified and whether the moratorium on all exploration, extraction and any other intervention under and on the ground between altitudes of 4,400 meters above sea level and 4,700 meters above sea level is currently in force”¹⁰.

Unfortunately, to date, this requirement has not been met and the plundering of the Silver Colossus continues. To get an objective idea, let's look at the following images.

10 UNESCO. UNESCO World Heritage Centre 1992 – 2024. [online] Available at: <https://acortar.link/1QuKSf>

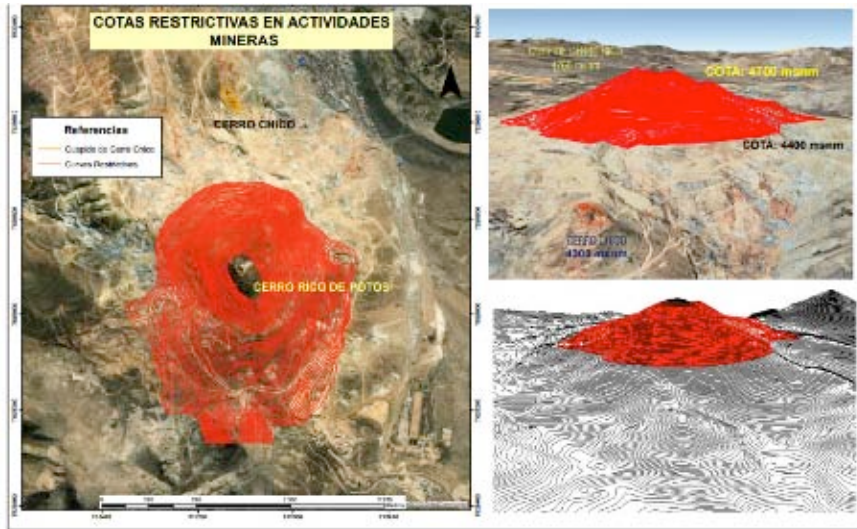


Image 2. Vera Q. Rodolfo, ArcGIS 10.6 Software Application. April 9, 2023. The images represent the elevation of 4,700 meters above sea level, the so-called iron hat, safety zone. The lower red line represents the elevation of 4,400 meters above sea level.

In 2014, the current Mining and Metallurgy Code came into force¹¹, maintaining both systems (properties and grids), but with the name of Special Temporary Authorizations (ATEs). In accordance with the adjustment regime, mining actors have the obligation to regularize their mining rights through new mining contracts. Regarding COMIBOL, Article 145 of the aforementioned Law recognizes association contracts under the condition of applying the modality of public tender or invitation with any mining actor. Another type of contract signed by the state-owned COMIBOL is mining production contracts, exclusively with private actors, recognized in Law 845¹² of 2016, by which COMIBOL grants rights over a mining area, without losing its ownership, this is the case

11 BOLIVIA. Law No. 535 of May 28, 2014. Mining and Metallurgy Law, Official Gazette of Bolivia, June 2, 2014, Edition 652.

12 BOLIVIA. Law No. 845 of October 24, 2016. Law amending Law 403 of September 18, 2013 and Law No. 535 of May 28, 2014 on Mining and Metallurgy, Official Gazette of Bolivia, October 24, 2016, Edition 903.

of the mining production contract for adaptation in accordance with Testimony 302/2020 of September 25, which COMIBOL signed with the Manquiri SA Mining Company in the “LA BOLIVIANA” area of Cerro de Potosí, which constitutes a nationalized area under the administration of the aforementioned state entity. Another type of contract gave rise to Law 1140¹³ of 2018, in which COMIBOL signs cooperative mining contracts in its areas, with actors from the exclusively cooperative sector, thus progressively replacing the lease contracts that govern the mine entrance system in Cerro de Potosí.

Law 535 does not mention Cerro de Potosí in an exhaustive manner, as established by the previous mining laws. What is interesting is that its abrogatory and repealing provisions do not render Supreme Decree 27787 ineffective. Therefore, the Special Regulation for Mining Activities in Cerro Rico de Potosí is fully in force to date. With Law 845, which modifies paragraph V of Article 61 of Law 535, COMIBOL right to exercise its rights over the nationalized areas in relation to Supreme Decree 3223 of 1952 is reinforced. That is, custodian and responsible for Sumaj. Ork’o. Finally, at this point, the mining rights systems still coexist, those of mine entrances, appurtenances and grids, subject to adaptation.

