

**TERMS OF REFERENCE CONCERNING THE EIA FOR
THE INVESTMENT PROPOSAL FOR ‘MINING AND
PROCESSING OF POLYMETAL ORES FROM THE
ROZINO DEPOSIT, TINTYAVA PLA, SITUATED IN THE
LANDS OF THE ROZINO VILLAGE AND GUGUTKA
VILLAGE, IVAYLOVGRAD MUNICIPALITY, HASKOVO
DISTRICT.’**



Investor: Tintyava Exploration AD

December, 2025

Table of contents

TOC

INTRODUCTION

This Terms of Reference for the Scope and Content for EIA (for consultation) was drawn up in accordance with Article 10, paragraph 1 and paragraph 3 of the *Regulation on the Terms and Procedures for Conducting Environmental Impact Assessments* (The EIA Regulation, SG, issue 25/2003, with most recent amendments) on the basis of Article 95, paragraph 2 of the Environment Protection Act (EPA, SG 91/2002, with most recent amendments) and in connection with a letter issued by the Haskovo RIEW, Ref. No. ПД-279 -(18)/31.03.2021. (Attached with the EIA Report).

This Terms of Reference concerns the investment proposal for ‘Mining and Processing of Polymetal Ores from the Rozino Deposit, Tintyava PLA, situated in the lands of the Rozino village and Gugutka village, Ivaylovgrad Municipality, Haskovo district.’.

By way of Permit No. 467/28.02.2017 issued by the Minister of Energy (Attached with the EIA Report) Gorubso – Kurdzhali AD from the town of Kardjali is allowed to carry out prospecting and exploration for metalliferous ores and minerals in the Tintyava PLA situated in the lands of the Ivaylovgrad Municipality, Haskovo District, and the Krumovgrad Municipality, Kardjali District.

The rights and obligations set forth in the Agreement dated 02.05.2017 for prospecting and exploration for metalliferous ores and minerals - subsurface resources in the meaning of Article 2, paragraph 1, item 1 of the Underground Resources Act in the Tintyava PLA, concluded between Gorubso – Kardjali AD and the Minister of Energy pursuant to Permit No. 467/28.02.2017 of the ME were transferred to Tintyava Exploration AD by means of an Additional Agreement No. 1 to the Contract, pursuant to Article 25, paragraph 1 of the URA and Article 61, paragraph 1, item 12 of the Contract. This Contract became effective on July 17, 2017 and was followed by a Decision No. 09-OC/2017 of the Minister of Environment and Waters concerning the assessment of the negative environmental impact assessment. On 31.08.2020, an Additional Agreement No. 2 extending the period of the Contract by 2 years was signed between Tintyava Exploration AD and the Minister of Energy.

After a 2-year overall report for the performed activities and a reasoned proposal for the first extension of the Contract were submitted, and pursuant to Article 31, paragraph 3 of the 3П, in connection with Article 2, paragraph 2 and paragraph 7 of the Contract dated 02.05.2017 г., on 23.01.2023, Tintyava Exploration AD and the Minister of Energy signed Additional Agreement No 3 (Attached with the EIA Report) extending the Contract for 2 more years.

At the time of writing of this TOR there is no executed agreement granting a concession for the deposit. As required by Article 37, paragraph 1 of the Underground Resources Act (URA), the concession area includes the area of the deposit or its separate parts, and all areas necessary for the performance of the concession-related non-mining activities. The following should be taken into consideration when defining the concession area:

- the bedding of the mineral resource;
- the technical conditions for its utilization to the full;
- the necessary additional areas for placing of stockpiles, storage facilities and technical infrastructure;

- the requirements of the URA for optimal extraction of the natural resource, the overall and annual mining designs will provide for additional exploration to ensure the most complete possible extraction of natural reserves and resources during the mining of the deposit, by applying suitable and environmentally sound technologies.

The distances between the mining areas and urban boundaries and areas have been taken into consideration with a view to securing buffer zones around the technical infrastructure and to protect the environment and human health.

Therefore, the comments here will extend to the boundaries and size of the design concession area required for the mining of the deposit and processing of the ore as this area will be proposed for alignment with the concerned government authorities during the concession granting procedure.

The Contracting Company intends to carry out mining and processing of polymetal (gold-silver) ores from the Rozino Deposit, Tintyava License, with a future concession area of **275 ha, of which 118 ha will be disturbed**. The main activities considered herein are:

- open pit mining of polymetal ores;
- flotation of the ore to concentrate;
- construction and operation of the necessary attendant infrastructure – roads, water supply, power supply, material stores, mine waste facility, etc.;
- staged rehabilitation of the disturbed areas.

The concession period is set as 35 years.

The purpose of the IP is open pit mining and processing of polymetal gold and silver ore from the Rozino Deposit in the Tintyava PLA. The open pit mining process will involve liberation of the natural resource from overburden, mining by drilling and blasting, and crushing of the mined material. Ore processing will comprise flotation to produce concentrate as the final product from the plant. No ingot metal will be produced. The mining waste will be disposed of in mining waste storage facilities.

The IP does not consider maintenance and construction of an explosives storage facility. Blasting will be based on a written agreement with a specialized company possessing all the necessary permits and agreements and carrying out the storage and delivery of the explosives and blasting of the ore mass.

The investor had informed the Haskovo RIEW, the concerned municipalities, mayor's offices and communities at the earliest stage. The investment proposal (IP) lies within the scope of item 19 - Open mining of raw materials in quarries and pits in the case of surface area exceeding 25 ha, or peat extraction in the case of surface area exceeding 150 ha.' of Annex 1 to the Environmental Protection Act (EPA) and is subject to mandatory Environmental Impact Assessment (EIA).

Open mining and flotation processing of natural raw materials is outside the scope of Annex 4 of the Environment Protection Act and, therefore, the IP does not require an integrated permit in the meaning of Chapter Seven, Section Two of the Environment Protection Act. Thus, there is no need for an assessment of the applicability of BATs for the proposed technologies.

No storage of hazardous chemical substances and mixes in quantities exceeding those laid down in Annex 3 of the Environment Protection Act is envisaged in the IP and, therefore, it is not subject to Article 103 of the EIA. Explosives will be supplied by a licensed company whose storage facilities are equipped and operated in accordance with the legal requirements for use of hazardous substances.

The future license area does not intrude on protected areas in the meaning of the Protected Areas Act, but affects two protected areas (PA) of the country’s Natural 2000 ecological network:

- ‘*Rhodopi - East*’, code BG0001032, for protection of natural habitats and wild flora and fauna;

- ‘*Byala reka*’, code BG0002019, for protection of wild birds.

In line with the instructions given, the Investor has taken steps to prepare the necessary EIA documents and a report on the assessment of IP compliance with the protected area conservation goals and object of protection (CA report).

This Terms of Reference is part of the EIA documents submitted to the MOEW with a second request for a decision regarding the environmental impact assessment following a first negative assessment of the EIA Report quality provided with letter Ref. No. OBOC-68-65/20.10.2025 from the Minister of Environment and Waters.

This ToR is consistent with the conducted consultations.

Project Investor Details:

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1. Elements of the Investment Project Proposal

1.1. Description of the physical characteristics of the project and land requirements (occupied land, farmland, woodland, etc.) during both the construction and the operation stages.

1.1.1 Physical features of the region

The Rozino deposit in the Tintyava PLA is situated in the lands of the villages of Rozino, Gugutka, Ivaylovgrad Municipality, Haskovo district, and is 1.2 km. to the south of the Rozino village. The border with Greece is to the east and south, and the municipalities of Lyubimets, Majarovo and Krumovgrad are situated to the north and west. The Rozino Project is located approximately 350km (by road) east-southeast of the city of Sofia.

The Rozino Deposit region is encircled to the south by the steep rocks of the Tashlaka locality and is divided by the Byala River and its tributaries which flow into the regional watershed area of the Arda river. The average altitude in the deposit area is approximately 470 m. (in the north) and 300 m. (in the south).

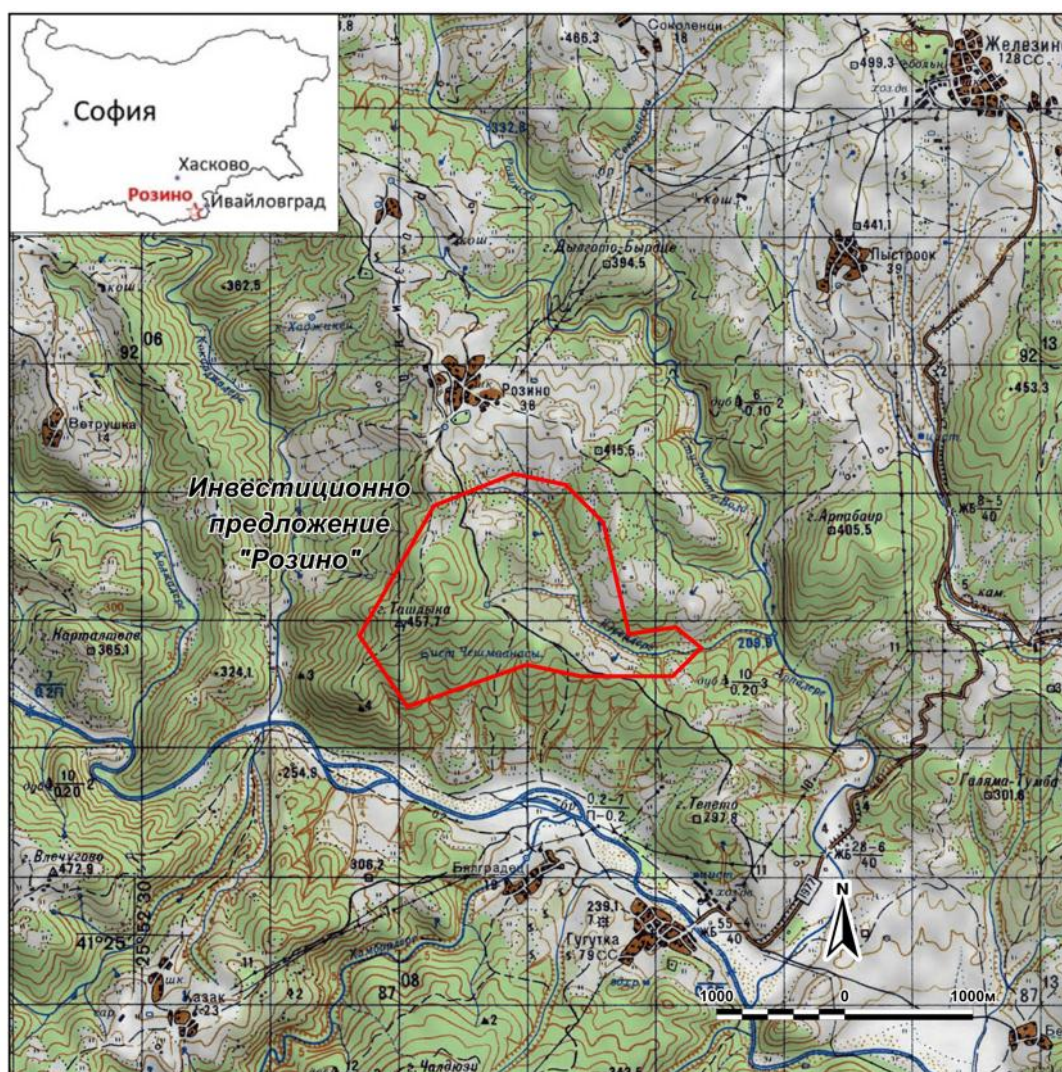


Figure I.1.1-1. Location of the Rozino Deposit, Tintyava Property

The topography in the area is low-mountainous and hilly, with level hills being prevalent. Low ridges and valleys are well pronounced. The Maglenik height is home to Kodjale, the highest peak in the area, of 1,267 m. The elevation above sea level varies between 70 and 700 m., averaging at 320 m. The topography at the level of the Tashlaka peak is highly indented by the Byala reka river and its tributaries - Dermen dere, Kokarja dere, Arpa dere, Hambar dere, Yuruklerska, etc. Tectonically controlled river valleys dominate the river basins, whose rivers, flowing from different directions, enter the main regional river - Arda.

The area belongs entirely to the Gyumyurdjin-Maglenishka geographic sub-area.

North-westerly winds prevail and are active along the valleys and the mountain ridges. Foehn is also present. The annual average precipitation varies widely between 800 and 1,200 mm. Its high is during the autumn and winter, in November and December. Often storms reach 100 mm. over 24 hours. This is one of the reasons for sheet erosion. Snow stays on the ground for 5 to 10 days per year. The surface run-off rate is 5 to 25 l/sec./1m².

1.1.2 Areas required for the IP and road links

The overall intended concession area amounts to **275 ha**, of which **118 ha** will be disturbed. The buffer area covers 157 ha. Some facilities will be developed in areas already processed/disturbed without taking over new areas, with the ‘overlap’ being 261,9 ha. The individual infrastructure is distributed as follows:

No .	Sites	Areas, ha x 10
1	Processing plant	51.4
2	Open pit	261.9
3	External topsoil stockpile 1	14.5
4	External topsoil stockpile 2	37.0
5	External waste rock stockpile (overburden)	247.0
6	Internal overburden stockpile (backfill).	133.2
7	External process tailings storage facility.	438.4
8	Internal (backfill) process tailings storage facility.	128.7
9	Contact water reservoir. Includes: an external processing waste storage facility, a mine, a processing plant and collection ditches. Comprises a supernatant water body and retaining dam).	9.1
10	Clean water reservoir and collection ditches (lake and retaining wall)	62.4
11	Service roads (external to the above infrastructure)	57.3
12	Overlapped areas - backfilling-internal stockpile and internal process tailings storage facility (this area is deducted from the total area!).	-261.9
Total required area:		1179.0

No mining will be carried out in the buffer zone. The buffer zone will provide protection for the facilities and plants and will restrict accidental access by people and animals. It will ensure

compliance with the obligations arising from the Underground Resources Act for further exploration with a view to optimal extraction of reserves and resources from the subsurface.

The coordinates along the outline of the future license are presented in the table below.

Table 1.1.1. Registry of boundary point coordinates of the design license area (БГС 2005 coordinate system)

No.	East (m)	North (m)	Lon	Lat
1	408811	4589180	25.90829	41.44902
2	409216	4589094	25.91315	41.44830
3	409510	4588798	25.91672	41.44566
4	409710	4587930	25.91924	41.43787
5	410076	4587982	25.92361	41.43838
6	410274	4587821	25.92600	41.43695
7	410050	4587600	25.92336	41.43493
8	409332	4587600	25.91477	41.43485
9	408913	4587690	25.90974	41.43562
#	407982	4587362	25.89865	41.43256
#	407609	4587916	25.89410	41.43750
#	408190	4588930	25.90090	41.44670

The register of impacted properties is presented as an attachment to the EIA Report.

The IP layout plan is presented on the next figure.

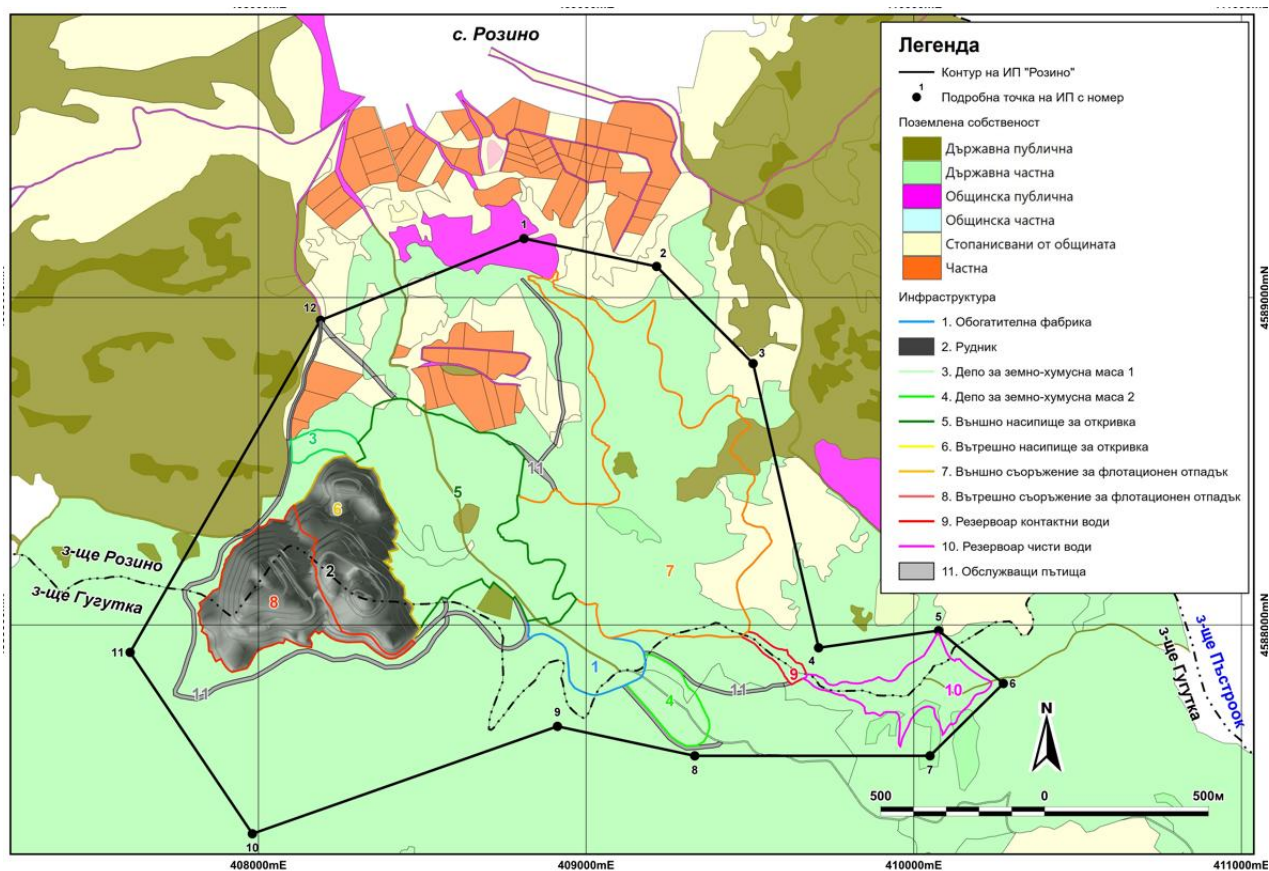


Figure 1.1.2-1. IP layout plan

Realizing the investment proposal requires construction of on-site roads and access roads. The Rozino mine will be connected to the road system along the existing unsurfaced road running across the Rozino and the Konnitsi villages and linking them to the towns of Ivaylovgrad and Krumovgrad via the II 59 road.

1.3.1. Throughput. Mode of operation.

The Rozino deposit reserves amount to 13.6 Mt of ore, with 26.5 Mt of overburden.

Given the time required for mine construction, construction of the necessary infrastructure, land-acquisition procedures, investment risks, mining and geology risks, the period of existence of the site will be 35 years for an average annual rate of production of 0.87 Mt of

The planned maximum annual throughput rate is as follows:

- Ore – 1.77 Mt/a or 0.72 Mm³/a;
- Overburden – 3.3 Mt/a or 1.3 Mm³/a;

The planned average annual throughput rate is as follows:

- Ore – 0.87 Mt/a or 0.36 Mm³/a;
- Overburden – 1.65 Mt/a or 0.681 Mm³/a;

Processing of these quantities of ore requires a processing plant with a design annual

throughput of 1.7 Mt of ore. This design maximum output of the plant will ensure available processing capacity if the planned maximum annual throughput rate of the mine is achieved.

The following table presents the regimen of operation of the mine and the processing plant.

Table 1.1.3-1. Mine and Processing Operation Regimen

No.	Parameters	Unit	Qty
1.	Work days per year		
	- Total number of days in the year	No./Year	365
	- Number of holidays per year	No./Year	0
	- Number of bank holidays per year	No./Year	14
	Total number of work days per year	No./Year	351
2.	Work days per week	No./Week	7
3.	Work shifts per 24 hours	no/day	
3.1.	For the pit	no/day	2
3.2.	For the plant	no/day	3
4.	Shift duration	hour	8

1.2. Description of the main parameters of the production process, such as type and quantity of raw and other materials used, including hazardous substances listed in Annex 3 to the Environment Protection Act that will be available at the enterprise/facility, and, in the cases referred to in Article 99b of the Environment Protection Act, the capacities of their storage and use facilities

Geological engineering, hydrogeological, geological and other field testing and laboratory testing have been carried out while studying the mining and processing conditions for operation of the deposit. Open pit mining will be employed, given the dip, situation and depth of the natural resource.

The intended IP parameters are as follows:

- ✓ No mining operations have been carried out in the Rozino deposit, Tintyava PLA;
- ✓ No processing plant has been constructed;
- ✓ Access by transport to the deposit will be along existing roads, with partial construction of new roads;
- ✓ There are no electricity and water supplies to the mine.
- ✓ Drilling and blasting will be employed during the mining.
- ✓ The deposit will be operated in accordance with duly approved overall operation and closure design/plan.

Deposit stripping and pit construction are fundamental for the open pit mining. The efficient and safe operation of the Tintyava PLA is contingent on the correct and coherent implementation of these activities.

The open pit mining of polymetal ores from the Tintyava PLA will include drilling and blasting, crushing, hauling and processing of the mined material in the processing plant, hauling of

overburden (waste rock) to a stockpile, and transporting of the flotation waste to a mine waste facility (MWF).

Mine Construction

The capital mine construction works will be as follows:

➤ Year 1:

- Rehabilitation of existing road links and building of new roads to the pit, to the processing plant, to stockpiles, to the water reservoirs;
- Stripping works to prepare 2 stockpiles for topsoil collected selectively where possible and also stored selectively, a mine waste facility, and a temporary low-grade ore stockpile Approximately 45% of the project area will be stripped;
- Mine plant maintenance pad is set up;
- Construction of a power supply line is started;
- The plant site is cleared and construction of the processing plant is started;
- Mobile ISOBOX containers for the administration and changeroom facilities are delivered;
- A diesel generator set is delivered and installed for use during mine construction and, subsequently, as a stand-by power source for cases of main-supply failure;
- Delivery and installation of a mobile crusher for the MWF retaining walls (dams) and for road construction and maintenance;
- Grubbing of terrains intended for the clean water pond and starting the dam construction;
- Grubbing of terrains intended for the contact water pond and starting the dam construction;
- Grubbing of MWF footprint areas;
- Grubbing of the contact water reservoir dam area at the base of the MWF;
- Setting up of the first mine levels, mainly for overburden removal, in order to uncover and prepare ore reserves;
- Delivery of mobile chemical toilets for the workers.

➤ Year 2:

- Continued selective topsoil removal, with further 45% of the area,, or 90% in total being stripped, and continued selective topsoil disposal for subsequent use in rehabilitation;
- Continuing works on the MWF and the low-grade ore stockpile;
- All road links between individual facilities are completed;
- The MWF contact water reservoir dam is completed as are the pit and the processing plant will be completed;
- The low-grade ore stockpile contact water reservoir dam will be completed;
- The clean-water reservoir dam will be completed, as will be the contact-water pond and the non-contact water reservoir.

- The entire system for management of the water flowing to the contact-water and non-contact water reservoirs is completed;
- The adjoining infrastructure is completed and operations can begin;
- Construction of the processing facility will be completed by the end of Year 2.

Table 1.2-1. Shows the overburden and ore volumes utilized during the first two years.

Table 1.2.-1. Volumes utilized during the mine construction phase

Production year	One		Two	
Section 1	Overburden, t	Ore, t	Overburden, t	Ore, t
Total:	8,621	3,837	708,689	178,947
Stockpiled ore		3,837		178,947

Completion of all of the above activities completes the mine construction phase and initiates the proper mining.

Operation

Proper operations will begin immediately after mining construction is completed and after the plant begins normal operations.

The main processes during the operation will be:

- Overburden removal
- Mining operations
- Ore Processing

Ore mining

Topsoil overburden (mass) work

The topsoil (soil) overburden will be collected separately from the rock overburden. Selective topsoil stockpiling is envisaged and the topsoil will be used for disturbed-area rehabilitation after operations end.

The main soil-mass collection activities will be:

- removal from the envisaged areas of tree and brush vegetation (grubbing);
- heaping of the soil mass by bulldozer, although it should be noted that no topsoil is present in some areas or is shallower than 0.25 cm. and, therefore, cannot be collected. The topsoil from all other areas will be collected in heaps and loaded by front end loader or excavator onto trucks for hauling to the two top-soil stockpiles;

These stockpiles will be developed during the mine construction and will be closed after rehabilitation is completed.

