

Resolution of the committee (committee was created on basis of decree №03/08. 2013.28.05.) of Minister of Georgian Culture Heritage) studying the subjects referred to the ancient Sakdrissi mining site in Municipality of Bolnissi

1. Location of the mining site and the circumstances of its discoveries.

Note: The commission's report is full of mistakes, wrong conclusions, disregard of scientific results and obvious conflict of interest of individual members of this commission: We decided to contradict point for point. The commend of the Georgian-German expedition are marked in blue color.

“Sakdrissi mining site” is located in Bolnissi region. The ancient mines are known in Dmanissi and Bolnissi regions from the ancient times, which are referred to getting copper, iron, polymetals and other types of ore. Sakdrissi, including Khachagiani district, is not the exception.

In 80ies of 20th century tunnels, which was made during the Geological research works, crossed three old mines, and from that time mining archaeological researches began.

In that period T. Mudjiri conducted some mining-archaeological researches (report of Tsulukidze mining mechanic institute – 1987), though after that no significant researches was done in that aspect.

(Mudjiri 1987 only mentioned two underground workings and he only gave a description to the mining site; scientific excavations were not carried out: It seems, that the commission did draw their results on the basis of the “Gold in Georgia”-research projects publication whose results they obviously ignored).

In 2004, geologist found a grave, during the activities foreseen with the fossil using license. Considering that fact, defending legislation demand, an archaeological group was convoked, and paid attention to the old mines again.

(This is again not true: the research began 2004 in the frame of the German-Georgian International project “Gold in Georgia”, headed by Prof. Dr. A. Hauptmann, Prof. Dr. Th. Stöllner and Dr. Irina Gambashidze)

In 2006, despite that the conformable detailed researches was not done (research license documentation and official documents are not given) and also some new factual facts were not discovered, the object was called gold ancient and unique mine with rough abrogate of legislation.

It has to be marked this circumstance underlined, that existing 2004-2005 archaeological expedition reports cannot be confirmed. According to the official notification of Georgian science academy reports of 2004-2005 archaeological expedition in Sakdrissi are not in the main archive of Academy. Mentioned reports, also according to the official notifications, are nor in Culture Ministry and not in National Agency for Cultural Heritage Preservation of Georgian.

(2004 and 2005 there had been undertaken two first archaeological and geological campaigns on the mines of Sakdrissi, Kachagiani hillock; they were fully permitted by the Ministry of Culture; technical reports about the excavation were given according the legislative necessities to Ministry of Culture, first publications with analyses have appeared in the following years).

2. Previous period of giving the status to the object.

As it was mentioned above, from the archaeological researches conducted in Dmanissi and Bolnissi Regions till 2004, basic is T. Mudjiri's research, though it contains a lot defects and so it cannot prove the argument to give a status to the site.

The other researches which could prove the existing the unique phenomenon – gold ancient mine, in previous period did not existed. All previous researches (I. Grdzlishvili and etc.) indicates about the probable copper procuring, which precedents are a lot in Georgian from the ancient times and so it (we mean copper procuring and mines) are not a unique phenomenon and also it cannot be the sensational circumstance. Existing these kinds of mining sites on the territory of Bolnissi and Dmanissi Regions is known and is not so fact.

(Why this commission did not mention all the scientific reports published by the research project? All our scientific arguments that were published on a great extend are summarized in short report here; further literature is mentioned likewise there, look addendum 1; according to the recent scientific results there is no doubt on the prehistoric gold exploitation).

3. The law aspects of giving the status to the site.

So as in 2006 there was no basis to declare so-called “Ancient Gold Mine” as a cultural site, because such object was not known and was not confirmed before, it was declared as a cultural site with active law at that time “About Cultural Heritage Preservation”, also with rough abrogation the standards and procedures established by the basic administration code. On this exists conclusion of the committee (committee protocol N1 30.05.2013).