2.b Legal Regime for the Protection of Cerro Rico de Potosí in its Patrimonial Aspect

The heritage character of Cerro Rico de Potosí was not the result of chance or group criteria; this quality has been the product of centuries of mineral resource donors. However, the first two decades of this 21st century are what have put and continue to put its history, structure and heritage status at risk. To understand this quality, let us gather some data. Professors *Mark B. Abbott* and *Alexander P. Wolfe* have used sediments from the Lobato lagoon near Cerro de Potosí, due to the predominance of westerly winds, which are strategic for recording historical data on atmospheric deposits of fine-grained particles as a result of smelting in the *Huayras*, especially lead (Pb). They determined that around 1,130 to 1,150 AD, Pb concentrations exceeded 100 g, but in the colony, a few years after 1,545, it reached 300 g, and the *Huayras continued to be used*.

13 BOLIVIA. Law No. 1140 of December 21, 2018, Law amending Law 535 and Law 845, regulating the State and Mining Cooperatives. Official Gazette of Bolivia, December 26, 2018. Edition 1131.

With the exhaustion of the silver-rich surface minerals in 1572 AD, smelting was replaced by the mercury amalgamation system; the authors suggest that exploitation already took place in the 11th century AD, the last stage of the Tiwanaku empire and subsequent Inca metallurgical boom¹⁴. Other authors claim that its discovery was made at a different date, 1545. Its period of maximum exploitation was between 1579 and 1635, when it produced approximately half of the silver in circulation in Europe and 80% of that of the Viceroyalty of Peru. Another period of boom took place between 1751–1760 and 1791–1800, when the Bourbon reforms partially enabled trade across the Atlantic, which greatly reduced transport costs. At this time, its production grew again, doubling that of the early 18th century; however, the depletion of the deposits began. For many years, Potosí was the richest and most populated city in South America because it had the most productive silver mines on the continent¹⁵.

The Republic (1825) recognized the historical quality of the Cerro Rico of Potosí, its emblematic structure achieved the ascension of the liberators Bolívar and Sucre, with the aim of announcing to the world the American Independence, a fact demonstrated by Law of November 6, 1925, in whose first Article it establishes:

“At the summit of Cerro Rico in Potosí, a monument will be erected in homage to the patriots who fought for the independence and organization of the Republic, and in memory of the historic ascension of the Liberators Bolívar and Sucre to said summit on October 26, 1825”¹⁶.

By Supreme Decree 72 of March 18, 1943 and subsequently elevated to the rank of Law on November 21, 1945, it determines:

14 WOLFE, Mark B. Abbott and Alexander P. Intensive Pre-Inca Metallurgy Recorded by Lake Sediments of the Bolivian Andes. www.sciencecemag.org SCIENCE. [Online] Science, September 26, 2003. Available at: <https://acortar.link/IKLIOo>

15 ECYT-AR. [Online] The Encyclopedia of Science and Technology in Argentina, 23 September 2013. Available at: <https://acortar.link/ujDc3W>

16 BOLIVIA. Honorable National Congress. Bolivian Legislation, Compendium of Laws from 1825 to 2009. [CD] La Paz: FUNDAPPAC – KONRAD ADENAUER STIFTUNG. 978-999-54-0-370-6.

“Article 1. Declare the Cerro de Potosí a National Relic, taking into account the universal fame it achieved during the colonial era and the memorable fact that the Liberator, in his famous ascent to the Hill, carried out on October 26, 1825, raised the flags of the free countries of South America at the summit”¹⁷.

For its part, Law 1197 specifies that:

“Article 1. Cerro de Potosí is hereby declared a national monument, from the summit in its current configuration to the base, including the smaller hill of Huayna Potosí, the Capilla del Minero, the old tunnels, the Socavón del Rey and all the external signs left by mining and the people of Potosí, especially at the summit that the Liberator Bolívar visited”¹⁸.

Article 5 of Law 368 recognizes Cerro Rico de Potosí as a historical monument declared as Cultural and Natural Heritage of Humanity¹⁹, this aspect forces us to go back to the 70s, since Bolivia is a party to the Convention for the Protection of the World Cultural and Natural Heritage, adopted by the General Conference of UNESCO in 1972, the interstate document defines cultural heritage as:

“... monuments, elements or structures of an archaeological nature, inscriptions, caves and groups of elements, which have an exceptional universal value from the point of view of history...”

and natural heritage as “[natural places or strictly delimited natural areas, which have an exceptional universal value from the point of view of science,

17 *Idem*.

