

Minutes of 2nd Meeting of IAH Working Group on Artificial Recharge on 10 September 2001 at IAH Congress XXXI, Munich

Present: Peter Dillon (Vice-Chairman), Paul Pavelic, Jurgen Schaeffer, Craig Simmons (Australia), Ines Beernaerts (Belgium), Asaf Pekdeger, Stephanie Rinck-Pfeiffer, Thomas Grischek, Birgit Fritz, Gudrun Massmann (Germany), S.N. Rai, Shrikanth Limaye, Siddan Anbazhagan (India), Giovanni Barrocu (Italy), Joel Carrillo-Rivera (Mexico), Emilio Custodio (Spain), Gideon Tredoux (South Africa), Majura Songo (Tanzania), Ian Gale (UK), John Moore (USA), Alice Aureli, Wolf von Izel (UNESCO), Jeffrey Turner (IAEA)

Apologies: Ivan Johnson, (Chairman), Andrew Skinner, Ian Simmers (Netherlands), James Dodds (UK), David Pyne (USA), Borvin Kracman, Russell Martin (Australia), Ricky Murray (South Africa)

1. Welcome and Introductions

On behalf of Ivan Johnson (the Chair of this working group) Peter Dillon welcomed all to the 2nd meeting of the working group (following an initial meeting in Cape Town, 30 Nov 2000).

2. Activities arising from the first meeting

(1) Web page - Ian Gale had established this on the British Geological Survey (BGS) web site seamlessly linked with the IAH web page: [HYPERLINK "http://www.iah.org/recharge" www.iah.org/recharge](http://www.iah.org/recharge) Ian was commended for this initiative, and all are invited to look at the site and make suggestions re further content. Format conforms to IAH web page image. Ian expects to be able to continue to manage this web site while BGS holds a contract with DFID (a UK Development Aid Agency) relating to international communication on recharge management appropriate for developing countries.

Action: Anyone with information of a durable nature suitable for pasting on the web page may contact Ian.

(2) Email list: Peter reported that this had been established on the CGS (Centre for Groundwater Studies) email server at Flinders University of South Australia and 26 names are on the list. People can join simply by accessing the web page and following the procedure. It was agreed that the names and email addresses of those present at the meeting be added to the list.

Action: Peter. Anyone on the list can send email to all on the list.

(3) Artificial recharge survey - list of sites - web page. Ivan Johnson had circulated about 100 copies of his survey questionnaire to those he knew to be responsible for artificial recharge sites. He had received very few responses. Currently he is working with EWRI (Environment and Water Resources Institute of the American Society of Civil Engineers) in the hope that they may want to mount such information on their web page. Peter Dillon reported that his survey on water quality changes at aquifer storage and recovery (ASR) sites had concluded and would be reported in an AWWARF report and most likely at ISAR4 in September 2002. Further actions on data bases are below.

(4) Publications data base web page - Alfredo Perez-Paricio had advised that due to a change in his position he was unable to develop a publications data-base. Volunteer(s) are needed to fill this gap. Stephanie Rinck-Pfeiffer agreed to consult with IT staff on appropriate web-searchable data-base software that could be convenient to use and maintain, ideally with data entry by multiple contributors. This is related to a bank-filtration research project in Berlin. Ian Gale indicated that he would be doing something similar for his AGRAR project for recharge techniques suitable for developing countries, with the assistance of Ilka Neumann.

Action: Stephanie Rinck-Pfeiffer and Ian Gale volunteered to meet and discuss nature of data base(s) with a view to a common structure/integration as appropriate.

(5) Workshop on isotopes for evaluation of artificial recharge - UNESCO/IAEA/IAH-MAR workshop (with UNESCO sponsorship of some delegates from developing countries) was developed and conducted by Asaf Pekdeger and Peter Dillon immediately before this IAH-MAR meeting. Other speakers were Joel Gat, Piotr Maloszewski, Alice Aureli and Jeff Turner. 41 people attended.

3. European Bank Filtration Activities

Thomas Grischek reported that a NATO Workshop on Riverbank Filtration had been held last week in Hungary. Proceedings would be published as a NATO Advances in Science series publication. Thomas is also finalising the editing of a special edition of Journal of Hydrology on riverbank filtration.

