

IAWQ-IWSA Joint Specialist Conference

**Reservoir Management and Water Supply
- an Integrated System**

(Theory, practice, new developments and complex solutions)

Programme and Invitation to Register

Prague, Czech Republic

19 - 23 May 1997

This is an invitation to participate in the first international conference organized by the *IAWQ-IWSA Joint Specialist Group on Reservoir Protection, Management and Water Treatment*.

The conference is devoted to the memory of the late
Prof. Dr. Heinz Bernhardt
the first Co-Chairman of this Joint Specialist Group

International Scientific Committee:

Dr. Houssain Abouzaid, WHO, Alexandria, Egypt
Prof. Heinz Bernhardt, Germany (Honorary Chairman) †
Mr. Mark Beuhler, Metropolitan Water District of Southern California, Los Angeles, CA, USA
Prof. Don Bursill, Australian Centre for Water Quality Research, Salisbury, Australia
Dr. Jürgen Clasen, Wahnbach Reservoir Association, Siegburg, Germany
Dr. Petr Dolejš, W&ET Team, České Budějovice, Czech Republic (JSG Co-Chairman)
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Prof. Charles R. O'Melia, The Johns Hopkins University, Baltimore, MD, USA
Dr. Gijs Oskam, Water Storage Corporation Brabantse Biesbosch, Werkendam, The Netherlands

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SOVAK - Czech Association of Water Companies
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Prof. J. Wanner, IAWQ National Committee and Prague Inst. of Chemical Technology
Prof. L. Žáček, National Committee IWSA and Water Research Inst., Prague

The Conference is organised and sponsored by:

IAWQ-IWSA Joint Specialist Group on

Reservoir Protection, Management and Water Treatment

AWWARF - American Water Works Association Research Foundation

Ministry of Agriculture of the Czech Republic, Prague

SVS - North Bohemian Waterworks Corporation, Teplice

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W&ET Team - Water & Environmental Technology Team, Č. Budějovice

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Conference secretariat

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During the conference, you may contact the Conference Secretariat in the conference venue:

IAWQ-IWSA Conference, Hotel Pyramida, Bělohorská 24, 169 00 Prague,

phone +42-2-3113241 (operator), fax: +42-2-3113291 or +42-2-350030

or via e-mail: petrdol@marvin.jcu.cz

Introduction and Invitation

The IAWQ (International Association on Water Quality) - IWSA (International Water Supply Association) Joint Specialist Group on Reservoir Protection, Management and Water Treatment was formed as a result of the need for a better understanding of the interactions between reservoirs and drinking water treatment.

The response to Call for Papers has been excellent. We have received preliminary registrations from 37 countries from five continents. The Scientific Committee evaluated nearly 100 abstracts and an interesting technical programme has been arranged. Enough time has been reserved for poster viewing and discussions because posters have the same scientific value as oral presentations.

All lunches and social events are included in the registration fee, which should enable the delegates to stay together and foster an atmosphere of informal discussions and mutual exchange of experience.

Prague is a fascinating venue for any conference. The number of foreign visitors increases every year. May and June are considered to be the most beautiful months to see Prague. As our conference is in the height of the tourist season, we are glad that we can offer unique hotel rates exclusively to our conference participants.

In the name of many colleagues, who participated in the preparation of this conference, I have the pleasure of inviting you to these activities.

See you in Prague.

Dr. Petr Dolejš
Chairman, Organising Committee
Co-Chairman, IAWQ-IWSA Joint Specialist Group

Scope

To ensure that customers are supplied with drinking water which meets all requirements, a system consisting of treatment plant, reservoir and its watershed requires:

- 1) protection from a multitude of contaminants, which may enter the impoundment;
- 2) understanding of physical, chemical and biological processes, which change the quality and treatability of reservoir water, and;
- 3) treatment train tailored to the raw water quality, which is based on detailed knowledge of different technological unit processes on the one hand, and treatment efficiency of their combinations on the other.

There is only one fixed point available in this system - drinking water quality standards. The satisfactory production of drinking water at an acceptable overall cost is dependent on a complex understanding of the multidimensional interactions in this system. As we can see, these demands merge many disciplines like: drinking water treatment, reservoir management, aquatic chemistry, limnology, hydrology, protection of water resources, wastewater treatment etc.

There is a lot of knowledge, information and data in every field involved. But there are also gaps between the different disciplines. A solution to existing problems can therefore be found only if these fields closely cooperate. This is the way of finding less expensive solutions which will work more effectively for the joint target - good quality drinking water.