18 BOLIVIA. Law No. 1197 of November 9, 1990. Law on the Declaration of the Cerro de Potosí National Monument. Official Gazette of Bolivia, p. 1.

19 BOLIVIA. Law No. 368 of May 1, 2013. Law authorizing the signing of mining contracts, Official Gazette of Bolivia, Edition 520, p.2.

conservation or natural beauty]”²⁰. Consequently, Article 4 of the Convention obliges each State Party to protect, conserve, rehabilitate and transmit to future generations the cultural and natural heritage located in its territory. In 1987, the city was inscribed on the UNESCO World Heritage List in accordance with the Report of the World Heritage Committee, in file 420 and Decision 11 COM VII.A), for its outstanding universal value, meeting three selection criteria (ii), (iv), (vi)²¹. However, in 2013, the World Heritage Committee decided to inscribe the city of Potosí on the List of World Heritage in Danger, in accordance with Decision 38 COM 7B.38, due to, among other aspects, the possible degradation of the historic site by continued and uncontrolled mining operations in Cerro Rico, the instability and risk of collapse of Cerro Rico and the ineffective application of the protection legislation. For the year 2021, in the report presented by Bolivia regarding the state of conservation, an inefficient application of the protective legislation, a potential degradation of the historic site due to continuous and uncontrolled mining operations on the Cerro Rico mountain, the instability

20 UNESCO. Convention concerning the Protection of the World Cultural and Natural Heritage. Paris: 1972. Arts. 1 and 2.

21 UNESCO – World Heritage Convention. [Online] UNESCO – City of Potosí. Available at: <https://acortar.link/WYiQzQ>

Criterion (ii): The “Imperial City” of Potosí, as it became following the visit of Francisco de Toledo in 1572, exerted a lasting influence on the development of architecture and monumental arts in the central Andes by disseminating the forms of a Baroque style incorporating Indian influences. Criterion (iv): Potosí is the only quintessential example of a large silver mine in modern times. The industrial infrastructure comprised 22 lagoons or reservoirs, from which a forced flow of water produced the hydraulic energy to activate the 140 mills to grind the silver ore. The ground ore was then amalgamated with mercury in refractory clay furnaces called huayras or guayras. It was then moulded into bars and stamped with the Royal Mint mark. From the mine to the Royal Mint (rebuilt in 1759), the entire production chain is preserved, together with the dams, aqueducts, grinding centres and ovens. The social context is equally well represented: the Spanish zone, with its monuments, and the very poor indigenous zone are separated by an artificial river. Criterion (vi): Potosí is directly and tangibly associated with an event of extraordinary universal significance: the economic change brought about in the 16th century by the avalanche of Spanish currency derived from the massive importation of precious metals in Seville.

and risk of collapse of Cerro Rico have been detected²². The World Heritage Committee, in Decision: 44 COM 7A.35 and Decision: 44 COM 8C.2 maintains its position of maintaining the Site on the List of World Heritage at Risk, since the State is not complying with certain commitments assumed, such as approving a legal instrument for the management and conservation of Cerro Rico de Potosí.

A Supreme Decree of great importance is Decree 27630 of July 19, “Decree of National Symbols”, which recognizes in its Article 5 when describing the National Shield, the intrinsic quality of the Cerro de Potosí, according to the following text.

“The Cerro Rico de Potosí, whose silver riches were discovered in 1545 by the indigenous Diego Huallpa, was one of the richest silver mines in the world. Exploited since then until the 21st century, it produced more than 30,000 metric tons of silver between 1581 and 1799 alone. In the modern era, tin and other minerals were also extracted from its depths. Its enormous wealth made Potosí one of the five largest cities in the world in the 17th century. It was its wealth and fundamental importance for the Spanish crown that justified the creation of the Audiencia de Charcas in 1559. Without a doubt, the creation of Bolivia based on the limits of the Audiencia is due to the existence of the Cerro Rico. The Cerro has been declared a World Cultural Heritage Site by the United Nations Educational, Scientific and Cultural Organization (UNESCO) which also declared this Silver Colossus or Sumaj Ork’o, “Messenger of Peace”. It symbolizes the richness of our natural resources²³.

