ZANGEZUR COPPER AND MOLYBDENUM COMBINE

CLOSED JOINT STOCK COMPANY

CLOSURE PROJECT

OF

ZANGEZUR COPPER MOLYBDENUM MINE AT KAJARAN, SYUNIK MARZ

”Zangezur Copper Molybdenum Combine” CJSC

General Director

PREFACE

The ore deposit that is the basis for the Zangezur Copper Molybdenum Combine (ZCMC) operations has a resource, as defined under the Soviet Resource Classification system, of 2.2 Billion tonne of ore (See section 1.1.9 Mine reserves). With the current mining rates of 20 – 22 million tonne of ore per annum, there is a future mining life of over 100 years.

ZCMC has just had a 25 year license extension up to 2041. Currently ZCMC only has mining plans, including waste dump design and disposal of tailings, up to the end of this period. As a result of this and uncertainty over what will transpire in the next 100 years, this closure plan only deals with the status of the operation up to this 2040 time period. It is highly likely that if the mine life is extended to an end point in 2120 then the status at this point in time is likely to be substantially different from what is described in this Closure Plan. It will be required to review the long term plans on a regular basis and modify this closure plan to suit future events, technology and knowledge.

The mine planning up to 2041 involved the consideration of two mining scenarios. The continued development of the current open pit located to the south of the Voghji River and a second option, of the commencement of mining of the resource located to the north of the Voghji River. The review of these two scenarios led to the decision that the development of the existing pit was the preferred option. The resources to the north of the river will only be mined after 2041. This closure plan therefore only considers the selected mining plan

This document has been prepared for ZCMC to address the issues and actions that will arise as a result of the closure of the mining operations at Kajaran. This Closure Project is an expression of the intent of how ZCMC will undertake the activities associated with the closure of the operation but is not considered as a final document. There is a requirement of the Subsoil Code of the Republic of Armenia (RA) that companies engaged in mining operations are required to present the final version of the Closure Project 2 years prior to the end of their operations. This document will be updated periodically to reflect changes in the status of the operation until the final document is prepared in compliance with the specified Code.

The document seeks to comply with the requirements of the document: Environmental, Health and Safety Guidelines for Mining, section 1.4 IFC Mine Closure and Post-Closure - Guidelines issued by the International Finance Corporation and World Bank Group on December 10, 2007.

These guidelines are reproduced below for clarity.

"**1.4 IFC Mine Closure and Post-Closure - Guidelines**

Closure and post-closure activities should be considered as early in the planning and design stages as possible. Mine sponsors should prepare a Mine Reclamation and Closure Plan (MRCP) in draft form prior to the start of production, clearly identifying allocated and sustainable funding sources to implement the plan. For short life mines, a fully detailed Mine Reclamation and Closure Plan (with guaranteed funding) as described below should be prepared prior to the start of operations. A mine closure plan that incorporates both physical rehabilitation and socio-economic considerations should be an integral part of the project life cycle and should be designed so that:

· Future public health and safety are not compromised;

- The after-use of the site is beneficial and sustainable to the affected communities in the long term;
- Adverse socio-economic impacts are minimized and socioeconomic benefits are maximized.

The MRCP should address beneficial future land use (this should be determined using a multi-stakeholder process that includes regulatory agencies, local communities, traditional land users, adjacent leaseholders, civil society and other impacted parties), be previously approved by the relevant national authorities, and be the result of consultation and dialogue with local communities and their government representatives.

The closure plan should be regularly updated and refined to reflect changes in mine development and operational planning, as well as the environmental and social conditions and circumstances. Records of the mine works should also be maintained as part of the post-closure plan.

Closure and post closure plans should include appropriate aftercare and continued monitoring of the site, pollutant emissions, and related potential impacts. The duration of post closure monitoring should be defined on a risk basis; however, site conditions typically require a minimum period of five years after closure or longer.

The timing for finalization of the MRCP is site specific and depends on many factors, such as potential mine life, however all sites need to engage in some form of progressive restoration during operations. While plans may be modified, as necessary, during the construction and operational phases, plans should include contingencies for temporary suspension of activities and permanent early closure and meet the following objectives for financial feasibility and physical / chemical / ecological integrity.

Financial Feasibility

The costs associated with mine closure and post-closure activities, including post-closure care, should be included in business feasibility analyses during the planning and design stages. Minimum considerations should include the availability of all necessary funds, by appropriate financial instruments, to cover the cost of closure at any stage in the mine life, including provision for early, or temporary closure. Funding should be by either a cash accrual system or a financial guarantee. The two acceptable cash accrual systems are fully funded escrow accounts (including government managed arrangements) or sinking funds. An acceptable form of financial guarantee must be provided by a reputable financial institution. Mine closure requirements should be reviewed on an annual basis and the closure funding arrangements adjusted to reflect any changes.

Physical Integrity

All structures (e.g. tailings impoundments) should remain stable such that they do not impose a hazard to public health and safety as a result of physical failure or physical deterioration. Tailings structures should be decommissioned so that water accumulation on the surface is minimized and that any water from the surface of the structure can flow away via drains or spillways and these can accommodate the maximum probable flood event. Spillways, drains and diversion ditches must continue to be maintained as required after closure, as they can easily become choked after storm events. Structures should not erode or move from their

intended location under extreme events or perpetual disruptive forces. Consideration should be given to backfilling of mine workings.

Physical hazards such as unguarded roads, shafts, and other openings should be effectively and permanently blocked from all access to the public until such time that the site can be converted into a new beneficial land use based on changed conditions at the site, as well as alternative uses by local communities or other industries for roads, buildings and other structures. Where there is a risk of methane emanating from disused shafts and other workings, passive venting systems should be considered.

Chemical Integrity

Surface water and groundwater should be protected against adverse environmental impacts resulting from mining and processing activities. Leaching of chemicals into the environment should be prevented, so as to avoid endangering public health or safety or exceed water quality objectives in downstream surface water and groundwater systems.

Ecological Habitat Integrity

While ecological habitat integrity is partially determined by the above factors (e.g. physical issues such as slope stability) and chemical issues (e.g. such as metal contaminants), it is also addressed with consideration towards replacement of habitat that is beneficial for future ecological use. The Mine Reclamation and Closure Plan (MRCP) should contain comprehensive measures for concurrent reclamation during the operating life of the mine according to a plan approved with the environmental and mineral authorities and with the engagement of local government and communities."

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1. DESCRIPTION OF THE MINING OPERATIONS AND ENVIRONMENT

1.1 The mine's location, geological structure and hydrogeological specifications, calculation of reserves

The copper-molybdenum mine at Kajaran is situated in the Syunik province, 1.5 - 2 km to the south of the town of Kajaran. Kajaran is located 345 km from Yerevan, the capital of Armenia, and approximately 25 km from Kapan, the administrative center of Syunik Province. The mentioned settlements and the copper-molybdenum combine with its infrastructures are connected with each other by excellent asphalted roads.



From the orographic point of view, the area of Kajaran mine is adjacent to the eastern branches of the Zangezur mountain range. The range extends North to South from Amulsar massif to the canyon of the Araks river for about 130km. The absolute height of the mountain peaks in the area are: Kaputjugh-3904 m, Yeghasar-3829 m, Ghazanlich-3650 m, Akhmejit-3637 m.

The Kajaran mine (open pit) is located in the region of the Gandzasar mountain (the central part of the Kajaran mine is at elevation of 2320 m above sea level), which is situated on one of the mountain branches of the Meghri mountain range. The northern half of the range is relatively low, trapezoidal, weakly fragmented and the mountain passes are low. The slopes are disproportionate, the eastern slopes are of moderate inclination while the western slopes are divided with deep valleys of the rivers Nakhijevan and Yernjak and their tributaries. The southern half of the mountain range beginning from Ayrisar is high, the top part is sharp with jagged peaks.



The outskirts of Kajaran mine have typical high-mountain relief (absolute heights are 1800 - 2500 m, the difference between relative heights is 500 - 700 m).

1.1.1 Surface waters.

The district's main water artery is the Voghji river, with its permanent and temporary streams. The Voghji is a northern tributary of the Araks River and is considered to be the second largest river in Syunik Region after the Vorotan.

The Voghji is a typical mountainous river with a narrow winding riverbed, high speed of flow and numerous small tributaries, which are mountain streams. Along its length, the Voghji river has several tributaries, these are the: Sakhkar, Myakan, Baghachajur, Davazami, Pkhrut, Geghi, Giratagh, Vachagan, Artsvanik and Norashenik rivers.

