

REQUEST FOR EXPRESSIONS OF INTEREST (REOI) CONSULTANT’S QUALIFICATIONS BASED SELECTION (CQS)

Name of Project	Just Transition in Select Coal Regions of Bosnia and Herzegovina
Loan No.	IBRD-98010
Assignment Title	Consultancy service for Environmental and Social Impact Assessment (ESIA) for Raspotočje Mine Closure
Procurement Plan Ref Number	BA-FBIH-JCT-CS-CQS-26-2.2.7
Country of Delivery	Bosnia and Herzegovina

The Federal Ministry of Energy, Mining and Industry (FMERI) has received financing from the World Bank toward the cost of the [Just Transition in Select Coal Regions of Bosnia and Herzegovina Project and intends to apply part of the proceeds for the following consulting services.

Federal Ministry of Energy, Mining and Industry (FMERI) is seeking to appoint a consultancy company to support the Federal Ministry of Energy, Mining and Industry (FMERI), Zenica coal mine (RMU Zenica) and the utility company Elektroprivreda BiH (EPBiH) in closing the underground mine Raspotočje. This consultancy supports the comprehensive Environmental and Social Impact Assessment (ESIA) and a corresponding Environmental and Social Management Plan (ESMP) for Raspotočje underground coal mine. The services are expected to start at December 2026 and to be finalized until the end of May 2027.

The detailed Terms of Reference (TOR) for the assignment can be found at the following website: <https://fmeri.gov.ba/project-implementation-unit/>

The Federal Ministry of Energy, Mining and Industry (FMERI) now invites eligible consulting firms (“Consultants”) to indicate their interest in providing the Services. Interested Consultants should provide information demonstrating that they have the required qualifications and relevant experience to perform the Services.

The attention of interested Consultants is drawn to paragraph 3.14, 3.16 and 3.17 of the World Bank’s Procurement Regulations for IPF Borrowers [dated September 2023] (“the Regulations”), setting forth the World Bank’s policy on conflict of interest.

The best qualified firm to carry out the services will be selected in accordance with the Consultant’s Qualifications Based Selection (CQS) method set out in the Regulations and based on the following criteria:

1. Core business and years in business 30%;
2. Qualifications in the field of the assignment 60%;
3. Technical and managerial organization of the firm and availability of key staff within the firm 10%;

CVs of Key Experts will not be evaluated in evaluation of expressions of interest.

Further information can be obtained at the address below during office hours 09:00 to 14:00 hours.

Expressions of interest must be delivered in a written form to the address below (in person, or by mail, or by e-mail) by 28/10/2026

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Terms of Reference: Environmental and Social Impact Assessment (ESIA) services for Mine Closure

Project: Support for the Closure of the Raspotočje Underground Coal Mine

Location: Zenica, Federation of Bosnia and Herzegovina (BiH)

Client: The World Bank Group (WBG)

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1. Introduction

The government of Bosnia and Herzegovina (BiH) is undertaking a phased approach to coal sector transition through the planning and closure of several open and underground mines in the Federation of BiH. The World Bank Group (WBG) is supporting some of the government's mine closure plans through an investment lending operation (IPF), focused on managing the environmental, social and economic impacts of mine closure and supporting a just transition in the affected regions.

One mine supported under the IPF project is Raspotočje mine in Zenica, an underground brown coal mine at the end of its life cycle, which ceased production in 2024 and remains under care and maintenance since then. The mine consists of multiple underground workings and surface facilities and is associated with ongoing environmental, safety, and water management liabilities typical of underground coal operations, including mine water pumping, ground stability risks, and the management of legacy infrastructure.

The IPF project will specifically support the preparation and implementation of priority mine closure measures, including removal of the underground mining equipment and ground stabilization, mine water management, the environmental remediation of surface facilities, and strengthening institutional capacity for safe and environmentally sound closure, in support of a responsible and orderly mine closure process.

Closing an underground coal mine requires careful study. From a technical mine perspective, there are a range of environmental considerations to be made with respect to water, soil and air quality in addition to geotechnical stability. In addition, WBG's Environmental and Social Framework (ESF) further sets out a range of obligations to meet specific safeguard standards¹.

2. Background information

The Raspotočje Coal Mine is a brown coal mine located in Zenica, Zenica-Doboj Canton (Raspotočje, Federation of Bosnia and Herzegovina, Bosnia and Herzegovina).

In Zenica area there are three small underground mines: Stara jama, Raspotočje and Stranjani. RMU Zenica which is owned by Elektroprivreda BiH (EPBiH) operates these mines. Coal from the mines was used to supply the Kakanj Thermal Power Plant.

The mining company had coal reserves amounting to 179 million tonnes of lignite in 2008 and a production capacity of 0.25 million tonnes of coal in 2023.

The company's website states that, from 1983 onwards, the chamber mining method is used as no significant investments were made in the company to regain the wide-faced method. Coal production in the last five years amounted to 0.32 million tonnes per year on average. Production at the Stranjani pit was suspended in 2019 and in June 2020, the Stranjani pit was officially closed. In 2023, Stara jama pit closed and in 2024 extraction of coal in Raspotočje pit stopped. Closure of Raspotočje pit is the subject of this ToR.

The deposit is bordered on the north by the Bosna River, the Šamac–Sarajevo railway line, and the Sarajevo–Zenica section of the Corridor Vc highway, while in the southern part of the exploitation field hills rise (Janjički Vrh, Zvečaj, etc.).

¹ <https://www.worldbank.org/en/projects-operations/environmental-and-social-framework>

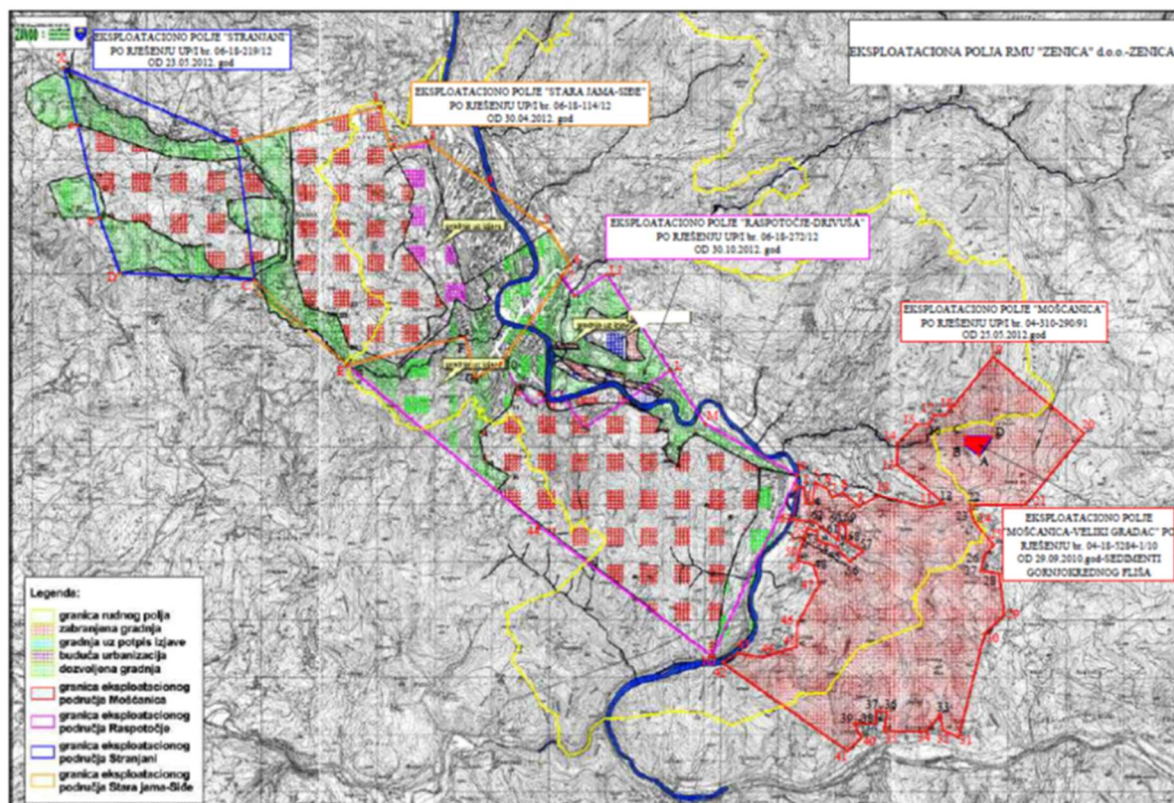


Figure 1: Exploitation areas of RMU Zenica

2.1 Geology

The technical information provided in this Terms of Reference (ToR) represent input data and information that were available prior to the preparation of a separate technical study, which will be conducted by another consultant in parallel with this assignment.