The Political Constitution of the State is not indifferent to the concept of heritage, since in its Article 99 it recognizes that the cultural heritage of the Bolivian people is inalienable, unseizable and imprescriptible, and that its conservation, preservation and promotion must be given priority. The State must guarantee the registration, protection, restoration, recovery, revitalization, enrichment, promotion and dissemination of its cultural heritage, in accordance

22 UNESCO. World Heritage Convention. [Online] UNESCO. Available at: <https://acortar.link/mfOccj>

23 BOLIVIA. Supreme Decree No. 27630 of July 19, 2004, National Symbols. Official Gazette of Bolivia. July 21, 2004, Edition 2630, p.3.

with the law. Therefore, at an infra-constitutional level, Law 530 of 2014 (Law of Bolivian Cultural Heritage) in its Article 4 defines that the Bolivian Cultural Heritage is the “set of cultural assets that, as a manifestation of culture, represent the most important value in the formation of the cultural diversity of the Plurinational State and constitute a key element for the integral development of the country. It is made up of the meanings and values attributed to cultural goods and expressions, both intangible and material, by indigenous and native peasant nations and peoples, intercultural and Afro-Bolivian communities and communities that define themselves as urban or rural, migrants, spiritual or of faith, transmitted by inheritance and established collectively. These meanings and values form part of the expression and identity of the Plurinational State of Bolivia²⁴.

For its part, Article 92 of the Mining and Metallurgy Law prohibits mining activities in areas of historical and archaeological monuments declared by Law, up to one thousand (1000) meters. This means that no new mining contracts could be granted after 2014 in Cerro de Potosí due to its heritage quality, only the pre-established ones prevailing.

At the Departmental level, in 2019, Departmental Law 112 “Law of the Cultural Heritage of the Department of Potosí” was born, seeking to ensure its transmission to future generations. Also, Departmental Law 32 “Law of Tourism Operation in Cerro Rico de Potosí”, from 2011, aims to guarantee the conservation of Cerro Rico de Potosí, as a national and international heritage. From the Municipal stage, Article 22 of Municipal Law 055/2014, has declared Cerro de Potosí, as a MONUMENTAL AREA. All this base constitutes the historical quality of Cerro Rico de Potosí, as a Natural and Cultural Heritage of Humanity.

3. Current Situation of the Conical Structure of the Cerro Rico de Potosí

The inspection on April 12, 2023 has revealed the reality that the Site is going through. Please note that the custodian, who is in a position to guarantee its care, is the Ministry of Mining and Metallurgy through the Mining Corporation of Bolivia, and in matters of heritage, the Ministry of Culture,

24 BOLIVIA. Law of May 23, 2014, Law of Bolivian Cultural Heritage, Official Gazette of Bolivia, May 27, 2014, Edition 650, p.5.

Decolonization and Depatriarchalization of the Plurinational State of Bolivia; unfortunately, those called by Law to its protection, care and support over time, are not assuming their social responsibility for current and future generations. With sad feelings, we present the following images.

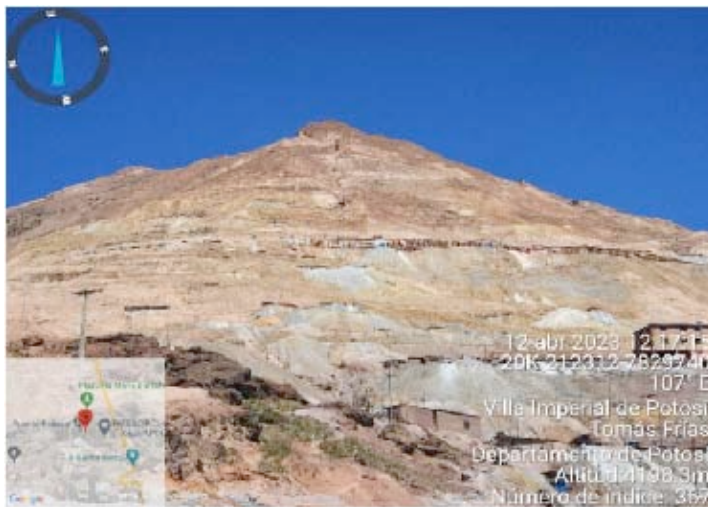


Image 3. From April 12, 2023, it is observed that the conical structure of Cerro de Potosí has disappeared, due to the excessive permissibility of removal of large-scale mining works.



Image. 4. Images from the inspection carried out on April 12, 2023, the upper left image shows that the summit of Cerro de Potosí has given way, a photograph obtained from the Huacajchi area at 4,599 masl. The upper right image shows large-scale subsidence at 4,711 masl. The lower left image shows that the summit of the Hill has given way, including part of the dry fill, a photograph obtained at 4,796 masl. The lower right image warns of subsidence above the 4,700 masl elevation.