The river has a mixture of sources in the form of precipitations, snow melt water and groundwater, but the snow melt water source dominates (60-70%).



Copper-molybdenum mine in Kajaran

Figure 1. Territorial map of Syunik Province

The Sakhkar River with its tributary, the Myakan, flows through the area of the open pit mine. The Sakhkar is a southern tributary of the river Voghji, and joins it in Kajaran. It originates from the southeast slopes of the Zangezur mountain range, from about 3200 - 3300 m altitude. Before reaching Kajaran, its tributary, the Myakan, joins it from north, which runs for its entire length through a deep valley.

The hydrographic and hydrological characteristics of the Sakhkar River Table1

River	Length, km	Catchment basin area, m^2	Flow module, $l/sec \cdot km^2$	Flow layer, mm
Sakhkar /After joining Myakan/	9.34	25.1	23.9	754

1.1.2 Climatic conditions

Two climatic zones are represented in the district of the Kajaran copper-molybdenum mine: temperate zone with mild winter and temperate zone with warm, long summer and cold winter. The average annual air temperature is +6 °C, the air relative humidity ranges between is 65 – 85 %, precipitation is up to 705mm, the average wind speed is 4.5 - 5.5 m/sec with the maximum up to 20 m/sec.

The winds in the warm half of the year is not as strong as it is during the cold period. The dominant wind direction in the Kajaran district is from the east in the winter and from the west and south- west in the summer. These quality of the air from these directions are considered to be of good quality for the town of Kajaran.

In the cold period of the year strong blizzards occur every year. The average density of the snow cover as a result of ten days snow fall is 170 - 180 kg/m^3. Blizzards often occur in January and February. The number of snowstorms during a single season ranges from 2 - 15.

Fogs are often observed on the western slopes of the mountains (from 40 - 90 days) and more often at night. The total duration of fog conditions from October until March is about 900 hours. The average continuous duration is 10 hours but there can be fog continuously for 5 days or more.

The district is located in the icing zone. The thickness of the ice, once in 10 years, reaches a thickness of 12.5 - 17.4 mm in the district of Kajaran.

In the warm period of the year, abundant precipitation occurs. From April until October from 300 - 500 mm of precipitation is recorded. The maximum quantites occur in April and May and the number of days with precipitation during that period varies from 20 - 30. The precipitation is mostly heavy, the intensity can range from 1.5 - 2.7 mm/sec. Such precipitation can cause mudflows to occur.

Fog is not typical during the warm period of the year.

1.1.3 Land resources.

The land forms in the mine area are representative of the Mountainous-Meadow, Meadow-Steppe and Brown Mountain Forest soil types (Figure 2).

Mountainous-Meadow soils have a well expressed fine granular structure and are poor in carbonates. They contain large amounts of humus (18 – 25 % and sometimes 25 – 30 %). The soil depth is shallow, depending on the relief conditions the depth can vary from 15 - 20 cm up to 40 – 50 cm. The mechanical composition is mainly loamy- sandy, the soil is mildly acidic, the pH varies from 4.5 - 6.4. The mountainous meadow soils are characterized by superficial and deeply buried strong stoniness.

Meadow-Steppe soils have a primarily loamy-sandy mechanical composition. The absorption capacity is high, Ca is dominant in the absorbed cations. The acidity is neutral or weakly basic. They are characterized by improved physical and water-physical properties and well expressed structure.

The Brown Mountain Forest soils of the Zangezur mountain range they are typical:

- Differentiated between the genetic horizons,
- Brown shade of the humus horizon,
- Coarse granular or nut structure of the upper soil horizons,
- Larger nut structure of the medium horizons,
- Clayiness of the medium horizons,
- Mechanical composition of loamy-sandy and loamy,
- Average humus content,
- High absorptivity:

Among the Brown Mountain Forest soils are identified the non-calcareous, typical and carbonate subtypes.

The soils of the open pit mine belong to the Brown Mountain Forest type with its following subtypes:

- Brown Mountain Forest, non-calcareous, rubble, weakly eroded soils of low capacity.
- Brown Mountain Forest, non-calcareous, weakly eroded soils of medium capacity.

The land surface is well covered with vegetation and the bare land is only around 0 – 15 %. The main vegetation in the open pit mine surroundings is represented by herbs, trees and shrubs. It should be noted that the trees and shrubs are fairly well developed. The lands are mainly mildly degraded.

The Brown Mountain Forest non-calcareous soils are widespread in the 1760 - 2141 m altitude, on the northern and north-western slopes of 0 - 50 degree slope. These soils are formed in relatively wet conditions.

The Brown Mountain Forest non-calcareous weakly eroded lands of medium capacity, are located in the 899 - 1620 m altitude, on the 0 - 15 degree slopes, the microrelief is flat or slightly hilly, the erosion level is 0 - 1. In this region because of the low slope angle of the location, good vegetation cover and climatic features, erosion processes have not occured or are very minor.

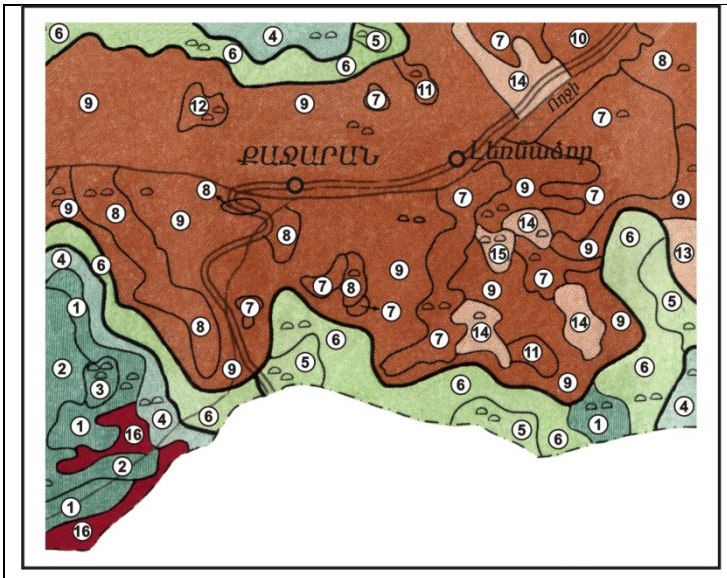
The Brown Mountain Forest carbonated soils occur mostly in arid zones, mainly on the southern and eastern slopes.

1.1.4 Vegetation

From the floristic-geographic point of view the area belongs to the Zangezur floristic region of the Caucasus subregion of the Circumboreal Region of the Boreal floristic sub-kingdom. Here the vegetation has an expressed xero-mesophilic, meso-xerophilic and mesophilic character, steppes, meadow steppes and forests as well the riparian vegetation is unique.

In some places of the district shrub and rock vegetation is present. There are also broadleaf forests of oak, beech, hornbeam, ash and lime trees (figures 3 and 4).

The woody plants are also represented by Caucasian hornbeam, Caucasian and Zangezur pear trees, maples, plums, birch trees, juniper, haw, brier, tragacanth and other shrubs and subshrubs.