Action: Thomas will post information on each of these publications to the email list and communicate with those coordinating the publications data base (see below).

Thomas is also interested in developing a bank filtration network, and has a web page linkage to the IAH-MAR web page to advance this. Possible developments could include running short courses on bank filtration.

Action: Anyone interested please contact Thomas.

4. DFID/BGS project on recharge enhancement in India

Ian Gale gave a summary of the AGRAR (Augmenting Groundwater Recharge by Artificial Recharge) Project, that involves up to about 20 organisations in India and Nepal including NGRI, the Central Ground Water Board, and the Institute for Social and Environmental Transition (ISET). The initial 12 months scoping study to be reported in March 2002, includes collation of data, and is intended to lead to a 3.5yr project to evaluate the effectiveness of various forms of managed recharge from technical, economic, social and environmental perspectives. A core activity includes development of communication channels to make the information more broadly available in developing countries, eg by web page. Jeff Turner asked that if a flagship field site approach was used, that Ian communicate with him before submitting the proposal as it may mesh within an IAEA/UNESCO plan to use isotopes for evaluating selected managed recharge sites.

Action: Ian

5. UNESCO Publication 'Wise strategies for groundwater recharge enhancement'

Alice Aureli (UNESCO) indicated that IHP VI 2002-2007 "Water interactions, systems at risk, and social challenges" contained themes in which recharge enhancement fit comfortably. These are (2) Integrated watershed and aquifer dynamics, and (3) Land habitat hydrology (including arid lands). It was also a focus area for the JIHP. Thus the notion Alice initiated in Cape Town, to develop a plan 'Wise strategies for groundwater recharge enhancement' and which had only advanced slowly, warranted further effort. **Action: Peter to circulate the draft set of contents to the members of the email list for comment.** Aim to assign tasks to volunteers before Christmas. Ian Gale suggested we aim to get the target audience involved, and indicated that some aspects were in common with AGRAR project. Further discussions with UNESCO may be necessary to more tightly define audience, objectives and publication format.

Action: Alice, Ian, Peter

6. IAEA/UNESCO project on isotopes to evaluate arid zone recharge enhancement

Jeff Turner reported that an IAEA Advisory Group Meeting on isotopes in artificial recharge recommended that there were many opportunities for appropriate use of isotopes to evaluate recharge enhancement in developing countries. This is an area for cooperation of IAEA and UNESCO in their joint IHP (JIHP). IAEA has an existing Technical Cooperation Project on application of isotopes to AR in United Arab Emirates. Jeff was invited to contribute information to the web page and/or email list, and to discuss how other sites could be added (see also items 4 & 7).

Action: Jeff, Alice, Peter to meet to discuss projects and a further workshop (see also item 10).

7. Arid and semi-arid zone recharge evaluation - postgraduate research proposal

Ines Beernaerts reported her proposal to evaluate enhanced recharge in shallow aquifers as an MSc project. Ines has completed a 5 year degree in Agricultural Economics and has worked for seven years in UNICEF and in the water harvesting section of FAO. There was a need for evidence on the sustainability of recharge enhancement from several perspectives and a holistic framework for such evaluations. FAO has expressed an interest in participation.

She is seeking sites where field studies are underway or where field data could be collected to enable her to collate the necessary information.

Action: All with suitable sites please advise Ines/Peter.

8. Research Projects, Gaps and Communication

Peter advised of the interest of a senior member of the Ministry of Water Resources of Oman in undertaking a project on recharge assessment using isotopes in Wadi Ahin, Oman. This would overlies an existing recharge assessment based largely on piezometric evaluations performed by a current Omani student in a Munich University. Jeff indicated that IAEA support could only be at a very modest level, and this would need to be considered in the light of distinguishing features from other studies underway and proposed.

Jurgen Schaeffer gave a brief explanation of his PhD project related to injection into aquifers to stop saline water ingress at near coal mines at Morwell.

It was decided to have a discussion on the potential to add value to each others research by better coordination and communication amongst researchers at the next meeting of IAH-MAR.