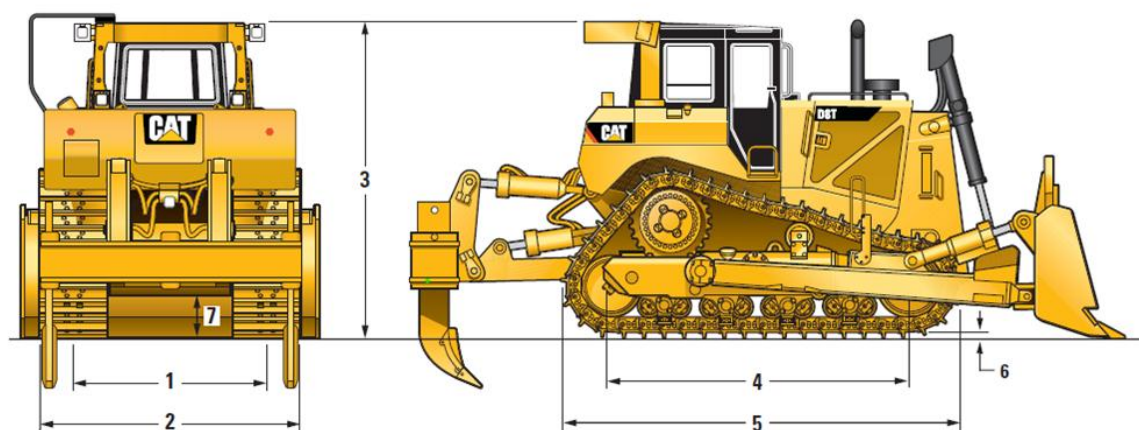


Figure 1.2-1 A CAT D8T bulldozer.

Overburden (waste rock) work

The following overburden removal and ore-mining parameters have been set for the Rozino Deposit:

- Working bench height - 5 to 10 m.;
- Non-working bench height - 20 m. (the 5 m. high benches in the final non-mined contour are combined in groups of 4 or two 10 meter high benches joined as 2);
- Working bench angle - 85 to 90°;
- Non-working bench angle - 70°;
- Minimal width between two non-working bench groups - 12 m.;
- Minimal work-area width - 60 m.;
- Overall non-mined face angle 36÷48°.

Because of the hardness of the overburden, it is accepted that both the ore and the waste rock will be detached by drilling with subsequent millisecond delay initiation and blasting using the NONEL system.

As it does not contain any payable components but envelops or is hosted in the ore-bearing rocks, the rock overburden in the Rozino Deposit should be selectively removed and stockpiled.

Most generally, the processes for selective removal of waste rock are: drilling and millisecond delay blasting to detach the waste rock from the massif, loading by back-hoe shovel to trucks and hauling to a waste-rock stockpile.

Currently, the NONEL (non-electric) blast field ignition and blasting system has for the past 30 years been most widely used in Bulgaria and in the EU because of its advantages over electric or cap-and-fuse ignition which were used in the past in almost all open pits and quarries in Bulgaria. The NONEL system has the following advantages:

- It is the safest transport, handling and initiation system;
- Its broad range of arming delay devices allows for controlled reduction of the blast impact to a minimum level and blasting of separate series of boreholes in the same blast field;
- Lower sound impact.

- Better fragmentation.

Overall, 26.5 Mt or around 10.8 Mm³ of waste rock will be removed from the deposit by design. Or the expected maximum annual volume is 3.3 Mt (1.3 Mm³/a)

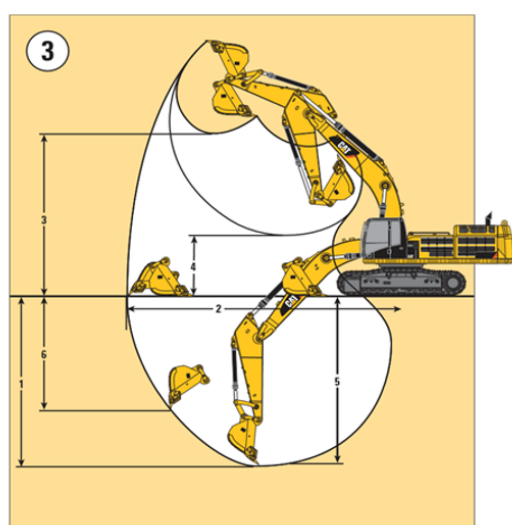
These volumes of waste rock are intended for stockpiling in the WRF to the east of the mine pit.

Backfilling of mined-out spaces will begin after Year 4 (once the reserves in Section 1 are exhausted).

The overburden removal bench heights will be 5 to 10 m.

The waste rock and the ore will be loaded by a 6 m³ backhoe hydraulic excavator, positioned after the blasting and airing of the pit next to the blast field and beginning the loading of the blasted heap.

Figure 1.2-2. presents an overall view of a CAT 930D excavator and its basic technical parameters.



Дължина на стрелата	7.25 m
Рамо	3.4 m
Кофа	6.0 m ³
1 Максимална дълбочина на гребане, мм	7650
2 Максимална дължина на загребване на нивото на земята, мм	12 690
3 Максимална височина на товарене, мм	8200
4 Минимална височина на товарене, мм	3200
5 Максимална дълбочина на гребане със събрана кофа, мм	7520
6 Максимална дълбочина при вертикално гребане, мм	5100

Figure 1.2-2. The CAT 390D excavator and its basic technical parameters

Overburden hauling will be by dumper trucks with a total carrying capacity of approximately 55 t (33 m³) and a 10x4 axle configuration, a 7 m. loading length, a 2.6 m. loading width, and a 1.96 m. unloading height. The trucks will be equipped with modern engines meeting the EURO 6 emission standard.

Twelve machines will be used in overburden removal.

Table 1.2-2. Overburden (topsoil and waste rock) work equipment types

No.	Equipment type	Required units
1.	Dozer	1
2.	Excavator	1

3.	Dumper trucks	7
4.	Water Truck	1
	Total overburden:	10

The conceptual design and a maximum annual output of overburden of 3.3 Mt and 1.7 Mt of ore underlie the tentative parameters for drilling and blasting for overburden and ore. The main drilling and blasting parameters are provided in Table 1.2-3.

Table 1.2-3. The main parameters of the ore blasting work

No.	Parameters	Unit	Overburden and ore - average parameters
1	Bench height	m	5 to 10
2	Hole Diameter	mm	76.2 to 110
3	Explosive type	-	ANFO/E3000
4	Relative explosive consumption	kg/m ³	0.36
5	Volume of rock blasted from 1 blast field / blasting for overburden	m ³	Approximately 30,000
6	Volume of rock blasted from 1 blast field / blasting for ore	m ³	Approximately 15,000
7	Frequency of blasting for overburden per week	qty	1 time per week
8	Frequency of blasting for ore per week	qty	1 time per week

The total number of blasts will be 88. The intent of the drilling and blasting works is to secure productive and efficiency of the excavation and hauling equipment and, also, of the primary crushing by suitable optimal crushing of the material and ensuring a minimal quantity of oversize pieces.

No explosives will be stored on site. The IP is not covered by the assumptions of Article 99b of the Environment Protection Act.

A contractor will carry out the drilling and blasting works and will deliver the required explosives immediately prior to their use, which excludes the likelihood of explosives being present on site. The determined mass of the charge will be mandatory for the drafting of each drilling and blasting pattern.

Ammonium nitrate - fuel oil (ANFO) and/or site-mixed emulsion are intended for use as the main explosives. The drilling and blasting parameters have been defined for three different zones on account of the rock mass type and condition, as follows: Oxide, transitive and fresh rocks, for both ore and barren rock, respectively.

Special blasting works means that the blasted material will slide in place without any flyrock. However, as regards the safety of blasting near urban areas, any probability of flyrock will be precluded through the use of protective covers. These protective covers could be heavy rubber blasting mats or geotextile or light covers made of wide and smaller mesh nets used together with discarded post-use conveyor belts. Properly positioned over the blast field, the protective covers restrict flyrock. Blasting mats reduce the generated noise and dust raised during

blasting. The individual protective covers will be positioned in a manner that enables blasting fumes to escape. This reduces blasting fume pressure and allows for a debris and dust suppression by the mats. Another substantial advantage is that the covers can be used multiple times.

In this regard and in line with the good open-pit development practices, the first 5 to 6 blasts will be intended to adjust and fine-tune the drilling and blasting parameters. Well-blasted/fragmented material saves further energy for fragmenting of oversize pieces and generally improves the efficiency of the mining and processing machinery.

In line with the Rules on Labour Safety in Open Pits and Quarries, the drilling and blasting contractor will hold a license for operation with explosives and must receive a permit from the Regional Labour Inspectorate for the performance of drilling and blasting for each year and must draft a drilling and blasting pattern for each individual blasting and present it for approval by the Control Over Hazardous Materials Authority of the Ministry of the Interior’s regional office. The determined safe mass of the charge will be mandatory for the drafting of each drilling and blasting pattern.

The investor may not carry out any blasting inconsistent with the safe explosive charge determined with respect of the seismic impact in the area of the quarry. The legislator has provided for a strict control mechanism intended to ensure work safety, environmental safety and local community life and health safety.

Experimental blasts have been carried out during the pre-feasibility studies in the Rozino deposit, with control measurements and registration of their environmental impacts, their results are presented in ‘*Evaluation of the Side Impact of Blasting on the Environment, Rozino Site. Final Report (2020.)*’

Ore related work

The following operational parameters have been adopted for both overburden and ore related work:

- Working bench height - 5 to 10 m.;
- Non-working bench height - 20 m. (the 5 m. high benches in the final non-mined contour are combined in groups of 4 or two 10 meter high benches joined as 2);
- Working bench angle - 85 to 90°;
- Non-working bench angle - 70°;
- Minimal width between two non-working bench groups - 12 m.;
- Minimal work-area width - 60 m.;
- Overall non-mined face angle 36÷48°.

Ore will be detached by drilling with subsequent millisecond delay initiation and blasting using the NONEL system.

The NONEL system has the following advantages:

- It is the safest transport, handling and initiation system;

- Its broad range of arming delay devices allows for controlled reduction of the blast impact to a minimum level and blasting of separate series of boreholes in the same blast field;
- Lower sound impact.
- Better fragmentation.

The following mining sequence will be applied:

- prepared reserves from a level will be percussion-bored by a rig equipped with a dust extraction system;
- once bored, the field will be charged with primed explosives and blasted.
- Once the working face is aired, the ore will be loaded by a 6 m³ backhoe excavator onto dumper trucks and will be hauled to the concentrator plant.

The expected maximum annual ore volume is 1.75 Mt, or 0.72 Mm³. In total, 6 machines will be employed in ore mining.

Table 1.2-4. Type of ore equipment, pcs.

No.	Equipment type	Required units
1.	Excavator	1
2.	Dump trucks	4
3.	Water Truck	1
	Total Ore:	6

The blasting parameters are provided in **Table 1.2.-3**.

Securing the quality of ore feed to the plant requires work in two stages in the Rozino deposit. This will ensure availability of ore with the required quantity and quality over the entire period of operation.

Stage 1 Development of Section 1

All operation will be focused only in Section 1 during this stage.

Once stripping in Section 1 is completed, all the plant will be moved and used in the stripping and preparation of Section 2. Only mining will continue in Section 1 until the scheduled geological reserves are exhausted.

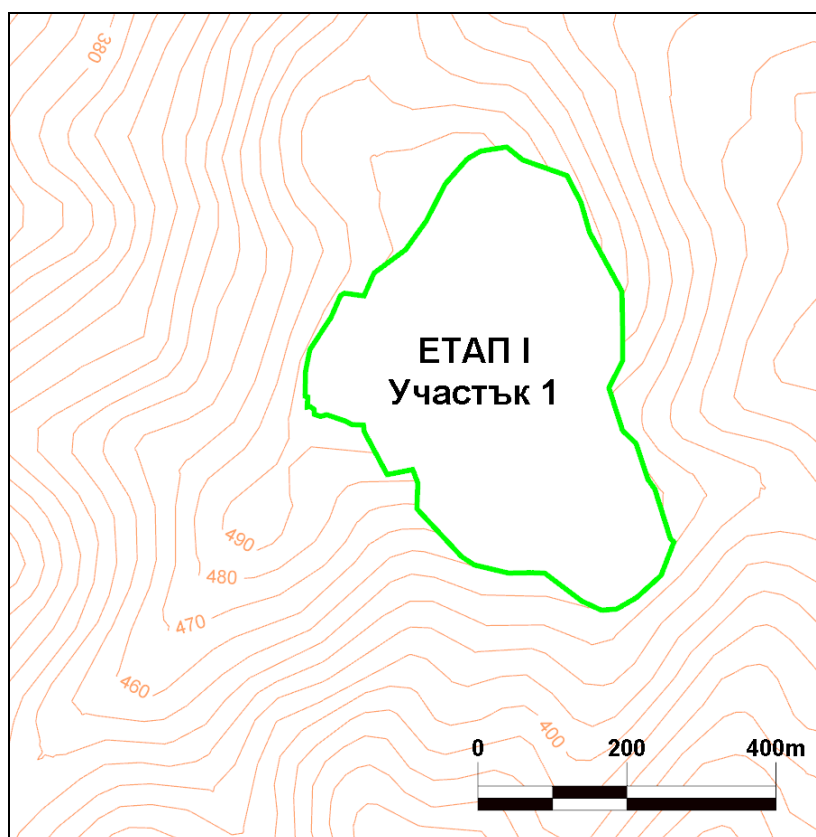


Figure 1.2-3. Stage 1, Section 1 of the deposit

Once the bottom of reserves in Section 1 is reached, waste overburden and mine waste rock can be used as backfill in the pit in this section (the mine waste facility will change from external to internal).

Stage 2: Section 1+2

Stage 2 will begin by pre-stripping in Section 2. Mining in Section 1 will not yet have been completed.

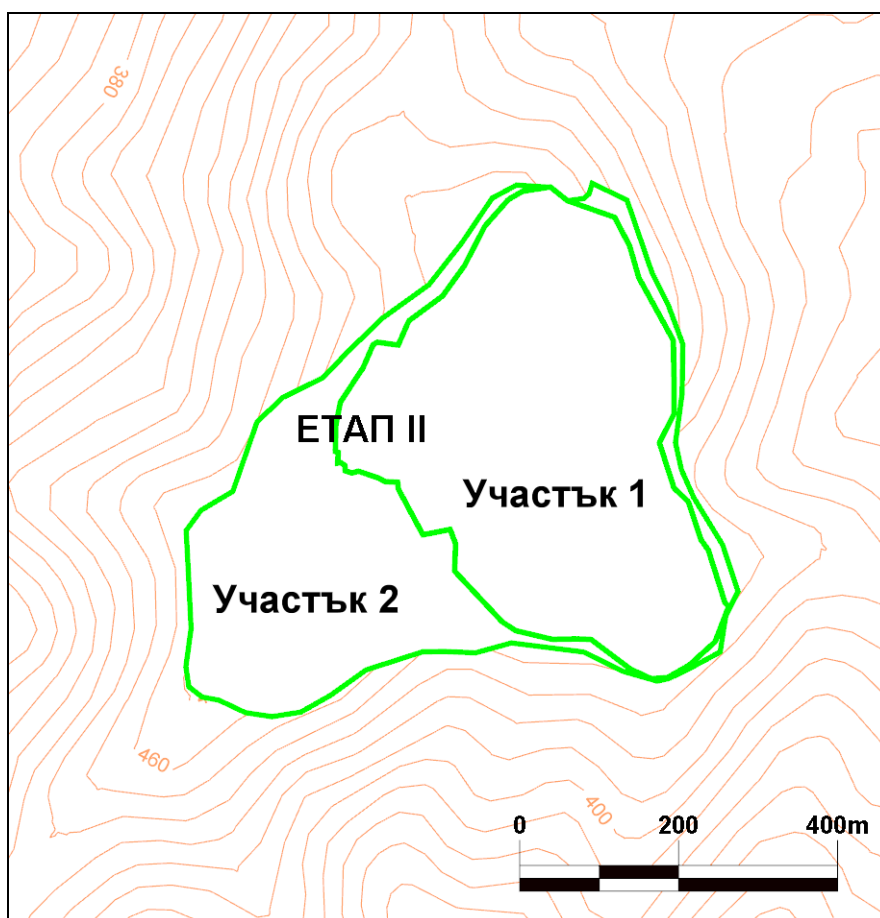


Figure 1.2-4. Stage 2, Section 1 and Section 2 of the deposit

Section 2 will be completed after:

- full exhaustion of reserves in Section 2;
- backfilling of Section 1 using overburden rock and processing waste.

Stockpiling works

Stockpiling will involve selective stacking by bulldozer and trucking.

Selective/separate stockpiling of:

- Earthfill and topsoil;
- Waste rock (overburden);
- Flotation tailings (processing waste)

This selective stockpiling conforms to the best international practices for management and conservation of topsoil which will be used to remediate disturbed areas at the beginning of the rehabilitation phase.

Stockpiling of topsoil

Two earth-fill and topsoil stockpiles will be developed for the deposit, as follows:

- To the north-east with one horizon at RL 495 m;

- To the south-west with two horizons at RL 377 and 382 m.

These stockpiles are expected to evolve during the mine construction and will be closed after rehabilitation is completed. It should be noted that the a staged rehabilitation system can be selected during the drafting of the overall design for operation and closure of disturbed lands.

Stockpiling of waste rock (overburden)

As regards the rock overburden stockpile, it will be bulldozer operated. The waste rock hauled by trucks will be delivered to the stockpile and dumped. Subsequently, a bulldozer will shape the stockpile.

An external stockpile will be developed and in-pit stacking will begin after Year 4.

The boundary between the outer and the in-pit stockpiles is conditional and follows the outline of Section 1 in the pit.

Table 1.2-5. Type of stockpiling equipment, pcs.

No.	Equipment type	Required units
1.	Dozer	2
	Total stockpiling works	2

Disposal of flotation tailings

The processing waste will be disposed of in a thickened state of 70 – 75% solids. This method is preferable to the conventional tailings for the following reasons:

- Higher recovery of return water;
- Lower use of ‘fresh’ water;
- Smaller disposal area;
- Significant increase in the stability coefficient of disposal facilities containing thickened flotation tailings;
- Significantly reduced risk of compromising of supporting facilities;
- Significantly higher potential for staged rehabilitation.

Disposing of flotation tailings (processing waste) with a 25%/75% water to solids ratio will reduce the footprint and, thus, the volume of the facility by approximately 1÷1.5 ha as compared to conventional disposal where the water to solids ratio is 45%/55%, i.e. there is an approximate 20 to 25% reduction of return water.

The water content of the flotation tailings will be reduced and a thickener will be installed in the processing plant to store the water from the dewatered flotation tailings.

Following exhaustion of the reserves in Section 1 and as the mining works in Section 2 advance, backfilling of the mined out spaces will begin and, again, will be consistent with the best open mining practices. Backfilling is expected to begin during Year 4 or 5 of the operations.

Backfilling has the following positive effects:

- Substantial reduction of the area required to (store overburden) and processing tailings (should the quality of such a process be proven);

- Substantial reduction of the time during which external stacking will be required, allowing for much faster rehabilitation of the possible external stockpile and the external process tailings storage facility.

Ore Processing

Process Flow Diagram and Description of the Ore Processing Plant

According to the pre-feasibility studies, the mined-ore processing sequence includes the following main and auxiliary activities:

- crushing and hauling;
- Storage of crushed ore in a covered intermediate storage facility - a reinforced concrete area covered by a canopy and with a feeder underneath;
- milling (ball mill);
- flotation;
- flotation tailings thickening and disposal in a WRF;
- concentrate thickening and filter-press dewatering;
- auxiliary activities - provision of: water, air and reagents.

The general concentrator-plant process flow diagram is presented on Figure 1.2-5.

Ore Dressing

Crushing

The choice of ore preparation circuit is underpinned by the low fragmentation index (4,7-8,92 kWh/t) and the moderate Bond-mill work index (11,2-12,5 kWh / t) for the different ore types which favours the use of a staged crushing circuit and ball milling. A belt feeder is the primary feeding device and is capable of sustaining impact by large pieces of ore entering the ROM bin. A static grizzly will separate all oversize pieces from the jaw-crusher feeder. Secondary dust from unloading trucks and from the crushing process will be prevented by a sprinkler system installed throughout this plant.

The comminution circuit is designed to produce P80 -12 mm. crushed ore. It will involve three stages of crushing: Primary jaw crusher followed by secondary and tertiary cone crushers. The ore will be fed directly from the pit or by a loader from the ROM pad to the ROM bin. A protective 700 x 700 mm screen will prevent entry of large pieces into the jaw crusher. A static 15kW hydraulic hammer will crush oversize pieces to the required size. A belt feeder (1300 x 6400 mm, 22kW) will feed the primary jaw crusher (160 kW). The crushed ore will be fed to a conveyor through a sieve. Any steel scrap will be removed by a magnet in the metal scrap bin.

Air quality in each crusher building will be maintained by a system of sprinklers. A 5 t maintenance hoist is provided for in the primary crusher building. The primary crushed material will be screened in a two-deck screen. The underside will report to the stockpiled ground ore and the oversize will report to the secondary and tertiary cone crushers. The secondary and tertiary crushers will operate in a closed circuit with the two-deck screen until all material is fed as through the lower screen deck to the stockpiled crushed ore. Two weightometers are provided for. There is one secondary crusher and two tertiary crushers. Assuming 16 hour work in two shifts

with a 75% plant availability on average, the crushing plant throughput will be 5,000 t/day. The total installed capacity of the crushing plant will be approximately 1,600 kW.

Covered crushed-ore intermediate storage

A 15,000 t. of buffer volume is provided for downstream of the crusher. This volume will be sufficient to supply the milling circuit for three days.

The crushed ore will be kept in a temporary stockpile comprising a reinforced concrete pad with a feeding bin and will be covered by a metal canopy to prevent fugitive emissions of dust.

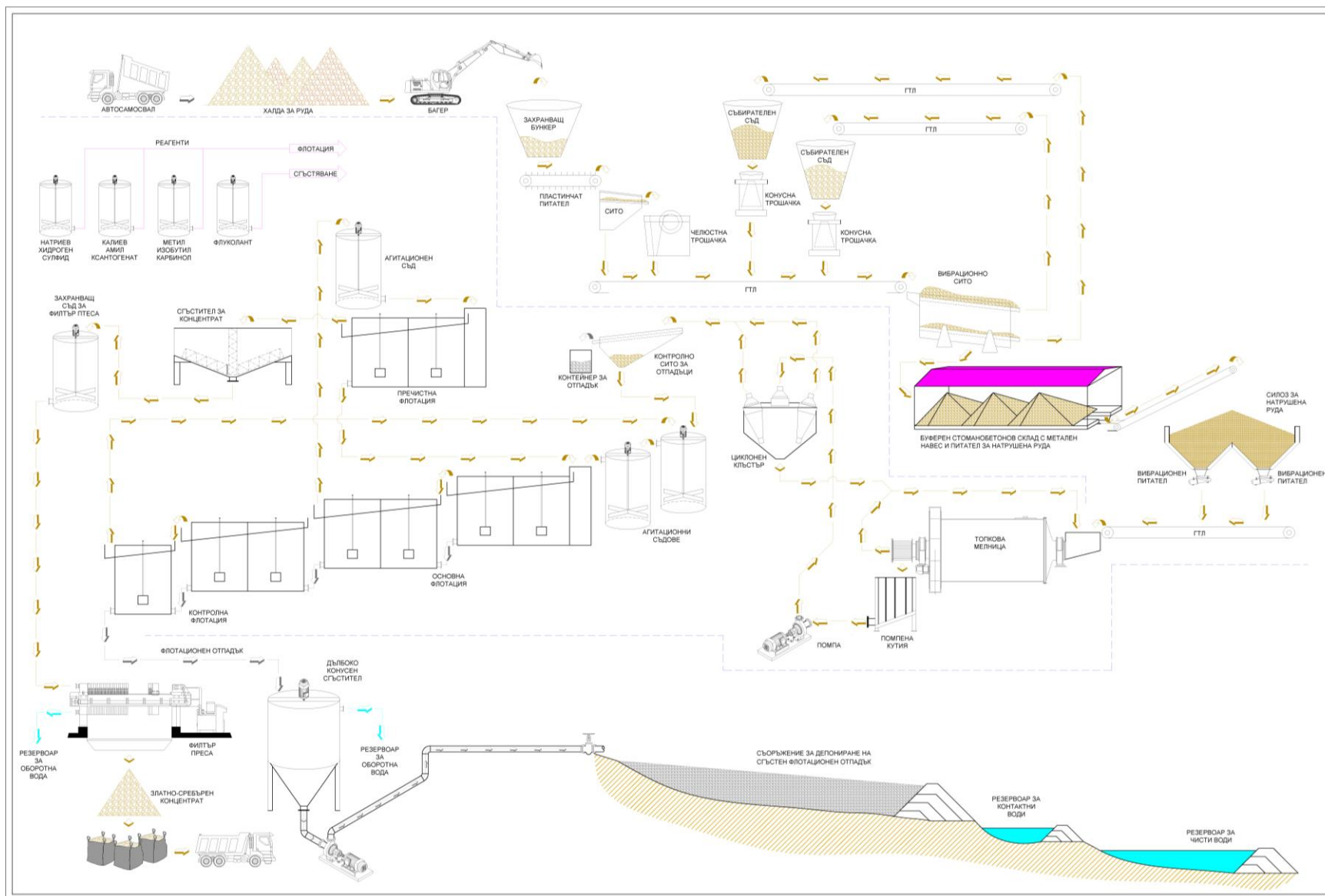


Figure. 1.2-5. Processing Plant Flow Diagram

Ore grinding.

The ore will be ground in a ball mill. The mill feeding belt will be provided with the necessary ore-feed speed controls and capacity counters. A crosscut conveyor belt sampler will be provided for metallurgical accounting purposes.