(1) Mountainous-Meadow greensward deeply - unsaturated with average thickness, sandy-clayey
(2) Mountainous-Meadow greensward deeply - unsaturated with small thickness, sandy-clayey, moderately weathered
(3) Mountainous-Meadow greensward lithogenous shredded with average thickness, sandy-clayey
(4) Mountainous-Meadow weak greensward lithogenous shredded with average thickness, sandy-clayey
(5) Meadow-Steppe typical residual - unsaturated with average thickness, sandy-clayey
(6) Meadow-Steppe typical residual - unsaturated with average thickness, sandy-clayey, weak - moderately weathered
(7) Brown Mountain Forest washed clayey with average thickness
(8) Brown Mountain Forest washed rocky with small thickness, weakly weathered
(9) Brown Mountain Forest washed steppe with average thickness, clayey, weak weathered
(10) Brown Mountain Forest washed steppe with small thickness, clayey, weak weathered
(11) Brown Mountain Forest washed steppe with average thickness, sandy-clayey, weakly weathered, cultivated
(12) Brown Mountain Forest washed steppe with average thickness, sandy-clayey, moderately weathered, cultivated
(13) Brown Mountain Forest carbonic steppe with small thickness, sandy-clayey
(14) Brown Mountain Forest carbonic steppe with average thickness, clayey, cultivated
(15) Brown Mountain Forest carbonic steppe with small thickness, sandy-clayey, weak weathered, cultivated
(16) Outcrop of bedrocks and semi-developed rocky soils

Figure 2. Natural types of soils in Kajaran open pit area

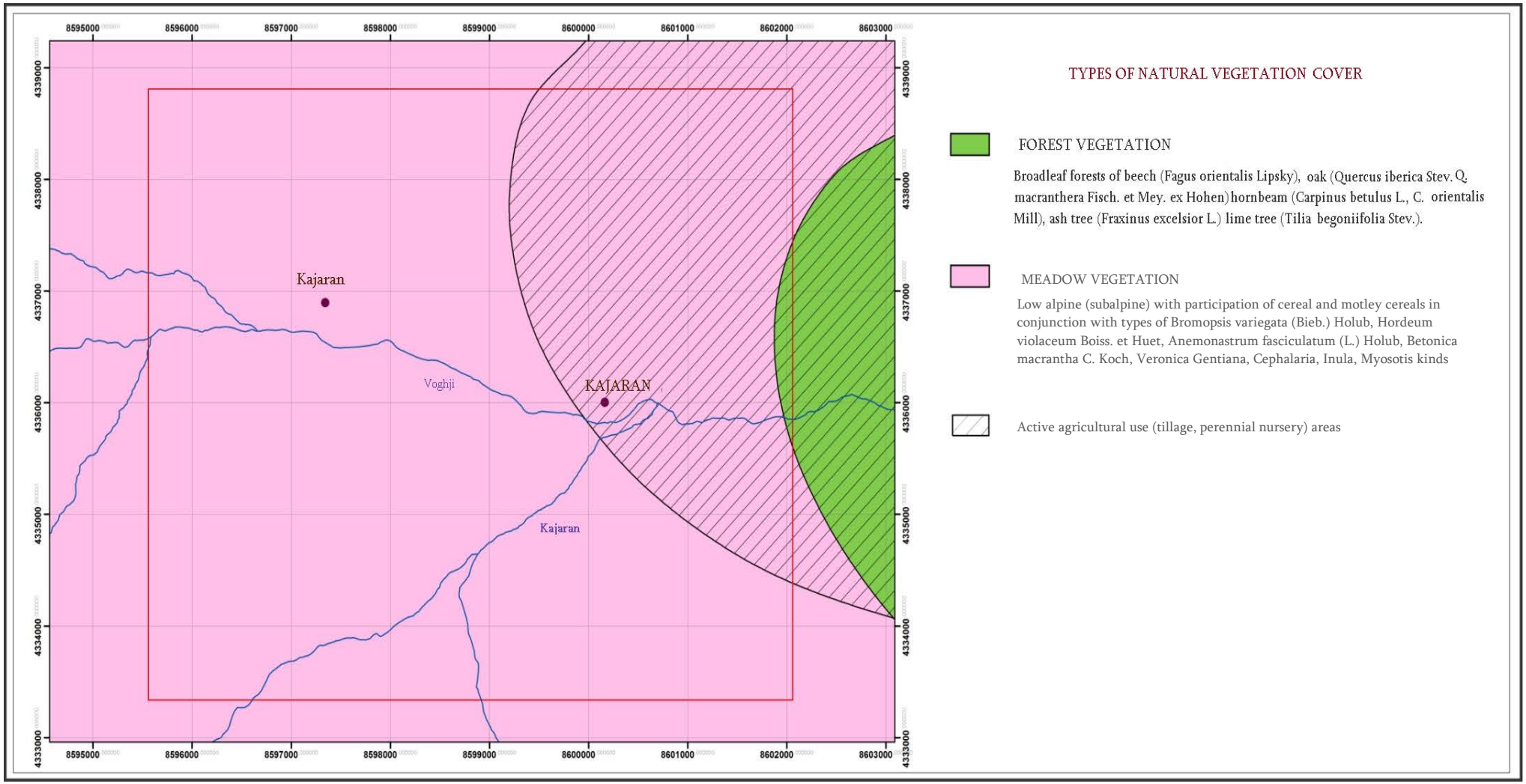


Figure 3. Types of Natural Vegetation Cover.

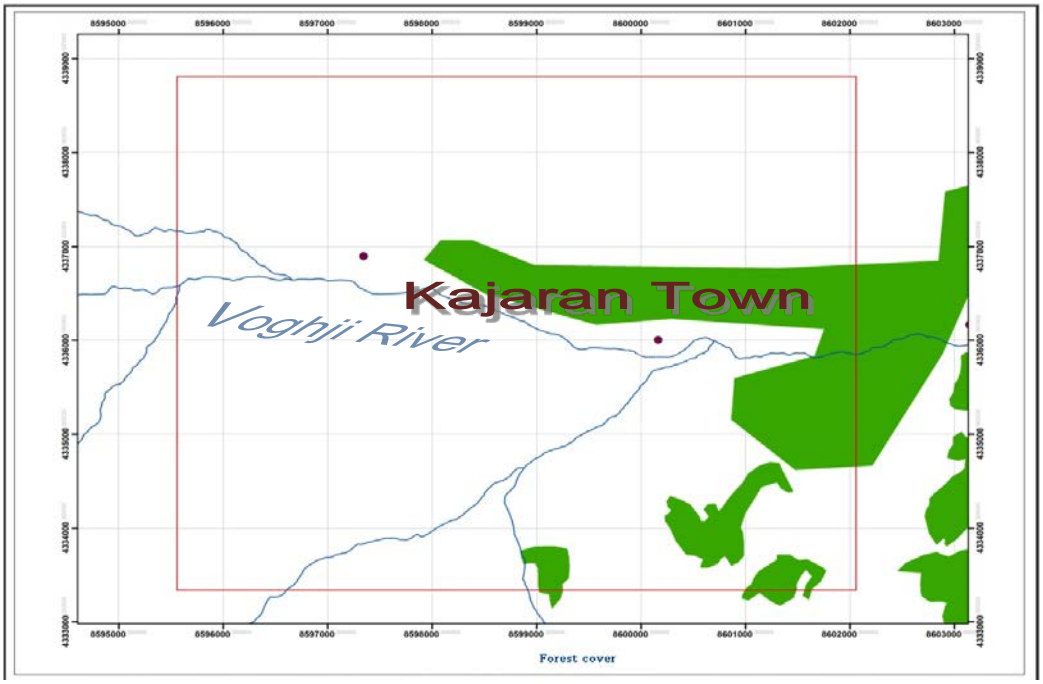


Figure 4. Forest Cover

The vegetation of the area between the existing open pit mine and the plant, is almost entirely secondary. There are crop areas of beans, cherry, apple and plum trees, plants imported for landscaping purposes, such as Black Locust-Robinia pseudoacacia, ash-leaved Maple-Acer negundo. There are a lot of weeds, such as Tatarian orache-Atriplex tatarica L, field bindweed-Convolvulus arvensis L., yellow sweet clover-Melilotus officinalis (L.) Pall., Chicory-Cichorium intybus L, stinging nettle-Urtica dioica L etc.

The area of the open pit mine south of the Voghji river is represented by steep slopes. The elevation is 1930 – 2100 m above Baltic sea level. The vegetation in the area of the open pit and its surroundings is mainly represented by tragacanth steppes. The steep slopes of the canyon is covered with tragacanth, where the dominant types are Astragalus aureus and Astragalus uranio linnaeus.



Tragacanth vegetation with dominant Astragalus uranio linnaeus.



Tragacanth vegetation with dominant Astragalus aureus

A part of the area is represented by sub-alpine meadow, where Alpine Timothy (Phleum alpinum), Sheep's Fescue (Festuca ovina) and Cocksfoot (Dactylis glomerata) are dominant. The steep slopes of 30 - 40° incline are covered with meadow vegetation. The land is rocky. The vegetation cover of land reaches up to 100 %, but in other areas, where the vegetation is degraded, it decreases to 15 – 20 %.

The mining region is immediately contiguous to the district of the "Zangezur" State Reserve which is a branch of the "Zangezur" Biospheric Complex, created in 2014.

1.1.5 Socio-economic characteristics

Population structure of Kajaran

The town of Kajaran was formed in 1958. In 1960 - 70's alongside the growth of the Zangezur operation, the population of Kajaran grew rapidly and reached 12,000.