(Despite the legal and administrative aspects the scientific argument for the Heritage have been existed since 2005: The results of the 2004 and 2005 field work were presented to an International audience in 2006 in Berlin during the conference: Von Majkop nach Trialeti – Gewinnung und Verbreitung von Metallen und Obsidian in Kaukasien im 4.-2. Jahrtausend v. Chr. Beiträge des Internationalen Symposiums in Berlin vom 1.–3. Juni 2006; various Georgian scientists took part on this conference).

Besides the mentioned abrogation in committee conclusion, next principally important standards according to the law “About Cultural Heritage Preservation” were abrogated to the mentioned archaeological object:

- During making decision for giving a status to the site were ignored the authorities and functions of Georgian Science Academy, including the role of the archaeological commission, according to the 5th and 9th paragraphs of the law;
- According to the 11th paragraph of the law the competence of Cultural Heritage Preservation commission is: a) to declare the conclusion about giving the status to the objects having signs of immovable and movable sites, which will be presented for proving to the Georgian Cultural Ministry. The same refers to issuing the recommendation about giving and changing category to the immovable and movable sites; according to the having information such kind of procedure have not been conducted.
- According to the 18th paragraph of the law the immovable site gets the category on the basis of committee recommendation. No documents are known (the committee protocol or recommendation of members) about Sakdrissi object corresponding to the signs of site; besides that does not exist the officially documented recommendation for getting category to the site.
- 21th paragraph of the law decisions legal regime of the object having immovable site signs. According to this paragraph (item 3rd) Ministry, in 6 month term after getting

information about discovery of object having site signs, is obliged to conduct examination to determine object value; conclusion of such examination is not known; as it seem such examination have not been conducted (corresponding documentation was not found). So the “cultural value” was determined with abrogating the law, only by the Ministry (though we also could not find the documentation about this).

So there is a lacking legislative basis to conduct next steps about this object, such as to ascertain the protection zones and giving “national importance” category.

This also can be confirmed with the committee conclusion referring juridical aspects, where is said clearly and expressly that “Sakdrissi-Khachagiani Gold Ancient Mine” legally should not have been put in Georgian Culture, Heritage Preservation and Sport minister’s 30.03.2006 N3/133 command’s enclosure; because it does not represent the regulation subject of that legal act. It is clear that for some reason, unknown for us, by ignoring and rough abrogating the law, Sakdrissi object got the site status.

(The Georgian-German expedition was not informed about the legislative procedure that led to the Heritage status of Sakdrissi. This procedure was and is completely in the hand of the Cultural Ministry).

4. Archaeological Aspects

In terms of archaeology substantiation of ancient gold mine is not convincing and contains, not one, important and serious gap, namely:

1. In so-called “mine”, because of lacking oxygen, it is impossible to mine gold containing rocks.
2. In the materials received officially, on the mining inventory it is not confirmed analyzes and main results that trace of gold is confirmed on them.

Depending on mentioned above in IV-III millenniums BC. Ancient gold extracting mine on Sakdrissi Khachagaini district is not confirmed, because of no arguments. Though, the archaeological artifacts of that period are confirmed, which generally confirms existing the archaeological objects.

(The arguments are not correct:

1. The mine had no problem with oxygen and it was possible to exploit the veins down to 30 m beyond ground: see Stöllner et al. 2008; 2010; 2011. Fire-setting-experiments underground did show how the ventilation was technically solvable, e.g. Stöllner et al. 2012)

2. A scientific evaluation of the gold content was published by Hauptmann et al. 2010; Hauptmann et al. 2011; further reports existing by e.g. Tschochonelidze 1975 and others; the full analytical calculation is given in addendum 1).

