

Explanatory note for Chapter 6 – Monitoring

Table of contents:

1. Assessment of the impact caused by the modification of relevant legal framework on the Project and/or on the EIA Report.....	2
2. Updates to Chapter 6 – „Monitoring”.....	2
2.1. General Requests.....	2
3. Updates to Chapter 6 – „Social and environmental monitoring plan” and „Social and environmental management plan”.....	4

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Detailed content:

1. Assessment of the impact caused by the modification of relevant legal framework on the Project and/or on the EIA Report

Chapter 6 of the EIA Report presents the monitoring of the Project during its four stages (development, construction, operation and closure/rehabilitation), including a general presentation of the monitoring activity. The monitoring activity in itself has been detailed, by fields of interest (factors/social and environment), within the appropriate subchapters of the potential impact assessment of the Project.

As a consequence, the chapter does not include detailed references to applicable regulations for each field of interest separately. Therefore, for any details regarding the legal framework that applies to the monitoring activity as well as the modification of the mentioned framework, please refer to the subchapters on monitoring included in Chapter 4 (analysis of the potential impact for the following fields of interest: water, air, noise and vibrations, soil, geology, biodiversity, landscape, social and economic environment, culture and patrimony, transport).

2. Updates to Chapter 6 – „Monitoring”

2.1. General Requests

a) Monitoring of surface and underground waters

Please note that during 2006 - 2010 we have updated the methods for physical and chemical analysis of samples taken for the monitoring of the quality of surface and underwater waters, in compliance with the new applicable standards and regulations. In this regard, please find below the updated table containing the methods used for each of the analyses performed under the water quality monitoring program. This does not change in any way the conclusions of Chapter 6 – „Monitoring” from the EIA Report, confirming – at the same time – the commitment of the Holder to comply with the best standards and update the monitoring methods in compliance with the future modifications associated with each relevant field.

Table 6-2. Analytical parameters – chemical and physical methods for the analysis of samples for the monitoring of surface / underground waters quality

Nr.	Indicator	Analysis method	Detection limit of the method
1	Redox potential	Potentiometry	1 mV
2	Particulate Matter	SR EN 872/1999	1.0 mg/l
3	pH	SR ISO 10523/2009	0.01 pH units
4	Turbidity	SR EN ISO 7027/2001	0.1 NTU
5	Temperature	STAS 6324/1961	0.1°C
6	Na	ISO 15586/2003	5 µg/l
7	K	SR EN ISO 14911/2003	15 µg/l
8	Ca	SR EN ISO 14911/2003	50 µg/l
9	Ba	ISO 15586/2003	1 µg/l
10	Mg	SR EN ISO 14911/2003	50 µg/l
11	Sb	ISO 15586/2003	0.05 µg/l
12	As (total)	ISO 15586/2003	0.05 µg/l
13	As (dissolved)	ISO 15586/2003	0.05 µg/l
14	Chlorides	SR EN ISO 10304-1/2003	0.10 mg/l
15	Sulfates	SR EN ISO 10304-1/2003	0.10 mg/l
16	Mn	ISO 15586/2003	1 µg/l
17	Fe (total)	ISO 15586/2003	1 µg/l
18	Fe (dissolved)		1 µg/l
19	Pb (total)	ISO 15586/2003	1 µg/l
20	Pb (dissolved)		1 µg/l
21	Cu (total)	ISO 15586/2003	1 µg/l
22	Cu (dissolved)		1 µg/l
23	Cd (total)	ISO 15586/2003	1 µg/l

Nr.	Indicator	Analysis method	Detection limit of the method
24	Cd (dissolved)		
25	Zn (total)	ISO 15586/2003	1 µg /l
26	Zn (dissolved)		
27	Ni (total)	ISO 15586/2003	1 µg /l
28	Ni (dissolved)		
29	HCO ₃ / CO ₃	SR EN ISO 9963-1,2/2002	3.05 mg/l
30	Nitrates	SR ISO 7890-3/2000	10 µg /l
31	Fluorides	SR EN ISO 10304-1/2003	10 µg /l
32	Conductivity	SR EN 27888/1997	1 µS/cm
33	Se	ISO 15586/2003	0.05 µg /l
34	Co	ISO 15586/2003	1 µg /l
35	CN	SR ISO 6703-1 /1998	2.5 µg /l
36	Hg	SR EN 1483/2007	0.1 µg l
37	Mo	ISO 15586/2003	1 µg /l
38	Cr (total)	ISO 15586/2003	1 µg /l
39	Cr (hexavalent)	SR ISO 11083/1998	10 µg /l
40	Phenols	STAS R 7167/1992	10 µg /l
41	Phosphates	SR EN ISO 6878/2005	10 µg /l
42	CBO ₅	EN 1899-1/1998	0.1 mg/l
43	CCO-Cr	SR EN ISO 14911/2003 SR ISO 6060/1996	5 mg/l
44	SiO ₂	ISO 15586/2003	20 µg /l
45	Residue filterable at 105°C	STAS 9187/1984	0.5 mg/l