Currently the town has a permanent population of 7,170 people, and the total population in the good transport access zone (Kajaran town, Lernadzor and Kajaran villages) is about 8,027 people. (Table 2).

Population dynamics in the nearby residential areas. Table 2

Settlements	Population, thousand people								
	1988	1999	2001 Population Census		2008	2009	2011	2012	2013
			current	permanent.					
Kajaran town	9.5	8.8	7.9	8.4	8.5	8.4	8.1	7.16	7.170
Kajaran village	-	-	-	-	0.190	0.204	0.204		0.223
Lernadzor community	0.218	0.545	0.624	0.634	0.551	0.530	0.530		0.530
Total	9.718	9.345	8.524	9.034	9.241	9.134	8.834		7.923

Migration

To evaluate the population movements the data in Table 2 is used, the analysis of which shows that there was registered migration from Kajaran, which can be explained by the collapse of the industrial complex.

According to the population census in 2001, the decrease of the Kajaran population, compared with 1999 was 4.5 %, and the decrease of the current and permanent population was 10 %. According to the data from 2011 and 2012 (7,159 people) the flow of the town population continues but in 2013 there was a small increase of population in Kajaran.

Employment

A large proportion of the capable male population, as well as a significant number of people from the surrounding areas and Kapan, are working at the Zangezur Copper Molybdenum Combine.

The data analysis of Table 3, shows that 3,322 people were employed in the economy (industry, agriculture, construction, trade, service and other sectors) in 2011 and 3,048 people in 2013.

Labor resources (People) Table 3

	Labor resources	**01.01.2011**	**01.01.2013**
1.	Labor resources, including	5,800	5,200
	Capable population in capable age	5,220	4,680
	People over the capable age and teenagers employed in economy (industry, agriculture, construction, trade, service and other sectors	580	520
1.1	Distribution of labor resources		
1.1.1	Economically active population, including	3,400	3,120
	Employed in the economy	3,322	3,048
	Officially registered unemployed	78	72
1.1.2	Economically inactive population (students in capable age, householders , sick carers, people who have no need to work)	2,400	2,080

Industry

Kajaran is the largest center of mining and processing in the Republic of Armenia, based on the ZCMC mining operation, it is considered to be a large resource of copper and molybdenum.

The Kajaran mine has minerial reserves for more than 100 years of operation, which makes up about 85 % of the reserves of copper and molybdenum in Armenia.

There is the potential to reprocess the accumulated tailings material stored in the tailings storage facilities in Zangezur combine.

The potential of the mineral resources may enable the plant's capacity to be doubled in the future thus further contributing to the development of the region.

1.1.6 Regional Geology

The oldest geological formations of the district are represented by the stratum of lower Paleozoic metamorphic rocks. This is covered by the layer group of upper Devonian age, represented by conglomerates, porphyrites, quartzites and micaceous shales. On the northern bank of the Voghji river (in the watershed of Piram-zadag ridge), these sediments are covered with volcanic rocks of lower eocene, which are represented by metamorphic shales and porphyrites containing layers of limestone, clay shale and quartzite. The quaternary period is represented with deluvial and glacial sediments.

In the district there are a wide variety of intrusive rocks, which differ in age and formation. The largest is the pluton in Meghri, which stretches from the Voghji River up to the Araks River within the borders of Armenia. The Tashtun gap plays a very important role.

The Kajaran mine is located in the northern contact of a monzonite mass of the Meghri pluton. The mineral field occupies a 20 - 25 km^2 area. In the west its borders pass through the zone of the Tashtun gap, in the north, through the zone of the contact cherts, in the east, the border of

the mineral field is determined by the extinguishment of the mineralized structures spread to the north-east. The mineral fields consist of the monzonites and the intrusion rocks of the granodiorites and porphyry granites as well as the volcanic rocks of the lower eocene. The contact between the two intrusions is tectonic (the Tashtun gap).

The distribution of copper and molybdenum in the ore is uneven. The is no fixed relationship between the copper and molybdenum grades. In some areas of the mine the copper grades are high and in other areas the molybdenum grades are high.

Currently more than 10 mineral types have been identified in the mine, the original genesis of which can be divided into the following groups:

- Primary minerals of the mineral bodies to which the mineral and venous minerals belong.
- Supergene minerals,
- Modified hydrothermal rocky minerals.

The mineralization consists of:

- Congenital gold, silver, bismuth and tellurium,
- Sulphides belong to a range of mining minerals, including: chalcopyrite, molybdenite, pyrite, bornite, sphalerite, galena and bismuthine,
- Sulfosalts - tenantit, tetraedrit, enargite and luconite,
- Oxides - magnetite, hematite, rutile, and
- Wolframites – Scheelite.

Venous minerals have a broad and uneven distribution. These are: quartz, dolomites, calcite, chalcedony, gypsum-anhydride, feldspar, barite, epidote, sericite, biotite, apatite, kaolinite and adular.

The copper-molybdenum ore body is represented by a huge stockwork (5.0 km x 1.8 km x 1.0 km) enclosed within the venous mineralization.

As a result of current physical and geological processes there is a temperatural weathering of the mountain rocks, resulting in the movement of rocks and other material down the steep slopes to the deep gorges where they give rise to scree, represented by the rocks, macadam and large rock fragments.

1.1.7 Hydrogeological conditions

The hydrological conditions of the district are connected with the strict fragmentation of the relief, the steepness of the slopes, the overwhelming development of the intrusive rocks (slot-type water cycle), the comparative insignificant capacity of the drifts and the absence of good vegetative cover. These factors result in the increase of the superficial natural streams and restricted formation of groundwater.

Atmospheric precipitation flows rapidly from the slopes, unable to be absorbed by the mountain rock. Moreover, the water absorption properties of the mountain massif are low, and the disjunctive dislocations are mostly filled with clay, which form more repellent screens, than the drifting zones. The ground water content of the rock mass is relatively low.

On the other hand, the large quantity of the atmospheric precipitation, and the humidity of the climate contribute to generation of groundwater mainly due to immediate absorption of precipitation.

The cracked ground and crack-vein waters are developed in the altered rocks of the district, the upper ground waters, soil-pore waters in the drift formations and the ground water horizon in the alluvium sediments of the river valleys.

1.1.8 Tectonics and seismicity.

From the tectonic point of view the district is situated in the southern part of the Sisian-Zangezur geo-anticline zone.

The area is included in the Syunik seismoactive zone, the character and seismicity of the geodynamics is connected with the active disjunctive dislocations. Here there is developed a system of north-west and submeridian disjunctive dislocation.

On the surface the Syunik zone is represented by three parallel disjunctions: Khustup-Giratagh, Tashtun and Geghi, which control the copper-molybdenum and polymetallic mineralization.

In the area of the mine, the Tashtun, class II seismic gap, plays an exclusive role, this runs through the submeridian direction (north-eastern) from Agarak town through Lichk village to the Tashtun Pass and Kajaran town to the Vorotan Pass. The gap is of the fault type, lowered to 55 – 65 ^{o} angle in the north-eastern limb and raised in the south-west limb.

In the district of Kajaran town the rocks making the disjunction zone are severely beaten, broken and dislocated. Of the numerous different disjunctions of the lower class, the Voghji fault may be mentioned, which intersects the placement district of Kajaran town in transversal direction.

According to the current earthquake-resistant construction standards of Armenia SNIP II-6.02-2006 [20], the area belongs to the class III zone, where the seismicity quantitative assessment is characterized by an expected maximum acceleration of, Amax = 0.4q, speed of ground movement, V = 32.0 cm/sec, MSK (64 point scale) - up to 9 or more.

1.1.9 Mine reserves.

The reserves of the Kajaran copper-molybdenum combine were reapproved by decision No 113 of MRA on 24.10.2006. The ore reserves in the mine were estimated at 2,244 million tonne.

This current license approval is to produce a total of 550.0 million tonne of ore over the next 25 years from the southern section of the open pit mine. The section of the open pit mine located on the northern side of the Voghji River is only planned to be operational after 2041.

The mine remaining reserves after this 25 years of operation will be 1,694 million tonne.

1.2 A brief description of the mining works

The current mining plan envisages the production of 22 million tonne/year of ore from the existing open-pit mine on the southern side of the Voghji River.

Disposal of waste rock will be from the expansion and extention of the existing waste dumps.