The Conference aims to bring together engineers, scientists, practitioners, consultants and professionals, managerial and technical staff from the whole spectrum of interested disciplines to exchange knowledge and experience of these important interactions.

The topics are organised into sessions according to the number and scope of the papers accepted. Round-Table Discussions of specialized topics are organised as special session. A special Poster Session is organised for interaction between participants and poster authors. "Hot poster news" for authors who register and send their abstracts before 10 March will also be displayed.

SCIENTIFIC PROGRAMME

Monday, May 19

19.00 - 21.00 *Informal welcome party*

EVENING

Tuesday, May 20

9.00 - 9.20 *Opening and welcome addresses*

MORNING

SESSION 1

WATER TREATMENT - MICROORGANISMS, PARTICLES

9.20 - 10.00 *Keynote lecture*

Control of *Cryptosporidium*: From reservoirs to clarifiers to filters.

J.K.Edzwald, M.B.Kelley (USA)

10.00 - 11.00 **Distribution and removal of *Giardia* and *Cryptosporidium* in water supplies in Germany.**

P.Karanis, H.M.Seitz (Germany)

Efficiency control of particle removal by rapid sand filters in treatment plants fed with reservoir water. A survey of different methods.

J.Clasen (Germany)

A Treatability Index for reservoir water.

C.T.Ta, C.A.Woodward (U.K.)

11.00 - 11.30 *Coffee/tea break*

SESSION 2

WATER TREATMENT - MICROORGANISMS, PARTICLES

11.30 - 13.10 **Enhanced rapid gravity filtration and dissolved air flotation for pre-treatment of River Thames reservoir water.**

M.J.Bauer, R.Bayley, M.J.Chipps, A.Eades, R.J.Scriven, A.J.Rachwall (U.K.)

Monitoring raw water quality and adjustment of treatment processes - experiences at the Wahnbach Reservoir.

O.Hoyer, H.Schell (Germany)

Control of algae in drinking waters by oxidation and coagulation.

J.D.Plummer, J.K.Edzwald (USA)

Management and treatment of algae in lowland reservoirs in eastern England.

P.W.G.Daldorph (U.K.)

Influence of water quality on microsand enhanced coagulation: upstream prevention or downstream mitigation?

F.Rogalla, K.Baumann, E.Hancock, N.Gonce (USA)

13.10 - 14.40 *Lunch*

SESSION 3

WATER TREATMENT - ORGANIC SUBSTANCES

AFTERNOON

14.40 - 15.20 *Keynote lecture*

Characterization of biogenic organic matter (BOM) in surface water treatment.

F.H.Frimmel, S.Hesse, J.Jahnel (Germany)

15.20 - 16.20 **Effect of planktonic community structure on the composition of particulate and dissolved organic matter and its coagulation properties.**

J.Hejzlar, P.Dolejš, J.Komárková, J.Sed'a, K.Šimek (Czech Republic)

Interactions between organic pollution and eutrophication in the South Para reservoirs, South Australia.

F.Recknagel, M.Burch, G.Jablonskas, J.Minney, S.Schoofs (Australia)

Applying ozonization to reduce disinfection by-products (DBPs) of eutrophic water.

C.-N. Chang, H.-Y. Liu (Chinese Taiwan)

16.20 - 18.00 **Poster viewing session** with continuous *coffee/tea service*

Wednesday, May 21

SESSION 4

MORNING

RESERVOIR-WATER TREATMENT INTERACTIONS

- 8.30 - 9.10 *Keynote lecture*
Coagulation and sedimentation in reservoirs and water treatment plants.
C.R.O'Melia (USA)
- 9.10 - 10.30 **Tasks and objectives of the "Association of Drinking Water Reservoirs" (ATT).**
J.Clasen (Germany)
Coliform transport in a pristine reservoir: modelling and field studies.
E.Garvey, M.Hayes, E.Wolfram, J.E.Tobiason, D.Reckhow, J.W.Male (USA)
Problems and practical experiences during refilling of the Kerspe Reservoir under unfavourable climatic conditions.
A.E.Nienhüser, P.Braches (Germany)
Sediment quality and oxygen depletion in a temperate reservoir.
J.Pizarro (Chile), D.D.Adams (USA), I.Vila Pinto (Chile)
- 10.30 - 11.00 *Coffee/tea break*