b) Monitoring of biodiversity

In order to complete the information presented in Chapter 6 – „Monitoring” of the EIA Report, throughout the life of the mining project, the Holder intends to develop two activities for the monitoring of biodiversity:

- **Activity no. 1: Biodiversity database.** Create a database using the GIS platform, which is compatible with the national biodiversity management system BIMS (Biodiversity Information Management System). All field data will be collected based on field protocols (standard operating procedures – SOP) and will be inserted in the database system. The most important aspects are:

- choosing the key species for the monitoring of biodiversity in the impact area of the Project and witness areas that haven't been affected by the implementation of the Project;
- prepare monitoring protocols for the key species;
- integrate the protocols of key species in the biodiversity monitoring plan within the Project impact area, alongside the monitoring protocols for terrestrial and aquatic habitats;
- apply key species monitoring protocols.

The use of the BIMS format will ensure total compatibility with the biodiversity database system, both at national and international level. Moreover, the GIS system allows, the development of various complex raw data modeling applications and their integration in certain complex ecological researches.

- **Activity no. 2: Detailed biodiversity inventory, emphasizing new European regulations in the field.** As a continuation of the research activities performed so far, the Holder will carry on the monitoring of biodiversity within the Project area. Studies will be performed within „test markets”, approaching both a stationary work system as well as a series of transects that include the alpha and beta biodiversity parameters. Systematic studies will be completed with occasional comments, by target groups, using dedicated work methodologies, for the completion of the species inventory. Hydrobiological studies will also be included in this action, with emphasis on benthic species, which are extremely valuable bioindicators. Monitoring of the species will be performed simultaneously with the monitoring of ecological factors, which the obtained data will relate to. The main aspects monitored until now will still be observed during the monitoring process through all the stages of the Project.

Most important ones are:

- annual updating of the list of species of plants within the perimeter affected by the Project;
- periodical review of vegetation maps in the area affected by the Project;
- monitoring the evolution of aquatic species of flora and fauna;

- annual updating of the species list of the main insect groups (Coleopterans, Orthopterans, Lepidoptera, Hymenoptera and Araneae) within the area affected by the Project;
- emphasizing/monitoring the evolution of main communities and populations of valuable insects;
- annual updating of the list of bird species within the area affected by the Project;
- annual updating of the list of reptiles and amphibians within the area affected by the Project;
- monitoring of ecologic reconstruction activities.

These activities that have been considered represent a normal continuation of the monitoring activities regarding biodiversity, as presented in Chapter 6 of the EIA Report, and do not change any of its conclusions.

c) Soil monitoring

In order to complete the information presented in Chapter 6 of the EIA Report regarding soil monitoring, the main analyses that are to be considered through all the stages of the Project are:

- physical analyses on samples of disturbed structure, required to calculate the index of structural instability;
- physical analyses on samples of undisturbed structure (in cylinders) required to calculate the total porosity (% v/v), compression level, the distribution of pores by size (% v/v), the wilting coefficient (%), field capacity (%), aeration porosity (%);
- current chemical analyses required for soil characterization;
- chemical analyses required to establish the intensity of pollution;
- microbiological, qualitative and quantitative analyses.

Most of the methods used to perform the analyses required for the monitoring of soils are standardized. Analyses will be performed by accredited labs. An auditing program will be set up by the executant, through an internal analytic audit. In this regard, national and international standards will be used. A witness sample will be analyzed for each analytical series. The beneficiary will perform its own inspections, by collecting samples in repetition and analyses performed by accredited labs or by duplicate or triplicate samples.