- The expanded area of the Spitakdjur 1 dump will be 66 hectares, and this dump will have an additional 5.9 million m^3 of waste rock added to it.
- The area of the Spitakdjur 2 dump will be 40 hectares, the dump will be filled with an additional 22.4 million m^3 of waste rock.
- The area of the Dzorateghi dump currently is 62 hectares, it is planned to increase this to 140 hectares, by the addition of 72.8 million m^3 of waste rocks.

Additional roads will be built consisting of:

- one road of 5.5 km total length and 26m width, and
- one road of 3.3 km total length and 13m width.

The location of the above mentioned structures is marked on the general plan (Appendix 1).

The vegetation layer and the fauna on the northern side of the Voghji River will not be disturbed during this period of time.

2. MINE CLOSURE AND IMPLEMENTATION OF MONITORING

Closure of the mine will include the following actions:

2.1 Physical Closure

Conservation which will be implemented at the end of the activities of Zangezur Copper Molybdenum Combine. The planned measures are the following:

- The remaining explosives, chemicals and reagents are to be sold or returned to the suppliers.
- The remnants of fuel, lubricants and oils should be sold.
- Hazardous wastes that have accumulated in the enterprise area along with the polluted or contaminated soil layer should be transported to the tailings dam and be buried.
- Buildings and infrastructure. There are two end use options for the site buildings and infrastructure

Option 1: Equipment, buildings and structures are to be dismantled, the foundations demolished and the natural drainage restored. The roadways will be ripped up, the areas will be cleaned and cultivated and the previous landscape will be restored

Option 2: After cleaning and neutralizing the areas, the buildings and infrastructure may be sold or leased on condition that the new activity does not contradict the sanitary and environmental norms.

2.2 Environmental Restoration.

2.2.1 Revegetation

After the conservation of the combine the following project of re-cultivation measures will be implemented:

- Recultivation of the surface and slopes of the waste dumps.
- Strengthen and recultivate the walls of the open-pit.
- Restoration of the drainage system in the area of the dumps.
- Removal of excessive waters from the tailings dam, hydro-sowing of the surface of the dam and restoration of the drainage system.
- Breaking up and covering the roadways connecting the open pit, dumps and plant with a soil and vegetation layer.
- Restoration of all disturbed lands, filling up small borrow pits.

The method of hydro-sowing has been selected for the recultivation of the dumps, as the stockpiled layer of fertile soil will be insufficient for recultivation of the entire surface of the dumps.

The recultivation works will be performed in two stages: technical and biological.

The technical recultivation plans are:

- Smoothing the surface of the dump with bulldozers and removal of large rocks, and
- Regulation of access roads.

Biological recultivation is performed after the technical recultivation. Hydro-sowing is the recommended biological method of recultivation. This method is applicable for all kinds of surfaces where it is necessary to create a vegetation layer and prevent erosion.

For the implementation of the hydro-sowing it is proposed to use a hydro-sower with 6 m^3 capacity and 0.75 m^3/minute productivity, which will be mounted on a truck frame.

The distance of sowing is approximately 50 m, the volume of the working solution is 5 m^3, which allows to sow 1,000m^2 of land. It is planned to using 2 hydro-sowing machines to carry out the recultivation.

The procedure of preparation of the solution and the required components is:

- bentonite powder is mixed with water for 12-15 hours;
- then a solution of 3.5% Carboxymethyl cellulose (CMC) and microbiological stimulators of humus is added and mixed until achieving a non-dispersion solution.
- the mineral fertilizer and seeds are added to the solution.

The hydro-sowing will require the selection of a vareity of different indigenous species of fast growing grasses and plants that will aid in the stabilization of the soil.

Recultivation works will have a seasonal character and will be implemented 150 days a year.

2.2.2 Open Pit area

The Sakhkar River will have been diversed during the course of the mining activities. A 6 MW hydro power station is planned to be constructed as a part of this diversion project. It is likely that in the event of closure of the mine that this facility will continue to be used as a source of power generation meaning that the Sakhar river will never be redirected to its original course running through the open pit area.

The open pit area, following the completion of the recultivation works, has the potential to be developed into an artificial lake and recreational area if there is an accumulation of water at the bottom of the pit. Natural inflow of water from precipitation, snow melt and ground water inflows will raise the water level in the open pit to the level of the existing transport adit from where any water overflow will be allowed to flow to the Voghji River through a dedicated purpose constructed drainage tunnel.

The recultivation works of the roadways that connect the open pit, dumps and combine, will include road chiseling and coverage with a soil and vegetation layer in order to re-establish the original appearance of the area.

The brief description of conservation and re-cultivation works is given in Table 4.

Following this are the estimates of the recultivation costs of the road ways and dumps (Tables 5 & 6).

2.3 Closure Costs.

According to the Subsoil Code of the Republic of Armenia the subsoil usage license (permit) holder shall make payments to the Nature Protection Capital for the re-cultivation of Brownfield sites and payments for the monitoring of the areas which have been under ore extraction, waste rock areas and for the monitoring to ensure the safety of the surrounding communities' residents.

The amounts payable are calculated based on the corresponding governmental decrees (N 1079-Ն dated August 23, 2012, and N 22-Ն dated January 10, 2013), and are included in the closure plan presented for EIA expertise with the EIA Report for Mining Permit amendment (including mine design amendment, change of permitted volume of ore extraction, expending of subsoil area, expending validity term of the Mining permit).

The design documents were submitted for Technical Safety Expertise and Environmental Impact Assessment Expertise to the Republic of Armenia Ministry of Emergency Situations and Republic of Armenia Ministry of Nature Protection. These two government departments, having reviewed the submitted documents pronounced a positive expertise conclusion.

Characteristics of conservation and recultivation works

Table 4

Object	Initial works	Current works	Final outline	Completing works	Other measures
1	2	3	4	5	6
Open pit mine	Portable equipment removal, drainage repair, installation of warning signs	Strengthening of slopes, fencing	In case of water accumulation in the bottom of the pit it is possible a landscape design with a lake	Furrow (berm)recovery on the accumulated waters in the pit bottom	If necessary, plan a cleaning of waters in open pit.
Dump	Slope formation to <20°. Installation of drainage system in the bottom of slopes, surface drainage	To plant soil strengthening plants specific for the site	Strengthening of slopes	Irrigation of slopes with reinforcing materials. Select other vegetation cover depending on the final landscape of the site.	In case of high concentrations of metals provide additional measures before sowing plants
Roads	Breaking up of roadways	Cultivation of the land	Drainage recovery and sowing	Recover the initial appearance of the site	There may be additional measures in cases of high degree of land degradation.
Storages and fuel storages	Remaining items, sell or remove	To neutralize the soils contaminated with oils and chemicals and to transport to the tailing dam	Recover the initial appearance of the site	Sow and plant vegetation specific for the site	There may be additional measures in cases of high degree of land pollution
Auxiliary workshops	Remove and sell the equipment and materials	Destroy the buildings and equalize to the land. Cultivate the area and prepare for planting.	Recover the initial appearance of the site	Plant vegetation specific for the site	There may be additional measures in cases of high degree of land pollution
Administrative buildings and other constructions	Removal of equipment and materials	Destroy the buildings and equalize to the land. Cultivate the area and prepare for planting. In case of selling the buildings, clean the entire area.	In case of destroying the buildings, recover the initial appearance of the site , if selling then maintain the buildings, treatment stations and other infrastructures	Plant vegetation specific for the site. In case of sale the area of administrative buildings and constructions are not subjected to recultivation.	