Figure 2 shows the lithostratigraphy of the “Raspotočje” exploitation field

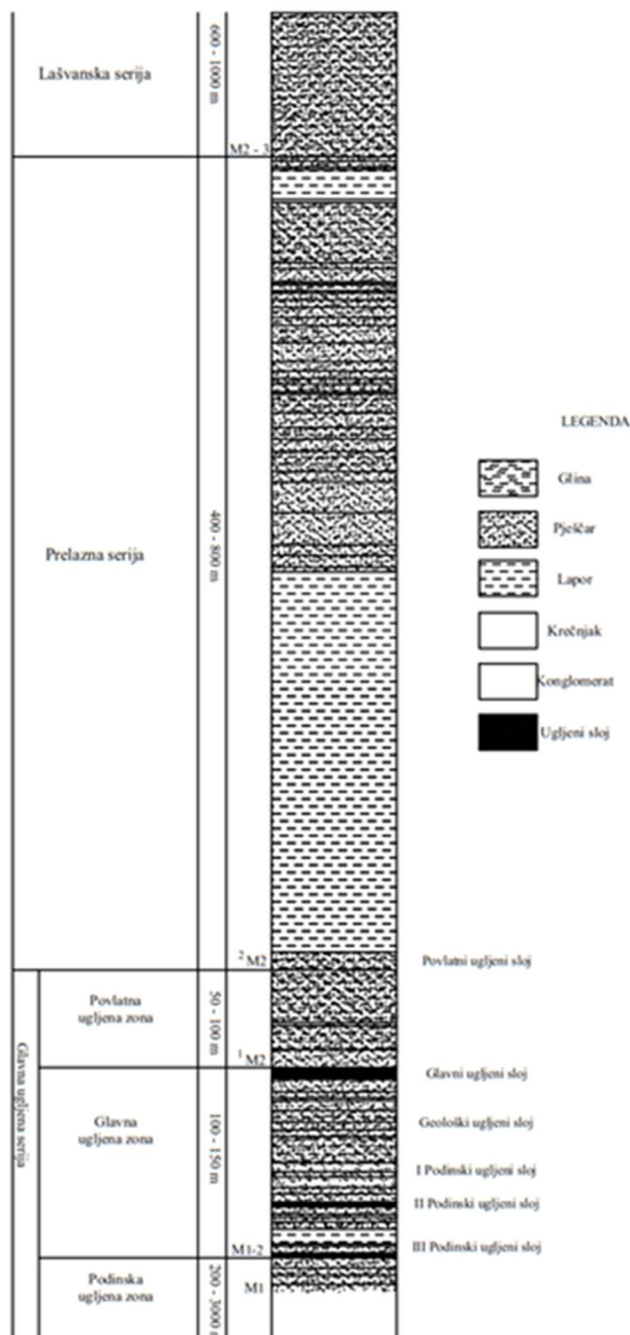


Figure 2: Lithostratigraphy of the "Raspotočje" exploitation field

The following exploitable coal seams have been identified and developed: the main, second, third, and sixth floor seams, of which the main and second floor seams have been exploited. Along the "Raspotočje" coal seam, the main coal zone (M_{1-2}) has been continuously developed, which begins with the third underlying coal seam and ends with the main coal seam.

This zone is approximately 130 m thick and is divided into a lower limestone section with the III, II, and I sub-bed coal seams, and an upper clayey and clayey-sandy section with the II pre-bed and main coal seams. The thickness of the lower part of the main coal zone is 90 m, and it is composed of yellow-gray and gray limestones and gray limy marls with three underlying coal seams (III, II, and I).

The upper part of the sediments of this zone, about 40 m thick, begins with the II sub-base layer, followed by clays, clayey limestones, and clayey sandstones, and finally the main coal seam.

The main coal zone is significantly different from the lower-lying footwall coal zone (M_1), because the sediments of the footwall zone are greenish and greenish-red in color, which is one of the correlatives and identifying characteristics for the entire basin.

In the main coal zone (M_{1-2}), coal seams of economic and exploitable significance for the Raspotočje mine have been deposited. The preferential coal zone of the sediments ($^1M_2$) begins with yellowish limestones, immediately above the main coal seam, followed by grayish-yellow limestones, and subordinate marly limestones, all the way to the transition of these limestones into marls and clayey marls of the transitional zone ($^2M_2$). The thickness of the sediments of the seventh ($^1M_2$) horizon is 70 meters, and near the top of this horizon, several coal beds are encountered, representing the overlying (cap) coal seam.

The following transitional zone ($^2M_2$) is about 200 m thick and is composed of gray claystones and gray argillaceous claystones with interbeds of gray fine-grained sandstone throughout its entire thickness.

Exploration drilling has proven that the coarse-grained Lašvanska Series (M_{2-3}) in the “Raspotočje” mine area, is about 1000 m thick and is composed of conglomerates and sandstones, which throughout the entire profile are interbedded with sandy clays, sandy and clayey limestones, and sandy clays.

It is considered that the deposition of this series completes the filling of the depositional environment of the “Raspotočje” mine's exploitation field. To date, it has been determined that in this exploitation field, only the sediments of the main coal zone (M_{1-2}) can be considered to contain coal-bearing strata.

No investigations have been conducted in the subsoil coal zone (M_1), where a lower group of subsoil coal seams (IV, V, VI, and VII) should be expected. A few boreholes have penetrated part of this zone as well, and only about one hundred meters below the third underlying coal seam, where a carbonaceous layer was drilled that, in a superimposed relationship, should correspond to the fourth underlying coal seam of the Old Pit, but there is little data for its more precise identification.

This coal seam (IV floor) is about 7.0 m thick, and is composed of coal-bearing clays, coal-bearing shale, and minor beds of matte coal.

The third-floor coal seam in the Raspotočje area is 4.0 meters thick, of which more than half is liptak and clayey coal, and the remainder is matte coal. Waste liptak and clayey strata are associated with the upper part of the seam.

The distance from the III to the II underlying coal layer is about 50.0 m, and it is mainly composed of yellowish sandy limestones.

The roof and floor of the Second Sub-Bed are composed of yellowish and gray sandy limestone. Within the coal seam itself, there are multiple barren interbeds of yellowish sandy limestone. The average thickness of this layer with barren interbeds is 11.4 m.

The first subsoil layer in the “Raspotočje” exploitation field has not been determined.

The interval from the second bed to the second sub-bed, with a thickness of 30 meters, is composed of yellowish and grayish-yellow sandy limestones, and subordinate gray limestone marl.

On the aforementioned limestones, the Second Pre-Pennsylvanian Coal Seam, 1.2 m thick, is exposed. It is composed of lenticular coal.

The distance from the top of the Second Pre-Basal Coal Layer to the base of the Main Coal Layer is 45 m, and it is composed of red and green-colored clays and sandstones, gray sandstones, gray clays, and gray clayey limestones.

The main coal seam in the “Raspotočje” exploitation field has an average thickness of 7.5 m. The base of the seam is clayey, and the overburden is limestone. In the upper part of the seam, there are numerous barren layers of gray and yellowish sandy limestone. Sterile layers are also present in the middle and lower parts of the seam. The coal seam itself is composed of bands of matte and lustrous coal, and this seam represents the highest quality coal in the Zenica-Sarajevo Basin.

