



INTERNATIONAL SCHOOL FOR GEOSCIENCE RESOURCES (IS-Geo)
KOREA INSTITUTE OF GEOSCIENCE AND MINERAL RESOURCES (KIGAM)

PUBLIC CUSTOMIZED TRAINING COURSE ON Some current trends in the Russian mineral resources development

The **International School for Geoscience Resources** of KIGAM presents an intensive training course on **Some current trends in the Russian mineral resources development**. The course will take place at the Mirinae room of International School for Geoscience Resources of KIGAM in Daejeon (Korea) in **February 23 to 26, 2015** (27 for discussion) and will include the following topics.

Topics	Date	Instructor
Day 1. Russian Legislature and standards in the field of Mineral Exploration and Mining.	Feb. 23	Valentin A. Stepanov (S-Petersburg Mining University, Russia)
Day 2. Current geographic redistribution of gold and diamond mining areas in Russia.	Feb. 24	
Day 3. Examples of undeveloped mineral resources discovered in Russian Arctic and neighboring regions.	Feb. 25	
Day 4. Russian Oil and Gas production potential.	Feb. 26	
Discussion	Feb. 27	

COURSE INFORMATION

• Course Covered

This course is intended to provide some information for the real estimation of the mineral resources potential of the Russian Federation, in all its principal aspects. Known as the self-evident truth, richness of Russia in natural resources needs some well defined apprehension when it is regarded from the point of the business decision-making. The country has the reputation of being very attractive and very risky for investments in its mining sector, and this ambiguity is rather typical. The largest Russia's territory is characterized by very variable geological structure of different its regions. Geographic location and geological features of mineral deposits are directly reflecting in expenditures for their development. And most of known and untouched ore fields are located in Russia in regions with the toughest climatic conditions. It is one of reasons why Russian mineral potential is often underestimated by foreign analytical centres. But numerous gas & oil production enterprises, diamond and gold mines stepping far above the Polar circle prove the possibility of profitable business despite the severe Arctic environment. The course displays the review of natural resources considering the problems and demonstrating examples (or directions) of their overcoming. Despite the limited time, the course includes chapter analysing events in the Russian oil and gas industry, because now it is the brunch of the mineral resources sector with the largest geography and the quickest development. Due to the wide range of topics, students will be challenged with the problem to understand numerous geological and mining-processing terms, but the reward may be expanding of their professional outlook.

The program of the course includes four principal consecutive topics:

- Legislative system of rules and regulations in the sphere of subsurface usage, Geological Exploration and Mining/Production activity including.
- Current state of gold and diamond mining in Russia – two most flexibly developing brunches of the Mineral resources sector of national economy.
- The fund of undeveloped mineral deposits, often unique ones by the volume and quality of reserves and remaining unmined mostly due to their geographic location.
- Review of production, proved reserves and appraised resources of oil and gas in the Russian Federation.

• Course Requirements: Prerequisite

- Basic knowledge of the general and economic geology (classification, principal types of rocks and some minerals, genetic classification of mineral deposits), some notions about mining technology and construction of an oil production well.



- Understanding of the technological chain in the upstream process: from the ore/oil recovery, through processing, up to the trade commodity.
- Anyway, in all cases the lecturer will try to be comprehensible.

- **Who should Attend?**

- This course is designed for the wide auditorium – it may be useful for scientists, mining analysts, managerial staff connected with mineral market, or engineers involved, at some extent, in mining industry, for postgraduate and under-graduate students of geological and mining economics specialties.



- **Summary of topic contents and learning objectives**

- **Day 1. Russian Legislature and standards in the field of Mineral Exploration and Mining.**

After brief preface with the main quantitative characteristics of Russia's mineral resources base, the course will start from acquaintance with principal legislative acts forming the national system of rules and regulations in geological exploration and mining activities. From the point of the State strategy in development of the national mineral wealth, the key role belongs to the Statement about stages in geological exploration, which is a direct derivative of the Federal Law "On subsurface" and the national Licensing system. This document exists in two separate versions: for solid minerals (1999) and for oil and natural gas fields (2001).