Construction name «***Zangezur Copper and Molybdenum Combine» CJSC*** Table 5

Object number

Local estimate number

Recultivation of roadways

Estimate name

Object name - **Conservation and recultivation works**

Base project

Estimated cost **132.02** million AMD

Average salary 2**18,194** *AMD*

Transition coefficients: salary – ***2,015.7*** *Equipment exploitation –* ***2,570.0***

NN	ciphers Norm number	names of works, costs and measurement unit	Quantity	Unit cost		Unit cost (Thousand Amd)					Total price (Thousand Amd)			
				Total	Mach. Expl	Total	Mach. Expl	Materials				including		
				main works	including works	main works	including works	Name	*Consumption, measurement unit*	*Price* unit	*Price* total	**Total**	*main works*	*Mach. Expl*	*Materials*
1	E1-288 33-9	Chiseling of roads and surfaces 100m3	1007.5	0.53	0.53	1.36	1.36					1372.31		1372.31	
					0.10		0.28								
2	E1-1579 22-1	Processing of I class soil Loading on trucks with excavators with scoop capacity 1,0 m3 1000m3	30.225	97.30	94.14	247.91	241.94					7492.93	180.33	7312.60	
				2.96	30.10	5.97	77.38								
3	C310-2	transporting till 2 km	54405.0	0.16	0.16	0.41	0.41					22371.25		22371.25	

4	E1-1655 32-3	Smoothing of surfaces by bulldozers of 132 kW (180 dz.uzh) capacity. 1000m2	201.5	1.17	1.17 0.24	3.01	3.01 0.60					605.89		605.89	
5	E1-1205 122-3	Sowing of perennial grasses by a mechanization method. 100m2	2015	10.20	9.60 3.58	27.10	24.67 9.20	price of total materials due to units grass seeds fertilizer	 2.7 kg 0.0034 t	 0.90 0.18	2.43 2.43 0.00	54611.57		49713.89	4897.68
		Total										**86453.95**	**180.33**	**81375.94**	**4897.68**
		Materials													4897.68
		other materials	5.00%												244.88
		Storage costs	2.00%												102.85
		Transport costs	12.90%												676.66
		Total										**87478.34**	**180.33**	**81375.94**	**5922.07**
		Overhead costs	13.30%									11634.62	23.98	10823.00	787.64
		Total										99112.96	204.31	92198.94	6709.71
		Profit	11.00%									10902.43	22.47	10141.88	738.07
		Total										110015.39	226.78	102340.82	7447.78
		VAT	20.00%									22003.08	45.36	20468.16	1489.56
		Total estimate										**132018.46**	**272.14**	**122808.98**	**8937.34**

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Construction name «***Zangezur Copper and Molybdenum Combine» CJSC*** Table 6

Object number

Local estimate number

Recultivation of dumps

Estimate name

Object name -**Conservation and recultivation works**

Base project

Estimated cost **2,811.8** million AMD

Average salary 2**18,194** *AMD*

Transition coefficients : Salary – ***2,015.7*** *Machine exploitation –* ***2,570.0***

NN	ciphers Norm number	names of works, costs and measurement unit	Quantity	Unit cost		Unit cost (Thousand Amd)						Total price (Thousand Amd)			
				Total	Mach. Expl	Total	Mach. Expl	Materials				Total	including		
				main works	including works	main works	including works	Name	Consumption, measurement unit	Price unit	Price total		main works	Mach. Expl	Materials
1	E1-1579 22-1	Processing of I class soil Loading on trucks with excavators with scoop capacity 1,0 m3 1000m3	329.4	97.30 2.96	94.14 30.10	247.91 5.97	241.94 77.38					81659.97	1965.31	79694.66	
2	C310-2	transporting till 2 km t	592920	0.16	0.16	0.41	0.41					243807.76		243807.76	
3	E1-1655 32-3	Smoothing of surfaces by bulldozers of 132 kW (180 dz.uzh) capacity. 1000m2	2196	1.17	1.17 0.24	3.01	3.01 0.62					6603.13		6603.13	

NN	ciphers Norm number	names of works, costs and measurement unit	Quantity	Unit cost		Unit cost (Thousand Amd)						Total price (Thousand Amd)			
				Total	Mach. Exp	Total	Mach. Exp	Materials				Total	including		
				main works	including works	main works	including works	Name	Consumption, measurement unit	Price unit	Price total		main works	Mach. Expl	Materials
4	E1-1205 122-3	Sowing of perennial grasses by a mechanization method. 100m2	21960.0	10.20	9.60	27.10	24.67	**price of total materials due to units**			**2.43**	595171.25		541795.01	53376.24
					3.58		9.20	grass seeds	2.7 kg	0.90	2.43				
								fertilizer	0.0034 t	0.18	0.00				
5	E1-1655 32-3	Smoothing of surfaces by bulldozers of 132 kW (180 dz.uzh) capacity. 1000m2	5124.0	1.17	1.17	3.01	3.01					15407.30		15407.30	
					0.24		0.68								
6	E1-1209 122-7	Hydro sowing of surfaces of dump platforms and slopes 100n2	51240.0	25.90	4.67	16.87	12.00	**price of total materials due to units**			**4.18**	864477.05	35115.85	614974.96	214386.24
				0.34	1.70	0.69	4.79	Bentonite clay powder	27.5 kg	0.03	0.88				
								КМЦ (sodium)	1.5 kg	0.31	0.47				
								sodium humat	3 kg	0.49	1.47				
								Azotovit	0.005 kg	3.62	0.02				
								seeds	0.8 kg	0.90	0.72				
								mineral fertilizer	3.5 kg	0.18	0.62				
								water	0.4625 m3	0.02	0.01				
Total												**2122646.60**	**36863.86**	**1818020.26**	**267762.48**

NN	ciphers Norm number	names of works, costs and measurement unit	Quantity	Unit cost		Unit cost (Thousand Amd)					Total price (Thousand Amd)			
				Total	Mach. Expl	Total	Mach. Expl	Materials			Total	including		
				main works	including works	main works	including works	Name	*Consumption, measurement unit*	*Price* unit	*Price* total		*main works*	*Mach. Expl*	*Materials*
		Materials													267762.48
		other materials	5.00%												13388.12
		Storage costs	2.00%												5623.01
		Transport costs	12.90%												36993.80
		Total										**1863131.38**	**37081.16**	**1502282.81**	**323767.41**
		Overhead costs	13.30%									247796.47	4931.79	199803.61	43061.07
		Total										2110927.85	42012.95	1702086.42	366828.48
		Profit	11.00%									232202.06	4621.42	187229.51	40351.13
		Total										2343129.92	46634.38	1889315.93	407179.61
		VAT	20.00%									468625.98	9326.88	377863.19	81435.92
		Total estimate										**2811755.90**	**55961.26**	**2267179.12**	**488615.53**

Summary table of recultivation costs

Table 7

NN	Estimate number	Name of heads and objects, works and costs	Total estimate cost, million AMD
1	Local estimate №1	Recultivation of the dumps	2,811.76
2	Local estimate №2	Recultivation of the roadways	132.02
		Total	**2,943.78**

2.4 Mitigation measures of the impact on the affected community workforce because of the mine closure.

The mitigation measures for the economic impact on the affected workforce will be established in the final closure project of the mine that will be re-presented 2 years prior to the end of the mine operation.

The monitoring programme to be established after the closure of the operation (as shown in the table 8) will allow the creation of an information database for the prevention of impacts on the environment of the waste dumps and the area of extracted minerals, as well as to provide for the safety and health of the surrounding communities.

The installation of the observation stations and frequency of monitoring is determined basis on the complexity of the geological, hydrogeological and engineering-geological conditions. The proposed observation station locations are reflected in Appendix 2.

The monitoring will be carried out in the two main zones of the mining works.

1st zone - The immediate area of the mining and processing works.

2nd zone - The boundaries of the significant influential zone are determined on the basis of the possible areas of influence of the exogenous geological processes, the conditions of the occurrence and development of the underground watercourses and the predictable disturbance of the hydrodynamic regime.

The objectives and the frequency of the monitoring programme are presented in Table 9.

Monitoring plan Table 8

Place	Monitoring parameters	Tools and methods	Indicators for environmental measures	Frequency and time
Roadways of the open pit, the nearest settlement	Atmospheric air	Aspiration devices and operating procedures	Exceeding norms	Once every three months
Area of open-pit mine and dump	Quality of waters	Operating procedures and analytical equipment	Water pollution	Monthly
Area of extraction works and dumps	Vegetation cover and fauna	Visual inspection, community inquiry	Recovery of the disturbed vegetation	Once a year
Area of open-pit mine, dump and surrounding landscape	Deformation of slopes, landslide	Visual inspection	Deformations	Once a year
Open pools	Quality of waters	Operating procedures and analytical equipment	Water pollution	Monthly
Area of extraction works and dumps	Land resources	Visual inspection , sampling and analysis	Soil erosion,content of heavy metals	Once a year

The monitoring will be carried out for 5 years following the closure of the operation or until the stabilization of the geo-dynamic and hydro-dynamic indicators and those characterizing the possible pollution of the environment.