At the top of the so-called overlying coal zone ($^1M_2$), in the form of several thinner coal seams, an overlying (roof) coal seam occurs, which has only a parallelizing significance.

2.2 Deposit tectonics

The Zenica-Sarajevo Basin, and by extension all the mining fields of the ZD Zenica Brown Coal Mines, according to the tectonic regionalization of Bosnia and Herzegovina, belong to the Central Dinarides. This geotectonic unit is characterized by the presence of paleodepressions filled with Oligocene and Neogene lacustrine deposits.

After the deposition of Upper Cretaceous sediments, tectonic movements occurred during the Pyrenean phase of the Alpine orogeny, causing the erosion, faulting, and uplift of Mesozoic formations and the cessation of sedimentation.

In the Oligocene, faulting and the formation of an isolated paleodepression occurred as the initial stage in the formation of the Zenica-Sarajevo Basin, and thus the sedimentation of freshwater lacustrine deposits.

After the formation of the initial paleodepression, a period of relative quiescence occurs, during which the sediments of the lower part of the Oligomiocene polyfacial complex, within which the Koščanski coal layer is located, are deposited.

A renewed tectonic activity occurs during the deposition of the coarse-clastic sediments of the Red Series (^3Ol , M). After that, another period of relative tectonic quiescence ensued, and in the basin, there was deposition of calcareous bituminous limestones (^4Ol , M) and sediments of the Podin Coal Zone (M_1) containing large amounts of coal substance, namely multiple coal seams. After the deposition of the Podine Coal Zone (M_1) sediments, when coarse-clastic rocks are deposited beneath the third podine coal seam, more intense tectonic activity occurs.

After the deposition of the Main ($M_{1,2}$) and the Lower Carbon Zone ($^1M_2$), as well as the sediments of the Transitional Zone ($^2M_2$), i.e., periods of longer quiescence, more pronounced tectonic movements affect the paleodeposit, resulting in the deposition of coarse-clastic sediments of the so-called series. “Lašvanski Conglomerates.” These tectonic movements caused the lacustrine environment to shift southwestward and led to the appearance of numerous radial deformations. (VII, VI, V, and IV Podin).

The greatest tectonic activity in the basin occurred after the deposition of the extremely coarse-grained “Orlač Conglomerates” ($^2M_3$), at the Miocene–Pliocene transition. At that time, the basin was completely filled, and it acquired approximately its present tectonic structure. This tectonic activity led to the formation of numerous fold structures in the basin, creating several synclines and anticlines with gently inclined limbs and axes that dip to the west.

In the basin, there are well-known gentle synclinal structures: the Zenica, Kakanj, Brezana, and Sarajevo synclines, which are associated with gentle anticlines. Between Zenica and Kakanj, the Lašva anticline is known, which is deeply eroded, while the youngest sediments (Orlački Conglomerates) are preserved in the Orlačka syncline near Zenica. Previous exploration work has proven that the frequency and size of faults decrease from bottom to top, i.e., from the oldest Oligomyoceanic to the younger Miocene and Pliocene sediments.

As for the present-day structural-tectonic relationships in the Raspotočje exploitation field, they are the result of predominantly vertical movements, and to a much lesser extent, tangential thrusting of the underlying mountain range, i.e., the Mesozoic sediments. All of these movements are also linked to the Alpine orogeny.

As in other exploitation fields, the faults in the Raspotočje area are longitudinal, transverse, and less frequently diagonal, and this classification is relative to the strike of the carboniferous sediments.

The formed fault blocks most often have prismatic or parallelepiped shapes, and the fault surfaces are at angles between 40° and 70°. When faults occur in limestone sediments, they are invariably accompanied by fault breccias, and when they are in clayey or argillaceous rocks, schistosity parallel to the fault surfaces develops.

In the Raspotočje pit, the identified faults are of the gravitational type with varying displacements of the fault wings. As in other fields, here too the older strike faults are roughly aligned with the strike of the coal seams.

The younger faults are north-south oriented and are approximately parallel to each other. The most significant is the fault that separates the eastern part of the Raspotočje pit from the area of the former Drivuša pit, with a scarp that decreases from north to south. Additionally, a significant transverse fault that separates the central from the eastern part of the Raspotočje pit is also notable.

The aforementioned older strike-slip faults have divided the Raspotočje mine's exploitation area into nine tectonic terraces, which are labelled such that the first terrace is the shallowest and lies to the north, while the ninth terrace is the deepest and lies on the southern side of the exploitation area.

The relationships between the tectonic terraces are such that those with higher sequential numbers are higher (more elevated) than those with lower sequential numbers. The only exception to this rule is the final IX tectonic terrace, which is lower than the eighth. It is also characteristic that the throw of these faults decreases from north to south, or from the shallower to the deeper parts of the exploitation field.

The carboniferous sediments are approximately ENE-WSW with a dip to the SW, and the stratigraphic dip ranges from 12° to 40°.

2.3 Hydrogeological characteristics of the deposit

As part of the comprehensive geological investigations of the eastern section of the Raspotočje pit, hydrogeological investigations were also carried out.

The investigations were aimed at defining the filtration characteristics of the immediate overburden of the main coal seam, which consists of limestones, and at determining the filtration characteristics of the lithological members of the overburden of the main coal seam. In addition to the filtration characteristics, the investigation should provide an answer to the question of the origin of the groundwater and the way it is replenished.

The classification of water permeability was carried out based on measurements and calculations of the filtration coefficient. In the area of the Raspotočje pit, the following aquifer horizons were identified:

- The first aquifer horizon is located immediately adjacent to the Bosna River and is composed of clays, clayey sands, and gravel. The thickness of this horizon ranges from 1.50 to 5.00 meters.
- The second aquifer horizon is located above the limestone zone. It is composed of marl.
- The third aquifer horizon is associated with the overlying coal zone, i.e., the limestones above the main coal seam up to the shaly zone. The lower boundary of this horizon is formed by the main coal seam and the clay in its immediate subsurface. The limestones that largely make up this horizon are secondary aquitard

rocks whose permeability depends on fractures and faults. The thickness of this horizon is about 70 m.

- The fourth water-permeable horizon is located between the basal clays (lower boundary) and the main coal seam (upper boundary). This aquifer horizon is composed of clays, clayey loams, sandstones, argillaceous limestone, and coal (main basal seams I, II, and III). The thickness of this horizon is up to 150 m.

Based on hydrogeological classification, the lithological members are classified as aquifers and aquitards.

Hydrogeological aquitards primarily include the shales that are present in the overlying sequence of the main coal seam, the bedded clays, as well as the coal seam itself. The aforementioned lithological members belong to permeable rocks with a filtration coefficient of $k = 2.06 \times 10^{-8}$ to $k = 9.10 \times 10^{-8}$ m/s. A very significant thick series of limes in the top of the main coal seam is present, as they hydrologically separate multiple aquifer horizons and surface flows from the aquiferous limestones in the immediate overlying layer.

In the category of hydrogeological collectors are the limestones of the immediate overlying layer of the main coal seam. The limestones feature pronounced secondary fractures and good filtration properties with $k = 2.13 \times 10^{-8}$ m/s. The most significant water-bearing formation (the limestones) in the northern parts of the deposit is hydraulically connected to the Bosna River alluvium, with which it is locally in direct contact.

In the Raspotočje pit, water appears in two forms: as stagnant and dynamic waters. Stagnant waters pose a danger to crews at the work sites and cause material damage, as their sudden breakthrough can occur when new mining areas were opened. After the breakthrough, the level of stationary water tends to decrease and it transitions into dynamic water. Dynamic water is characterized by a continuous influx into the mine chambers in smaller quantities:

Inflow: in older works, dynamic waters create accumulations that partially drain away through migration through the fissure system of the karstic limestones. The current inflow of water into the "Raspotočje" pit is about 4,300 m³ per day = appr. 180 m³/h.