SESSION 5

RESERVOIR-WATER TREATMENT INTERACTIONS

- 11.00 - 11.40 *Keynote lecture*
An algal monitoring protocol: the strategic link between reservoir and treatment process.
M.C.Steynberg, K.Adam, A.J.H.Pieterse (South Africa)
- 11.40 - 13.00 **Understanding and managing cyanobacterial blooms in sub-tropical reservoirs of Queensland, Australia.**
G.J.Jones, W.Poplawski (Australia)
Nitrification at low temperatures in raw water reservoir and rapid sand filters.
L.J.Kors, J.H.N.Moorman, A.P.M.Wind, J.P.van der Hoek (The Netherlands)
A modelling approach to simulate impact of climate change in lake water quality: phytoplankton growth-rate assessment.
H.Hassan, K.Hanaki, T.Matsuo (Japan)
Change of chemical and biological water environment at a newly-constructed reservoir.
T.Ioriya, S.Inoue, M.Haga, N.Yogo (Japan)
- 13.00 - 14.20 *Lunch*

SESSION 6A (Parallel with session 6B)

AFTERNOON

EUTROPHICATION

- 14.20 - 16.00 **Technological and hygienic consequences of reservoirs eutrophication in the Czech Republic.**
A.Sládečková, L.Žáček (Czech Republic)
Eutrophication control of a reservoir by "algation" methods.
K.Yamasaki (Japan)
Eutrophication and water management of three drinking water reservoirs in Slovakia.
M.Holobradá, P.Hucko (Slovakia)
Statistical analysis of freshwater red tide in Japanese reservoirs.
S.Fukuju, T.Takahashi, T.Kawayoke (Japan)
Accumulation of freshwater red tide in a dam reservoir.
Y.Masato, Y.Ono, I.Somiya (Japan)

SESSION 6B (Parallel with session 6A)
RESERVOIR HYDRODYNAMICS

- 14.20 - 16.00 **Application of computational fluid dynamics techniques to storage reservoir studies.**
C.T.Ta, W.J.Brignall (U.K.)
Use of computational fluid dynamics to model reservoir mixing and destratification.
J.Cox, M.Padley (U.K.), J.Hannon (Ireland)
Phosphorus elimination by longitudinal subdivision of reservoirs and lakes.
L.Paul (Germany)
Effect of selective intake management on the environment of a reservoir.
N.Yogo, S.Inoue, M.Haga, T.Ioriya (Japan)
A study on the role of hydraulic retention time in eutrophication of the Asahi River Dam reservoir.
O.Kawara, E.Yura, S.Fujii, T.Matsumoto (Japan)
- 16.00 - 16.30 *Coffee/tea break*
- 16.30 - 18.00 **Panel discussions**
- 20.00 - 22.30 *Concert in the Convent of Saint Agnes and light dinner* **EVENING**

Thursday, May 22

SESSION 7 **MORNING**
PROCESSES IN RESERVOIRS

- 8.30 - 9.10 **Keynote lecture**
Storage reservoirs as a first barrier for pathogenic micro-organisms in The Netherlands.
L.W.C.A.van Breemen, H.A.M.Ketelaars, G.Medema, J.Willemsen-Zwaagstra, W.Hoogenboezem (The Netherlands)
- 9.10 - 10.30 **Influence of raw water storage on *Giardia*, *Cryptosporidium* and nematodes.**
G.C.Bertolucci, G.Gilli, E.Carraro, D.Giacosa, M.Puppo (Italy)
BEKWAAM - a model fit for reservoir design and management.
A.P.Benoist, A.G.Brinkman, P.M.J.A.van Diepenbeek, J.M.J.Waals (The Netherlands)
Multiple-function of the Kiskore Reservoir (Tisza river, Hungary) and its management challenges.
T.Petr, J.Olah (Hungary)
The influence of bioregulation on water quality of the stagnant prefiltered water reservoir Eekhoven.
J.De Maeseneer, L.Gille (Belgium)
- 10.30 - 11.00 *Coffee/tea break*

SESSION 8
WATERSHED MANAGEMENT

- 11.00 - 11.40 **Keynote lecture**
A concept for an integrative consideration of drinking water and wastewater/sewage management.
R.Gimbel, G.Björnsen, H.-D.Spangenberg (Germany)
- 11.40 - 13.00 **To treat or not to treat: a billion dollar question.**
J.Schaefer, D.Nickols, D.Silverman, F.Rogalla (USA)
The implications of point-source phosphorus management to potable water treatment.
R.Heath, M.Steynberg (South Africa)
Integrated water quality management of the Grosse Dhünn Reservoir (Germany).
W.Scharf (Germany)
Managing the threats of afforestation in reservoir catchments.
C.Stretton (U.K.)