Sampling locations are characterized by the following coordinates:

Observation Station location Co-ordinates

Table 9

1, Monitoring of the content of dust, harmful substances in atmospheric air (sulfur dioxide, nitrogen dioxide, carbon dioxide) on roads, nearby settlements and in areas of recultivated waste dumps.		
Type of monitoring observation number	Coordinates	
	X	Y
1	2	3
Sample 1	8597093	4336870
Sample 2	8598640	4335990
Sample 3	8599550	4336150
Sample 4	8600035	4336075
Sample 5	8600510	4335765
Sample 6	8600870	4335940
Sample 7	8601940	4336015
Sample 8	8600215	4335065
Sample 9	8600255	4334810
Sample 10	8600215	4334623

2, Study of water pollution in open pools, dumps (base on the Ecological standards of water quality of rivers in Voghji river water basin approved by 23 annex of the RA Government decision No 75-N on 27.01.2011)		
Type of monitoring observation number	Coordinates	
	X	Y
1	2	3
Sample 1	8696265	4336685
Sample 2	8597265	4336410
Sample 3	8598195	4336420
Sample 4	8598380	4335460
Sample 5	8599965	4335645
Sample 6	8601075	4335265
Sample 7	8601600	4335875

3, Monitoring of heavy metal contents of soils on the recultivated dumps.		
Type of monitoring observation number	Coordinates	
	X	Y
1	2	3
Sample 1 (North-west dump)	8596950	4335700
Sample 2 (North-west dump)	8597215	4336285
Sample 3 (Spitakdjur 1 waste dump)	8599275	4334910
Sample 4 (Spitakdjur 2 waste dump)	8599760	4334465
Sample 5 (Spitakdjur 1 waste dump)	8599720	4335275
Sample 6 (Dzorateghi waste dump)	8601385	4333970
Sample 7 (Dzorateghi waste dump)	8601315	4334415
Sample 8 (Dzorateghi waste dump)	8601015	4334575

4, Visual inspection of flora and fauna.
Area of the "Zangezur" state reserve adjacent to the mine, forest territories near to the Kajaran town and Lernadzor village.

5, Visual inspection of slope deformations, landslides.
Open pit and dump area. Landslide-prone areas situated 1.7 km and 2.3 km to south-west from the southern open pit. Landslide-prone areas situated up to 1.5 km, 1.7 km and 1.9 km north-east from the dump Dzorategh.

Overall the implementation of monitoring programme after the closure of the mine will cost over 77.85 million AMD. The funds for the implementation of the monitoring programme will be allocated by an initial payment followed by annual payments. The initial payment of 15 % of the total sum (11.678 million AMD) for the implementation of the monitoring programme will be made within one month after the signing of the contract of mining. The annual payments will be made during the period of mining activities except for the last year.

3. TEMPORARY CESSATION OF OPERATIONS

The Labour Code of the Republic of Armenia regulates collective and individual labour relations, defines the bases of their occurrence and termination, rights and responsibilities of the parties of those relations, as well as conditions of work safety.

In the event of temporary closure of ZCMC's operations the labour relations with the current employees of the company can be evolved by two possible scenarios:

1. It can be declared downtime through no fault of the employee, and the employees, who were not offered a new job corresponding to their specialization and qualification, shall be paid for each hour of downtime in amount of 2/3 of their average hourly salary, but not less than the minimal hourly rate defined by the legislation.

The estimated total payment per month in this case will comprise circa AMD 980 million. The estimate is based on data of number of employees and their average salaries as of 1 December 2016.

2. The labour contract with the employees can be terminated due to the changes of business, economic, technological, work organizing conditions and due to industrial needs.

In this case the employee mast be given a written termination notice two months prior the termination date. Within this two-month period the employees who have received termination notice shall be paid their salary in full volume.

The estimated cost of such termination notice for all the employees notice will comprise circa AMD 2.7 billion. The estimate is based on data of number of employees and their average salaries as of 1 December 2016.

Additionally, the termination of labour contract by the above mentioned base will cause obligation for the employer to pay termination wage (severance pay) to the dismissed employees. Particularly, this payment shall be made:

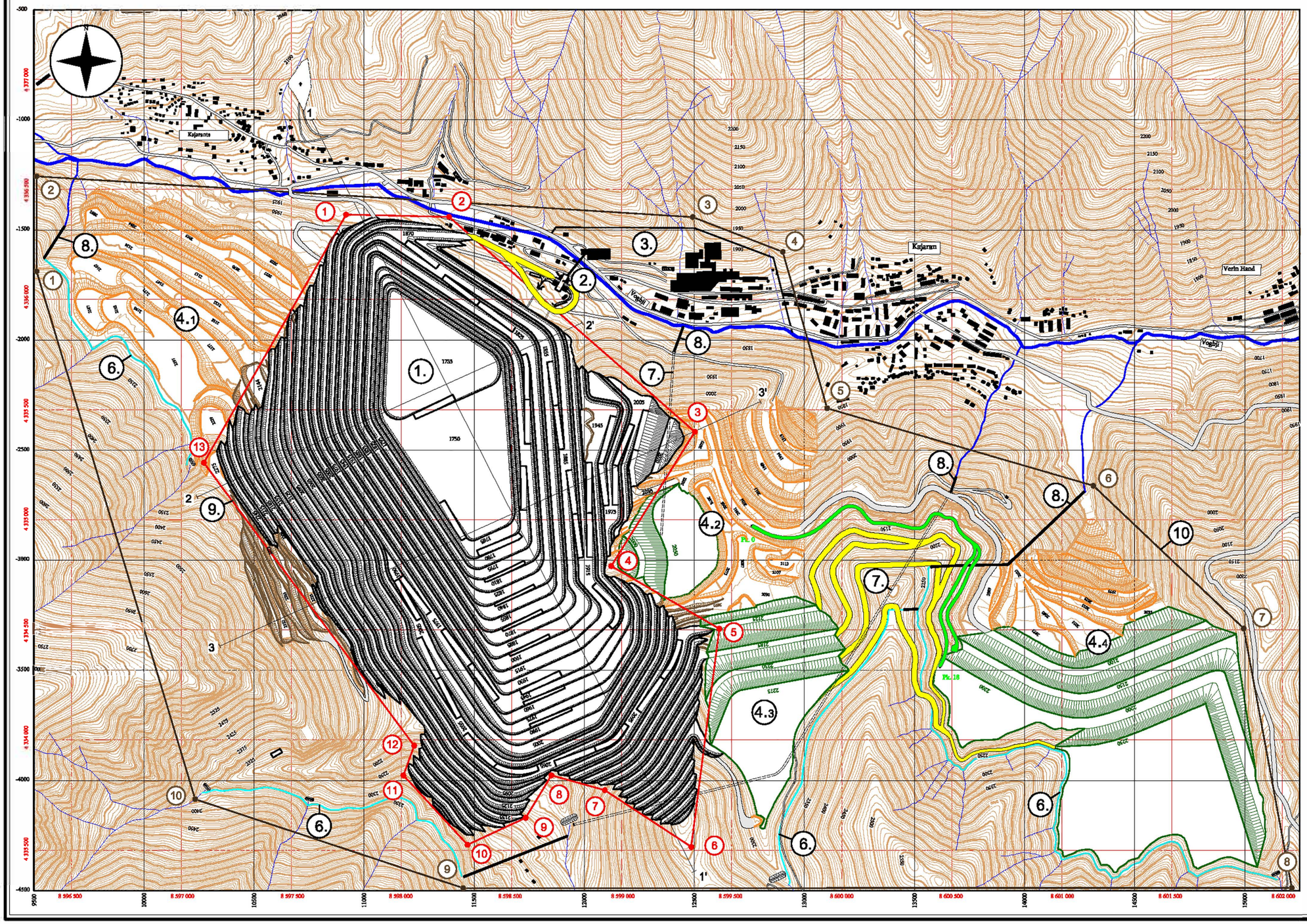
a. at the amount of 10 working days' average daily salary, if the employee has worked for the company for the period of up to one year;
b. at the amount of 25 working days' average daily salary, if the employee has worked for the company for the period of 1 to 5 years;
c. at the amount of 30 working days' average daily salary, if the employee has worked for the company for the period of 5 to 10 years;
d. at the amount of 35 working days' average daily salary, if the employee has worked for the company for the period of 10 to 15 years;
e. at the amount of 44 working days' average daily salary, if the employee has worked for the company for the period of 15 years or more.

The severance payment for all the employees will comprise circa AMD 2.3 billion. The estimate is based on data of number of employees and their average salaries as of 1 December 2016.

At the same time it is essential to underline that in case of labour contract termination (regardless of the basis) the employer has to make final payment to the employee, which shall include also compensation for unutilized vacations.

