

(200)
R290
no. 87-16



DEPARTMENT OF THE INTERIOR

U.S. GEOLOGICAL SURVEY

Geological Applications of Well Logs
A Selected Bibliography of Well Logging Literature

Published Through June 30, 1986

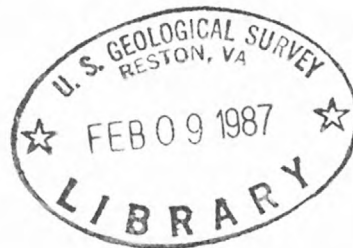
OCLC

by

Stephen E. Prensky¹ LCAF

Open-File Report 87-16

✓
✓ Hw anal



PREPARED IN COOPERATION WITH THE UNITED STATES DEPARTMENT OF ENERGY

This report is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards and stratigraphic nomenclature.

¹ Box 25046, MS 971, Denver, CO, 80225

December 1986

One file in
(Geological Survey
(U.S.))

TABLE OF CONTENTS

TOPIC	PAGE
Introduction.....	ii
Part A. Basic Well Logging.....	1
1. Fundamentals of Well Logging and Well Log Interpretation.....	1
I. Texts.....	1
II. General Logging and Log Analysis; Electric Logging.....	6
III. Temperature Logging, Determination of Static BHT, Applications...	15
IV. Conditions and Special Situations Affecting Tool Response.....	19
V. Crossplot Techniques and Applications.....	23
VI. Programmable Calculator and Computer Programs for Log Analysis...	25
VII. International Well Evaluation Conferences.....	29
VIII. Cased Hole and Production Logging; Determination of ROS.....	31
IX. Acoustic Logging.....	37
X. Nuclear Logging.....	44
XI. Shaly Sands.....	48
XII. Borehole Gravimetry.....	54
XIII. Permeability Determination From Logs.....	56
XIV. Reprint Volumes.....	59
XV. Bibliographies.....	61
XVI. Well-Log Response Charts.....	62
Part B. Geological Applications.....	63
2. General Geological and Geotechnical Applications.....	63 ✓
3. Determination of Facies and Depositional Environment.....	77
4. Identification of Depositional Environments by SP and GR Pattern.....	81
5. Facies Analysis and Case Studies.....	84
6. Dipmeter Applications.....	86
7. Computer Applications (Including Automated Lithofacies Analysis).....	91
8. Natural Gamma-ray Spectrometry.....	95
9. Organic Carbon and Source Rock Determination.....	98
10. Tight (Low-Permeability) Gas Sands.....	100
11. Abnormal Pressure Detection and Evaluation	104
12. Oil and Gas Shales.....	108
13. Heavy Oil and Tar Sands.....	111
14. Coal and Coalbed Methane.....	114
15. Fracture Detection and Evaluation.....	120 ✓
16. Permafrost and Gas Hydrates.....	131
17. Evaporites.....	134
18. Mineral Evaluation (Including Uranium).....	136
19. Ground Water Applications.....	146 ✓
20. Igneous and Metamorphic Rocks.....	150
21. Geothermal Well-Log Evaluation.....	155
Part C. Listing of Citations by First-Author.....	161

GEOLOGICAL APPLICATIONS OF WELL LOGS
A SELECTED BIBLIOGRAPHY
Stephen E. Prensky

This report is a revised and greatly expanded version of U.S. Geological Survey Open-File Report 86-170 and includes approximately 1,350 individual citations as well as a first-author index. For the convenience of users, the entry for articles which appeared in several sources have been consolidated into a single citation, using the earliest publication date, and reference made to the additional sources. The author welcomes suggestions from readers regarding changes, improvements, and additions (new or older papers which may have been overlooked) for possible inclusion in future revisions.

The purpose of this bibliography is twofold, 1) to provide a basic, first-stop resource on well logging which the non-specialist, i.e., geoscientist, can consult and, 2) to provide a reference on geologic applications for the non-geoscientist, i.e., log analyst or petroleum engineer, as well as for the geoscientist. To achieve these goals this reference has been kept relatively simple by, a) including only papers written in English, b) excluding papers that are primarily mathematical, theoretical, experimental or instrumentation orientated, c) excluding abstracts (except extended abstracts), masters, and doctoral theses and, d) limiting the size of this bibliography by placing emphasis on work published since 1975. It is hoped that significant contributions published prior to 1975 can be accessed through the texts and review papers which are listed. Of course the reader is invited to consult the references contained in these citations to obtain a more advanced or in-depth discussion on any subject. There has been some rudimentary cross-referencing of citations; however, time did not permit a more extensive effort.

Bibliographies of this type are, of necessity, subjective works due, in part, to the compiler's own knowledge and professional orientation or bias and to the difficulty in locating and reviewing all published work. There is no single reference which contains a complete listing of publications on well-logging and applications. Petroleum Abstracts (Tulsa database) is the single best source for keeping up with new publications in the field, however, they are not a definitive source. Many important papers, particularly older ones, have not been picked up by their abstracting service and many citations listed in this bibliography never appeared in Petroleum Abstracts. The Bibliography and Index of Geology (Georef database) is the best source for abstracts and papers published in non-English language journals, especially those in Russian. The primary sources of well-logging literature are publications by

1. The Society of Professional Well Log Analysts (SPLWA)
 - a) The Log Analyst
 - b) annual symposium transactions
 - c) transactions of the European chapters' (Aberdeen, London, and Paris) symposiums
 - d) reprint volumes
 - e) chapter publications
2. Canadian Well Logging Society (CWLS)
 - a) annual Journal
 - b) biannual symposium transactions
3. Society of Petroleum Engineers (SPE)
 - a) Journal of Petroleum Technology

- b) Formation Evaluation journal
- c) preprints from national meetings
- d) proceedings from regional meetings and specialized symposia
- e) monographs
- f) reprint volumes
- 4. Society of Exploration Geophysicists (SEG)
 - a) Geophysics
 - b) technical papers and extended abstracts for annual meetings
- 5. Schlumberger
 - a) The Technical Review - quarterly publication
 - b) texts and documents on tool operation, chart books, and log interpretation.
 - c) international Well Evaluation Conference documents
- 6. Well-logging service companies - publications on tool operation, chart books, and log interpretation
 - a) Dresser Atlas
 - b) Gearhart-Owens
 - c) Welex.

Preparation of this report was funded, in part, by the Department of Energy's Western Tight Gas Sand Program.

1. FUNDAMENTALS OF WELL LOGGING AND WELL LOG INTERPRETATION

I. TEXTS

- Asquith, G.B., 1985, Handbook of log evaluation techniques for carbonate reservoirs: Tulsa, American Association of Petroleum Geologists, Methods in Exploration No. 5, 47 p.
- Asquith, G.B., and Gibson, C.R., 1982, Basic well log analysis for geologists: Tulsa, American Association of Petroleum Geologists, Methods in Exploration Series No. , 216 p.
- Bateman, R.M., 1984, Log quality control: Boston, IHRDC Press, 398 p.
- Bateman, R.M., 1984, Cased-hole log analysis and reservoir performance monitoring: Boston, IHRDC Press, 380 p.
- Bateman, R.M., 1985, Openhole log analysis and formation evaluation: Boston, IHRDC Press, 647 p.
- Brock, J., 1984, Analyzing your logs, volume 1 (fundamentals of open hole log interpretation): Tyler, Texas, Petro-Media, Inc., 270 p.
- Brock, J., 1984, Analyzing your logs, volume 2 (advanced open hole log interpretation): Tyler, Texas, Petro-Media, Inc., 186 p.
- Brock, J., 1985, Analyzing your logs, volume 3--Cased hole log interpretation: Tyler, Texas, Petro-Media, Inc.
- Brock, J., 1986, Applied open-hole log analysis: Houston, Gulf Publishing Company, Contributions in Petroleum Geology and Engineering, volume 2, 292 p.
- Chapman, R.E., 1983, Chapter 6, in Petroleum geology: New York, Elsevier, p. 107-137.
- Crain, E.R., 1986, The log analysis handbook, volume 1--Quantitative log analysis methods: Tulsa, PennWell Books, 684 p.
- de Witte, L., 1972, Formation evaluation, chapter 4, in G.V. Chilingar, R.W. Mannon, H.R. Rieke, III, editors, Oil and gas production from carbonate rocks: New York, Elsevier, 143-215.
- Debrandes, R., 1985, Encyclopedia of well logging: Houston, Gulf Publishing Company, 585 p.
- Dewan, J.T., 1983, Essentials of modern open-hole log interpretation: Tulsa, PennWell Books, 361 p.
- Dickey, P.A., 1979, Electrical and other wireline logs, chapter 5, in Petroleum development geology: Tulsa, Petroleum Publishing Co., p. 58-86.

- Doveton, J.H., 1986, Log analysis of subsurface geology--Concepts and computer methods: New York, John Wiley & Sons, 273 p.
- Dresser Atlas, 1982, Interpretive methods for production well logs, 2nd edition: Houston, Dresser Industries, Document no. 9441, 159 p.
- Dresser Atlas, 1984, Well logging and interpretation techniques, the home study course: Houston, Dresser Industries, publication 9333, variously paginated.
- Frank, R.W., 1986, Prospecting with old E-logs: Houston, Schlumberger Educational Services, ? p.
- Gilreath, J.A., 1977, Dipmeter, chapter 22, in L.W. LeRoy, D.O. LeRoy and J.W. Raese, editors, Subsurface geology, 4th edition: Golden, CO., Colorado School of Mines, p. 389-396.
- Gilreath, J.A., Cox, J.W., Fett, T.H., and Grace, L.M., 1985, Practical dipmeter interpretation: Houston, Schlumberger Educational Services, variously paginated.
- Gomez-Rivero, O., 1982, Physical basis of well logging, chapter 6, in K.C. Jain and R.J.P. deFigueiredo, editors, Concepts and techniques in oil and gas exploration: Tulsa, Society of Exploration Geophysicists, p. 161-198.
- Hallenburg, J.K., 1984, Geophysical logging for mineral and engineering applications: Tulsa, PennWell Books, 254 p.
- Hearst, J.R., and Nelson, P.H., 1985, Well logging for physical properties: New York, McGraw-Hill, 576 p.
- Helander, D.P., 1983, Fundamentals of formation evaluation: Tulsa, Oil and Gas Consultants International, 332 p.
- Hilchie, D.W., 1977, Caliper and temperature logging, chapter 15, in L.W. LeRoy, D.O. LeRoy and J.W. Raese, editors, Subsurface geology, 4th edition: Golden, CO., Colorado School of Mines, p. 342-346.
- Hilchie, D.W., 1978, Applied openhole log interpretation: Golden, CO., D.W. Hilchie, Inc., variously paginated.
- Hilchie, D.W., 1979, Old (pre-1958) electrical log interpretation: Golden, CO., D.W. Hilchie Inc., 161 p.
- Hilchie, D.W., 1982, Advanced well log interpretation: Golden, CO., D.W. Hilchie, Inc., variously paginated.
- Hilchie, D.W., 1984, Reservoir description using well logs: Journal of Petroleum Technology, v. 36(7), p. 1067-1073. A discussion and reply published in 1984, Journal of Petroleum Technology, v. 36(12), p. 2195-2196.

- Hobson, G.D., and Tiratsoo, E.N., 1975, Formation evaluation, chapter 7, in Introduction to petroleum geology: Beaconsfield, England, Scientific Press, Ltd., p. 176-204.
- Jain, K.C., 1982, Well logs in exploration, chapter 7, in K.C. Jain and R.J.P. deFigueiredo, editors, Concepts and techniques in oil and gas exploration: Tulsa, Society of Exploration Geophysicists, p. 199-226.
- Jorden, J.R., and Campbell, F.L., 1984, Well logging I—Rock properties, borehole environment, mud and temperature logging: Dallas, Society of Petroleum Engineers, Monograph Series No. 9, 167 p.
- Jorden, J.R., and Campbell, F.L., 1986, Well logging II—Electric and acoustic logging: Dallas, Society of Petroleum Engineers, Monograph Series No. 10, 192 p.
- Kelley, D.R., 1969, A summary of major geophysical logging methods: Pennsylvania Geological Survey Bulletin M61, 82 p.
- Kerzner, M.G., 1986, Image processing in well log analysis: Boston, IHRDC Press, 140 p.
- Mares, S., 1984, Geophysical logging, chapter 7, in Introduction to applied geophysics: Boston, D. Reidel Publishing Co., p. 474-568.
- Mathur, S.P., 1977, Borehole geophysical methods, in V.L.S. Bhimasankaram and V.K. Gaur, editors, Lectures on exploration geophysics for geologists and engineers: Hyderabad, India, The Association of exploration Geophysicists, p. 265-286.
- Merkel, R.H., 1979, Well log formation evaluation: Tulsa, American Association of Petroleum Geologists, Continuing Education Course Note Series No. 14, 82 p.
- Moran, J.H., and Chemali, R., 1985, Focused resistivity logs in A.A. Fitch, editor, Developments in geophysical exploration methods—6: London, Elsevier Applied Science Publishers, p. 225-260.
- Nelson, R.A., 1985, Geologic analysis of naturally fractured reservoirs: Houston, Gulf Publishing Company, Contributions in Petroleum Geology and Engineering Series, volume 1, 320 p.
- Pickett, G.R., 1977, Resistivity, radioactivity and acoustic logs, chapter 13, in L.W. LeRoy, D.O. LeRoy and J.W. Raese, editors, Subsurface geology, 4th edition: Golden, CO., Colorado School of Mines, p. 304-336.
- Pirson, S.J., 1963, Handbook of well log analysis for oil and gas formation evaluation: Englewood Cliffs, New Jersey, Prentice-Hall, 325 p.
- Pirson, S.J., 1983, Geologic well log analysis, 3rd edition: Houston, Gulf Publishing Company, 475 p.

- Pochitaloff, A., and Verdier, M., editors, 1982, Geological and mud logging in drilling control - catalog of typical cases: Houston, Gulf Publishing Co., 81 p.
- Ransom, R.C., editor, 1984, Glossary of terms and expressions used in well logging, 2nd edition: Houston, Society of Professional Well Log Analysts, 116 p.
- Reiss, L.H., 1980, Well logging in fractured reservoirs, appendix 1, in The reservoir engineering aspects of fractured formations: Houston, Gulf Publishing Co., p. 47-53.
- Rider, M.H., 1986, The geological interpretation of well logs: New York, John Wiley & Sons, Inc., 175 p.
- Ryley, D.J., 1980, Well logging, in R. DiPippo, H.E. Khalifa, D.J. Ryley, editors, Sourcebook on the production of electricity from geothermal energy: Washington, D.C., U.S. Government Printing Office [Department of Energy Report DOE/RA/4051-1], p. 155-172.
- Schlumberger, 1972, The essentials of log interpretation practice: New York, Schlumberger Ltd., document no. M-081002, 57 p.
- Schlumberger, 1972, Log interpretation volume 1--Principles: Houston, Schlumberger Well Services, document no. C-11759, 112 p.
- Schlumberger, 1973, Production log interpretation: Houston, Schlumberger Well Services, document no. C-11811, 91 p.
- Schlumberger, 1974, Log interpretation volume 2--Applications: Houston, Schlumberger Well Services, document no. C-11943, 116 p.
- Schlumberger, 1975, Cased hole applications: Houston, Schlumberger Well Services, 123 p.
- Schlumberger, 1981, RFT--Essentials of pressure test interpretation: Paris, Schlumberger Technical Services, document no. M-081022, 77 p.
- Selley, R.C., 1985, Methods of exploration, chapter 3, in Elements of petroleum geology: New York, W.H. Freeman & Company, p. 37-131.
- Sengel, E.W., 1984, Well logging handbook: Oklahoma City, Institute for Energy Development (IED), 168 p.
- Serra, O., 1984, Fundamentals of well-log interpretation volume 1--the acquisition of data: New York, Elsevier, Developments in Petroleum Science no. 15A, 423 p.
- Serra, O., 1985, Fundamentals of well-log interpretation volume 2--interpretation of various well logs [In French, Diagraphies differees - Bases de l'interpretation]: Pau, France, Bulletin des Centres de Recherches Exploration-Production Elf-Aquitaine Memoire no. 7, 632 p. Not yet translated into English.

- Serra, O., 1985, Sedimentary environments from wireline logs: Paris, Schlumberger Technical Services, Document no. M-081030/SMP-7008, 211 p.
- Smolen, J.J., 1986, Production logging: Missouri City, Texas, J.J. Smolen, variously paginated.
- Society of Professional Well Log Analysts, Houston Chapter, 1979, The art of ancient log analysis: Houston, Society of Professional Well Log Analysts, 131 p. + reprints of 22 classic papers. Interpretation of old electric (normal and lateral) logs.
- Threadgold, P., 1985, Advances in formation evaluation, chapter 3 in R.A. Dawe and D.C. Wilson, editors, Developments in petroleum engineering, volume 1: New York, Elsevier Applied Science Publishers, p. 43-87.
- Tittman, J., 1986, Geophysical well logging: New York, Academic Press, Inc., 175 p.
- Verdier, M., editor, 1986, Wireline logging tool catalog, 2nd edition: Houston, Gulf Publishing Co., 409 p.
- Wylie, A.W., 1984, Nuclear assaying of mining boreholes: New York, Elsevier, Methods in Geochemistry and Geophysics 21, 344 p.
- Wyman, R.E., 1981, Well logging, in S.P. Parker, editor, Encyclopedia of energy, 2nd edition: New York, McGraw-Hill, p. 778-785.

II. GENERAL LOGGING AND ELECTRIC LOGGING

(See also 19. Mineral exploration)

- Ajam, S.O., Henzell, L.A., Wang, J., Syarif, A.M., and Soedirdja, H., 1982, Wellsite log evaluation of the Miocene carbonates in Salawati Basin, in 11th annual convention proceedings, volume 1: Jakarta, Indonesian Petroleum Association, p. 357-377.
- Alger, R.P., 1966, Interpretation of electric logs in fresh water wells in unconsolidated formations, in 7th annual logging symposium transactions, paper CC: Houston, Society of Professional Well Log Analysts, p.
- Anderson, B., 1986, The analysis of some unsolved induction interpretation problems using computer modeling, in 27th annual logging symposium transactions, paper II: Houston, Society of Professional Well Log Analysts, 18 p. Later published in 1986, The Log Analyst, v. 27(5), November-December, p. 60-73.
- Augier, C., 1980, Log Interpretation in Complex Lithologies [in French]: Bulletin des Centres Recherches Exploration-Production Elf-Aquitaine, v. 4(1), p. 143-177.
- Barber, T.D., 1986, Invasion profiling with the Phasor Induction Tool, in 27th annual logging symposium transactions, paper EE: Houston, Society of Professional Well Log Analysts, 14 p.
- Biella, G., Lozej, A., and Tabacco, I., 1983, Experimental study of some hydrogeophysical properties of unconsolidated porous media: Ground Water, v. 21(6), November-December, p. 741-751. A discussion of the limitations of Archie's equation.
- Blenkinsop, M., Baker, P., Clavier, C., Kenyon, W., and des Ligneris, S., 1986, Deep Electromagnetic Propagation Tool interpretation, in 27th annual logging symposium transactions, paper XX: Houston, Society of Professional Well Log Analysts, 26 p.
- Borai, 1985, A new correlation for cementation factor in low-porosity carbonates: Dallas, Society of Petroleum Engineers, 60th annual meeting [Las Vegas], preprint SPE-14401, 8 p.
- Borai, A.M., and Muhsin, M.A., 1985, LDT tool give improved formation evaluation: Oil and Gas Journal, v. 83(27), July 8, p. 60-63.
- Bosworth, A.F., 1972, Log calibrations surface and downhole: Canadian Well Logging Society Journal, v. 5(1), p. 39-68.
- Boyeldieu, C., Coblentz, A., and Pelissier-Combesure, J., 1984, Formation evaluation in oil base mud wells, in 25th annual logging symposium transactions, paper BB: Houston, Society of Professional Well Log Analysts, 18 p.

- Brown, G.A., 1986, A mathematical comparison of common saturation equations, in 27th annual logging symposium transactions, paper T: Houston, Society of Professional Well Log Analysts, 24 p.
- Brown, R.J.S., and Neuman, C.H., 1980, Processing and display of nuclear magnetism logging signals--Application to residual oil determination, in 21st annual logging symposium transactions, paper K: Houston, Society of Professional Well Log Analysts, 25 p.
- Brown, R.J.S., and Neuman, C.H., 1982, The nuclear magnetism log--A guide for field use: The Log Analyst, v. 23(5), September-October, p. 4-9.
- Busch, J.M., Fortney, W.G., and Berry, L.N., 1985, Determination of lithology from well logs by statistical analysis: Dallas, Society of Petroleum Engineers, 60th annual meeting [Las Vegas], preprint SPE-14301, 11 p.
- Canadian Well Logging Society (CWLS), annually (1968-1985), Journal :
- Canadian Well Logging Society (CWLS), biannually (1968-1985), Well logging symposium transactions:
- Cheruvier, E., and Suau, J., 1986, Applications of micro-wave dielectric measurements in various logging environments, in 27th annual logging symposium transactions, paper MMM: Houston, Society of Professional Well Log Analysts, 23 p.
- Conaway, J.G., , 1983, Digital filtering of geophysical logs in A.A. Fitch, editor, Developments in geophysical methods--5: London, Applied Science Publishers, p. 65-105.
- Connolly, E.T., and Reed, P.A., 1983, Full spectrum formation evaluation: Canadian Well Logging Society Journal, v. 12(1), p. 23-69.
- Coope, D.F., and Yearsley, E.N., 1986, Formation evaluation using EWR logs, in 1986 SPE international meeting on petroleum engineering [Beijing, China, March 17-20], proceedings, SPE-14062: Dallas, Society of Petroleum Engineers, p. 415-425.
- Cox, P.T., 1983, Evaluation of the Texaco dielectric log in central Sumatra, in 12th annual convention proceedings, v. 2: Jakarta, Indonesian Petroleum Association, p. 255-264.
- Craft, M., and Keelan, D., 1985, Coring, part 7--Analytical aspects of sidewall coring: World Oil, v. 201(4), September, p. 77-90.
- Ditzhuijen, P.J.D., and Massan, D., 1984, A multilog-evaluation package using linear programming techniques to evaluate porosity and lithology in hydrocarbon bearing complex lithologies in 5th offshore South East Asia conference [February 21-24, Singapore], proceedings, SPE-12376: Dallas, Society of Petroleum Engineers, 17 p.

- Donaldson, E.C., and Bizerra, M.J., 1985, Relationship of wettability to the Archie saturation component, in 3rd international UNITAR/UNDP heavy crude and tar sands conference preprints [Long Beach, California, July 22-31, 1985], v. 2: New York, United Nations Institute for Training and Research, Information Center for Heavy Crude and Tars, p. 664-684.
- Dresser Atlas, 1984, Wireline services catalog: Houston, Dresser Atlas Industries, publication 9102, 62 p. A brief discussion with illustrations of the various logging devices and processing services currently available.
- Dusenbery, R.A., and Osoba, J.S., 1986, Determination of formation water resistivity using shale properties, in 1986 SPE Permian Basin oil and gas recovery conference, proceedings, SPE-14137: Dallas, Society of Petroleum Engineers, p. 387-397.
- Ekstrom, M.P., Dahan, C.A., Chen, M., Lloyd, P.M., and Rossi, D.J., 1986, Formation imaging with microelectrical scanning arrays, in 27th annual logging symposium transactions, paper BB: Houston, Society of Professional Well Log Analysts, 21 p.
- Ellis, D., and Boucau, J., 1983, The future development of logging techniques: Oil and Enterprise, n. 2, September, p. 60-66.
- Ernst, K., and Scherer, H.U., 1986, Self-potential variations with time and their relation to hydrogeologic and meteorological parameters: Geophysics, v. 51(10), p. 1967-1977.
- Fertl, W.H., 1983, Advances in well logging and well interpretation, in 11th world petroleum congress, proceedings, v. 3: New York, John Wiley, p. 341-354. Later published in condensed form in 1984, Oil and Gas Journal, v. 82(16), April 16, p. 85-91.
- Fertl, W.H., King, E.E., Vercellino, W.C., Kumar, R., Denoo, S., Schoonover, L.G., and Aguilera, R., 1978, Practical log analysis--A twenty-two part series: Oil and Gas Journal, v. 76-77, May 15, 1978 through September 19, 1979.
- Finklea, E.E., 1981, Advanced logging techniques, in Workshop proceedings: world oil and natural gas supplies, [June 1979]: Electric Power Research Institute, WS-79-182, Paper 3-11, 23 p.
- Gearhart, L.M., Moseley, L.M., and Foster, M., 1986, Current state of the art of MWD and its application in exploration and development drilling, in 1986 SPE international meeting on petroleum engineering [Beijing, China, March 17-20], proceedings, SPE-14071: Dallas, Society of Petroleum Engineers, p. 515-523.
- Grief, M.A., and Koopersmith, C.A., 1985, Petrophysical evaluation of thinly bedded reservoirs in high angle/displacement development wells with the NL Baroid recorded lithology logging system, in 10th formation evaluation symposium transactions, paper S: Calgary, Canadian Well Logging Society, 12 p.

- Hagiwara, T., 1986, Archie's "m" for permeability: The Log Analyst, v. 27(1), January-February, p. 39-42.
- Hartley, K.B., 1979, Evaluation of wireline down-log information and effects of increased log speeds on data quality: Dallas, Society of Petroleum Engineers, 54th annual meeting [Las Vegas] preprint SPE-8363. Later published in 1980, Journal of Petroleum Technology, v. 32(7), p. 1151-1160. Also published in 1981, Oil and Gas Journal, v. 79(8 and 9), February 23, p. 66-76, and March 2, p. 99-100.
- Hartmann, D.J., 1975, Effect of bed thickness and pore geometry on log response, in 16th annual logging symposium transactions, paper Y: Houston, Society of Professional Well Log Analysts.
- Helgoy, R., 1984, Prediction techniques from logging tools—Are the results confirmed by testing?: Norwegian Petroleum Society offshore North Seas conference [August 21-24, Stavanger] paper G4, 25 p.
- Hilchie, D.W., 1985, SP (spontaneous potential) hydrocarbon suppression (a conceptual approach): Canadian Well Logging Society Journal, v. 14, p. 43.
- Hirakawa, S., and Miyake, Y., 1983, A method for well log interpretation of a carbonate oil reservoir: Butsuri-Tanko, v. 36(4), p. 22-31.
- Holgate, M.M., 1960, The microlog as a porosity datum for the neutron log in the Swan Hills field, Alberta: CIM [Canadian Institute of Mining and Metallurgy] Bulletin, v. 53, p. 324-328.
- Holmes, M., 1980, A new method for calculating water resistivity from logs within hydrocarbon-bearing intervals, in 21st annual logging symposium transactions, paper C: Houston, Society of Professional Well Log Analysts, 15 p.
- Hutomo, P., and Jordan, W.V., 1985, Wireline pressures detect fluid contacts, Ikan Pari field, Natuna Sea, in 14th annual convention proceedings: Jakarta, Indonesian Petroleum Association, p. 543-563.
- Jennings, H.Y., and Timur, A., 1973, Significant contributions in formation evaluation and well testing: Journal of Petroleum Technology, v. 25(12), p. 1432-1446, SPE-4704.
- Kartawidjaja, F., and Luciani, J.P., 1985, The streaming SP—A flow indicator, in 14th annual convention proceedings: Jakarta, Indonesian Petroleum Association, p. 611-633.
- Keelan, D., 1985, Coring, part 8—Plug and full diameter analysis: World Oil, v. 201(6), November, p. 103-111.
- Keller, G.V., 1967, Induced polarization well logging, in 8th annual logging symposium transactions, paper W: Houston, Society of Professional Well Log Analysts, 16 p.

- Kersey, D.G., 1986, Coring, part 9-Geological aspects: World Oil, v. 202(1), January, p. 103-108.
- Kerzner, M.G., and Frost, E., Jr., 1982, Blocking--A new technique for well log interpretation: Dallas, Society of Petroleum Engineers, 57th annual meeting [New Orleans] preprint SPE-11093, 14 p. Later published in 1984, Journal of Petroleum Technology, v. 36(2), p. 267-275.
- Kwader, T., 1984, The use of geophysical logs for determining formation water quality, in D.M. Nielsen and M. Curl, editors, 1984 NWWA/EPA conference on surface and borehole geophysics methods in ground water investigations, proceedings: Worthington, Ohio, National Water Well Association, p. 833-842.
- Lesso, W.G., Jr., and Burgess, T.M., 1986, Pore pressure and porosity from MWD measurements, in 1986 IADC/SPE drilling conference, proceedings, IADC/SPE-14801: Dallas, Society of Petroleum Engineers, p. 643-656.
- Looyestijn, W.J., 1982, Deconvolution of petrophysical logs--Applications and limitations, in 23rd annual logging symposium transactions, paper W: Houston, Society of Professional Well Log Analysts, 20 p. A discussion of improving the vertical resolution of different logging tools.
- Lowe, T.A., and Dunlap, H.F., 1986, Estimation of mud filtrate resistivity in fresh water drilling muds: The Log Analyst, v. 27(2), March-April, p. 77-84.
- Maciula, E.A., and Cochrane, J.E., 1967, Quantitative use of calibration data to correct miscalibrated well logs: Dallas, Society of Petroleum Engineers, 42nd annual meeting [Houston] preprint SPE-1940. Later published in 1968, Journal of Petroleum Technology, v. 20(7), p. 663-670.
- Mathews, M., and LaDelfe, C., 1981, Log comparison and quantification, in 8th formation evaluation symposium transactions, paper I: Calgary, Canadian Well Logging Society.
- McCall, C., Van Gonten, W.D., and Osoba, J.S., 1971, The effect of hydrocarbons on the SP opposite sands, in 12th annual logging symposium transactions, paper C: Houston, Society of Professional Well Log Analysts, 20 p.
- McCluskey, L.D., 1986, Moveable hydrocarbon determination--fact, fancy, or differential pressure, in 27th annual logging symposium transactions, paper A: Houston, Society of Professional Well Log Analysts, 13 p.
- McConnell, C.L., 1986, Equivalent mud filtrate resistivities in fresh water wells: The Log Analyst, v. 27(2), March-April, p. 85-90.
- McCoy, R.L., and Smith R.F., 1979, The use of interlog relationships for geological and geophysical evaluations, in 20th annual logging symposium transactions, paper G: Houston, Society of Professional Well Log Analysts.

- Middleton, M.F., 1979, Correlation between well log and surface resistivity measurements; a case study in the Eromanga Basin, Queensland: Bulletin of Australian Society of Exploration Geophysicists, v. 10(2), p. 176-178.
- Moss, B., and Harrison, R., 1985, Statistically valid log analysis method improves reservoir description: Dallas, Society of Petroleum Engineers, Offshore Europe conference [Aberdeen, 9/10-13/85], SPE-13981 32 p.
- Murphy, R.P., and Ownes, W.W., 1971, A new approach for low resistivity sand log analysis: Dallas, Society of Petroleum Engineers, 46th annual meeting [New Orleans] preprint SPE-3569. Later published in 1972, Journal of Petroleum Technology, v. 24(11), p. 1302-1306.
- Neuman, C.H., and Brown, R.J.S., 1981, Applications of nuclear magnetism logging to formation evaluation: Dallas, Society of Petroleum Engineers, 56th annual meeting [San Antonio] preprint SPE-10108, 10 p. Later published in 1982, Journal of Petroleum Technology, v. 34(12), p. 2853-2862.
- Peeters, M., and Fung, L.L., 1983, Triple-fluid evaluations using density, neutron, and electromagnetic propagation logs, in 8th European formation evaluation symposium transactions, paper Q: London, Society of Professional Well Log Analysts, London Chapter, 23 p. Later published in 1986, SPE Formation Evaluation, v. 1(2), April, p. 193-204.
- Pochitaloff, A., and Verdier, M., editors, 1982, Geological and mud logging in drilling control - catalog of typical cases: Houston, Gulf Publishing Co., 81 p.
- Rasmus, J.C., 1986, A summary of the effects of various pore geometries and their wettabilities on measured and in-situ values of cementation and saturation exponents, in 27th annual logging symposium transactions, paper PP: Houston, Society of Professional Well Log Analysts, 25 p.
- Rasmus, J.C., and Kenyon, W.E., 1985, An improved petrophysical evaluation of oomoldic Lansing-Kansas City Formations utilizing conductivity and dielectric log measurements, in 26th annual logging symposium transactions, paper V: Houston, Society of Professional Well Log Analysts, 18 p. Reprinted 1985, in 10th formation evaluation symposium transactions, paper G: Calgary, Canadian Well Logging Society, 18 p.
- Roy, K.K., and Saha, A., 1975, Discussion on SP log interpretation: Canadian Well Logging Society Journal, v. 8(1), p. 41-46.
- Ruhovets, N., and Oliver, D.W., 1985, Log analysis problems and solutions in complex lithology reservoirs: Dallas, Society of Petroleum Engineers, 60th annual meeting [Las Vegas], preprint SPE-14187, 12 p.
- Safinya, K. Habashy, T., Randall, C., Clark, B., Perez-Falcon, A., 1985, Experimental and theoretical study of the Electromagnetic Propagation Tool in layered and homogeneous media: Dallas, Society of Petroleum Engineers, 60th annual meeting [Las Vegas], preprint SPE-14188, 17 p.