During mining operations to develop the opening and preparation chambers for the "Raspotočje" pit, a sudden influx of groundwater may occur. Given the deposit's tectonics, it is realistic to expect the inflow of accumulated water from older, higher-lying workings as well as infiltration through fault zones.

For the above reason, all measures to prevent water ingress must be taken, first and foremost pre-draining as mining progresses.

Multi-year hydrogeological research in the pit Raspotočje has established a very low water permeability of roof marls (from 0 to 6.5 l/min), while the water permeability of marly limestones is much higher and amounts to 45 l/min. The main coal seam and the bottom of the main coal seam are impermeable. According to previous tests of self-ignition of the coal layer, it was concluded that the main coal layer is extremely prone to self-ignition, and the pit "Raspotočje" is classified in the III category of self-ignition of coal.

2.4 Methods of excavation used in the mine

During the exploitation of the mine, the main and II floor coal seams were excavated using the following excavation methods:

- chamber excavation method (Mostar method),
- chamber excavation method using a fan of deep mine boreholes,

- wide-face excavation method of the roof part of the main coal seam, with a working height of up to 3.4 m, using SHP (Becorit and Hemscheid),
- wide-face - sublevel excavation method of the entire thickness of the main coal seam, with a working height of up to 6.5 m, using SHP (reconstructed Becorit and DAWTY 4L - 4000 kN),
- wide-face excavation method using MHP type BW 22/41 POZ with accompanying equipment

The Raspotočje mine employed the wide-face excavation method with a face length of 95 m using MHP type BW 22/41 POZ with accompanying equipment, and as an alternative method, for parts of the deposit where wide-face excavation is impossible due to mining and geological conditions, the Chamber excavation method was applied using a fan of deep mining boreholes. The chamber excavation method using a fan of deep mine boreholes was an alternative excavation method in the Raspotočje mine for mining fields where the application of SHP and wide-face mining was not possible due to geological conditions. The geometry and dimensions of the chamber method are shown in Figure 3.

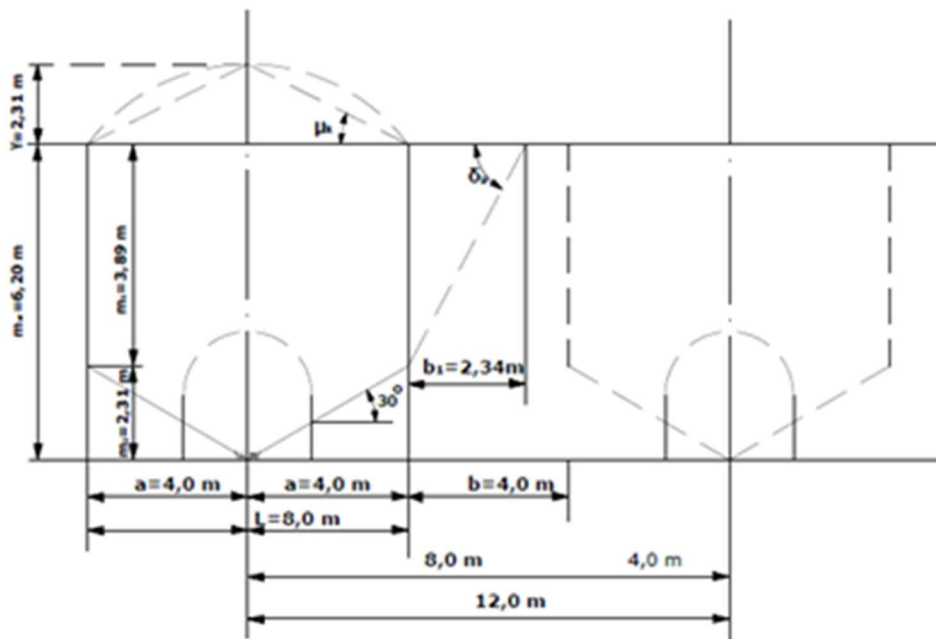


Figure 3: Geometry of heading a gallery working in the II sub-coal seam in the eastern part of the "Raspotočje" mine

2.5 Existing drainage conditions

All water inflows above the catchment at elevation K+176.90 m, as well as water from the free depth of the shaft, are collected in this catchment and from that point are directly pumped out of the mine into the Bosna River. This pumping station is called PS K+180 m.

All other water inflows below elevation K+176.90 m, inflows from the productive part of the mine and inflows from old workings, whether by gravity or via centrifugal pumps, are collected in the main water collector of the Main Pump Station (MPS), which is located next to the main transport gallery (GOP) at elevation K+1.6 m, and from there they are discharged outside the mine directly through a pipeline via the gallery and the hoist shaft.

3. Objectives of the assignment

- a. The World Bank Group (the “Client”) is seeking to appoint a qualified consultancy company (the “Consultant”) to support the Federal Ministry of Energy, Mining and Industry (FMERI), the coal mining company RMU Zenica and the utility company Elektroprivreda BiH (EPBiH) in closing the underground mine Raspotočje (the “Project”).
- b. The Consultant will develop a comprehensive **Environmental and Social Impact Assessment (ESIA)** and a corresponding **Environmental and Social Management Plan (ESMP)** for Raspotočje underground coal mine.

The ESIA and ESMP must be developed in strict compliance with the **World Bank Environmental and Social Framework (ESF)**, relevant Environmental and Social Standards (ESS1 to ESS10), the World Bank Group General EHS Guidelines, and the **EHS Guidelines for Mining, Environmental and Social Management Framework (ESMF)** as well as all applicable national environmental and social laws and regulations. The relevance of the WB ESSs considered applicable to the BiH JT Project is presented in the following table.

Table 1 Relevance of ESS for the Project

E&S Standards		Relevance
ESS 1	Assessment and Management of Environmental and Social Risks and Impacts	Relevant
ESS 2	Labor and Working Conditions	Relevant
ESS 3	Resource Efficiency and Pollution Prevention and Management	Relevant
ESS 4	Community Health and Safety	Relevant
ESS 5	Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	Relevant
ESS 6	Biodiversity Conservation and Sustainable Management of Living Natural Resources	Relevant
ESS 7	Indigenous Peoples	Not Relevant
ESS 8	Cultural Heritage	Not Relevant
ESS 9	Financial Intermediaries	Not Relevant
ESS 10	Stakeholder Engagement and Information Disclosure	Relevant

The ESIA shall assess the environmental and social risks of the specific engineering solutions developed under the separate Technical study for closure of Raspotočje pit that will be implemented by another consultant in parallel with this assignment.

- establish the environmental and social baseline conditions relevant to mine closure;
- identify activities and facilities associated with closure that may result in environmental or social impacts;
- assess direct, indirect, induced and cumulative environmental and social impacts, as relevant;

- assess risks associated with mine water rebound, groundwater and surface water interactions, subsidence, ground instability and methane migration;
- assess impacts on nearby communities, land users, infrastructure and economic activities;
- assess occupational and community health and safety risks;
- assess impacts on biodiversity, ecosystems, land use and ecosystem services;
- assess potential impacts associated with closure-related traffic, construction and demolition activities;
- identify vulnerable groups and assess potential disproportionate impacts;
- identify mitigation and management measures following the mitigation hierarchy;
- develop an Environmental and Social Management Plan (ESMP);
- develop an environmental and social monitoring programme for phases of mine closure and post-closure;
- establish roles and responsibilities for implementation of mitigation and monitoring measures;
- provide cost estimates for implementation of the proposed environmental and social measures, where required;
- identify residual risks and impacts following implementation of mitigation measures.

4. Reporting Requirements and Approval Procedures

The Consultant shall submit all deliverables, including draft and final versions of the Environmental and Social Impact Assessment (ESIA) and Environmental and Social Management Plan (ESMP), to the Project Implementation Unit (PIU), for the attention of the Project Coordinator/ Environmental and Social Specialists.

The PIU will serve as the main counterpart and will coordinate the technical review, consolidation of stakeholders' comments, and formal institutional approval.