13.00 - 14.20 *Lunch*

SESSION 9A (Parallel with session 9B)

AFTERNOON

PRERESERVOIRS - MONITORING

14.20 - 16.00 **Short-term pre-reservoir effects on river water quality.**

C.Roveri, L.Meucci (Italy)

The importance of pre-reservoirs for the control of eutrophication of reservoirs.

K.Pütz, J.Benndorf (Germany)

Nutrient release from inundated land of a tropical reservoir (Nanhua Reservoir, Taiwan).

S.-P.Chang, C.-G.Wen (Chinese Taiwan)

Water resources management for the European side of Istanbul by considering Yildiz Mountain creeks.

Z.Sen (Turkey)

Continuous water quality monitoring using automatic analyser and telemetry system.

M.Furuta (Japan)

SESSION 9B (Parallel with session 9A)

RESERVOIR AERATION and DESTRATIFICATION

14.20 - 16.00 **Preliminary studies on the effectiveness of artificial aeration in reducing iron and manganese levels in a tropical reservoir.**

M.A.Kassim, M.I.Mohd Said, N.S.M.Noor, M.A.Johari, R.Ruhani, A.L.Kamaruddin, M.M.Yusof, A.Abdul Aziz, Z.Mohd Taib, M.N.Awaluddin (Malaysia)

Case study - automatic reservoir aeration to control manganese in raw water: Maryborough town water supply, Queensland, Australia.

F.L.Burns (Australia)

Nutrient control in Standley Lake: Evaluation of three oxygen transfer devices.

D.McGinnis, J.Little, W.Cumbie (USA)

Algal control and destratification at Hanningfield Reservoir.

J.Simmons (U.K.)

The characteristics of a hypolimnetic aerator on the Gruža reservoir.

D.Ljubisavljevič, A.Dukič (Yugoslavia)

16.00 - 16.30 *Coffee/tea break*

16.30 - 18.00 *Reports from panel discussions*

General discussion, Conclusions

CONFERENCE CLOSE

Friday, May 23

9.00 - 18.00 PROFESSIONAL VISITS

WHOLE DAY

1) North

2) South

Details are given on page 15.

POSTER SESSION

Tuesday, May 20

16.20 - 18.00 **Poster viewing session** with continuous *coffee/tea service*

WATER TREATMENT

- 1. Removal of algae by water treatments.**
A.Montiel, B.Welté (France)
- 2. Application of a Treatability Index to predict throughput capacity of a water treatment works.**
C.T.Ta (U.K.)
- 3. Problems of fungal spore removability by UV disinfection.**
E.Franková, L.Tóthová (Slovakia)
- 4. Disinfection by-product formation of eutrophic water: effect of organic fractionation.**
C.-N.Chang, Y.-H.Chang (Chinese Taiwan)
- 5. Aluminium fractions in drinking water from reservoirs.**
M.Schintu, L.Massa, A.Contu (Italy)
- 6. The importance of reactivation in the use of granular activated carbon for the treatment of drinking water.**
B.Pinker (Belgium)
- 7. Pilot plant evaluation of ozonation and GAC filtration at Nakdong river, Korea.**
S.Oh, K.Choi, S.Choi, S.Son (Korea)
- 8. Rational operation of a chlorine contact chamber by balancing disinfection efficiency and disinfection by-product formation.**
P.-C.Chiang, E.E.Chang, Y.-W.Ko (Chinese Taiwan)

RESERVOIR TECHNOLOGY AND MANAGEMENT

- 9. Determination of maximum acceptable water level fluctuation in a drinking water reservoir.**
J.Hejzlar, K.Forejt, P.Kavalír, B.Knesl, M.Růžicka (Czech Republic)
- 10. Operation of air-lifters at the Yeoncho Reservoir (Korea).**
H.S.Kim, T.Y.Lee, S.G.Jeong, S.O.Sa (Korea)
- 11. Water quality improvement of a small reservoir by air-lifter operation.**
H.S.Kim, T.Y.Lee, S.G.Jeong, S.O.Sa (Korea)
- 12. Supply reservoir oxygenation - its results and management.**
C.Gordo Muñoz, D.Gonzales Ramos (Spain)
- 13. Pre-treatment and restoration of reservoir-waterbodies by bubble plumes - examples and conclusions.**
E.Jungo (Switzerland)
- 14. Water quality improvement at Souš water works after reservoir liming.**
L.Rederer, M.Kuchař (Czech Republic)
- 15. Ecological factors accounting in HES adapted control.**
A.Chusov, M.Kononova (Russia)
- 16. Assessment of effects of sediment contamination on water quality in reservoirs.**
J.M.Azcue, A.Mudroch (Canada)
- 17. The influence of *Bythotrephes longimanus* and *Leptodora kindtii* on the life history of *Daphnia* in the eutrophic Broechem storage reservoir (Flanders, Belgium).**
L.Gille, J.Meheus (Belgium)
- 18. Changes in the relative abundance of two *Daphnia* species as a result of artificial destratification in the eutrophic Broechem storage reservoir (Flanders, Belgium).**
L.Gille, J.Meheus (Belgium)