5. Mining processing and technical aspects:

Conception represented by the group of Georgian National Museum archaeologist about extracting gold from ancient mines, is not acceptable in terms of mining and technology (basis – Geological conclusion). According to firmness quartzite is much more strong/firm than basalt. So without any preliminary activities (heating and etc.) it is inconceivable to extract the quartzite. If it was so then they would have extract only the rocks which are weathered, mechanically and chemically changed and zones containing ores. According to this:

- a) Thermal processing is possible only during the open mining works and using this method during the underground works is impossible; trying to confirm the opposite is senseless.
- b) Without thermal processing extracting the rock would have been possible only in the weak zones, which is confirmed by converged the disposition of old mines, geological decomposition and silicified zones.
- c) Gold seen by eyes are not in the secondary quartz and not in sulfide ores and the trace of the gold on the ancient working tools are not confirmed by the official documented facts.
- d) Selecting the ore form the rock can be only by seeing copper, from which can be smelted only copper with small additives of gold. To refine and pick up gold technology from the copper alloy, of course, did not exist in that period. So we think that copper was extracted and smelted in Sakdrissi.

(a-b: experimental work and non-doubtable traces of fire-setting [fire-setting cupolas and soot on walls and ceilings of them] show the usage of this technique, published by Stöllner et al. 2008; 2010; 2011, see addendum 1.

c: Gold can be seen occasionally by naked eyes in highly enriched parts; gold traces on working tools cannot be found while almost all tools had no preserved original crusts on their surface.

d: Copper cannot be seen in the deposit by naked eye; copper has a geochemical concentration between some ppm to 0,5 % at the most, normally but clearly beyond that degree. In prehistory ores had been exploited with grades of 1-2 % of copper as minimum, normally

beyond 5% and more (research Bochum und Heidelberg research groups over the last 40 years of archaeometallurgical work). Copper definitely was not extracted in Sakdrissi, its grade is much too low, while gold can easily be found when crushing, milling and panning the ores).

6. Accordance to the cultural site status in geological terms

Two types of mineralization are confirmed and ascertained on Sakdrissi gold-copper mine: small sulfide gold mineralization (so-called gold bearing secondary quartz) containing ~1-1,5 ppm and gold-copper ore, containing gold ~3-5 ppm. In both types of mineralization gold is represented in a thin depression and visible gold existence is not proved yet, despite many years of work and research of mine. So to prove gold existence is possible only in chemical way.

(Gold can be found easily; in secondary quartz formation gold can be enriched on a high degree; as the gold of Bolnissi-Madneuli district is described as extremely small sized it only could be seen by the naked eye in the enrichment zones; while knowing about the gold containing quartz vein it would be have been easy to follow them: archaeological evidence proves the existence of a workshop on the mining site in which the ores were tested on their gold content).

On Khachagiani district, gold bearing secondary quartz creates massive section, which has north-south direction. The gold-copper bearing vein zone is located sub-longitude direction is veins, where is taken out the ancient mines. So historical mines are connected to copper veins of the sub-longitude disorganization and not to the gold bearing secondary quartz. According to all these, we can say that:

1. The ores of Sakdrissi mines, included Khachagiani district, are very poor, with very low or middle gold bearing. The rich ores are very seldom and to extract it with modern technologies is very expensive. Visible gold is not known yet here.
2. In gold bearing secondary quartzes average gold bearing is 1-1,5 ppm. According to this in times it was impossible to extract gold.
3. Gold bearing of gold-copper veins contains ~3,5 ppm, which is considered nowadays non-rentable for underground extracting. Also gold extracting from the sulfides – gold-copper mines in old times was impossible.
4. It is believable that here was extracted copper but not in very small amount. Also we cannot prove gold traces on the working tools.

In geological aspect, in prehistory gold extracting is not proved in Sakdrissi. So Sakdrissi is a very simple copper mine, which are discovered in Georgia a lot and so is not a unique.

(the orientation to a special type of veins is not correct; the stockwerk-deposit had been exploited nearly in all directions; especially in prehistory the miners exploited especially the quartz-veins being enriched in gold while hematite ores with smaller amount of gold left in the deposit; copper only is accessory to hematite veins and has not been exploited at all; there is no evidence for this after six campaigns of intensive studying the deposit.

According to our measuring the gold content in the ancient galleries has an average minimum of 15 ppm while miners left an average minimum of 1 ppm in their debris; especially quartz-hematite veins being left at the walls of the Kura-Araxes-Galleries of the 4th mill. show contents of more than that. Obviously gold contents of higher average were exploited in the 4th and early 3rd mill.: see addendum 1).