The final approval of the report and completion of tasks will be conducted through approval received by the PIU from the World Bank team.

4.1 Submission Format and Language

All deliverables must be written in English and BHS language. The Consultant shall submit the documents in the following formats:

- **Draft ESIA/ESMP:** Electronic copy via email / cloud link in both editable format (MS Word) and non-editable format (PDF).
- **Final ESIA/ESMP:** hard copies (3 copies) and electronic copy (USB/Cloud link) in PDF format.

4.2 Review and Approval Process

To ensure compliance with the World Bank Environmental and Social Framework (ESF), the review process will follow these stages:

1. **Initial Review:** The PIU will review the draft deliverables and provide consolidated comments to the Consultant within 14 calendar days from receipt.

2. **World Bank Review:** The PIU will forward the revised draft to the **World Bank Environmental and Social Specialists** for their review and "No Objection".
3. **Public Consultation Draft:** Once approved for disclosure, the Consultant will update the draft to incorporate feedback from public consultation meetings.
4. **Final Approval:** The final ESIA will be formally approved by the PIU only after receiving the final **World Bank clearance**.

5. Initial Assessment and available information

A first assessment of technical and environmental risks of the mine closure has been carried out. Coal mining at the Raspotočje pit has created long-term effects on the environment. Based on these reports most relevant ones are:

- a. Ground movements: From the perspective of post-mining residual ground movement risks, two main types of mining methods have been applied in Raspotočje mine: wide-face method = longwall mining, chamber and pillar mining. In particular the chamber and pillar mining method has left large residual empty spaces. The stability of the remaining pillars in the old works may be affected by the alteration or aging of the material or by modifications in the environment of the underground structures, probably due to the mine flooding. In particular, the limestone might be highly sensitive to water circulation.
- b. Mining induced hydrological and hydrogeological disturbance: Pumping stops at Raspotočje mine will lead to a gradual flooding of the mine voids and a rise in the hydrostatic level. This flooding can result in the hazard that natural draining toward the surface occurs at topographical low points (valleys, depressions), maybe through mine galleries that are connected to the surface. New discharge outflows can also appear. Whatever the scenario, it can be assumed that the hydrostatic level in the area of a former mining operation is not in its original position.
- c. Methane and other gas emissions: Raspotočje mine is classified as a gassy mine i.e. the coal seams contain methane which was released during extraction. Once production has ceased and the coal mine is closed, it continues to release methane. Such methane emissions typically occur at well-defined source points, such as ventilation shafts or pressure-relief vents.

The technical data provided in this Terms of Reference (ToR) represent input data and information that were available prior to the preparation of a separate technical study, which will be conducted by another consultant in parallel with this assignment. The Consultant under this ToR will involve technical data in ESIA from the newly prepared technical study.

Available information

The following information is available about the mine, in Bosnian language and will be made available to the successfully appointed consultant:

Title	Translation	Type of document
O KATEGORIZACIJI I RAZVRSTAVANJU RUDARSKIH PROSTORIJA	On the categorization and classification of mining premises by degree of methane hazard in the	Report (284 pages) and 8 attachments (maps of ventilation, water drainage, mine exploitation and

POSTEPENU OPASNOSTI OD METANA U JAMI „RASPOTOČJE“, JP ELEKTROPRIVREDA BIH D.D.-SARAJEVO, ZD RMU „ZENICA“ D.O.O.-ZENICA + prilog 1 -8	Raspotocje mine, JP Elektroprivreda BiH D.D.- Sarajevo, ZD RMU “Zenica” D.O.O.-Zenica	galleries, digital terrain models)
PROJEKAT OTPADNIH VODA	Wastewater project	Drawings, photos etc. (31 documents)
PROJEKAT SISTEMA ZA ODVODNJU I TRETMAN TEHNOLOŠKIH, SANITARNO – FEKALNIH I OBORINSKIH OTPADNIH VODA POGONA „RASPOTOČJE	Project of the system for drainage and treatment of technological, sanitary- faecal and storm waste waters of the Raspotocje plant	Report (76 pages)
GEOLOGIJA I HIDROGEOLOGIJA RASPOTOCJE	Geology and hydrogeology Raspotocje	Geological report, hydrogeological information, geological and hydrological profiles
BILANS METANA U VAZDUŠNIM STRUJAMA VENTILACIONOG SISTEMA JAME „RASPOTOČJE”	Methane balance in the air flows of the ventilation system of the 'Raspotocje' pit	Reports and drawings (in dwg)
GEOMEHANICKA ISPITIVANJA UGLJA I STIJENA PRATECIH NASLAGA IZ JAME „RASPOTOCJE"	Geomechanical testing of coal and rocks of the accompanying layers from the “Raspotocje” mine	Report (52 pages)
IZVJESTAJ 0 REZULTATIMA ISPITIVANJA TERETA ZAGADENJA OTPADNIH VODA RMU ZENICA D.O.O. ZENICA, POGON RASPOTOCJE, IZRAZENOG PREKO EBS-	Report on the results of waste water pollution testing RMU Zenica D.O.O. Zenica, Raspotocje plant, expressed through EBS	Report (58 pages) Dec. 2024

IZVJESTAJ MONITORINGU KVALITETA KVANTITETA OTPADNIH VODA ZD RMU «ZEN/CA» D.O.O. ZENICA, POGON «RASPOTOCJE»	O I	Report on the monitoring of quality and quantity of waste water ZD RMU “Zenica” D.O.O. Zenica, plant “Raspotocje”	Report (17 pages) March 2024
KNJIGA PROTIVEKSPLOZIVNIH _ BRANA POGONA "RASPOTOCJE" ZAPOCETA: 02.08.2017 GOD		Book of anti-explosive dams of the 'Raspotocje' plant started: 02.08.2017	Hand-written documentation with drawings
EVIDENCIJA IZRADE ZIDOVA U JAMI “RASPOTOCJE”, ZAPO- CETA 18.03.2013		Record of wall construction in the pits 'Raspotocje', started on 18.03.2013	Hand-written documentation with drawings
ELABORAT SVJETSKU BANKU	ZA	Report for the World Bank	Summary report (32 pages) containing information on geology hydrogeology, methane, description of mine void closure methods, water quality monitoring
ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK (ESMF) for Just Transition in Select Coal Regions in Bosnia and Herzegovina			
ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP) for the retrieval of the mine equipment (May 2025)			

6. Scope of work

To achieve the assignment's objectives, the Consultant shall perform the tasks outlined below. The Consultant is required to establish a continuous, bidirectional data-exchange loop with the

parallel Technical Closure Consultant. All engineering models and technical solutions developed by the parallel teams must be systematically subjected to environmental and social risk screening.

The Consultant will deliver an ESIA satisfactory to the World Bank (ESIA should align with guidance from WB²), which is based the following steps:

6.1 Project Description

The Consultant shall prepare a detailed description of the Raspotočje mine closure project based on available information and the findings of the ITA.

The project description shall include, as applicable:

- regulatory review;
- location and boundaries of the mine site;
- historical and current mining activities;
- underground workings and surface infrastructure;
- mine entries, shafts, adits and other openings;
- existing mine-water management infrastructure;
- existing methane extraction, ventilation and gas management systems;
- existing waste rock, coal waste and other waste management areas;
- power, water and other utilities;
- roads and access infrastructure;
- proposed closure activities;
- sealing and securing of underground openings;
- proposed stabilisation measures;
- demolition and removal of infrastructure, where applicable;
- management of mine water and groundwater rebound;
- methane monitoring, capture and/or controlled release;
- subsidence management;
- surface rehabilitation;
- temporary construction/closure facilities;
- closure-related traffic and logistics;
- post-closure monitoring and maintenance.

The project description shall clearly distinguish between:

1. closure activities;
2. immediate post-closure activities;
3. long-term post-closure management and monitoring.