- Salich, H.A., 1980, Methods of identifying those oil and gas reservoirs which can be developed commercially in rocks with poor reservoir properties, in Tenth world petroleum congress, proceedings v. 3: London, Heyden, p. 191-199.
- Schlumberger, 1983-1986, Service modules: Paris, Schlumberger Technical Services. Concise descriptions of the newest generation of logging tools and their interpretation. In 14 individual full color pamphlets.
- Schlumberger, 1985, Openhole services catalog: Houston, Schlumberger Well Services, document no. SMP-7004, 72 p. A brief discussion with illustrations of the various logging devices and processing services currently available.
- Schlumberger, 1986, Log interpretation charts: Houston, Schlumberger Well Services, document no. SMP-7006, 112 p.
- Schulze, R.P., Ives, G.L., and Smalley, E.A., 1985, Evaluation of low-resistivity Simpson series of formations: Dallas, Society of Petroleum Engineers, 60th annual meeting [Las Vegas], preprint SPE-14282, 8 p.
- Segesman, F.F., 1980, Well-logging method: Geophysics, v. 45(11), p. 1667-1684. A concise history of well logging, see references.
- Sharma, S.K., Nohwar, U.V.S., Raj, H., Koithara, J., and Chilingar, G.V., 1980, Interrelationships among various petrophysical parameters of carbonate reservoir rocks in the Bombay High oil field, India: Energy Sources, v. 5(1), p. 53-69.
- Shen, L.C., 1985, Problems in dielectric-constant logging and possible routes to their solution: The Log Analyst, v. 26(6), November-December, p. 14-25.
- Shen, L.C., and Hardman, R.H., 1986, Effect of formation dip or hole deviation on induction logs, in 27th annual logging symposium transactions, paper I: Houston, Society of Professional Well Log Analysts, 13 p.
- Shen, L.C., Manning, M.J., and Price, J.M., 1984, Application of Electromagnetic Propagation Tool to formation evaluation, in 25th annual logging symposium transactions, paper J: Houston, Society of Professional Well Log Analysts, 14 p.
- Shen, L.C., Savre, W.C., Price, J.M., and Athavale, K., 1985, Dielectric properties of reservoir rocks at ultra-high frequencies: Geophysics, v. 50(4), p. 692-704. An important paper on the interpretation of dielectric (EPT) logs.
- Sherman, M.M., 1985, The calculation of porosity from dielectric constant measurements—A study using laboratory data, in 26th annual logging symposium transactions, Paper HH: Houston, Society of Professional Well Log Analysts. 15 p. Reprinted in 1986, The Log Analyst, v. 27(1), January-February, p. 15-24.

- Silva, P., and Bassiouni, Z., 1981, A new approach to the determination of formation water resistivity from the SP log, in 22nd annual logging symposium transactions, paper G: Houston, Society of Professional Well Log Analysts, 15 p.
- Silva, P., and Bassiouni, Z., 1985, One step chart for SP log interpretation, in 10th formation evaluation symposium transactions, paper Q: Calgary, Canadian Well Logging Society, 22 p.
- Snyder, D.D., and Fleming, D.B., 1985, Well logging—A 25-year perspective: Geophysics, v. 50(12), p. 2504-2529. See references.
- Snyder, D.D., and Merkel, R.H., 1977, Induced polarization measurements in and around boreholes, in Induced polarization for exploration geologists and geophysicists [short course, March 14-16, 1977]: Tucson, University of Arizona Department of Geosciences, p. 161-220.
- Society of Petroleum Engineers, 1971, Well Logging: Dallas, Society of Petroleum Engineers, Reprint Series 1, 410 p. Contains 26 classic papers on basic tool principles and application. A revised edition to be published in early 1987.
- Society of Professional Well Log Analysts (SPWLA), Annually (1960-1985), Logging symposium transactions: Houston, Society of Professional Well Log Analysts
- Society of Professional Well Log Analysts (SPWLA), bimonthly (1960-1985), The Log Analyst: Houston, Society of Professional Well Log Analysts
- Society of Professional Well Log Analysts (SPWLA), Biannually (1972-1986), European formation evaluation symposium transactions: European chapters of SPWLA
- Society of Professional Well Log Analysts (SPWLA), irregular, Reprint volumes: Houston, Society of Professional Well Log Analysts
- Stein, N., 1975, Mechanical properties of friable sands from conventional log data: Dallas, Society of Petroleum Engineers, 50th annual meeting [Dallas] preprint SPE-5500. Later published in 1976, Journal of Petroleum Technology, v. 28(7), p. 757-763. Discussion and reply published in 1976, Journal of Petroleum Technology, v. 28(11), p. 1303-1304.
- Suau, J. Boyeldieu, C. Roccabianca, R., Cigni, M., and Spila, M., 1978, Evaluation of very low-porosity carbonates (Malossa, Italy), in 19th annual logging symposium transactions, paper W: Houston, Society of Professional Well Log Analysts.
- Sujono, A.D., and Sumaryana, 1985, Resistivity measurements and their interpretation using dual laterolog and dual induction log in Gunung Kemala and Benuang fields, south Palembang district, Pertamina UEP-II, in 14th annual convention proceedings: Jakarta, Indonesian Petroleum Association, p. 587-609.

- Swanson, B.F., 1985, Microporosity in reservoir rocks—Its measurement and influence on electrical resistivity, in 26th annual logging symposium transactions, paper F: Houston, Society of Professional Well Log Analysts, 17 p. Later published in 1985, The Log Analyst, v.26(6), November–December, p. 42–52.
- Threadgold, P., 1971, Some problems and uncertainties in log interpretation, in 13th annual logging symposium transactions, paper, W: Houston, Society of Professional Well Log Analysts, 19 p. Later reprinted in 1972, The Log Analyst, v. 12(2), March–April, p. 3–11.
- Timur, A., 1982, Open hole well logging, in International petroleum conference [Beijing] proceedings, SPE-10037: Dallas, Society of Petroleum Engineers, p. 639–674. Later published in condensed form 1982, Advances in well logging: Journal of Petroleum Technology, v. 34(6), p. 1181–1185.
- Timur, A., and Toksoz, M.N., 1985, Downhole geophysical logging: Annual Reviews of Earth and Planetary Science, v. 14, p. 315–344.
- Vittachi, A.R., 1985, A high resolution, three mineral lithology analysis utilizing sonic and litho-density measurements, in 10th formation evaluation symposium transactions, paper F: Calgary, Canadian Well Logging Society, 9 p.
- Whittaker, A., editor, 1985, Mud logging, principles and interpretations: Boston, International Human Resources Development Corporation, 92 p.
- Wood, B.R., and Westaway, P., 1982, Applications of the electromagnetic propagation tool in Indonesia, in 11th annual convention proceedings, v. 1: Jakarta, Indonesian Petroleum Association, p. 379–400.
- Worthington, P.F., Pallatt, N., and Toussaint-Jackson, J.E., 1985, Influence of microporosity upon the evaluation of hydrocarbon saturation: Dallas, Society of Petroleum Engineers, 60th annual meeting [Las Vegas], preprint SPE-14296, 12 p.
- Yale, D.P., 1985, Recent advances in rock physics: Geophysics, v. 50(12), p. 2480–2491. See references.

III. TEMPERATURE LOGGING, DETERMINATION OF STATIC BHT AND APPLICATIONS (See also 22. Geothermal logging)

- Bachu, S., 1985, Influence of lithology and fluid flow on the temperature distribution in a sedimentary basin--A case study from the Cold Lake area, Alberta, Canada: *Tectonophysics*, v. 120, p. 257-284.
- Beck, A.E., 1982, Precision logging of temperature gradients and the extraction of past climate: *Tectonophysics*, v. 83, p. 1-11.
- Carstens, H., and Finstad, K.G., 1981, Geothermal gradients of the northern North Sea basin, 59-62°N, in L.V. Illing and G.D. Hobson, editors, *Petroleum geology of the continental shelf of north-west Europe*: London, Heyden & Sons, Ltd., p. 152-161.
- Chapman, D.S., Keho, T.H., Bauer, M.S., and Picard, M.D., 1984, Heat flow in the Unita Basin determined from bottom hole temperature (BHT) data: *Geophysics*, v. 49(4), p. 453-466.
- Dowdle, W.L., and Cobb, W.M., 1974, Static formation temperature from well logs--an empirical method: Dallas, Society of Petroleum Engineers, 49th annual meeting [Houston] preprint SPE-5036. Later published in 1975, *Journal of Petroleum Technology*, v. 27(11), p. 1326-1330. Reprinted in 1982, *Geothermal log interpretation handbook*: Houston, Society of Professional Well Log Analysts, p. V-61-V-65.
- Fertl, W.H., 1978, How subsurface temperature affects formation evaluation: *Oil and Gas Journal*, v. 76(30), July 24, p. 54-62.
- Fertl, W.H., 1985, Logs help approximate reservoir temperature: *Oil and Gas Journal*, v. 83(17), April 29, p. 89-95.
- Fertl, W.H., 1985, Determination of true static formation temperature: *Canadian Well Logging Society Journal*, v. 14, p. 77.
- Fertl, W.H., and Wichmann, P.A., 1977, How to determine static BHT from well data: *World Oil*, v. ?, January, p. 105-106.
- Fertl, W.H., Chilingarian, G.V., and Yen, T.F., 1986, Determination of true static formation temperature from well logs: *Energy Sources*, v. 8(2/3), p. 277-290.
- Grisafi, T.W., Rieke, H.H., III, and Skidmore, D.R., 1974, Approximation of geothermal gradients in northern West Virginia using bottom-hole temperature from electric logs: *AAPG Bulletin*, v. 58(2), p. 321-323.
- Gretener, P.E., 1981, *Geothermics--Using temperature in hydrocarbon exploration*: Tulsa, AAPG Education Course Note Series, No. 17, 156 p.
- Harrison, W.E., and Luza, K.V., 1986, Temperature-gradient information from several boreholes drilled in Oklahoma: Oklahoma Geological Survey, Special Publication No. 86-2, 42 p. Valuable study of the length of time required for borehole-fluid temperature stabilization.

- Jones, F.W., Lam, H.L., and Majorowicz, J.A., 1985, Temperature distributions at the Paleozoic and Precambrian surfaces and their implications for geothermal energy recovery in Alberta: *Canadian Journal of Earth Science*, v. 22, p. 1774-1780.
- Jones, F.W., Majorowicz, J.A., Linville, A., and Osadetz, K.G., 1986, the relationship of hydrocarbon occurrences to geothermal gradients and time-temperature indices in Mesozoic formations of southern Alberta: *Bulletin of Canadian Petroleum Geology*, v. 34(2), June, p. 226-239.
- Joyner, H.D., 1975, A correlation of electric-log-indicated reservoir temperature with actual reservoir temperature - southwest Louisiana: *Journal of Petroleum Technology*, v. 27(2), p. 181-182.
- Kehle, R.O., Schoepfel, R.J., and Deford, R.K., 1970, The AAPG geothermal survey of North America [U.N. symposium on the development and utilization of geothermal resources (Pisa, Italy)]: *Geothermics*, special issue no. 2, part 1, p. 358-367.
- Lam, H.L., and Jones, F.W., 1982, A statistical analysis of bottom-hole temperature data in the Hinton area of west-central Alberta: *Tectonophysics*, v. 103, p. 273-281.
- Lam, H.L., and Jones, F.W., 1986, An investigation of the potential for geothermal energy recovery in the Calgary area in southern Alberta, Canada, using petroleum exploration data: *Geophysics*, v. 51(8), p. 1661-1670.
- Lam, H.L., Jones, F.W., and Majorowicz, J.A., 1985, A statistical analysis of bottom-hole temperature data in southern Alberta: *Geophysics*, v. 50(4), p. 677-684.
- Majorowicz, J.A., Jones, F.W., Lam, H.L., and Jessop, A.M., 1985, Terrestrial heat flow and geothermal gradients in relation to hydrodynamics in the Alberta basin, Canada: *Journal of Geodynamics*, v. 4(1-4), p. 265-283.
- Middleton, M. F., 1979, A model for bottom-hole temperature stabilization: *Geophysics*, v. 44(8), p. 1458-1462.
- Oxburgh, E.R., and Andrews-Speed, C.P., 1981, Temperature, thermal gradients and heat flow in the southwestern North Sea, in L.V. Illing and G.D. Hobson, editors, *Petroleum geology of the continental shelf of north-west Europe*: London, Heyden & Sons, Ltd., p. 141-151.
- Rainis, A.E., Skidmore, D.R., and Rieke, H.H., III, 1974, A computational method for determining segmental and overall geothermal gradients and geothermal heat flow values: *Geothermics*, v. 3(3), p. 113-117.
- Reiter, M., Eggleston, R.E., Broadwell, B.R., and Minier, J., 1986, Estimates of terrestrial heat flow from deep petroleum tests along the Rio Grand rift in central and southern New Mexico: *Journal of Geophysical Research*, v. 91(B6), May 10, p. 6225-6245.

- Reiter, M., Mansure, A.J., and Peterson, B.K., 1980, Precision continuous temperature logging and comparison with other types of logs: *Geophysics*, v. 45(12), p. 1857-1868. Also published in 1981, as Deep subsurface temperature studies in the basins of New Mexico and neighboring geologic areas—Precision continuous temperature logging and comparison with other types of logs: New Mexico Energy Research and Development Program Report EMD-2-67-2321, 30 p.
- Roux, B., Sanyal, S.K., and Brown, S.L., 1980, An improved approach to estimating true reservoir temperature from transient temperature data, in 50th California regional meeting proceedings, SPE-8888: Dallas, Society of Petroleum Engineers, p. ?. Reprinted in 1982, *Geothermal log interpretation handbook*: Houston, Society of Professional Well Log Analysts, p. V-53-V-60.
- Saskai, A., 1984, An empirical method and a few problems for estimating formation temperature from bottom-hole temperature recorded during logging [in Japanese, except for English abstract]: *Journal of the Japanese Association for Petroleum Technology*, v. 49(5), September, p. 7.
- Schoepfel, R.J., and Gilarranz, S., 1965, Use of well log temperatures to evaluate regional geothermal gradients: Dallas, Society of Petroleum Engineers, 40th annual meeting [Denver] preprint SPE-1297. Later published in 1966, *Journal of Petroleum Technology*, v. 18(6), p. 667-673.
- Shen, P.Y., and Beck, A.E., 1983, Determination of surface temperature history from borehole temperature gradients: *Journal of Geophysical Research*, v. 88(B9), September 10, p. 7385-7493.
- Speece, M.A., Bowen, T.D., Folcik, J.L., and Pollack, H.N., 1985, Analysis of temperatures in sedimentary basins—The Michigan Basin: *Geophysics*, v. 50(8), p. 1318-1334.
- Staub, W.P., and Treat, N.L., 1981, Analysis of bottom-hole temperature data from oil and gas wells of the Tennessee Valley region: *Geothermal Resources Council, Transactions*, v. 5, p. 129-132.
- Treguer, J.P., 1981, Temperature measurement in oil wells, in *Heat flow; combined proceedings of the joint ASCOPE/CCOP workshops I [Jakarta, 1981] and II [Bangkok, 1984]*: New York, United Nations, CCOP Project Office Report CCOP/TP 15, p. 61-69.
- Urban, T.C., and Diment, W.H., 1985, Convection in boreholes—Limits on interpretation of temperature logs and methods for determining anomalous fluid-flow, in 1985 NWWA conference on surface and borehole geophysical methods in ground water investigations [Fort Worth, Texas, February 12-14], proceedings: Worthington, Ohio, National Water Well Association, p. 399-414.
- Vacquier, V., 1985, Calculation of terrestrial heat flow solely from oil well logging records, in *Joint ASCOPE/UN CCOP heat flow workshop [Jakarta, Indonesia, 10/19-23/81]*, proceedings: New York, United Nations CCOP Technical Publication 15, p. 45-48.

Verma, R.K., 1977, Temperature logging and its application to geophysical problems, in V.L.S. Bhimasankaram and V.K. Gaur, editors, Lectures on exploration geophysics for geologists and engineers: Hyderabad, India, The Association of exploration Geophysicists, p. 287-300.

IV. CONDITIONS AND SPECIAL SITUATIONS AFFECTING TOOL RESPONSE

- Anonymous, 1971, Logging oddities—radioactive clean dolomite: Canadian Well Logging Society Journal v. 4(1), p. 95-98.
- Buchanan, J.C., Clearman, D.K., Heidbrink, L.J., and Smith, H.D., Jr., 1984, Applications of TMD pulsed neutron logs in unusual downhole environments, in 25th annual logging symposium transactions, paper KKK: Houston, Society of Professional Well Log Analysts, 17 p.
- Chilingarian, G.V., and Vorabutr, P., 1981, Drilling and drilling fluids: Amsterdam, Elsevier, Developments in Petroleum Science no. 11, 767 p.
- Clavier, C., 1985, Accuracy and limitations with special log data, in 1985 technical program abstracts and biographies: Tulsa, Society of Exploration Geophysicists, p. 286-289.
- Clavier, C., Heim, A., and Scala, C., 1976, Influence of pyrite on resistivity and other logging measurements, in 17th annual logging symposium transactions, paper HH: Houston, Society of Professional Well Log Analysts, 33 p.
- Clenchy, D.R., 1985, Effect of borehole diameter on log data quality and interpretation—Grand Banks area, east coast Canada, in 10th formation evaluation symposium transactions, paper V: Calgary, Canadian Well Logging Society, 26 p.
- Cooley, B.B., 1974, The delta tension curve for better log quality, in 15th annual logging symposium transactions, paper F: Houston, Society of Professional Well Log Analysts, 9 p. Later reprinted in 1974, The Log Analyst, v. 15(4), July-August, p. 8-13.
- Coope, D.F., and Hendricks, W.E., 1984, Formation evaluation using measurements recorded while drilling, in 25th annual logging symposium transactions, paper FF: Houston, Society of Professional Well Log Analysts, 21 p. Later published in 1985 as, MWD logs provide fast, accurate formation data, World Oil, v. 20(2), August 1, p. 46-52.
- Coope, D.F., and Yearsley, E.N., 1986, Formation evaluation using EWR logs, in 1986 SPE international meeting on petroleum engineering [Beijing, China, March 17-20], proceedings, SPE-14062: Dallas, Society of Petroleum Engineers, p. 415-425.
- Cox, J.W., and Raymer, L.L., 1976, The effect of potassium-salt muds on gamma ray, and spontaneous potential measurements, in 17th annual logging symposium transactions, paper I: Houston, Society of Professional Well Log Analysts, , 20 p.
- Crues, J.V., Jr., 1982, Recognizing large SP anomalies in the Cretaceous carbonates along the Balcones systems and how to interpret them: Bulletin of the South Texas Geological Society, v. 23(4), December, p. 16-27.

- Edwards, D.P., Lacour-Gayet, P.J., and Suau, J., 1981, Log evaluation in wells drilled with inverted oil emulsion mud: Dallas, Society of Petroleum Engineers, 56th annual meeting [San Antonio] preprint SPE-10206, 19 p.
- Elliott, L.R., Barolak, J.G., Coope, D.F., and Hendricks, W.E., 1983, Recording downhole formation data while drilling, in SPE production technology symposium [November 14-15, Lubbock], SPE-12360: Dallas, Society of Petroleum Engineers. Later published in 1985, Journal of Petroleum Technology, v. 37(7), p. 1231-1238.
- Fertl, W.H., 1978, How subsurface temperature affects formation evaluation: Oil and Gas Journal, v. 76(30), July 24, p. 54-62.
- Fertl, W.H., 1979, Interpretive well logging concepts assist south Texas formation evaluation problems: Transactions of the Gulf Coast Association of Geological Societies, v. 29, p. 64-73.
- Fertl, W.H., and Hammack, G.W., 1976, Solid particle penetration into porous reservoir rocks and its effect on well log analysis, in 17th annual logging symposium transactions, paper F: Houston, Society of Professional Well Log Analysts, 10 p.
- Fertl, W.H., King, E.E., and Kumar, R., 1978, Important SP and gamma ray log anomalies explained: Oil and Gas Journal, v. 76(34), August 21, p. 70-75.
- Hammack, G.W., and Fertl, W.H., 1974, Anomalies observed on well logs, in 15th annual logging symposium transactions, paper V: Houston, Society of Professional Well Log Analysts, 21 p. Also published in 1974, World Oil, v. 179(7), p. 69-73.
- Jorden, J.R., and Campbell, F.L., 1984, Well logging I—Rock properties, borehole environment, mud and temperature logging: Dallas, Society of Petroleum Engineers, Monograph Series 9, 167 p.
- Keith, B.D., and Pittman, E.D., 1983, Bimodal porosity in oolitic reservoir—Effect on productivity and log response, Rodessa Limestone (Lower Cretaceous), East Texas Basin: AAPG Bulletin, v. 67(9), p. 1391-1399.
- Kenyon, W.E., and Baker, P.L., 1984, EPT interpretation in carbonates drilled with salt muds: Dallas, Society of Petroleum Engineers, 59th annual meeting [Houston] preprint SPE-13192. Later published in 1986, SPE Formation Evaluation, v. 1(5), p. 521-531.
- Kowalski, J.J., and Asekun, S.O., 1979, It may not be shale, in 20th annual logging symposium transactions, paper P: Houston, Society of Professional Well Log Analysts, 15 p. Also published in 1979, in 7th formation evaluation symposium transactions, paper G: Calgary, Canadian Well Logging Society.
- Manning, M.J., and Athavale, K.A., 1986, Dielectric properties of pyrite samples at 1100 MHz: Geophysics, v. 51(1), p. 172-182.

- McGlothlin, R.E., and Krause, H., 1980, Water base drilling fluids, in Research on environmental fate and effects of drilling fluids and cuttings symposium, proceedings, volume I: U.S. Department of Energy, Report DOE/CONF-800172, p. 30-37. A concise description of the composition and uses of commonly used water-based drilling muds.
- McMordie, W.C. Jr., 1980, Oil base drilling fluids, in Research on environmental fate and effects of drilling fluids and cuttings symposium, proceedings, volume I: U.S. Department of Energy, Report DOE/CONF-800172, p. 38-42. A concise description of the composition and uses of oil-based drilling muds.
- Misk, A., Mowat, G.R., Goetz, J.F., Vivet, B., 1977, Effects of hole conditions on log measurement and formation evaluation, in 5th European logging symposium transactions, paper 22: Paris, Society of Professional Well Log Analysts, Paris Chapter (SAID), 16 p. Reprinted in 1978, in Measuring accuracy of parameters used in formation evaluation in the North Sea, Norwegian Petroleum Society conference [10/30-11/2/77]: Oslo, Norwegian Information Publishers, p. 21-37.
- Moore, C.V., and Kaufman, R.L., 1981, Your unsuspected problems--Fluid resistivity and water analysis, in 22nd annual logging symposium transactions, paper C: Houston, Society of Professional Well Log Analysts, 15 p.
- Nelson, P.H., and Glenn, W.E., 1975, Influence of bound water on the neutron log in mineralized igneous rock, in 16th annual logging symposium transactions, paper M: Houston, Society of Professional Well Log Analysts, 9 p.
- Pachett, P.G., Berry W.R., II, Burlingame, R.W., Moore, C.V., Spalding, J.S., Wichmann, P.A., and Woodhouse, R., 1986, Problematic overview--A series of six studies on difficult log analysis, in 27th annual logging symposium transactions, paper MNN: Houston, Society of Professional Well Log Analysts, 23 p.
- Roy, K.K., and Saha, A., 1975, Discussion on SP log interpretation: Canadian Well Logging Society Journal, v. 8(1), p. 41-46.
- Semmelbeck, M., Holditch, S.A., 1985, The effects of mud filtrate invasion on the interpretation of induction logs in Eastern regional meeting [Morgantown, West Virginia, November 5-8], proceedings, SPE-14491: Dallas, Society of Petroleum Engineers, p. 27-38.
- Sharma, M.M., and Wunderlich, R.W., 1985, The alteration of rock properties due to interactions with drilling fluid components: Dallas, Society of Petroleum Engineers, 60th annual meeting [Las Vegas], preprint SPE-14302, 12 p.
- Simpson, J.P., 1985, The drilling mud dilemma, recent examples: Journal of Petroleum Technology, v. 37(2), p. 201-206. Discussion and reply v. 37(7), p. 1230.

- Suau, J., and Spurlin, J., 1982, Interpretation of micaceous sandstones in the North Sea, in 23rd annual logging symposium transactions, paper G: Houston, Society of Professional Well Log Analysts, 32 p.
- Tilly H.P., Gallagher, B.J., and Taylor, T.D., 1981, Methods for correcting porosity data in a gypsum-bearing carbonate reservoir, in 1981 SPE Permian Basin oil and gas recovery symposium, proceedings, SPE-9716: Dallas, Society of Petroleum Engineers. Later published in 1982, Journal of Petroleum Technology, v. 34(10), p. 2449-2454.
- Trojan, M., 1985, Effects of diagenesis on reservoir properties and log response, Upper Jurassic Taylor Sandstone, Cotton Valley Group, Lincoln Parish, Louisiana: Transactions of the Gulf Coast Association of Geological Societies, v. 35, p. 515-523.
- Ucok, H., 1981, A laboratory study of the effect of temperature gradient on the development of spontaneous-potential in geothermal wellbore, in 22nd annual logging symposium transactions, paper K: Houston, Society of Professional Well Log Analysts, 16 p.
- Williams, H., and Dunlap, H.E., 1984, Short-term variations in drilling fluid parameters; their measurement and implications: The Log Analyst, v. 25(5), September-October, p. 3.
- Zhixing, H., and Liandi, S., 1986, Mechanism of transit time increase and its interpretation after water injection into reservoir M in Lao Jun Miao oil field, in 1986 SPE international meeting of petroleum engineering [Beijing, March 17-20], proceedings, SPE-14846: Dallas, Society of Petroleum Engineers, p.427-447.

V. CROSSPLOT TECHNIQUES AND APPLICATIONS

- Burke, J.A., Schmidt, A.W., and Campbell, R.L., Jr., 1969, The litho-porosity cross plot: The Log Analyst, v. 10(6), November-December, p. 25-43.
- Clavier, C., and Rust, D.H., 1976, MID plot—A new lithology technique: The Log Analyst, v. 17(6), November-December, p. 16-24.
- Fertl, W.H., 1978, Open-hole crossplots—A powerful technique in well log analysis: Dallas, Society of Petroleum Engineers, European offshore petroleum conference preprint SPE-8115. Later published in 1981, Journal of Petroleum Technology, 33(3), p. 535-549. See references.
- Fertl, W.H., 1979, Practical log analysis, part 13—Hingle crossplot speeds long-interval evaluation: Oil and Gas Journal, v. 77(3), p. 110-118.
- Galloway, W., and Smith W.D.M., 1981, The successful application of a neutron acoustic crossplot to the dolomite sandstone of the Belloy, in 8th formation evaluation symposium transactions, paper Y: Calgary, Canadian Well Logging Society, 15 p.
- Greengold, G.E., 1986, The graphical representation of bulk volume water on the Pickett crossplot: The Log Analyst, v. 27(3), May-June, p. 21-25.
- Heslop, A., 1978, Using cross-plots to quantify the effect of shaliness: Canadian Well Logging Society Journal, v. 10, p. 79-91.
- Holgate, M.M., 1960, The microlog as a porosity datum for the neutron log in the Swan Hills field, Alberta: CIM [Canadian Institute of Mining and Metallurgy] Bulletin, v. 53, p. 324-328.
- Lang, W.H., Jr., 1972, Porosity-resistivity cross-plotting, in 13th annual logging symposium transactions, paper F: Houston, Society of Professional Well Log Analysts, 9 p. Later published in 1973, The Log Analyst, v. 14(1), January-February, p. 16-20.
- Maple, L., 1985, A crossplot approach to electromagnetic propagation tool (EPT) interpretation, in 26th annual logging symposium transactions, paper N: Houston, Society of Professional Well Log Analysts, 18 p.
- Mathews, D.M., and Bassiouni, Z., 1984, Resistivity-spontaneous potential crossplot for enhanced interpretation of well logs: The Log Analyst, v. 25(4), July-August, p. 14-19.
- O'Brian, W.J., Brown, S.L., and Sanyal, S.K., 1982, Crossplot technique for the analysis of the carbon/oxygen log, in California regional meeting, proceedings, SPE-10740: Dallas, Society of Petroleum Engineers, p. 243-266.
- Pickett, G.R., 1973, Pattern recognition as a means of formation evaluation, in 14th annual logging symposium transactions, paper A: Houston, Society of Professional Well Log Analysts, 20 p. Later published in 1973, The Log Analyst, v. 14(4), July-August, p. 3-11.

Watney, W.L., 1979, Gamma-ray-neutron [sic] cross-plots as an aid in sedimentological analysis, in D. Gill and D.F. Merriam, editors, Geomathematical and petrophysical studies in sedimentology: Oxford, Pergamon Press, Computer in Geology Series, p. 81-100.

VI. PROGRAMMABLE CALCULATOR AND COMPUTER PROGRAMS FOR LOG ANALYSIS

- Bateman, R.M. and Konen, C.E., 1977, Wellsite log analysis and the programmable pocket calculator, in 18th annual logging symposium transactions, paper B: Houston, Society of Professional Well Log Analysts, 35 p. Expanded into series published in The Log Analyst.
- Bateman, R.M., and Konen, C.E., 1977, The log analyst and the programmable pocket calculator, part 1— R_w from the SP and pulsed neutron log analysis: The Log Analyst, v. 18(5), September-October, p. 3-11.
- Bateman, R.M., and Konen, C.E., 1977, The log analyst and the programmable pocket calculator, part 2—Crossplot porosity and water saturation: The Log Analyst, v. 18(6), November-December, p. 3-11.
- Bateman, R.M., and Konen, C.E., 1978, The log analyst and the programmable pocket calculator, part 3—Dipmeter computation: The Log Analyst, v. 19(1), January-February, p. 3-9.
- Bateman, R.M., and Konen, C.E., 1978, The log analyst and the programmable pocket calculator, part 4—Dual induction-laterolog 8: The Log Analyst, v. 19(3), May-June, p. 14.
- Bateman, R.M., and Konen, C.E., 1978, The log analyst and the programmable pocket calculator, part 5— R_t and D_t from the dual laterolog: The Log Analyst, v. 19(4), July-August, p. 11-14.
- Bateman, R.M., and Konen, C.E., 1979, The log analyst and the programmable pocket calculator, part 6—Finding true stratigraphic thickness and true vertical thickness of dipping beds cut by directional wells: The Log Analyst, v. 20(2), March-April, p. 3-6.
- Cambell, D.L., Ballantyne, E.J., Jr., Mentemeier, S.H., and Wiggins, R., 1981, Manual of geophysical hand-calculator programs: Tulsa, Society of Exploration Geophysicists, variously paginated. Volumes for HP and TI calculators consisting of previously published programs.
- Crain, E.R., 1986, Calculator solutions for log analysis, chapter 13, in The log analysis handbook, volume 1—Quantitative log analysis methods: Tulsa, PennWell Books, p. 417-447.
- Crain, E.R., 1986, Computer-aided log analysis, chapter 15, in The log analysis handbook, volume 1—Quantitative log analysis methods: Tulsa, PennWell Books, p. 463-487.
- Crain, E.R., 1986, Log analysis using electronic spreadsheets, chapter 14, in The log analysis handbook, volume 1—Quantitative log analysis methods: Tulsa, PennWell Books, p. 448-462.
- Cranmer, J.L., Jr., 1982, BASIC reservoir engineering manual: Tulsa, PennWell Books, 232 p. Programs for TRS-80 and IBM PC.

- Dudnick, R.A., 1986, Program for TI-59 to convert true dips to seismic section dips: Oil and Gas Journal, v. 84(14), April 7, p. 107-108.
- Garb, F.A., 1978, Property evaluation with hand-held computers, part 4--Water saturation by five shaly sand equations and interpolation of deviated tops: Petroleum Engineer International, v. 50(4), April, p. 47-52.
- Garb, F.A., 1978, Property evaluation with hand-held computers, part 3--Clean sand log analysis and shaly formation sonic-density log analysis: Petroleum Engineer International, v. 50(3), March, p. 50-80.
- Garb, F.A., 1978, Property evaluation with hand-held calculators, part 5--Neutron and neutron-density log analysis procedures: Petroleum Engineer International, v. 50(5), May, p. 52-69.
- Gobran, B.D., Saldaña, M.A., Brown, S.L., and Sanyal, S.K., 1980, A comprehensive mathematical approach and a hand-held calculator program for analysis of shaly gas sands: The Log Analyst, v. 21(5), September-October, p. 11-21.
- Hallenburg, J.K., 1984, HP41C formation evaluation programs: Tulsa, PennWell Books, 120 p.
- Hallenburg, J.K., 1985, LOGCOMP petroleum formation evaluation programs: Tulsa, PennWell Books, 104 p. For IBM-XT.
- Hollo, R., and Fifadara, H., 1981, TI-59 reservoir engineering manual, 2nd edition: Tulsa, PennWell Books, 249 p.
- Keet, B., 1982, Temperature log analysis with a pocket calculator--Interpretation program for discrete temperature logs in small-diameter well: Geologie en Mijnbouw, v. ?, p. 293-295.
- Kork, J.O., 1981, FENCE--A computer program to create files of borehole data and to construct fence sections of boreholes interactively: U.S. Geological Survey, Open-File Report 81-0183, 62 p.
- Kork, J.O., 1986, JKDIGIT, a program to control a digitizing board for geologists, written in BASIC for an IBM Personal Computer: U.S. Geological Survey, Bulletin 1616, 69 p.
- Kostecke, S.T., 1980, Speed of hand-calculator programs can be improved: Oil and Gas Journal, v. 78(32), August 11, p. 107-116.
- Lauman, J., 1985, Basic well log analysis using the HP-11C: Geobyte, v. 1(1), Winter, p. 108.
- LeBlanc, D.P., 1982, Shaly sand and carbonate analysis on the HP-41C: Canadian Well Logging Society Journal, v. 11, p. 31-41.
- LeBlanc, D.P., 1983, Enhanced shaly sands and carbonate analysis on the HP-41C: Canadian Well Logging Society Journal, v. 12, p. 135-145.