4. The Socio-economic-environmental Conflict and the Impact of Environmental Law in relation to Cerro Rico de Potosí

In the case of Cerro Rico de Potosí, the vision of sustainability that has been attempted to give to the Mining Law has failed, although Article 93 paragraph III inc. f) of the Mining Law (Law 535), indicates that it is prohibited to carry out mining activities in “*areas of historical monuments declared by law, up to one thousand (1000) meters*, the excuse used is that there are concessions pre-established at the validity of the aforementioned Law (2014), however COMIBOL itself in its report *OTP-EMUCP-554/2021 of August 10*, has indicated that according to the 2018 Cerro Rico de Potosí census, of the 56 mines that are located above the 4,400 masl mark, 17 mines have a contract and 39 do not have a contract.

Neither is Supreme Decree 27787 developed previously complied with,

much less is Article 218 of Law 535 applied, regarding the obligation of all mining activities to have an Environmental License, in this regard, according to information sent by the National Competent Environmental Authority in note MMAyA / VMABCCGDF / No. 990 of September 10, 2021, only 12 Cooperatives have an Environmental License in the entire Cerro de Potosí, as well as the Manquiri SA Mining Company. To give us an idea, 19 Mining Cooperatives work above the 4,400 mark, the latter data reported by COMIBOL.

On the other hand, in accordance with Law 845 and 1140, COMIBOL signs mining production and mining association contracts with private mining actors, and with mining cooperatives, mining cooperative contracts, in all of which the requirement of an environmental license is mandatory, however, the permissibility of giving extra-legal deadlines causes many operators to work without an environmental license.

Given the failure of the care and vision of sustainability that Mining Law should have applied through its legislation cited above, hope arises with Environmental Law. Let us remember that the object of protection of this contemporary Law is the environment, understood as:

“...The set of subatomic elements and holistic macro systems that condition the diverse forms of life that interact with the abiotic, with exogenous forces, with endogenous artificial forces, all of them subsumed in a symbiosis of the past, present and future”²⁵.

In this way, as Cerro de Potosí is part of the environment, it enjoys the protection of Environmental Law; the same Bolivian Constitution, called ecological, in its preamble recognizes that:

“... in time immemorial mountains were erected, rivers were displaced, lakes were formed. Our Amazon, our Chaco, our highlands and our plains and valleys were covered with greenery and flowers. We populate this sacred Mother Earth”.

With this vision, the Law on the Rights of Mother Earth and Comprehensive Development for Living Well, in its Article 26 (Mining and Hydrocarbons)²⁶, requires that mining activities must reduce environmental and social damage to a minimum; note that the components of Mother Earth are the beings, elements and processes that make up the life systems located in the different life zones, and all forms of their use must be carried out under extraction and transformation processes within the framework of harmony and balance with Mother Earth.

Another aspect that Environmental Law protects is the intergenerational aspect, its vision that future generations also enjoy the right to the heritage that Cerro de Potosí holds, its natural qualities as a symbol of independence, part of the National Symbol of the Coat of Arms, National Relic, Historical Monument and Natural and Cultural Heritage of Humanity. However, the conflict between the mining sector that sees Cerro de Potosí as a deposit and the bulk of the population as a heritage, entails applying the vision of the Club of Rome of the late 1960s, when they referred to the limits of growth, that is, the exploitation of Cerro de Potosí has a limit, that limit is the respect for its heritage quality, in this way, the same Plurinational Constitutional Court through Constitutional Sentence 1062/2022 / S4²⁷ of August 19, basis III.4, when dealing with Cerro de Potosí as a cultural heritage of humanity, has established that balance, of carrying out mining work respecting and stabilizing the gradient of the hill, preserving its rocky morphological structure and the stability of its lands, without ignoring the right of the inhabitants of the city of Potosí, Bolivians and those of the world, to enjoy the cultural heritage expressed in Cerro de Potosí, as a heritage of humanity and as source also, of work for the sector that is dedicated to tourism, and that said mining development, complies with the current regulations of the environmental sector, since a sustainable mining work is based on an environmental license that guarantees or should guarantee a balanced work of heritage care and mining development, and working

26 BOLIVIA. Law 300 of October 15, 2012. Framework Law on Mother Earth and Integral Development for Living Well. Official Gazette of Bolivia, October 15, 2012. Edition 431.