6.2 Analysis of the legal and institutional framework

- Review all applicable national environmental, social, water, and mining laws, community health and safety as well as labor regulations regarding working

² <https://documents1.worldbank.org/curated/en/142691530216729197/ESF-Guidance-Note-1-Assessment-and-Management-of-Environmental-and-Social-Risks-and-Impacts-English.pdf>

conditions, welfare, Occupational Health and Safety and collective redundancies and retrenchment.

- Map project requirements against the World Bank Environmental and Social Standards, the WBG General EHS Guidelines, and the EHS Guidelines for Mining. The Consultant shall identify and clearly document material gaps and differences between applicable national requirements and the applicable World Bank ESF/ESS and WBG EHS requirements, and shall recommend an appropriate project-specific approach for addressing such differences in consultation with the Client and the World Bank.
- Identification of necessary permits and approvals for the closure phases

6.3 Baseline Environmental and Social Assessment

The Consultant shall establish a baseline against which potential impacts can be assessed. The Consultant shall review, validate, and utilize relevant data from the Technical Study. The Consultant shall be responsible for planning and undertaking all supplementary primary data collection, field investigations, environmental and social monitoring, sampling, and laboratory analyses required to establish an adequate and reliable baseline for the ESIA. This shall include, but not be limited to, air quality and noise monitoring at sensitive receptors, and sampling and laboratory testing of surface water, groundwater, and mine-water discharges, as well as any additional soil, sediment, biological, or other investigations identified as necessary to address data gaps and assess potential impacts. All associated costs, including fieldwork, sampling, sample transport, laboratory testing, and reporting of results, shall be included in the Consultant's scope of services and financial proposal and shall not be treated as additional services. The Consultant shall identify the proposed baseline investigations, sampling locations, parameters, methods, and estimated scope in the Inception Report or a dedicated Baseline Data Collection Plan, for review and approval by the Client.

The baseline assessment shall be proportionate to the risks and impacts of mine closure and shall include, as relevant:

6.3.1 Physical Environment

- topography and geomorphology;
- geology and soils;
- climate and meteorology;
- air quality (including mandatory baseline primary field monitoring at sensitive receptor locations);
- noise and vibration (including mandatory baseline primary field monitoring at sensitive receptor locations) ;
- surface water;
- groundwater;
- hydrology and drainage;
- mine water;
- water quality (including sampling and laboratory testing of surface water, groundwater, and mine-water discharges) ;
- existing contamination and contaminated land;
- land stability and subsidence;

- landscape and visual environment.

The hydrogeological baseline shall be consistent with the Hydrogeological Conceptual Model developed under the ITA.

6.3.2 Biological Environment

The assessment shall include:

- habitats and ecosystems;
- flora;
- fauna;
- protected and sensitive species;
- protected areas;
- aquatic ecosystems;
- ecological connectivity;
- invasive species;
- ecosystem services;
- potential impacts on livestock and wildlife safety.

Where appropriate, the Consultant shall undertake field surveys to supplement existing information.

6.3.3 Socio-Economic Environment

The assessment shall cover:

- population and settlements;
- demographic characteristics;
- livelihoods;
- employment;
- local economic activities;
- land ownership and land use;
- agricultural activities;
- access to land and natural resources;
- public infrastructure;
- roads and transport;
- utilities;
- community services;
- vulnerable groups;
- community health and safety;
- existing community concerns related to the mine.

Particular attention shall be given to communities and land users potentially affected by subsidence, changes in drainage, groundwater changes, mine-water discharge, closure activities and access restrictions.

6.3.4 Cultural Heritage

The Consultant shall identify:

- known cultural heritage sites;
- archaeological resources;
- tangible and intangible cultural heritage potentially affected by closure activities;
- chance-find risks associated with excavation, demolition and rehabilitation works.

6.4 Environmental and Social Impact Assessment

The Consultant shall identify and assess potential impacts associated with the closure and post-closure phases.

The assessment shall consider the full project life cycle relevant to closure, including construction/implementation, closure, post-closure and long-term monitoring.

6.4.1 Mine Water, Groundwater and Surface Water

The ESIA shall assess the environmental and social implications of the mine-water and hydrogeological scenarios developed under the ITA, including:

- groundwater rebound;
- changes in groundwater levels;
- changes in groundwater flow directions;
- changes in surface water flows;
- uncontrolled or unplanned mine-water discharges;
- impacts on downstream water users;
- impacts on groundwater users;
- impacts on aquatic ecosystems;
- changes in water quality;
- potential acid mine drainage;
- mobilisation of contaminants;
- new groundwater/surface-water connections;
- potential impacts on existing water infrastructure.

The ESIA shall use the numerical mine-water and hydrogeological model results as a technical input and shall translate the predicted changes into environmental and social receptors and impacts.

6.5 Subsidence, Ground Stability and Land Impacts

The ESIA shall assess the environmental and social implications of the subsidence modelling undertaken under the ITA.

The assessment shall consider:

- predicted areas of subsidence;

- surface deformation;
- ground cracking;
- sinkholes and pot-holing;
- changes in surface topography;
- changes in local drainage;
- surface ponding;
- impacts on houses and other buildings;
- impacts on roads and transport infrastructure;
- impacts on power and utility infrastructure;
- impacts on agricultural land;
- impacts on waterways;
- impacts on biodiversity and ecosystems;
- potential risks to people, livestock and wildlife.

The ESIA shall identify areas requiring specific management, restrictions, warning systems or monitoring.

6.6 Methane and Other Mine Gases

The ESIA shall assess environmental, climate and health and safety risks associated with methane and other mine gases.

The assessment shall be based on the methane pathway assessment undertaken under the ITA and shall consider:

- potential methane migration pathways;
- methane emission points;
- uncontrolled methane emissions;
- methane accumulation;
- risks to nearby communities;
- risks to workers and contractors;
- risks to infrastructure;
- potential greenhouse gas emissions;
- impacts associated with methane capture, flaring, controlled release or other management technologies.

The Consultant shall assess the environmental and social implications of the proposed methane management alternatives.

6.7 Air Quality, Dust, Noise and Vibration

The Consultant shall assess potential impacts associated with closure works, including:

- demolition;
- excavation;
- earthworks;
- transport;
- movement of heavy equipment;
- dust generation;

- emissions from machinery;
- noise;
- vibration.

The assessment shall identify sensitive receptors and establish appropriate mitigation and monitoring requirements.

6.8 Waste and Hazardous Materials Management

The ESIA shall identify waste streams generated during closure, including:

- demolition waste;
- mining waste;
- coal waste;
- contaminated soil;
- hazardous materials;
- oils and fuels;
- asbestos-containing materials, where present;
- electrical and electronic waste;
- general construction waste;
- domestic waste;
- waste generated during water treatment.

The Consultant shall prepare a waste management framework covering:

- waste minimisation;
- segregation;
- temporary storage;
- transport;
- treatment;
- recycling/reuse;
- final disposal;
- hazardous waste management.

6.9 Biodiversity and Ecosystem Services

The Consultant shall assess potential impacts on:

- terrestrial habitats;
- aquatic habitats;
- flora and fauna;
- protected or sensitive species;
- ecological connectivity;
- water-dependent ecosystems;
- ecosystem services.

Particular consideration shall be given to changes in groundwater, surface-water drainage and mine-water discharge resulting from closure.

The assessment shall identify appropriate mitigation measures and, where relevant, opportunities for ecological restoration.

6.10 Land Use and Rehabilitation

The Consultant shall assess potential changes in:

- land use and related restrictions;
- access;
- agricultural use;
- drainage;
- vegetation;
- landscape characteristics;
- land stability.

The ESIA shall provide environmental and social requirements for rehabilitation of areas affected by closure activities.

The development and costing of **alternative post-closure land uses** is excluded from the scope unless specifically instructed by the Client.