- Linehan, J.M., and Sutterlin, P.G., 1986, WSULOG, microcomputer-based well-log evaluation for carbonate reservoirs in Kansas [with source code in Fortran 77]: Computers & Geosciences, v. 12(4B), p. 499-517.
- McCoy, R.L., 1983, PETROCALC 1—Reservoir engineering and formation evaluation: Houston, Gulf Publishing Co., 144 p. For IBM, Apple, and HP.
- Meehan, D.N., and Vogel, E.L., 1982, HP-41 reservoir engineering manual: Tulsa, PennWell Books, 364 p.
- Mosa, M.M., 1983, Lithology computer program—Three minerals plus shale contamination and porosity, appendix 2, in S.J. Pirson, Geologic well log analysis, 3rd edition: Houston, Gulf Publishing Company, p. 343-362.
- Pirson, S.J., 1983, Basic log analysis package for the HP-41CV programmable calculator, appendix 4, in Geologic well log analysis, 3rd edition: Houston, Gulf Publishing Company, p. 363-460.
- Schad, S.T., 1986, BASIC log analysis programs: Oil and Gas Journal, v. 84(18), May 5, p. 185-187.
- Schoonover, L.G., and Fertl, W.H., 1979, Practical log analysis, part 18—Estimate R_{wa} and water saturation with hand calculator programs: Oil and Gas Journal, v. 77(29), July 16, p. 67-68.
- Schoonover, L.G., and Fertl, W.H., 1979, Practical log analysis, part 19—Porosity and water saturation using handheld calculators: Oil and Gas Journal, v. 77(31), July 30, p. 170-172.
- Schoonover, L.G., and Fertl, W.H., 1979, Practical log analysis, part 17—How to find temperature, R_w , and salinity with hand calculators: Oil and Gas Journal, v. 77(27), July 2, p. 109-111.
- Schoonover, L.G., and Fertl, W.H., 1979, Practical log analysis, part 20—Calculator programs used for shaly sand log analysis: Oil and Gas Journal, v. 77(33), August 13, p. 120-126.
- Schoonover, L.G., and Fertl, W.H., 1979, Practical log analysis, part 21—Using the S_w and q-factor approach to quicker shaly-sand analysis: Oil and Gas Journal, v. 77(35), August 27, p. 122-125.
- Scott, J.H., 1978, A FORTRAN algorithm for correcting normal resistivity logs for borehole diameter and mud resistivity: U.S. Geological Survey, Open-File Report 78-779, 12 p.
- Scott, J.H., 1978, A computer program for borehole compensation of dual-detector density well logs: U.S. Geological Survey, Open-File Report 78-515, 7 p.
- Smith, S.W., and Keen, D., 1979, A simplified true vertical thickness (TVT) calculation using a programmable pocket calculator: The Log Analyst, v. 20(2), March-April, p. 28-32.

- Souder, W.W., and Williams, J.S., 1979, Interactive calculators can aid wellsite log analysis: Oil and Gas Journal, v. 77(47), November 26, p. 69-76.
- Texas Instruments, 1978, Programmable TI-59 specialty packettes--Oil, gas, energy: Texas Instrumments, Inc. 40 p.
- Thompson, K.D., 1978, Well log interpretation of shaly sands with the programmable calculator, in 19th annual logging symposium transactions, paper X: Houston, Society of Professional Well Log Analysts, 26 p.
- Tsang, P.B., 1978, The log analyst and the programmable pocket calculator, Part I--R_w from the SP--Addendum: The Log Analyst, v. 19(1), January-February, p. 10-11.
- Turner, W.J., 1980, Hand-held calculator programs for frequently used formulas, part 8--Directional well surveys, radius of curvature method: Petroleum Engineer International, v. 52(7), June, p. 102-114.
- Wu, C.H., and Krudwig, M.C., 1980, Density-neutron crossplot analysis using polar coordinates: The Log Analyst, v. 21(4), July-August, p. 3-8.
- Wu, C.H., and Krug, J., 1978, Density-neutron crossplot analysis for shaly gas sands using hand-carried calculators: The Log Analyst, v. 19(4), July-August, p. 3-10.
- Wu, C.H., and Krug, J., 1979, Shaly gas-sand analysis using hand-carried calculators: The Log Analyst, v. 20(3), May-June, p. 20-25.

VII. INTERNATIONAL WELL EVALUATION CONFERENCES
(Regional geology and formation evaluation of various countries)

- Alexander, I., editor, 1982, Schlumberger well evaluation developments—Continental Europe 1982 [Baden-Baden, June]: Paris, Schlumberger Technical Services, 296 p.
- de Murville, E.C., and Dadrian, C., editors, 1973, Schlumberger well evaluation conference—Indonesia 1973 [Jakarta, June]: Paris, Schlumberger Technical Services, 83 p.
- Felder, B., editor, 1980, Schlumberger well evaluation conference—Venezuela 1980 [Caracas, May] [in Spanish]: Paris, Schlumberger Technical Services, variously paginated.
- Logar, J.F., editor, 1983, Schlumberger well evaluation conference—West Africa 1983 [Libreville, October]: Paris, Schlumberger Technical Services, variously paginated.
- Marmissolle-Daguerre, D., editor, 1984, Schlumberger well evaluation conference—Mexico 1984 [Mexico City, September] [in Spanish]: Paris, Schlumberger Technical Services, variously paginated.
- Mok, J.S., editor, 1985, Schlumberger well evaluation conference—China 1985 [Beijing, September]: Paris, Schlumberger Technical Services, 359 p.
- Pinnington, D.J., editor, 1981, Schlumberger well evaluation conference—United Arab Emirates/Qatar 1981 [Abu Dhabi, November]: Paris, Schlumberger Technical Services, 271 p.
- Schlumberger, 1970, Well evaluation conference—Libya 1970 [Tripoli, Autumn]: Paris, Schlumberger Technical Services, variously paginated.
- Schlumberger, 1973, Well evaluation conference—Argentina 1973 [Buenos Aires, June]: Paris, Schlumberger Technical Services.
- Schlumberger, 1974, Schlumberger well evaluation conference—Nigeria 1974 (2nd ed.) [Lagos, April]: Paris, Schlumberger Technical Services, variously paginated.
- Schlumberger, 1974, Schlumberger well evaluation conference—North Sea 1974 [London, June]: Paris, Schlumberger Technical Services, 171 p.
- Schlumberger, 1975, Schlumberger well evaluation conference—Arabia 1975 [Bahrain, May]: Paris, Schlumberger Technical Services, 152 p.
- Schlumberger, 1976, Schlumberger well evaluation conference—Iran 1976 [Tehran, May]: Paris, Schlumberger Technical Services, 179 p.
- Schlumberger, 1979, Schlumberger well evaluation conference—Algeria 1979 [Algiers, December]: Paris, Schlumberger Technical Services, variously paginated.

- Schlumberger, 1983, Schlumberger well evaluation conference—India 1983 [New Delhi, December]: Paris, Schlumberger Technical Services, 263 p.
- Schlumberger, 1985, Well evaluation conference—Nigeria 1985 [Lagos, June]: Paris, Schlumberger Technical Services, 292 p.
- Smith, C.M., editor, 1984, Well evaluation conference—Egypt 1984 [Cairo, March]: Paris, Schlumberger Technical Services, variously paginated.
- Viro, E.J., editor, 1985, Well evaluation conference—Brazil 1985 [November] [in Portuguese]: Paris, Schlumberger Technical Services, variously paginated.
- Winchester, A., editor, 1981, Schlumberger well evaluation conference—South East Asia 1981 [Singapore, October]: Paris, Schlumberger Technical Services, 238 p.

VIII. CASED HOLE AND PRODUCTION LOGGING; DETERMINATION OF ROS

(See also X. Nuclear logging)

- Aguilera, R., 1977, A new approach for log analysis of the pulsed neutron and resistivity log combination: Dallas, Society of Petroleum Engineers SPE-6995. Later published 1979, Journal of Petroleum Technology, v. 31(4), p. 415-418.
- Ahmed, A.E., 1977, A neutron logging method for locating the top of cement behind borehole casing: Journal of Petroleum Technology, v. 29(9), p. 1089-1090, SPE-6498.
- Arnold, D.M., and Paap, H.J., 1978, Quantitative monitoring of water flow behind and in wellbore casing: Dallas, Society of Petroleum Engineers, SPE-7107. Later published in 1979, Journal of Petroleum Technology, v. 31(1), p. 121-130.
- Baldwin, J.L., Morris, C.L., Pegors, Latz, C.W., Wahsa, R.J., Harris, E.B., and Wishart, R.A., 1986, Pulsed neutron log application in California--Improved capability via borehole decay correction, in 1986 offshore technology conference, proceedings, OTC-5278: Dallas, Society of Petroleum Engineers, p. 463-480.
- Bateman, R.M., 1984, Cased-hole log analysis and reservoir performance monitoring: Boston, IHRDC Press, 380 p.
- Brock, J., 1985, Analyzing your logs, volume 3--Cased hole log interpretation: Tyler, Texas, Petro-Media, Inc.
- Chang, M.M., Maerefat, N.L., Tomutsa, L., and Honarpour, M.M., 1986, Evaluation and comparison of residual oil saturation determination techniques, in SPE/DOE 5th symposium on enhanced oil recovery, proceedings, SPE/DOE-14887: Dallas, Society of Petroleum Engineers, p. 77-96.
- Connolly, E.T., 1965, Resume and current status of the use of logs in production, in 6th annual logging symposium transactions, paper L: Houston, Society of Professional Well Log Analysts, p. Reprinted in 1985, Production logging: Dallas, Society of Petroleum Engineers reprint series 19, p. 268-352.
- Connolly, E.T., 1970, Interpretation and recognition of calibration and recording abnormalities on production logs: Canadian Well Logging Society Journal, v. 3(1), December, p. 89-122.
- Cooke, C.E., Jr., and Meyer, A.J., 1979, Application of radial differential temperature (RDT) logging to detect and treat flow behind casing, in 20th annual logging symposium transactions, paper UU: Houston, Society of Professional Well Log Analysts, 10 p.
- Cooke-Yarborough, P., 1984, Reservoir analysis by wireline formation tester; pressures, permeabilities, gradients, and net pay: The Log Analyst, v. 26(6), November-December, p. 36-46.

- Draxler, J.K., Jacob, K., and Stark, D.M., 1986, Cased hole evaluation with oil, gas and varying water salinities in the formation by pulsed neutron techniques, in 10th European formation evaluation symposium transactions, paper E: Aberdeen, Society of Professional Well Log Analysts, Aberdeen Chapter, 12 p.
- Dresser Atlas, 1982, Interpretive methods for production well logs, 2nd edition: Houston, Dresser Industries, publication no. 9441, 159 p.
- Dresser Atlas, 1983, Neutron Lifetime Log Interpretation: Houston, Dresser Industries, publication no. 3319, 73 p.
- Dresser Atlas, 1984, Wireline services catalog: Houston, Dresser Industries, publication no. 9102, 43 p. A brief discussion with illustrations of the various logging devices and processing services currently available.
- Elkins, L.F., 1978, Evaluation, chapter 8, in Determination of residual oil saturation: Oklahoma City, Interstate Oil Compact Commission, p. 177-261.
- Felder, R.D., and Hoyer, W.A., 1982, The use of well logs to monitor a surfactant flood pilot test: Dallas, Society of Petroleum Engineers, 57th annual meeting [New Orleans] preprint, SPE-11147, 24 p. Later published in 1984, Journal of Petroleum Technology, v. 36(8), p. 1379-1392.
- Fertl, W.H., 1979, Determination of residual oil saturation from geophysical well logs in tertiary recovery projects: Energy Sources, v. 4(3), p. 259-277.
- Fertl, W.H., 1982, Well logging and its applications in cased holes, in International petroleum conference [Beijing], proceedings, SPE-10034: Dallas, Society of Petroleum Engineers, p. 541-561. Later published in 1984, Journal of Petroleum Technology, v. 36(2), p. 249-266.
- Fertl, W.H., and Wichmann, P.A., 1977, Exploration for and evaluation of hydrocarbon resources in cased boreholes, in Fifth European logging symposium transactions, paper 25: Paris, Society of Professional Well Log Analysts, Paris Chapter (SAID), 17 p.
- Fertl, W.H., Conley, S., Frost, E., and Thompson, J.B., 1983, Evaluation and monitoring of enhanced recovery projects in California and cased-hole exploration and recompletions in west Texas based on the continuous carbon/oxygen log [combined SPE-9714 and SPE-10739]: Journal of Petroleum Technology, v. 35(1), p. 143-157.
- Grooms, G.E., and Schulte, R.K., 1985, Contributions of observation well logging to the evaluation of polymer-augmented waterflood pilots: Dallas, Society of Petroleum Engineers, 60th annual meeting [Las Vegas], preprint SPE-14396, 12 p.

- Gunter, J.M., and Moore, C.V., 1986, Improved use of wireline testers for reservoir evaluation, in 1986 SPE international meeting on petroleum engineering [Beijing, China, March 17-20], proceedings, SPE-14063: Dallas, Society of Petroleum Engineers, p. 401-413.
- Hopkinson, E.C., Fertl, W.H., and Oliver, D.W., 1981, The continuous carbon/oxygen log—basic concepts and recent field experiences, in 1981 SPE Middle East oil technical conference [Manama, Bahrain, March 9-12], proceedings, SPE-9613: Dallas, Society of Petroleum Engineers. Later published in 1982, Journal of Petroleum Technology, v. 34(10), p. 2441-2448. Reprinted in 1981, in Carbon/oxygen log: Houston, Dresser Industries, publication no. 9417, paper 6.
- Hull, R.L., and Johnson, D.E., 1985, The Muldoon field—an evaluation of behind-casing pay zones in a freshwater environment: Dallas, Society of Petroleum Engineers, 60th annual meeting [Las Vegas], preprint SPE-14464, 5 p.
- Interstate Oil Compact Commission, 1978, Determination of residual oil saturation: Oklahoma City, Interstate Oil Compact Commission, 302 p.
- Jones, R.L., 1982, Bootstrapping your way into TDT analysis: The Log Analyst, v. 23(4), July-August, p. 3-13.
- Knight, B.L., and Davarzani, M.J., 1984, Injection well logging using viscous EOR fluids: Dallas, Society of Petroleum Engineers, 59th annual meeting [Houston] preprint SPE-13143. Later published in 1986, SPE Formation Evaluation, v. 1(3), p. 300-308.
- Lachance, D.P., and Winston, R.T., 1985, Recognition of waterflood sweep and formation lithology in a giant Egyptian oil field by applied petrophysics: Dallas, Society of Petroleum Engineers, 60th annual meeting [Las Vegas], preprint SPE-14277, 8 p.
- Martin, K.I., 1982, The application of log-derived transmissibility in well completion design and well performance evaluation, in 11th annual convention proceedings, volume 1: Jakarta, Indonesian Petroleum Association, p. 401-414.
- McKinley, R.M., 1982, Production logging, in International petroleum exhibition and technical symposium [Beijing] proceedings, SPE-10035: Dallas, Society of Petroleum Engineers, p. 563-594. Reprinted in 1985, Production logging: Dallas, Society of Petroleum Engineers, reprint series 19, p. 176-207.
- Morgan, W.D., and Hertzog, R.C., 1983, The application of induced gamma-ray spectroscopy in cased hole formation evaluation in Sumatra, Indonesia, in 12th annual convention proceedings, v. 2: Jakarta, Indonesian Petroleum Association, p. 275-300.
- Murphy, R.P., and Owens, W.W., 1972, The use of special coring and logging procedures for defining reservoir residual oil saturations [Symposium on improved oil recovery, Tulsa]: Dallas, Society of Petroleum Engineers, SPE-3793. Later published in 1973, Journal of Petroleum Technology, v. 25(7), p. 841-850.

- Murphy, R.P., Foster, G.T., and Owens, W.W., 1976, Evaluation of waterflood residual oil saturations using log-inject-log procedures, in 4th SPE-AIME symposium on improved oil recovery [Tulsa], proceedings: Dallas, Society of Petroleum Engineers. Later published in 1977, Journal of Petroleum Technology, v. 29(2), p. 178-186.
- Murthy, V.R., and Gupta, A.K., 1982, Evaluation of formation porosities in Bombay High field using cased hole compensated neutron log: Bulletin ONGC [India Oil Natural Gas Commission], v. 19(2), December, p. 243-256.
- Oliver, D.W., Wyatt, D.F., Jr., and Smith, H.D., Jr., 1986, Reservoir monitoring with the thermal multigate decay log, in 1986 SPE Permian Basin oil and gas recovery conference, proceedings, SPE-14137: Dallas, Society of Petroleum Engineers, p. 7-26. Also published in 1986, in 1986 SPE international meeting on petroleum engineering [Beijing, China, March 17-20], proceedings: Dallas, Society of Petroleum Engineers, p. 217-236.
- Pecine, R.J., Welbridge, E.W., Vandegrift, Herzenberg, C.L., Seitz, M.G., and Heemstra, R., 1984, Assessment of gamma-inject logging techniques for the determination of residual oil saturation: U.S. Department of Energy, Bartlesville Center Report DOE/BC/10383-30, 74 p.
- Petovello, B.G., 1975, Evaluation of well performance through production logging: Canadian Well Logging Society Journal, v. 8(1), p. 47-56. Reprinted in 1975, in 16th annual logging symposium transactions, paper E: Houston, Society of Professional Well Log Analysts. Reprinted in 1985, in Production Logging: Dallas, Society of Petroleum Engineers, reprint series 19, p. 112-117.
- Richardson, J.E., 1977, Monitoring flood profiles with induction logs: Dallas, Society of Petroleum Engineers, 52nd annual meeting [Denver] preprint SPE-6785. Later published in 1979, Journal of Petroleum Technology, v. 31(1), p. 19-24.
- Robinson, J.D., Loren, J.D., Vajnar, E.A., and Hartman, D.E., 1972, Determining residual oil with the nuclear magnetism log [Symposium on improved oil recovery, Tulsa]: Dallas, Society of Petroleum Engineers, SPE-3797. Later published in 1974, Journal of Petroleum Technology, v. 26(2), p. 226-236.
- Robinson, W.S., 1974, Field results from the noise-logging technique: Dallas, Society of Petroleum Engineers, 49th annual meeting [Houston] preprint SPE-5088. Later published in 1976, Journal of Petroleum Technology, v. 28(11), p. 1370-1376. Reprinted in 1985, Production logging: Dallas, Society of Petroleum Engineers, reprint series 19, p. 233-239.
- Schlumberger, 1973, Production log interpretation: Houston, Schlumberger Well Services, document no. C-11811, 91 p.
- Schlumberger, 1975, Cased hole applications: Houston, Schlumberger Well Services, 123 p.
- Schlumberger, 1976, The essential of thermal decay time logging: New York, Schlumberger Ltd., document no. M-081003, 31 p.

- Schlumberger, 1981, RFT—Essentials of pressure test interpretation: Paris, Schlumberger Technical Services, document no. M-081022, 77 p.
- Schlumberger, 1984, Production services catalog: Houston, Schlumberger Well Services, document no. SMP-7005, 60 p. A brief discussion with illustrations of the various logging devices and processing services currently available.
- Shultz, A.L., Bell, W.T., and Urbanosky, H.J., 1974, Advancements in uncased-hole, wireline formation-tester techniques: Dallas, Society of Petroleum Engineers, 49th annual meeting [Houston] preprint SPE-5035. Later published in 1975, Journal of Petroleum Technology, v. 27(11), p. 1331-1336.
- Smolen, J.J., 1986, Cased-hole logging—A perspective, in 27th annual logging symposium transactions, paper K: Houston, Society of Professional Well Log Analysts, 22 p.
- Smolen, J.J., 1986, Production logging: Missouri City, Texas, J.J. Smolen, variously paginated.
- Smolen, J.J., and Litsey, L.R., 1977, Formation evaluation using wireline formation tester pressure data: Dallas, Society of Petroleum Engineers, 52nd annual meeting [Denver] preprint SPE-6822. Later published in 1979, Journal of Petroleum Technology, v. 31(1), p. 25-32.
- Society of Petroleum Engineers, 1985, Production logging: Dallas, Society of Petroleum Engineers, Reprint Series 19, 375 p. Reprints of 26 significant papers.
- Society of Professional Well Log Analysts, 1979, Pulsed neutron logging reprint volume: Houston, Society of Professional Well Log Analysts, 448 p. Contains 32 significant papers on tool operation and application.
- Tanner, H.L., 1985, Evaluation of low-resistivity cased-off reserves using the shale-compensated chlorine log: Dallas, Society of Petroleum Engineers, 60th annual meeting [Las Vegas], preprint SPE-14459, 8 p.
- Thomas, E.C., and Ausburn, B.E., 1976, Determining swept-zone residual oil saturation in a slightly consolidated Gulf Coast sandstone reservoir, in SPE-AIME improved oil recovery symposium, proceedings, SPE-5803: Dallas, Society of Petroleum Engineers. Later published in 1979, Journal of Petroleum Technology, v. 31(4), p. 513-524.
- Thomas, E.C., Richardson, J.E., Shannon, M.T., and Williams, M.R., 1986, ROS measurement and flood monitoring techniques, in 1986 SPE international meeting on petroleum engineering [Beijing, China, March 17-20], proceedings, SPE-14060: Dallas, Society of Petroleum Engineers, p. 193-208.
- Tubman, K.M., Cheng, S.T., Willen, D.E., Toksoz, M.N., 1984, Determination of formation properties in cased boreholes using full waveform acoustic logs, in 25th annual logging symposium transactions, paper CC: Houston, Society of Professional Well Log Analysts, 19 p.

- Westaway, P., Whittman, M., and Rochette, P., 1979, Applications of nuclear techniques to reservoir monitoring, in 1979 Middle East oil technical conference [Manama, Bahrain, March 25-29], proceedings, SPE-7776: Dallas, Society of Petroleum Engineers. Later published in 1981, Journal of Petroleum Technology, v. 33(1), p. 46-54.
- Wyman, R.E., 1977, How should we measure residual-oil saturation?: Bulletin of Canadian Petroleum Geology, v. 25(2), May, p. 233-270.
- Wyman, R.E., 1978, Logging methods, chapter 5, in Determination of residual oil saturation: Oklahoma City, Interstate Oil Compact Commission, p. 89-116.
- Yang, Y., Xiancai, Q., and Guocai, Y., 1986, Determination of residual oil saturation in place by carbon/oxygen (C/O) logging in Daqing oilfield, in 1986 SPE international meeting on petroleum engineering Beijing, China, March 17-20], proceedings, SPE-14838: Dallas, Society of Petroleum Engineers, p. 209-215.
- Youngblood, W.E., 1979, The application of pulsed-neutron-decay time logs to monitor waterfloods with changing salinity, in 1979 Middle East oil technical conference [Bahrain], proceedings, SPE-7777: Dallas, Society of Petroleum Engineers, p.
- Zhixing, H., and Liandi, S., 1986, Mechanism of transit time increase and its interpretation after water injection into reservoir M in Lao Jun Miao oil field, in 1986 SPE international meeting on petroleum engineering [Beijing, March 17-20], proceedings, SPE-14846: Dallas, Society of Petroleum Engineers, p.427-447.

IX. ACOUSTIC LOGGING
(See also 15. Fracture detection)

- Ahmed, H., 1984, Reservoir delineation and porosity evaluation from VSP: Tulsa, Society of Exploration Geophysicists, Expanded Abstracts with Biographies, 1984 Technical Program, p. 847-850.
- Angeleri, G.P., and Joli, F., 1986, Analysis of the applications of the VSP, in 27th annual logging symposium transactions, paper X: Houston, Society of Professional Well Log Analysts, 19 p.
- Aron, J. Murray, J., and Seeman, B., 1978, Formation compressional and shear interval transit-time logging by means of long spacings and digital techniques: Dallas, Society of Petroleum Engineers, 53rd annual meeting [Houston] preprint SPE-7446, 11 p.
- Astbury, S., and Worthington, M.H., 1986, The analysis and interpretation of full waveform sonic data, part I--Dominant phases and shear wave velocity: First Break, v. 4(4), p. 7-16.
- Astbury, S., and Worthington, M.H., 1986, The analysis and interpretation of full waveform sonic data, part 2--Multiples, mode conversions and reflections: First Break, v. 4(6), June, p. 15-24.
- Babec, J.R., and Struss, S.E., 1985, Vertical seismic profiling (VSP)--Bridging the gap: Canadian Well Logging Society Journal, v. 14, p. 85.
- Baker, L.J., 1981, The effect of the invaded zone on full wavetrain acoustic logging: Tulsa, Society of Exploration Geophysicists, 51st annual meeting [Los Angeles] preprint S11.2, v. 5, p. 2609-2625. Later published in 1984, Geophysics, v. 49(6), p. 796-809. An important discussion on the depth of investigation of acoustic logging tools.
- Balch, A.H., and Lee, M.W., editors, 1984, Vertical seismic profiling--technique, applications, and case histories: Boston, International Human Resource development Corporation (IHRDC), 488 p.
- Blakeman, E.R., 1982, A case study of the effect of shale alteration on sonic transit times, in 23rd annual logging symposium transactions, paper II: Houston, Society of Professional Well Log Analysts, 14 p. Discusses the effects of invasion on the sonic log.
- Botter, B.J., 1982, Circumferential acoustic waves in boreholes for the delineation of vertical fractures, in 23rd annual logging symposium transactions, paper S: Houston, Society of Professional Well Log Analysts, 21 p.
- Branisa, F., 1974, Filtering of well-log curves: Geophysics, v. 39(4), August, p. 545-549.
- Cassell, B., 1984, Vertical seismic profiles--An introduction: First Break, v. 2(11), November, p. 9-19.

- Castagna, J., 1985, Accuracy and limitation of sonic log and VSP measurements for seismic exploration, in 1985 technical program abstracts and biographies: Tulsa, Society of Exploration Geophysicists, p. 281-283.
- Castagna, J.P., and Gaiser, J.E., 1984, Digital processing improves sonic log reliability: World Oil, v. 198(5), April, p. 71-74.
- Chang, S.K., Everhart, A.H., and Hornby, B., 1984, Full waveform sonic logging in a shale formation—Field data and theoretical waveforms: Tulsa, Society of Exploration Geophysicists, Expanded Abstracts with Biographies, 1984 Technical Program, p. 3-5.
- Chemali, R, Gianzero, S., and Su, S.M., 1984, The depth of investigation of compressional wave logging for the standard and the long spacing sonde, in 9th international formation evaluation symposium transactions, paper 13: Paris, Society of Professional Well Log Analysts, Paris Chapter (SAID), 10 p.
- Cheng, C.H., Wilkens, R.H., and Meredith, J.A., 1986, Modelling of full waveform acoustic logs in soft marine sediments, in 27th annual logging symposium transactions, paper LL: Houston, Society of Professional Well Log Analysts, 14 p.
- Corley, B.H., 1984, Predicting interval transit time for synthetic seismograms from nuclear well logs: Tulsa, Society of Exploration Geophysicists, Expanded Abstracts with Biographies, 1984 Technical Program, p. 360-363.
- Crain, E.R., and Boyd, J.D., 1979, Determination of seismic response using edited well log data, in 7th formation evaluation symposium transactions, paper V: Calgary, Canadian Well Logging Society.
- Dennis, B., 1985, Digital Sonic (SDT) - full waveform logging applications in western Canada: Canadian Well Logging Society Journal, v. 14, p. 63.
- Engelhard, L., 1985, Shear wave well logging from wavetrain analysis, chapter 5, in G.P. Dohr, editor, Seismic shear waves, seismic exploration volume 15A, part A—Theory: London, Geophysical Press, p. 283-351.
- Fitch, A.A., 1984, Interpretation of vertical seismic profiles: First Break, v. 2(6), June, p. 19-23.
- Frost, E., Jr., and Fertl, W.H., 1982, Shear wave travel time determination using an unconventional approach: Dallas, Society of Petroleum Engineers, 57th annual meeting [New Orleans] preprint SPE-11032, 11 p.
- Garotta, R., 1985, Observation of shear waves and correlation with P events, chapter 1, in G.P. Dohr, editor, Seismic shear waves, seismic exploration volume 15B, part B—Applications: London, Geophysical Press, p. 1-86. A discussion of P and S waves, their potential, and application in formation evaluation.
- Georgi, D.T., 1985, Geometrical aspects of borehole televiewer images, in 26th annual logging symposium transactions, paper O: Houston, Society of Professional Well Log Analysts, 20 p.

- Gevers, E.C.A., and Watson, S.W., 1978, Quantitative interpretation of seismic data using well logs: Dallas, Society of Petroleum Engineers, 53rd annual meeting [Houston] preprint SPE-7439, 4 p.
- Goetz, J.F., Dupal, L., and Bowler, J., 1979, An investigation in to discrepancies between sonic log and seismic check shot velocities: Australian Petroleum Exploration Association Journal, V. 19(1), P. 131-141.
- Goldberg, D.S., Grant, W.T., Siegfied, R.W., and Castagna, J.P., 1984, Processing and interpretation of sonic log waveforms—A case study: Tulsa, Society of Exploration Geophysicists, Expanded Abstracts with Biographies, 1984 Technical Program, p. 28-31.
- Han, D., Nur, A., and Morgan, F.D., 1986, Velocity measurement and empirical modeling in sandstones, in 27th annual logging symposium transactions, paper OO: Houston, Society of Professional Well Log Analysts, 23 p.
- Hardage, B.A., 1985, Vertical seismic profiling—a measurement that transfers geology to Geophysics, in O.R. Berg and D.G. Woolverton, editors, Seismic stratigraphy II—an integrated approach to hydrocarbon exploration: Tulsa, American Association of Petroleum Geologists, Memoir 39, P. 13-34.
- Hardage, B.A., 1985, The uses and abuses of vertical seismic profiling: World Oil, v. 201(7), December, p. 53-56.
- Hartley, K.B., 1981, Factors affecting sandstone acoustic compressional velocities and an examination of empirical correlations between velocities and porosities, in 22nd annual logging symposium transactions, paper PP: Houston, Society of Professional Well Log Analysts, 20 p.
- Hoard, R.E., 1983, Sonic waveform logging—A new way to obtain subsurface geologic information, in 24th annual logging symposium transactions, paper XX: Houston, Society of Professional Well Log Analysts, 16 p. Later published in 1985, Oil and Gas Journal, v. ;83(26), July 1, p. 70-74.
- Hornby, B.E., and Chang, S.K., 1985, A case study of shale and sandstone alteration using a digital sonic tool in 26th annual well logging symposium transactions, paper H: Houston, Society of Professional Well Log Analysts, 10 p.
- Husten, P., 1979, Analysis of sonic wave trains, in 6th European formation evaluation symposium transactions, paper D: London, Society of Professional Well Log Analysts, London Chapter, 15 p.
- Koerperich, E.A., 1977, Investigation of acoustic boundary waves and interference patterns as techniques for detecting fractures: Dallas, Society of Petroleum Engineers, 52nd annual meeting [Denver] preprint SPE-6820. Later published in 1978, Journal of Petroleum Technology, v. 30(8), p. 1199-1207.

- Koerperich, E.A., 1979, Shear wave velocities determined from long- and short-spaced borehole acoustic devices: Dallas, Society of Petroleum Engineers, 54th annual meeting [Las Vegas] preprint SPE-8237. Later published in 1980, Society of Petroleum Engineers Journal, v. 20(5), p. 317-326.
- Kowalski, J.J., 1975, Formation strength parameters from well logs, in 16th annual logging symposium transactions, paper N: Houston, Society of Professional Well Log Analysts, 19 p. Reprinted in 1978, Acoustic logging reprint volume, paper Z, 19 p.
- Lang, W.H., Jr., 1978, Determination of prior depth of burial using interval transit time, in 19th annual logging symposium transactions, paper B: Houston, Society of Professional Well Log Analysts. Later published in 1980, Oil and Gas Journal, v. 78(4), January 28, p. 222-232.
- Lanyon, G.W., 1986, Interactive computer analysis of borehole televiewer data, in 10th European formation evaluation symposium transactions, paper S: Aberdeen, Society of Professional Well Log Analysts, Aberdeen Chapter, 14 p.
- Larkin, T.J., and Taylor, P.W., 1979, Comparison of downhole and laboratory shear-wave velocities: Canadian Geotechnical Journal, v. 16(1), p. 152-162.
- Leslie, H.D., and Mons, F., 1982, Sonic waveform analysis--Applications, in 23rd annual logging symposium transactions, paper GG: Houston, Society of Professional Well Log Analysts, 25 p.
- Levine, E.N., Cybriwsky, Z.A., and Toksoz, M.N., 1984, Detection of permeable rock fractures and estimation of hydraulic conductivity by 3-D vertical seismic profiling, in D.M. Nielsen and M.Curl, editors, 1984 NWWA/EPA conference on surface and borehole geophysics methods in ground water investigations, proceedings: Worthington, Ohio, National Water Well Association, p. 853-876.
- Lewkowicz, J.f., Resichman, R., and Walsh, J.J., 1983, Results from open hole and cased hole vertical seismic profiles, in 24th annual logging symposium transactions, paper MM: Houston, Society of Professional Well Log Analysts, 13 p.
- Lindseth R.O., 1979, Synthethic sonic logs--A process for stratigraphic interpretation: Geophysics, v. 44(1), p. 3-26.
- Lindseth, R.O., and Ward, J.A., 1983, Delineation of hydrocarbon reservoirs with synthethic sonic logs, in AAPG stratigraphic interpretation of seismic data [course notes, Colorado Springs, Colorado, November 29-December 3]: Tulsa, American Association of Petroleum Geologists, 80 p.
- McCann, D.M., and McCann, C., 1976, The application of borehole acoustic logging techniques in engineering geology, in 4th European formation evaluation symposium transactions, paper N: London, Society of Professional Well Log Analysts, London Chapter, 22 p. Later published in 1977, The Log Analyst, v. 18(3), May-June, p. 30-37.