27 Plurinational Constitutional Court of Bolivia. Plurinational Constitutional Judgment 1062/2022–S4. COMCIPO Judgment of August 19, 2022 [online] Available at: <https://acortar.link/UQ4c0G>

without having the aforementioned license, violates the sustainability of the cultural heritage as a collective right of humanity and directly attacks the right of current and future generations. Hence, the custodian of the Cerro, should not allow mining work without first complying with the environmental measures proposed at the time of obtaining the environmental license, consequently, not allow any mining work that does not have the aforementioned license, which constitutes a preventive institution of Environmental Law, which marks the balances between economy–environment–society.

This social, environmental and cultural conflict demonstrates two short- and long-term paths.

Temporary	Sustainable Development Vision
<ul style="list-style-type: none"> – Temporary jobs – Temporary currencies – Benefits for a few – Loss of Patrimonial character – Open pit works – Non-compliance with legislation. 	<ul style="list-style-type: none"> – Respect for the national symbol and its heritage status – Respect for the tourism sector – Respect for the rights of future generations – Collective benefits – Work in mine shafts, outside prohibited areas – The guarantee of not exploiting in the open air – Compliance with environmental regulations.

Table 1. Paths of the destiny of Cerro de Potosí

In any case, the Political Constitution of the State, in Articles 9 no. 3; 99; 108 no. 14; 298 – II no. 25; 339 – II, deals with the purpose of the State, obligations of Bolivians, responsibilities of the State in relation to the protection of Heritage, despite the fact that the contracts signed between mining cooperatives and COMIBOL oblige compliance with environmental standards, this body, in many cases, does not comply with its own regulations. However, mining development in Cerro de Potosí must unquestionably be seen from different points of view and not only as a deposit, but in accordance with a development with a vision of sustainability, including the variable heritage and the respect for future generations that Environmental Law protects. Let us approach this vision according to the following table.



Fig. 1 Balanced development–Heritage versus work. The upper part shows that COMIBOL is responsible for the care of Cerro de Potosí, an entity that authorizes mining companies to carry out activities throughout the Cerro through mining contracts. The lower part shows that the Political Constitution of the State protects the Heritage through Popular Action, since it is a diffuse right and a right–duty of the State for its protection, since it has various heritage and cultural names. The central part is the contribution of Environmental Law, because it harmonizes, balances, respects future generations and recognizes Cerro de Potosí as a component of the Environment.

5. Conclusions

The environmental license, as an institution of Environmental Law, definitely seeks balance between mining development and the care of its environment, in this case, Cerro de Potosí, because it puts a stop to the excessive destabilisation of its gradients, takes care of mining development in relation to its workers and risks of subsidence, improves work inside the mine, implementing safety measures.

Environmental Law has expanded its spectrum of protection to collective heritage, which is why, through a popular action filed in 2021, the nature of which is the protection of collective or diffuse rights, the Plurinational Constitutional Court in August 2022, has recognized the heritage quality held by Cerro de Potosí and has ordered the Ministries of Culture, Decolonization and Depatriarchalization, as well as the Ministry of Mining and Metallurgy, through COMIBOL, to assume effective measures to protect Cerro de Potosí as a cultural heritage of humanity, and the consequent migration of mining cooperatives installed in prohibited areas to other sectors.

Environmental Law not only protects current rights, that is what differentiates it from other branches of law, its scope of protection reaches those who are not yet present on this earth, but when they arrive, they will enjoy an environmental quality suitable for their survival, they will enjoy the collective heritage left by our past generations as the identity of a people, in this case the Cerro de Potosí, symbol of independence, national relic, monument and cultural and natural heritage of humanity.

Environmental Law has helped to find a solution to this conflict, balanced mining development, equilibrium limits set by the environmental license, limits for its exploitation.

UNESCO, through the Convention for the Protection of the World Cultural and Natural Heritage and the World Heritage Committee, should not limit itself to receiving reports from the member countries, but should verify their veracity, especially if we are talking about sites that are on the list of heritage in danger. Therefore, its action should be direct in these cases, and the principle of sovereignty of States would not be violated, because in the Bolivian case, said Convention has been ratified, and in doing so it is unquestionable to assume its guidelines or intervention of the macro structure.

Finally, to achieve this balance between mining development under the mine entrance system and the protection of heritage quality, the contracts should only have been enforced in relation to the requirement of their environmental license, the non-granting of areas in prohibited zones, adequate supervision of mining works and effective control of the guarantor of Cerro de Potosí, with a view to sustainable mining development, the prohibition of open-pit exploitation, which unfortunately, the complicity and the prioritization of particular

interests over collective interests, put Sumaj at serious risk. Ork'o and that in many cases political decisions overshadow objective law.

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