The milling circuit comprises a ball mill operating in a closed cycle with a battery of cyclone classifiers. This milling circuit is designed to produce particles P80 -75 μm . The ball mill is 4.88 m in diameter, 7.62 m long with a 3500 kW motor. The ball mill comprises a trunnion and gearbox lubrication system, a cooling system and a control system. The ball mill discharges into a sump feeding the hydrocyclone battery by means of a duty/stand-by feeding pump. The cyclone battery comprises 14 cyclones of which 12 only are operational at any time. The cyclone underflow reports to the flotation circuit while the sand recirculates back to the ball mill.

Any spillage from the grinding circuit will be contained within a sump beneath the ball mill. The sump will be equipped with a vertical slime pump to direct spillage back into the mill feed box.

The installed capacity in the milling circuit is approximately 3,700 kW.

Ore dressing (flotation)

High-volume flotation cells were chosen for the flotation circuit as they are more cost-effective than staged flotation reactors (SFR) from the CAPEX and OPEX perspective. The cells were sized and selected based on resulting laboratory flotation times, with a 2.5 industrial-scale ratio and an aeration ratio of 0.85.

The flotation circuit will comprise a standard collective rougher-scavenger and cleaner sections to produce gold-pyrite containing concentrate.

Prior to reporting to the flotation circuit, the ground ore from the hydrocyclone battery underflow will be passed through a 0,85 mm. mesh size cleaning vibrating screen for removing of all non-typical impurities in the ore, such as wood, plastics, metals and larger ore pebbles.

The cleaning screen underflow will be fed to the two agitation cells, each of 50 m³ in volume. Sequentially connected, they will provide the required slurry and reagent agitation time of 2 x 5 minutes.

A feeding pump downstream of the agitation circuit will feed the slurry to the rougher-scavenger cell circuit comprising 6 high-volume flotation cells in a configuration of 4 gold bearing rougher cells and 2 scavenger cells. Each cell has an effective volume of 60 m³, the total being 360 m³, which ensures the required flotation time of 34 minutes. All flotation cells electrical motors are 90kW each.

The flotation cells are supplied with air mass flow control to enable each bank of cells to be controlled.

The scavenger product is the final flotation barren waste and will report to the deep cone thickener for dewatering prior to reporting to the WRF.

The rougher concentrate will be pumped to the cleaner bank. Before reporting to the flotation cells, the slurry will be conditioned in a 10 m³ agitation cell allowing for a 5 minute-long slurry agitation with reagents. The cleaner circuit comprises two cells with installed

capacity of 15kW and effective volume of 8 m³ each, or 16 m³ in total, ensuring the required 8.6 minutes of flotation time.

Water sprays are provided in the flotation cell launders to assist froth breakdown and concentrate flow.

A sampler on the discharge side of the scavenger tailings (final tailings) provides a current analysis sample.

The cleaner concentrate is final and reports to a sump feeding a gold bearing concentrate sump. The target gold concentration in the final concentrate is 22 to 30 g/t depending on the grades in the ore feed.

The gold bearing concentrate pump is a fixed-speed cellular pump.

Reagent metering is controlled automatically to operator-set flow rates. Dedicated pumps and metering devices feed frother (Methyl Isobutyl Carbinol - MIBC) and collector (Potassium Amyl Xanthate - PAX) in various points along the flotation process.

Any spill along the circuit is collected by sump pumps mounted on the flotation circuit floor and is fed to the respective points along the flotation circuit.

The installed capacity in the flotation circuit is approximately 1000 kW.

Hazardous chemical substances and mixes

Hazardous chemicals and materials (HCM) specified below will be used and stored in the mine site such as fuel and as part of the ore concentration process.

Diesel fuel will be used for loaders and haul trucks and for ancillary self-propelled mining equipment. It will be kept in steel tanks with a total volume of 42.5 t. (with an average density of 0.85) - 50,000 l or 55 m³. The number of the tanks and their sizes will be in accordance with a Design for construction of a filling station consistent with the Zoning Act.

A specialized explosives manufacturer will supply the blasting materials which will not be stored on-site.

The following reagents will be stored and prepared in the reagent supply area:

Frother: Methyl isobutyl carbinol (MIBC). The MIBC preparation system comprises an agitated storage tank with two duty/stand-by distribution pumps feeding MIBC to the flotation circuit. The maximum amount available on site will be 6.6 t., present in: a storage facility and a solution tank with a total capacity of 480 kg – 500 l – 0.6 m³, and a solution feeding tank with a total capacity of 60 kg – 64 l – 0.06 m³ with a solution metering system.

Collector: Potassium Amyl Xanthate (PAX). The maximum amount available on site will be 18.7 t., present in: a storage facility and a solution tank with a total capacity of 1,440 kg – 9,600 l – 10 m³, and a solution feeding tank with a total capacity of 480 kg – 3,200 l – 3.5 m³ with a solution metering system. Two duty/stand-by circulating pumps will feed the solution with PAX to the flotation circuit;

Activator: Copper sulphate (CuSO₄.5H₂O). The maximum amount available on site will be 45 t., present in: a storage facility and a solution tank with a total capacity of 3,000 kg – 20,000 l – 20 m³, and a solution feeding tank with a total capacity of 1500 kg – 10,000 l – 10 m³ with a solution metering system.

Sulphidizing agent: Sodium hydrogen sulphide (NaHS). The maximum amount available on site will be 48 t., present in: a storage facility and a solution tank with a total capacity of 3600 kg – 23,980 l – 25 m³, and a solution feeding tank with a total capacity of 1200 kg – 8,000 l – 8 m³ with a solution metering system.

Collector: Aerofloat 404 (A404). The maximum amount available on site will be 3.6 t, present in: a storage facility and a solution tank with a total capacity of 360 kg – 2,400 l – 2.5 m³, and a solution feeding tank with a total capacity of 60 kg – 400 l – 0.4 m³ with a solution metering system.

Flocculant (mixture): The maximum amount available on site will be 2.2 t., present in an automatic polymer-solution dosage machine. The flocculant distribution system comprises a flocculant dust bin, a feeding auger, an agitated mixing an agitated storage tank and two metering pumps. Polymer solution doses will be prepared in advance in a Tomal PolyRex automatic machine. This will allow for proper solution preparation and aging of flocculants. Both metering pumps will feed the mixed flocculant to the concentrate thickener and to the processing waste thickener. Each line will be equipped with a mixer for further flocculant dilution to 0.02% density upstream of the thickeners.

Present on site, in the storage facility, will also be:

- Prista® M10 De motor oil in 2 drums, each of 110 kg. capacity, totalling at 0.22 t. and
- Prista® AN 68 motor oil in 2 drums, each of 110 kg. capacity, totalling at 0.22 t.

The delivery, transport, preparation, use, disposal and treatment of solutions and packaging are in line with the regulatory requirements.

Concentrate thickening and filtration.

The concentrate thickener has been sized using the available static-settling test results. No dewatering tests have been carried out to size and select the concentrate filter unit. Data about similar concentrate types and particle sizes were used instead. The design moisture content in the concentrate is 10 to 12% density by volume. The concentrate thickening and dewatering circuit comprises a 16 m. diameter concentrate thickener and a dewatering filter press. 11.3 t/h of concentrate will report to the thickener, with 23% solids in the feed. The thickener overflow will be recirculated back to the process water reservoir for reuse in the grinding and flotation circuits. Two 50 mm by 40 mm duty/stand-by thickened tailings pumps will pump the thickened product (50 to 55% solids) to the filter press.

The filter feed reservoir will be agitated to prevent settling of solid particles. Two 75 mm by 50 mm duty/stand-by thickened tailings pumps will pump the concentrate from the filter-press feed reservoir to the concentrate filter-press. The concentrate filter press will be a vertical filter-plate press designed to operate at 75% availability and to produce 11.3 t. of concentrate per day with 10 to 12% moisture content. The filter-press is equipped with a dedicated compressor and air intake.

The concentrate will report to a bin for storage before being loaded for processing by an end-user.

Required plant

The following will be required for the concentrator plant:

- A front-end loader to feed the crusher plant;
- A bulldozer to maintain the crushed ore buffer storage;

Table 1.2-6. Type and numbers of the machines used in the Processing Plant

No.	Equipment type	Required units
1.	Front end loader	1
2.	Dozer	1
Total for processing plant:		2

Flotation Tailings Management

The following specifics were considered for the choice of the tailings thickening and dewatering process:

- Physical and chemical parameters of the flotation tailings will - the current data show no acid generation potential.
- The yield strength limit or yield stress - the property corresponding to the yield strength limit at which plastic deformation of the material occurs;
- Negative water balance;
- Best practices for dewatering of processed mining waste;
- Best practices for management of mining and processing waste.

The above practices and the basic design for the Rozino Deposit have lead to the selection of a technology for disposal of flotation tailings (processing waste) thickened to 70-75%.

Tailings disposal will be preceded by removal of water (thickening). The thickener operates in the following manner: radial flow of slurry to the centre of the thickener, into a feeding tank. As the solids settle, a rake reaching the outer end of the thickener rotates slowly and moves the settled material to the central outlet. At the same time, as solid particles deposit over the thickener base, the supernatant water or solution clarifies and as its level increases with the introduction of more slurry, it flows over a perimeter launder to return to the process. The particles settling into the centre of the thickener and the matter raked toward it exit through the central exit pipe at the thickener base, containing significantly less water than the slurry in which they had entered the thickener. High-pressure slurry pumps can transfer the thickened processing waste to the storage facility.

The advantage of this method is its efficiency as regards water and the more favourable operating conditions as compared to the conventional method of disposal of processing waste with high content of water. A second advantage over the other options is the minimal potential

for liquefaction (slumping or flowing) of the disposed waste or a dam failure. Usually, high-output cone thickeners increase the solids concentration to around 70 -75%.

Cone thickeners ensure the highest yield strength values and guarantee high stability of the stored waste.

The water to solids ratio in the resulting waste is 25/75.

Higher thickening allows for:

- significant increase of the use of return water;
- significant reduction of the use of 'fresh' water.

Being denser, the waste is easier to handle and shape the stockpile it is disposed of in.

Reduced water content shortens significantly the time for evaporation of residual water and improves the stability of the stockpile body, thus allowing for its staged upgrading with guaranteed stability.

Thickening of waste prior to disposal bears a reflection on the overall consumption of water in the processing plant and provides a substantial improvement of the overall water balance.

Also, thickened waste disposal conforms to the natural geographic, geological, geotechnical and geochemical conditions of the site. As the waste is disposed of from the highest toward the lowest stockpile points, it should be noted this disposal enables staged rehabilitation of completed slopes.

Closure and rehabilitation

If the maximum output is achieved - mining and processing of 1.7 Mt of ore per year, closing and rehabilitation of worked out spaces may begin as early as Year 6 after mining begins.

Post-closure rehabilitation (technical and biological) will ensure a stable and maintenance-free status of the site. The proposed overall site-rehabilitation strategy is:

- Technical rehabilitation;
- Biological rehabilitation.

In practice, technical rehabilitation will start during mine construction, when topsoil will be collected and stockpiled selectively.

The technical rehabilitation activities will involve:

- Forming of ledges and securing of all non-working benches;
- Cleaning of all mine levels of residual rock pieces;
- Loading, delivery and spreading of topsoil along the terrains intended for rehabilitation;
- Preparing of terrains intended for forestation;
- Preparing of terrains intended for recovery for agriculture;
- Ensuring normal surface run-off;
- All areas remediated during the Concentrator Plant closure will be ploughed up (to increase water infiltration and reduce the potential for surface erosion and instability), levelled and covered by a 0.15 m deep top-soil layer (except for the concrete structures).

- The concrete slabs will remain in place and will be covered by approximately 0.40 m. deep layer of topsoil from the stockpiles.

The technical rehabilitation will be followed by biological one. It will comprise:

- Forestation of the areas intended for returning to the forestry fund by creation of a nursery of saplings of local tree species (oak and Austrian pine) which will be required for rehabilitation;
- Sowing of grass in the areas intended for restoration as agricultural land, by purchasing of seed mixes, sowing and growing.

Characteristics of the main raw and other materials, energy and water resources used for the investment proposal

Fuel and lubricants will be used by the service machinery during the construction and operation of the mine.

The required equipment will be as follows:

Table 1.2-7. Total required plant and machinery

No .	Equipment type	Overburden work	Ore related work	Stockpiling works	Flotation Plant	Required number, total
1.	Excavator	1	1	-	-	2
2.	Dump trucks	7	4	-	-	11
3.	Water Truck	1	1	-	-	2
4.	Front end loader	-	-	-	1	1
5.	Dozer	1	-	2	1	4
		Total 12	Total 7	Total 2	Total 2	20

Diesel fuel will be delivered by tank trucks and at most 42.5 t will be present on site.

The required lubricating, hydraulic and cooling oils and grease will be delivered packaged and the packaging will be returned to the vendors in a full-empty scenario.

Ammonium nitrate - fuel oil (ANFO) and/or site-mixed emulsion are intended for use as **the main explosives**. The total number of blasts will be 88. A contractor will carry out the drilling and blasting works and will deliver the required explosives immediately prior to their use, which excludes the likelihood of explosives being present on site.

No explosives will be stored on site.

No **chemical substances and mixes** will be used during the mining process. Such materials will be used in the concentration process described in more detail above.

The IP is not covered by the assumptions of Article 99b of the Environment Protection Act.

Electrical power - Powering the concentrator plant and open pit machines, facilities and installations requires construction of a power line branching off from the existing power supply system. The exact routing and method of construction will be specified at the next stage.

Water Supply

The IP will require processing water (for the processing plant and for dust control, and potable water for the personnel.

The hydrology report on the hydrology study of existing surface water bodies **shows that** water can be used from Arpa valley between January and May, when its river flow is sufficient, to supply via the Rozino Pumping Station a water flow of at least 50 l/s (for an expected overall volume of 648,000 m³) which is equal to 10% of the average-multiannual water quantity, **and to guarantee the ecological minimum for the river.** An open non-contact water reservoir will be filled during this period by constant pumping.

One possible water-abstraction option is to build a pumping station near the existing Rosino Pumping Station used for supplying of potable water to the village of Rozino. The higher water flow in February, March and April allows for using higher flow rates, at around 100 l/s during these months, to fill the non-contact water during higher precipitation-related inflows.

As the pit develops during the years, the Rozino mine watershed area will accumulate precipitation water. This water will report to an open contact-water reservoir and will be used in the process.

The hydrogeological study in the deposit area showed insignificant groundwater flow-rates and that groundwater abstraction would be utterly insufficient for the process.

Where possible, the water will be returned to ensure optimal water consumption, and an open contact-water basin will be constructed for this purpose.

Bottled water will be provided for drinking purposes. Water from the non-contact reservoir will be used for household purposes (for the toilet facilities).

Chemical Composition of the Ores

The following were observed in the analysed ore samples:

- Primary materials: pyrite, chalcopyrite, sphalerite, magnetite.
- veined materials: quartz, calcite
- supergenetic materials: haematite/limonite, bornite.

Pyrite is the most frequent primary mineral. The remaining minerals occur as single grains. Pyrite precipitates as idiomorphic and hypidiomorphic grains and aggregates most common separately, rarely with chalcopyrite and sphalerite. Most frequently, the supergenetic minerals affect pyrite which is completely replaced by haematite/limonite in certain places.

No native gold has been found in the ore.

The only vein minerals observed are only quartz and calcite.

Haematite is the most widespread supergenetic mineral, attended by limonite in many places. Several bornite grains have been identified and may be the result of chalcopyrite alteration.

1.3. Determining the types and quantities of waste and emissions (pollution of water, air and soil, noise, vibration and radiation such as light, heat, radioactivity, etc.) from the operation of the IP

Waste

The following types of waste are expected during the operation of the investment proposal and may be divided into two main groups:

- wastes falling within the subject matter of the Wastes Management Act (WMA), and
- mining waste falling within the subject matter of the Underground Resources Act.

These wastes must be classified in accordance with Regulation No. 223/06/2014 on the Classification of Wastes (SG, issue. 66/2014, most recently amended and supplemented).

Generated Waste within the scope of the Wastes Management Act

The investment proposal generates wastes by the mining, processing and transport operations, and household wastes by the personnel.

Table 1.3-1. Classification of waste included in the Waste Management Act

Type of Waste	Name	Regulation 2/2014 Code
Non Hazardous	Ferrous metals	16 01 17
	End-of-life tyres	16 01 03
	Obsolete equipment other than the equipment specified in codes 16 02 09 through 16 02 13* - lamps used in the lighting systems across the site	16 02 14
	Waste from sand traps	19 08 02
	Conveyor belt waste (incl. conveyor mats) (plastic and rubber)	19 12 04
Hazardous	Mineral-based non-chlorinated hydraulic oils	13 01 10*
	Synthetic hydraulic oils	13 01 11*
	Synthetic engine, gear and lubricating oils	13 02 06*
	Absorbents, filter materials (including oil filters not otherwise specified), wiping cloths, protective clothing contaminated by dangerous substances	15 02 02*
	Packaging containing hazardous substance residues or polluted with hazardous substances	15 01 10*
	Lead batteries	16 06 01*
Household waste	Mixed household waste	20 03 01

The generated wastes will be collected separately and in a timely manner, and handed over for subsequent treatment under contract with companies holding registration or permit documents issued in line with the Wastes Management Act. **No hazardous waste will be stored in the IP area**

Only modern mining and transport equipment consistent with the Euro 6 standard will be used during the operations in the plant. Current repair and maintenance of the transport vehicles and mine plant will be carried out in the repair workshop. A site equipped with the necessary spill-containment and removal materials will be designated for collection of the waste from these activities. Also, any spills of fuel and/or oil occurring during emergencies will be collected using absorbent materials (wood shavings, sawdust) which will then be handed over as hazardous waste (code 150202*).

Generated Waste according to the Underground Resources Act

The following waste will form during the mining and processing of metal-bearing ores:

- Code 01 01 01 - wastes from mineral metalliferous excavation, which will be disposed of on a waste rock stockpile;
- Code 01 03 06 - tailings other than those mentioned in 01 03 04 and 01 03 05, that will be disposed of as paste.

The acid rock drainage study of the rocks in the deposit shows that **no** acid will be **generated** from the overburden rocks and no leaching of metals is expected. Both the ore and the waste rock are low in sulphides (~1% and below 0.5% pyrite) and relatively high in neutralizing potential ratio of more than 2. The metal leaching test results showed that the properties of ore, waste rock and flotation tailings seepage would not be hazardous.

Article 22r, paragraph 4 of the Underground Resources Act requires that the IP prepares a mine waste management proposal as part of the EIA documents. No other mining waste is expected to form.

The IP does not envisage waste treatment activities other than disposal of mine waste.

Air emissions

Generated waste gasses

The operation will involve generation of dust during mining and crushing of the polymetal ore. Localised pollution over small distances and without any impact on pollution in the region is expected.

Other harmful emissions which causing environmental and workplace pollution will be exhaust from machinery. Gaseous CO_x, NO_x, SO_x, incompletely combusted hydrocarbons, dust (soot) etc. emitted from the diesel plant and transport vehicles will be local in nature and will not have any substantial impact on pollution in the region. The following measures to reduce air pollution in the deposit are provided for in the IP:

- spraying of on-site roads, especially in dry weather;

- using new equipment in good repair with daily inspection prior to beginning of work and timely repairs of faulty machinery;
- sprinkling during ore handling and processing in the crushing and ball-milling circuits;
- indoor concentration of ore in the processing plant to prevent fugitive emissions of dust.

Data about emissions during mining, processing (crushing) and handling will be provided in the EIA Report.

The ore will be mined by drilling and blasting which will cause emissions of dust and toxic gasses into the air. Detailed quantities of harmful substance emissions from blasting and analysis of environmental impacts will be provided in the EIA Report.

The data in the EIA Report concerning emissions from mining, handling and processing (crushing) will be substantiated by mathematical modelling by relevant experts using methods approved by the Minister of Environment and Waters.

Emissions to water

Generated waste water

Generation of the following waste water is expected for the site: process-related and generated from the flotation and concentrate dewatering process, and ablution effluent from the mine-site workers. All this water will be recycled, using the contact-water reservoir as a buffer storage.

No discharging of process-related waste water into water bodies or into the sewerage systems of urban centres is envisaged.

Two ablution-effluent treatment options are considered;

- construction of water tight underground cesspools maintained by a duly authorised Company;
- construction of a local treatment facility (utilizing microbiological sludge) with the treated water being fed to the contact water reservoir.

The final option will be selected at a later stage but none of the options **provide for disposal of domestic and faecal water into water bodies or into the sewer system of any urban settlement.**

Surface precipitation water and mine run-off will be diverted to the contact-water reservoir.

The wastewater described above will form during the entire life of the mine and their quantities will be evaluated more precisely at the next stage of project development.

As a general rule, no discharges to water bodies are envisaged by the Project.

Soil contamination

Earth and soil pollution around the pit areas may be caused by:

- dust – when hauling and crushing of the mined material in dry and windy weather;

- oil products – improper maintenance and operation of the equipment and incidental spilling of fuel and lubricants;
- gas-borne or airborne pollution during blasting.

The EIA report will consider the possible impacts on soils by the mining and processing (crushing) works and will propose specific mitigation or prevention measures.

Noise, vibrations, radiation - light, heat; radiation etc.

Generation of harmful physical factors (noise, vibrations, radiation)

Any noise loading in the region will be caused by the equipment used in ore mining, drilling and blasting, crushing and concentration of the mined material, and by transport vehicles. Furthermore, there will be noise caused by machines loading overburden. The noise caused by blasting, by hauling trucks and by other facilities, as well as by the crusher and ball mill will be daily and will be around 85 dB(A) for the workers using those machines, while it will be significantly lower for the region. Ear protection will be provided for the workers and is mandatory for excavator and bulldozer operators and for the other workers.

Machinery generated noise will be localised in points and will affect the machine operators and those working within the pit, but not the surrounding villages and the environment. No disturbance of the noise comfort in surrounding urban areas is expected to be caused by the plant used within the IP, but will, nevertheless, be analysed in detail in the EIA Report. Blasting noise may have a negative effect on urban areas and will, therefore, be studied in detail in the EIA Report.

The potential sources of excessive general transport-related vibrations are the cabins of many bulldozers and excavators, with localized vibrations caused by the handles of control levers. Also, vibrations may occur around the crushers.

The EIA report will consider in more detail the occupational and regional noises and vibrations and will propose specific mitigation or prevention measures.

No sources of light, heat or radioactive radiation exist in the activities provided for in the IP.

2 . Investment Proposal Alternatives

2.1. IP Location Alternatives

As regards the location of the Rozino Deposit in the Tintyava PLA there are no other alternatives since the ores and minerals have been established in this area and the mineable reserve limits have been defined. The boundaries of the future concession area have been proposed accordingly.

2.2. Siting options for the project facilities

Pit location, size and layout are dictated by geology of the ore body and the determined for mining reserves as topographic and geographic constraints combine to reduce opportunity for locating the associated ore processing plant and auxiliary infrastructure and facilities.

Several options with a larger footprint taken by the auxiliary plant and infrastructure have been considered and rejected by the Investor with the view to maximum protection of the natural features.

The following major project design components have been considered in respect of options for design and location:

- the ore mining method and the siting of the respective attendant facilities;
- minimal encroaching upon the soil surface;
- requirements for environmentally sound management of mine wastes.
- minimal impact on areas of the Rhodopes Eastern protected area with code BG0001032 and the Byala reka protected area with code BG0002019.

The practical perspective and all these circumstances show that there is no better alternative for siting the mine, the facilities and the infrastructure.

Difference in impacted areas from the notification sent with letter No. ПД-279/14.02.2023 to the Haskovo RIEW.

The concession area with the above notification amounts to 304.47 ha of which 118.98 ha are disturbed and 185.49 ha are a buffer zone. In order to optimise the location of facilities and reduce the directly impacted areas, the total footprint of the concession area described in this TOR is 275 ha with 118 ha being disturbed and with 157 ha allocated as a buffer zone.

2.3. Mining Method Alternatives

The open pit mining is applied at deposits with ore bodies which are close to the surface and have substantial low-grade mineral resources. The main disadvantage of this mining method is the formation of a new negative form in the landscape (open pit or borrow), which is a challenge to the rehabilitation of the environment after shut-down of operations. Additionally, another large landscape form may be created – a waste rock stockpile.

Underground mining is used to mine higher grade deposits located at greater depths in the earth's crust. This method requires backfilling of the mined stopes. Underground backfilling is required for the more efficient extraction of the reserves and for prevention of surface caving above the ore bodies. The underground mining option facilitates the management of mine wastes as it involves partial reclaim and reuse of waste products as fill materials in the underground backfilling process. In the case of close-to-surface low-grade deposits, this option is economically infeasible because it involves higher mine construction and operational costs.

Shaft mining is not an option for the conditions in the “Rozino deposit for the following reasons:

- the small bedding depth of the ore body – 15-20 m;
- the small strip ratio – 2.5, making shaft mining systems environmentally unsound;
- the morphological type of the mineralization – veinlet-disseminated, requires exact identification of balance ores and proper and regular extraction, which is difficult in shaft mining. Shaft mining would require setting aside of Appendix areas for temporary stockpiling of different ore types and their subsequent blending prior to feeding to the processing plant.

No such other alternatives could be considered because the mining technology considers the location of the natural resource in the subsurface, and the geological mining conditions. The open mining of polymetal ores is a method widely applied in similar deposits. It is also justified as the only economically viable method, given the expenses for mining, processing and hauling relative to the market price of the produce.