According to our well balanced scientific results, Sakdrissi is the oldest gold mine in the World and the oldest mine with underground workings in the Caucasus at all)

7. Ensuring possibilities of the site as a touristic object in engineering-geological and mining-technical aspects:

The conception about making the site as a touristic object offered by Georgian National Museum archaeologist group is unrealizable because of some circumstances:

1. The object is totally unavailable for visiting because safety lacking; and available insignificant part contains a lot danger as for the visitors and sciences, and as for the inhabitants;
2. The mine, in engineering-geological aspect, is located in very fragile and unsteady rocks; because of that working and visiting the mine is possible only after consolidating the walls totally.
3. Preservation the object in a current state is impossible without changing it according to the engineering-geological standards.

So, it is very important and compulsory to consolidate the object capially, which will cause changes and lose of its authentication.

(1. The mine has its problems especially in argillite zones in deeper parts of the deposit, where chemical erosion did alter the host rock. In the area of the prehistoric mine especially in parts of the upper exploration tunnels no major problems have occurred since their establishment in the 1980ies. This is due the silicide rocks nearby the ore-veins which are extremely hard.

2. Although there is a necessity to timber or secure the galleries underground this work is normal maintaining work; a total consolidation of the walls is not necessary.

3. Like in other visiting mines it certainly needs a detailed report on the mining structures and a constant maintaining work to enable tourist visits on a bigger scale! This is the case in nearly all visiting mines worldwide).

8. Ecological Subjects:

According to the conclusion (N12-15/436 27.06.2013) of the specialist (they studied the case on the place) LEPL National Environmental Agency Geological department of Ministry of environment Protection of Georgia, Engineering Geological management of natural calamity of Geological danger management service and environment pollution monitoring, can be said that stopping the exploitation works (including opening, building alkalizing fields and roads and etc.) on mine can cause unconditionally sharp activation of erosion-gravitation processes, and the slope will erode totally. The weathered earth will be washed in the river and it is not excluded that river-bed will be closed because of the future formation of the mudflow, and this also will cause the danger to Tbilisi-Dmanisi highway.

Apart to this we will get no-controlled negative impacts, which are connected to creation of dirty water caused by heavy metal from the opened quarries and also other the non-predictable factors. This will cause inevitable and important degradation, which can provoke ecological catastrophe, which will penetrate also in other regions.

So continuing an alternative of normal exploitation on the mine is much safer in ecological aspect.

(These arguments seem strange and representing a reversed viewpoint: Any exploitation activity causes destruction of nature and causes pollution while exploitation and after the exploitation period: any mining activity should underlie a complete monitoring by independent official authorities. The mining exploitation will end in a large opencast-mine nearby the Mashavera valley that is planned to include and eradicate the hills of Khwirazkhoveli, Postiskedi, Mamulisi and Kachagiani; the diameter of such an opencast at the beginning would

have a diameter of nearly 1 km. The mining company should present their strategies how to avoid damages on the surrounding nature and populations living nearby in villages like Balitshi).

9. Economic Aspects:

It is almost impossible to solitude the licensed mine so-called “Khachagiani” district (on which the site is located) from the other district, as in mining and technical, and also as in economic aspects. Besides that existing zones and established norms for cultural site protection is limiting the company’s actions not only on the territory of the cultural site, but also on a large radius from the protection zones of the site. So cultural object on the Sakdrissi mine is practically limiting the possibility to plan process the mine. So we get the economic results:

Sakdrissi as a touristic object, which will not have lot visitors because of no-safety on the site, will not be high profitable; people who will work on it the maximum amount will be 20-30 persons.

(Touristic activities including the possibility to apply for Sakdrissi as a World Heritage Site can be embedded to whole archaeological and cultural tourism of the Bolnissi-Dmanissi regions that includes sites like the Hominid site of Dmanissi, the Christian churches of Bolnissi and the early Neolithic site of Arukhlo; to have benefit of tourism for the wellbeing of a hole region it needs a middle- to long termed strategy which is in opposite to the quick commercial profit that only can gained from the gold of Kachagiani hillock).