APPENDICIES

APPENDIX 1



END-POINT COORDINATES OF SUBSOIL GRANTING ARRA

End-points	Coordinates Local			Coordinates in ARMWGS-84 system		
	X	Y	Z	X	Y	Z
1	2	3	4	5	6	7
1	- 1430.1	10918.3	1917.0	4836285.6	8597748.6	1885.0
2	- 1440.8	11886.0	1965.0	4836275.0	8598216.4	1933.0
3	- 2416.5	12502.6	2070.0	4835399.2	8599337.9	2038.0
4	- 3026.0	12122.4	1980.0	4834789.8	8598982.8	1928.0
5	- 3510.0	12613.9	2125.0	4834305.8	8599444.2	2093.0
6	- 4300.9	12486.0	2428.0	4833514.8	8599316.4	2506.0
7	- 4043.4	12058.4	2200.0	4833772.8	8598928.8	2168.0
8	- 3975.9	11850.7	2080.0	4833839.9	8598681.0	2048.0
9	- 4169.3	11734.1	2155.0	4833646.5	8598564.5	2123.0
10	- 4291.2	11469.8	2275.0	4833524.6	8598300.1	2243.0
11	- 3976.3	11178.5	2275.0	4833839.4	8598008.9	2243.0
12	- 3841.6	11227.5	2185.0	4833974.2	8598057.8	2153.0
13	- 2556.7	10272.4	2257.5	4835259.1	8597102.7	2225.5

END-POINT COORDINATES OF MINE CONCESSION AREA

End-points	Coordinates Local			Coordinates in ARMWGS-84 system		
	X	Y	Z	X	Y	Z
1	2	3	4	5	6	7
1	- 1687.6	9512.9	2181.0	4835128.2	8596342.6	2149.0
2	- 1256.3	9512.6	2034.0	4834840.5	8596342.9	2002.0
3	- 1441.2	12492.7	1932.5	4836374.5	8599323.0	1900.5
4	- 1599.5	12502.2	1885.0	4836216.2	8599732.5	1853.0
5	- 2309.9	13103.4	1836.0	4835506.1	8599933.7	1804.0
6	- 2660.9	14313.0	1820.0	4835154.8	8601143.3	1788.0
7	- 3309.6	14995.3	2170.0	4834506.2	8601825.7	2138.0
8	- 4487.4	15213.8	2293.0	4833328.3	8602044.1	2261.0
9	- 4487.6	11450.6	2326.0	4833328.2	8598281.0	2294.0
10	- 4084.4	10297.6	2871.5	4833731.4	8597063.0	2839.5

LIST OF FACILITIES OF OPEN PIT PROPERTIES

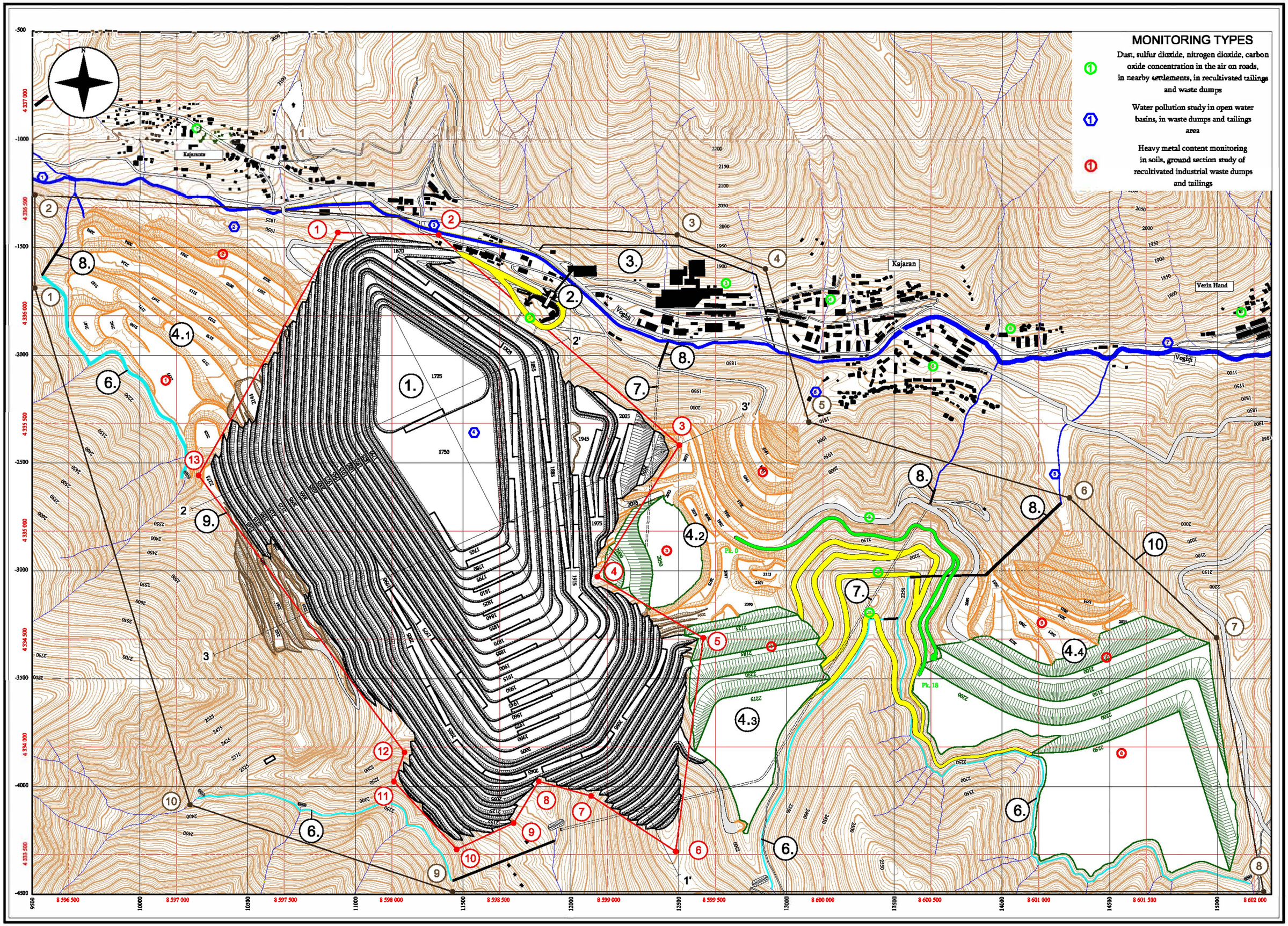
No	Name
1.	Open Pit: (brown - existing, black - project)
2.	Primary Crushing Division
3.	Processing Plant
4.	Waste Dump (orange: existing, green: project).
4.1	North West
4.2	Spitak Djur - 1
4.3	Spitak Djur - 2
4.4	Dzoraqegh
5.	Automobile Road (brown - existing, green - project, yellow - subject to design)
6.	Water Drainage Channel
7.	Water Drainage Tunnel
8.	Spillway Channel of Water Drainage System
9.	Outline of Subsoil Granting Area
10.	Outline of Mine Concession Area

OBJECTS TO BE CONSTRUCTED

5.	Automobile Road with 13 m. width	3.3 km
	Automobile Road with 26 m. width	5.5 km
6.	Water Drainage Channel	6.2 km

Client	"Zangezur Copper Molybdenum Combine" CJSC	
Performer	"Mining Technology and Engineering" Ltd.	
Job Title	Working Project of Open Pit Expansion of "Zangezur Copper Molybdenum Combine" Closed Joint Stock Company	
Graphical Appendix 2	General Plan of Open Pit Facility	Scale 1:10 000
Director of "MTE" Ltd.	Kh. Saponjyan	
Chief Engineer of the Project	S. Mekhakyan	
Responsible for the Execution	G. Durunts	
Computer Design	H. Mnacakanyan	

APPENDIX 2


MONITORING TYPES
Dust, sulfur dioxide, nitrogen dioxide, carbon oxide concentration in the air on roads, in nearby settlements, in recultivated tailings and waste dumps
Water pollution study in open water basins, in waste dumps and tailings area
Heavy metal content monitoring in soils, ground section study of recultivated industrial waste dumps and tailings
Kajaran
Verin Hand
Voghji
1.
2.
3.
4.1
4.2
4.3
4.4
Pk. 0
Pk. 18
1'
2'
3'