3. Updates to Chapter 6 – „ Social and environmental monitoring plan” and „ Social and environmental management plan”

Even though the Social Management System is a management function in general, in the case of a project which has a social and environmental impact, a high level of expertise and responsibility is required. Therefore, during 2006-2010, RMGC has improved its managerial capacity to handle the social and economic impact of the Project by means of a specialized departmental structure (the departments of Community Relations, Environment, Patrimony and Sustainable Development) as well as an inter-departmental structure, which observes the integrated approach of the size of sustainable development – environment, social and economic, patrimony. Within RMGC, all policies, strategies, processes, functions and managerial decisions are permanently examined and reexamined from the viewpoint of identifying, preventing and mitigating risks and social impact. During 2006-2009, RMGC has hired personnel with a lot of experience in tackling social issues and assessing risks. Also, in 2008, RMGC has appointed a risk manager at Project level. RMGC organizes, on a monthly basis, inter-departmental meetings to discuss topics such as: permitting, ownership rights, patrimony, sustainable development, where the risks and types of social impacts are tackled in an interdisciplinary way, as well as from the point of view of all stakeholders, emphasizing the impact on community.

Internal reports

The new forms of impact or the risks for the community in the Project area will be reported, depending on their gravity, to the RMGC management via internal alerts, weekly, monthly and annual reports. In order to comply with the requirement to continually improve the Social and Environmental Management System, those in charge of the monitoring systems will initiate periodical assessment sessions concerning the efficiency of the management program, based on the periodical collection and analysis of collected data.

External reports

The Social and Economic Impact Monitoring Report is currently prepared and made public annually. This approach will continue throughout the life of the Project. RMGC will continue to issue reports concerning the fulfillment of any commitments mentioned in our Policies regarding sustainable development, the environment, social responsibility (CSR), in compliance with the other commitments and standards.

Description

The social and economic monitoring mechanism includes:

- the matrix of integrated social and economic indicators;
- annual report;
- social and economic database;
- four levels of consultation.

The annual report will be made public and discussed by means of a four-level consultation process:

- I. community
- II. authorities
- III. experts, civil society/ non-governmental organizations and the academic environment
- IV. private environment partners

As a result of the consultative analysis with the stakeholders, new versions of the Action Plan for Sustainable Development will be adopted. New needs for development will be identified. Together with the experts, authorities and various other categories of stakeholders, the communities in the Project area will identify new opportunities for development, new solutions and they will build collaboration networks and platforms, intra-community associations, public-private partnerships. The Sustainable Development Department of RMGC has nominated/employed an independent research institute from Alba Iulia, an entity that has the competence and the authority to monitor the social and economic impact of the Project.

As a result of the Independent Social and Economic Monitoring Report and associated consultations (consultation on four levels for the sustainable development of the community), RMGC will debate together with all relevant stakeholders (including experts) the efficiency of all measures for the management of the social and economic impact pertaining to the previous type of impact, as well as the measures for the management of the social impact for the newly identified types of social and economic impact. The measures for the management of the social impact will be proposed with the observance of three basic principles: they will be proposed as a sustainable development program; the community will be involved in the planning process; they will be integrated with the local/county/regional/national/European sustainable development plans.

The main social and economic indicators monitored so far, that will continue to be monitored throughout the entire life of the Project, are part of the following main categories:

- demography
- the size of households and the quality of living
- household utilities
- manpower, employment and unemployment
- incomes, expenses and consumption per household
- poverty and extreme poverty
- health
- education
- culture
- access to services and infrastructure network
- economy.

The necessity for participative monitoring of the Roşia Montana Project

When proposing a new project in an area, there is often a high degree of optimism as far as the economic and job opportunities are concerned. But optimism can turn into dissatisfaction if the economic opportunities are not fulfilled – and into indignation, if the sense that the environment and resources, cultural heritage or other major values at local/regional/national/international level are severely affected occurs. Generally, people want to participate in the decision making process if decisions are of their concern. Thus, the social request for participatory approaches is, often, large. In many cases, companies spent huge amount of money for monitoring programs with an increased level of technical credibility, even though they have no mechanism to generate public trust in the resulting data. In these cases, one of the main purposes of monitoring is lost. Participative monitoring, if implemented during the early stages of the project, can address these challenges by including the members of the community in defining questions and development of the monitoring project. Moreover, participative

monitoring and the inherent collaboration required for the design and implementation of a process can strengthen the social capital by building relations, trust and understanding.

Given the previous experience, the concerns expressed in time by stakeholders or examples of similar projects to address all these concerns, attention focused on initiating / creating a participative monitoring mechanism to monitor the social and environmental performances and inform competent authorities in due time in case of emergencies. The company intends to develop this mechanism, in order to ensure periodically the independent and specialized assessment of the management system and operational procedures as well as of other reports and relevant information concerning the location and undertaken activities. In total transparency, periodically, all stakeholders, regulating authorities and shareholders will have access to relevant documents which contain records of all aspects regarding social and environmental performance (social responsibility, IFC performance standards, operational procedures and management systems).