

6/29/87

301.0/NC/87/07/28

MEMORANDUM FOR: Donald L. Chery, Section Leader
Hydrology Section, HLTR

FROM: Neil M. Coleman, Hydrogeologist
Hydrology Section, HLTR

SUBJECT: ATTENDANCE AT SPRING MEETING OF AMERICAN
GEOPHYSICAL UNION (MAY 21, 1987)

On May 21st I attended the final day of the spring meeting of AGU in Baltimore, MD. During the morning session I listened to several presentations on the use of "expert systems" in water resources investigations. N. Crawford's discussion was entitled "Experience with development and testing an expert system for calibration of a hydrologic model." Crawford feels that expert systems have a major disadvantage - they operate on text input and cannot easily accommodate numerical input. He felt that the level of expertise of the user is limiting. With respect to future developments, Crawford said that there is a need for expert systems to incorporate spatial/graphical information.

During the afternoon session I attended presentations on a variety of groundwater topics. Tim Steele of In Situ, Inc. discussed the instrumentation and design for tracer testing at a field site near Creston, Washington. This work is being sponsored by NRC's Office of Nuclear Regulatory Research. Fred Molz of Auburn discussed internal inconsistencies in dispersion-dominated models that incorporate chemical and microbial kinetics. Richard Satkin presented results of a study that evaluated the relative efficiency of various pumping-well patterns in groundwater "cleanup" operations. V. Nguyen (consultant to the Yakima Indian Nation) presented a discussion entitled "Can groundwater travel time be used in environmental regulations?: A stochastic model study." Finally, Peter Clifton (Rockwell) reviewed his work on estimating groundwater travel times at the Hanford Site. Unfortunately, in order to stay on schedule, the presider of this session cut out half of the time originally allotted for Clifton's talk, forcing him to give a very abbreviated version of the presentation.

An interesting panel discussion on hydrologic modeling was held during the latter part of the afternoon session. Panel members included Fred Molz, Mary Anderson, Peter Huyakorn, et al. Ms. Anderson, of the University of Wisconsin, opined that "We don't know whether [hydrologic] models are capable of making accurate long-term decisions," and she has "grave doubts" about whether generic models will be of any value. In fact, the whole panel was critical of the generic modeling approach in decision making, emphasizing the need for site-specific information to support modeling efforts.

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In summary, I believe that the opportunity to attend this AGU spring meeting was very worthwhile and has significantly added to my perspective of current developments and trends in hydrogeology.

ORIGINAL SIGNED BY

Neil M. Coleman, Hydrogeologist
Hydrology Section, HLTR

JUL 29 1987

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