2.4. Raw material processing alternatives

There are three possible alternatives for mined-ore processing:

- *Alternative 1*: Ore mining and crushing within the license and selling to processing facility owners;
- *Alternative 2*: Processing the ore to gold bearing concentrate as the final product within the concession area. This option includes mandatory construction and operation of a concentrator plant which requires increasing of the potential concession area in order to provide sufficient space for the auxiliary facilities such as: water and chemical solution reservoirs, flotation tailings storage facility, storage facility for the finished product, etc. This option would require additional water management - provision of sufficient amounts of fresh water and sufficient volumes of return water.
- *Alternative 3*: Processing of ore to end metal as the final product within the concession area, which would require: mining, a processing plant, cyaniding and end-metal production facility. Given the proven mineral reserves, this option is economically and financially non-viable and excludes the need for another hazardous chemical substance - cyanide.

The preliminary technical and economic assessment of all three options with a +/-30%% accuracy show that *Alternative 2* as unambiguously advantageous.

Alternative 1 is inapplicable for the following reasons:

- remoteness from any existing processing facilities. Apart from being economically unsound, hauling of enormous quantities of ore at such a distance means significant presence of heavy-duty trucks on the road network and, therefore, higher emissions of harmful substances in the ambient air, above-standard noise levels, lasting disturbance of animal species and significant discomfort for the people who use these roads;
- the existing plant is limited to processing of ore from specific deposits with specific throughputs and ore composition. In fact, there is no available production capacity to take additional quantities of ore from the Rozino deposit;
- limited volumes of the respective processing plant waste facilities, designed with specific needs, conditions and capacities in mind.

Alternative 2 which is preferred by the Customer allows for a final product – gold-bearing concentrate of significantly smaller volume as compared to the ore mass, can be transported easily for further processing with lesser impact on the road network and on the environment adjacent to the transport routes.

2.5. Flotation tailings management alternatives

- *Alternative 1:* Conventional spigotting into a TMF whereby water carries the waste slurry to the TMF, which is, by nature, a water-engineering facility.
- *Alternative 2:* Disposal of thickened waste; Additional dewatering of the processing waste produces 70-75% solid waste which is transported to the waste storage facility by means of a pipeline.

Considering the advantages of thickened waste disposal, the Customer intends to use Alternative 2.

The advantages of this technology over the disposal of high water content waste are as follows:

- Reduced use of ‘fresh’ water by 20÷25%, leading to reduced volume and area of the ‘fresh’ water reservoir by up to 5%;
- Increased recovery of return water by 20÷25%, leading to reduced volume and footprint of the ‘contact’ water reservoir by up to 5%.
- Reduced footprint of the tailings disposal facility by 10 to 15% through reduced volume of disposed waste;
- Low water content in the disposed waste by up to 5%.
- Accelerated waste drying and solidifying - 1-2 days in dry seasons.
- Increased overall stability coefficient of the stockpile and retaining wall bodies because of lower or zero water content in the waste;
- Reduced risks related to the disposal of high water content waste;
- Possibility for staged rehabilitation of areas once the design disposal levels are reached.

2.6. No-action alternative

The ‘no-action alternative’ is non-implementation of the investment proposal. In this case the polymetal resources situated and proven in the Rozino Deposit, Tintyava PLA will not be mined and utilized. This would deprive the state and the Ivaylovgrad Municipality of revenues from fees related to direct and indirect taxes and fees, and the local community from jobs on site and in other service providing companies.

3. Characterisation of the project environment and a forecast of the impacts, including cumulative impacts

Short presentation of the method used to describe the environmental media/factors and human health (preliminary identification of sensitive receptors) which are likely to be significantly impacted by the implementation of the IP, and an impact forecast.

Studying the existing/starting/baseline conditions underpins the assessment of environmental media/factors. The description of the baseline conditions will rest on a review of the available information and published data combined with field studies of the environmental conditions in the area affected by the IP.

The subject of description and analysis will be the *territory* that will be affected by the entire IP with its additional or auxiliary facilities and activities in relation to the space and time dimensions,

the frequency and the duration of significant impacts which the IP is likely to have. ***This territory covers the entire future concession area.***

The EIA will identify the impacts from the implementation of the IP in its entirety during and during its entire life cycle – *mine construction, operation, closure and rehabilitation*, with consideration of the degree of development/detail of the design study provided by the Customer.

Identification of the expected IP implementation impacts will consider the described specific, physical and technological characteristics of the IP, as well as the type and quantity of expected pollutants, the use of natural resources, and the results from the consultation with the IP stakeholders. Also, the possible cumulative impacts will be evaluated based on available information about any other existing or envisaged activities and projects carried out in the IP area.

The presumable significant impacts on the environmental media/factors and on human health will be assessed and measures will be proposed to present and reduce any significant harmful impacts on all environmental media / factors, individually during the mine construction period, the operation period and the closure and rehabilitation period.

3.1. Climate and Air. Climate.

Climate is among the main factors of atmospheric air quality. Precipitation, winds, fog, and temperature inversions aid in the cleaning of the atmospheric air or create conditions for prolonged retention and concentration of pollutants in the lower layers of the atmosphere.

The winds in the IP area determine the direction in which stripping and mining pollutants spread. Wind is an important factor for natural self-purification of air and has a direct effect on the distance over which pollutants will scatter during the various IP implementation phases. Northern winds prevail in the region, but changes of direction can not be ruled out.

Protecting atmospheric air quantity (AAQ) is extremely important because of its direct effect on human health. The *Clean Atmospheric Air Act* lays down the conditions, the procedure and the manner for AAQ evaluation and management, including AAQ improvement in the areas where certain standards are exceeded. The Ministry of Environment and Waters (MOEW) has created a National Environmental Monitoring System (NEMS). This system provides timely and reliable information on the state of the environmental media and the factors impacting the said media, which is used for analyses, assessments and forecasts to justify activities to conserve and protect the environment against harmful impacts. The conditions of the atmospheric air in Haskovo and Kardjali is monitored by two automated and one manually operated MOEW points which are part of the NEMS:

- Rakovski Automatic Station - Automated urban background measuring point, situated in the built-up part of the town of Dimitrovgrad and accounting for the effects of industrial and household emissions;
- Studen Kladenets Automatic Station - Automated urban background measuring point, situated in the built-up part of the town of Kardjali and accounting for the effects of industrial and household emissions;
- Haskovo RIEW point – urban background measuring point with manual sampling and subsequent laboratory analysis.

The nearest automatic station is the Studen Kladenets station in the town of Kurdjali, 40 km. from the IP.

No information about significant sources of air pollution in the region is present. No enterprises or activities with non-fugitive emissions of atmospheric air pollution exist near the IP boundaries.

Pollution of urban air in near-by villages is of household nature and is caused during the winter. Air pollution is caused mainly by dust and SO₂ from domestic heating systems.

No intensive automotive traffic exists in the IP area. There is insignificant traffic along the existing road infrastructure and has no effect on the urban ambient air quality.

In total, there are no significant pollution sources in the region and it is possible to conclude that the ambient air quality is within the admissible limits.

The IP implementation will lead to fugitive emissions in the atmosphere. Such emissions will be present in all stages, from construction, operation, closure and through to rehabilitation. No operation of controlled emission sources is intended. Air pollution in the IP area will be caused by:

- ⇒ fugitive emissions of dust released from mining and overburden stripping - area sources;

- ⇒ fugitive emissions of dust released from handling of overburden and mined material;

- ⇒ fugitive emissions from transporting of the raw material to the processing plant and hauling of overburden to the stockpile;

- ⇒ fugitive emissions of dust from unloading of ore onto the apron feeder of the crusher and ball milling circuits and the processing circuits - secondary dust from unloading trucks and from the crushing process will be prevented by a sprinkler system installed throughout the plant.

- ⇒ uncontrolled emission of dust raised by the winds from stockpiled materials;

- ⇒ fugitive emissions of exhaust from machinery (*excavators, bulldozers, front-end loaders, impact drills etc.*) and from heavy-duty vehicles;

- ⇒ transport – dump trucks moving along the roads in the concession area will release linear source emissions from their internal-combustion engines. The pollutants will be the following: CO, CO₂, NO_x, SO₂, incompletely combusted hydrocarbons, soot etc.

- ⇒ dust and toxic gases released in the atmospheric air from drilling and blasting – this pollution will be presented in the EIA Report as indicative carbon oxide or as area-source emissions of NO_x and CO (*depending on the published data about toxic gases from blasting of the particular explosive*).

The EIA Report will present dust emission factors in accordance with approved methods, occurring during the various IP processes.

The EIA Report will prescribe mandatory measures to restrict dust pollution from the IP.

No other significant source of pollution is present in the IP area and no cumulative impact of atmospheric air by pollutants is expected.

The EIA Report will consider in more detail the atmospheric air pollution sources and will make a detailed analysis of the deposition of pollutants in the ground-level atmospheric air.

3.2. Surface and Ground Waters

The IP is situated within the jurisdiction of the Eastern Aegean Basin Directorate (EABD) for which there is an *Eastern Aegean Region Basin Management Plan* (2016-2021).

The EABD Director has expressed a Report in Letter Ref. No. IIY-01-183 (5)/26.05.2023 (Attached with the EIA Report) that the IP is admissible provided that the following conditions are met (we attach some of them):

- ⇒ No pollution of surface and ground water by operations in the IP is allowed;
- ⇒ No activities that may impair the status of the BG3MA100R270 water body are allowed.
- ⇒ No direct and indirect disposal of hazardous and harmful substances in ground water is allowed during the IP implementation;
- ⇒ No felling of natural riparian vegetation is allowed;
- ⇒ Abstraction from surface or ground water must be carried out following a permit issued in accordance with Article 44, paragraph 1 of the Waters Act;
- ⇒ Construction of new facilities in a water body must be carried out following a permit issued in accordance with Article 46, paragraph 1 of the Waters Act;
- ⇒ The quality and quantity status of drinking water sources in the IP area is protected;
- ⇒ Construction of drainage ditches peripheral to the mine field and to the open pit must be provided for in order to collect precipitation and snow-melt run-off from higher levels to prevent entry of surface water into the pit;
- ⇒ Adequate measures for reusing of precipitation, waste and drainwater into a closed return cycle in order to reduce the planned water abstraction and efficient use of water.

All those requirements have been taken into account in the basic design and the relevant analyses will be made in the EIA Report.

It should be noted that the Water Act (WA) does not provide any bans and restrictions as regards the IP presented above.

Surface water

The IP includes the territory of the surface water body ‘Byala Reka River and its Tributaries’ with Code BG3MA100R270. This water body includes some water protection areas designated under Article 119a, paragraph 1, item 3, letter „6“ of the WA (Section 3 of the Eastern Aegean River Basin Management Plan). The IP is not situated in a sensitive area in the meaning of Article 119a, paragraph 1, item 3, , letter ‘6’ of the WA (Section 3 of the Eastern Aegean River Basin Management Plan). The IP is not situated in water protection areas defined in accordance with Article 119a, item 1, item 2 and item 4 of the WA

The IP is situated within a water protection area - the Rhodopes - Eastern PA with code B00001032 defined in accordance with Article 119a, paragraph 1, item 5 of the WA included in Section 3, item 3.5.1. of the Eastern Aegean River Basin Management Plan. The IP is situated within a water protection area - the Byala Reka River Protected Area with code B00001032 defined in accordance with Article 119a, paragraph 1, item 5 of the WA included in Section 3,

item 3.5.2. of the Eastern Aegean River Basin Management Plan (with point 12 describing the concession area boundaries being situated outside the area).

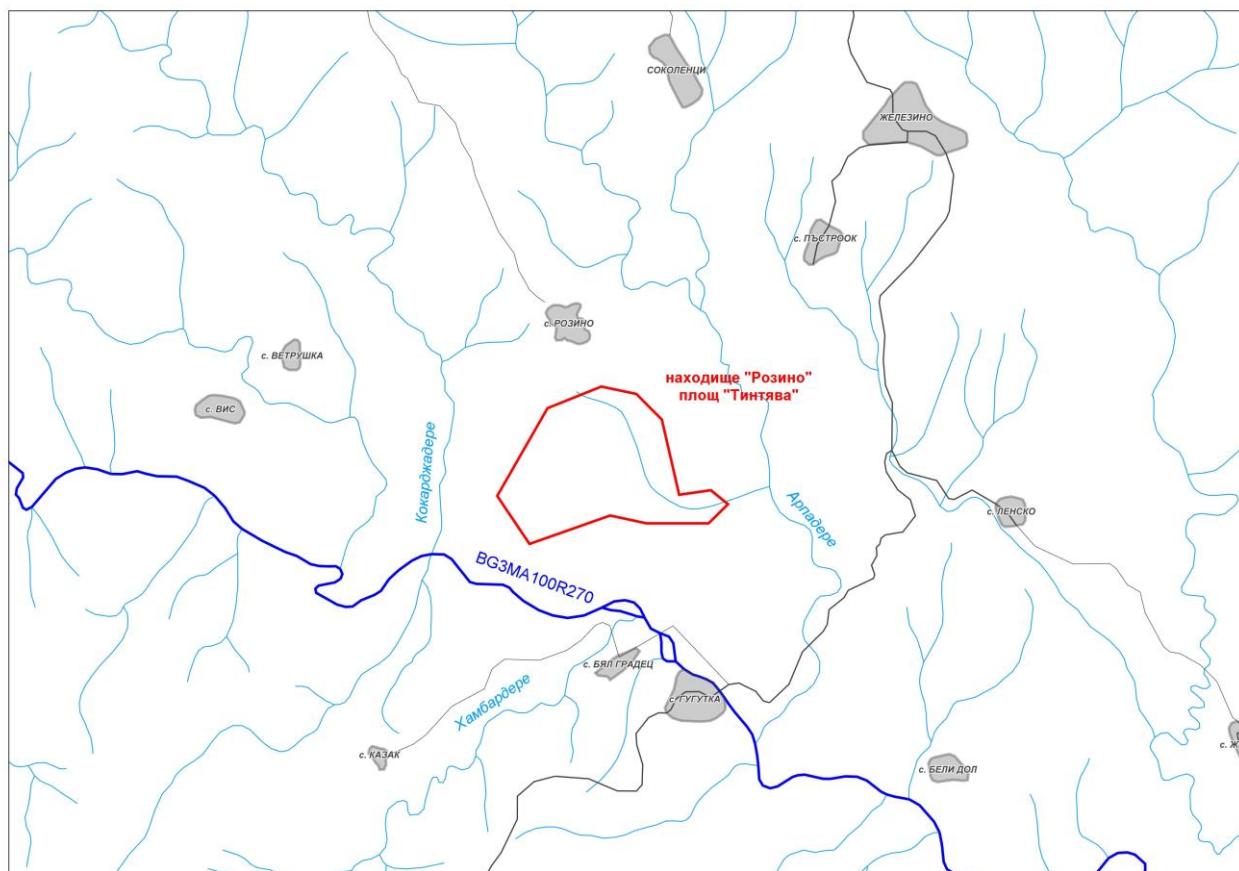


Figure 3.2-1. Location of the Rozino Deposit, Tintyava Property on part of the map of surface water bodies

Byala Reka (Akche hisar until 1942) flows through Bulgaria's southernmost part, in the lands of Krumovgrad and Ivaylovgrad municipalities. Its southern watershed line coincides with the state border with the Republic of Greece. The river drains a large portion of the hills of Maglenik, Irantepe and Sarta in the Eastern Rhodopes. It starts 2.2 km south of Chernichevo village from the Maglenik hill as Kodjadere at 660 m above sea level. For the first 15 km it flows north into a deep and thickly forested valley between the Irantepe hill (to the west and the Cherna planina hill (to the east). Approximately 3.5 km north-east of Tintyava village, the river turns to the south-east and the valley becomes asymmetrical with steep right-side slopes and oblique left-side slopes. The valley widens slightly near Gugutka village. Five large tributaries on the left side form the main and tributary supply system: Korudere, Dermen dere, Suldja dere, Musadere and Kodja dere. Down to this point the watershed area is expressly asymmetric to the left. There are many meanders along the river course, with those in the village of Dolno Lukovo being most famous and situated in a protected area of 1,532 ha. It discharges into the Luda reka river - a left-side tributary of the Maritsa River in the territory of Greece. The spring side and the right hand side of the watershed area down to the village of Gugutka are covered by well-

developed broad-leaved forests, and there is no forest in the Sarta hill part of the watershed area. The watershed area is rolling to low-mountainous.

The geological base includes crystal schists, gneisses, rhyolites, andesites and amphibolites of low filtration capacity. The soil cover is represented entirely by leached cinnamon forest soils.

Arpa Dere is the largest left-hand side tributary to the Byala Reka River in this region. It starts from springs at elevation 750 north (500-600 m.) of the Popsko village where it is named Rahmankyovska River, forming the Arpa Dere River at its point of confluence with the left-hand side tributaries Sokaklarska and Sokolenska rivers. From the Orohydrographic perspective, it resembles, and is identical to, those of the Byala Reka River.

Groundwater

The IP is situated in the groundwater body of *Fissure Water - Rhodopes Eastern Complex* with code BG3G000PtPg049. This water body includes some water protection areas designated under Article 119a, paragraph 1, item 3a of the WA. The IP is not situated in a vulnerable water protected area included in Section 3, item 3.3.1 of the Eastern Aegean River Basin Management Plan.

The Palaeogene materials occupy the tectonic subsided areas in the Eastern Rhodope block and in parts of the Central Rhodopean Block. They are represented by sediment, volcanogenic-sediment, and volcanic materials. The lower parts of the geological cross-section displays mainly continental terrigenous and limestone sediments from the Palaeocene. These are observed mainly in the southern and western parts of the water catchment area. These rocks are covered by breccias conglomerate and coal supply sandy materials at Preabonian age (mainly around Smolayn). They are overlaid consecutively by volcanogenic-sediment Priabonian and Oligocene rocks represented by flysch-like and molassa sediments, alternating with layer spills and andesite covers, latites, rhyolites, dacites, rhyodacites with associated tuffs, tuffoids and lava breccia.

The paleogenic sediments form laminar aquifer complex with mainly low flow rate. This aquifer is broad, significantly deep, featuring uneven horizontal and vertical changes of various rock types which, together with the uneven jointing, have caused filtration anisotropy of the ore-hosting rocks.

Several types of water have formed in this complex:

1. Fissure stratum water

Forming in sediment-tuff materials, with main water-bearing materials such as sandstone, conglomerates and, to a lesser extent, tuffs and tuff-breccia. The ground water is connected to the areas of regional jointing. Sandstone and conglomerate are frequently clayey which reduces their water-collection properties and available water. The fissure-layer water is recharged by precipitation but recharging is difficult because in most cases the water permeable rocks are covered by non-impermeable layers. On the other hand, the severely disjointed terrain aids in the faster draining of the crossing gorges which also reduces the volumes of water accumulating there. The water quantities of most of the springs are insignificant. Some boreholes go through these layers below the local erosion base and create some self-drainage. The water extraction

tests have shown low flow-rate for water extraction, frequently less than 0.1 l/s/m, but even more in some more cracked sections with higher abundance of water. The ground water here is also recharged by precipitation in the outcrop areas, and draining is by springs of insignificant flow-rate, of 0.05 to 0.25 l/s. Several springs with maximum flow-rates reach 0.45-2.2 l/s following intensive precipitation. The relative flowrates in the Smolyan coal basin are low - 0.0003 to 0.143 l/s/m and the filtration ratio varies between 0.016 and 0.08 m/24h.

2. Fissure - karst waters

This water forms in lenses of upper Neocene and Oligocene organogenic reef limestone, several scores of meters deep, and of 10-20 km² in area, enclosed in the sediment-volcanogenic complex. The small outcrops, and, therefore, recharging areas and the good drainage do not allow for much water to accumulate in these materials. This type of ground water is also recharged by precipitation and is drained by springs, most of which have low flow-rates. Some relatively higher water quantities drain from springs of varying flow-rates (near the villages of Podkova, Plovka, Byal Kladenets, Svetoslav, Grivyak, and the town of Ivaylovgrad). They values go as high as 0.7-10 l/s. The water in the springs varies significantly, depending on the amounts recharged by precipitation. The small distribution areas, their comparatively low water abundance and the lack of sufficient quantitative information have caused consideration of this type of water along with the fissure water further on in this text.

3. Fissure water.

This water is recharged by the weathered volcanic cover areas made of rhyolites, andesite, dacite, and the lava breccia of these materials, and by sediment rocks of strong cohesion. Their abundance is mainly controlled by the regional weathering patterns and tectonic structures in the rocks. Higher abundance is associated with the tectonic structures. These rocks form a common aquifer with the overlaying alluvial, deluvial and colluvial deposits. A common unconfined aquifer is formed where the water level depends on the landscape and is several scores of centimeters to 7-10 m below surface. The seasonal fluctuation of the water level is 0.3-0.4 m. The groundwater is recharged by precipitation and drained by springs in the lower parts of the land surface, whose flow rates vary between 0.06 and 0.2 L/s, and rarely higher. Due to the shallow circulation of groundwater, the flow of these springs is intermittent and some even dry up in the summer. Draining into the alluvial aquifer and directly into the rivers is also possible. The highest water availability is allowed by the prism-crack andesites giving rise to many springs. The most significant spring is located north of Studen Kladenets village, with a flow rate of 3 to 50 l/s (10-12 l/s on average), from block andesites. No information about the filtration parameters of this aquifer is present.

According to EABD's River Basin Management Plan (Section 4, Monitoring and Assessment of the Condition of Surface Waters, Ground Waters and the Laws for Protection of Water in the River Basin Management Plan, 2016 – 2021), the chemical status of this water body is good.

According to Table 25 Deterioration of the Quality of Groundwater Intended for Drinking and Household Supply for Total Alfa-Activity, Natural Uranium and Lead (Section 4, Monitoring and Assessment of the Condition of Surface Waters, Ground Waters and the Laws for Protection of Water in the River Basin Management Plan, 2016 – 2021), the lead in

concentrations of 0.0149 - 0.0350 mg/l is present in the groundwater of the Fissure Water - Rhodope Eastern Complex water body with code BG3G000PtPg049.

According to Section 5 - List of Environment Protection Goals (of EABD’s 2016 – 2021 River Basin Management Plan) and Table 12 Goals and Deadlines for the Groundwater Intended for Drinking in the Fissure Water - Rhodope Eastern Complex water body with code BG3G000PtPg049 must reach the limit values for lead and nitrate ions consistent with the potable groundwater quality standard by 2027.

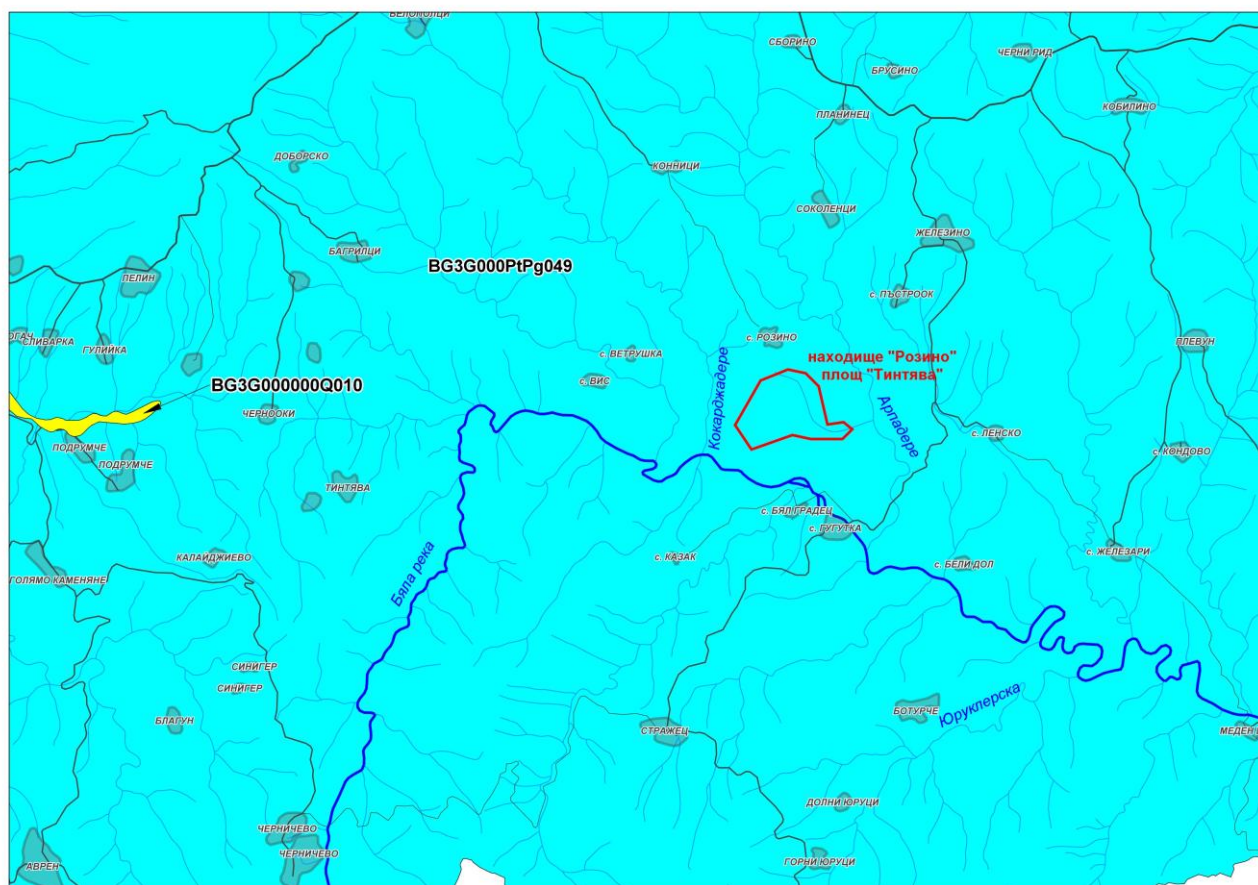


Figure 3.2-2. Location of the Rozino Deposit, Tintyava PLA on part of the 1:100,000 scale map of groundwater bodies

The nearest water bodies used for potable water supply will be identified and information will be requested from the local mayors about the sources for which the EABD has no information. The potential impacts on those areas will be analysed in the EIA Report.

