Selected Bibliography on Laboratory and Field Methods in Ground-Water Hydrology

GEOLOGICAL SURVEY WATER-SUPPLY PAPER 1779-Z
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III
The science of ground-water hydrology is concerned with the evaluation both of the occurrence, availability, and quality of ground water and of the interrelationship between ground water and surface water. To accomplish such evaluation, this science requires the utilization of a wide variety of laboratory and field methods—not only those unique to ground-water hydrology, but also those peculiar to such other scientific disciplines as mathematics, physics, soil mechanics, soil physics, geology, and hydraulics.

Studies of ground-water hydrology are advancing so rapidly that many scientists working in this field find it difficult to keep abreast of current literature. Young hydrologists just beginning to explore this scientific field can greatly benefit from some basic and advanced reports on methodology. Also, hydrologists from other countries who have received training in the United States have expressed interest in learning of such literature. Thus, this bibliography was prepared to make the references readily available to meet the needs discussed above.

References are listed in alphabetical order under headings representing the main topic of the publication. This selection of references emphasizes papers and book reports from the United States, although it includes a few from other countries. It is by no means complete, as the literature on the subject is so extensive that an inordinate amount of time would be required to cover it all. This list should not be construed as representing the author's recommendation of the best literature on the subject; however, it should provide a ready guide to useful source material on various phases of methodology in ground-water hydrology.
REFERENCES

MATHEMATICS

Howell, L. G., and Frosch, Alex, 1939, Gamma-ray well-logging: Geophysics, v. 4, no. 2, p. 106-114.
SELECTED BIBLIOGRAPHY, LABORATORY AND FIELD METHODS

HYDRAULICS AND HYDROLOGY


— 1947, Drawdown test to determine effective radius of artesian well: Am. Soc. Civil Engineers Trans., v. 112, p. 1047–1070.


Lohman, S. W., 1957, Method of determining the coefficient of storage from straight-line plots without extrapolation: U.S. Geol. Survey open-file rept.


Rogers, G. S., 1917, The interpretation of water analyses by the geologist: Econ. Geology, v. 12, no. 1, p. 56-88.


—-1938, The significance and nature of the cone of depression in ground-water bodies: Econ. Geology, v. 33, no. 8, p. 889-902.


—-1940, The source of water derived from wells—Essential factors controlling the response of an aquifer to development: Civil Eng., v. 10, no. 5, p. 277-280, May.


SOIL PHYSICS AND SOIL MECHANICS


**GEOLOGY**


OFFICE TECHNIQUES
Airphoto Interpretation Laboratory, 1953, A manual on the airphoto interpretation of soils and rocks for engineering purposes: LaFayette, Ind., Purdue Univ. School of Civil Eng. and Eng. Mechanics, 206 p.
SELECTED BIBLIOGRAPHY, LABORATORY AND FIELD METHODS


SURVEYING


METEOROLOGY

Z12 CONTRIBUTIONS TO THE HYDROLOGY OF THE UNITED STATES


WATER MEASUREMENT


WELL CONSTRUCTION


Klaer, F. H., Jr., 1953, Providing large industrial water supplies by induced infiltration: Mining Eng., v. 5, p. 620–624.


Nast, P. H., 1955, Drillers handbook on rock: Kent, Ohio, Davey Compressor Co., 58 p.


EARTH RESISTIVITY AND SEISMOLOGY

SELECTED BIBLIOGRAPHY, LABORATORY AND FIELD METHODS


ELECTRIC LOGGING


——— 1952, Electrical well logging fundamentals: Houston, Tex., Well Instrument Developing Co., 164 p.; also Oil and Gas Jour., v. 50, nos. 31, 46; and World Oil, v. 127, no. 11.


——— 1957a, Electric detective, pt. 1 of Investigation of ground-water supplies with electric well logs: Water Well Jour., v. 11, no. 3, p. 12-13, 32-36.

——— 1957b, Electric detective, pt. 2 of Investigation of ground-water supplies with electric well logs: Water Well Jour., v. 11, no. 5, p. 14-16, 34.

Jones, P. H., and Buford, T. B., 1951, Electric logging applied to ground-water exploration: Geophysics, v. 16, no. 1, p. 115-139.

Morris, T. S., 1952, Investigating ground water supplies with electric well logs: Water Well Jour., v. 6, no. 3.


SELECTED BIBLIOGRAPHY, LABORATORY AND FIELD METHODS


RADIOACTIVE LOGGING

Bush, R. E., 1950, Porosities can be obtained from radioactivity logs in West Texas: Oil and Gas Jour., v. 48, no. 51, p. 153-165.
——— 1945b, Neutron bombardment of formations, pt. 2 of Radioactivity well logging: Oil Weekly, p. 38-44, June 11.


Kokesh, F. P., 1951, Gamma-ray logging: Oil and Gas Jour., v. 50, no. 12, p. 284–300.


McGaha, S. W., 1946, Radioactivity dictionary, in Tomorrow’s tools—today: Los Angeles, Calif., Lane-Wells Co., 10 p.


MISCELLANEOUS BORE- HOLE GEOPHYSICS


SELECTED BIBLIOGRAPHY, LABORATORY AND FIELD METHODS

Guyod, Hubert, 1945, Caving pattern in abnormal shales, pt. 4 of Caliper well logging: Oil Weekly, p. 52–55, Sept. 17.


John, Klaus, 1958, Electronic bore-hole camera for TV projection: Civil Eng., v. 28, no. 3, p. 197–198.


CONTRIBUTIONS TO THE HYDROLOGY OF THE UNITED STATES


SOIL-MOISTURE MEASUREMENT