- Minear, J.W., 1982, Clay models and acoustic velocities: Dallas, Society of Petroleum Engineers, 57th annual meeting [New Orleans] preprint SPE-11031, 11 p.
- Minear, J.W., 1986, Full wave logging--A brief perspective, in 27th annual logging symposium transactions, paper AAA: Houston, Society of Professional Well Log Analysts, 20 p.
- Minear, J.W., and Ajam, S.O., 1984, Full wave acoustic logging--some examples, in 5th offshore South East Asia conference [February 21-24, Singapore], proceedings, SPE-12399: Dallas, Society of Petroleum Engineers, 13 p.
- Nations, J.F., 1974, Lithology and porosity from acoustic shear and compressional wave transit time relationships, in 15th annual logging symposium transactions, paper Q: Houston, Society of Professional Well Log Analysts, 16 p. Later published in 1975, The Log Analyst, v. 16(6), November-December, p. 3-8. Reprinted in 1978, Acoustic logging: Houston, Society of Professional Well Log Analysts, Reprint Volume, paper Y, 16 p.
- Neitzel, E.B., and Kan, T.K., 1984, Reconciliation of measurement differences observed from seismic, well logs, and VSP: Tulsa, Society of Exploration Geophysicists, Expanded Abstracts with Biographies, 1984 Technical Program, p. 25-28.
- Newmark, R.L., Anderson, R.N., Moos, D., Zoback, M.D., 1985, Sonic and ultrasonic logging of hole 504B and its implications for the structure, porosity, and stress regime of the upper 1 km of the oceanic crust, in Initial reports of the the Deep Sea Drilling Project, v. 83: Washington D.C., U.S. Government Printing Office, p. 479-510. Also published in 1985, Structure, porosity and stress regime of the upper oceanic crust--Sonic and ultrasonic logging of DSDP hole 504B: Tectonophysics, v. 118, p. 1-42.
- Omnes, G., 1978, The vertical seismic profile--A bridge between velocity logs and surface seismograms: Dallas, Society of Petroleum Engineers, 53rd annual meeting [Houston] preprint SPE-7436, 12 p.
- Omnes, G., 1979, Logs from P and S vertical seismic profiles: Dallas, Society of Petroleum Engineers, 54th annual meeting [Las Vegas] preprint SPE-8364. Later published in 1980, Journal Petroleum Technology, v. 32(10), p. 1843-1849.
- Oristaglio, M.L., 1985, A guide to current use of vertical seismic profiles: Geophysics, v. 50(12), p. 2473-2479.
- Overton, A., 1975, Borehole seismic methods, in A.V. Dyck, editor, Borehole geophysics applied to metallic mineral prospecting--A review: Geological Survey of Canada Paper 75-31, p. 3-12.
- Paillet, F.L., 1985, Applications of borehole-acoustic methods in rock mechanics, in E. Ashworth, editor, Research and engineering applications in rock masses (proceedings of the 26th U.S. symposium on rock mechanics, South Dakota School of Mines and Technology, Rapid City, 26-28 June): Boston, A.A. Balkema, p. 207-220.

- Pasternack, E.S., and Goodwill, W.P., 1983, Applications of digital borehole televiewer logging, in 24th annual logging symposium transactions, paper X: Houston, Society of Professional Well Log Analysts, 12 p.
- Pennebaker, E.S., 1968, An engineering interpretation of seismic data: Dallas, Society of Petroleum Engineers, 43rd annual meeting [Houston] preprint SPE-2165, 12 p. Also published, in part, 1968, World Oil, v. 166(7), June, p. 73-77. Important uses and interpretations of sonic log data.
- Rafavich, R., Kendall, C.H., St., C., and Todd, T.P., 1984, The relationship between acoustic properties and the petrographic character of carbonate rocks: Geophysics, v. 49(10), p. 1622-1636.
- Raiga-Clemenceau, J., Martin, J.P., and Nicoletis, S., 1986, The concept of acoustic formation factor for more accurate porosity determination from sonic transit time data, in 27th annual logging symposium transactions, paper G: Houston, Society of Professional Well Log Analysts, 14 p.
- Rambow, F.H.K., 1984, The borehole televiewer—Some field examples, in 25th annual logging symposium transactions, paper C: Houston, Society of Professional Well Log Analysts, 21 p.
- Raymer, L.L., Hunt, E.R., and Gardner, J.S., 1980, An improved sonic transit time-to-porosity transform, in 21st annual logging symposium transactions, paper P: Houston, Society of Professional Well Log Analysts, 12 p.
- Smith, R.F., McCoy, R.L., Ausburn, B.E., and Pottorf, B.R., 1978, Determining acoustic velocity of subsurface formations from well log data: Dallas, Society of Petroleum Engineers, 53rd annual meeting [Houston] preprint SPE-7435. Later published in 1979, Journal of Petroleum Technology, v. 31(11), p. 1453-1461.
- Society of Professional Well Log Analysts, 1978, Acoustic logging reprint volume: Houston, Society of Professional Well Log Analysts, various pagination. Contains 26 significant papers on tool development, operation and application.
- Spencer, T.W., and Wu, R.C., 1985, Polarization method for the determination of Poisson's ratio in boreholes: Geophysics, v. 50(12), p. 2808-2816.
- Stephen, R.A., Cardo-Casa, F., and Cheng, C.H., 1985, Finite-difference synthetic acoustic logs: Geophysics, v. 50(10), p. 1588-1609.
- Stewart, R.R., Huddleston, P.H., and Kan, T.K., 1984, Seismic versus sonic velocities—a vertical seismic profiling study, in A.H. Balch and M.W. Lee, editors, Vertical seismic profiling—technique, applications, and case histories: Boston, International Human Resource development Corporation (IHRDC), p. 385-423.
- Stone, D.G., and Evans, H.B., 1980, Extrapolating logs run in exploration or development wells using seismic data, in 21st annual logging symposium transactions, paper KK: Houston, Society of Professional Well Log Analysts, 35 p.

- Tatham, R.H., 1985, Shear waves and lithology, chapter 2, in G.P. Dohr, editor, Seismic shear waves, seismic exploration volume 15B, part B—Applications: London, Geophysical Press, p. 87-133.
- Taylor, T.J., 1983, Interpretation and application of borehole televiewer surveys, in 24th annual logging symposium transactions, paper QQ: Houston, Society of Professional Well Log Analysts, 19 p.
- Thomas, D.H., 1977, Seismic applications of sonic logs, in 5th European logging symposium transactions, paper 7: Paris, Society of Professional Well Log Analysts, Paris Chapter (SAID), 23 p. Later published in 1978, The Log Analyst, v. 19(1), January-February, p. 23-32.
- Tixier, M.P., Loveless, G.W., and Anderson, R.A., 1973, Estimation of formation strength from the Mechanical Properties Log: Dallas, Society of Petroleum Engineers, 48th annual meeting [Las Vegas] preprint SPE-4532, 14 p. Later published in 1975, Journal of Petroleum Technology, v. 27(3), p. 283-293. Reprinted in 1978, Acoustic Logging: Houston, Society of Professional Well Log Analysts, Reprint Volume, paper X, 11p.
- Tosaya, C., and Nur, A., 1982, Effects of diagenesis and clays on compressional velocities in rocks: Geophysical Research Letters, v. 9(1), p.
- West, G., 1981, An ultrasonic velocity borehole logger for use in rock: Ultrasonics, v. 19(2), p. 67-71.
- White, J.E., 1983, Waves along cylindrical boreholes, chapter 5, in Underground sound, application of seismic waves: Amsterdam, Elsevier, Methods in geochemistry and geophysics 18, p. 139-245.
- Willis, M.E., and Toksoz, M.N., 1983, Automatic P and S velocity determination from full waveform digital acoustic logs: Geophysics, v. 48(12), p. 1631-1644.
- Zemanek, J., Caldwell, R.L., Glenn, E.E., Jr., Holcomb, S.W., Norton, L.J., and Straus, A.J.D., 1968, The Borehole Televiewer—A new logging concept for fracture location and other types of borehole inspection: Dallas, Society of Petroleum Engineers, 43rd annual meeting [Houston] preprint SPE-2402. Later published in 1969, Journal of Petroleum Technology, v. 21(6), p. 762-774.
- Zemanek, J., Williams, D.M., Caldwell, R.L., Dennis, C.L., and Angona, F.A., 1985, New developments in acoustic logging, in 14th annual convention proceedings: Jakarta, Indonesian Petroleum Association, p. 565-586.
- Zhixing, H., and Liandi, S., 1986, Mechanism of transit time increase and its interpretation after water injection into reservoir M in Lao Jun Miao oil field, in 1986 SPE international meeting on petroleum engineering [Beijing, March 17-20], proceedings, SPE-14846: Dallas, Society of Petroleum Engineers, p. 427-447.

X. NUCLEAR LOGGING
(See also 19. Mineral exploration)

- Ajam, S.O., and Rahal, V.E., 1985, Applications of thermal multigate decay pulsed neutron logs in unusual downhole logging environments: Australian Petroleum Exploration Association [APEA] Journal, v. 25, part 1, p. 265-274.
- Brown, J.A., Jackson, J.A., and Koelle, A.R., 1985, Western gas sands project Los Alamos NMR well logging tool development: Los Alamos, Los Alamos National Laboratory, Report LA-10374-PR, March, 77 p.
- Buchanan, J.C., Clearman, D.K., Heidbrink, L.J., and Smith, H.D., Jr., 1984, Applications of TMD pulsed neutron logs in unusual downhole environments, in 25th annual logging symposium transactions, paper KKK: Houston, Society of Professional Well Log Analysts, 17 p.
- Caldwell, R.L., Desai, K.P., and Mills, W.R., Jr., 1976, Geophysical well-logging using nuclear techniques, in Nuclear techniques in geochemistry and geophysics: Vienna, Austria, International Atomic Energy Agency, p. 3-19.
- Caldwell, R.L., Mills, W.R., Jr., Orr, W.L., and Allen, L.S., 1977, Nuclear techniques in oil and gas exploration and production, in Symposium on nuclear technology in exploration, extraction and processing mineral resources, 1977, proceedings: Vienna, International Atomic Energy Agency, p. 3-41.
- Chace, D.M., Schmidt, M.G., Frost, E., and Fertl, W.H., 1985, Advance in cased hole logging - the multiparameter spectroscopy instrument continuous carbon/oxygen log, in 3rd international UNITAR/UNDP heavy crude and tar sands conference preprints [Long Beach, California, July 22-31, 1985]: New York, United Nations Institute for Training and Research, Information Center for Heavy Crude and Tars, v. 3, p. 1404-1419.
- Clavier, C., Hoyle, W., Meunier, D., 1969, Quantitative interpretation of thermal neutron decay time logs--part I, fundamentals and techniques: Dallas, Society of Petroleum Engineers, 44th annual meeting [Denver] preprint SPE-2658-II. Later published in 1971, Journal of Petroleum Technology, v. 23(6), p. 743-763.
- Conaway, J.G., 1979, Problems in gamma-ray logging--The effect of dipping beds on the accuracy of ore grade determinations: Geological Survey of Canada Paper 79-1A, p. 41-44.
- Czubek, J.A., 1976, Comparison of nuclear well logging data with the results of core analysis, in Nuclear techniques in geochemistry and geophysics: Vienna, Austria, International Atomic Energy Agency, p. 93-106.
- Czubek, J.A., 1983, Advances in gamma-gamma logging, in C.G. Clayton, editor, Nuclear geophysics--Selected papers on applications of nuclear techniques in mineral exploration, mining and process control: Oxford, England, Pergamon Press, p. 153-172.

- Czubek, J.A., 1986, Quantitative interpretation of gamma-ray logs in presence of random noise, in 27th annual logging symposium transactions, paper KKK: Houston, Society of Professional Well Log Analysts, 25 p.
- Czubek, J.A., Loskiewicz, J., Gyurcsak, J., Lenda, A., Umiastowski, K., and Zorski, T., 1977, Geostatistical method of interpretation of nuclear well logs, in Nuclear techniques and mineral resources 1977: Vienna, International Atomic Energy Agency, p. 313-332.
- Dewan, J.T., 1986, Open-hole nuclear logging—State of the art, in 27th annual logging symposium transactions, paper MM: Houston, Society of Professional Well Log Analysts, 20 p.
- Dresser Atlas, 1981, Spectralog: Houston, Dresser Industries, publication no. 3334, variously paginated. Reprint volume containing papers on tool applications.
- Dresser Atlas, 1981, Carbon/Oxygen log: Houston, Dresser Industries, publication no. 9417, variously paginated. Reprints of papers on tool operation, interpretation and application.
- Dresser Atlas, 1983, Neutron Lifetime Log: Houston, Dresser Industries, publication no. 3319, 100 p. Interpretation and application manual.
- Ellis, D.V., 1985, Neutron porosity devices—What do they measure?, in 1985 technical program abstracts and biographies: Tulsa, Society of Exploration Geophysicists, p. 285-286.
- Ellis, D.V., 1986, Neutron porosity devices—What do they measure?: First Break, v. 4(3), p. 11-17.
- Grau, J.A., Roscoe, B.A., and Tabanou, J.R., 1985, A borehole correction model for capture gamma-ray spectroscopy logging tools: Dallas, Society of Petroleum Engineers, 60th annual meeting [Las Vegas], preprint SPE-14462, 8 p.
- Hartley, K.B., 1979, Evaluation of wireline down-log information and effects of increased log speeds on data quality: Dallas, Society of Petroleum Engineers, 54th annual meeting [Las Vegas] preprint SPE-8363. Later published in 1980, Journal of Petroleum Technology, v. 32(7), p. 1151-1160. Also published in 1981, Oil and Gas Journal, v. 79(8 and 9), February 23, p. 66-76, and March 2, p. 99-100.
- Hilchie, D.W., 1977, Nuclear well logging for petroleum, in J.G. Morse, editor, Nuclear methods in mineral exploration and production: New York, Elsevier, Developments in Economic Geology 7, p. 201-213.
- Horner, S.C., and Sanyal, S.K., 1984, The prediction of saturation using the carbon/oxygen log: U.S. Department of Energy, Report DOE/SF/11564--9, 36 p.

- Jameson, J.B., McGhee, B.F., Blackburn, J.S., and Leach, B.C., 1976, Dual-spacing TDT applications in marginal conditions: Dallas, Society of Petroleum Engineers, Rocky Mountain meeting [Casper] preprint SPE-5904. Later published in 1977, Journal of Petroleum Technology, v. 29(9), p. 1067-1077.
- Jones, R.L., 1982, Bootstrapping your way into TDT analysis: The Log Analyst, v. 23(4), July-August, p. 3-13.
- Karus, E.V., and Shimelevich, Y.S., 1983, Nuclear geophysics in prospecting, exploration and development of oil and gas fields, in C.G. Clayton, editor, Nuclear geophysics—Selected papers on applications of nuclear techniques in mineral exploration, mining and process control: Oxford, England, Pergamon Press, p. 95-117.
- Killeen, P.G., 1982, Gamma-ray logging and interpretation, in A.A. Fitch, editor, Developments in geophysical exploration methods 3: London, Applied Science Publishers, p. 95-150.
- McGuire, J.A., Rogers, L.T., and Watson, J.T., 1985, Improved lithology and hydrocarbon saturation determination using the gamma spectrometry log: Dallas, Society of Petroleum Engineers, 60th annual meeting [Las Vegas], preprint SPE-14465, 9 p.
- Moore, D.C., 1980, Interpretation of total gamma logs in thin and dipping beds: Geophysics, v. 45(1)2, p. 1847-1856.
- O'Brian, W.J., Sanyal, S.K., and Brown, S.L., 1983, Comprehensive analysis of the carbon/oxygen log: U.S. Department of Energy, Report DOE/ET/12056-28, January 1983, 69 p.
- Roscoe, B.A., and Grau, J.A., 1985, Response of the carbon/oxygen measurement for an inelastic gamma ray spectroscopy tool: Dallas, Society of Petroleum Engineers, 60th annual meeting [Las Vegas], preprint SPE-14460, 7 p.
- Russell, M.J., and Ogehenejobo, M.J.O., 1984, Experience with a new petrophysical evaluation tool—the gamma ray spectroscopy tool (GST): 8th annual international SPE Nigeria sectional conference, paper SPE-LS-126, 14 p.
- Schlumberger, 1982, Essentials of natural gamma ray spectrometry interpretation: Paris, Schlumberger Technical Services, document no. M-081025, 69 p.
- Serpas, C.J., Wichmann, P.A., Fertl, W.H., DeVries, M.R., and Randall, R.R., 1977, The dual detector Neutron Lifetime Log—theory and practical applications, in 18th annual logging symposium transactions, paper CC: Houston, Society of Professional Well Log Analysts, 37 p.
- Setser, G., and Williams, M.R., 1985, Measurement of remaining oil saturation in northern Michigan using nuclear magnetism log data and pressure core: Dallas, Society of Petroleum Engineers, 60th annual meeting [Las Vegas], preprint SPE-14276, 10 p.

Society of Professional Well Log Analysts, 1978, Gamma ray, neutron and density logging reprint volume: Houston, Society of Professional Well Log Analysts, variously paginated. Contains 32 significant papers in these areas.

Society of Professional Well Log Analysts, 1979, Pulsed neutron logging reprint volume: Houston, Society of Professional Well Log Analysts, 448 p. Contains 32 significant papers on tool operation and application.

Swilius, T.M., 1984, Porosity calibration of neutron logs, SACROC unit: Dallas, Society of Petroleum Engineers, 59th annual meeting [Houston] preprint SPE-13289. Later published in 1986, Journal of Petroleum Technology, v. 38(4), p. 468-476.

Umiastowski, K., and Buniak, M., 1977, Influence of the rock heterogeneity on the results of gamma-gamma logging, in Nuclear techniques and mineral resources 1977: Vienna, International Atomic Energy Agency, p. 273-280.

Veach, C.L., and Wheatley, J.C., 1977, A look at the development of neutron logging, in 24th annual southwestern petroleum shortcourse [Lubbock, Texas, April 21-22], proceedings: Lubbock, Texas, Southwestern Petroleum Short Course Association, p. 105-112.

Westaway, P., Whittman, M., and Rochette, P., 1979, Applications of nuclear techniques to reservoir monitoring, in 1979 Middle East oil technical conference [Manama, Bahrain, March 25-29], proceedings, SPE-7776: Dallas, Society of Petroleum Engineers. Later published in 1981, Journal of Petroleum Technology, v. 33(1), p. 46-54.

Wyatt, D.F., Smith, H.D., Jr., and Oliver, D.W., 1986, Reservoir monitoring with the thermal multigate decay log, in 1986 SPE international meeting on petroleum engineering, proceedings, SPE-14137: Dallas, Society of Petroleum Engineers, p.

XI. SHALY SANDS

- Aaboe, E., 1984, Influence of shaliness upon conductivity in shaly sandstones in the northern North Sea area, in 25th annual logging symposium transactions, paper LL: Houston, Society of Professional Well Log Analysts, 17 p.
- Almon, W.R., 1979, A geologic appreciation of shaly sands, in 20th annual logging symposium transactions, paper WW: Houston, Society of Professional Well Logging Analysts, 14 p. Reprinted in 1982, Shaly sand reprint volume: Houston, Society of Professional Well Log Analysts, p. I5-I18.
- Atwater, J.E., 1986, Correlation of cation exchange capacity with core spectral gamma ray logs, in 27th annual logging symposium transactions, paper QQ: Houston, Society of Professional Well Log Analysts, 16 p.
- Bussian, A.E., 1983, A comparison of shaly sand models, in 24th annual logging symposium transactions, paper E: Houston, Society of Professional Well Log Analysts, 16 p.
- Clavier, C., Coates, G., Dumanoir, J., 1977, Theoretical and experimental bases for the dual-water model for interpretation of shaly sands: Dallas, Society of Petroleum Engineers, 52nd annual meeting [Denver] preprint SPE-6859, 16 p. Reprinted in 1982, Shaly sand reprint volume: Houston, Society of Professional Well Log Analysts, p. V5-V20. Later published in 1984, Society of Petroleum Engineers Journal, v. 24(2), p. 153-169.
- Dennis, C.B., and Lawrence, T.D., 1984, Log evaluation of clastic shaly formations using corrected R_{wa} -ratio techniques, in 25th annual logging symposium transactions, paper R: Houston, Society of Professional Well Log Analysts, 16 p.
- Donovan, H.L., 1982, Determining water saturation in anisotropic shaly formations: Canadian Well Logging Society Journal, v. 11(1), p. 19-28.
- Fertl, W.H., 1972, Status of shaly sand evaluation, in 4th formation evaluation conference transactions, paper I: Calgary, Canadian Well Logging Society, 26 p.
- Fertl, W.H., 1980, Well log analysis concepts in clastic and argillaceous U.S. Gulf Coast sediments: Transactions of the Gulf Coast Association of Geological Societies v. 30, p. 81-89.
- Fertl, W.H., 1986, Log-derived evaluation of shaly clastic reservoirs, in 1986 SPE international meeting on petroleum engineering [March 17-20, Beijing, China], proceedings, SPE-14061: Dallas, Society of Petroleum Engineers, p. 173-192.

- Fertl, W.H., and Hammack, G.W., 1971, A comparative look a water saturation computations in shaly pay sands, in 12th annual logging symposium transactions, paper R: Houston, Society of Professional Well Log Analysts, 18 p. Reprinted in 1972, The Log Analyst, v. 13(2), March-April, p. 12-20.
- Glanville, C.R., 1970, Log interpretation of thinly-bedded oil-productive sands with unusually low resistivities, in 11th annual logging symposium transactions, paper M: Houston, Society of Professional Well Log Analysts.
- Glanville, C.R., 1984, A method for direct log calculation of excess conductivity applied to shaly sand log interpretation, in 25th annual logging symposium transactions, paper X: Houston, Society of Professional Well Log Analysts, 17 p.
- Heckel, B.H., 1985, Enhanced hydrocarbon recognition - a new approach to well evaluation for sand-shale sequences, in 10th formation evaluation symposium transactions, paper L: Calgary, Canadian Well Logging Society, 17 p.
- Henry, K.C., 1979, Gas detection in the extremely shaly Bowdoin Formation of northern Montana, in 20th annual logging symposium transactions, paper T: Houston, Society of Professional Well Log Analysts.
- Heslop, A., 1972, Gamma-ray log response of shaly sandstone: Canadian Well Logging Society Journal, v. 5(1), p. 29-38. Reprinted in 1982, Shaly sand reprint volume: Houston, Society of Professional Well Log Analysts, p. II59-II69.
- Holbrook, P.W., 1985, A new method for estimating hydrocarbon saturation in shaley sands for exploration applications, in 26th annual logging symposium transactions, paper GGG: Houston, Society of Professional Well Log Analysts, 27 p.
- Johnson, W., 1978, Effect of shale on log response: Canadian Well Logging Society Journal, v. 10(1), p. 29-57.
- Johnson, W.L., and Linke, W.A., 1977, Some practical applications to improve formation evaluation of sandstones in the Mackenzie Delta, in 6th formation evaluation symposium transactions, paper R: Calgary, Canadian Well Logging Society, 19 p. Reprinted in 1978, in 19th logging symposium transactions, paper C: Houston, Society of Professional Well Log Analysts, 19 p. Reprinted in 1982, Shaly sand reprint volume: Houston, Society of Professional Well Log Analysts, p. V47-79.
- Juhasz, I., 1986, Assessment of the distribution of shale, porosity and hydrocarbon saturation in shaly sands, in 10th European formation evaluation symposium transactions, paper AA: Aberdeen, Society of Professional Well Log Analysts, Aberdeen Chapter, 15 p.

- Keelan, D.K., and McGinley, D.C., 1979, Application of cation exchange capacity in a study of the Shannon Sand of Wyoming, in 20th annual logging symposium transactions, paper W: Houston, Society of Professional Well Log Analysts.
- Kern, J.W., Hoyer, W.A., and Spann, M.M., 1976, Low porosity gas sand analysis using cation exchange and dielectric constant data, in 17th annual logging symposium transactions, paper PP: Houston, Society of Professional Well Log Analysts, 17 p. Reprinted in 1982, Shaly sand reprint volume: Houston, Society of Professional Well Log Analysts, p. 169-185.
- Koerperich, E.A., 1974, Applications of Waxman-Smiths and Archie equations for determination of oil saturation in shaly sand reservoirs: Dallas, Society of Petroleum Engineers, 49th annual meeting [Houston] preprint SPE-5038. Later published 1975, Journal of Petroleum Technology, v. 27
- Marett, G., Chevalier, P., Souhaite, P., and Suau, J., 1976, Shaly sand evaluation using gamma ray spectrometry applied to the North Sea Jurassic, in 17th annual logging symposium transactions, paper DD: Houston, Society of Professional Well Log Analysts, 20 p. Reprinted in 1982, Shaly sand reprint volume: Houston, Society of Professional Well Log Analysts, p. IV43-IV63.
- Murphy, R.P., and Owens, W.W., 1971, A new approach for low resistivity sand log analysis: Dallas, Society of Petroleum Engineers, 46th annual meeting [New Orleans] preprint SPE-3569. Later published in 1972, Journal of Petroleum Technology, v. 24(11), p. 1302-1306.
- Neasham, J.W., 1977, The morphology of dispersed clay in sandstone reservoir and its effect on sandstone shaliness, pore space and fluid flow properties: Dallas, Society of Petroleum Engineers, 52nd annual meeting [Denver] preprint SPE-6858, 8 p. Reprinted in 1982, Shaly sand reprint volume: Houston, Society of Professional Well Log Analysts, p. I87-I94.
- Patchett, J.G., 1975, An investigation of shale conductivity, in 16th annual symposium transactions, paper U: Houston, Society of Professional Well Log Analysts, 41 p. Reprinted in 1982, Shaly sand reprint volume: Houston, Society of Professional Well Log Analysts, p. I95-I135.
- Patchett, J.G., 1986, The determination of the properties of clays in shales from logs with an example of one interpretation technique, in 10th European formation evaluation symposium transactions, paper P: Aberdeen, Society of Professional Well Log Analysts, Aberdeen Chapter, 23 p.
- Patchett, J.G., and Coalson, E.B., 1982, The determination of porosity in sandstone and shaly sandstone, part 2--Effects of complex mineralogy and hydrocarbons, in 23rd annual logging symposium transactions, paper T: Houston, Society of Professional Well Log Analysts, 50 p.
- Petricola, M., Jumardi, and Saito, K., 1985, Formation evaluation in deltaic sand deposits--The effect of lignite debris on logs--Integration of sand-body analysis, in 14th annual convention proceedings: Jakarta, Indonesian Petroleum Association, p. 517-541.

- Peveraro, R.C.A., and Russell, K.J., 1984, Interpretation of wireline log and core data from a Mid-Jurassic sand/shale sequence: *Clay Minerals*, v. 19, p. 483-505.
- Phillips, I.C., and Roberts, W.R., 1986, Use of fine resolution logging tools to evaluate thinly laminated North Sea reservoirs, in 10th European formation evaluation symposium transactions, paper BB: Aberdeen, Society of Professional Well Log Analysts, Aberdeen Chapter, 10 p.
- Raiga-Clemenceau, J., Fraisse, C., and Grosjean, Y., 1984, The dual-porosity model, a newly developed interpretation method for shaly sands, in 25th annual logging symposium transactions, paper F: Houston, Society of Professional Well Log Analysts, 16 p.
- Ransom, R.C., 1977, Methods based on density and neutron well-logging responses to distinguish characteristics of shaly sandstone reservoir rock: *The Log Analyst*, v. 18(3), p. 47-62. Reprinted in 1982, Shaly sand reprint volume: Houston, Society of Professional Well Log Analysts, p. II105-II120.
- Ruhovets, N., and Fertl, W.H., 1981, Digital shaly sand analysis based on Waxman-Smiths model and log-derived clay typing, in 7th European formation evaluation symposium transactions, paper 25: Paris, Society of Professional Well Log Analysts, Paris Chapter (SAID), 26 p. Reprinted in 1982, *The Log Analyst*, v. 23(3), May-June, p. 7-23. Reprinted in 1982, Shaly sand reprint volume: Houston, Society of Professional Well Log Analysts, p. VI107-VI134.
- Schultz, A.L., 1979, Electric log evidence for hydrocarbon production and trapping in sandstones possessing diagenic clay minerals: *Houston Geological Society Bulletin*, v. 21(2), p. 4-8.
- Society of Professional Well Log Analysts, 1982, Shaly sand reprint volume: Houston, Society of Professional Well Log Analysts, variously paginated. Contains 38 significant papers + extensive bibliography. Excellent source for studying the shaly sand problem.
- Swanson, B.F., 1985, Microporosity in reservoir rocks—Its measurement and influence on electrical resistivity, in 26th annual logging symposium transactions, paper F: Houston, Society of Professional Well Log Analysts, 17 p. Later published in 1985, *The Log Analyst*, v.26(6), November-December, p. 42-52.
- Thomas, E.C., and Steiber, S.J., 1975, The distribution of shale in sandstones and its effect upon porosity, in 16th annual logging symposium transaction, paper T: Houston, Society of Professional Well Log Analysts, 15 p.

- Tixier, M.P., Morris, R.L., and Connell, J.G., 1968, Log evaluation of low resistivity pay sands in the Gulf Coast, in 9th annual logging symposium transactions, paper E (abstract only): Houston, Society of Professional Well Log Analysts. Later published in 1968, *The Log Analyst*, v. 9(6), p. 3-21. Reprinted in 1971, *Well logging*: Dallas, Society of Petroleum Engineers, Reprint Series 1, p. 342-367. Reprinted in 1982, *Shaly sand reprint volume*: Houston, Society of Professional Well Log Analysts, p. IV125-IV142.
- Vajner, E.A., Kidwell, C.M., and Haley, R.A., 1977, Surprising productivity from low-resistivity sands, in 18th annual logging symposium transactions, paper EE: Houston, Society of Professional Well Log Analysts, 11 p. Reprinted in 1978, *Low resistivity masks high potential of Gulf Coast sands*, *World Oil*, v. 186(2), February 1, p. 49-54.
- Vinegar, H.J., and Waxman, M.H., 1984, Induced polarization of shaly sands: *Geophysics*, v. 49(8), p. 1267-1287. An investigation of this method for direct in-situ log determination of CEC for use in shaly sand evaluation.
- Vinegar, H.J., Waxman, M.H., Best, M.H., and Reddy, K., 1985, Induced polarization logging—Tool development, borehole departure curves and field test results, in 26th annual logging symposium transactions, paper AAA: Houston, Society of Professional Well Log Analysts, 62 p.
- Vinegar, H.J., Waxman, M.H., Best, M.H., and Reddy, I.K., 1986, Induced polarization logging—Borehole modelling, tool response and field tests: *The Log Analyst*, v. 27(2), March-April, p. 25-61.
- Visser, R., and van Baaren, J.P., 1985, Optimisation [sic] of the shale correction using well logs, in 26th annual logging symposium transactions, paper C: Houston, Society of Professional Well Log Analysts, 14 p.
- Waxman, M.H., and Smits, L.J.M., 1967, Electrical conductivities in oil-bearing shaly sands: Dallas, Society of Petroleum Engineers, 42nd annual meeting [Houston] preprint SPE-1863-A, 16 p. Later published in 1968, *Society of Petroleum Engineers Journal*, v. 8(2), p. 107-122. Reprinted in 1971, *Well Logging*: Dallas, Society of Petroleum Engineers, Reprint Series 1, p. 101-116. Reprinted in 1982, *Shaly sand reprint volume*: Houston, Society of Professional Well Log Analysts, p. V145-V160.
- Waxman, M.H., and Thomas, E.C., 1972, Electrical conductivities in shaly sands—I. The relation between hydrocarbon saturation and resistivity index; II. The temperature coefficient of electrical conductivity: Dallas, Society of Petroleum Engineers, 47th annual meeting [San Antonio] preprint SPE-4094. Later published in 1974, *Journal of Petroleum Technology*, v.26(2), p. 213-225. Reprinted in 1982, *Shaly sand reprint volume*: Houston, Society of Professional Well Log Analysts, p. V161-V173.
- Wilkinson, J., 1978, Effect of shale distribution on porosity and water saturation: *Canadian Well Logging Society Journal*, v. 10(1), p. 61-77.

Wilson, M.D., and Pittman, E.D., 1977, Authigenic clays in sandstones--recognition and influence on reservoir properties and paleoenvironmental analysis: *Journal of Sedimentary Petrology*, v. 47(1), p. 3-31. Reprinted in 1982, Shaly sand reprint volume: Houston, Society of Professional Well Log Analysts, p. I137-I165.

Worthington, P.F., 1985, The evolution of shaly-sand concepts in reservoir evaluation: *The Log Analyst*, v. 26(1), p. 23-40. A concise discussion of the development of models for evaluation of shaly sands. See references.

Worthington, P.F., and Collar, F.A., 1982, The relevance of induced polarization to quantitative formation evaluation, in 23rd annual logging symposium transactions, paper U: Houston, Society of Professional Well Log Analysts, 42 p.