The EIA Report will review in detail the hydrological and hydrogeological conditions and the factors affecting groundwater quantity and quality, and the quantity and quality of water resources in the site. The possible sources of pollution of surface and ground water will be analysed. The cumulative effects from other similar IPs within the impact area will be assessed. Measures to limit pollution of water in the region will be prescribed.

3.3. Soils

According to Bulgaria's soil-geographic zoning (N. Ninov, Geography of Bulgaria, 1997), the IP area is situated in a Balkan-Mediterranean soil sub-area, in the Eastern Rhodopes - Sakar province.

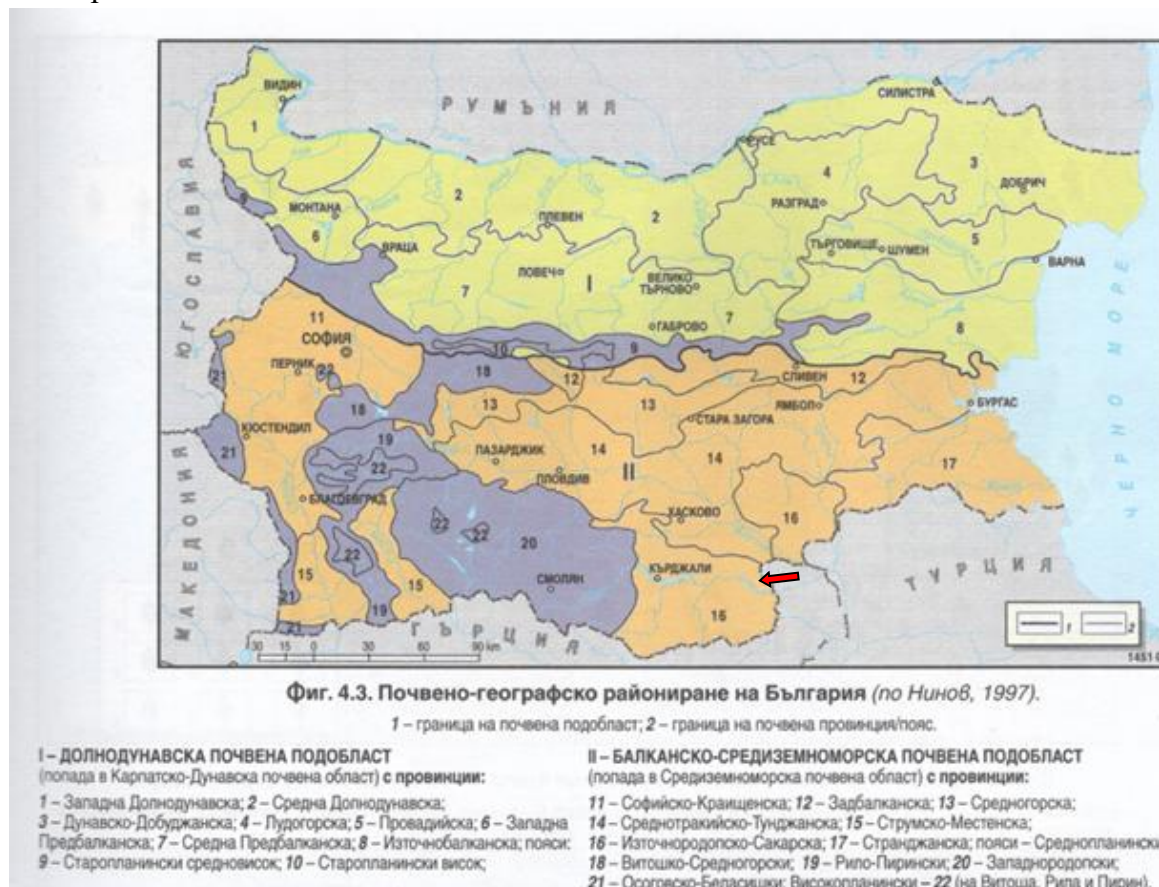


Figure 3.3-1 Map of Bulgaria's soil-geographic zoning and location of the IP

This province is dominated by shallow soils (Leptosols, LP) – umbric leptosols with lithosols, umbric leptosols with cinnamon luvisols (chromicq LVx) soils and development of erosion. The soils in the province belong mainly to Class IV of soil capability – poor.

They are formed over the weathering zone of Paleogene limestones (Pg23). Up to 90% of these soils are defined as cinnamon leached, sandy-clayey, rocky, rather shallow, poor, dry, and not suitable for forests. These soils are poorly fertile, weak and with up to 2% of total nitrogen. Their pH is mainly slightly acidic and neutral. The high ion-exchange and buffer capacity of these soils, which are differentiated in texture, are also highly stable against pollution and belong to resistance class III. The sub-Mediterranean part of the climate in the region where cinnamon forest soils occur contributes to a longer and more intense intra-soil weathering processes. The soils are cinnamon to cinnamon-brown in colour and more clayey in composition.

Crumbly, shallow and predominantly dry leached cinnamon forest soils of clayey-sandy composition prevail in the Ivaylovgrad Municipality. In general, cinnamon forest soils occur mainly in low-mountain regions and occupy the relatively more disjointed terrain forms in pan

valleys. This soil type contains mineral chemical elements. As the physical properties are concerns, the profile is highly compacted irrespective of the differences in mechanical composition. Furthermore, usually the upper layer is highly pulverised but the subsoil structure is good, in comparison. The soil structure deteriorates abruptly at depth. Increased erosion is observed in the areas where these soils occur. In general, relatively high vertical disjoining of the terrain and significant deforestation are the main erosion-conductive processes.

It is important to note that soil erosion is among the main problems faced by farmers and impacts agricultural development to a high degree. Many studies show that sustainable organic farming and regular forestation can improve the condition of the soils and reduce the erosion processes.

Cinnamon forest soils are suitable for vineyards, tobacco, fruit crops and cereals.

The other soil types in the Ivaylovgrad area are slowly weathering and erodible leached and weakly leached chernozem vertisols occurring in river valleys and in shallow soils over hard rocks.

The regional laboratory of the Executive Environmental Agency in Haskovo monitors the Earth and Soils monitoring and control subsystem of the National Automated System for Environmental Monitoring (NASEM). The soil-sampling points have been defined by the Executive Environmental Agency in Sofia. They are situated over the entire jurisdiction of the RIEW and are related to the sources of pollution. The monitoring points are appropriate for the soil types, the permanent uses and the crops. Geographic coordinates in a 16x16 km network have been laid down for those monitoring points. Sampling in the Ivaylovgrad Municipality is carried out in the following points:

- Pashkul village;
- Svirachi village.

According to the Regional Environmental Status Report drawn up by the Haskovo RIEW, the samples taken in 2021 were analysed in 2022 for heavy metals and level I metalloids following an annual soil monitoring program approved by EEA's Executive Director. Samples taken from both points in the Ivaylovgrad Municipality had been analysed for the following parameters: heavy metals and metalloids, total nitrogen (Keldahl), phosphorus, organic carbon, soil pH, electrical conductivity, total carbon and persistent organic pollutants - 16 PAH, 6 PCB, 15-chlor-organic pollutants, bulk density. The analysis results show compliance for all parameters with the limit values set forth in Regulation 3/2008 on the Limit Values for Harmful Substances in Soils and in Annex 2 under Article 4 – Safe Concentrations, Maximum Admissible Concentrations, Intervention Concentrations for Persistent Organic Pollutants and Oil Products in Soils.

No soil sampling and soil acidity testing in the Ivaylovgrad region have been carried out in 2022.

Storage facilities (BB cubes) for obsolete plant protection products which have become unusable or have been banned are present in the municipality and have been repaired.

The soil samples taken from the points in the Pashkul and the Svirachi villages have been analysed in 2022 for pesticide pollution. No pesticide pollution was shown in the test results.

No sampling and testing of soil samples for acidity from the Ivaylovgrad region have been carried out.

No pollution with oil products was found on the territory of the Haskovo RIEW in 2022.

The impact of the IP on this component of the environment will be analysed in the EIA Report.

3.4. Subsurface Environment and Mineral Diversity

The Eastern Rhodopes is regarded as part of the so-called Eastern-Rhodopean anticlinorium comprising a series of anticlinal and synclinal folds (Kozhuharov, 1971) such as the Kesebair upheaval, the Avren graben-synclinorium, the Tintyava upheaval, and the Rozen synclinorium.

The Tintyava PLA is located in the Eastern Rhodope fall, east of the Belorechki cupola. It is positioned in a Palaeogene graben, typical of the Eastern Rhodopes and filled mainly by coarse clastic material and by less rudaceous sediments. The graben has formed by collision development of the region during the Upper Cretaceous and the Oligocene. This has resulted to the accumulation of thick terrigenous and volcanogenic-sediments of diverse composition during the Palaeogene. Hypoabyssal and mainly acidic subvolcanic intrusives have become embedded by the end of the Oligocene in this heavily disintegrated earth crust and have enabled the creation and long existence of hydrothermal systems. The intrusions have acted as thermal motors driving large volumes of hydrothermal solutions. These solutions have leached gold from the hosting rocks and have transported it as chloride complexes across the permeable faulting and thrusting zones. Their mixing with meteoric water has resulted in lower temperature and deposition of the more mineralization. Several highly metamorphous complexes, mesozoic schists and aplitic granites (Rozino type), which are superimposed between one another, are delineated in the western and north-western parts of the Palaeogene sediment basin. Two suites - a breccia-conglomerate and a coal-bearing sandy suite of Preabonian age have been proven by fauna indicators in the PLA. These suites are 800 - 1,000 m. deep and 100 to 800 m. deep, respectively. Their lithology is highly diverse. The breccia conglomerate suite comprises pieces of the metamorphous foundation, granite blocks, ultrabazites, and diaphorites with sandy and coal-sandy bindings. The coal-sandy suite comprises polymictic sandstones with limestone-clayey binding, gravel conglomerates, aleurolitic sandstones, marls, coal schists and coal.

The main ore deposition is hosted in the sediments of the Byala River graben near the western boundary of the basin. Several highly metamorphous complexes, mesozoic schists and aplitic granites (Rozino type), which are superimposed between one another, are delineated in within the Palaeogene sediment basin.

The sediments outcropping to the surface are part of the Krumograd group (undefined), the breccia-conglomerate suite (Podrumchenska suite), the coal-bearing sandy formation (conglomerate-sandstone suite).

The Alpine ore deposits in the Eastern-Rhodopes Ore Basin are united in five mineralization types:

- pre-Palaeogene: chalcopyrite-pyrite with gold type;
- Palaeogene quartz-pyrolusite, quartz-gold-polymetal, quartz-gold-adular (low-sulphide) types;
- Neogene: quartz-antimony with gold type.

Quartz-gold-polymetal and quartz-gold-adularia mineralizations are predominant in the PLA.

The quartz-gold-polymetal mineralization is closely linked to montsonite hypoabyssal intrusive rocks, post-plutonic dykes and rhyolite-andesite depressions (Kolkovski, 1994). The ore bodies comprise quartz-sulphide veins, vein-like zones or linear stockwerks. Five mineral types are present in the formation:

- quartz-pyrite-chalcopyrite with bismuth sulphosalts - Madjarovo, Popsko;
- quartz-hematite-chlorite with gold - Madjarovo, Spahievo;
- quartz-polymetal with chalcopyrite - Madjarovo, Popsko, Zvezdel-Pcheloyad;
- quartz-barite-sulphosalt with gold - Zvezdel-Pcheloyad, Madjarovo, Popsko.

The quartz-gold-adularia mineralization which is poor in sulphides in the Eastern-Rhodope Ore Region is increasingly important. It is characterised by a genetic connection to sub-volcanic bodies, mainly basalt-latite sills. It is controlled by sub-meridional faults. Four mineral types have been identified:

- quartz-pyrite - Sarnak;
- gold-adularia with haematite - Sarnak, Sedefcje, Chala;
- gold-quartz-pyrite - Rozino;
- gold-quartz-adularia - Madjarovo, Krumovgrad.

The regional geological position of the Rozino Deposit is interpreted as a sequence of small Palaeogene syn-tectonic extensional sediment basins in the Byala Reka metamorphous core basin. The tectonic situation in this complex is extensional and complicated, with a main north-western direction and right-slip fault kinematics of the main structures. One of the main fault disturbances is the so-called Byala Reka shear zone followed along more than 15 km. in the region. Multiple north-eastern fault disturbances limiting the northwestern part of the sediment basin have been established and drilling data have established the Tashlak fault on which the telethermal alteration zone is found.

The main lithological units containing the gold mineralization in the deposit are breccia-conglomerates/sandstone sediments and, partially, olistostrome blocks, metagranites and ultrabazite rocks of the upper multicolored complex. The breccia-conglomerate suite is the main host of the mineralization and lies transgressively or along a low-angle fault separating it from the up to 200 m. deep foundation. This unit comprises alternating coarse and often non-layered and non-stratified conglomerates of polymictic breccia, sandstone, siltstone and clayey bands. A large 800 m. long, 350 m. long and 170 m. deep olistostrome body that had most likely slipped along the fault surface of a listric fault during sedimentation has been defined in the basin. It consists of black-gray low metamorphous and highly folded schists and phyllites abundant in organic materials.

Morphology of the Orebodies

The industrially most important morphogenetic type in the Rozino Deposit is the strip-intergrown type of mineralization evolved in the Palaeogene sediments. The orebody morphology is complex and they may be divided conditionally into steep and sub-horizontal. The steep bodies are evolved near the contact of the sediments with the underlying rocks in the north-northeastern fault sheaf. Frequently the sub-horizontal ore bodies are separate and without clear links to fault structures. The main ore controls in this case are the permeability and the geochemical features of the hosting rocks. Some rare veiny ore bodies are hosted among the rocks of the metamorphous substrate. The bodies are sub-horizontal to slightly inclined, concordant with the foliation and always linked to the mineralizing structure.

Three morpho-genetic types of mineralization can be identified in the Rozino deposit: strip-intergrown type, streaks and veins (gold-silver-polymetal veins);

The steep bodies are evolved near the contact of the sediments with the underlying rocks in the north-northeastern fault sheaf - the Tashlaka fault which confines the sediment palaeogene basin on the north-east. A Bonanza type mineralization is evolved along the fault contact zone where chalcopryrite, sphalerite and galena are deposited alongside gold. The gold mineralization in this shear zone traced for 300 m. is highly irregular both laterally and vertically.

Cross-cutting shape-forming ore bodies are observed both in the steep and inclined ore bodies described above and separately, in the veinlet and veiny morphogenetic mineralization types. They are best represented in the north-northeastern contact-side flank of the sediment basin where they form 130-150° trending and up to 80m wide strip. Veins, veinlets and sheaves of veins are observed on the surface and in boreholes.

Spatial binding with a tectonic direction of 130-150 degrees is observed around the veins (and particularly those with fracture brecciation and silicification). Many veins with voids and open spaces seem to occupy steep sections of extension near the shears, while others are subparallel to the shears. Studies of the veins have shown the following:

- Usually, the quartz-(carbonate)-pyrite-marcazite and quartz-(carbonate)-adularia veins include hollows and substantial open spaces. Crustiform, chalcedonic and mossy textures are present.
- Pyrite, +/- quartz, veinlets are oriented similarly to the quartz veins and mostly dip moderately to WSW and SSW;
- The carbonate veins seem to be paragenetically late and dip moderately to steeply to the SW, subparallel to the NW-SE trending late faults.

Total Mineral Composition of the Ores

Almost all samples contain a chaotic mix of differently sized clasts varying between 4-62.5 µm grains (represented by angular coarse particles) to several centimetre large clasts forming over-saturated conglomerates and breccias. The clasts comprise an allochthonic mix mainly of quartzites, milotitized quartzites, feldspar quartzites, mica schists (often containing graphite), phyllitized schists and grainy muscovite-containing fragments. The matrix is almost always made of a finer-grained mix of the same minerals building the clasts - mainly quartz, muscovite and feldspar. Finely injected haematite/limonite and/or ferroxide pigmentation are observed in many of the samples. All samples contain injected allotriomorphic rutile grains present in the clasts and, also, in the matrix. Garnet grains are present in some cases.

Veined Mineralization

Veins are a frequent occurrence in the examined intervals. Mainly ankerite with some quartz are the minerals present in the veins. Seen under the microscope, many veins are trimmed by a selvage of idiomorphic quartz and, in some case, adularia, while ankerite generally occupies the central part of the vein. Sometimes the vein quartz forms dog-tooth shaped crystals, typical of low-pressure growth in a pull-apart shear fracture. While most fractures are narrow and completely sealed by quartz and ankerite, others are wider and more porous, which is an indication of filling up of hollows and caverns.

A small number of narrow veins comprises only quartz. Thin fine-grain orthoclase (adularia) occur rarely in the series.

Narrow micro-veinlets with adularia increase appreciably in the sections where the host rock is sufficiently compacted. Several generations of veins have been noted.

Pyrite-containing solutions have penetrated the foundation ultramafic rocks displacing partially the outer peripheral parts of magnetite grains and filling the narrow fractures in the host rocks. Generally, the central parts of the magnetite grains are unaffected. This seems to show that the pyrite mineralization is at least partially owed to penetration of iron rich sulphides in the rock. No pyrite veins are observed in the rocks above the contact with the foundation.

Sulphide mineralization

Pyrite occurs in the entire series, mostly as single idiomorphic to sub-idiomorphic grains or groups of few grains scattered throughout the host-rock matrix. It also occurs as recrystallized grains attached to the outer peripheral parts of the clasts. A very small number of pyrite grains is included among the clasts. Many of the pyrite grains have entrained in their central parts multiple fine or small lamellar grains of mica and contain fewer inclusions in their outer peripheries, which seems to represent a later pyrite overgrowth of the grains. Pyrite associates with veins rarely but in the sections where quartz-ankerite veins intersect pyrite grains the latter are remobilized and recrystallized as nests in or near the vein. It is noted that in rare instances grains of gold form inclusions in the remobilized and/or recrystallized pyrite. It seems that most of the pyrite has formed during diagenesis and has changed partially during the late recrystallization and overgrowing during the hydrothermal activity. Many pyrite grains have become corroded by the altered material of the matrix.

The foundation below the contact zone has been affected by low-temperature pyritization that has replaced magnetite partially and has filled small joints in the rock. The pyrite is melnikovite-pyrite formed at low temperatures.

Very few injections of arsenopyrite - a diagenetic mineral, have been observed. This mineral occurs in the host rock matrix and, rarely, in silicate veins among the rocks. No visible gold in association with arsenopyrite has been found.

The polymetal sulphides are locally evolved in the sediments of the foundation contact zone. This zone comprises non-compacted tectonic clay (mainly chlorite, ankerite, adularia and muscovite) with chaotic injections of sulphides - in other words, they are not present as veins or in fractures but may have been such before the faulting. These are represented by usually closely

linked and mostly intergrown chalcopyrite, sphalerite and galena. Any association with pyrite seems to be accidental, rather than by a causal link. Only a small number of polymetal sulphide grains are linked to pyrite and seem to be genetically linked. In those cases the pyrite is usually anhedral and intergrown with sphalerite and chalcopyrite, rather than idiomorphic-to-subidiomorphic. In the cases where the polymetal sulphides are linked to the more frequent idiomorphic pyrite, chalcopyrite, sphalerite and galena are generally attached to the outer periphery of pyrite grains and are not intergrown. It seems that the polymetal sulphides which have formed at a later stage have assimilated the existing grains of pyrite. Frequently gold is associated with chalcopyrite, sphalerite and galena, and forms small, rounded or egg-shaped inclusions and conchrescences in these minerals, but very rarely it associates with pyrite. Rare chalcopyrite injections are observed along the entire series. No change of chalcopyrite into covellite, digenite or chalcocite is observed.

Gold Mineralisation

Although gold grades in the series are anomalous to some extent, gold visible under microscope have been established only in singular samples. Most of the gold-behaviour related data are outlier-grade samples where gold is associated with chalcopyrite, sphalerite and galena in the form of small conchrescences and rounded inclusions into the minerals and onto grain peripheries. Some rare gold grains are present as 'free' gold along the contacts between silica and/or carbonaceous grains forming the matrix of the rocks, while a small number of grains occurs as inclusions in the pyrite.

The EIA Report will include:

- A description and assessment of the activities affecting the geological environment during implementation of the project.
- A forecast and assessment of the expected changes in the geological environment caused by the implementation of the investment proposal. Significance of the impact.

3.5. Landscape

According to the European Landscape Convention, it has an important role in the cultural, ecological, and social sphere of the public interest and, being conducive to the economic activity, is a resource whose protection, management, and planning can contribute toward sustainable development of the community and quality of life improvements.

Defined as a 'territory; the specific aspect and elements have emerged as a result of actions and interactions between natural and/or human factors'.

According to the definitions accepted in Bulgaria, 'landscape is a territorial system comprising interacting natural and anthropogenic components and complexes' and represents a system containing and recreating resources, preserving the genetic fund and is a source of aesthetic impact.

Landscape sustainability is a category which reflects the persistence or rigidity of landscape in time. It is regarded as sustainability relative to the magnitude of the impact affecting the landscape

structure and its capacity for prolonged unidirectional development while preserving its natural or acquired properties over a defined forecast period.

The landscape in the IP area has not been affected by anthropogenic factors. There are no asphalt roads, industrial enterprises, storage facilities etc. It belongs to the Eastern Rhodopean - Sakar district according to the Regional Differentiation of Landscapes in Bulgaria (Velchev, Todorov, Penin, 2002).

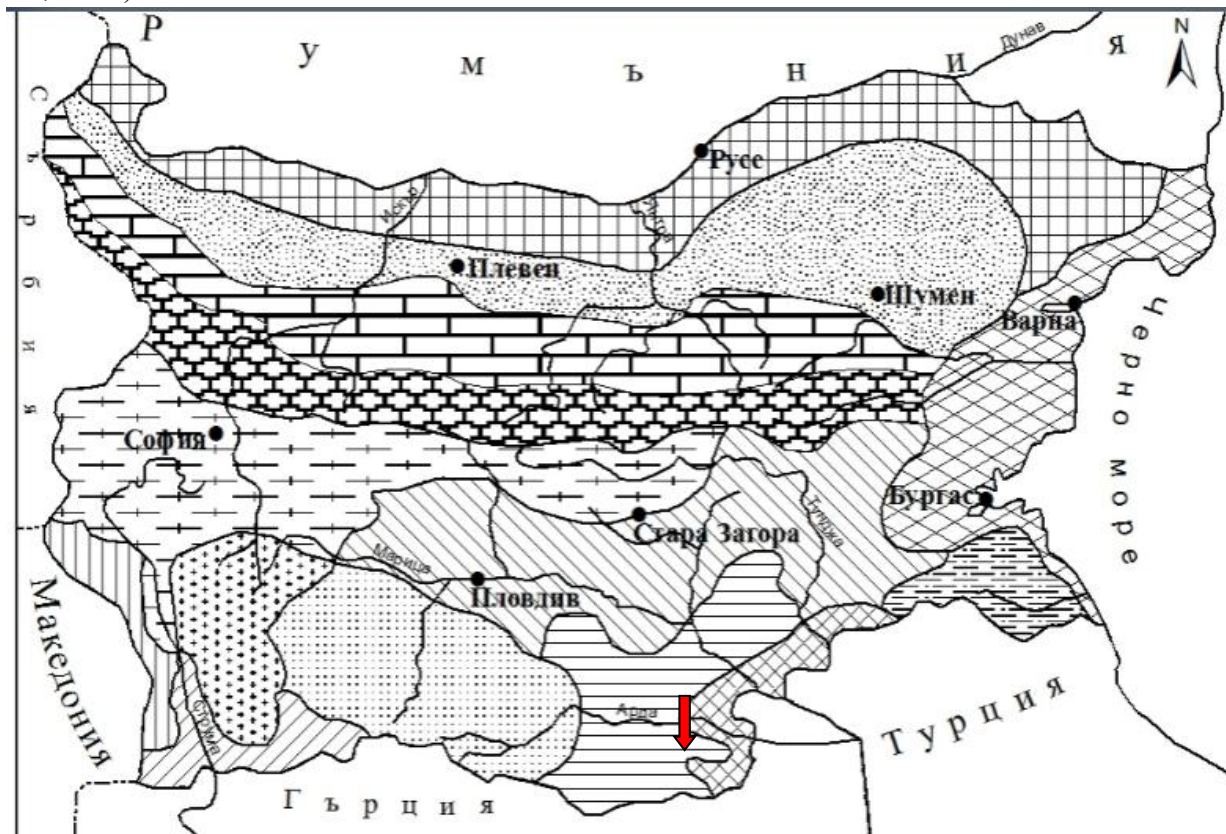


Figure 3.5-1. Location of the IP and Regional Differentiation of Landscapes in Bulgaria (Velchev, Todorov, Penin, 2002).