- Brief review of the Russia's Mineral Resources endowment.
- Russia's subsoil law – Principal statements of "The Federal Law on Subsurface", some other laws regulating geological exploration and mining / Oil & Gas production. Property rights. Definition of "strategically-important mineral deposits" in Russia.
- The statement on the system of licensing in the subsurface using. Types of licenses, mechanism of their acquirement, valid periods. Contents of the Licensing agreement.
- About recommendations for the Russian Government from the side of foreign mining companies (Canada) for changes to current laws and regulations.
- Statement on the Order of Geological Exploration carried out by Stages, and requirements for their results. Stages of the Regional geological investigation, Prospecting and Exploration for solid mineral deposits (1999).
- Statement on the Stages of Geological Prospecting and Exploration for Oil & Gas fields.

- **Day 2. Current geographic redistribution of gold and diamond mining areas in Russia.**

Mining of gold in the country is now in the stable growing trend, and, in particular, with active participation of foreign mining companies. It seems that in the year 2014 by the amount of gold production Russia has taken the second place in the world, after China, overcoming goldminers of Australia. By the diamond production Russia keeps the leading position in the world also. Both branches are characterized by geographic replacements, development of new production regions.

- Gold and silver production in the country: brief historical review.
- Traditional and new gold mining regions. Foreign companies participating in the gold mining in Russia.
- Some trends in the gold mining technology: by examples of “Polus Zoloto” and “Polymetall” companies.
- Diamond production in Russia. Current position of ALROSA Company in the world diamond market.
- Technological transition in the ALROSA company activities in Yakutia: from open pits to underground mining.
- Traditional and new regions of diamond mining; primary kimberlite and placer deposits.

- **Day 3. Examples of undeveloped mineral resources discovered in Russian Arctic and neighboring regions.**

Russian Federation has inherited from the Soviet Union (with its numerous and very active geological services) the vast fund of revealed ore occurrences and even explored mineral deposits. Prospective areas from this fund continue to be licensed for prospecting and exploration until now, during two decades. There are several mineral deposits, unique by the amount of explored reserves and the ore quality, remaining undeveloped in Siberia and Arctic regions.

- The unique Tomtor REE and Nb ore deposit in northern Siberia.
- Popigai diamond-bearing impact area and the neighboring Maimecha-Kotuy carbonatite province. About the Tomtor-Popigai development project.

- The unique Udokan copper ore field: reserves, geographic position, potential.
- Delayed scheme of the Udokan copper production.
- Chinese iron ore and Katuginsky rare metal deposits in the Udokan ore district.
- Perspective new sources of copper, nickel and PGM in the Norilsk ore cluster (Maslovskoye and Chernogorskoye copper-nickel deposits).

- **Day 4. Russian Oil and Gas production potential.**

Besides the leading positions of the world market of hydrocarbon, oil and gas production in Russia is characterized now by the high scale geographic development, accompanied by propagation of the country infrastructure (pipelines, railways, towns, ports, etc) in new regions. In several places recently uninhabited Arctic coasts become areas of production activity. The whole new petroleum-bearing province in East Siberia is involved in the process with pipelines leading to the Pacific coast.

- Dynamics of the Oil & Gas production in the country.
- Oil & Gas-bearing basins over Russian territory and continental shelf: geological peculiarities, reserves and resources.
- New regions with growing Oil & Gas production. Potential of the Shtokman gas field on the Barents Sea shelf.
- New discoveries of the last years: the Kara Sea and Sakhalin shelf.
- Oil and Gas resources as the base of new clusters and directions in the country's infrastructure development. Gas production projects at Yamal peninsula.
- East Siberia – Pacific program.

About the instructor – *Professor Valentin Stepanov, PhD*



Dr. (PhD in Geology and Mineralogy, 1975), Associate Professor of the Department of Geology and Exploration of Mineral Deposits, St-Petersburg Mining University, Russia.