XII. BOREHOLE GRAVIMETRY

- Beyer, L.A., 1983, Borehole gravity surveys—Theory, mechanics and nature of measurements: U.S. Geological Survey, Open-File Report 83-0079, 91 p.
- Beyer, L.A., Robbins, S.L., and Clutson, F.G., 1985, Basic data and preliminary density and porosity profiles for twelve borehole gravity surveys made in the Los Angeles, San Joaquin, Santa Maria, and Ventura Basin, California: U.S. Geological Survey, Open-File Report 85-42, 66p.
- Black, A.J., and Herring, A.T., 1983, Offset of borehole gravity densities due to geologic structures: Calgary, Canadian Society of Exploration Geophysicists, annual meeting preprint, 33 p. Available from Edcon, Inc., Denver, Colorado.
- Bradley, J.W., 1975, Application of the borehole gravimeter to the evaluation and exploration of oil and gas reserves: Tulsa, Society of Exploration Geophysicists, 45th annual meeting [Denver] preprint, 15 p.
- Brown, A.R., and Lautzenhiser, T.V., 1982, The effect of dipping beds on a borehole gravimeter survey: Geophysics, v. 47(1), p. 25-30.
- Caton, P.W., 1981, Improved methods for reducing borehole-gravity data—Applications and analyses of reduced gravity plots, in 22nd annual logging symposium transactions, paper RR: Houston, Society of Professional Well Log Analysts, 41 p.
- Edcon, Inc., no date, Borehole gravity density logging: Denver, Edcon, Inc., 30 p.
- Gournay, L.S., and Lyle, W.D., 1984, Determination of hydrocarbon saturation and porosity using a combination borehole gravimeter and deep investigating electric log, in 25th annual logging symposium transactions, paper WW: Houston, Society of Professional Well Log Analysts, 14 p.
- Gournay, L.S., and Maute, R.E., 1982, Detection of bypassed gas using borehole gravimeter and pulsed neutron capture logs: The Log Analyst, v. 23(3), May-June, p. 27-32.
- Hearst, J.R., 1977, Estimation of dip and lateral extent of beds with borehole gravimetry: Geophysics, v. 42, p. 990-994.
- Hearst, J.R., 1977, On the range of investigation of a borehole gravimeter, in 18th annual logging symposium transactions, paper E: Houston, Society of Professional Well Log Analysts, 11 p.
- Hearst, J.R., and Carlson, R.C., 1982, Measurement and analysis of gravity in boreholes, in A.A. Fitch, editor, Developments in geophysical exploration methods 3: London, Applied Science Publishers, p. 269-303.
- Hearst, J.R., and McKague, H.L., 1976, Structure elucidation with borehole gravimetry: Geophysics, v. 41(3), p. 491-505.

- Jageler, A.H., 1975, Improved hydrocarbon reservoir evaluation through use of borehole gravimeter data: Dallas, Society of Petroleum Engineers, 50th annual meeting [Dallas] preprint SPE-5511, 20 p. Later published in 1976, Journal of Petroleum Technology, v. 28(6), p. 709-718.
- Jones, B.R., 1972, The use of downhole gravity data in formation evaluation, in 13th annual logging symposium transactions, paper M: Houston, Society of Professional Well Log Analysts, 13 p. Later published in abridged form in 1972, as Downhole gravity tool spots distant porosity: World Oil, v. 175(2), August 1, p. 56-59.
- LaFehr, T.R., 1983, Rock density from borehole gravity surveys: Geophysics, v. 48(3), p. 341-356.
- Maute, R.E., and Gournay, L.S., 1985, Determination of residual oil saturation with the borehole gravity meter, in 4th Middle East oil technology conference, proceedings, SPE-13703: Dallas, Society of Petroleum Engineers, p. 185-190.
- McCulloh, T.H., Kandle, J.R., and Schoellhamer, 1968, Application of gravity measurements in wells to problems of reservoir evaluation, in 9th annual logging symposium transactions, paper O: Houston, Society of Professional Well Log Analysts, 28 p.
- Overton, A., 1975, Borehole gravimetry, in A.V. Dyck, editor, Borehole geophysics applied to metallic mineral prospecting--A review: Geological Survey of Canada, Paper 75-31, p. 31-34.
- Rasmussen, N.F., 1975, The successful use of the borehole gravity meter in northern Michigan: The Log Analyst, v. 16(5), September-October, p. 3-10.
- Rasmussen, N.F., 1975, Borehole gravimeter finds bypassed oil, gas: Oil and Gas Journal, v. 73(39), September 29, p. 100-104.
- Robbins, S.L., 1980, Bibliography with abridged abstracts of subsurface gravimetry (especially borehole) and corresponding in-situ rock density determinations: U.S. Geological Survey, Open-File Report, 80-710, 47 p.
- Schmoker, J.W., 1977, Density variations in a quartz diorite determined from borehole gravity measurements, San Benito County, California: The Log Analyst, v. 18(2), March-April, p. 32-38.
- Schmoker, J.W., 1978, Accuracy of borehole gravity data: Geophysics, v. 43(3), p. 538-542.
- Snyder, D.D., 1976, The borehole Bouguer gravity anomaly--Application to interpreting borehole gravity surveys, in 17th annual logging symposium transactions, paper AA: Houston, Society of Professional Well Log Analysts.

XIII. PERMEABILITY DETERMINATION FROM LOGS

- Allan, J.R., 1979, Prediction of permeability from logs by multiple regression, in 6th European formation evaluation symposium transactions, paper M: London, Society of Professional Well Log Analysts, London Chapter, 13 p.
- Barlai, Z., 1976, Determination of permeability and specific surface area of the pore channels from well logs in fine grained sandstones, in 17th annual logging symposium transactions, paper C: Houston, Society of Professional Well Log Analysts.
- Brown, A.A., 1977, Permeability from well logs Shaybah Field, Saudi Arabia, in 18th annual logging symposium transactions, paper Q: Houston, Society of Professional Well Log Analysts, 22 p.
- Brown, R.J.S., and Neuman, C.H., 1980, Processing and display of nuclear magnetism logging signals—Application to residual oil determination, in 21st annual logging symposium transactions, paper K: Houston, Society of Professional Well Log Analysts, 25 p.
- Brown, R.J.S., and Neuman, C.H., 1982, The nuclear magnetism log—A guide for field use: The Log Analyst, v. 23(5), September-October, p. 4-9.
- Burck, L.J.S., and Forsyth, D., 1984, Permeability prediction in shaly sands, in 9th international formation evaluation symposium transactions, paper 19: Paris, Society of Professional Well Log Analysts, Paris Chapter (SAID), 18 p.
- Burns, D.R., and Cheng, C.H., 1986, Determination of in-situ permeability from tube wave velocity and attenuation, in 27th annual logging symposium transactions, paper KK: Houston, Society of Professional Well Log Analysts, 15 p.
- Coates, G.R., and Dumanoir, J.L., 1973, A new approach to improved log-derived permeability, in 14th annual logging symposium transactions, paper R: Houston, Society of Professional Well Log Analysts, Later published in 1974, The Log Analyst, v. 15(1), January-February, p. 17-31.
- Ershaghi, I., Dougherty, E.L., Herzberg, D., and Uco, H., 1981, Permeability determination in liquid dominated geothermal reservoirs using the Dual Induction Laterolog, in I. Ershaghi, E.E. Dougherty, L.L. Handy, editors, Formation evaluation in liquid dominated geothermal reservoirs: U.S. Department of Energy, Report DOE/ET/28384-T1, p. 41-59.
- Herrick, R.C., Couturie, S.H., and Best, D.L., 1979, An improved nuclear magnetism logging system and its application to formation evaluation: Dallas, Society of Petroleum Engineers, 54th annual meeting [Las Vegas] preprint SPE-8361, 7 p.
- Honarpour, M., DeGroat, C., and Manj Nath, A., 1986, How temperature affects relative permeability measurement: World Oil, v. 202(5), May, p. 116-126.

- Jackson, J.A., 1984, Nuclear magnetic resonance logging: The Log Analyst, v. 25(5), September-October, p. 16.
- Kapadia, S.P., and Menzie, D.E., 1985, Determination of permeability variation factor V from log analysis: Dallas, Society of Petroleum Engineers, 60th annual meeting [Las Vegas], preprint SPE-14402, 10 p.
- Kwader, T., 1984, Estimating aquifer permeability from formation resistivity factors, in D.M. Nielsen and M. Curl, editors, 1984 NWWA/EPA conference on surface and borehole geophysics methods in ground water investigations, proceedings: Worthington, Ohio, National Water Well Association, p. p.713-721.
- Loren, J.D., 1972, Permeability estimates from NML measurements: Dallas, Society of Petroleum Engineers, 47th annual meeting reprint SPE-3334. Later published in 1972, Journal of Petroleum Technology, v. 24(8), p. 923-928.
- Mathieu, F., and Toksoz, M.N., 1984, Application of full waveform acoustic logging data to the estimation of reservoir permeability: Tulsa, Society of Exploration Geophysicists, Expanded Abstracts with Biographies, 1984 Technical Program, p. 9-12.
- Neuman, C.H., and Brown, R.J.S., 1981, Applications of nuclear magnetism logging to formation evaluation: Dallas, Society of Petroleum Engineers, 56th annual meeting [San Antonio] preprint SPE-10108, 10 p. Later published in 1982, Journal of Petroleum Technology, v. 34(12), p. 2853-2862.
- Ogbe, D., and Bassiouni, Z., 1978, Estimation of aquifer permeabilities from electric well logs: The Log Analyst, v. 19(5), September-October, p. 21-27.
- Pape, H., Riepe, L and Schopper, J.R., 1984, Calculating permeability from electrical logging data, in 9th international formation evaluation symposium transactions, paper 22: Paris, Society of Professional Well Log Analysts, Paris Chapter (SAID), 11 p.
- Raymer, L.L., and Freeman, P.M., 1984, In-situ determination of capillary pressure, pore throat size and distribution, and permeability from wireline data, in 25th annual logging symposium transactions, paper CCC: Houston, Society of Professional Well Log Analysts, 12 p.
- Riepe, L., Schopper, J.R., and Wehr, R., 1986, Permeability estimations from nuclear measurements (NMR-, spectral gr-data), in 10th European formation evaluation symposium transactions, paper X: Aberdeen, Society of Professional Well Log Analysts, Aberdeen Chapter, 15 p.
- Timur, A., 1967, Pulsed nuclear magnetic resonance studies of porosity, movable fluid and permeability of sandstones: Dallas, Society of Petroleum Engineers, 42nd annual meeting [] preprint SPE-2045. Later published in 1969, Journal of Petroleum Technology, v. 21(6), p. 775-786.

Timur, A., 1968, Effective porosity and permeability of sandstones investigated through nuclear magnetic principles, in 9th annual logging symposium transactions, paper K: Houston, Society of Professional Well Log Analysts, 18 p. Later published in 1969, The Log Analyst, v. 10(1), January-February, p. 3-11.

Timur, A., 1968, An investigation of permeability, porosity, and residual water saturation relationships for sandstone reservoirs in 9th annual well logging symposium transactions, paper J: Houston, Society of Professional Well Log Analysts, 18 p. Later published in 1968, The Log Analyst, v. 9(4), July-August, p. 8-17.

XIV. REPRINT VOLUMES

- American Association of Petroleum Geologists, 1974, Abnormal formation pressures: Tulsa, American Association of Petroleum Geologists, Reprint Series 11, 205 p. Contains 14 significant papers that appeared in the AAPG Bulletin.
- Buchanan, D.J., and Jackson, L.J., editors, 1986, Coal geophysics: Tulsa, Society of Exploration Geophysicists, Geophysics reprint series no. 6, p. 25-85. Reprints of 6 papers relating to identification and evaluation of coal via borehole logging.
- Dresser Atlas, 1981, Spectralog: Houston, Dresser Industries, publication no. 3334, variously paginated. Contains 8 significant papers on tool development and applications.
- Dresser Atlas, 1981, Carbon/oxygen Log: Houston, Dresser Industries, publication no. 9417, variously paginated. Contains an interpretation manual and reprints of 10 significant papers on instrumentation and application.
- Society of Petroleum Engineers, 1971, Well logging: Dallas, Society of Petroleum Engineers, Reprint Series No. 1, 410 p. Contains 26 significant papers on tool development, application and interpretation. A revised edition to be published in early 1987.
- Society of Petroleum Engineers, 1985, Production logging: Dallas, Society of Petroleum Engineers, Reprint Series 19, 375 p. Contains 26 significant papers on tool design and application.
- Society of Professional Well Log Analysts, 1978, Acoustic logging: Houston, Society of Professional Well Log Analysts, variously paginated. Contains 26 significant papers on tool design, application and interpretation.
- Society of Professional Well Log Analysts, 1978, Gamma ray, neutron and density logging: Houston, Society of Professional Well Log Analysts, Houston, variously paginated. Contains 30 significant papers on tool design, application and interpretation.
- Society of Professional Well Log Analysts, 1979, Pulsed neutron logging: Houston, Society of Professional Well Log Analysts, 448 p. Contains 32 significant papers on tool design, application and interpretation.
- Society of Professional Well Log Analysts, Houston Chapter, 1979, The art of ancient log analysis: Houston, Society of Professional Well Log Analysts, variously paginated. Contains reprints of 22 significant papers in early electric logging.
- Society of Professional Well Log Analysts, 1982, Shaly sand: Houston, Society of Professional Well Log Analysts, reprint volume, variously paginated. Contains 41 significant papers and an extensive bibliography on the subject.

Society of Professional Well Log Analysts, 1982, Geothermal log interpretation handbook: Houston, Society of Professional Well Log Analysts, reprint volume, variously paginated. Contains reprints of 17 significant papers and an extensive bibliography.

1. [Faint text, likely a reference to a book or report]
2. [Faint text, likely a reference to a book or report]
3. [Faint text, likely a reference to a book or report]
4. [Faint text, likely a reference to a book or report]
5. [Faint text, likely a reference to a book or report]
6. [Faint text, likely a reference to a book or report]
7. [Faint text, likely a reference to a book or report]
8. [Faint text, likely a reference to a book or report]
9. [Faint text, likely a reference to a book or report]
10. [Faint text, likely a reference to a book or report]
11. [Faint text, likely a reference to a book or report]
12. [Faint text, likely a reference to a book or report]
13. [Faint text, likely a reference to a book or report]
14. [Faint text, likely a reference to a book or report]
15. [Faint text, likely a reference to a book or report]
16. [Faint text, likely a reference to a book or report]
17. [Faint text, likely a reference to a book or report]
18. [Faint text, likely a reference to a book or report]
19. [Faint text, likely a reference to a book or report]
20. [Faint text, likely a reference to a book or report]
21. [Faint text, likely a reference to a book or report]
22. [Faint text, likely a reference to a book or report]
23. [Faint text, likely a reference to a book or report]
24. [Faint text, likely a reference to a book or report]
25. [Faint text, likely a reference to a book or report]
26. [Faint text, likely a reference to a book or report]
27. [Faint text, likely a reference to a book or report]
28. [Faint text, likely a reference to a book or report]
29. [Faint text, likely a reference to a book or report]
30. [Faint text, likely a reference to a book or report]
31. [Faint text, likely a reference to a book or report]
32. [Faint text, likely a reference to a book or report]
33. [Faint text, likely a reference to a book or report]
34. [Faint text, likely a reference to a book or report]
35. [Faint text, likely a reference to a book or report]
36. [Faint text, likely a reference to a book or report]
37. [Faint text, likely a reference to a book or report]
38. [Faint text, likely a reference to a book or report]
39. [Faint text, likely a reference to a book or report]
40. [Faint text, likely a reference to a book or report]
41. [Faint text, likely a reference to a book or report]
42. [Faint text, likely a reference to a book or report]
43. [Faint text, likely a reference to a book or report]
44. [Faint text, likely a reference to a book or report]
45. [Faint text, likely a reference to a book or report]
46. [Faint text, likely a reference to a book or report]
47. [Faint text, likely a reference to a book or report]
48. [Faint text, likely a reference to a book or report]
49. [Faint text, likely a reference to a book or report]
50. [Faint text, likely a reference to a book or report]
51. [Faint text, likely a reference to a book or report]
52. [Faint text, likely a reference to a book or report]
53. [Faint text, likely a reference to a book or report]
54. [Faint text, likely a reference to a book or report]
55. [Faint text, likely a reference to a book or report]
56. [Faint text, likely a reference to a book or report]
57. [Faint text, likely a reference to a book or report]
58. [Faint text, likely a reference to a book or report]
59. [Faint text, likely a reference to a book or report]
60. [Faint text, likely a reference to a book or report]

XV. BIBLIOGRAPHIES

- Connolly, E.T., 1973, Comprehensive bibliography of well logging literature 1942-1972: Canadian Well Logging Society Journal, v. 6(1), p. 51-87.
- Dyck, A.V., editor, 1975, Borehole geophysics applied to metallic mineral prospecting--A review: Geological Survey of Canada, Paper 75-31, 67 p. Eight separate review papers each with a bibliography.
- Hilchie, D.W., 1979, Cumulative index, 1960-1978--The Log Analyst, SPWLA symposium papers, SPWLA European symposium papers, CWLS symposium papers, and CWLS Journal: The Log Analyst, v. 20(1), January-February, p. 6-39.
- IRT Corporation, 1976, Future research in borehole assaying technology Volume 2--Bibliography of borehole assaying techniques, 1965-75: U.S. Bureau of Mines, Open-File Report 119(2)-76 (Contract J0255018, Final Report, March 18, 1976), 325 p.
- Laramie Energy Research Center, 1981, A bibliography of publications dealing with tar sands: U.S. Department of Commerce, National Technical Information Service, Report DOE/LETC/RI-81-2 (DE81-026146), 294 p.
- Nuhfer, E.B., and Nurmi, R.D., 1976, Bibliography of references for recognition of depositional environment from wireline log data: West Virginia Geological and Economic Survey, Mineral Briefs Series, 15 p.
- Prensky, S.E., 1986, Geological applications of well logs--A selected bibliography of well logging literature published through December 31, 1985: U.S. Geological Survey Open-File Report 86-170, 103 p.
- Robbins, S.L., 1980, Bibliography with abridged abstracts of subsurface gravimetry (especially borehole) and corresponding in-situ rock density determinations: U.S. Geological Survey, Open-File Report 80-710, 47 p.
- Scott, J.H., 1974, Well-logging techniques for mineral deposit evaluation--A review: U.S. Bureau of Mines, Information Circular 8627, 45 p.
- Senftle, F.E., 1980, Field studies of borehole gamma-ray spectrometer methods for mineral exploration--A selected bibliography: U.S. Geological Survey Open-File Report 80-503, 41 p.
- Taylor, T.A., and Dey, J.A., 1985, Bibliography of borehole geophysics as applied to ground-water hydrology: U.S. Geological Survey Circular 926, 62 p.
- University of Tulsa, 1985, Index to well logging literature: Tulsa, University of Tulsa, 399 p.

XVI. WELL-LOG RESPONSE CHARTS

Klein, G. deV., 1984, Vertical sequences and log shapes of major sandstone reservoir systems: Boston, IHRDC Press, 1 sheet.

Hyne, N.J., editor, 1983, Well log response chart: Houston, PennWell Publishers, 1 sheet.

Petrocraft Products, 1979, Logging device response chart: Calgary, Petrocraft Products, 1 sheet. Also available through Petrocraft Products Inc., Denver. Illustrates the response of different logging devices to varying lithologies of different geologic ages and contains a summary of how each tool responds to different lithologic parameters.

2. GENERAL GEOLOGICAL AND GEOTECHNICAL APPLICATIONS

- Ajam, S.O., Henzell, L.A., Wang, J., Syarif, A.M., and Soedirdja, H., 1982, Wellsite log evaluation of the Miocene carbonates in Salawati Basin, in 11th annual convention proceedings, volume 1: Jakarta, Indonesian Petroleum Association, p. 357-377.
- Alexander, I., editor, 1982, Schlumberger well evaluation developments—Continental Europe 1982 [Baden-Baden, June]: Paris, Schlumberger Technical Services, 296 p.
- Alger, R.P., 1980, Geological use of wireline logs, in G.D. Hobson, editor, Developments in petroleum geology no. 2: London, Applied Science Publishers Ltd., p. 207-272.
- Anderson, R.N., O'Malley, H., and Newmark, R.L., 1985, Use of geophysical logs for quantitative determination of fracturing, alteration and lithostratigraphy in the upper oceanic crust, Deep Sea Drilling Project, holes 504B and 556, in Initial reports of the the Deep Sea Drilling Project, v. 83: Washington D.C., U.S. Government Printing Office, p. 443-478. Also published as 1985, Nuclear, multichannel-sonic, ultrasonic analyses for determination of degree of fracturing and alteration in a fast formation—the deep oceanic crust, in 25th annual logging symposium transactions, paper Y: Houston, Society of Professional Well Log Analysts, 22 p.
- Anderson, R.N., Zoback, M.D., Hickman, S.H., and Newmark, R.L., 1985, Permeability versus depth in the upper oceanic crust—In situ measurements in Deep Sea Drilling Project hole 504B, eastern equatorial Pacific, in Initial reports of the the Deep Sea Drilling Project, v. 83: Washington D.C., U.S. Government Printing Office, p. 429-442. Also published in 1985, Journal of Geophysical Research, v. 90(B5), p. 3659-3669.
- Arditty, P.C., Arens, G., and Staron, P., 1984, Improvement of formation properties evaluation through the processing and interpretation results of the EVA tool recordings: Tulsa, Society of Exploration Geophysicists, Expanded Abstracts with Biographies, 1984 Technical Program, p. 31-35.
- Baldwin, A.D., Jr., and Miller, J., 1979, The use of a gamma logger to delineate glacial and bedrock stratigraphy in southwestern Ohio: Ground Water, v. 17(4), p. 385-389.
- Beck, A.E., 1976, The use of thermal resistivity logs in stratigraphic correlation: Geophysics v. 41(2), p. 300-309. Reprinted in 1977, The Log Analyst, v. 17(1), January-February, p. 17-22.
- Becker, K., Von Herzen, R.P., Francis, T.J.G., Anderson, R.N., Honnorez, J., Adamson, A.C., Alt, J.C., Emmermann, R., Kempton, P.D., Kinoshita, H., Laverne, C., Mottl, N.J., and Newmark, R.L., 1982, In situ electrical resistivity and bulk porosity of the oceanic crust Costa Rica rift: Nature, v. 300, December 16, p. 594-599.

- Berilgen, B.A., Sinha, A.K., and Fertl, W.H., 1985, Estimation of productivity of Lobo 6 sand (Lower Wilcox, Texas) by identifying diagenetic clays using well log data: Dallas, Society of Petroleum Engineers, 60th annual meeting [Las Vegas], preprint SPE-14278, 15 p.
- Bigelow, E.L., 1982, Application of dip-related measurements to a complex-carbonate-clastic depositional environment: *The Log Analyst*, v. 23(2), p. 9-30.
- Bigelow, E.L., 1985, Making more intelligent use of log derived dip information, Part I—Suggested guidelines: *The Log Analyst*, v. 26(1), January-February, p. 41-51.
- Bigelow, E.L., 1985, Making more intelligent use of log derived dip information, Part II—Wellsite data gathering considerations: *The Log Analyst*, v. 26(2), March-April, p. 25-41.
- Bigelow, E.L., 1985, Making more intelligent use of log derived dip information, Part III—Computer processing considerations: *The Log Analyst*, v. 26(3), May-June, p. 18-31.
- Bigelow, E.L., 1985, Making more intelligent use of log derived dip information, Part IV—Structural interpretation: *The Log Analyst*, v.26(4), July-August, p. 21-43.
- Bigelow, E.L., 1985, Making more intelligent use of log derived dip information, Part V—Stratigraphic interpretation: *The Log Analyst*, v. 26(5), September-October, p. 25-64.
- Boutemy, Y., Calvier, C., and Simond, R.F., 1979, Field studies—A progress report on the contribution of logging: Dallas, Society of Petroleum Engineers, SPE-8178, 13 p.
- Boyce, R.E., 1980, Determination of the relationships of electrical resistivity, sound velocity, and density/porosity of sediment and rock by laboratory techniques and well logs from Deep Sea Drilling Project sites 415 and 416 off the coast of Morocco, in Initial reports of the Deep Sea Drilling Project, v. 50: Washington, D.C., U.S. Government Printing Office, p. 305-318.
- Boyce, R.E., 1984, Deep Sea Drilling Project drill sites 530 and 532 in the Angola Basin and on the Walvis Ridge—Interpretation of induction log data, and laboratory sound velocity, density, porosity-derived reflection coefficients, and vane shear strength, in Initial reports of the Deep Sea Drilling Project, v. 75, part 2: Washington, D.C., U.S. Government Printing Office, p. 1137-1187.
- Branisa, F., 1974, Filtering of well-log curves: *Geophysics*, v. 39(4), August, p. 545-549.
- Busch, J.M., Fortney, W.G., and Berry, L.N., 1985, Determination of lithology from well logs by statistical analysis: Dallas, Society of Petroleum Engineers, 60th annual meeting [Las Vegas], preprint SPE-14301, 11 p.

- Canadian Well Logging Society, 1985, Log analysis handbook: Calgary, Canadian Well Logging Society, variously paginated. Type logs and analysis for major Canadian oil and gas fields.
- Cann, J.R., and Von Herzen, R.P., 1983, Downhole logging at Deep Sea Drilling Project sites 501, 504, and 505, near the Costa Rica rift, in L.N. Stout and M.G. Bailey, editors, Initial reports of the Deep Sea Drilling Project, v. 69: Washington, D.C., U.S. Government Printing Office, p. 281-299.
- Canadian Well Logging Society (CWLS), annual, Journal : Calgary, Canadian Well Logging Society.
- Canadian Well Logging Society (CWLS), biannually, Formation evaluation symposium transactions: Calgary, Canadian Well Logging Society.
- Cant, D.J., 1983, Subsurface sedimentology: Geoscience Canada, v. 10(3), p. 115-121.
- Carvalho, M., and Venavente, V., 1979, Application of electrical and gamma ray logging to geotechnical prospection—An example, in International symposium on the geotechnics of structurally complex formations [Capri, September 1977], supplement 1: Milan, Italy, Associazione Geotecnica Italiana, unpaginated.
- Chmelik, F.B., Bouma, A.H., and Rezak, R., 1969, Comparison of electrical logs and physical parameters of marine sediment cores: Transactions of the Gulf Coast Association of Geological Societies, v. 19, p. 63-70.
- Collins, H.N., 1984, Regression analysis - some loose ends: Canadian Well Logging Society Journal, v. 13, p. 61-65.
- Cox, J.W., 1970, The high resolution dipmeter reveals dip-related borehole and formation characteristics in 11th annual logging symposium transactions, paper D: Houston, Society of Professional Well Log Analysts, 26 p.
- Cratchley, C.R., 1978, Geophysical measurements in rock mechanics investigations, in Sciences de la terre et mesures [Orleans, France, May 5-6, 1977]: Paris, Bureau Recherches Geologiques et Minieres, Memoir 91, p. 446-456.
- Crosby, J.W., III, Konstantinidis, B., and Davis, P., 1981, Geotechnical applications of borehole physics: Journal of the Geotechnical Engineering Division, American Society of Civil Engineers, v. 107(GT10), p. 1255-1267.
- Davis, B.K., 1981, Log analysis in the search for brackish water in the Kurnub and Arad Groups in the northeastern Negev: Israel Journal of Earth Sciences, v. 30, p. 93-101.
- de Murville, E.C., and Dadrian, C., editors, 1973, Schlumberger well evaluation conference—Indonesia 1973 [Jakarta, June, 1970]: Paris, Schlumberger Technical Services, 83 p.

- Dobecki, T.L., and Romig, P.R., 1985, Geotechnical and groundwater geophysics: Geophysics, v. 50(12), p. 2621-2636.
- Dyck, J.H., 1973, Some applications of borehole logging to Quaternary research—A study in southern Saskatchewan: Geoexploration, v. 11(4), p. 233-247.
- Edwards, D.P., 1983, Zones of sand production identified by log-derived mechanical properties—A case study, in 8th European formation evaluation symposium transactions, paper S: London, Society of Professional Well Log Analysts, London Chapter, 23 p.
- Elkington, P.A.S., Stouthamer, P., and Brown, J.R., 1982, Rock strength predictions from wireline logs: International Journal of Rock Mechanical Mineral Science and Geomechanical Abstracts, v. 19, p. 91-97. Reprinted in 1986, in Buchanan, D.J., and Jackson, L.J., editors, Coal geophysics: Tulsa, Society of Exploration Geophysicists, Geophysics reprint series no. 6, p. 45-51.
- Etnyre, L.M., 1982, Statistical detection of hydrocarbons from well logs, in 23rd annual logging symposiums transactions, paper Z: Houston, Society of Professional Well Log Analysts, 29 p. Later published in 1984 as, Practical application of weighted least squares method to formation evaluation, part I—The logarithmic transformation of non-linear data and selection of dependent variable: The Log Analyst, v. 25(1), January-February, p. 11-21. Part II—Evaluating the uncertainty in least squares results: The Log Analyst, v. 25(3), May-June, p. 11-20.
- Evans, C.B., 1980, The changing role of well logging in reservoir evaluation—A challenge of the 1980s, in Tenth world petroleum congress, proceedings, v. 3: London, Heyden, p. 181-189.
- Felder, B., editor, 1980, Schlumberger well evaluation conference—Venezuela 1980 [Caracas, May, in Spanish]: Paris, Schlumberger Technical Services, variously paginated.
- Fertl, W.H., 1977, Shale density studies and their application, in G.D. Hobson, editor, Developments in petroleum geology no. 1: London, Applied Science Publishers, p. 293-327.
- Fons, L., 1969, Geological applications of well logs, in 10th annual logging symposium transactions, paper AA: Houston, Society of Professional Well Log Analysts, 44 p.
- Ganer, B.L., 1985, Case history of Cotton Valley sand log interpretation for a north Louisiana field: Journal of Petroleum Technology, v. 37(11), SPE-12182, p. 1995-2205.
- Gardner, G.H.F., Gardner, L.W., and Gregory, A.R., 1974, Formation velocity and density—The diagnostic basics for stratigraphic traps: Geophysics, v. 39(6), December, p. 770-780.

- Givens, W.W., 1986, Formation factor, resistivity index, and related equations based upon a conductive rock matrix model (CRMM), in 27th annual logging symposium transactions, paper P: Houston, Society of Professional Well Log Analysts, 18 p.
- Glanville, C.R., 1970, Log interpretation of thinly-bedded oil-productive sands with unusually low resistivities, in 11th annual logging symposium transactions, paper M: Houston, Society of Professional Well Log Analysts.
- Goldberg, D., Moos, D., and Anderson, R.N., 1985, Attenuation changes due to diagenesis in marine sediments in 26th annual well logging symposium transactions, paper KK: Houston, Society of Professional Well Log Analysts, 18 p.
- Greenhouse, J.P., and Pehme, P., 1985, Stratigraphy and physical properties of unconsolidated glacial deposits using borehole geophysics, in P. Kileen, editor, Borehole geophysics for mining and geotechnical applications [International symposium and workshop, Ottawa, August 29-31, 1983, proceedings]: Geological Survey of Canada, Paper 85-27. Available in early 1986
- Gundestrup, N.S., and Hansen, B.L., 1984, Bore-hole survey at Dye 3, south Greenland: Journal of Glaciology, v. 30(106), p. 282-288.
- Halker, A., Kusznir, N.J., Mellor, D.W., and Whitworth, K.R., 1982, The synthesis of fracture/strength logs using borehole geophysics--A new geotechnical service: The Quarterly Journal of Engineering Geology [London], v. 15, p. 15-28. Reprinted in 1986, in Buchanan, D.J., and Jackson, L.J., editors, Coal geophysics: Tulsa, Society of Exploration Geophysicists, Geophysics reprint series no. 6, p. 52-64.
- Hawkins, J.M., Snyder, R.W., and Pahwa, S.B., 1977, How well logs were used to improve evaluation of a gas storage project: Dallas, Society of Petroleum Engineers, 52nd annual meeting [Denver] preprint SPE-6429. Later published in 1977, Journal of Petroleum Technology, v. 29(12), p. 1550-1558.
- Helgoy, R., 1984, Prediction techniques from logging tools--are the results confirmed by testing?: Norwegian Petroleum Society offshore North Seas conference [August 21-24, Stavanger] paper G4, 25 p.
- Hietala, R.W., and Connolly, E.T., 1984, Integrated rock-log calibration in the Elmworth Field, Alberta Canada--Part II, Well log analysis methods and techniques, in J.A. Masters, editors, Elmworth--case study of a Deep Basin gas field: Tulsa, AAPG Memoir 38, p. 215-242.
- Hietala, R.W., Connolly, E.T., King, H.R., and Sneider, R.M., 1984, Integrated rock-log calibration in the Elmworth Field, Alberta Canada--Part III, Selected samples illustrating integration of rock-log data to determine reservoir petrophysical characteristics, in J.A. Masters, editors, Elmworth--case study of a Deep Basin gas field: Tulsa, AAPG Memoir 38, p. 243-282.