The more important characteristics are the following:

- ⇒ The Eastern Rhodopes, Sakar and the lower stretches of the Maritsa, Tundja and Arda rivers are included;
- ⇒ The Mediterranean influence is strong;
- ⇒ Increased anthropogenic influence exists in some places;
- ⇒ The terrain is low-mountainous, rolling.

The EIA Report will assess the change of landscape that will result from implementation of the IP – negative and protruding land forms, man-made water bodies, buildings and facilities. The report will include post-mining landscape-restoration recommendations that will be taken into account in the rehabilitation designs.

3.6. Flora and Fauna. Elements of the National Environmental Network

Flora

Bulgaria’s geobotanical zoning places the studied region into the Krumovgrad Region of the Eastern-Rhodopean district of the Macedonian-Thracian province which includes the country’s warmest regions. Southern exposures or exposures with a southern component prevail in the exploration region. The forest communities comprise xerothermal species such as Italian oak, cerris oak and pubescent oak. Xerothermal Italian oak and Italian oak-Cerris oak forests, as well as xeromesophytic durmast oak and mixed durmast oak and hornbeam forests are typical. Various oak communities of secondary origin have formed during the years of intensive logging. Scrub communities – mainly juniper (*Juniperus oxycedrus*), oriental hornbeam (*Carpinus orientalis*) and Christ’s thorn (*Paliurus spina-christi*), are also present in some places. Grass vegetation has formed mainly in former tobacco meadows abandoned during the years for various reasons. Depending on the time at which they had been abandoned, parts of these former tobacco lands are being overtaken by scrub. Austrian pine and Scots pine plantations in poor condition are a frequent occurrence - many of the trees are attacked by parasites and many (almost 40%) have withered completely or partially.

Field studies in the IP have established 16 habitat types classified according to EUNIS (Davies et al. 2004) Seven of these habitats are of significance for conservation and are included in Annex 1 of the Biodiversity Act and are subject to protection in the Rhodopes - Eastern Protected Area (PA).

Table 3.6-1: Types of habitats in the IP area. EUNIS – EUNIS Code; Attachment 1 – Attachment 1 of the EPA Code (* - priority habitat);

No.	EUNIS	Habitat	Attachment 1
1	C2.31	Upper currents of permanent, slow-flowing rivers and streams	
2	E1.22	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (*important orchid sites)	6210(*)
3	E5.2	Meadows	
4	F5.13	Arborescent matorral with <i>Juniperus spp.</i>	5210
5	F5.31	Helleno-Balkan pseudomaquis	
6	G1.111	Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (Alno-Padion, Alnion incanae, Salicion albae)	91E0*
7	G1.38	<i>Platanus orientalis</i> woods	92C0
8	G1.737	Eastern white oak woods	91AA*
9	G1.76	Pannonian-Balkan turkey oak –sessile oak forests	91M0
10	G3.F1	Coniferous crops	
11	G5.81	Recently cut down places, former deciduous forests	
12	H2.58	Southeast European thermophilic silicate screes	
13	H3.6	Siliceous rock with pioneer vegetation of the Sedo-Scleranthion or of the Sedo albi-Veronicion dillenii	8230
14	H5.61	Unsurfaced pathways	

No.	EUNIS	Habitat	Attachment 1
15	I1.53	Non-cultivated, non-irrigated meadows with annual and multi-annual weed formations	
16	X25	Yard seats	

The field studies have established habitats of plant species of conservation significance:

- pink butterfly orchid (*Orchis papilionacea*) included in Attachment 3 to the Biodiversity Act;
- Lizard orchid (*Himantoglossum caprinum*), included in Annexes 2 and 3 of the Biodiversity Act and in Bulgaria’s Red Data Book (Peev 2011) as ‘Vulnerable’;
- Caesar’s Amanita (*Amanita caesarea*), included in Bulgaria’s Red Data Book (Peev 2011) as ‘Vulnerable’;

Fauna

From the zoo-geographic perspective, the region belongs to the Rila-Rhodopes region where Euro-Siberian and European species are predominant together with Mediterranean species. The Euro-Siberian and European species there have spread mainly from the west, through the mountains in Southwestern Bulgaria. Varying climatic influences, mainly Mediterranean, and the diverse terrain explain the high biodiversity of the region.

Eighty five vertebrate species have been established by inspection visits in 2017. Three species are subject to protection in the Rhodopes - Eastern Protected Area (*Bombina variegata*, *Testudo graeca* and *Testudo hermanni*), and 22 in the Byala Reka Protected Area (*Ardea cinerea*, *Ciconia ciconia*, *C. nigra*, *Gyps fulvus*, *Neophron percnopterus*, *Accipiter nisus*, *Aquila heliaca*, *Buteo rufinus*, *B. buteo*, *Circaetus gallicus*, *Hieraaetus pennatus*, *Pernis apivorus*, *Falco subbuteo*, *Charadrius dubius*, *Caprimulgus europaeus*, *Coracias garrulus*, *Merops apiaster*, *Picus canus*, *Dendrocopos medius*, *Dryocopus martius*, *Lanius collurio*, *L. minor*).

Table 3.6-2: Vertebrate species found in the IP area

No.	Species	Species
<u>Reptiles</u>		
1	Slowworm	<i>Anguis fragilis</i>
2	Aesculapian snake	<i>Elaphe longissima</i>
3	Dahl’s whip snake	<i>Platycephalus najadum</i>
4	Viper	<i>Vipera ammodytes</i>
<u>Birds</u>		
5	Grey heron	<i>Ardea cinerea</i>
6	Sparrow hawk	<i>Accipiter nisus</i>
7	Long-legged buzzard	<i>Buteo rufinus</i>
8	Honey buzzard	<i>Pernis apivorus</i>
9	Little owl	<i>Athene noctua</i>
10	Middle spotted woodpecker	<i>Dendrocopos medius</i>
11	Black woodpecker	<i>Dryocopus martius</i>

No.	Species	Species
12	White-throated dipper	<i>Cinclus cinclus</i>
13	Winter Wren	<i>Troglodytes troglodytes</i>
14	Black Redstart	<i>Phoenicurus ochruros</i>
15	Song thrush	<i>Turdus philomelos</i>
16	Nuthatch	<i>Sitta europaea</i>
<u>Mammals</u>		
17	Fat dormouse	<i>Glis glis</i>
18	Jackal	<i>Canis aureus</i>

As regards invertebrates, a second species protected in the PA, *Euplagia quadripunctaria*, was found during the current field study, besides the stag beetle (*Lucanus cervus*).

Fifty eight vertebrate species of which 4 are newly established in the region have been found during the 2019 field studies.

Table 3.6-3: Vertebrate species found during the field studies in the region, and their conservation status. Biodiversity Act – Number of BA attachment; Bulgaria’s Red Data Book category (Golemanski 2011); *Carassius gibelio* – a newly established species.

No	Species	Species	Biodiversity Act	Bulgaria’s Red Data Book
<u>Fish</u>				
1	Italian barbel	<i>Barbus cyclolepis</i>	2	
2	Goldfish	<i>Carassius gibelio</i>		
3	Spined loach	<i>Cobitis taenia</i>	2	
<u>Amphibians</u>				
4	Spotted salamander	<i>Salamandra salamandra</i>	3	
5	Yellow-bellied toad	<i>Bombina variegata</i>	2, 3	
6	Common toad	<i>Bufo bufo</i>	3	
7	European tree frog	<i>Hyla arborea</i>	3	
8	Marsh frog	<i>Pelophylax ridibundus</i>		
9	Agile frog	<i>Rana dalmatina</i>		
<u>Reptiles</u>				
10	European pond tortoise	<i>Emys orbicularis</i>	2, 3	
11	Spur-thighed tortoise	<i>Testudo graeca</i>	2, 3	EN
12	Hermann's tortoise	<i>Testudo hermanni</i>	2, 3	EN
13	Meadow lizard	<i>Darevskia praticola</i>		
14	European green lizard	<i>Lacerta viridis</i>	3	
15	Erhard’s wall lizard	<i>Podarcis erhardii</i>	3	
16	Caspian whipsnake	<i>Dolichophis caspius</i>	3	
17	Grass snake	<i>Natrix natrix</i>		
18	Montpellier snake	<i>Malpolon insignitus</i>	3	
<u>Birds</u>				
19	White stork	<i>Ciconia ciconia</i>	2, 3	VU
20	European nightjar	<i>Caprimulgus</i>	2, 3	

No	Species	Species	Biodiversity Act	Bulgaria's Red Data Book
		<i>europaeus</i>		
21	Common Swift	<i>Apus apus</i>	3	
22	Common Cuckoo	<i>Cuculus canorus</i>	3	
23	Common Wood Pigeon	<i>Columba palumbus</i>		
24	Turtle dove	<i>Streptopelia turtur</i>		
25	Egyptian vulture	<i>Neophron percnopterus</i>	2, 3	EN
26	Honey buzzard	<i>Pernis apivorus</i>	2, 3	VU
27	Booted eagle	<i>Hieraaetus pennatus</i>	2, 3	VU
28	Common buzzard	<i>Buteo buteo</i>	3	
29	Scops owl	Otus scops	3	
30	Tawny Owl	<i>Strix aluco</i>	3	
31	Eurasian hoopoe	<i>Upupa epops</i>	3	
32	Great Spotted Woodpecker	<i>Dendrocopos major</i>	3	
33	Middle spotted woodpecker	<i>Dendrocopos medius</i>	2, 3	
34	Black woodpecker	<i>Dryocopus martius</i>	2, 3	VU
35	Raven	<i>Corvus corax</i>	3	NT
36	Hooded Crow	<i>Corvus cornix</i>		
37	Red-backed shrike	<i>Lanius collurio</i>	2, 3	
38	Golden Oriole	<i>Oriolus oriolus</i>	3	
39	Crested Lark	<i>Galerida cristata</i>	3	
40	Woodlark	<i>Lullula arborea</i>	2, 3	
41	House Martin	<i>Delichon urbicum</i>	3	
42	Swallow	<i>Hirundo rustica</i>	3	
43	Blue tit	<i>Parus caeruleus</i>	3	
44	Great Tit	<i>Parus major</i>	3	
45	Robin	<i>Erithacus rubecula</i>	3	
46	Nightingale	<i>Luscinia megarhynchos</i>	3	
47	Blackbird	<i>Turdus merula</i>	3	
48	Song thrush	<i>Turdus philomelos</i>	3	
49	White Wagtail	<i>Motacilla alba</i>	3	
50	Grey Wagtail	<i>Motacilla cinerea</i>	3	
51	Chaffinch	<i>Fringilla coelebs</i>	3	
52	Spanish Sparrow	<i>Passer hispaniolensis</i>	3	
53	Corn bunting	<i>Emberiza calandra</i>	3	
		<u>Mammals</u>		
54	Common mole	<i>Talpa europaea</i>		
55	Fat dormouse	<i>Glis glis</i>		
56	Wild boar	<i>Sus scrofa</i>		
57	European roe deer	<i>Capreolus capreolus</i>		
58	Jackal	<i>Canis aureus</i>		

The EIA Report should analyse and evaluate the assumed impact of the entire IP on the flora and fauna and measures to prevent negative impacts on biodiversity should be prescribed.

Protected areas. Elements of the National Environmental Network

Protected Areas.

The IP area does not impact any protected areas in the meaning of the Protected Areas Act.

Protected zones

The IP area is situated in two protected areas (PA) of the National Environmental Network Natura 2000:

- 'Rhodopi - East', code BG0001032, for protection of natural habitats and wild flora and fauna;
- 'Byala reka', code BG0002019, for protection of wild birds.

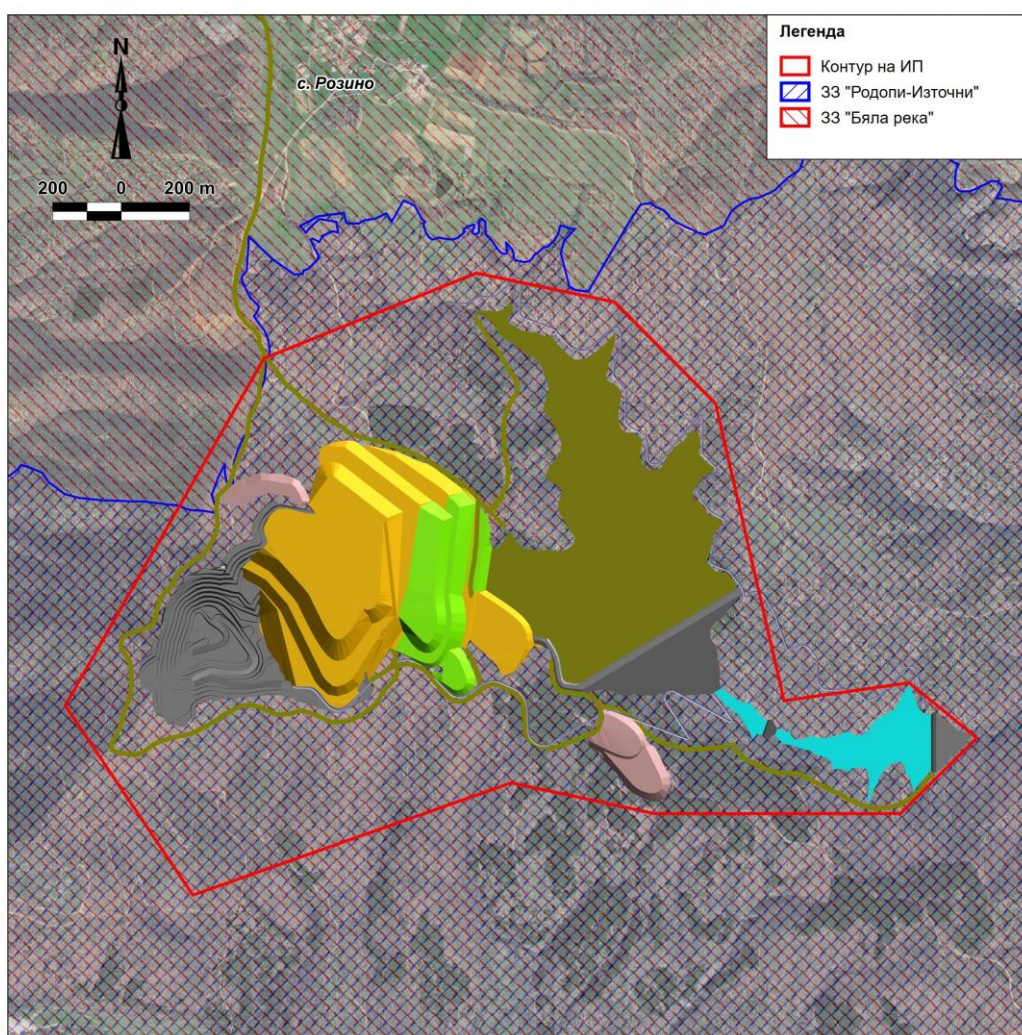


Figure 3.6-1. Location of the future license area (blue outline) and the two Natura 2000 Pas (red and blue outlines)

A report on the assessment of the IP compatibility with the subject and goals for protection of the PAs will be drawn up as a separate attachment to the EIA Report.

3.7. Cultural and Historical Heritage

Two archaeological sites are registered in the lands of the Rozino Village and seven in Gugutka Village, according to Bulgaria’s Archaeological Map (Automated Information System - Archaeological Map of Bulgaria - AIS AMB). One of them is situated near the IP boundary. The high concentration of cultural values in the region leads to the assumption that other such values related to those may be present but are still unknown.

The EIA Report should analyse and evaluate the assumed impact of the entire IP on the cultural heritage and measures to prevent negative impacts on any potential objects of cultural heritage should be prescribed. An in-depth analysis of the available information about cultural value in the region should be carried out during the drawing up of ‘Cultural Heritage’ section of the Report. This would require checking the AIS AMB computer system, the registries of the National Institute of Immovable Cultural Heritage and other sources with information about known archaeological sites within or near the IP.

3.8. Waste

So far there are no polluted terrains in the Tintyava PLA. The type and properties of waste generated from mining and production processes and their treatment are presented above in this TOR and will be analysed also in the EIA Report.

Domestic waste generated from the operations in the deposit will be managed in an environmentally sound manner to prevent any negative environmental impacts. The waste will be handed over to persons who possess the necessary documents and permits required by the Waste Management Act and authorised to handle such waste.

According to Article 22r, paragraph 4 of the Waste Management Act, the mine waste generating activities are subject to the procedure laid down in Chapter Six of the Environment Protection Act and inclusion of the intent to manage mine waste in the IP is mandatory. In keeping with this requirement, the Customer will specify and attach with the EIA Report a separate proposal for management of such waste.

Subsequently, a mine-waste management plan will be drawn up as required by the Underground Resources Act and will be submitted to the Ministry of Energy.

The human and environmental impacts of the waste should be assessed in the EIA Report.

3.9. Hazardous substances

No processing or mining operations have been carried out within the deposit. Geological exploration has been conducted but the terrain has been restored and the equipment used has been demobilized from the drilling region. Therefore no past pollution and no hazardous chemical substances are present. There might be some impacts during the mining and rehabilitation, if artificial fertilizers should be used.

The hazardous substances which will be used during the operations on the site are specified in the Classification Report as required by Article 103, paragraph 1 of the Environment Protection Act and Attachment 1 to the Regulation on the Prevention of Major Accidents with Hazardous Substances and Mitigation of their Consequences. The conclusion in the report is that

no high or low risk potential classification applied to the operation, as is confirmed with Haskovo RIEW letter No. ПД-279-(18)/19.06.2023.

The human and environmental impacts of the hazardous substances should be assessed in the EIA Report.

3.10. Risk energy sources (noise, vibration, radiation)

◆ Noise

The area around the IP site and the near-by settlements are far from any significant sources of environmental noise. The automotive traffic is negligible and does not increase the background noise.

Any background noise in the near-by residential areas is created mainly by the residents' everyday activities.

Noise from the IP will be generated by any equipment used to mine and process the ore and by the vehicles hauling the ore to the processing plant. Noise will be generated also by the overburden stripping and handling machines.

The mining, transporting and processing plant used during construction and operation of the deposit (*excavator, bulldozers, front-end loaders, drilling rigs, dumper trucks, crusher and ball mill, etc.*) will emit a continuous-spectrum noise which will affect the operators and those working within the deposit. According to Article 3 of *Regulation No. 6 of 15.08.2005 on the Minimum Requirements for Ensuring the Health and Safety of Employees against Risks of Exposure to Noise*, the limit values of exposure for use of PPEs for a duration of 8 hours are up to 85 dB(A). Data from measurements in similar sites show that in most cases noise exceeds the admissible values and is around 80-120 dB(A). Machinery generated noise will be localised in points and will affect the machine operators and those working within the deposit, but not the surrounding villages and the environment. The plant in use will not disrupt the noise comfort of surrounding settlements.

The EIA Report will calculate the level of noise at the place of impact (*the nearest urban areas and sites which are subject to increased noise protection*) in accordance with the *Methodology for Measurement of the Total Sound Power Emitted into the Environment from an Industrial Operation and Measurement of the Noise Levels at the Point of Impact*, approved with Order No. ПД-613/08.08.2012.

◆ Vibration

According to published data, ecological analyses etc., of similar projects, the likely sources of exceeded parameters for total transport-related vibrations are, according to Bulgarian State Standard 12.1.012-80, defined for the cabins of many modifications of bulldozers and excavators, and, also, for the local vibrations (Bulgarian State Standard 16013-84) of control lever handles.. No vibration caused by machinery is expected to spread beyond their confines.

◆ Radiation

Mining of ore from the deposit and its subsequent processing will not involve emitting of ionising radiation, electromagnetic waves, gamma radiation and emission of particles from radioactive decay. There is no information about exceeding the natural radiation gamma background in the IP area, and no information about disease incidence among the population.

No harmful radiation and sources of radioactivity have been found in the IP area.

No ionizing or non-ionizing radiation will be emitted into the environment from the IP during its two phases - construction and operation. Therefore, we propose that radiation be not considered in the EIA Report.

3.11. Health and Hygiene Aspects

3.11.1. Current health and hygiene aspects of the environment

The IP will be implemented in parts of the lands outside the zoning limits of two settlements - the Rozino and Gugutka villages in the Ivaylovgrad Municipality, Haskovo District.

Figure 3.11.1-1 shows the distances between the Rozino Deposit license and the nearest objects which are subject to health protection - residential buildings in the nearest settlements in this case. As can be seen from this figure, the nearest objects which are subject to health protection are at the following distances from the concession area outline:

- ◆ the first residential building in the Rozino Village is 570 m. to the north-northeast of the boundary of the concession area;
- ◆ the first residential building in the Byal Gradets village is 1,380 m. to the south of the boundary of the deposit license;
- ◆ the first residential building in the Gugutka village is 1,780 m. to the south of the boundary of the deposit license.

As can be seen from Figure 2-1, the distance between the mining area (the pit) and the processing plant, which are expected to have the most substantial impact on the health and hygiene aspects of the environment, and the nearest objects which are subject to health protection, is considerable. 1.1.2-1.

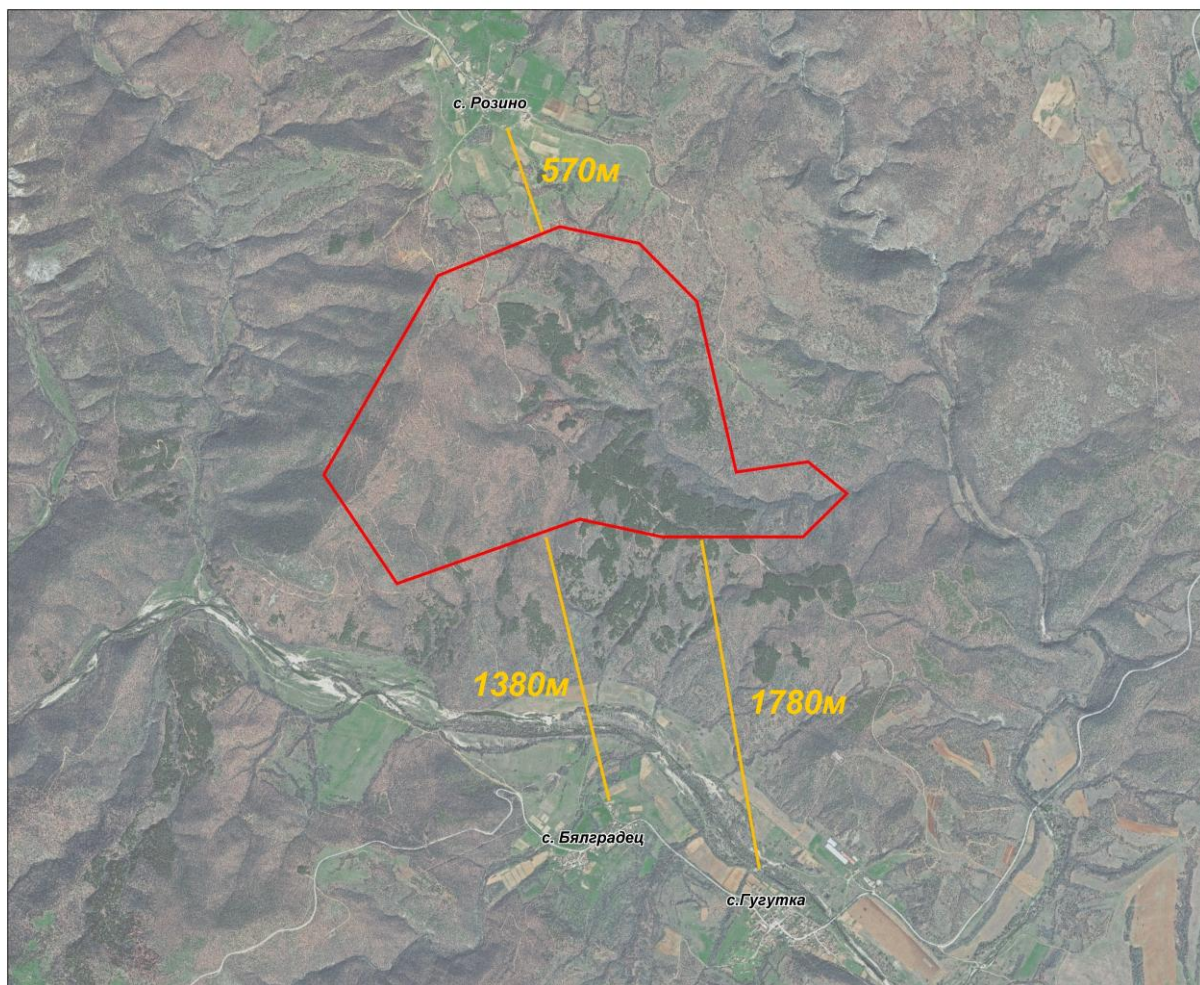


Figure 3.11.1-1 Distances between the boundaries of the Rozino Deposit and the nearest objects which are subject to health protection

As at December 31, 2022, the population of the urban areas closest to the Rozino deposit is (according to information from the Civil Administration and Administrative Services Chief Directorate) as follows:

- Rozino village – 149 persons with permanent address and 48 persons with present address;
- Byal Gradets village – 137 persons with permanent address and 61 persons with present address;
- Gugutka village – 154 persons with permanent address and 101 persons with present address.