EUTROPHICATION

- 19. Eutrophication of the Udaipur Lakes and suggestions for their restoration.**
R.K.Trivedy (India)

- 20. Influence of eutrophication on water quality in the Nová Říše drinking water reservoir.**
B.Staňková, I.Galodová (Czech Republic)
- 21. Eutrophication and resilience of a temperate reservoir.**
I.Vila Pinto, M.Contreras, J.Pizarro (Chile)
- 22. Supplemental investigation of Lorenzen's model on algal growth.**
R.Kuawabara, A.Saeki, S.Nakajima (Japan)
- 23. Estimation of surface water discharge in a dam reservoir as measures of freshwater red tide.**
N.Kishimoto, K.Hatamochi, Y.Kishimoto, S.Okada (Japan)
- 24. Evolution of phytoplankton in a large shallow reservoir (north-western Russia).**
L.G.Korneva (Russia)
- 25. Variations of plankton primary production and respiration indices in two large reservoirs under different trophic conditions.**
N.Mineeva (Russia)
- 26. Estimation of phototactic swimming velocity of the dinoflagellate *Peridinium*.**
Y.Ono, M.Yamada, I.Somiya (Japan)

WATER RESOURCES MANAGEMENT

- 27. Reservoir management for water supply to a major city on an arid continent - Sydney, Australia.**
H.Bandler (Australia)
- 28. An integrated approach for water resources management study in Taiwan.**
C.M.Wu, M.-J.Horng (Chinese Taiwan)
- 29. Management of water resources for waterworks purposes: the example of the middle Valdarno area.**
C.Lubello, G.Cocchi (Italy)
- 30. Development of water quality management strategies for the proposed Isikli Reservoir.**
O.Gündüz, S.Soyupak, C.Yurteri (Turkey)
- 31. Regulation of watershed management practices in England and Wales.**
C.Swinnerton (U.K.)
- 32. Evaluation of watershed protection.**
M.Weideborg (Norway)
- 33. Groundwater and watershed management - two strategies, one goal.**
G.Brandt (Denmark)
- 34. New software solution: an agricultural and general water management and information system to improve the quality of surface and ground water.**
U.Streit, H.Overath (Germany)
- 35. Testing of influence of wash-off from rain precipitations on quality of water in reservoirs.**
J.Šálek, J.Malá (Czech Republic)
- 36. Ecological reconstruction of valley reservoirs.**
K.K.Edelstein, Y.S.Datsenko, V.V.Puklakov, M.B.Zaslavskaya, M.G.Yershova (Russia)
- 37. Possible ecological consequences of the Rybinsk reservoir level decrease.**
A.Litvinov (Russia)
- 38. Musty odour bioluminescent sensor.**
E.Oikawa, S.Ohnuma, K.Kimura, T.Nishino (Japan), Y.Ishibashi (Thailand)
- 39. Tritium monitoring in water reservoirs: the Ukrainian sample.**
D.I.Gudkov, M.I.Kuzmenko (Ukraine)
- 40. Drinking water quality in Slovakia.**
H.Zajícová, E.Büchlerová (Slovakia)

GENERAL INFORMATION

Venue and date

The Conference will be held in Prague, Czech Republic, in the Pyramida Hotel, Bělohorská 24, 169 00 Prague from 19 - 23 May 1997.

You can learn more about Prague, its "must-see" places and about the Czech Republic on the Internet e.g. at: <http://sunsite.ms.mff.cuni.cz/prague/>

Note that IAWQ has its own home page at: <http://www.iawq.org.uk>

Language

The official language of the conference is English.

Important dates

Submission of full manuscripts before	- 20 February 1997
Submission of "hot poster news" abstracts before	- 10 March 1997
Registration deadline (your registration and payment have to be received by the organizers by)	- 10 March 1997

Climate

The average daylight temperature in Prague in late May is 20°C, and average temperature is 14°C. There is 25% probability of light rain up to 1 mm daily precipitation. Before you leave, you may consult the four-day weather forecast for Prague area, which is also on Internet at: <http://www.intellicast.com/weather/prg/>

Proceedings

Papers presented during the lectures and posters will be printed in the conference book of proceedings. We expect this book to contain about 750 pages. The book will be handed out to the participants at the registration desk and is included in the registration fee.