9. Standard Guidelines for Artificial Recharge

Ivan Johnson chaired the ASCE Standards Committee that produced and has recently printed these guidelines. Peter gave a synopsis of his review of the guidelines and promised to circulate this via the email list, together with the address where the guidelines can be ordered.

Peter to communicate the appreciation of IAH-MAR to Ivan for his perseverance in completing these guidelines that represent a marathon effort.

Action: Peter. Ivan had informed Peter that EWRI is now considering producing more detailed standards on specific methods.

Action: Ivan to keep IAH-MAR informed of developments to give members an opportunity to contribute where they can make a useful contribution.

10. 4th Intl Symposium on Artificial Recharge (ISAR4), Adelaide, 22-26 Sept 2002

Call for papers and ISAR4 fridge magnets were distributed after the meeting. Web page is [HYPERLINK "http://www.groundwater.com.au/conf/ISAR4.htm"](http://www.groundwater.com.au/conf/ISAR4.htm) www.groundwater.com.au/conf/ISAR4.htm

Email address of conference organiser is: [HYPERLINK "mailto:isar4@hartleymgt.com.au"](mailto:isar4@hartleymgt.com.au)
isar4@hartleymgt.com.

All were asked to pass on this information to others who could be interested in submitting a paper. Acceptance will be advised in December 2001 and final papers are due 22 March 2002.

Action: All were encouraged to submit abstracts for papers for ISAR 4, 22-26 Sept 2002, by 15 October 2001.

[Since the meeting it has been agreed to run a UNESCO/IAEA training course on evaluation of recharge enhancement with special emphasis on use of isotopes, on 20-21 Sept 2002 in Adelaide, ie the two days before the ISAR4 conference.]

Ivan Johnson had suggested that ISAR5 be held in Panama, but as yet there is no volunteer organiser. Similarly there have been suggestions of Egypt, Morocco, Thailand and China as venues for the 5th conference, notionally in 2006, and this list is not exhaustive.

Action: Any members interested in proposing to run ISAR5 please advise Peter Dillon.

11. Newsletter

In the absence of a volunteer to edit a newsletter, it was agreed that the email list and web site would be the major sources of communication for the group. If anyone would like to take this up, please contact Peter.

12. Name of working group, roles, election of officers?, volunteers

Ivan had suggested the name of the group be shortened to 'aquifer recharge', to mirror that of the equivalent committee in EWRI and widen the scope, although Ivan had also indicated he would accept if the group wanted to retain status quo. However there was no support at the meeting for a change in name. There was a desire to keep the group's focus on managed recharge rather than natural recharge, a topic that would cross most commissions of IAH. We would rely on Ivan to keep us up to date on activities of the EWRI group, and to inform them of ours with a view to working jointly where desirable.

Action: Ivan

Ivan also advised his decision to retire from the chair of the working group he had established, and recommended that Peter Dillon become chair and that a deputy chair be appointed. Peter invited Ian Gale, and he accepted this role. Ivan intends to continue to be actively involved in the group to the extent his circumstances allow. Peter will convey the thanks of all present for the work Ivan has done in getting this group established. We discussed the need for elections and Peter to find out the rules from Andrew Skinner. [It turns out that working groups and commissions are at liberty to organise themselves as they see fit.] Peter to raise this at the next meeting to give opportunity for those that wish to contribute in leadership roles to do so.

We also discussed being a 'working group' or a 'commission', and decided that there was no need for a change of name. [Subsequently, Andrew Skinner suggested that IAH could reinforce UNESCO's intention to make recharge enhancement a priority area in IHP VI, 2002-2007, by upgrading the status of the working group to a commission. Peter is to draft a statement on this for the IAH executive Meeting in January, and will circulate this in advance on the mailing list for information of members. Changing the name from Working Group to Commission reflects the expected longevity of the activity, but does not change how we operate or what we do.]

Action : Peter .

13. Any Other Business - none

14. Next Meeting - Will be held during ISAR4 in Adelaide, Sept 2002.

Peter to circulate minutes to all who attended the AR working group meeting, and to organisations who should be made aware of the existence of this group, including any names Alice and others provide.

P.Dillon

20 Sept 2001