The population of these three villages comprises only 5.8% of the population with permanent address in the Ivaylovgrad Municipality at the same date, and 3,7% of the population with present address in this municipality. All three villages are largely isolated, with no substantial economic activities and, therefore, are largely depopulated.

According to § 1, item 12 of the additional provisions of the *Health Act*, ‘the living environment factors’ are: water intended for drinking and household uses; water intended for bathing; mineral water intended for drinking or preventive, curative or hygiene needs; noise and vibrations in residential and public buildings and in urban areas; ionising radiation in residential, production and public buildings; non-ionising radiation in residential, production and public buildings and in urban areas; chemical factors and biological agents in public facilities; resorts; air.

The analysis of the environment at the present time (baseline scenario) made in preceding sub-items under **item 3** of this The Terms of Reference, allow the following conclusions about those groups of factors:

- As water intended for drinking and household needs is concerned, there is no information about potable water issues in urban areas within the IP region;
- As water intended for bathing is concerned, the IP region is not situated near any such waters;
- As mineral water intended for drinking or for preventive, curative or hygienic needs is concerned, the IP is not within the scope and no use of such water is envisaged;
- As regards noise and vibrations in residential and public buildings and in urbanised areas, there are no significant sources of noise in the IP, the main source of noise being transport traffic - negligible given the isolated area and sparse population of the villages in the region, with no information about noise limit values for territories and sites with rated noise levels being exceeded. There are no sources of vibration for residential and public buildings and in urbanised areas in the IP area. According to the information published in the annual noise reports by the Haskovo Regional Health Inspectorate, and in the 2022 Annual Noise Report, there are no noise monitoring points on the territory of the Ivaylovgrad Municipality;
- As regards ionising radiation in residential and public buildings and in urbanised areas, there are no deviations from the natural values and no exceeding of background radiation parameters - there is no potential polluters of this type both within the municipality and in the neighbouring municipalities. Ionising radiation is of no relevance to this investment proposal;
- As regards non-ionising radiation in residential and public buildings and in urbanised areas, the Report on Electromagnetic Field Monitoring and Control conducted by the Haskovo Regional Health Inspectorate in 2022 does not indicate any exceeding of the density and power limit values during the measurements in 2022.
- Regarding chemical factors and biological agents in public facilities, there are no such facilities near the concession license, and no activities involve chemicals and biological agents.
- As regards resorts, there are neither resorts nor resort facilities adjacent to and near the IP properties;

- As regards air, the atmospheric air quality in the region is considered good because no major non-fugitive sources of harmful substances (production facilities and similar plants) are present.

In other words, the analysis of the present situation shows that no problems have been found with the environmental media and factors (as can be seen from the analyses in the preceding subitems of **item 3** of the TOR) that create negative impacts or create risks for the community. Therefore, the environmental quality and, in particular, the aspects of environmental health and hygiene, is good.

3.11.2. Forecast of impacts, including cumulative impacts

The IP forecasts, including the parameters and activities for its implementation, will involve certain impacts during construction, operation and subsequent closure and rehabilitation.

The main impacts **during the construction phase** are related to:

The construction works entail the following main health *risks for those working* on the IP site:

- dust – from excavation and filling and from moving construction and transport equipment;
- noise – from operating construction and transport equipment;
- total and local vibrations – from construction and transport equipment;
- unfavourable microclimate – working in the open, in overheating and overcooling temperatures;
- physical strain.

Using suitable PPEs and complying with the occupational health and safety requirements will minimise the possible unfavourable impacts which are typical of any construction activity. The impact is temporary, insignificant and, in general, reversible.

Risk factors for *the health of the residents of the nearest urban areas* – the villages of Rozino, Byalgradets, and Gugutka – are not expected during this phase because of the sufficient remoteness of the nearest residential buildings from the concession license and because of the predominantly localized impacts, extending to within the construction sites.

The main impacts **during the operations phase** are related to the mining activities. Similar to the construction phase, mainly those working on the site will be exposed directly to health risk factors. Recognized and well-established good occupational health and safety practices exist for each activity type and minimise the specific occupational risks to the acceptable level.

As regards the *near-by community*, the possible impacts are mainly the result of increased noise and traffic of hauling and construction equipment but given the remoteness of the nearest sites which are subject to health protection, no significant impact (caused by exceeding of the environmental and human health protection standards) is expected at this stage. Particular attention will be given to the assessment of potential impacts on potable water sources and the nearest water bodies used for potable water supply will be identified and information will be requested from the local mayors about the sources for which the EABD has no information.

The main impacts **during the closure and rehabilitation phase** are similar to those during the construction phase.

Since no other significant production facilities and activities exist in the close vicinity, including activities of similar nature, no cumulative negative environmental health and hygiene impacts can be expected from the IP implementation. Nevertheless, the cumulative health-and-hygiene impacts will be assessed based on the predicted impacts for each environmental media and factor.

The EIA Report will include a health-demographic analysis of the community in the IP area (on the basis of information and data requested under the Public Information Access Act and submitted by the Haskovo Regional Health Inspectorate) and a comparison will be made to the country’s average (using data from the National Statistic Institute and the National Centre for Public Health, and analyses). The risks and impacts for the near-by communities and facilities which are subject to protection, and for the workers, posed by all activities required for the IP implementation will be evaluated and the admissibility of the IP and the need for specific measures to prevent and minimise human health impacts and risks will be determined on this basis.

3.12. Genetically modified organisms

The investment proposal is not concerned with genetically modified organisms. This aspect will not be considered in the EIA Report.

4. Significance of the environmental impacts, determining the unavoidable and lasting environmental impacts caused by construction and operation of the project site, that could be significant and should be considered in more detail in the EIA Report, including the cases referred to in Article 996 in connection with Article 109, paragraph 4 of the Environment Protection Act.

4.1. Evaluating the degree/magnitude and significance of the IP implementation impacts

The EIA Report will identify the impacts from the IP implementation as a whole - *from construction and operation to closure and rehabilitation*, and will take into account the level of detail of the investment project, information submitted by the Customer and consulted Customer data.

The identification of the expected IP implementation impacts will consider the described specific, physical and technological characteristics of the IP presented in item 1 ‘Specifics of the Investment Proposal (IP)’, as well as the type and quantity of expected pollutants, the use of natural resources, and the results from the consultation with the IP stakeholders. Also, the possible cumulative impacts will be evaluated based on available information about any other existing or envisaged activities and projects carried out in the IP area.

The impacts on the environmental media and the ways to carry out the assessments, as well as the proposals to reduce the negative consequences of these impacts will be determined by the current provisions of the Bulgarian environmental legislation.

The significance of the impacts on receptors/receiving environment will be evaluated with the sensitivity/value of such receptor or resource and with the strength/magnitude of the impact in mind, according to the following matrix:

Figure 4.1-1. Example impact significance assessment matrix

Extent/Magnitude/Value of impact		Receptor sensitivity/Receptor of Resource Value				
		A	B	C	D	E
		Very low	Low	Medium	High	Very High
1	Very low					
2	Low					
3	Mean					
4	High					
5	Very High					

The matrix on Figure 4.1-1 defines the significance of the impacts in three main groups:

⇒ Red presents strong impacts (inadmissibly high), significance of the impact - Significant;

Significant impacts: Impacts of ‘strong/high’ significance that can disturb the functions and the value of a resource/receptor and the extent of whose consequences may be wider (extending to the ecosystems and to human health, for example). The mitigating measures in the event of such impacts are mandatory in order to prevent or reduce the significance of the impact. This refers also to irreversible impacts whose territorial scope is large and to which no mitigation measures could be applied.

⇒ Yellow marks impacts of moderate/average significance (impacts whose acceptability under certain conditions needs to be proven), significance of the impact - moderate/average

Medium impacts: Impacts of ‘average/moderate’ significance comprising visible and lasting changes of the existing condition and capable of causing damage or degrading the resource/receptor whose overall function and value are not damaged, however. These impacts are of priority when determining mitigation to prevent or reduce the significance of the impact.

⇒ Green designates the impacts of low significance but does not exclude the need to propose/provide for their mitigation, Significance of the impact - negligible.

Insignificant impacts: The ‘weak/low’ significance impacts are visible changes of the existing conditions that are not expected to cause damage or disturb the function and value of a resource/receptor. Still, these impacts should be taken into account and be prevented or mitigated, where possible.

However, a precise distinction between these groups is not possible and in many cases the final evaluation of the significance of the impact falls somewhere in between them.

Usually, **the magnitude** of the impact is expressed by quantitative and qualitative values compared to local, national and international standards. Some impacts cannot be given values/parameters. In such cases the evaluation is subjective and is based on the experience of the expert and on good practices. Emergency impacts (catastrophes, natural disasters, incidents) are considered from the perspective of likelihood of the event and of its consequences.

Generally, the criteria for the degree/amount/magnitude of the impacts can be examined:

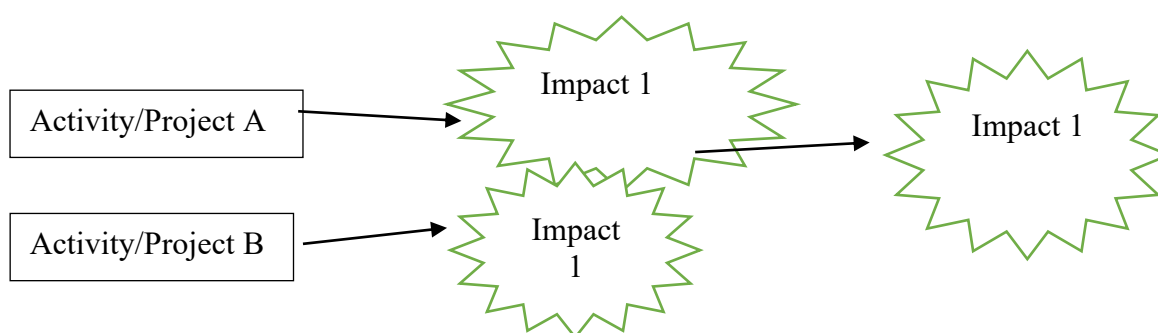
- in space, according to the physical scope of their effect;
- in time, for instance the duration of recovery or of the effect, project schedule etc.;
- in a quantitative or qualitative aspect, provided that there are applicable measurable parameters for the sensitivity status of the relevant media/factor or receptor.

In some cases, where adequate, the environmental risk will be determined as dependent on the significance of the impact and of the likelihood of its occurrence. As in the case of significance, the degree of risk is defined in three groups:

- substantial, environmentally unacceptable;
- acceptable, needing provision of mitigation and impact control;
- low, without the need for mitigation.

Assessment of cumulative impacts

Cumulative impacts may result from individually insignificant but collectively significant acts performed over a period of time or concentrated in a certain place. The assessment of cumulative impacts is especially important in the EIA process because some environmental media/components may already be exposed to certain impacts and the additional impacts may result in near-critical levels. In such cases, the additional impact might bring about an irreversible outcome for the more vulnerable or sensitive areas.



Cumulative impact

The assessment of cumulative impacts should include all facilities with identical environmental impact (such as emissions in the atmospheric air, into the surface and ground waters, harmful physical factors, noise, accumulation of waste, use and storage of hazardous substances), and the effects should be assessed for each pollutant emitted into the environment by the various IP elements while in operation. These sites are:

- any existing and operational site in which natural resources are being mined;

- projects that have already been subject to EIA (mandatory or as necessary) and are in the process of implementation but not commissioned as yet and involve mining of subsurface resources.

Given the IP characteristics, a cumulative assessment is necessary for the following environmental media and factors:

- **atmospheric air**, including emissions from mining, drilling and blasting and ore processing;
- **water** - the possible sources of pollution of surface and ground water will be analysed. The cumulative effects from other similar IPs within the impact area will be assessed.
- **soils** – the IP will be implemented on terrain unaffected by human activity and, therefore, assessment of the cumulative effect of land re-purposing will be required;
- **the geological environment** - the IP involves extraction of natural resources, which is conducive to a cumulative effect from other similar activities in the area of the impact;
- **noise** from the mining operation, from drilling and blasting and from ore processing;
- **landscape** - the IP involves changing of the existing landscape, which will cumulate over the existing changes
- **waste** - the IP involves accumulation of mine waste and rehabilitation of the used terrains;
- **biodiversity** – the IP will have a certain impact on biodiversity through future mining and this impact should be taken into account jointly with other impacts on biodiversity caused by existing similar activities near the IP;
- **aspects of health and hygiene** – the cumulative impacts will be assessed on the basis of the predicted impacts for each environmental media and factor.

As regards *hazardous substances*, no cumulative effect assesment is required because no hazardous chemicals and mixtures will be stored for the IP in the license area in quantities exceeding the quantities in Attachment of the Environment Protection Act, and the self-assessment shows that the IP is not rated as high or low risk potential one. A licensed supplier will deliver the explosives immediately prior to the blasting and will carry out the drilling and blasting operations.

The presumable significant impacts on the environmental media/factors and on human health will be assessed and measures will be proposed to present and reduce any significant harmful impacts, during the periods of mine operation and closure and rehabilitation.

Based on the data in this TOR about the types and quantities of waste gases, waste water, waste and energy pollutants resulting from the operation of the project, the EIAs will evaluate the impact on: the environment, the material and cultural heritage, the health of the workers and the population, the risk energy sources and the waste.

As regards the aspects of environmental health and hygiene and the health risk, the EIA Report will include a health and demography analysis and an analysis of the population in the IP and will make a comparison to the country’s averages. The risks and impacts for the near-by communities and facilities which are subject to protection, and for the workers, posed by all activities required for the IP implementation will be evaluated.

The significance of the impacts on all environmental media and factors will be determined as direct, indirect, cumulative, short-term, mid-term, long-term, permanent, temporary, positive and negative and the results will be summarised in a table, such as Table 4.1.

The analyses and the assessment of the significant environmental impacts resulting from the overall IP implementation, the EIA Report will recommend measures to prevent and reduce the unfavourable environmental and human-health consequences caused by the IP implementation.

4.2. Transboundary impact assessment

The transboundary impact presence/absence analysis was based on the conditions and criteria specified in the *Convention on Transboundary Environmental Impact Assessment in the Transboundary Context* ratified by the Republic of Bulgaria with a law promulgated in the State Gazette, issue 28 of 1995 and effect as of September 10, 1997.

According to Article 2, item 2 of the Convention, the hypothesis for **conducting and EIA in the transboundary context is required if two conditions are explicitly present:**

- **first** – the proposed activity should be part of Annex I to the Convention and
- **second** – that the likelihood of significant adverse transboundary environmental impact on the territory of another state be present .

Given the parameters and the description of the IP, the project may be regarded as subject to item 14. ‘Major quarries, mining, on-site extraction and processing of metal ores or coal’ of Annex I, List of Activities, to the Convention on Environmental Impact Assessment in a Transboundary Context. **It may, therefore, be accepted that the first condition for applying the requirements of the Convention has been met.**

As regards the second condition about the likelihood of significant negative impact on the environment on the territory of another state, we will consider the following aspects of the likely impacts resulting from implementation of the IP:

1) Information about spatial and temporal limits of the proposed activity.

The Rozino Deposit in the Tintyava License is situated 1.2 km south of the village of Rozino in the Ivaylovgrad Municipality, Haskovo Ivaylovgrad Municipality shares a border with the Republic of Greece but not with the Republic of Turkey.

The proposed activity will impact directly an area of 11,18 ha. with the future license area being defined as 27,53 ha. because it includes a 15,74 ha. buffer zone in which no mining and processing will be carried out. The buffer zone will provide protection for the facilities and plants and will restrict accidental access by people and animals. It will ensure compliance with the obligations arising from the Underground Resources Act for further exploration with a view to optimal extraction of reserves and resources from the subsurface.

The time scale is a nine-year period of operation with 2 years of construction, 6.5 years of mining and processing, and 0.5÷1 year period of receding during which only low-grade ore will be processed.

The Rozino Deposit is situated approximately 13 km. to the south-southwest and approximately 19.4 km. to the east, along a straight line, from the border with the Republic of

Greece. Figure 1 below shows the distances from the Rozino deposit relative to the border with the Republic of Greece.

This part of Bulgaria's territory does not border on the Republic of Turkey.

Therefore, the Republic of Greece may be regarded as a potentially affected country in the meaning of the Convention.

2) Information about expected environmental impacts

Given the extent, scope and level of influence, the expected impact on the environmental media may be categorised as constant – reclaimable during the time of operation – of local territorial extent after the tenth year, of low intensity, without a cumulative effect and not exceeding the national and European emission limit values, without significant negative effects on human health and on the environmental media and factors. The following impacts may be forecasted for the various environmental media and factors:

Ambient air

Any dust and gas emissions during the various IP implementation phases will be restricted to the area of the deposit, meaning it will be local, and pollutants will settle within short distances around the work areas. **It is not possible to emit pollutants which would overcome the regional terrain features (mountainous elevations and river valleys) and reach the territory of the Republic of Greece, even less so in air-polluting concentrations.**

Surface and Ground Waters

No impacts on surface water quality or quantity are expected. The IP will construct two consecutively situated reservoirs (the second one for non-contact, or conditionally clean, water) thus eliminating any likelihood of entry into water bodies of water separated by the IP. No discharging of waste water into water bodies or into the sewerage systems of urban areas is envisaged. All collected water will be recirculated to the process circuits.

A hydrology study of water resources in surface water bodies has been carried out with regard to the supplying of water for the process. **The possibility for such water use without lowering the water quantities or disturbing the natural water inflows has been ascertained.** Water use will be made possible with a permit issued in accordance with the Water Act.

No impacts on the quality or quantity of groundwater bodies are expected. Also, a hydrogeology study in the deposit area has established that the flow of groundwater is insubstantial. Given the design depth of the pit, there is no reason to expect direct impacts on a groundwater body and to drinking water sources with sanitary protection belt areas and use permits as required by the Water Act.

Therefore, no impacts can be expected to arise and cause negative effects on water quality in the Republic of Greece.

Subsurface

The harmful impact is concentrated mostly on the geological media, since non-renewable natural resources will be extracted. The information from the exploration and the mining technology which will be employed for the deposit allow the assumption that part of the IP area will be affected by the mining operations, **but that the entire region will not be affected in a manner changing the sustainability of the geological media and of its qualitative features, and, even less so, causing transboundary impacts.**

Lands and Soils

Given the nature of the operation – open mining of natural resources, the direct impacts on soils will be local and only in the territory of the Republic of Bulgaria. This will in no way impact the soils in the neighbouring state. **These soils will be restored to the maximum possible extent through timely and staged technical and biological rehabilitation.**

Noise

The operations during the various IP implementation phases will increase the background noise levels in the immediate vicinity of the Project. **The distance to the Republic of Greece means that no elevated equivalent noise levels can reach its territory.**

Biodiversity

As two protected areas from the Natura 2000 network will be affected, an assessment will be made of the IP compliance with the scope and goals for protection of these areas. The Byala reka River is a protected area designated for protection of wild birds and the habitats of protected bird species must be preserved and restored if their nature-conservation status requires improvement. **It is inadmissible to cause significant negative impacts on the areas of the national Natura 2000 ecological network which, for its part, is a reason to avoid damage to biodiversity also on the territory of the Republic of Greece. It will be possible to carry out the activities only following approval of the IP as required by the Biodiversity Act.**

Wastes

The proposed method for treatment and management of waste generated by the operations does not suggest environmental risks. Flotation tailings with minimal levels of humidity will be disposed of with two consecutive water reservoirs - the second one being intended for non-contact (conditionally clean) water, built downstream of the WRF. **This will eliminate any chance of pollutants entering the water, even during calamities, and reaching the territory of the Republic of Greece.**

Landscape

The significant distances from the border with the Republic of Greece and given the rolling and mountainous topography - a natural barrier to pollutants in the ambient air and a barrier to visual impacts, **no visual or landscape impacts may be expected.**

Health risk

According to preliminary data, the risk for the population following the stripping and mining of mineral resources in the Rozino Deposit is expected to be limited and insubstantial and can be further minimised by maintaining the equipment and plant in good working order and by regular monitoring. With proper operation, the IP is not expected to endanger the health status of the workers in the future site and of the population in the region. **No ground are present to suggest any transboundary risks for the health of the population in the border areas of the Republic of Greece.**

It should be stated explicitly that the EIA procedure will involve an exhaustive analysis and confirmation of the potential impacts, including through the use of adequate mathematical models and forecasts **for the worst operating conditions in the deposit and at maximum output.**

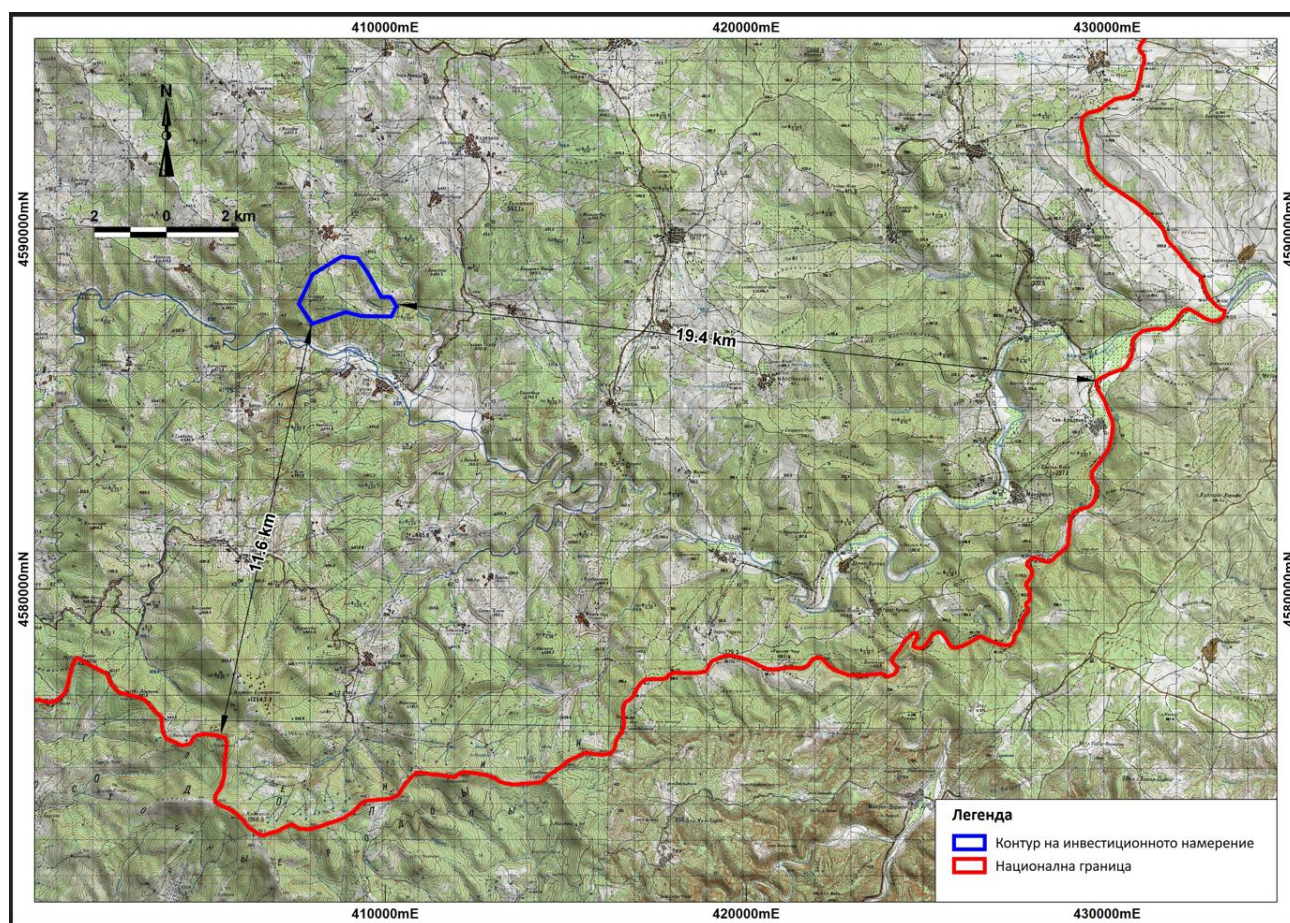


Figure 4.2-1. Distance of the Rozino Deposit from the border with the Republic of Greece

Measures to prevent, mitigate and, where possible, eliminate the possible impacts on the environment and on human health, consistent with the nature and extent of the assumed negative impacts, will be applied locally, in the region affected directly by the IP, to ensure that the environment and health of the population in the border areas of the Republic of Greece are not impacted.

Based on the above, it can be assumed that the second mandatory requirement for applying the Convention - that the substantiated likelihood of significant adverse environmental impacts on the environment on the territory of another state be present, is absent.

With reference to the letter of the Ministry of Environment ref. 99-00-587/27.05.2024 and pursuant to Article 98, paragraph 1 of the Environment Protection Act, a notification to a potentially affected party - the Republic of Greece has been sent concerning the EIA procedure and in line with the provisions of the Convention on Environmental Impact Assessment in a Transboundary Context. This notification is consistent with Decision I/4 of the First meeting of the Parties to the Convention.

Letter Ref. OBOC – 68/23.10.2024 of the MOEW contains the response of the Greek state confirming its wish to participate in the EIA procedure as a concerned party. Accordingly, the

assessment will consider in detail the aspects of transboundary impact with particular focus on ‘water’.

