СЕМИНАР ПО ПРОБЛЕМАМ ИНЖЕНЕРНОГО КАРСТОВЕДЕНИЯ

(посвящённый 60-летию ОАО «Противокарстовая и береговая защита» и 75-летию В.В. Толмачёва)

Дзержинск, 4 – 5 октября 2012 г.

Дзержинск 2012

Саморегулируемая организация, Некоммерческое партнёрство
«Инженерно-Геологические Изыскания в Строительстве»
СРО НП «ИГИС»

Местонахождение: 603001, г. Нижний Новгород, наб. Нижневолжская, д. 16,
Почтовый адрес: 603001, г. Нижний Новгород, ул. Рождественская, д. 11/13, оф. 201
ОГРН 1095200001742 ИНН 5260252584 КПП 526001001 р/с 40703810703240018 76
в Филиале ОАО Банк ВТБ (Открытое акционерное общество (Банк ВТБ)) в г. Нижнем Новгороде
БИК 042202837 к/с 30101810200000000837 в ГРКЦ ГУ ЦБ Банка России по Нижегородской области

г. Н.Новгород тел. (831) 430-80-31(34, 45), 410-78-51, e-mail: lobanova_ee@mail.ru
г. Дзержинск тел. (8313) 32-34-51, e-mail: jukova_l@dizar.nnov.ru
г. Москва тел. (987) 750-00-00 , e-mail: pravo-nn@mail.ru

www.igis.su

Исх. № 002-СВВТ от «1» сентября 2012г.
На № _____ от «____» _____ 2012г.

Invitation

to the seminar on Engineering Karstology

(October 2012, Dzerzhinsk Nizhny Novgorod region, Russia)

Dr. Saša Milanović, (Department of Hydrogeology, Faculty of Mining and Geology

University of Belgrade)

Dear Dr. Milanović,

As you have already been informed, a seminar on engineering karstology is held on 4-6 October, 2012. The dates coincide with the 60-th anniversary of the "Antikarst and Shore Protection" Company and the 75-th anniversary of Prof. Tolmachev.

The seminar venue is the Chaika Hotel**** in the settlement Zholnino, 15-minute drive from Dzerzhinsk. The accommodation is free for you.

The Organizing Committee expects you to read the lecture "Special investigation in karst as base for engineering problems solutions". The lectures delivered at the seminar will be later published in a special issue. Format requirements and other instructions for the authors are attached to the present letter.

During your visit to the seminar we will discuss some issues of our future cooperation.

The proposed period of your stay in Dzerzhinsk is 2 – 9 October 2012.

Organizing Committee Chairman, The President of Self-regulated organization, Non-commercial partnership «Engineering and Geological Exploration in Building» Nikita A. Samusevich

Contact addresses:
Vladislava Kostyuchenko – 8-9651256482; E-mail: vlada-sro@mail.ru
Vladimir Tolmachev – 8-9063517267; (8313)259801; privat (8313)222959; E-mail: altolm@sinn.ru
DZERZHINSK, Nizherod region, Gastello-str., 10/15, Russia 606019

SAŠA MILANOVIĆ
Doctor of Geological Sciences, Centre for Karst Hydrogeology, Department of Hydrogeology, Faculty of Mining and Geology, Belgrade, Serbia
sasamilanovic@rgf.bg.ac.rs

SPECIFIC INVESTIGATION METHODS IN KARST – WITH PARTICULAR EMPHASES ON SPELEOLOGY AND CAVE DIVING

Abstract: Very complex hydrogeological characteristics of karst, particularly position of cavern and karst conduits, including position and directions of the main zones of groundwater distribution, are not yet explained enough. Even after detailed and complex research of geological, hydrogeological and geomorphologic characteristics, some rules of karst hydrogeology and groundwater flows in karst have remained unclear. In spite of the number of investigation methods are successfully adapted to the geological specificity of karst formation, and some new specific methods which are created and developed particularly for karst, still a lot of limitations minimize its application. Methods as tracer tests, speleology, cave diving, borehole radar, thermal logging, geoelectrical sounding, echo-sounding and video logging provide the best results.

Tracer tests are the most common investigation methods in regional as well as in local scale. Geoelectrical sounding and mapping are frequently used in number of dam, reservoir and tunnel projects. The borehole radar techniques obtain local information about fracturing and cavity detection. Caverns are clearly detected at close vicinity (10 – 20 m) from borehole. Geothermal method is based on the fact that underground flow forms a low temperature anomaly around a karst channel. The inverse temperature gradient indicates an active karst conduit. Application of different logging technique including video and echo-sounding require existence of boreholes.

Among the all investigation methods the speleology and cave diving are only exploration methods which enable the presence of man in the underground and direct observation including exact geological mapping of karstic channels and caverns. At number of cases the grout curtain routes are re-designed on the base of speleological investigations. The proper speleological measurements are unavoidable for karst channel plugging beneath the dams and reservoirs. Investigation of concentrated seepage zones at the bottom of reservoirs and submerged karst channels is possible by applying diving techniques only. In the past 50 years more than 100 water caves, springs, and ponors longer than 1200 m were investigated by cave diving, as well as more than 120 water caves, springs, and ponors deeper than 100 m were investigated also by cave diving. However, cave diving is very danger method particularly in the case of very narrow channels deep beneath the groundwater level.

Role of speleology and cave diving in tapping of the large karst spring is unavoidable. The karstic springs are the most interesting phenomenon from hydrogeological point of view, and their investigations needs particular attention. The speleological investigations have been performed in 1840 to solve a water supply problem in the city of Trieste, Italy.

Besides investigations for mentioned purposes, protection of karst groundwater is getting more and more as an important parameter of regional planning and development of karstic regions. Construction of dams, reservoirs and underground structures has, at some cases, the negative environmental impacts. One of impacts still not enough attended is human influence on endemic species which are settled in the vadose caves and submerged karstic channels. Speleology and cave diving are among the most important diagnostic methods to analyze these impacts and number of different secondary uncertainties.