- Holt, O.R., 1983, Relating diplogs to practical geology: Houston, Dresser Industries, publication no. 1603, 69 p.
- Hyndman, R.D., and Salisbury, M.H., 1984, The physical nature of young upper oceanic crust on the Mid-Atlantic Ridge, Deep Sea Drilling Project Hole 395A, in Initial reports of the Deep Sea Drilling Project, v. 78A: Washington, D.C., U.S. Government Printing Office, p. 839-848.
- Janssen, J.C., and Nunn, J.A., 1985, Bulk density, velocity, and porosity relationships in Tertiary sandstones of southwest Louisiana, in B.F. Perkins and G.B. Martin, editors, Habitat of oil and gas in the Gulf Coast [Gulf Coast Section SEPM 4th annual research conference (Houston, November 27-30, 1983), proceedings]: Houston, Gulf Coast Section Society of Economic Paleontologists and Mineralogists, p. 129-138.
- Jensen, J.L., and Lake, L.W., 1985, Optimization of regression-based porosity-permeability predictions, in 10th formation evaluation symposium transactions, paper R: Calgary, Canadian Well Logging Society, 22 p.
- Johnson, R.B., and Johnson, L.A., 1978, Investigation of a damsite utilizing drill-hole, down-hole geophysical and surface geophysical data: Association of Engineering Geologists Bulletin, v. 15(3), p. 285-294.
- Kashik, A.S., Gogonenkov, G.N., and Sokhranov, N.N., 1980, Use of well logging for defining oil and gas pool limits, in Tenth world petroleum congress, proceedings volume 3: London, Heyden, p. 157-163.
- Kirkpatrick, R.J., 1979, Results of downhole geophysical logging hole 396b, DSDP leg 46, in Initial reports of the Deep Sea Drilling Project, v. 46: Washington, D.C., U.S. Government Printing Office, p. 401-407. Also published in 1979 as The physical state of the oceanic crust—Results of downhole geophysical logging in the mid-Atlantic ridge at 23°N: Journal of Geophysical Research, v. 84(B1), p. 178-188.
- Knutson, C.F., and Boardman, C.R., 1978, Continuity and permeability development in the tight gas sands of the eastern Uinta Basin, Utah: U.S. Department of Energy, Report NVO/0011-1, 54 p.
- Koepnick, R.B., 1985, Distribution and permeability of stylolite-bearing horizons within a Lower Cretaceous carbonate reservoir in the Middle East: Dallas, Society of Petroleum Engineers, 60th annual meeting [Las Vegas], preprint SPE-14173, 7 p.
- Kowalski, J.J., 1975, Formation strength parameters from well logs, in 16th annual logging symposium transactions, paper N: Houston, Society of Professional Well Log Analysts, 19 p. Reprinted in 1978, Acoustic logging: Houston, Society of Professional Well Log Analysts, Reprint Volume, paper Z, 19 p.
- Lang, W.H., 1980, Determination of prior depth of burial using interval transit time: Oil and Gas Journal, v. 78(4), January 28, p. 222-232.
- Lang, W.H., Jr., 1986, Correlation with multiple logs: The Log Analyst, v. 27(1), January-February, p. 43-52.

- Lapointe, P., Morris, W.A., and Harding, K.L., 1986, Interpretation of magnetic susceptibility—A new approach to geophysical evaluation of the degree of rock alteration: Canadian Journal of Earth Sciences, v. 23(3), p. 393-401.
- Lindseth R.O., 1979, Synthethic sonic logs—A process for stratigraphic interpretation: Geophysics, v. 44(1), p. 3-26.
- Lindseth, R.O., and Ward, J.A., 1983, Delineation of hydrocarbon reservoirs with synthethic sonic logs, in AAPG stratigraphic interpretation of seismic data [course notes, Colorado Springs, Colorado, November 29-December 3]: Tulsa, American Association of Petroleum Geologists, 80 p.
- Logar, J.F., editor, 1983, Schlumberger well evaluation conference—West Africa 1983 [Libreville, October]: Paris, Schlumberger Technical Services, variously paginated.
- MacCary, L.M., 1978, Interpretation of well logs in carbonate aquifers: U.S. Geological Survey Water Resources Investigations 78-88, 30 p. Later published in 1983 as Geophysical logging in carbonate aquifers: Ground Water, v. 21(3), p. 334-342.
- MacCary, L.M., 1984, Relation of formation factor to depth of burial in aquifers along the Texas Gulf Coast, in D.M. Nielsen and M. Curl, editors, 1984 NWWA/EPA conference on surface and borehole geophysics methods in ground water investigations, proceedings: Worthington, Ohio, National Water Well Association, p. 722-742.
- Magara, K., 1976, Thickness of removed sedimentary rocks, paleopore pressure, and paleotemperature, southwestern part of western Canada basin: AAPG Bulletin, v. 60(4), p. 554-565. Valuable uses of sonic log data.
- Magara, K., 1978, Compaction and fluid migration—Practical petroleum geology: New York, Elsevier Scientific Publishing Company, Developments in Petroleum Science, no. 9, 319 p.
- Magara, K., 1979, Formation water salinity and its exploration application, in 7th formation evaluation symposium transactions, paper S: Calgary, Canadian Well Logging Society, 8 p.
- Magara, K., 1981, Direct estimate of hydrocarbon volume from a conductivity log: Journal of the Japanese Association of Petroleum Technologists [Sekiyu Gijutsu Kyokaishi] v. 46(3), p. 183-188.
- Magnusson, K.A., and Duran, O., 1984, Comparison between core log and hydraulic and geophysical measurements in boreholes: Geoexploration, v. 22, p. 169-186.
- Mann, C.J., 1979, Obstacles to quantitative lithostratigraphic correlation, in D. Gill and D.F. Merriam, editors, Geomathematical and petrophysical studies in sedimentology: New York, Pergamon Press, p. 149-165.

- Marmissolle-Daguerre, editor, 1984, Schlumberger well evaluation conference—Mexico 1984 [Mexico City, September, in Spanish]: Paris, Schlumberger Technical Services, variously paginated.
- Mathews, M., Salisbury, M.H., and Hyndman, R., 1984, Basement logging on the Mid-Atlantic Ridge, Deep Sea Drilling Project hole 395A, in Initial reports of the Deep Sea Drilling Project, v. 78A: Washington, D.C., U.S. Government Printing Office, p. 717-730.
- Maxant, J., 1975, Distribution and regional variation of density in the western Canada basin: Geophysics, v. 40(1), p. 56-78.
- Maxant, J., 1980, Variation of density with rock type, depth, and formation in Western Canada basin from density logs: Geophysics, v. 45(6), p. 1061-1076.
- May, J.A., and Eyles, D.R., 1985, Well log and seismic character of Tertiary Terumbu carbonate, South China Sea, Indonesia: AAPG Bulletin, v. 69(9), p. 1339-1358.
- McCann, D.M., and McCann, C., 1976, The application of borehole acoustic logging techniques in engineering geology, in 4th european formation evaluation symposium transactions, paper N: London, Society of Professional Well Log Analysts, London Chapter, 22 p. Later published in 1977, The Log Analyst, v. 18(3), May-June, p. 30-37. ✓
- McConnell, C.L., 1983, Spontaneous Potential corrections for ground-water salinity calculations; Carter County, Oklahoma, U.S.A.: Journal of Hydrology, v. 65, p. 363-372.
- McConnell, C.L., 1985, Salinity and temperature anomalies over structural oil fields, Carter County, Oklahoma: AAPG Bulletin, v. 69(5), p. 781-787.
- McConnell, C.L., 1985, Time dependence of the equivalent water resistivity in fresh water wells: The Log Analyst, v. 26(3), May-June, p. 12-17.
- McGinley, T.R., and McKnight, T.N., Jr., 1984, Log-derived stratigraphic reservoir description: Dallas, Society of Petroleum Engineers, Transactions of the 1984 Permian Basin oil and gas recovery conference [Midland, March 8-9], SPE-12597, p. 179-188.
- Mok, J.S., editor, 1985, Schlumberger well evaluation conference—China 1985 [Beijing, September]: Paris, Schlumberger Technical Services, 359 p.
- Morin, R.H., 1985, Physical properties of calcareous sediments from the southwest Pacific, chapter 31, in J.P. Kennett and C.C. von der Borch, editors, Initial reports of the Deep Sea Drilling project, volume 90: Washington, D.C., U.S. Government Printing Office, p. 1239-1246.
- Murphy, R.P., and Owens, W.W., 1971, A new approach for low resistivity sand log analysis: Dallas, Society of Petroleum Engineers, 46th annual meeting [New Orleans] preprint SPE-3569. Later published in 1972, Journal of Petroleum Technology, v. 24(11), p. 1302-1306.

- Newmark, R.L., Anderson, R.N., Moos, D., Zoback, M.D., 1985, Sonic and ultrasonic logging of hole 504B and its implications for the structure, porosity, and stress regime of the upper 1 km of the oceanic crust: in Initial reports of the the Deep Sea Drilling Project, v. 83: Washington D.C., U.S. Government Printing Office, p. 479-510. Also published 1985, Structure, porosity and stress regime of the upper oceanic crust—Sonic and ultrasonic logging of DSDP hole 504B: Tectonophysics, v. 118, p. 1-42.
- Norris, S.E., 1972, The use of gamma logs in determining the character of unconsolidated sediments and well construction features: Ground Water, v. 10(6), p. 14-21.
- Nyberg, O., Lindberg, P.A., Lien, K., and Smistad, J.K., 1978, Mineral composition, an aid in classical log analysis used in Jurassic sandstones of the northern North Sea, in 19th annual logging symposium transactions, paper M: Houston, Society of Professional Well Log Analysts, 35 p.
- Overton, H.L., 1978, Appraisal of water movement from subsurface data: The Log Analyst, v. 19(5), September-October, p. 3-20.
- Owen, J.D., 1975, Log analysis of Ekofisk field, in J.E. Kastrop, editor, Oil and gas production handbook: Dallas, Petroleum Engineer Publishing Co., p. 14-21.
- Penn, I.E., Cox, B.M., and Gallois, R.W., 1986, Towards precision in stratigraphy—Geophysical log correlation of Upper Jurassic (including Callovian) strata of the eastern England shelf: Journal of the Geological Society [London], v. 143, p. 381-410.
- Pennebaker, E.S., 1968, An engineering interpretation of seismic data: Dallas, Society of Petroleum Engineers, 43rd annual meeting [Houston] preprint SPE-2165, 12 p. Also published, in part, 1968, World Oil, v. 166(7), June, p. 73-77. Important uses and interpretations of sonic log data.
- Pinnington, D.J., editor, 1981, Schlumberger well evaluation conference—United Arab Emirates/Qatar 1981 [Abu Dhabi, November]: Paris, Schlumberger Technical Services, 271 p.
- Pirson, S.J., 1983, Geologic well log analysis, 3rd edition: Houston, Gulf Publishing Company, 475 p.
- Prard, Y.M., Prins, W.J., and Cramez, C., 1976, Recent developments in logging techniques and interpretation in Indonesia, in 5th annual convention proceedings, volume 1: Jakarta, Indonesian Petroleum Association, p. 171-199.
- Rabinowitz, P.D., and Borella, P.E., 1984, Well logging of the sediments and basement complex on the Walvis Ridge, in Initial reports of the Deep Sea Drilling Project, v. 74: Washington, D.C., U.S. Government Printing Office, p. 827-838. Also published in 1984, as A sonic well log of the basement complex of the Walvis Ridge: Geo-Marine Letters, v. 3(1), p. 1-7.

- Rafavich, R., Kendall, C.H., St., C., and Todd, T.P., 1984, The relationship between acoustic properties and the petrographic character of carbonate rocks: *Geophysics*, v. 49(10), p. 1622-1636.
- Rahman, A.U., and Jacka, A.D., 1986, Petrographic images and log response of the Lower San Andres Formation, northwestern shelf of the Permian Basin, New Mexico: *The Log Analyst*, v. 27(3), May-June, p. 72-80.
- Ramirez, A.L., Lytle, R.J., and Harben, P., 1984, Crosshole geophysical methods used to investigate the near vicinity of high level waste repositories: Lawrence Livermore National Laboratory Report NUREG/CR-3758 [UCID-20060], 65 p.
- Raymer, L.L., and Burgess, K.A., 1980, The role of well logs in reservoir modeling: Dallas, Society of Petroleum Engineers, 55th annual meeting [Dallas] preprint SPE-9342.
- Reyment, R., 1982, Correlating between electrical borehole logs in paleocology, in J.M. Cubitt and R.A. Reyment, editors, *Quantitative stratigraphic correlation*: New York, John Wiley, p. 233-240.
- Rider, M.H., 1986, The geological interpretation of well logs: New York, John Wiley & Sons, Inc., 175 p.
- Robinette, M.S. and Williams, R.E., 1980, Geophysical techniques for selection, analysis and monitoring uranium waste disposal sites, chapter 10, in C.O. Brawner, editor, *First international conference on uranium mine waste disposal, proceedings* [May 19-21, Vancouver, British Columbia, Canada]: New York, Society of Mining Engineers of AIME, p. 93-99.
- Rudman, A.J. Whaley, J.F., Blakely, R.G., and Biggs, M.E., 1975, Transformation of resistivity to pseudovelocity logs: *AAPG Bulletin*, v. 59(7), p. 1151-1165. Also published in 1976, *The Log Analyst*, v. 16(2), March-April, p. 11.
- Saito, K., Tono, S., and Kamili, Z.A., 1985, Sand body correlation in deltaic setting, East Kertaling field, Sumatra basin, in 14th annual convention proceedings: Jakarta, Indonesian Petroleum Association, p. 499-515.
- Salisbury, M.H., Donnelly, T.W., and Francheteau, J., 1980, Geophysical logging in Deep Sea Drilling Project hole 417D, in Initial reports of the Deep Sea Drilling Project, v. 51-53, part 1, : Washington, D.C., U.S. Government Printing Office, p. 705-713.
- Salisbury, M.H., Scott, G.H., Becker, K., Bosum, W., Broglia, C., Carlson, R., Fisher, A., Gieskes, J., Holmes, M., Hoskins, H., Legrand, J., Moos, D., Rio, D., Stephen R., Wilkens, R., 1985, Ocean drilling program--looking down an old hole: *Nature*, v. 316(6030), August 22, p. 682.
- Sallee, J.E., and Wood, B.R., 1982, Use of microresistivity from the dipmeter to improve formation evaluation in thin sands, northeast Kalimantan, Indonesia, in Offshore South East Asia conference, proceedings: Dallas, Society of Petroleum Engineers SPE-10462, 24 p. Later published in 1984, *Journal of Petroleum Technology*, v. 36(9), p. 1535-1544.

- Schlumberger, 1970, Well evaluation conference—Libya 1970 [Tripoli, Autumn]: Paris, Schlumberger Technical Services, variously paginated.
- Schlumberger, 1973, Well evaluation conference—Argentina 1973 [Buenos Aires, June]: Paris, Schlumberger Technical Services.
- Schlumberger, 1974, Schlumberger well evaluation conference—Nigeria 1974, 2nd edition, [Lagos, April]: Paris, Schlumberger Technical Services, variously paginated.
- Schlumberger, 1974, Schlumberger well evaluation conference—North Sea 1974 [London, June]: Paris, Schlumberger Technical Services, 171 p.
- Schlumberger, 1975, Schlumberger well evaluation conference—Arabia 1975 [Bahrain, May]: Paris, Schlumberger Technical Services, 152 p.
- Schlumberger, 1976, Schlumberger well evaluation conference—Iran 1976 [Tehran, May]: Paris, Schlumberger Technical Services, 179 p.
- Schlumberger, 1979, Schlumberger well evaluation conference—Algeria 1979 [Algiers, December]: Paris, Schlumberger Technical Services, variously paginated.
- Schlumberger, 1983, Schlumberger well evaluation conference—India 1983 [New Delhi, December]: Paris, Schlumberger Technical Services, 263 p.
- Schlumberger, 1985, Well evaluation conference—Nigeria 1985 [Lagos, June]: Paris, Schlumberger Technical Services, 292 p.
- Schultz, A.L., 1979, Electric log evidence for hydrocarbon production and trapping in sandstones possessing diagenic clay minerals: Houston Geological Society Bulletin, v. 21(2), p. 4-8.
- Schulze, R.P., Ives, G.L., and Smalley, E.A., 1985, Evaluation of low-resistivity Simpson series of formations: Dallas, Society of Petroleum Engineers, 60th annual meeting [Las Vegas], preprint SPE-14282, 8 p.
- Senger, J.A., 1985, Defining glacial stratigraphy with the neutron log, in 1985 NWWA conference on surface and borehole geophysical methods in ground water investigations [Fort Worth, Texas, February 12-14], proceedings: Worthington, Ohio, National Water Well Association, p. 355-368.
- Serra, O., 1985, Fundamentals of well-log interpretation volume 2—interpretation of various well logs [Diagraphies differees - Bases de l'interpretation] [in French]: Pau, France, Bulletin des Centres de Recherches Exploration-Production Elf-Aquitaine Memoire 7, 632 p. Not yet translated into English. An excellent reference on application of well logs to determination of facies and depositional environments, sedimentology, (sedimentary structures, diagenesis and compaction), structural geology, and fractures.

- Sethi, D.K., 1981, Well log applications in rock mechanics, in 1981 SPE/DOE symposium on low permeability gas reservoirs, proceedings: Dallas, Society of Petroleum Engineers, SPE/DOE-9833, p. 45-53.
- Smith, C.M., editor, 1984, Well evaluation conference--Egypt 1984 [Cairo, March]: Paris, Schlumberger Technical Services, variously paginated.
- Smith, R.F., McCoy, R.L., Ausburn, B.E., and Pottorf, B.R., 1978, Determining acoustic velocity of subsurface formations from well log data: Dallas, Society of Petroleum Engineers, 53rd annual meeting [Houston] preprint SPE-7435. Later published in 1979, Journal of Petroleum Technology, v. 31(11), p. 1453-1461.
- Sneider, R.M., and King, H.R., 1984, Integrated rock-log calibration in the Elmworth Field, Alberta Canada--Part I, reservoir rock detection and characterization, in J.A. Masters, editors, Elmworth--case study of a Deep Basin gas field: Tulsa, AAPG Memoir 38, p. 205-214.
- Society of Professional Well Log Analysts (SPWLA), bimonthly, The Log Analyst: Houston, Society of Professional Well Log Analysts.
- Society of Professional Well Log Analysts, annually, Logging symposium transactions: Houston, Society of Professional Well Log Analysts.
- Society of Professional Well Log Analysts, European Chapters, biannually, European formation evaluation symposium transactions: Houston, Society of Professional Well Log Analysts.
- Society of Professional Well Log Analysts, irregularly, Reprint volumes: Houston, Society of Professional Well Log Analysts.
- Spencer, T.W., and Wu, R.C., 1985, Polarization method for determination of Poisson's ratio in boreholes: Geophysics, v. 50(12), p. 2808-2816.
- Stevenson, J.A., 1981, Log evaluation of wells in the Tuscaloosa trend of south Louisiana, in Tuscaloosa Trend of South Louisiana: New Orleans, Louisiana, New Orleans Geological Society, p. 27-46.
- Stosur, J.J., and David, A., 1975, Petrophysical evaluation of the diatomite formation of the Lost Hills field, California: Dallas, Society of Petroleum Engineers, 50th annual meeting [Dallas] preprint SPE-5501. Later published in 1976, Journal of Petroleum Technology, v. 28(10), p. 1138-1144.
- Sukandar, S., Siregar, S.A., and Leverbvre, L., 1982, A reservoir description, based on wireline logs, geological and production data, aids selection of new well locations for optimum oil production, in 11th annual convention proceedings, volume 1: Jakarta, Indonesian Petroleum Association, p. 415-427.
- Takahashi, K., and Ishikawa, K., 1974, Geological investigation and judgment of engineering nature, utilizing borehole measurements: Rock Mechanics in Japan, v. 2, p. 158-160.

- Thomas, D.H., 1977, Seismic applications of sonic logs, in 5th European logging symposium transactions, paper 7: Paris, Society of Professional Well Log Analysts, Paris Chapter (SAID), 23 p. Later published in 1978, The Log Analyst, v. 19(1), January-February, p. 23-32.
- Ting-Dong, T., 1985, Log interpretation characteristics of China's offshore hydrocarbon reservoirs, in Offshore China '85 symposium [Canton, November 26-30] proceedings, v. 1: Canton, Third Offshore China Oil Exhibition and Conference, Ltd., p. 371-393.
- Tixier, M.P., Loveless, G.W., and Anderson, R.A., 1973, Estimation of formation strength from the Mechanical Properties Log: Dallas, Society of Petroleum Engineers, 48th annual meeting [Las Vegas] preprint SPE-4532, 14 p. Later published in 1975, Journal of Petroleum Technology, v. 27(12), p. 283-293. Reprinted in 1978, Acoustic Logging: Houston, Society of Professional Well Log Analysts, Reprint Volume, paper X, 11p.
- Toksoz, M.N., Wilkens, R.H., and Cheng, C.H., 1985, Shear wave velocity and attenuation in ocean bottom sediments from acoustic log waveforms: Geophysical Research Letters, v. 12(1), p. 37-40.
- Tootle, J.R., 1979, The prediction of well productivity from wireline logs, McAllen Ranch field, in 20th annual logging symposium transactions, paper H: Houston, Society of Professional Well Log Analysts. Reprinted in 1979, in 7th formation evaluation symposium transactions, paper AA: Calgary, Canadian Well Logging Society.
- Truman, R.B., Howard, W.A., Davies, D.K., and Vessell, R.K., 1986, Utilization of rock characterization data to improve well log interpretation, in 27th annual logging symposium transactions, paper V: Houston, Society of Professional Well Log Analysts, 19 p.
- Tselentis, G., 1986, On-site assessment of rock discontinuities from resistivity logs; T-L log—A new logging technique: Journal of Hydrology, v. 83, p. 269-283.
- Turner, J.R., 1984, Problematic petrophysical characteristics of the Smackover at Bayou Middle Fork field, Claiborne Parish, Louisiana, in M.W. Presley, editor, The Jurassic of east Texas [East Texas Jurassic exploration conference, Tyler, Texas, March 27-28]: East Texas Geological Society, p. 95-106.
- Viro, E.J., editor, 1985, Well evaluation conference—Brazil 1985 [November] [in Portuguese]: Paris, Schlumberger Technical Services, variously paginated.
- Whittaker, A., Holliday, D.W., and Penn, I.E., 1985, Geophysical logs in British stratigraphy: London, Blackwell Scientific Publications, Geological Society Special Report no. 18, 74 p.
- Winchester, A., editor, 1981, Schlumberger well evaluation conference—South East Asia 1981 [Singapore, October]: Paris, Schlumberger Technical Services, 238 p.

Zoback, M.D., and Anderson, R.N., 1982, Ultrasonic borehole televiewer investigation of oceanic crustal layer 2a, Costa Rica rift: *Nature*, v. 295, February 4, p. 375-379.

3. DETERMINATION OF FACIES AND DEPOSITIONAL ENVIRONMENTS FROM LOGS

(See also 6. Dipmeter)

- Almon, W.R., and Schultz, A.L., 1979, Electric log detection of diagenetically altered reservoirs and diagenetic traps: Transactions of the Gulf Coast Association of Geological Societies, v. 29, p. 1-10.
- Asquith, G.B., 1979, Chapter 4, in Subsurface carbonate depositional models--A concise review: Tulsa, Petroleum Publishing Co., p. 103-116.
- Bigelow, E.L., 1982, Application of dip-related measurements to a complex-carbonate-clastic depositional environment: The Log Analyst, v. 23(2), p. 9-30.
- Bigelow, E.L., 1985, Making more intelligent use of log derived dip information, Part V--Stratigraphic interpretation: The Log Analyst, v. 26(5), September-October, p. 25-64.
- Bigelow, E.L., and Easton, S.B., 1986, Electrofacies fingerprints of eolian desert environments, in 10th European formation evaluation symposium transactions, paper V: Aberdeen, Society of Professional Well Log Analysts, Aberdeen Chapter, 19 p.
- Cameron, G.I.F., 1986, Confidence and the identification of forsets in stratigraphic dipmeter surveys, in 10th European formation evaluation symposium transactions, paper O: Aberdeen, Society of Professional Well Log Analysts, Aberdeen Chapter, 17 p.
- Chauvel, Y., Seeburger, D.A., and Castro-Orjuela, A., 1984, Applications of the SHDT (Stratigraphic High Resolution Dipmeter) to the study of depositional environments, in 25th annual logging symposium transactions, paper G: Houston, Society of Professional Well Log Analysts, 23 p.
- Dorfman, M.H., and Dupree, J., 1985, New techniques for facies determination of carbonates by use of well logs, in Third AGIP improved oil recovery European meeting [Rome, 4/16-18], proceedings, volume 1: Rome, Azienda Generale Italiana Petroli, p. 13-23.
- Ethridge, F.G., 1985, Surface and subsurface methods of investigation and classification of fluvial environments, in Recognition of fluvial depositional systems and their resource potential: Tulsa, Society of Economic Paleontologists and Mineralogists, Short Course No. 19, p. 9-32.
- Flach, P.D., and Mossop, G.D., 1985, Depositional environments of Lower Cretaceous McMurray Formation, Athabasca oil sands, Alberta: AAPG Bulletin, v. 69(8), p. 11195-1207.
- Galloway, W.E., and Hobday, D.K., 1983, Terrigenous clastic depositional systems: New York, Springer-Verlag, 423 p.
- Gilreath, J.A., 1968, Electric log characteristics of diapiric shale, in J. Braunstein and G.D. O'Brien, editors, Diapirism and diapirs: Tulsa, American Association of Petroleum Geologists, Memoir no. 8, p. 137-144.

- Gilreath, J.A., 1977, Dipmeter, chapter 22, in L.W. LeRoy, D.O. LeRoy and J.W. Raese, editors, Subsurface geology, 4th edition: Golden, Colorado School of Mines, p. 389.
- Gilreath, J.A., Healy, J.S., and Yelverton, J.N., 1969, Depositional environments defined by dipmeter interpretation: Transactions of the Gulf Coast Association of Geological Societies, v. 19, p. 101-111.
- Gilreath, J.A., and Maricelli, J.J., 1964, Detailed stratigraphic control through dip computations: AAPG Bulletin, v. 48(12), p. 1902-1910.
- Gilreath, J.A., and Stephens, R.W., 1971, Distributary front deposits: Transactions of the Gulf Coast Association of Geological Societies, v. 21, p. 233-243.
- Goetz, J.F., Prins, W.J., and Logar, J.F., 1977, Reservoir delineation by wireline techniques: The Log Analyst, v. 18(5), September-October, p. 12-40.
- Lalouel, P., 1979, Log interpretation in deltaic sequences, in 8th annual convention, proceedings: Indonesian Petroleum Association, p. 247-290.
- Lawrence, T.D., Ball, S., and Harris, M., 1984, Continuous carbon/oxygen and neutron lifetime log proposed interpretation for organic and/or shaly depositional environments, in 25th annual logging symposium transactions, paper QQ: Houston, Society of Professional Well Log Analysts, 19 p.
- McCabe, P.J., 1984, Depositional environments of coal and coal-bearing strata in R.A. Rahmani and R.M. Flores, editors, Sedimentology of coal and coal-bearing sequences: Oxford, England, Blackwell Publishers, International Association of Sedimentologists, Special Publication No. 7, p. 13-42.
- McGovney, J.E., and Radovich, B.J., 1985, Seismic stratigraphy and facies of the Frigg fan complex, in O.R. Berg and D.G. Woolverton, editors, Seismic stratigraphy II—An integrated approach to hydrocarbon exploration: Tulsa, American Association of Petroleum Geologists, Memoir no. 39, p. 139-154.
- Mitchell-Tapping, H.J., 1986, Depositional environment determination using a SSP-resistivity method: The Log Analyst, v. 27(2), March-April, p. 15-20.
- Nurmi, R.D., 1984, Geological evaluation of high resolution dipmeter data, in 25th annual logging symposium transactions, paper YY: Houston, Society of Professional Well Log Analysts, 23 p.
- Nurmi, R.D., 1985, Eolian sandstone reservoirs—bedding facies and production geology modeling: Dallas, Society of Petroleum Engineers, 60th annual meeting [Las Vegas], preprint SPE-14172, 8 p.
- Payre, X., and Serra O., 1979, Turbidites recognized through dipmeter, in 6th European logging symposium transactions, paper K: London, Society of Professional Well Log Analysts, London Chapter, 26 p.

- Pirson, S.J., 1983, Paleo-facies logging and mapping, chapter 6, in *Geologic well log analysis*, 3rd edition: Houston, Gulf Publishing Company, p. 163-190.
- Priisholm, S., and Michelsen, O., 1979, The use of porosity logs in lithology determination, lithostratigraphy and basin analysis, in D.Gill and D.F. Merriam, editors, *Geomathematical and petrophysical studies in sedimentology*: Oxford, Pergamon Press, Computers in Geology Series, p. 71-79.
- Rider, M.H., 1986, *The geological interpretation of well logs*: New York, John Wiley & Sons, Inc., 175 p.
- Roehl, P.O., and Choquette, editors, 1985, *Carbonate petroleum reservoirs*: New York, Springer-Verlag, 622 p. Contains 35 papers on facies and petrophysics of selected carbonate petroleum reservoirs of different geologic ages.
- Russell, D.J., 1985, Depositional analysis of a black shale by using gamma-ray stratigraphy--The Upper Devonian Kettle Point Formation of Ontario: *Bulletin of Canadian Petroleum Geology*, v. 33(2), June, p. 236-253.
- Schlumberger, 1986, *Dipmeter interpretation--Fundamentals*: Houston, Schlumberger Well Services, document no. SMP-7002, 76 p.
- Selley, R.C., 1974, Environmental analysis of subsurface sediments, in 3rd European formation evaluation symposium transactions, paper J: London, Society of Professional Well Log Analysts, London Chapter, 15 p. Later published in 1976, *Subsurface environmental analysis of North Sea sediments*: AAPG Bulletin, v. 60(2), p. 184-195. Also published in 1976, *The Log Analyst*, v. 17(1), January-February, p. 3-11.
- Selley, R.C., 1975, Subsurface diagnosis of deltaic deposits with reference to the northern North Sea, in *Jurassic of the northern North Sea symposium*, paper JNNSS/13: Norwegian Petroleum Society, 22 p.
- Selley, R.C., 1978, *Ancient sedimentary environments*, 2nd edition: New York, Cornell University Press, 287 p.
- Selley, R.C., 1979, Dipmeter and log motifs in North Sea submarine-fan sands: AAPG Bulletin, v. 63(6), p. 905-917.
- Serra, O., 1985, *Fundamentals of well-log interpretation volume 2--Interpretation of various well logs [Diagraphies differees - Bases de l'interpretation] [in French]*: Pau, France, Bulletin des Centres de Recherches Exploration-Production Elf-Aquitaine Memoire 7, 632 p. Not yet translated into English. \an excellent reference on application of well logs to determination of facies and depositional environments, sedimentology, (sedimentary structures, diagenesis and compaction), structural geology, and fractures.
- Serra, O., 1985, *Sedimentary environments from wireline logs*: Paris, Schlumberger, Document M-081030/SMP-7008, 211 p.

- Shields, C., and Gahan, M.J., 1974, The dipmeter used to recognize depositional environments: APEA [Australian Petroleum Exploration Association] Journal, v. 14, part 1, p. 181-188.
- Slack, H.A., and Otte, C., 1960, Electric log interpretation in exploration for stratigraphic traps in shaly sands: AAPG Bulletin, v. 44(12), p. 1874-1894.
- Watney, W.L., 1979, Gamma-ray-neutron [sic] cross-plots as an aid in sedimentological analysis, in D. Gill and D.F. Merriam, editors, Geomathematical and petrophysical studies in sedimentology: Oxford, Pergamon Press, Computer in Geology Series, p. 81-100.
- Weber, K.J., 1971, Sedimentological aspects of oil fields in the Niger Delta: Geologie en Mijnbouw, v. 50(3), p. 559-576.

4. IDENTIFICATION OF DEPOSITIONAL ENVIRONMENTS BY SP AND GR PATTERNS

- Adams, S.C., and Kullerud, G., 1984, Depositional patterns of Pennsylvanian sediments in Sullivan County, west-central Indiana, USA: *International Journal of Coal Geology*, v. 3, p. 349-373.
- Bashem, W.H.M., and Dorfman, M.H., 1983, Facies characterization of carbonates by use of well logs, Sligo Formation (Lower Cretaceous), South Texas, in 24th annual logging symposium transactions, paper SS: Houston, Society of Professional Well Log Analysts, 17 p.
- Berg, R.R., 1986, Interpretation of reservoir morphology, chapter 3, in *Reservoir sandstones*: Englewood Cliffs, New Jersey, Prentice-Hall Inc., p. 75-103.
- Carrigy, M.A., 1971, Deltaic sedimentation in Athabasca tar sands: *AAPG Bulletin*, v. 55(8), p. 1155-1169.
- Chauvin, A., and Valachi, L., 1980, Sedimentology of the Brent and Statfjord Formations of Statfjord field, in *The sedimentation of the North Sea reservoir rocks* [Proceedings of a conference, May 11-14, Geilo, Norway]: Oslo, Norwegian Petroleum Society, 17 p.
- Cohen, A., 1985, Enhanced lithological discrimination through application of graphical log cross-reference (crossplotting)—A case study of Shiqma 5 (Saqiye Group, Neogene, Israel): *Geological Survey of Israel, Mineral Energy Infrastructure Report GSI/44/85*, 22 p.
- Everett, R.V., Herron, M., Pirie, G., Schweitzer, J., and Edmundson, H., 1985, Faja case study results on a single well MFM-7S, in 10th formation evaluation symposium transactions, paper A: Calgary, Canadian Well Logging Society, 20 p.
- Flach, P.D., and Mossop, G.D., 1985, Depositional environments of Lower Cretaceous McMurray Formation, Athabasca oil sands, Alberta: *AAPG Bulletin*, v. 69(8), p. 11195-1207.
- Harris, P.M., Dodman, C.A., and Bliefnick, D.M., 1984, Permian (Guadalupian) reservoir facies, McElroy Field, west Texas, in Harris, P.M., editor, *Carbonate sands—A core workshop*: Tulsa, Society of Economic Paleontologists and Mineralogists, Core Workshop No. 5, p. 136-174.
- Jageler, A.H., and Matuszak, D.R., 1972, Use of well logs and dipmeters in stratigraphic-trap exploration, in R.E. King, editor, *Stratigraphic oil and gas fields—Classification, exploration methods and case histories*: Tulsa, American Association of Petroleum Geologists, Memoir no. 16, p. 107-135.
- Johnson, H.D., and Stewart, D.J., 1985, Role of clastic sedimentology in the exploration and production of oil and gas in the North Sea, in P.J. Brenchley and B.P.J. Williams, editors, *Sedimentology—Recent developments and applied aspects*: Boston, Blackwell Scientific Publications, p. 249-310.