The Republic of Greece is separated into 14 water management basins. Ivaylovgrad region is adjacent to a zone with code GR12 - Geographic Region of Thrace. The EIA Report will use data from the Thracian River Basin Management Plan (GR12).

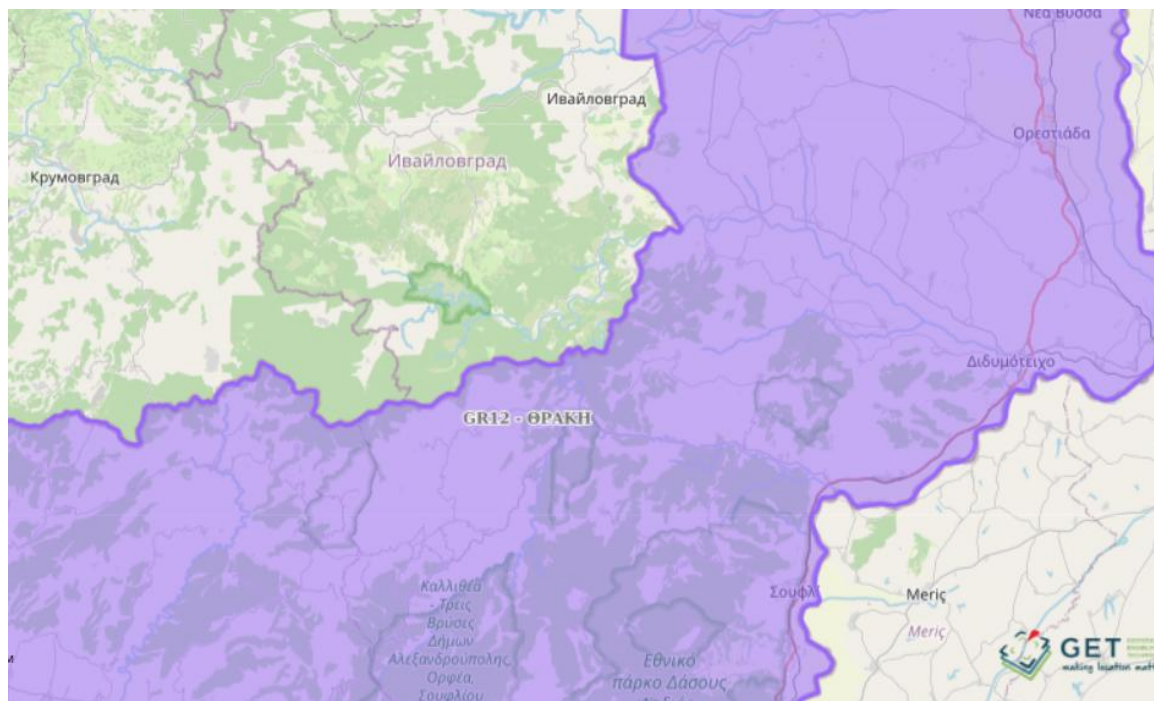


Figure 4.2-2. Location of Ivaylovgrad and the Thracian water management basin (GR12)

The Thracian water management basin (GR12) is a transboundary basin management region. The western part of the basin borders on the territory managed by the Bulgarian Aegean Basin Directorate where the Nestos and Despatis rivers are transboundary. The central and eastern parts border on the Bulgarian East Aegean Basin Directorate with Arda (Ardas) and Luda reka (Eritropotamos) being the transboundary rivers. The basin of the Evros River is also transboundary in nature, being partially located in the territory of the Bulgarian Eastern Aegean Basin Directorate. The Maritsa River (Evros) is the boundary between Bulgaria and Greece for 12 km, and between Greece and Turkey, with the exception of a stretch upstream in the Nova Visa river where it flows along in Turkish territory.

The Byala River flows into the Luda River - Eritropotamos, in the Greek territory.

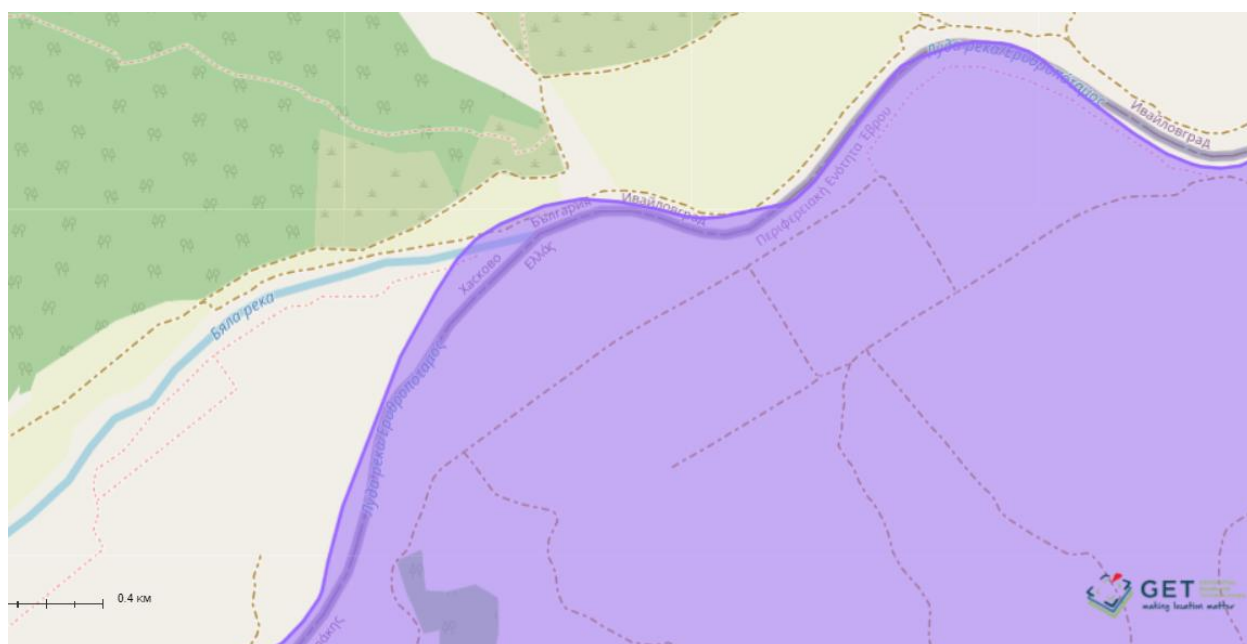


Figure 4.2-3. Location of the confluence of the Byala reka (Bulgarian territory) into the Luda reka river (Greek territory)

Two groundwater bodies border on the Investment Proposal area: Drosinio, with code GR120B100, and Soufli – Didimoticho, with code GR12BT150.

The EIA Report will consider the current status of the surface and ground water bodies and will provide a forecast of potential IP implementation impacts on both the Bulgarian and Greek territories.

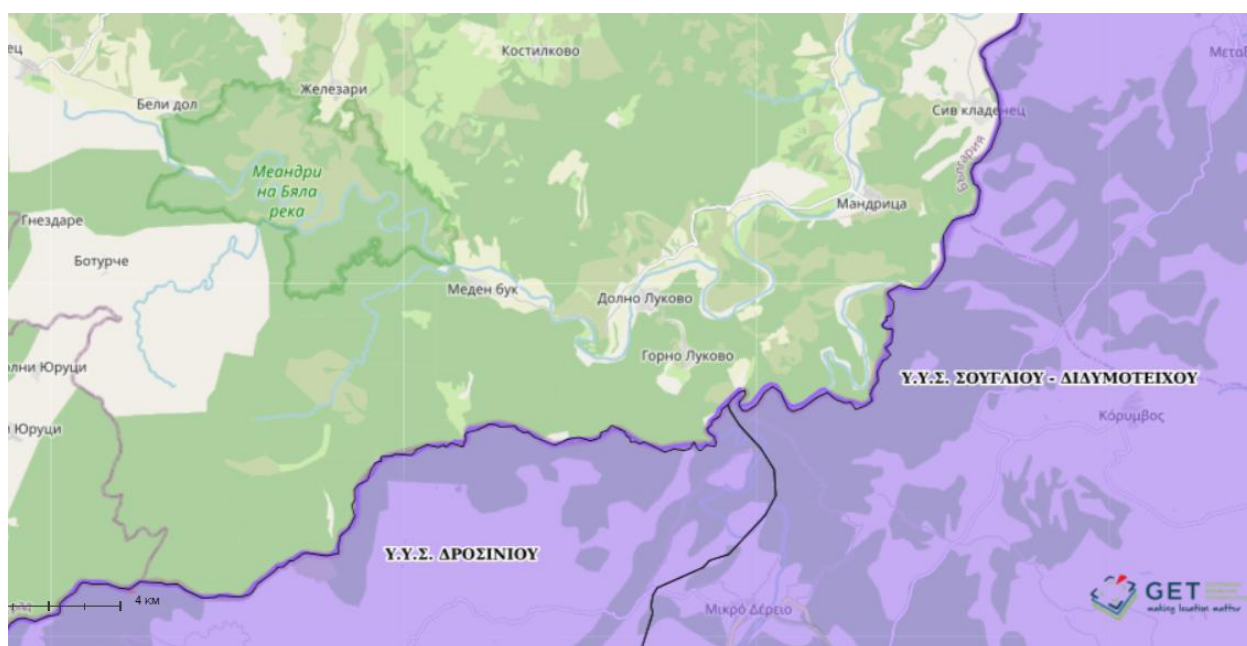


Figure 4.2-4. Boundary groundwater bodies

4.3. Impact characteristics (type, extent, likelihood, duration, frequency and reversibility) and determination of the unavoidable and lasting environmental impacts of the IP in need of detailed consideration in the Report

Impact Assessment: The expected IP implementation impacts are diverse and can be defined differently. The EIA will assess the expected human and environmental impacts by the construction, operation, closure and rehabilitation of the mine and its auxiliary facilities and will consider the characteristics of the impacts. The expected impacts from the IP are assessed as:

- Impact type: direct, indirect, reversible (over a period of time) and irreversible (permanent); caused by routine operations or incidents;
- Extent of the impact: local, regional, national or transboundary;
- Duration of impact: short-term, mid-term, long-term;
- Occurrence of impact: periodic, constant;
- Consequences of impact: positive, negative;
- Severity of impact: very low; low; average; high and very high.
- Significance of the impact: strong/high significance (significant impacts); average/moderate significance (average/moderate impacts); weak/low significance (negligent impacts).

In addition to the above impacts, the EIA Report will identify and assess also the potential cumulative impacts.

A matrix for quality assessment and characterisation of the identified potential IP implementation impacts has been developed for the determination and detailed consideration in the EIA Report of environmental impacts by the IP implementation.

Environmental media/factors		IMPACT CHARACTERISTICS														SIGNIFICANCE OF THE IMPACT			
		Positive	Negative	Direct	Indirect	Reversible	Irreversible	Short term	Long term	Occasional	Continuous	Local	Wide-ranging	Synergic/Cumulative effect	From routine activities	Unavoidable	Negligible	Moderate/Average	Significant
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Atmospheric air and climate factors	Construction	--	x	x	--	x	--	x	--	x	--	x	--	--	x	--	x	--	--
	Operation	--	x	x	--	--	x	--	x	--	x	x	--	--	x	x	--	x	--
Surface water	Construction	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Operation	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Groundwater	Construction	--	x	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Operation	--	x	x	--	x	--	x	--	x	--	x	--	--	x	--	--	x	--
The subsurface	Construction	--	x	x	--	--	x	x	--	--	--	x	--	--	x	x	--	x	--
	Operation	--	x	x	--	--	x	--	x	--	x	x	--	--	x	x	--	x	--
Mineral diversity	Construction	--	x	x	--	--	x	--	x	--	x	x	--	--	x	x	--	x	--
	Operation	--	x	x	--	--	x	--	x	--	x	x	--	--	x	x	--	--	x
Soils	Construction	--	x	x	-	x	--	x	--	--	--	x	--	--	x	x	x	--	--
	Operation	--	x	--	x	-	x	-	x	--	x	x	--	--	x	x	x	--	--
Noise	Construction	--	x	x	--	x	--	x	--	x	--	x	--	--	x	x	x	--	--
	Operation	--	x	x	--	--	x	--	x	--	x	x	--	--	x	x	x	--	--
Landscape	Construction	--	--	--	--	--	--	--	--	--	-	--	--	--	--	--	-	--	--
	Operation	x	--	x	--	--	--	--	x	--	--	x	--	--	--	x	x	--	--
Flora	Construction	--	x	x	--	--	x	x	--	--	x	x	--	--	x	x	x	--	--
	Operation	--	x	x	--	x	--	--	x	--	x	-x	--	--	x	x	--	x	--
Fauna	Construction	--	x	x	--	--	x	x	--	--	--	x	--	--	x	x	x	--	--
	Operation	--	x	x	--	x	--	--	x	--	x	x	--	--	x	--	--	--	--
Health and Hygiene Aspects	Construction	--	x	x	--	x	--	x	--	x	--	x	--	--	x	x	x	--	--
	Operation	--	x	x	--	--	x	--	x	--	x	x	--	--	x	x	x	--	--
Cultural and Historical Heritage	Construction	--	x	x	--	--	x	x	--	--	--	x	--	--	x	--	x	--	--
	Operation	--	--	--	x	x	--	--	x	--	--	x	--	--	--	--	x	--	--
Waste	Construction	--	x	x	--	x	--	x	--	--	--	x	--	--	x	--	x	--	--
	Operation	--	x	x	--	x	--	--	x	--	x	x	--	--	x	--	x	x	--
Hazardous substances	Construction	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Operation	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

5. The EIA battery limits

The territorial scope of the study covers the entire area of the future concession. The impact assessment will be based on the IP elements with clarifications of where direct and indirect impacts will occur.

In connection with the EIA procedure in the transboundary context, the analysis and the assessment will include also neighbouring bordering territories of the Republic of Greece, with detailed focus on the ‘water’ component.

6. Structure of the EIA Report with a description of the expected content of its items

The EIS is compliant with the requirements under art. 96 par. 1 of the Environment Protection Act ("EPA") (SG issue 91/2002, latest amendments)

1. General information about the Company

2. Detailed characterisation of the IP with information about the size, impacted area, parameters, scope, volume, throughput, scope, and formatting of the complete IP

2.1. Description of the project location.

2.2. Description of the physical characteristics of the complete IP and of the water and subsurface use requirements – during the construction and operation phases.

2.3. Description of the main characteristics during the operation of the IP (all processes and activities), such as power demand and power use, the nature and quantity of materials and natural resources used (including water, soils and biodiversity).

2.4. Assessment by type and quantity of the expected residual substances and emissions (such as pollution of water, air, soil and subsurface layers, noise, vibrations) and quantities and types of waste generated during the construction and operation phases.

3. Description of reasonable alternatives (for instance, as regards the activities, technology, location, size and extent) studied by the Customer and relevant to the IP and to its specific characteristics, and indication of the reasons for the selected option in consideration of the environmental consequences of the IP impacts.

4. Description of the relevant aspects of the current state of the environment (baseline scenario) and brief presentation of their likely evolution if IP is not implemented, insofar as the natural changes caused by the baseline scenario can be assessed from the available environmental information and scientific knowledge

4.1. Atmospheric air and climate factors

4.2. Surface and Ground Waters

4.3. Soils

4.4. Subsurface Environment and Mineral Diversity

4.5. Landscape

4.6. Flora and Fauna. National ecological network

4.7. Cultural and Historic Heritage

4.8. Waste

4.9. Hazardous substances

4.10. Risk Energy Sources - Noise and Vibration

4.11. Health and Hygiene Aspects

5. Description of the elements referred to in Article 95, paragraph 4, which are likely to be affected significantly by the IP: the community, human health, biodiversity (e.g. fauna and flora), soils (e.g. organic matter, erosion, compaction, sealing), water (e.g.

hydromorphological changes, quantity and quality), air, climate (e.g. greenhouse gas emissions, impacts related to adaptation), material assets, cultural heritage, including aspects of architecture and archaeology, and landscape (description of the likely significant consequences for the elements referred to in Article 95, paragraph 4 of the direct consequences and of all indirect, secondary, cumulative, transboundary, short-term, mid-term and long-term, lasting and temporary, positive and negative consequences of the IP, and consideration of the environmental protection goals of significance for the IP)

5.1. Atmospheric air and climate factors

5.1.1. Air Pollution Sources Associated with the Implementation of the Investment Project – Construction, Operation, Closure and Rehabilitation

5.1.2. Air and Climate Factor Impact Assessment According to the National Standards and Legal Requirements

5.2. Surface and Ground Waters

5.2.1. Impacted Water Bodies and Other Sources of Water

5.2.2. Project-related sources of pollution to surface and ground water

5.2.3. Assessment of Impact

5.3. Soils

5.3.1. Size of affected areas

5.3.2. Pollution sources

5.3.3. Assessment of Impact

5.4. Subsurface Environment and Mineral Diversity

5.4.1. Geology of the Deposit

5.4.2. Mineral composition of construction materials

5.4.3. Assessment of Impact

5.5. Landscape

5.5.1. Assessment of the Expected Landscape Alteration

5.6. Flora and Fauna

5.6.1. Description and Analysis of the Project Impacts on the Flora

5.6.2. Description and Analysis of the Project Impacts on the Fauna

5.6.3. Protected areas. Elements of the National Environmental Network

5.7. Cultural and Historical Heritage - Assessment of Impact

5.8. Waste

5.8.1. Types and Amounts of Wastes that are Expected to be Generated during Project Construction, Operation, Closure and Rehabilitation Waste Classification

5.8.2. Disposal considerations

5.8.3. Assessment of Impact

5.9. Hazardous substances during construction, operation, closure and rehabilitation of the IP. Assessment of Impact

5.10. Risk Energy Sources - Noise and Vibration

5.1.10. Forecast of the expected noise in the environment during construction, operation, closure and rehabilitation of the IP.

5.10.2 Assessment of expected noise impact

5.10.3. Vibrations – forecast and assessment

5.10.4. Assessment of drilling and blasting impacts

5.11. Assessment of the environmental and occupational health aspects and risks to human health

5.11.1. Identification of potentially affected population and areas which are subject to health protection based on the environmental impact forecast.

5.11.2. Identification of the environmental and occupational risk factors prior to consideration of the type and conditions for occurrence of their harmful impact

5.11.3. Assessment of the health risk during construction, operation, closure and rehabilitation of the IP and measures for health protection

6. Description of the likely significant consequences of the environmental impacts from the IP arising from:

6.1. The construction and operation of the IP

6.2. The use of natural resources and, in particular, the subsurface, soils, water and biodiversity, in consideration, as far as possible, of the sustainable presence of such resources

6.3. Emissions of pollutants, noise, vibrations, occurrence of harmful impacts and waste disposal and recovery

6.4. Human health or environmental risks, including risks arising from accidents or catastrophes

6.5. Combining of the impact with the impacts from other existing and/or approved investment proposals, in consideration of all existing environmental problems concerning areas of particular ecological importance that are likely to be impacted, or impacts related to the use of natural resources. Cumulative effects.

6.6. IP impact on climate (e.g. the nature and degree of greenhouse gas emissions) and the vulnerability of the IP to climate changes

6.7. Used technologies and substances

7. Description of considered available results from other relevant assessments made in line with the national legislation that are relevant to the IP and have been drawn up prior to the EIA Report

8. Description of the forecast methods or data used in determining the main elements of uncertainty and in assessing the significant environmental consequences, including details about difficulties (such as technical flaws or lack of know-how) experienced by the Customer when gathering the necessary information

9. Description of the measures to avoid, prevent, mitigate and, where possible, eliminate the established significant unfavourable environmental and human-health consequences, and description of the proposed monitoring measures (e.g. drawing up of an analysis after the IP implementation), with explanations of the extent to which the significant unfavourable environmental and human-health consequences will be avoided, prevented, mitigated or eliminated. The description should cover both the stages of construction and of operation, and should include a measure implementation plan

10. Description of the expected significant environmental and human-health impacts of the IP resulting from the vulnerability of the IP risks of serious incidents and/or disasters of significance to the IP. The relevant information should be obtained by risk assessment. The description should include the applicable measures to prevent or mitigate the the significant unfavourable environmental and human-health consequences of these events, and details about the preparedness and proposed responses to such emergencies.

11. Observations and opinions expressed by the public concerned, of the authorities competent to make an EIA decision or officials authorised by these authorities, and other specialized institutions, as well as the States affected – in a transboundary context, as a result of the consultations held

12. Conclusion in keeping with the requirements of Article 83, paragraph 5 of the Environmental Protection Act

13. Description of the difficulties (technical reasons, insufficient or missing data) experienced during the gathering of information for the EIA Report

14. Other information – as decided by the competent authority or by the person authorised by the competent authority

15. A reference document listing in detail the sources used for the descriptions and assessments in the report

16. Declarations of expert independence and competence

17. Attachments – texts and graphics

17. Executive summary

18. Report on the assessment of the degree of impact of the IP on the conservation objects and goals of protected areas

7. Consultations with stakeholder agencies and organizations and local community affected by the implementation of the Investment Project

The project documentation required under art. 4, par. 1 of the EIA Regulation has been submitted to the Haskovo RIEW. The concerned municipalities and mayor's offices are notified.

The Minister of Environment and Water has requested by letter ref. 99-00-587/27.05.2024 that the Director of RIEW Haskovo forward the entire case file to the MOEW, the assumption being that the Minister is the competent authority as regards this procedure. The Director of RIEW Haskovo has complied with this request by way of Letter ref. ПД-279-(38)/2023/29.05.2024.

Pursuant to the requirements of art. 95, par. 1 of the EPA, the Customer will identify the stakeholders that should be involved in the Consulting process on the scope and content of the Environment Impact Report, as follows:

- MOEW;
- The Ministry of Healthcare;
- The RIEW Haskovo;
- The East Aegean Basin Directorate - Plovdiv;
- The Ministry of Energy;
- The Ivaylovgrad Municipality:
 - Rozino village;
 - Gugutka village;
 - Byal Gradets village.
- The Regional Museum of History in Haskovo;
- The Water Supply and Sewerage OOD of Haskovo, Ivaylovgrad region;
- The Regional Forestry Directorate – Kardzhali, the Ivailovgrad State Forestry Enterprise;
- The Regional Directorate of Agriculture.

The EIA Report will include relevant comments and suggestions made in the opinions filed within the statutory deadline.

8. List of required annexes, lists and others

The following will be attached with the EIA Report: maps, layouts, schemes, photographs, written Reports from the consultancies, credentials of the experts and of the team manager, written declarations of the experts referred to in Article 11, paragraph 4 of the *Regulation on the EIA Conditions and Procedure (EIA Regulation)* etc.

Furthermore, as required by Article 12, paragraph 1 and paragraph 2 of the *EIA Regulation*, the following will be attached:

- a list of the sources of information used by the authors in the EIA Report;
- information about the consultancies and the reasoning for accepted and rejected notes and recommendations (according to Article 9, paragraph 5 of the *EIA Regulation*);
- a list of the experts and of the manager of the team drawing up the EIA Report signed by everyone against the report sections drawn up by them;
- Executive summary in accordance with Article 96, paragraph 1, item 9 of the Environment Protection Act which will be drawn up in line with item 27 of § 1 of the Additional Provisions of the Environment Protection Act;
- TOR for the scope and content of the EIA as per Article 10, paragraph 3 of the *EIA Regulation*.
- Proposal for the management of mine waste in accordance with Article 22r, paragraph 4 of the Underground Resources Act.

9. EIA Report development stages, phases and deadlines

9.1. Drawing up of information about consultancies/TOR for scope and content in accordance with the provisions of Article 10, paragraph 1 and in line with Article 9, paragraph 1 and paragraph 4 of the *EIA Regulation*.

9.2. Consultation with specialized agencies, representatives of the concerned community, including NGOs, the competent environmental authority - the Haskovo RIEW and the Haskovo Regional Health Inspectorate, regarding the initial TOR for the scope and content of the EIA, pursuant to Article 9, paragraph 1 and paragraph 4.

9.3. Supplementing the EIA TOR with information received during the consultation referred to in Article 9.

9.4. Drawing up of the EIA Report with all its attachments within a time limit approved with the Customer.

9.5. Submission of the EIA Report with all its attachments to the competent environmental authority for quality assessment.

9.6. Submission of the EIA Report with its attachments to the concerned municipalities and mayors' offices determined by the competent authority, organising of a public hearing meeting/meetings, conducting of a public hearing/discussions of the EIA Report and the Compliance Assessment Report.

9.7. Submission to the competent environmental authority of the public-hearing materials (records, statements from the concerned persons), the Customer's statement concerning the proposals, recommendations, opinions and objections made.

9.8. Scheduling a session of the Council of Environmental Experts at the Haskovo RIEW for consideration of the EIA documents.

9.9. Delivering of a decision on the EIA by the Director of the Haskovo RIEW.

10. Other conditions or requirements

The EIA procedure concerns the complete investment proposal for ‘Mining and Processing of Polymetal Ores from the Rozino Deposit, Tintyava PLA, situated in the lands of the Rozino village and Gugutka village, Ivaylovgrad Municipality, Haskovo district.’ and the relevant auxiliary activities. The layout of the future concession is included in the EIA for completeness of the assessment and for proper defining of the affected areas and concerned persons.

The EIA documents should be drawn up and the subsequent phases of the procedure should be carried out in full and adequate consideration of the design, the mine construction and the mining activities, as well as the IP data available at the respective time period.

Note: All referred documents are attached with the EIA Report.