On the other hand, mining industry, which investment was in 2012-2013 ~270 million Laris, will increase to ~30 Million Laries at the end of the year. In that period 300 persons were employed additionally; totally is employed 3000 persons in the company. In 2012 ~50 million Laris were input in the budget, and in 2013 in 4 month (including April) ~16 million Laris. In the budget from the company as a tax will be put more than 100 million dollars during first 7-8 years, and the salary will be on average 1000 Laries.

Also one should consider that the budget income 85% of local municipality is due to the functionality of company; and 90% of the employers are the locals. Planned investments are 20-30 million dollars yearly, only for the capital investments of the geological searching and mine works. And the investments of buildings of new factories will exceed some ten millions dollars.

Nowadays assimilating Sakdrissi mine is one of the important projects; without realization it company will end its existence and according to this very difficult economic, social and ecological circumstances will be caused.

(the budgets and investments should be proven by an international committee which should seriously compare both the benefit of tourism and of quick mining success; Kachagiani hillock for instance only contains approximately 3 t of gold; regarding to the producing costs of one ounce which is nearly to € 700,- and the world marked level of gold [nearly € 1000], one should put a question mark on the regional benefit of that enterprise. Regarding the re-cultivation cost after the end of the mining activities one should ask if this enterprise would still be a benefit for the region and the country)

Conclusion of the committee:

With all above mentions consequences the committee is designating that correspondingly to the command (2013. 28.05 N03/28) of Culture Minister of Georgia he must be charged to study two basic subjects and to prepare appropriate recommendation, namely to estimate giving the cultural status in law aspect and to prepare a recommendation of moving it. According to the existing documentation and on the basis if the conclusion of the juridical department of Ministry we see that, Sakdrissi-Khachagiani ancient Gold mine got Cultural site status and national category by abrogating the law norms.

(The documents that were presented by the Georgian-German expedition could not be found: we ask why; our copies prove their existence and the fact of their presentation to the ministry).

1. Sakdrissi so-called “The ancient gold mine” got cultural site status and afterwards “national category” without relevant science and juridical basis, by rough abrogating of law (see legal conclusion. Protocol N1). This inflicted damage not only to the company which have license on Sakdrissi mine, but the State budget. It must be also marked that assimilating Sakdrissi mine is one of the most important projects for state budget development. And also there is some danger of ecological, social and economic circumstances. According to above mentioned, because the Sakdrissi-Khachagiani ancient gold mine get in the list of enclosure of 2006.30.03. Command N3/133 without any proves and it got cultural site status by abrogating of Georgian law 25.06.1999 paragraph 16 and 53rd paragraph, 5th item and 96th 2nd item of administrative code, minister of Georgian Cultural Heritage is recommended to carry out relevant arrangements to eradicate above mentioned law violation.

2. Substantiation of existing Sakdrissi Khachagiani gold mine is not believable and contains some important gaps. Arguments and actual materials, which was represented to the committee as reports and other materials, cannot prove the existing the most ancient Mine. Committee thinks that Sakdrissi might have be a mine for extracting copper in a little amount, possibly in Bronze Age, which is not so surprising for Georgian and also for that region.

(The commission did not seriously and scientifically study the existing publications and documents [analyses, reports, aso]; the arguments are put together without regarding the rules of good scientific praxis! The German team as the specialists of mining and metallurgy never has been asked to give a statement! In consideration that scientists took part in this commission this is astonishing and not acceptable. It should be noted that some of the members are in commercial relation with the Mining Company RMG Gold).

3. Mines of Sakdrissi are represented by very narrow mines and also they are not safe not only for the visitors also for the scientist. Because the safety it is inadmissible to work and visit the mine.

(The mines of Sakdrissi allow entering an underground gallery of the 4th millennium BC. This is worldwide a very rare example and unique for a metal ore mine; the safety problems can be solved but need investment).

