



Second Technical Symposium on
ARTIFICIAL RECHARGE
AQUIFER
AND **WATER REUSE**

Comments and Conclusions

www.agua.unam.mx/jornadas2013/

Comments and Conclusions

The goals of the *Analysis Group* on Management of Artificial Aquifer Recharge of the Water Network of UNAM is to further develop courses of action and to disseminate some of the results of research projects carried out or that are in process, based on an exchange of skills, experiences and knowledge through convening a group of experts in the field. The Second Technical Symposium on Artificial Recharge of Aquifers and Water Reuse, central to environmental conservation and sustainable development issues, was conducted to help meet these goals.



The main objectives of the Second Technical Symposium meetings were to exchange experiences among a multidisciplinary group of professionals and researchers to discuss the advantages and disadvantages, applications and recommendations for artificial recharge (or “managed aquifer recharge”), water reuse and groundwater management as a whole. An additional significant objective was to fully consider the potential and seek commitment for Mexico to be the host country for the next International Symposium on Managed Aquifer Recharge (ISMAR 9 in 2016).



The main objectives of the Second Technical Symposium meetings were to exchange experiences among a multidisciplinary group of professionals and researchers to discuss the advantages and disadvantages, applications and recommendations for artificial recharge (or “managed aquifer recharge”), water reuse and groundwater management as a whole. An additional significant objective was to fully consider the potential and seek commitment for Mexico to be the host country for the next International Symposium on Managed Aquifer Recharge (ISMAR 9 in 2016).

These technical meetings were held as part a Water Conference with the support of the Water Network of the National Autonomous University of Mexico and the International Association of Hydrogeologists (IAH). The event was attended by government agencies such as the National Water Commission, the National Commission for the Efficient Use of Energy, and the Federal Commission for Protection Against Health Risks, and included representatives of the Chamber of Deputies, civil associations of OXFAM and Business Association Water and Sanitation, academic institutions such as the Metropolitan Autonomous University, the Technology Institute of Superior Studies of Monterrey, the Iberoamericana University, the College of Mexico, the Latin American Faculty of Social Sciences and the UNAM, academics and national officials from Oaxaca, Sonora, Nuevo Leon, Mexico State, Veracruz and Chihuahua, and international speakers from Spain and the United States.



The main conclusions derived from the 4 sessions of 4 technical presentations and 2 keynotes include:

- Integrated water management is a response to the global, national, regional and local shortages, quality, sanitation, access to water, and the call for social equity, economic efficiency and ecological sustainability.



- In general, integrated water management aims to incorporate knowledge from a variety of systems to be considered simultaneously, in various disciplines, concepts, knowledge, research, policy and management bodies, institutions and users.
- Artificial recharge is a technique that is now a key element in integrated water management accomplished by introducing additional surface water when it is available into an aquifer with a basic purpose to address the timing mismatch of water supply and demand, to increase water supply and reliability, and improve water quality. Artificial recharge provides a more rational approach to maximize the overall water resource potential in integrated water management on regional or watershed basis, wherever it is technically and economically feasible. Artificial recharge is a widely accepted technology and requires a simultaneous multi-disciplinarian approach including hydrology, geology, chemistry, biology, engineering, ecology, economics, and policy and management considerations.
- Additional objectives of artificial recharge include reduce seawater intrusion, minimize or avoid land surface subsidence from groundwater exploitation, and for the use of aquifers as water purification and conveyance systems.
- Water management will be integral but the problems are site specific. Solutions and designs are “A la carte” or locally-based.
- Alternate water sources provide different water qualities that can be focused on different uses besides involving potential new users.
- Incidental artificial recharge must be carefully managed as well, as mixing with the source water may degrade the water quality in the receiving aquifer.



- Source water quality may be limiting factor in artificial recharge from rivers, and it is mandatory to evaluate the geochemistry of the source water, receiving water, aquifer matrix, and purification capacity of the receiving environment or aquifer.
- Certain aquifer recharge scenarios require particularly complex solutions, both in design and management.
- Artificial recharge may have direct impact on the management of floods and extreme water events within the framework of comprehensive management.



The presentations and general information can be found at:

http://www.agua.unam.mx/jornadas2013/resultados_acuiferos.html