Papers and posters, selected by the IAWQ peer review process, will be published after the conference in a special issue of the IAWQ journal "*Water Science and Technology*".

Hot Poster News

The Scientific and Organizing Committees are aware of the main tasks of any professional conference - exchange of fresh information, intensive mutual communication and personal discussions between participants.

We would like to give a chance to those colleagues who would like to present to conference participants their very recent results, and who were not able to send their abstracts by the conference deadline in July 1996. We also presume that there are still some colleagues who did not know about our conference before this program was printed, and who might be interested in active participation.

Those, who would like to join the authors of posters and present their contribution to the conference program, could do it in our "Hot Poster News" session. How to do it?

Send your one page abstract (preferably with the conference registration) to the conference secretariat as soon as possible, but not later than 10 March 1997. The Scientific Committee will evaluate the abstract and if accepted, you will be notified immediately the decision is made. At the conference, you will have space for your poster reserved in the poster session, and the title of your poster will appear in the final program, which will be distributed to conference participants on registration in the conference hotel.

Registration

All delegates are kindly requested to make their application in advance on the enclosed form, which should be completed and returned to the Secretariat (preferably by registered mail) together with payment as soon as possible for processing and confirmation. Together with the confirmation, additional practical information for conference participants will be sent in due course. We suggest you to make a copy of your registration form after you have filled it in.

Registration fees

Registration fees in US dollars:

	Registration and payment received by the organizers	
	<u>before 10 March</u>	<u>after 10 March</u> and on site
Full Delegate	345 USD	395 USD
Student (letter from supervisor required)	130 USD	160 USD
Accompanying Person	145 USD	180 USD
Professional Visit (per person)	45 USD	45 USD

Participants from developing countries may apply for a limited number of registration fee reductions.

Entitlements

	Full Delegate	Student	Accompanying Person
Conference Attendance	+	+	
Conference Preprints	+	+	
Coffee/Tea, Refreshments	+	+	+
Informal Welcome	+	+	+
Lunches	+		+
Conference Dinner	+		+
Concert of Classical Music and a Light Dinner	+		+
2 Day Accompanying Persons Programme			+

Accommodation

The Conference will be held in the Hotel "Pyramida", located 15 minutes walk from the historical Prague Castle, the former residence of Czech kings and current seat of the President of the Czech Republic. In addition to the comfortably furnished rooms, the hotel offers a full range of other services (sauna, fitness center, swimming pool, guarded parking area, hairdresser, masseur etc.).

The electrical network voltage is 220 V, 50 Hz and the power plug is European standard, with contacts distance 20 mm. All rooms have colour TV with two English speaking TV channels (CNN, Eurosport), and six German speaking channels in addition to four Czech channels.

Although our conference is in the high season, special conference rates were offered by Hotel Pyramida exclusively to the Conference participants. To take advantage of these low rates, hotel reservations and payment in full for the nights required must be received by the conference secretariat before 10 March 1997. This is an imperative deadline, because of difficulty of finding accommodation in Prague near the conference venue during the period of our conference.

After the deadline of 10 March 1997, the organizers cannot guarantee the reservation even at the standard room rate. In this case, hotel reservations will be on a first come - first served basis. Any outstanding accounts should be settled direct with hotel before departure. The following cards are accepted: MC/EC, VISA, American Express, Sphere.

Only pre-paid accommodation bookings can be confirmed. Room rates are quoted per room, per night and include breakfast and taxes.

	<u>before 10 March</u>		<u>after 10 March</u>	
	Single	Double	Single	Double
Pyramida Hotel	66 USD	85 USD	100 USD	116 USD

Alternative Accommodation

For colleagues and students, who prefer less expensive accommodation, we have arranged a high quality hostel, which is only about 7 minutes walk from the Conference Hotel Pyramida. The hostel has twin room apartments equipped with bathroom and toilet and offers all basic hotel services. All rooms have a telephone. Only pre-paid accommodation bookings can be confirmed. Room rates are quoted per room, per night and include breakfast and taxes.

	<u>before 10 March</u>	
	Single	Double
Hostel	20 USD	29 USD

Payments

Payments must be remitted in US Dollars, free of all bank charges. All payments should be marked properly with the name of the participant. Please, make sure we receive your payment **before 10 March 1997**, otherwise we cannot guarantee your hotel room.