- Mitchell-Tapping, H.J., 1983, Petrophysical evaluation of the Smackover oomoldic porosity of East Texas and Southern Arkansas: *The Log Analyst*, v. 24(4), July-August, p. 3-13.
- Nelson, H.W., and Glaister, R. P., 1978, Subsurface environmental facies and reservoir relationships of the McMurray oil sands, northeastern Alberta: *Bulletin of Canadian Petroleum Geology*, v. 26(2), June, p. 177-207.
- Olsen, R.S., 1982, Depositional environment of Jurassic Smackover Sandstones, Thomasville Field, Rankin County Mississippi: *Transactions of the Gulf Coast Association of Geological Societies*, v. 32, p. 59-66.
- Palomino Cardenas, J.R., and Carozzi, A.V., 1979, Sedimentology and electric log interpretation of the Cabo Blanco Sandstone (Lower Eocene), Talara Basin, northeast Peru: *Archives des Sciences [Societe de Physique et d'Histoire Naturelle de Geneve]*, v. 32(2), p. 127-149.
- Pirie, G., 1985, Geological evaluation of a single well from cores and logs Faja petrolifera del Orinoco, eastern Venezuela, in 10th formation evaluation symposium transactions, paper B: Calgary, Canadian Well Logging Society, 35 p.
- Plint, A.G., Walker, R.G., and Bergman, K.M., 1986, Cardium Formation, part 6—Stratigraphic framework of the Cardium in subsurface: *Bulletin of Canadian Petroleum Geology*, v. 34(2), June, p. 213-225.
- Proctor, C.V., 1980, Distribution of Middle Jurassic facies in the east Shetlands basin and their control of reservoir capability, in *The sedimentation of the North Sea reservoir rocks [Proceedings of a conference, May 11-14, Geilo, Norway]*: Oslo, Norwegian Petroleum Society, 22 p.
- Putnam, P.E., 1982, Aspects of the petroleum geology of the Lloydminster heavy oil fields, Alberta and Saskatchewan: *Bulletin of Canadian Petroleum Geology*, v. 30(2), June, p. 81-111.
- Quirein, J., Kimminau, S., Lavigne, J., Singer, J., and Wendel, F., 1986, A coherent framework for developing and applying multiple formation evaluation models, in 27th annual logging symposium transactions, paper DD: Houston, Society of Professional Well Log Analysts, 16 p.
- Ramli, N., 1986, Depositional model of a Miocene barred wave- and storm-dominated shoreface and shelf, southeastern Malay Basin, offshore west Malaysia: *AAPG Bulletin*, v. 70(1), p. 34-47.
- Ranganathan, V., and Tye, R.S., 1986, Petrography, diagenesis, and facies controls on porosity in Shannon Sandstone, Harzog Draw field, Wyoming: *AAPG Bulletin*, v. 70(1), p. 56-69.
- Rolle, F., 1985, Late Cretaceous-Tertiary sediments offshore central west Greenland—Lithostratigraphy, sedimentary evolution, and petroleum potential: *Canadian Journal of Earth Science*, v. 22, p. 1001-1019.

- Throckmorton, H.C., and Al-Shaieb, Z., 1986, Core-calibrated logs utilization in recognition of depositional facies and reservoir rock of the Henryhouse Formation (Silurian), Anadarko Basin, in 27th annual logging symposium transactions, paper L: Houston, Society of Professional Well Log Analysts, 17 p.
- Tyler, N., and Ambrose, W.A., 1985, Facies architecture and production characteristics of strandplain reservoirs in the Frio Formation, Texas: Austin, Texas Bureau of Economic Geology, Report of Investigations no. 146, 42 p. Later published in 1986, AAPG Bulletin, v. 70(7), 809-829.
- Witherbee, L.J., Godfrey, R.D., and Dimelow, T.E., 1983, Predicting turbidite-contourite reservoir intervals in tight gas sands--A case study from the Mancos B Sandstone, in 1983 SPE/DOE symposium on low permeability gas reservoirs, proceedings, SPE/DOE-11609: Dallas, Society of Petroleum Engineers, p. 87-94.
- Woodruff, K.D., 1976, Geophysical log characteristics of coastal plain units in Delaware, in A.M. Thompson, editor, Guidebook to the stratigraphy of the Atlantic coastal plain in Delaware [third annual field trip]: New York, Petroleum Exploration Society, p. 81-92.
- Woodruff, K.D., 1976, Selected logging data and examples of geophysical logs for the coastal plain of Delaware: Delaware Geological Survey, Report of Investigation 25, 40 p.

5. FACIES ANALYSIS AND CASE STUDIES

- Allan, D.R., 1975, Identification of sediments—Their depositional environment and degree of compaction from well logs, in G.V. Chilingarian and K.H. Wolf, editors, *Compaction of coarse-grained sediments, part I*: New York, Elsevier, *Developments in Sedimentology* 18A, p. 349-401.
- Coleman, J.M., and Prior, D.B., 1982, Deltaic environments of deposition, in P.A. Scholle and D. Spearing, editors, *Sandstone depositional environments*: Tulsa, American Association of Petroleum Geologists, Memoir no. 31, p. 139-178.
- Coppinger, W.W., and Schlutz, A.L., 1983, Using the self-potential curve to define depositional trends in Lower Wilcox sands, McMullen County, Texas: *Bulletin of the South Texas Geological Society*, v. 23(6), p. 16-28.
- Dresser Atlas, 1984, Well logging and interpretation techniques, the home study course: Houston, Dresser Industries, publication no. 9333, variously paginated. Includes a discussion on the use of SP for evaluating depositional environments.
- Fisher, W.L., 1969, Facies characterization of Gulf Coast basin delta systems with some Holocene analogues: *Transactions of the Gulf Coast Association of Geological Societies*, v. 19, p. 239-261.
- Flores, R.M., Toth, J.C., and Moore, T.A., 1982, Use of geophysical logs in recognizing depositional environments in the Tongue River Member of the Fort Union Formation, Powder River Area, Wyoming and Montana: U.S. Geological Survey, Open-File Report 82-756, 22 p.
- Fons, L., 1969, Geological applications of well logs, in 10th annual logging symposium transactions, paper AA: Houston, Society of Professional Well Log Analysts, 44 p.
- Galloway, W.E., 1968, Depositional systems of the Lower Wilcox Group, north-central Gulf Coast Basin: *Transactions of the Gulf Coast Association of Geological Societies*, v. 18, p. 275-289.
- Jageler, A.H., and Matuszak, D.R., 1972, Use of well logs and dipmeters in stratigraphic-trap exploration, in R.E. King, editor, *Stratigraphic oil and gas field—Classification, exploration methods and case histories*: Tulsa, American Association of Petroleum Geologists, Memoir no. 16, p. 107-135.
- Klein, G. deV., 1980, Sandstone depositional models for exploration for fossil fuels: Minneapolis, Cepco Division, Burgess Publishing Co., 149 p.
- Klein, G. deV., 1984, Vertical sequences and log shapes of major sandstone reservoir systems: Boston, IHRDC Press. A chart with references.
- Krueger, W.C., 1968, Depositional environments of sandstones as interpreted from electrical measurements—An introduction: *Transactions of the Gulf Coast Association of Geological Societies*, v. 18, p. 226-241.

- Le Blanc, R.J., Sr., 1976, Distribution and continuity of sandstone reservoirs, part I and part II: Dallas, Society of Petroleum Engineers, 51st annual meeting [New Orleans] preprint SPE-6137A,B. Later published in 1977, Journal of Petroleum Technology, v. 29(9), p. 776-804.
- Lock, B.E., 1982, Towards a better understanding of Gulf Coast Miocene deep water sediments: Transactions of the Gulf Coast Association of Geological Societies, v. 32, p. 283-288.
- Norwood, E.M., 1974, Lithofacies mapping--A descriptive tool for ancient delta systems of the Louisiana outer continental shelf: Transactions of the Gulf Coast Association of Geological Societies, v. 24, p. 175-188.
- Nuhfer, E.B., and Nurmi, R.D., 1976, Bibliography of references for recognition of depositional environment from wireline log data: West Virginia Geological and Economic Survey, Mineral Briefs Series, 15 p.
- Pirson, S.J., 1983, Sedimentological studies by log curve shapes, chapter 2, in Geologic well log analysis, 3rd edition: Houston, Gulf Publishing Co., 475 p.
- Rider, M.H., 1986, The geological interpretation of well logs: New York, John Wiley & Sons, Inc., 175 p.
- Ruoff, W.A., 1976, A technique for interpreting depositional environments of sandstone from the SP log using a computer: The Log Analyst, v. 17(4), July-August, p. 3-10.
- Saitta, B.S., and Visher, G.S., 1968, Subsurface study of the southern portion of the Bluejacket delta, in A guidebook to the geology of the Bluejacket-Bartlesville Sandstone, Oklahoma: Oklahoma Geological Society, p. 52-65.
- Self, G.A., Breard, S.Q., Rael, H.P., Stein, J.A., Traugott, M.O., Thayer, P.A., and Eason, W.D., 1986, Lockhart Crossing field--New Wilcox trend in southeastern Louisiana: AAPG Bulletin, v. 70(5), p. 501-515. Later published in abridged form in 1986, Oil and Gas Journal, v. 84(33), p. 81-87.
- Snedden, J.W., 1984, Validity of the use of the spontaneous potential curve shape in the interpretation of sandstone depositional environments: Transactions of the Gulf Coast Association of Geological Societies, v. 34, p. 255-263.
- Tizzard, P.G., and Lerbekmo, J.F., 1975, Depositional history of the Viking Formation, Suffield area, Alberta, Canada: Bulletin of Canadian Petroleum Geology, v. 23(4), p. 715-752.
- Visher, G.S., 1965, Use of vertical profile in environmental reconstruction: AAPG Bulletin, v. 49(1), p. 41-61. Paper generally cited as the basis of environmental interpretation of the SP curve.

6. DIPMETER APPLICATIONS

- Babcock, E.A., 1978, Measurement of subsurface fractures from dipmeter logs: AAPG Bulletin, v. 62(7), p. 1111-1126.
- Baker, J.D., 1984, Dipmeter Advisor—an expert log analysis system at Schlumberger in P.H. Winston and K.A. Prendergast, editors, The AI business; the commercial uses of artificial intelligence: Cambridge, Massachussetts, The MIT Press, p. 51-65.
- Beaudoin, B., Pinoteau, B., and Delhomme, J.P., 1983, Geological analysis of logs and dipmeter data for well-to-well correlation, in 24th annual logging symposium transactions, paper BBB: Houston, Society of Professional Well Log Analysts, 18 p. Deep-sea fan example.
- Bell, J.S., and Gough, D.I., 1979, Northeast-southwest compressive stress in Alberta—evidence from oil wells: Earth and Planetary Science Letters, v. 45, p. 475-482.
- Bell, J.S., and Gough, D.I., 1982, The use of borehole breakouts in the study of crustal stress, in M.D. Zoback and B.C. Haimson, editors, Workshop on hydraulic fracturing stress measurements [December 2-5], proceedings: U.S. Geological Survey Open-file Report 82-1075, p. 539-557.
- Bengston, C.A., 1981, Statistical curvature analysis techniques for structural interpretation of dipmeter data: AAPG Bulletin, v. 65(2), p. 312-332.
- Bengston, C.A., 1982, Structural and stratigraphic uses of dip profiles in petroleum exploration, in M.T. Halbouty, editor, The deliberate search for the subtle trap: Tulsa, American Association of Petroleum Geologists, Memoir 32, p. 31-45.
- Bigelow, E.L., 1982, Application of dip-related measurements to a complex carbonate-clastic depositional environment: The Log Analyst, v. 23(2), March-April, p. 9-30.
- Bigelow, E.L., 1985, Making more intelligent use of log derived dip information, Part I—Suggested guidelines: The Log Analyst, v. 26(1), January-February, p. 41-51.
- Bigelow, E.L., 1985, Making more intelligent use of log derived dip information, Part II—Wellsite data gathering considerations: The Log Analyst, v. 26(2), March-April, p. 25-41.
- Bigelow, E.L., 1985, Making more intelligent use of log derived dip information, Part III—Computer processing considerations: The Log Analyst, v. 26(3), May-June, p. 18-31.
- Bigelow, E.L., 1985, Making more intelligent use of log derived dip information, Part IV—Structural interpretation: The Log Analyst, v.26(4), July-August, p. 21-43.

- Bigelow, E.L., 1985, Making more intelligent use of log derived dip information, Part V—Stratigraphic interpretation: *The Log Analyst*, v. 26(5), September–October, p. 25–64.
- Cameron, G.I.F., 1986, Confidence and the identification of forsets in stratigraphic dipmeter surveys, in 10th European formation evaluation symposium transactions, paper O:—Aberdeen, Society of Professional Well Log Analysts, Aberdeen Chapter, 17 p.
- Campbell, R.J., Jr., 1968, Stratigraphic applications of dipmeter data in Mid-Continent: *AAPG Bulletin*, v. 52(9), p. 1700–1719.
- Chauvel, Y., Seeburger, D.A., and Castro-Orjuela, A., 1984, Applications of the SHDT (Stratigraphic High Resolution Dipmeter) to the study of depositional environments, in 25th annual logging symposium transactions, paper G: Houston, Society of Professional Well Log Analysts, 23 p.
- Cox, J.W., 1983, Long axis orientation in elongated boreholes and its correlation with rock stress data, in 24th annual logging symposium transactions, paper J: Houston, Society of Professional Well Log Analysts, 17 p.
- Davis, R., Austin, H., Carlbom, I., Frawley, B., Pruchnik, P., Sneiderman, R., and Gilreath, J.A., 1981, The Dipmeter Advisor—Interpretation of geological signals, in 7th international joint conference on artificial intelligence, [Vancouver, British Columbia, Canada], proceedings: p. 846–849.
- Donovan, M.P., and Nelson, R.F., 1985, The Dual Dipmeter service in high-resistivity formations in Eastern regional meeting [Morgantown, W. Vir., November 5–8], proceedings, SPE-14492: Dallas, Society of Petroleum Engineers, p. 39–46.
- Ekstrom, M.P., Dahan, C.A., Chen, M., Lloyd, P.M., and Rossi, D.J., 1986, Formation imaging with microelectrical scanning arrays, in 27th annual logging symposium transactions, paper BB: Houston, Society of Professional Well Log Analysts, 21 p.
- Fitzgerald, D.D., Theriot, J.C., and York, P.L., 1980, Dipmeter validity in deviated boreholes: *The Log Analyst*, v. 21(3), May–June, p. 8.
- Franke, M., and Hepp, V., 1973, Dipmeter outlines petroleum entrapment on flanks of diapiric shale dome, in 14th annual logging symposium transactions, paper J: Houston, Society of Professional Well Log Analysts.
- Gershman, A., 1982, Building a geological expert system for dipmeter interpretation, in European conference on artificial intelligence {Orsay, France, July 12–14], proceedings: ?, p. 139–140.
- Gilreath, J.A., 1968, Electric log characteristics of diapiric shale, in J. Braunstein and G.D. O'Brien, editors, *Diapirism and diapirs*: Tulsa, American Association of Petroleum Geologists, Memoir no. 8, p. 137–144.

- Gilreath, J.A., 1977, Dipmeter, chapter 22, in L.W. LeRoy, D.O. LeRoy and J.W. Raese, editors, Subsurface geology, 4th edition: Golden, CO., Colorado School of Mines, p. 389-396.
- Gilreath, J.A., Cox, J.W., Fett, T.H., and Grace, L.M., 1985, Practical dipmeter interpretation: Houston, Schlumberger Educational Services, variously paginated.
- Gilreath, J.A., Healy, J.S., and Yelverton, J.N., 1969, Depositional environments defined by dipmeter interpretation: Transactions of the Gulf Coast Association of Geological Societies, v. 19, p. 101-111.
- Gilreath, J.A., and Maricelli, J.J., 1964, Detailed stratigraphic control through dip computations: AAPG Bulletin, v. 48(12), p. 1902-1910.
- Gilreath, J.A., and Stephens, R.W., 1971, Distributary front deposits: Transactions of the Gulf Coast Association of Geological Societies, v. 21, p. 233-243.
- Goldstein, B.A., and Hubbard, J.J., 1984, Comparison and geologic interpretation of alternative dipmeter analyses from a Permo-Carboniferous sequence in the Fitroy graben, in P.G. Purcell, editor, The Canning Basin, Western Australia: Perth, Australia, Geological Society of Australia, p. 505-519.
- Gough, D.I., and Bell, J.S., 1981, Stress orientations from oil-well fractures in Alberta and Texas: Canadian Journal of Earth Sciences, v. 18, p. 638-645.
- Gough, D.I., and Bell, J.S., 1982, Stress orientations from borehole fractures with examples from Colorado, east Texas, and northern Canada: Canadian Journal of Earth Sciences, v. 19(7), p. 1358-1370.
- Holt, O.R., 1972, Structural geologic considerations in diplog interpretation, in 13th annual logging symposium transactions, paper Q: Houston, Society of Professional Well Log Analysts, 30 p. Later published in 1973, The Log Analyst, v. 14(2), March-April, p. 3-9.
- Holt, O.R., 1983, Relating diplogs to practical geology: Houston, Dresser Industries, publication no. 1603, 69 p.
- Jageler, A.H., and Matuszak, D.R., 1972, Use of well logs and dipmeters in stratigraphic-trap exploration, in R.E. King, editor, Stratigraphic oil and gas fields—Classification, exploration methods and case histories: Tulsa, American Association of Petroleum Geologists, Memoir no. 16, p. 107-135.
- Kerzner, M.G., 1983, Formation dip determination—An artificial intelligence approach: The Log Analyst, V. 24(5), September-October, P. 10-22.

- Lloyd, P.M., Dahan, C., and Hutin, R., 1986, Formation imaging with micro electrical scanning arrays—a new generation of stratigraphic high resolution dipmeter tool, in 10th European formation evaluation symposium transactions, paper L: Aberdeen, Society of Professional Well Log Analysts, Aberdeen Chapter, 19 p.
- Mair, B.F., and Adams, J.T., 1986, An approach to the sedimentological interpretation of dipmeter results, in 10th European formation evaluation symposium transactions, paper N: Aberdeen, Society of Professional Well Log Analysts, Aberdeen Chapter, 22 p.
- Nurmi, R.D., 1984, Geological evaluation of high resolution dipmeter data, in 25th annual logging symposium transactions, paper YY: Houston, Society of Professional Well Log Analysts, 23 p.
- Payre, X., and Serra O., 1979, Turbidites recognized through dipmeter, in 6th European logging symposium transactions, paper K: London, Society of Professional Well Log Analysts, London Chapter, 26 p.
- Pirson, S.J., 1983, Continuous dipmeter as a structural and sedimentation tool, chapters 4 and 5, in Geologic well log analysis, 3rd edition: Houston, Gulf Publishing Co., p. 97-162.
- Plumb, R.A., and Hickman, S.H., 1985, Stress-induced borehole elongation—A comparison between the four-arm dipmeter and the borehole televiewer in the Auburn geothermal well: Journal of Geophysical Research, v. 90(B7), p. 5513-5521.
- Rider, M.H., 1978, Dipmeter log analysis—An essay, in 19th annual logging symposium transactions, paper G: Houston, Society of Professional Well Log Analysts, p.
- Sallee, J.E., and Wood, B.R., 1982, Use of microresistivity from the dipmeter to improve formation evaluation in thin sands, northeast Kalimantan, Indonesia, in Offshore South East Asia conference, proceedings, SPE-10462: Dallas, Society of Petroleum Engineers, 24 p. Later published in 1984, Journal of Petroleum Technology, v. 36(9), p. 1535-1544.
- Schlumberger, 1986, Dipmeter interpretation—Fundamentals: Houston, Schlumberger Well Services, document no. SMP-7002, 73 p.
- Selley, R.C., 1979, Dipmeter and log motifs in North Sea submarine-fan sands: AAPG Bulletin, v. 63(6), p. 905-917.
- Shields, C., 1974, The dipmeter used to recognize and correlate depositional environment, in 3rd European formation evaluation symposium transactions, paper, H: London, Society of Professional Well Log Analysts, London Chapter, 15 p.
- Shields, C., and Gahan, M.J., 1974, The dipmeter used to recognize depositional environments: APEA [Australian Petroleum Exploration Association] Journal, v. 14, part 1, p. 181-188.

- Smith R.G., and Baker, J.D., 1983, The Dipmeter Advisor system, a case study in commercial expert system development, in 8th international joint conference on artificial intelligence, proceedings: International Joint Conference on Artificial Intelligence, p. 122-129.
- Smith, R.G., and Young, R.L., 1984, The design of the dipmeter advisor system in ACM annual conference [October, 1984], proceedings: New York, Association for Computing Machinery, p. 15-23.
- Standen, E., 1985, The use of dipmeter synthetic data to determine rock texture and depositional environment, in 10th formation evaluation symposium transactions, paper AA: Calgary, Canadian Well Logging Society, 12 p.
- Stuart-Bruges, W.P., 1984, A dipmeter for use in oil based muds, in 9th international formation evaluation symposium transactions, paper 32: Paris, Society of Professional Well Log Analysts, Paris Chapter (SAID), 8 p.
- Van Golf-Racht, T.D., 1982, Logging versus fracture evaluation, chapter 5, in Fundamentals of fractured reservoir engineering: Amsterdam, Elsevier, Developments in Petroleum Science, no. 12, p. 255-294.
- Vincent, Ph., Gartner, J.E., and Attali, G., 1977, An approach to detailed dip determination using correlation by pattern recognition: Dallas, Society of Petroleum Engineers, 52nd annual meeting [Denver] preprint SPE-6823. Later published in 1979, Journal of Petroleum Technology, v. 31(2), p. 232-240.
- Wahab, A., 1975, An analysis of dipmeter survey results in the Langkat area, in 4th annual convention proceedings, volume 1: Jakarta, Indonesian Petroleum Association, p. 83-112.
- Zoback, M.D., Moos, D., Mastin, L., and Anderson, R.N., 1985, Well bore breakouts and in situ stress: Journal of Geophysical Research, v. 90(B7), p. 5523-5530.

7. COMPUTER APPLICATIONS (Including automated lithofacies analysis and AI)

- Baker, J.D., 1984, Dipmeter Advisor—an expert log analysis system at Schlumberger in P.H. Winston and K.A. Prendergast, editors, The AI business; the commercial uses of artificial intelligence: Cambridge, Massachussetts, The MIT Press, p. 51-65.
- Baker, P.L., and Smoliar, S.W., 1984, Applying artifical intelligence to the interpretation of petroleum well logs, in Proceedings, first conference on artificial intelligence applications: The Institute of Electrical and Electronics Engineers Computer Society Press, p. 558-561.
- Berteig, V., Helgeland, J., Mohn, E., Langeland, T., and van der Wel, D., 1985, Geofacies determination by logging data, in 26th annual logging symposium transactions, paper TT: Houston, Society of Professional Well Log Analysts, 25 p.
- Bigelow, E.L., and Easton, S.B., 1986, Electrofacies fingerprints of eolian desert environments, in 10th European formation evaluation symposium transactions, paper V: Aberdeen, Society of Professional Well Log Analysts, Aberdeen Chapter, 19 p.
- Bonnet, A., and Dahan, C., 1983, Oil-well interpretation using expert system and pattern recognition technique, in Eighth international joint conference on artificial intelligence, proceedings: Palo Alto, American Association on Artificial Intelligence, p. 185-189.
- Bornemann E., and Doveton, J.H., 1983, Lithofacies mapping of Viola Limestone in south central Kansas based on wireline logs: AAPG Bulletin, v. 67(4), p. 609-623.
- Collins, D.R., and Doveton, J.H., 1986, Color images of Kansas subsurface geology from well logs: Computers & Geosciences, v. 12(4B), p. 519-526.
- Crain, E.R., 1985, A primer on artificial intelligence and expert systems in the petroleum industry: Canadian Well Logging Society Journal, v. 14, p. 17.
- Davis, R., Austin, H., Carlbom, I., Frawley, B., Pruchnik, P., Sneiderman, R., and Gilreath, J.A., 1981, The Dipmeter Advisor—Interpretation of geological signals, in 7th international joint conference on artificial intelligence, [Vancouver, British Columbia, Canada], proceedings: International Joint Conference on Artificial Intelligence, p. 846-849.
- Delfiner, P., Delhomme, J.P., and Pelissier-Cobescure, J., 1983, Application of geostatistical analysis to the the evaluation of petroleum reservoirs with well logs, in 24th annual logging symposium transactions, paper WW: Houston, Society of Professional Well Log Analysts, 26 p.
- Delfiner, P.C., Peyret, O., and Serra, O., 1984, Automatic determination of lithology from well logs: Dallas, Society of Petroleum Engineers, 59th annual meeting [Houston] preprint SPE-13290, 8 p.

- Doveton, J.H., 1983, Automated lithofacies analysis from well logs, in 12th annual geochautauqua short course notes, November 8, 1983: Lawrence, Kansas Geological Survey/University of Kansas, 188 p.
- Doveton, J.H., 1986, Log analysis of subsurface geology—Concepts and computer methods: New York, John Wiley & Sons, 273 p.
- Doveton, J.H., and Bornemann, E., 1981, Log normalization by trend surface analysis: The Log Analyst, v. 22(4), July-August, p. 3-8.
- Doveton, J.H., and Cable, H.W., 1979, Fast matrix methods for the lithological interpretation of geophysical logs, in D. Gill and D.F. Merriam, editors, Geomathematical and petrophysical studies in sedimentology: Oxford, Pergamon Press, Computers in Geology Series, p. 101-116.
- Doveton, J.H., Ke-An, Z., and Davis, J.C., 1984, Three-dimensional trend mapping using gamma-ray well logs—Simpson Group, south-central Kansas: AAPG Bulletin, v. 68(6), p. 690-703.
- Gershman, A., 1982, Building a geological expert system for dipmeter interpretation, in European conference on artificial intelligence, proceedings: p. 139-140.
- Griffiths, C.M., 1982, A proposed geologically consistent segmentation and reassignment algorithm for petrophysical borehole logs, in J.M. Cubitt and R.A. Reymont, editors, Quantitative stratigraphic correlation: New York, John Wiley & Sons, p. 287-298.
- Hempkins, W.B., 1977, Multivariate statistical approaches in formation evaluation, in 18th annual logging symposium transactions, paper DD: Houston, Society of Professional Well Log Analysts, 23 p.
- Hoyle, I.B., 1986, Computer techniques for the zoning and correlation of well-logs: Geophysical prospecting, v. 34(5), August, p. 648-664.
- Kemp, F., 1982, An algorithm for the stratigraphic correlation of well logs: Mathematical Geology, v. 14(3), p. 271-285.
- Kerzner, M.G., 1986, Image processing in well log analysis: Boston, IHRDC Press, 140 p.
- Lanning, E.N., and Johnson, D.M., 1983, Automated identification of rock boundaries—An application of the Walsh transform to geophysical well-log analysis: Geophysics, v. 48(2), p. 197.
- Magara, K., 1979, Identification of sandstone body types by computer method: Journal of the International Association for Mathematical Geology, v. 11(3), p. 269-283.
- Mann, C.J., and Dowell, T.P.L., Jr., 1977, Quantitative lithostratigraphic correlation of subsurface sequences: Computers and Geosciences, v. 4, p. 295-306.

- Matuszak, D.R., 1972, Stratigraphic correlation of subsurface geologic data by computer: *Mathematical Geology*, v. 4(4), p. 331-343. Discussion of Holgate crossplots.
- Merkel, R.H., and Head, W.J., 1977, The use of computerized log analysis to determine in situ lithologic characteristics pertinent to secondary recovery: *Bulletin of Canadian Petroleum Geologists*, v. 25(2), May, p. 291-304.
- Messineo, A.V., 1980, The use of computers in log interpretation to evaluate complex reservoirs, in Tenth world petroleum congress, proceedings, volume 3: London, Heyden, p. 171-179.
- Pirie, G., 1982, Geology and log study of tight gas sandstones--Cotton Valley Group: *Transactions of the Gulf Coast Association of Geological Societies*, v. 32, p. 77-88.
- Pirie, G., 1984, Computer-generated interpretations of stratigraphy and depositional environments from a logging/core study--Cotton Valley Group, East Texas, in W.P.S. Ventress, D. Bebout, B.F. Perkins and C.H. Moore, editors, *The Jurassic of the Gulf rim: Gulf Coast Section of the Society of Economic Paleontologists and Mineralogists* p. 323-331.
- Prensky, S.E., and Dickinson, W.W., 1986, Computer-generated well-log data plots assist in regional subsurface evaluation, northern Green River basin, Wyoming: *Geobyte*, v.1(2), Spring, p. 52-58.
- Rider, M.H., and Laurier, D., 1979, Sedimentology using a computer treatment of well logs, in 6th European formation evaluation symposium transactions, paper J: London, Society of Professional Well Log Analysts, London Chapter, 12 p.
- Robinson, J.E., 1977, Pitfalls in automatic lithostratigraphic correlation: *Computers and Geosciences*, v. 4, p. 273-275.
- Robinson, J.E., 1982, Computer analysis of well logs, chapter 12, in *Computer applications in petroleum geology*: New York, Hutchinson Publishing Company, p. 143-151. Discussion of unusual graphic displays of log data.
- Robinson, J.E., 1986, Correcting well-log information for computer processing and analysis: *Computers & Geosciences*, v. 12(4B), p. 493-498.
- Ruoff, W.A., 1976, A technique for interpreting depositional environments of sandstone from the SP log using a computer: *The Log Analyst*, v. 17(4), July-August, p. 3-10.
- Serra, O., and Abbott, H.T., 1980, The contribution of logging data to sedimentary sedimentology and stratigraphy: Dallas, Society of Petroleum Engineers, 55th annual meeting [Dallas] preprint SPE-9270, 19 p. Later published in 1982, *Society of Petroleum Engineers Journal*, v. 22(1), p. 117-131.

- Serra, O., Delfiner, P., Levert, J.C., 1985, Lithology determination from well-logs—Case studies, in 26th annual logging symposium transactions, paper WW: Houston, Society of Professional Well Log Analysts, 19 p.
- Serra, O., and Sulpice, L., 1975, Sedimentological analysis of sand-shale series from well logs, in 16th annual logging symposium transactions, paper W: Houston, Society of Professional Well Log Analysts, 23 p.
- Shaw, B.R., 1977, Parametric interpolation of digitized log segments: Computers and Geosciences, v. 4, p. 277-283.
- Shaw, B.R., and Cubitt, J.M., 1979, Stratigraphic correlation of well logs—An automated approach, in D. Gill and D.F. Merriam, editors, Geomathematical and petrophysical studies in sedimentology: New York, Pergamon Press, p. 127-148.
- Smith R.G., and Baker, J.D., 1983, The Dipmeter Advisor system, a case study in commercial expert system development, in 8th international joint conference on artificial intelligence: International Joint Conference on Artificial Intelligence, p. 122-129.
- Smith, R.G., and Young, R.L., 1984, The design of the Dipmeter Advisor system in ACM annual conference [October, 1984], proceedings: New York, Association for Computing Machinery, p. 15-23.
- Somturk, A.R., and Des Ligneris, S., 1985, LITHO; a computerized approach to lithofacies determination: Geological Society of Malaysia Bulletin [Bulletin Persatuan Geologi Malaysia], v. 18, p. 101-118.
- Startzman, R.A., and Kuo, T.B., 1986, An artificial intelligence approach to well log correlation, in 27th annual logging symposium transactions, paper WW: Houston, Society of Professional Well Log Analysts, 21 p. Also published in 1986 as, A rule-based system for well log correlation, in Symposium on petroleum industry applications of microcomputers [Silver Creek, Colorado, June 18-20], proceedings, SPE-15295: Dallas, Society of Petroleum Engineers, p. 113-124.
- Szendro, D., 1983, A statistical method for lithologic interpretation from well logs: The Log Analyst, v. 24(3), May-June, p. 16-23.
- Wolff, M., and Pelissier-Combes, J., 1982, Faciolog—Automatic electrofacies determination in 23rd annual logging symposium transactions, paper FF: Houston, Society of Professional Well Log Analysts, 23 p.
- Wu, X., and Nyland, E., 1986, Well log data interpretation using artificial intelligence technique, in 27th annual logging symposium transactions, paper M: Houston, Society of Professional Well Log Analysts, 16 p.
- Zivy, G.M., 1984, the role of expert systems in producing log interpretation software: Expert Systems, v. 1(1), p. 57-62.

8. NATURAL GAMMA-RAY SPECTROMETRY

(Clay analysis, fracture identification, and determination of organic carbon)

- Atwater, J.E., 1984, Spectrometric gamma ray logging of core: Canadian Well Logging Society Journal, v. 13, p. 29-39.
- Dion, E.P., and Allen, L.S., 1985, The accuracy of commercial natural gamma-ray spectral logs, in 1985 technical program abstracts and biographies: Tulsa, Society of Exploration Geophysicists, p. 283-285.
- Donovan, W.S., and Hilchie, D.W., 1979, Natural gamma ray emission in the Muddy J Formation in eastern Wyoming, in 7th formation evaluation symposium transactions, paper B: Calgary, Canadian Well Logging Society, 11 p. Later published in 1981, The Log Analyst, v. 22(2), February-March, p. 17-22.
- Dypvik, H., and Eriksen, D.O., 1983, Natural radioactivity of clastic sediments and the contribution of U, Th, and K: Journal of Petroleum Geology, v. 5(4), April, p. 409-416.
- Fertl, W.H., 1979, Gamma ray spectral data assists in complex formation evaluation, in 6th European formation evaluation symposium transactions, paper Q: London, Society of Professional Well Log Analysts, London Chapter. Later published in 1979, The Log Analyst, v. 20(5), September-October, p. 3-37. Reprinted in 1981, Spectralog: Houston, Dresser Industries, publication 3334.
- Fertl, W.H., 1983, Gamma ray spectral logging—A new evaluation frontier, part I—Principles: World Oil, v. 196(4), March, p. 79-91. A seven-part series. See References.
- Fertl, W.H., 1983, Gamma ray spectral logging—A new evaluation frontier, part II—Application in carbonates: World Oil, v. 196(5), April, p. 87-98.
- Fertl, W.H., 1983, Gamma ray spectral logging—A new evaluation frontier, part III—Measuring source rock potential: World Oil, v. 196(6), May, p. 147-155.
- Fertl, W.H., 1983, Gamma ray spectral logging—A new evaluation frontier, part IV—Application in fractured shale: World Oil, v. 196(7), June, p. 189-204.
- Fertl, W.H., 1983, Gamma ray spectral logging—A new evaluation frontier, part V—Application in clastic reservoirs: World Oil, v. 197(2), August 1, p. 57-63.
- Fertl, W.H., 1983, Gamma ray spectral logging—A new evaluation frontier, part VI—Clay analysis in shaly sands: World Oil, v. 197(4), October, p. 99-112.
- Fertl, W.H., 1983, Gamma ray spectral logging—A new evaluation frontier, part VII—Application in workovers/recompletions: World Oil, v. 197(5), November, p. 85-88.