4. The company RMG must be asked by Georgian State to prepare Historical Museum of Bolnissi; the archaeological materials will be kept there.

(Building up a site museum seems to provide a better way to show finds and results in the original atmosphere: tourists nowadays expect the special event character and the originality; this can be provided by the Sakdrissi mines).

The committee thinks that it is excluded interruption the work of the company in unproved and artificial ways. Such kind of behavior is against the state and local budget, and directly to the state interests.

(State interests include the careful handling of the natural and cultural property of a country: besides short termed economic interests these immaterial wealth of nation provides important aspects of cultural identity and national welfare. Georgia has ratified the Valetta-convention to save its immobile and mobile cultural heritage. By destroying the mine of Sakdrissi one of the most important heritage sites of Georgia will be lost forever).

Members of the Committee

- A. Tschaltschrelidze (Geologist; free-lance-geologist; employed by Madneuli company?)
- O. Kuznaschwili (engineering geologist, Technical University Tblissi).
- D. Lomitaschwili (specialist of early medieval archaeology, Georgian National Museum).
- G. Mirzchulawa (see additional document) (archaeologist, prehistorian, Georgian National Museum)
- L. Achalaia (State Heritage Agency, field archaeologist)
- G. Khipiani (architect, Ilija Chavichavadze University Tblissi)
- G. Grigorlia (Ivane Javakhishvili-University of Tblissi (he writes: "Sakdrissi is a very important archaeological site, it should be studied completely before it is destroyed")
- V. Litcheli, (Ivane Javakhishvili-University of Tblissi, classical archaeologist, drives business archaeology also in contract with Club Tadzari which itself has a contract with the mining company "RMG Gold Ltd")
- T. Chikhradze, juristic representative of Ministry of Culture of Georgia

(Part of the committee did contradict the commission's decision, even adding short memoranda to this session:

Guram Khipiani:

I will report you my opinion on "Sakdrissi-Khachagiani" archaeological complex:

Sakdrissi-Khachagiani complex is an archaeological object, where can be clearly seen action of men's of IV Millennium B.C.

According to the geological conclusions, in that period gold was not extracted on that territory.

Unfortunately, archaeological expedition did not represent equal documentation of that.

We realize State's versatile interests about that territory.

I think that modern manufacture and archaeological expedition should express desire for collaboration.

28.06.2013.

Guram Khipiani)

(I restrain to share geological negative conclusion about extracting gold at Sakdrissi Mine, because of not having enough arguments and without getting respond from German side.

Sakdrissi represents a very important archaeological site, taking into account mines and artifacts discovered there.

Mine of IV millennium B.C., even copper mine, for me is unknown.

28.06.2013

Guram Mirckhulava)

One case of the corruption of commercial and scientific interests is documented in case of the Classical Archaeologist Prof. V. Litcheli: We present a document of the Tadzari Club of Bolnissi which works in relation with the mining company of RMG Gold. We doubt if a serious evaluation is possible in such case of interest's conflict.

“CLUB TADZARI”

№1/04

The 17th of April. 2013

To General Director of Cultural Heritage

Preservation of Georgian

Mr. M. Bochoidze

Dear Mr. Bochoidze,

We inform you that a contract is registered officially between TLD “RMG GOLD” and NELP “Club TADZARI”, which implicates collaboration in science field, included archaeological subjects. As you know, TLD “RMG GOLD” has a perennial license for extracting the ore on the territory of Bolnissi and Dmanissi Municipalities (Sakdrissi-Abulmugi). Before starting exploitation work, according to the Georgian Law company is planning to make archaeological researches on the territory. According to the mentioned please discuss the project of archaeological work project and give archaeological works permission to the NELP “Club TADZARI”.

Archaeological works will be managed by Dr. Professor Vakhtang Licheli.

Enclosure: Project archaeological works

Consent from owner of the land and license holder TLD “RMG GOLD”

Permission fee confirming document.

Sincerely,

Giorgi Gigiashvili

Head of board of administrators of

NELP "Club TADZARI"

(Translation of a Georgian document).