Cheques/money orders should be made payable to:

Czech National Committee IAWQ

Bank-to-bank transfer

Account number: 4736160267/0100

at Komerční banka, Praha -Pohořelec, expo. Bøevnov, SWIFT: KOMBCZPP

Cheque

A certified cheque for the total amount due made payable to:

Czech National Committee IAWQ

On site payment

In case of registration on site cash will be accepted.

Registration is not final until both the registration form and payment have been received.

Cancellations/Refunds

All cancellations must be made in writing. If the notice of cancellation is received before 15 March 1997, a cancellation fee of 50 USD will apply. The fee after 15 March will be 150 USD. There will be no refund for cancellations received after 1 May 1997, however a copy of conference proceedings will be mailed to those registrants. Substitutions for individuals not able to attend are allowed. Fees will be refunded after the conference.

Hotel Cancellation

In the event of cancellation after 15 March 1997 no refund can be made.

Liabilities

All delegates and accompanying persons should be responsible for their own medical, accident and other necessary insurance.

Transportation

All registered delegates will receive a map and transportation information together with the registration confirmation from the secretariat. Other details and advice on transportation will be sent upon request.

Registration Desk

Registration Desk will be open on:

Monday, 19 May at 15.00 - 21.00

Tuesday, 20 May at 8.00 - 10.00

Conference business centre will be open during the conference.

Exhibition

Manufacturers, suppliers and consultants are invited to attend the Conference Exhibition at the Conference venue.

Concert

The concert will be performed exclusively for our conference by the chamber orchestra Musici de Praga. This orchestra was founded in 1966 and nowadays belongs to leading Czech chamber orchestras. Besides concert activities, Musici de Praga collaborate with radio and TV broadcasting companies. They record in Prague and abroad. The CD "Baroque concerts in Prague" received in Paris the very prestigious "Grand Prix de l'Académie du Disque Française".

The concert will take place in the Convent of Saint Agnes near the banks of the Vltava river. The convent of the Little Clares was founded in 1234 by King Václav I for his sister Agnes, who was the first Abbess. The foundation stone of the monastery was laid before 1240, which made it at the time of its construction one of the first of the early Gothic structures in Bohemia.

In the middle ages the monastery was a great center of culture, as numerous manuscripts produced by its scriptorium testify. After the second world war the monastery, lying desolate, was reconstructed and adapted for the use of the National Gallery. Paintings and craft work of the Czech 19th century are now exhibited in St. Agnes Convent.

Accompanying Persons Programme

Tuesday (20 May) and Wednesday (21 May) - whole day

Thursday (22 May) - free

- Minibus guided tour to see Prague monuments, which are not within walking distance of the historical city center, lunch included.
- Guided walk to visit "must-see" places in the historical city center (the Old Town square and Old Town hall, the Carolinum, the Charles Bridge, the Old-New Synagogue etc.). Information about shopping, lunch included.
- Modern Czech Art and a large botanical garden is on view in the Little Manor in Průhonice Park near Prague. The Gallery of twentieth century Czech paintings has been installed in what is known as the Little Manor, adapted late in the nineteenth century, refreshment included.

PROFESSIONAL VISITS

We offer two options of professional visits, which will be held after the Conference, on Friday, 23 May.

Professional visit "NORTH"

All the sites we will visit are located north of Prague. Our interest will focus on the region between the triangle of the cities Liberec, Tanvald and Turnov.

We will see headwater reservoir Josefův Důl built in 1984. This reservoir is 730 a.s.l., maximum depth is 37 m and total volume is 23.10^6m^3 . Water from this reservoir is an acidified soft humic water. The water is treated in Bedřichov treatment plant, which has a maximum capacity 870 l/s (75 MLd). The treatment train consists of prealkalinization, coagulant dosing, aggregation, direct filtration, ozonation, hardening with carbon dioxide and lime water, and disinfection with chlorine.

We will visit Sychrov Castle and have a lunch there. The castle was preceded by a stronghold from the 14 century. Later, it was transformed into a Baroque castle owned from 1740 till 1820 by the Wallensteins. From the Wallensteins the castle passed to the Rohan-Rochefort family, a French family who played an important role in French history. This family filled the castle with large collections of porcelain, glass and especially portraits of their family, French kings and aristocrats. Sychrov Castle was visited in the past by many important personalities, among whom was Antonín Dvořák, in whose honour musical festivals take place here every year. An extensive English park is an integral part of the castle complex.

Enough time will be also devoted to Bohemian glass and crystal. We shall visit the Museum of Glass and see also the glassworks, where famous handmade glass is being made. Factory glass shops will offer a unique opportunity to buy some gifts.