6.11 Labour and Working Conditions and Occupational Health and Safety

The ESIA shall identify occupational health and safety risks associated with closure activities, including:

- unstable underground workings;
- mine entries and shafts;
- ground collapse;
- subsidence;
- methane and other gases;
- contaminated water;
- hazardous materials;
- demolition;
- heavy equipment;
- traffic;
- confined spaces;
- electrical hazards;
- fire and explosion;
- emergency response.
- current workforce profile;
- direct and contracted workers;
- employment termination and retrenchment;
- collective redundancies;
- working conditions;
- workers' rights;
- worker grievance mechanism;

- contractor/subcontractor arrangements;
- occupational health and safety;
- hazardous work;
- emergency preparedness;
- worker accommodation, if applicable;
- non-discrimination and equal opportunity;
- risks associated with closure-related workforce reduction.

The Consultant shall recommend appropriate mitigation, emergency preparedness and monitoring requirements. Where retrenchment is unavoidable, the Consultant shall assess the potential environmental and social risks associated with workforce reduction and identify appropriate measures consistent with applicable national requirements and ESS2.

6.12 Community Health, Safety and Security

The Consultant shall assess risks to surrounding communities arising from:

- ground collapse and subsidence;
- methane migration;
- mine-water discharges;
- changes in water quality;
- construction and closure traffic;
- access restrictions;
- open excavations or unsecured mine openings;
- changes in drainage;
- dust and noise;
- emergency events.

Appropriate community safety measures, warning systems, access controls and emergency response arrangements shall be identified.

6.13 Socio-Economic Impacts of Mine Closure

The Consultant shall assess potential socio-economic impacts associated with mine closure, including:

- direct employment impacts;
- indirect and induced economic effects, where material;
- impacts on local businesses;
- changes in household income;
- impacts on livelihoods;
- impacts on local services and infrastructure;
- impacts on vulnerable groups;
- potential changes in land use and access.

The assessment shall distinguish between impacts that are directly attributable to the Raspotočje closure and broader regional socio-economic changes that are outside the project scope.

Where socio-economic transition measures are required, the Consultant shall identify them as recommendations; however, preparation of a comprehensive regional economic transition programme is outside the scope. Also, where relevant, the assessment shall consider differentiated impacts on women, vulnerable households and groups that may be disproportionately affected by mine closure.

6.14 Stakeholder Engagement and Consultation

The Consultant shall develop and implement an appropriate stakeholder engagement process that meets ESS10 requirements in coordination with the Client and relevant authorities.

Stakeholder identification shall include, as relevant:

- affected communities;
- landowners and land users;
- local authorities;
- environmental and water authorities;
- mine employees and representatives;
- local businesses;
- vulnerable groups;
- civil society organisations;
- relevant technical and academic institutions.

The engagement process shall:

- identify stakeholder concerns;
- communicate key closure risks and impacts;
- document feedback;
- identify community knowledge relevant to baseline conditions;
- identify concerns regarding groundwater, subsidence, methane and land use etc..;
- explain proposed mitigation and monitoring measures.

The Consultant shall prepare a **Stakeholder Engagement Plan (SEP)** or equivalent stakeholder engagement framework, where required by the applicable standards.

6.14.1 Public Disclosure and Consultation of the ESIA

The draft ESIA and related environmental and social instruments must be publicly disclosed and consulted upon before they are finalized. The Consultant shall provide full technical and logistical support to the Client during this process. Specifically, the Consultant's scope of services shall include:

- **Support for Public Disclosure:** Prepare summaries, presentation materials, and infographics in both English and BHS suitable for public disclosure on the Client's website and local community boards.
- **Public Consultation Meetings:** Support the Client in organizing, scheduling, and conducting public consultation meetings/workshops with affected communities and other

stakeholders. The Consultant shall deliver the technical presentations, explain the findings, and respond to questions regarding impacts and mitigation measures.

- **Documentation and Minutes:** Document the entire consultation process, including a comprehensive list of participants (disaggregated by gender, where appropriate), a summary of all questions raised, and responses provided.
- **Integration of Feedback:** Systematically review and integrate relevant recommendations, concerns, and feedback received during the disclosure period and consultation meetings into the final version of the ESIA and ESMP. A dedicated annex summarizing how each comment was addressed must be included in the final ESIA report submitted for World Bank clearance.

6.15 Cumulative and Transboundary Impacts

The Consultant shall identify and assess cumulative impacts where relevant, considering other existing, planned or reasonably foreseeable activities in the surrounding area.

Particular attention shall be given to:

- other mining activities;
- regional groundwater and surface-water systems;
- cumulative land-use changes;
- regional transport impacts;
- cumulative socio-economic effects.

The assessment shall distinguish the impacts attributable to the Raspotočje closure from those associated with other mines or developments.

6.16. Climate Change and Greenhouse Gas Assessment

The ESIA shall assess relevant climate-related risks and greenhouse gas emissions associated with mine closure.

The assessment shall consider:

- methane emissions;
- other relevant greenhouse gas emissions;
- climate-related changes affecting mine water;
- extreme precipitation and flooding;
- drought;
- temperature changes;
- implications for long-term stability and monitoring;
- climate resilience of proposed closure measures.

The assessment shall identify appropriate adaptation and mitigation measures.

6.17 Environmental and Social Management Plan

The Consultant shall prepare a project-specific **Environmental and Social Management Plan (ESMP)**. The ESMP shall be developed in accordance with the template table forms provided in World Bank ESS1 and the corresponding Guidance Note.

The ESMP shall include, at minimum:

- identified impact/risk;
- proposed mitigation measure;
- monitoring parameter;
- monitoring methodology;
- monitoring frequency;
- performance indicator;
- responsible party;
- implementation schedule;
- reporting requirements;
- estimated cost.

The ESMP shall distinguish between:

- closure-phase measures;
- immediate post-closure measures;
- long-term post-closure measures.

6.18 Environmental and Social Monitoring Programme

The Consultant shall develop an environmental and social monitoring programme covering the closure and post-closure phases.

The monitoring programme shall be coordinated with the four-dimensional long-term monitoring framework under the ITA and shall include but not limited to and as relevant:

- groundwater levels;
- surface-water levels and flows;
- water quality;
- mine-water quality;
- methane and other gases;
- air quality;
- subsidence;
- ground deformation;
- surface cracking;
- infrastructure condition;
- biodiversity;
- vegetation;
- land use;
- community health and safety;
- stakeholder complaints management;
- socio-economic indicators.

The Consultant shall define:

- monitoring locations;
- parameters;
- methods;
- frequency;
- duration;
- trigger/action levels;
- responsibilities;
- data management requirements;
- reporting requirements.

Where possible, the programme should integrate conventional field monitoring with GIS, remote sensing, satellite data, drones and other appropriate technologies.

6.19 Environmental and Social Risk Register

The Consultant shall prepare an **Environmental and Social Risk Register** identifying:

- risk/impact;
- source/cause;
- receptor;
- likelihood;
- consequence;
- mitigation;
- residual risk;
- monitoring requirements;
- responsible party.

The risk register shall be maintained as a living document and shall be consistent with the findings of the ITA.

6.20 Emergency Preparedness and Response

The Consultant shall identify credible environmental and social emergency scenarios associated with mine closure and post-closure conditions, including:

- uncontrolled mine-water discharge;
- sudden ground collapse;
- major subsidence;
- methane migration or accumulation;
- fire/explosion;
- flooding;
- failure of closure structures;
- contamination events.

For each relevant scenario, the Consultant shall identify:

- potential consequences;

- early warning indicators;
- monitoring requirements;
- response actions;
- responsible institutions;
- communication and notification requirements.

6.21 Scope Exclusions

The following activities are outside the scope of the ESIA unless specifically instructed otherwise:

- Development of the full mine closure plan for the three coal pits in the Zenica area.
- Detailed engineering design of mine closure structures, bulkheads, caps, backfilling systems or other stabilisation measures.
- Development of the numerical mine-water/hydrogeological model where this is covered by the ITA.
- Detailed subsidence modelling where this is covered by the ITA.
- Detailed methane engineering design where this is covered by the ITA.
- Detailed design and costing of alternative post-closure land uses.
- Preparation of closure plans for other mines in the area.
- Training of officials in deployment, use and interpretation of monitoring systems, unless separately instructed.
- Detailed engineering design of water treatment plants or methane capture systems.
- Implementation of closure works.