Professional visit "SOUTH"

Sites we will visit are located South and South-East Prague. We will be travelling between the cities of Kutná Hora, Zruč nad Sázavou and Benešov.

We will see the water supply reservoir Želivka and its treatment plant, which is the main supply of drinking water for Prague. The volume of the reservoir is 263.10^6m^3 , maximum depth is 54 m and the surface is 377 m a.s.l. Maximum capacity of the treatment plant is 6300 l/s (544 MLd). There are two treatment plants under operation (old and new), which have similar treatment trains consisting of pH adjustment with acid, coagulant dosing, aggregation reactors, rapid sand filters, alkalization with lime and chlorine dosing. The treated water is transported to Prague through a 52 km long tunnel.

The cultural highlight of this trip will be a visit to city Kutná Hora. This town is placed on the UNESCO list of world cultural monuments.

The former royal mining town of Kutná Hora could, in the greatest prosperity, rival Prague herself for wealth and architectural beauty. The town began to grow after the discovery of large deposits of silver in the third quarter of the 13th c. The coins which flowed from Kutná Hora mint played an important role in feeding the Czech king's ambitions. It was also the produce of the mines which helped to enlarge and enhance the Prague Castle, and also to undertake ambitious building projects in Kutná Hora, among them the church of St. Barbara, the patroness of miners. The foundations of this church date from about 1380. The art history of Kutná Hora is no less indebted to the Baroque than to medieval styles. Together with the town's greenery it forms a harmonic whole, with picturesque lanes and quiet places in an unequalled Baroque and Gothic atmosphere.

The next stop will be the Castle of Konopiště, the famous residence of the Austrian heir apparent, Archduke Ferdinand d'Este. The Castle lies in the middle of an enormous park, and displays an interesting collection of historical arms. Konopiště is famous in history for the meeting between Emperor William II and Archduke Franz Ferdinand in June 1914 on the eve of World War I.

The Želivka water works also supplies the Hotel Pyramida. By courtesy of "**The Prague Water Supply Company**", samples of the drinking water from the taps in the rooms of the Conference Hotel will be reported to conference participants. Samples meet all WHO drinking water quality guidelines. Following are some key drinking water quality parameters:

Al	0.027 mg/l	conductivity	36.6 mS/cm
Fe	0.090 mg/l	Pb	0.003 mg/l
COD (permanganate)	1.8 mg/l	Ca + Mg	1.40 mmol/l
colour	4.0 TCU	ammonium ions	0.09 mg/l
UV (254nm)	0.039 cm ⁻¹	nitrates	33.1 mg/l
turbidity	0.9 NTU	nitrites	0.00 mg/l
alkalinity	1.05 mmol/l	Cl ₂	0.11 mg/l
pH	7.80	THM	19.1 µg/l

E. coli and total coliform bacteria were not detectable in any 100 ml sample.

THE EARLY HISTORY OF PRAGUE

Prague, the capital of the Czech Republic, is undoubtedly one of the most beautiful cities in the world. The walls of its palaces, great homes and churches conceal untold wealth, and works of art of all periods.

The early history of Prague Castle reaches back into the middle of the 9th century, when it became the seat of the reigning dynasty of the Pøemyslids.

The Emperor Charles IV (1316-1378) acquired valuable art works of the Gothic period, and housed them in Prague. Charles IV founded, in Prague, the oldest university of central Europe in 1348 - Charles University. One of the oldest standing bridges in Europe, Charles Bridge, was founded in 1357. It is adorned on both sides with thirty statues and sculptural groups which represent a unique gallery of Baroque art in the open air.

Since the Middle Ages there has been a good-sized Jewish community in Bohemia and particularly in Prague itself. The Old-New synagogue, in early Gothic style, is one of the oldest in Europe (late 13th century).

The next golden age of culture in Prague was the reign of the Emperor Rudolph II (1552-1611), who invited famous artists from all over Europe to his court. The Thirty Years War (1618-1648) was a catastrophe for Bohemia, many medieval buildings were destroyed, and in 1648 the Swedish army looted Prague Castle, carrying most of Rudolph's art treasures away to Sweden.

The cultural life of Bohemia and of Prague itself was later enriched by the collections of Baroque art formed by aristocratic families and in monasteries of which the most famous were Nostic gallery, the Ěernín collection and that of the Strahov monastery, which is less than 5 minutes walk from the Conference venue. The nineteenth century awakening of national pride led to the establishment of official bodies to propagate general awareness of the country's cultural past. The first was the Society of Patriotic Friends of the Arts (1796), followed by the National Museum.