The ESIA may, however, provide **environmental and social requirements, performance criteria and recommendations** relevant to these activities.

6.22 Deliverables

The consultant is expected to deliver the following:

Phase	Deliverable	Expected timeline
Inception report	Following review of the available information, an inception report that should include: - methodology; - work programme; - data requirements; - stakeholder mapping; - field survey plan; - applicable standards; - interfaces with the ITA; - quality assurance arrangements.	End of Month 1
Baseline Environmental and Social Assessment	Baseline Environmental and Social Assessment should include: - environmental baseline; - social baseline;	End of Month 2

Phase	Deliverable	Expected timeline
	- biodiversity baseline; - water baseline; - land-use assessment; - cultural heritage baseline; - baseline data gaps.	
Draft ESIA	Draft ESIA should include: - project description; - legal framework; - baseline; - Analysis of alternatives; - impact assessment; - cumulative impacts; - climate assessment; - stakeholder engagement; - mitigation measures; - ESMP; - monitoring programme; - risk register.	End of Month 4
Environmental and Social Management Plan	Includes detailed management and monitoring measures, responsibilities, schedules and cost estimates.	End of Month 4
Stakeholder Engagement Documentation	Stakeholder Engagement Documentation should include - stakeholder mapping; - consultation programme; - consultation materials; - records of consultation; - comments and responses; - grievance-management arrangements and log	End of Month 5
Final ESIA	The final ESIA shall incorporate comments from the Client, competent authorities and relevant stakeholders and shall be suitable for use in the applicable approval/financing process. The final ESIA should be submitted in both English and BHS languages.	End of Month 6
GIS Database and Supporting Data	The Consultant shall provide relevant spatial data, maps and GIS layers generated as part of the ESIA, in agreed digital formats.	End of Month 6

6.23 Guiding principles

The ESIA and its associated deliverables that are expected are to be fully compliant with the World Bank Group (WBG) EHS Guidelines³, the IFC Guidelines for EHS in mining⁴, World Bank Environmental and Social Framework (ESF), relevant Environmental and Social Standards as well as all the applicable laws of the BiH relating to mining, water, and the environment.

7 Consultant qualifications

To be considered for this assignment, the consultant must adequately show the following attributes:

- a. At least **10 years of demonstrated corporate experience** in conducting Environmental and Social Impact Assessments (ESIAs) and preparing Environmental and Social Management Plans (ESMPs).
- b. Successful completion of at least **two (2) comparable ESIA assignments** for complex industrial, infrastructure, energy, or mining projects financed by International Financial Institutions (IFIs), preferably including the World Bank, applying the World Bank Environmental and Social Framework (ESF) and relevant Environmental and Social Standards (ESSs), IFC Performance Standards, or equivalent international environmental and social standards.
- c. The Consultant shall demonstrate specific experience in environmental and social assessment of mining, mine closure, mine rehabilitation, decommissioning, or other extractive-sector projects, including, where applicable, assessment of environmental and social risks associated with post-closure conditions.
- d. Experience in Bosnia and Herzegovina and/or the Western Balkans in environmental and social assessment, mining, industrial decommissioning, mine closure or related projects shall be considered an advantage.
- e. Experience in conducting meaningful stakeholder engagement and consultation for projects with potentially significant environmental and social risks.
- f. The Consultant shall demonstrate access to an appropriately qualified multidisciplinary team capable of assessing the environmental and social implications of mine closure, including, as relevant, environmental and social assessment, stakeholder engagement, mine water and hydrogeology, subsidence and ground stability, biodiversity, occupational and community health and safety, climate change and greenhouse gas emissions, land-related impacts, cultural heritage, and GIS/remote sensing.

7.1 Consultant team

The core team employed by the consultant must include the following key roles and qualifications:

³ <https://www.worldbank.org/en/projects-operations/environmental-and-social-framework>

⁴ <https://www.ifc.org/content/dam/ifc/doc/2000/2007-mining-ehs-guidelines-en.pdf>

Key role	Qualifications	Experience level
Team leader/Senior Environmental Assessment Specialist	Minimum of a Master's degree in Environmental Science, Environmental Engineering, Civil Engineering, or a closely related discipline. Demonstrated knowledge of the World Bank Environmental and Social Framework (ESF) and relevant Environmental and Social Standards (ESSs).	At least 15 years of professional experience in environmental and social assessment and environmental consulting, including at least 5 years of experience managing multidisciplinary ESIA assignments for complex industrial, infrastructure, energy or mining projects.
Social Development Specialist	Minimum of a Master's degree in Sociology, Social Anthropology, Human Geography, Development Studies, or an equivalent social science field.	At least 10 years of professional experience in social impact assessment, socio-economic assessment, community-level risk assessment and stakeholder engagement. Experience in assessing land-use impacts, vulnerable groups, livelihoods and community health and safety is desirable. Knowledge of World Bank ESS1, ESS2,4 and ESS10 is highly desirable.
Hydrologists/ Mine Water Specialist	Minimum of a Master's degree in Hydrogeology, Hydrological Engineering, Geochemistry, or a related discipline.	At least 10 years of professional experience in mine hydrogeology, groundwater assessment and modelling, mine-water management and quality assessment, groundwater rebound, mine flooding, and assessment of groundwater-surface water interactions.
Mining / Geotechnical and Mine Closure Specialist	Minimum of a Bachelor's or Master's degree in Mining Engineering, Geotechnical Engineering, or Engineering Geology.	At least 10 years of experience in underground mine closure, subsidence, ground instability, mine entries and sealing and post-closure risks
Methane, Mine Gas and Air Quality Specialist	Minimum of a Bachelor's or Master's degree in Environmental Engineering, Chemical Engineering, or Atmospheric Sciences.	At least 10 years of professional experience in mine gas assessment, methane migration and emissions, mine ventilation, gas monitoring, greenhouse gas emissions and/or air quality assessment preferably in underground

Key role	Qualifications	Experience level
		mining or mine closure projects.
Biodiversity / Ecology Specialist	Minimum Master's degree in Ecology, Biology, Biodiversity Conservation, Environmental Sciences, Zoology, Botany, or a closely related discipline. Knowledge of the World Bank Environmental and Social Framework (ESF), particularly ESS6 – Biodiversity Conservation and Sustainable Management of Living Natural Resources, and relevant international good practice.	At least 8 years of professional experience in biodiversity and ecological assessment, including biodiversity baseline surveys, habitat and species assessment, ecological impact assessment and biodiversity monitoring. Experience in mining, mine closure, industrial development or infrastructure projects is highly desirable. Experience assessing impacts associated with changes in groundwater, surface water, drainage and habitat conditions is an advantage.
Stakeholder Engagement & Public Consultation Specialist	Minimum of a Bachelor's in Communications, Public Relations, Sociology, or a related field.	At least 7 years of experience in managing public disclosure, community relations, and citizen engagement. Experience in stakeholder engagement for projects financed by IFIs and/or applying World Bank ESF, IFC Performance Standards or equivalent international standards is highly desirable.

7.2 Consultant support team

The Consultant shall have access to the following specialist support expertise, to be mobilised as required by the ESIA findings and applicability screening:

GIS specialists
OHS / Community Health & Safety Specialist- with demonstrated experience in occupational health and safety and community health and safety risk assessment, preferably for mining, industrial or infrastructure projects, including experience relevant to World Bank ESS2 and ESS4 or equivalent international standards.
Land Acquisition / Resettlement Specialist- subject to ESS5 applicability screening
Cultural Heritage Specialist- subject to ESS8 applicability screening
Climate Change / GHG Specialist
Waste / Contaminated Land Specialist
Availability of Bosnian-speaking core and/or support team members shall be considered an advantage.

8 Project duration

The project is expected to be completed in **6 months** from contract signature to final delivery.