- Fertl, W.H., Chilingarian, G.V., and Yen, T.F., 1982, Use of natural gamma ray spectral logging in evaluation of clay minerals: *Energy Sources*, v. 6(4), p. 335-360.
- Fertl, W.H., and Frost E., Jr., 1979, Evaluation of shaly clastic reservoir rocks: Dallas, Society of Petroleum Engineers, 54th annual meeting [Las Vegas] preprint SPE-8450. Later published in 1980, *Journal of Petroleum Technology*, v. 31(9), p. 1641-1646. Reprinted in 1981, *Spectralog*: Houston, Dresser Industries, publication no. 3334.
- Fertl, W.H., and Rieke, H.H., III, 1979, Gamma ray spectral evaluation techniques identify fractured shale reservoirs and source-rock characteristics: Dallas, Society of Petroleum Engineers, 54th annual meeting [Las Vegas] preprint SPE-8454. Later published in 1980, *Journal of Petroleum Technology*, v. 32(11), p. 2053-2062.
- Gilchrist, W.A., Jr., Quirein, J.A., Boutemy, Y.L., and Tabanou, J.R., 1982, Application of gamma ray spectroscopy to formation evaluation, in 23rd annual logging symposium transactions, paper B: Houston, Society of Professional Well Log Analysts, 28 p.
- Heinze, D.M., 1985, Clay identification and amount measured by laboratory techniques compared to well log responses—Application to tight gas sands and shales: Albuquerque, Sandia National Laboratory Report SAND85-0312, March, 36 p.
- Hassan, M., 1973, Radio elements and diagenesis in shale and carbonate sediments, in 2nd annual logging symposium transactions, paper 7: Paris, Society of Professional Well Log Analysts, Paris Chapter (SAID), 12 p.
- Koizumi, C.J., 1985, Computer determination of calibration and environmental corrections for a natural spectral gamma ray logging system: Dallas, Society of Petroleum Engineers, 60th annual meeting [Las Vegas], preprint SPE-14186, 12 p.
- Kowalski, J.J., and Asekun, S.O., 1979, It may not be shale, in 20th annual logging symposium transactions, paper P: Houston, Society of Professional Well Log Analysts, 15 p.
- Moll, S.H., 1980, Spectral gamma logging in the Copper Mountain uranium district—A case study in fractured quartz monzonite, in 21st annual logging symposium transactions, paper O: Houston, Society of Professional Well Log Analysts, 18 p.
- Passaretti, M., Eslinger, E., and Hinterlong, G., 1986, High gamma ray zone from a core within a Permian dolostone sequence: Dallas, Society of Petroleum Engineers, unsolicited paper SPE-15333, 12 p.
- Ruhovets, N., and Fertl, W.H., 1982, Volumes, types and distribution of clay minerals in reservoir rocks based on well logs, in SPE/DOE unconventional gas recovery symposium, proceedings, SPE/DOE-10796: Dallas, Society of Petroleum Engineers, p. 67-82.

- Schlumberger, 1982, Fundamentals of natural gamma ray spectrometry and essentials of NGS interpretation: Paris, Schlumberger Technical Services, document no. M-081025, 69 p.
- West, F.G., and Laughlin, A.W., 1976, Spectral gamma logging in crystalline basement rocks: *Geology*, v. 4(10), p. 617-618.
- Zelt, F.B., 1985, Natural gamma-ray spectrometry, lithofacies and depositional environments of selected Upper Cretaceous marine mudrocks, western United States, including Tropic Shale and Tununk Member of Mancos Shale: Princeton University, unpublished PhD. dissertation, 354 p.
- Zelt, F.B., 1985, Paleocenographic events and lithologic/geochemical facies of the Greenhorn marine cycle (Upper Cretaceous) examined using natural gamma-ray spectroscopy, in L. Pratt, E.G. Kaufmann, F.B. Zelt, editors, *SEPM field trip guidebook number 4*, 1985 midyear meeting, Golden, Colorado: Tulsa, Society of Economic Paleontologists and Mineralogists, p. 49-59.

9. ORGANIC CARBON DETERMINATION AND SOURCE ROCK EVALUATION
(See also 8. Natural gamma-ray spectrometry)

- Autric, A., and Dumensil, P., 1985, Resistivity, radioactivity and sonic transit time logs to evaluate the organic content of low permeability rocks: *The Log Analyst*, v. 26(3), May-June, p. 36-45.
- Chilingar, G.V., Fertl, W.H., and Yen, T.F., 1984, Classification of source rocks on the basis of shale resistivity ratio parameter: *Energy Sources*, v. 7(3), p. 271-274.
- Dellenbach, J., Espitalie, J., and Lebreton, F., 1983, Source rock logging, in 8th European logging symposium transactions, paper D: London, Society of Professional Well Log Analysts, London Chapter, 19 p.
- Fertl, W.H., 1983, Gamma ray spectral logging, part III—Measuring source rock potential: *World Oil*, v. 196(6), p. 147-155.
- Gautier, D.L., Starkey, H.C., and Takahashi, K.I., 1983, Clays, cations and geophysical log response of gas-producing and non-producing zones in the Gammon Shale (Cretaceous), southwestern North Dakota: *Clays and Clay Minerals*, v. 31(2), p. 122-128.
- Herron, S.L., 1986, A total organic carbon log for source rock evaluation, in 27th annual logging symposium transactions, paper HH: Houston, Society of Professional Well Log Analysts, 11 p.
- Meissner, F.F., 1978, Petroleum geology of the Bakken Formation Williston basin, North Dakota and Montana, in Williston basin symposium: Montana Geological Society, p. 207-227. Later reprinted in 1984, in G.Demaison and R.J. Murris, editors, *Petroleum geochemistry and basin evaluation*: Tulsa, American Association of Petroleum Geologists, Memoir no. 35, p. 159-179.
- Mendelson, J.D., and Toksoz, M.N., 1985, Source rock characterization using multivariate analysis of log data, in 26th annual logging symposium transactions, paper UU: Houston, Society of Professional Well Log Analysts, 21 p.
- Meyer, B.L., and Nederlof, M.H., 1984, Identification of source rocks on wireline logs by density/resistivity and sonic transit time/resistivity crossplots: *AAPG Bulletin* v. 68(2), p. 121-129.
- Russell, D.J., 1985, Depositional analysis of a black shale by using gamma-ray stratigraphy—The Upper Devonian Kettle Point Formation of Ontario: *Bulletin of Canadian Petroleum Geology*, v. 33(2), June, p. 236-253.
- Schmoker, J.W., 1979, Determination of organic content of Appalachian Devonian shales from formation-density logs: *AAPG Bulletin*, v. 63(9), p. 1504-1509.
- Schmoker, J.W., 1981, Determination of organic-matter content of Appalachian Devonian shales from gamma-ray logs: *AAPG Bulletin*, v. 65(7), p. 1285-1298.

- Schmoker, J.W., and Hester, T.C., 1983, Organic carbon in Bakken Formation, U.S. Portion of Williston Basin: AAPG Bulletin, v. 67(12), p. 2165-2174.
- Smagala, T.M., Brown, C.A., and Nydegger, G.L., 1984, Log-derived indicator of thermal maturity, in J. Woodward, F.F. Meissner, J.L. Clayton, editors, Hydrocarbon source rocks of the greater Rocky Mountain region: Denver, Rocky Mountain Association of Geologists, p. 355-363.

10. TIGHT (LOW-PERMEABILITY) GAS SANDSTONES
(See also XI. Shaly sands)

- Autric, A., and Dumensil, P., 1985, Resistivity, radioactivity and sonic transit time logs to evaluate the organic content of low permeability rocks: *The Log Analyst*, v. 26(3), May-June, p. 36-45.
- Boardman, C.R., Hammack, G.W., Fertl, W.H., and Atkinson, C.H., 1972, Evaluation of low-permeability gas-bearing formations in Rio Blanco County, Colorado: Dallas, Society of Petroleum Engineers, 47th annual meeting [San Antonio] preprint SPE-4097. Later published in 1973, *Journal of Petroleum Technology*, v. 25(10), p. 1125-1129.
- Brown, J.A., Jackson, J.A., and Koelle, A.R., 1985, Western gas sands project Los Alamos NMR well logging tool development: Los Alamos, Los Alamos National Laboratory, Report LA-10374-PR, March, 77 p.
- CER Corporation, 1984, Multiwell experiment—Well log analysis of the paludal interval: Las Vegas, Nevada, CER Corporation [Prepared for Sandia National Laboratory], 103 p.
- CER Corporation, 1986, Multiwell experiment—Well log analysis of coastal interval: Las Vegas, Nevada, CER Corporation [Prepared for Sandia National Laboratory], 98 p.
- Chilholm, J.L., Schenewerk, P.A., and Donaldson, E.C., 1985, A comparison of shaly sand interpretation techniques in the Mesaverde Group of the Uinta Basin, Utah: Dallas, Society of Petroleum Engineers, 60th annual meeting [Las Vegas], preprint SPE-14281, 12 p.
- Crain, E.R., 1981, Log evaluation results in the Deep Basin area of Alberta, in 8th formation evaluation symposium transactions, paper A: Calgary, Canadian Well Logging Society, 14 p.
- Dawson-Grove, G.E., 1979, Log analysis in tight gas sands—A reconnaissance study, in 7th formation evaluation symposium transactions, paper H: Calgary, Canadian Well Logging Society, 14 p.
- Frank, R.W., 1978, Formation evaluation with logs in the Ark-La-Tex Cotton Valley: Transactions of the Gulf Coast Association of Geological Societies, v. 28, part 1, p. 131-141.
- Henry, K.C., 1979, Gas detection in the extremely shaly Bowdoin Formation of northern Montana, in 20th annual logging symposium transactions, paper T: Houston, Society of Professional Well Log Analysts, 45 p.
- Howard, W.E., and Hunt, E.R., 1986, Travis Peak—An integrated approach to formation evaluation, in 1986 unconventional gas technology symposium, proceedings, SPE-15208: Dallas, Society of Petroleum Engineers, p. 7-17.

- Hunt, E.R., Raymond, D.H., Haskett, C.E., and Pirie, R.G., 1981, Application of new well logs and geology to fracturing and producibility in tight gas sands, Cotton Valley Group, in 1981 SPE/DOE symposium on low permeability gas reservoirs, proceedings, SPE/DOE-9832: Dallas, Society of Petroleum Engineers, p. 35.
- Hunts, E.R., Walls, J.D., and Scala, C., 1985, An integrated log and core analysis study of an east Texas tight gas well, in 26th annual logging symposium transactions, paper HHH: Houston, Society of Professional Well Log Analysts, 18 p.
- Jackson, J.A., Brown, J.A., and Crawford, T.R., 1981, Remote characterization of tight gas formations with a new NMR logging tool, in 1981 SPE/DOE symposium on low permeability gas reservoirs, proceedings, SPE/DOE-9860: Dallas, Society of Petroleum Engineers, p. 313-320.
- Jennings, J.B., and Carroll, H.B. Jr., editors, 1982, Western tight gas sands advanced logging workshop [March 17-18, 1981], proceedings: U.S. Department of Energy, Bartlesville Energy Technology Center, Report CONF-8103113, April 1982, 253 p.
- Knutson, C.F., 1984, Reservoir evaluation and geologic modeling for the Clinton eastern tight gas formation, phase I final report: U.S. Department of Energy, Morgantown Center Report DOE/MC/21148, 73 p.
- Knutson, C.F., and Boardman, C.R., 1978, Continuity and permeability development in the tight gas sands of the eastern Uinta Basin, Utah: U.S. Department of Energy, Report NVO/0011-1, 54 p.
- Kukal, G.C., 1978, Log evaluation of compacted shaly sands of the Mesaverde Group, Uinta Basin, Utah, in 4th annual DOE symposium on enhanced oil and gas recovery and improved drilling methods, proceedings, volume 2, paper E-1: U.S. Department of Energy, 18 p.
- Kukal, G.C., 1979, Formation evaluation and gas detection in shallow, low-permeability shaly sands of the Northern Great Plains province, in 1979 SPE symposium on low permeability gas reservoirs, proceedings, SPE-7920: Dallas, Society of Petroleum Engineers, p. 85-98. Later published in 1981, Journal of Petroleum Technology, v. 33(10), p. 1976-1984.
- Kukal, G.C., 1981, Determination of fluid corrected porosity in tight gas sands and in formations exhibiting shallow invasion profiles, in 1981 SPE symposium on low permeability gas reservoirs, proceedings, SPE-9856: Dallas, Society of Petroleum Engineers, p. 289-299.
- Kukal, G.C., 1983, Log analysis in low-permeability gas sand sequence—Correcting for variable unflushed gas saturation, in 23rd annual logging symposium transactions, paper F: Houston, Society of Professional Well Log Analysts, 18 p.
- Kukal, G.C., 1984, A systematic approach for the effective log analysis of tight gas sands, in SPE/DOE/GRI unconventional gas recovery symposium, proceedings, SPE/DOE/GRI-12851: Dallas, Society of Petroleum Engineers, p. 209-220.

- Kukal, G.C., Biddison, C.L., Hill, R.E., Monson, E.R., and Simons, K.E., 1983, Critical problems hindering accurate log interpretation of tight gas sand reservoirs, in 1983 SPE/DOE symposium on low permeability gas reservoirs, proceedings, SPE/DOE-11620: Dallas, Society of Petroleum Engineers, p. 181-190.
- Kukal, G.C., Biddison, C.L., Hill, R.E., Monson, E.R., and Simons, K.E., 1983, Tight gas sands log interpretation--Problem study: Chicago, Gas Research Institute, final report GRI-82/0094, July 1982, 181 p.
- Kukal, G.C., and Hill, R.E., 1986, Log analysis of clay volume--An evaluation of techniques and assumptions used in an Upper Cretaceous sand-shale sequence, in 27th annual logging symposium transactions, paper RR: Houston, Society of Professional Well Log Analysts, 21 p.
- Kukal, G.C., and Simons, K.E., 1985, Log analysis techniques for quantifying the permeability of sub-millidarcy sandstone reservoirs, in 1985 SPE/DOE symposium on low permeability reservoirs, proceedings, SPE/DOE-13880: Dallas, Society of Petroleum Engineers, p. 303-310. Later published in SPE Formation Evaluation, v. 1(6), December, p. 609-622.
- Leeth, R., and Cossette, B., 1979, The velocity ratio plot in tight Canadian carbonate formations, in 7th formation evaluation symposium transactions, paper X: Calgary, Canadian Well Logging Society, 17 p.
- Leeth, R., and Holmes, M., 1978, Log interpretation of shaly formations using the velocity ratio plot, in 19th annual logging symposium transactions, paper CC: Houston, Society of Professional Well Log Analysts, 9 p.
- Murphy, W.F., III, 1984, Acoustic measures of partial gas saturation in tight sandstones: Journal of Geophysical Research, v. 89(B13), p. 11,549-11,559.
- Nur, A., and Raible, C., 1983, Sonic and electrical properties of partially saturated tight gas sands: U.S. Department of Energy, Report DOE/BC/10498-5, March 1983, 54 p.
- Nydegger, G.L., Rice, D.D., and Brown, C.A., 1979, Development of shallow gas reserves in low-permeability reservoirs of Late Cretaceous age, Bowdoin Dome area, north-central Montana, in 1979 SPE symposium on low permeability gas reservoirs, proceedings, SPE-7945: Dallas, Society of Petroleum Engineers, p. 315-323. Later published in 1980, Journal of Petroleum Technology, v. 32(12), p. 2111-2120.
- Osoba, J., Gist, R., and Carroll, H., 1980, Porosity determination from density logs in western gas sands, in 21st annual logging symposium transactions, paper JJ: Houston, Society of Professional Well Log Analysts, 10 p.
- Osoba, J., Gist, R., and Carroll, H., 1981, Log evaluation techniques in Uinta basin found faulty: World Oil, v. 192(6), June, p. 235-244.

- Osoba, J.S., and Raible, C.J., 1982, Study of sonic, neutron and density logging of low permeability gas sands: U.S. Department of Energy, Bartlesville Energy Technology Center, Report DOE/BC/00010-33, May 1982, 63 p.
- Pirie, G., 1982, Geology and log study of tight gas sandstones--Cotton Valley Group: Transactions of the Gulf Coast Association of Geological Societies, v. 32, p. 77-88.
- Rosepiller, M.J., 1981, Calculation and significance of water saturations in low porosity shaly gas sands, in 23rd annual logging symposium transactions, paper C: Houston, Society of Professional Well Log Analysts, 21 p. Also published in condensed form 1981, Oil and Gas Journal, v. 79(28), July 13, p. 180-187.
- Trojan, M., 1985, Effects of diagenesis on reservoir properties and log response, Upper Jurassic Taylor Sandstone, Cotton Valley Group, Lincoln Parish, Louisiana: Transactions of the Gulf Coast Association of Geological Societies, v. 35, p. 515-523.
- Tsay, F.S., and Fang, J.H., 1986, A core-log study of the Hastelle Sandstone in north Alabama with emphasis in log interpretation problems in tight gas sands, in 1986 unconventional gas technology symposium, proceedings, SPE-15211: Dallas, Society of Petroleum Engineers, p. 47-62.
- Volk, L.J., Carroll, H.B., and Raible, C.J., 1979, Influence of shale conductivities on the electrical conductivity of low-permeability rocks, in 1979 symposium on low-permeability gas reservoirs [Denver], proceedings, SPE-7918: Dallas, Society of Petroleum Engineers, p. Later published in 1980, Journal of Petroleum Technology, v. 32(5), p. 865-867.
- Wescott, W.A., 1983, Diagenesis of Cotton Valley Sandstone (Upper Jurassic), east Texas--Implications for tight gas formation pay recognition: AAPG Bulletin, v. 67(6), p. 1002-1013. A discussion and reply published in 1985, AAPG Bulletin v. 69(5), p. 813-816.

11. ABNORMAL PRESSURE DETECTION AND EVALUATION

- Anderson, R.A., 1972, Fracture pressure gradient determination from well logs: Dallas, Society of Petroleum Engineers, 47th annual meeting [San Antonio] preprint SPE-4135, 15 p.
- Blackburn, J.S., and Brimage, R.C., 1978, Estimation of formation pressures in clean gas sands from the dual-spacing TDT log, in 19th annual logging symposium transactions, paper V: Houston, Society of Professional Well Log Analysts, 14 p.
- Campbell, R., 1974, Abnormal pressure detection using log data, in 3rd European formation evaluation symposium transactions, paper T: London, Society of Professional Well Log Analysts, London Chapter, 16 p.
- Carstens, H., and Dypvik, H., 1981, Abnormal formation pressure and shale porosity: AAPG Bulletin, v. 65(2), p. 344-350.
- Constant, W.D., and Bourgoynne, A.T., Jr., 1986, Fracture gradient prediction for offshore wells, in 56th SPE California regional meeting, proceedings, SPE-15105: Dallas, Society of Petroleum Engineers, p. 125-128. Also published in 1986 as, Method predicts frac gradient for abnormally pressured formations: Petroleum Engineer International, v. 58(1), January, p. 38-46.
- Davis, T.B., 1984, Subsurface pressure profiles in gas-saturated basins, in J.A. Masters, editor, Elmworth--Case study of a Deep Basin gas field: Tulsa, American Association of Petroleum Geologists, Memoir no. 38, p. 189-203.
- Dickey, P.A., 1979, Subsurface pressures, chapter 12, in Petroleum development geology: Tulsa, Petroleum Publishing Co., p. 250-308.
- Eaton, B.A., 1972, The effect of overburden stress on geopressure prediction from well logs, in 3rd symposium on abnormal pore pressure, proceedings, SPE-3719: Dallas, Society of Petroleum Engineers. Later published in 1972, Journal of Petroleum Technology, v. 24(8), p. 929-934.
- Eaton, B.A., 1975, The equation for geopressure prediction from well logs: Dallas, Society of Petroleum Engineers, 50th annual meeting [Dallas] preprint SPE-5544, 9 p.
- Evers, J.F., and Ezeanyim, R., 1983, Prediction of abnormal pressures in Wyoming sedimentary basins using well logs, in Rocky Mountain regional meeting [Salt Lake City], proceedings, SPE-11859: Dallas, Society of Petroleum Engineers, p. 363-374.
- Fertl, W.H., 1976, Geophysical well-logging techniques detect and evaluate abnormal formation pressures, chapter 5, in Abnormal formation pressures: New York, Elsevier, p. 177-274.

- Fertl, W.H., 1977, Shale density studies and their application, in G.D., Hobson, editor, *Developments in petroleum geology volume 1*: London, Applied Science Publishers, p. 293-327.
- Hamouz, M.A., and Mueller, S.L., 1984, Some new ideas for well log pore-pressure prediction: Dallas, Society of Petroleum Engineers, 59th annual meeting [Houston] preprint SPE-13204, 11 p.
- Herring, E.A., 1973, Estimating abnormal pressures from data in the North Sea: Dallas, Society of Petroleum Engineers, 2nd annual European meeting [London, April 2-3], preprint SPE-4301, 8 p.
- Hottman, C.E., and Johnson, R.K., 1965, Estimation of formation pressures from log-derived shale properties: *Journal of Petroleum Technology*, v. 17(6), p. 717-722, SPE-1110. Reprinted in 1971, *Well logging*: Dallas, Society of Petroleum Engineers, Reprint Series no. 1, p. 299-305. One of the first papers on the use of logs for pressure detection-evaluation.
- Lane, R.A., and MacPherson, L.A., 1974, A review of geopressure evaluation from well logs—Louisiana Gulf Coast: Dallas, Society of Petroleum Engineers, 49th annual meeting [Houston] preprint SPE-5033, 16 p. Later published in 1976, *Journal of Petroleum Technology*, v. 28(9), p. 963-971.
- Lindberg, P.H., and Fertl, W.H., 1980, Occurrence and distribution of overpressures in the northern North Sea: Dallas, Society of Petroleum Engineers, 55th annual meeting [Dallas] preprint SPE-9339, 21 p.
- Magara, K., 1978, *Compaction and fluid migration—Practical petroleum geology*: New York, Elsevier Scientific Publishing Company, *Developments in Petroleum Science*, no. 9, 319 p.
- Matthews, W.R., McClendon, R.T., and Soucek, C.R., 1972, How to predict formation pressures of Cretaceous-Jurassic age sediments in Mississippi in 3rd symposium on abnormal subsurface pore pressure, proceedings, SPE-3895: Dallas, Society of Petroleum Engineers, p. 137-144.
- McGregor, J.R., 1965, Quantitative determination of reservoir pressures from conductivity logs: *AAPG Bulletin*, v. 49(9), p. 1502-1511. Reprinted in 1974, *Abnormal subsurface pressure*: Tulsa, American Association of Petroleum Geologists, Reprint Series 11, p. 37-46. One of the first papers on pressure detection using well logs.
- Pennebaker, E.S., 1968, An engineering interpretation of seismic data: Dallas, Society of Petroleum Engineers, 43rd annual meeting [Houston] preprint SPE-2165, 12 p. Important uses and interpretations from sonic log data.
- Pickering, L.A., and Indelicato, G.J., 1985, Abnormal formation pressure—A review: *The Mountain Geologist*, v. 22(2), April, p. 78-89.
- Pirson, S.J., 1983, Geostatic equilibrium, chapter 9, in *Geologic well log analysis*, 3rd edition: Houston, Gulf Publishing Co., p. 259-290.

- Prensky, S.E., 1986, Geologic implications of large-scale trends in well-log response, northern Green River basin, Wyoming, in 27th annual logging symposium transactions, paper EEE: Houston, Society of Professional Well Log Analysts, 24 p.
- Pritchett, W.C., 1978, Physical properties of shales and possible origins of high pressures: Dallas, Society of Petroleum Engineers, 53rd annual meeting [Houston] preprint SPE-7506. Later published in 1980, Society of Petroleum Engineers Journal v. 20(5) p. 341-348.
- Ransom, R.C., 1986, A method for calculating pore pressures from well logs: The Log Analyst, v. 27(2), March-April, p. 72-76.
- Rathbun, F.C., 1968, Abnormal pressures and conductivity anomaly, northern Green River basin, Wyoming: Dallas, Society of Petroleum Engineers, 43rd annual meeting [Houston] preprint SPE-2205, 8 p. Later reprinted under Rathbun, F.C., and Dickey, P., 1969, Abnormal pressures and conductivity anomaly, northern Green River basin, Wyoming: The Log Analyst, v. 10(4), July-August, p. 3-8.
- Reynolds, E.B., Timko, D.J., Zanier, A.M., 1972, Potential hazards of acoustic-log shale pressure plots: Dallas, Society of Petroleum Engineers, 47th annual meeting [San Antonio] preprint, SPE-4020. Later published in 1973, Journal of Petroleum Technology, v. 25(9), p. 1039-1044.
- Saavedra, L.L., 1985, A review of the methods of detection and estimation of geopressure from well logs: South Texas Geological Society Bulletin, v. 26(2), p. 21-37.
- Schmidt, G.W., 1973, Interstitial water composition and geochemistry of deep Gulf Coast shales and sandstones: AAPG Bulletin, v. 57(2), p. 321-337.
- Society of Petroleum Engineers, 1972, Third symposium on abnormal subsurface pore pressure, transactions: Dallas, Society of Petroleum Engineers, 159 p. Includes preprints of 16 papers.
- Taneja, P.K., and Carroll, J.F., 1985, Abnormal pressure detection using a pulsed neutron log in 26th annual well logging symposium transactions, paper MM: Houston, Society of Professional Well Log Analysts, 10 p.
- Timko, D.J., and Fons, L.C., 1971, Definition, identification and measurement of normal and abnormal subsurface pressures, in Abnormal subsurface pressures, a study group report, 1969-1971: Houston Geological Society, p. 20-30.
- Wallace, W.E., 1965, Abnormal subsurface pressures measured from conductivity or resistivity logs, in 6th annual logging symposium, paper I: Houston, Society of Professional Well Log Analysts, 13 p. Also published in 1965, The Log Analyst, v. 5(4), February-March, p. 26-38., and in 1965, Oil and Gas Journal, v. 63, July 5, p. 102-106. One of the first papers on use of logs for pressure detection.

Ward, G.S., and Pendergast, R.D., 1979, Evaluation of pressures and salinities of the Cardium Formation in Western Canada, in 7th formation evaluation syposium transactions, paper R: Calgary, Canadian Well Logging Society.

Whittaker, A., editor, 1985, Theory and evaluation of formation pressures, a pressure detection reference handbook: Boston, International Human Resources Development Corporation, 92 p.

Wichmann, P.A., 1973, A review of the use of logs to determine abnormal pressures: Canadian Well Logging Society Journal, v. 6(1), December, p. 7-32. Later published in 1974, in 15th annual logging symposium transactions, paper C: Houston, Society of Professional Well Log Analysts, 16 p.

12. OIL AND GAS SHALES

(See also 15. Fracture detection)

- Aguilera, R., 1980, Fractured shales, chapter 5, in Naturally fractured reservoirs: Tulsa, Petroleum Publishing Company, p. 355-414.
- Bardsley, S.R., and Algermissen, S.T., 1963, Evaluating oil shale by log analysis: Journal of Petroleum Technology, v. 15(1), p. 81-84. Later published in 1963, Colorado School of Mines Quarterly, v. 58(4), p. 175-184.
- Campbell, R.L., Jr., and Truman, R.B., 1986, Formation evaluation in the Devonian shale, in 1986 unconventional gas technology symposium, proceedings, SPE-15212: Dallas, Society of Petroleum Engineers, p. 63-74.
- Curtis, J.B., and Fingleton, W.G., 1979, A preliminary evaluation of various log analysis techniques for the eastern Devonian shales, in 20th annual logging symposium transactions, paper I: Houston, Society of Professional Well Log Analysts, 20 p.
- Fertl, W.H., 1976, Evaluation of oil shales using geophysical well-logging techniques, chapter 10, in F.F. Yen, editor, Oil shale: New York, Elsevier Scientific Publishing Company, p. 199-213.
- Flower, J.G., 1981, Use of sonic-shear-wave/resistivity overlay as a quick-look method for identifying potential pay zones in the Ohio (Devonian) shale: Dallas, Society of Petroleum Engineers, Eastern regional meeting preprint SPE-10366. Later published in 1983, Journal of Petroleum Technology, v. 35(3), p. 638-642.
- Habiger, R., and Robinson, R.H., 1983, Using a multiple log approach to evaluate Green River oil shale in the Piceance Creek Basin, in J.H. Gary, editor, 16th oil shale symposium, proceedings: Golden, Colorado, Colorado School of Mines, p. 45-67.
- Hashmy, K.H., Hefter, T., and Chicko, R., 1982, Quantitative log evaluation in the Devonian shales of the northeast United States, in 1982 SPE/DOE unconventional gas recovery symposium proceedings, SPE/DOE-10795: Dallas, Society of Petroleum Engineers, p. 55-66.
- Hilton, J., 1978, Wireline evaluation of the Devonian shale, in G.L. Schott, W.K. Overbey, Jr., A.E. Hunt, and C.A. Komar, editors, 1st eastern gas shales symposium, proceedings: Morgantown, West Virginia, U.S. Department of Energy Report MERC/SP-77/5, p. 68-79.
- Lawrence, T.D., Ball, S., and Harris, M., 1984, Continuous carbon/oxygen and neutron lifetime log proposed interpretation for organic and/or shaly depositional environments, in 25th annual logging symposium transactions, paper QQ: Houston, Society of Professional Well Log Analysts, 19 p.

- Myung, J.I., 1976, Fracture investigation of the Devonian shale using geophysical well logging techniques: Dallas, Society of Petroleum Engineers, Eastern region annual meeting preprint SPE-6366, 16 p. Also published in 1976 in R.C. Shumaker and W.K. Overbey, Jr., editors, 7th Appalachian petroleum geology symposium, proceedings: Morgantown, West Virginia, U.S. Department of Energy Report MERC/SP-76/2, p. 212-238, (these proceedings were also published by West Virginia Geological and Economic Survey, p. 1-29.)
- Russell, D.J., 1985, Depositional analysis of a black shale by using gamma-ray stratigraphy—The Upper Devonian Kettle Point Formation of Ontario: Bulletin of Canadian Petroleum Geology, v. 33(2), June, p. 236-253.
- Smith, J.W., Thomas, H.E., and Trudell, L.G., 1968, Geologic factors affecting density logs in oil shale, in 9th annual logging symposium transactions, paper P: Houston, Society of Professional Well Log Analysts, 17 p. Reprinted in 1978, Gamma Ray, Neutron and Density Logging: Houston, Society of Professional Well Log Analysts, paper CC, 17 p.
- Soeder, D.J., 1986, Porosity and permeability of eastern Devonian gas shale, in 1986 unconventional gas technology symposium, proceedings, SPE-15213: Dallas, Society of Petroleum Engineers, p. 75-88.
- Schmoker, J.W., 1977, The relationship between density and gamma-ray intensity in the Devonian shale sequence, Lincoln County, West Virginia, in G.L. Schott, W.K. Overbey, Jr., A.E. Hunt, C.A. Komar, editors, First eastern gas shales symposium, proceedings: U.S. Department of Energy, Morgantown Energy Research Center, p. 266-271.
- Schmoker, J.W., 1979, Determination of organic content of Appalachian Devonian shales from formation-density logs: AAPG Bulletin, 63(9), p. 1504-1509.
- Schmoker, J.W., 1981, Determination of organic-matter content of Appalachian Devonian shales from gamma-ray logs: AAPG Bulletin, 65(7), p. 1285-1298.
- Schmoker, J.W., and Hester, T.C., 1983, Organic carbon in Bakken Formation, U.S. Portion of Williston Basin: AAPG Bulletin, 67(12), p. 2165-2174.
- Tixier, M.P., and Curtis, M.R., 1967, Oil shale yield predicted from well logs, in 7th world petroleum congress, proceedings, volume 3: New York, Elsevier, p. 713-715.
- Truman, R.B., and Campbell, R.L., Jr., 1985, Devonian shale well log analysis: Eastern Devonian Gas Shales Technology Review [Gas Research Institute], v. 2(3), December, p. 6-17.
- Yost, A.B., II, Frohne, K., Komar, C.A., and Ameri, S., 1980, Techniques to determine natural and induced fracture relationships in Devonian shale: Dallas, Society of Petroleum Engineers, 55th annual meeting [Dallas] preprint SPE-9271. Later published in 1982, Journal of Petroleum Technology, v. 34(6), p. 1371-1377.

Yost, A.B., II, Komar, C.A., and Ameri, S., 1980, Application of core and log data to determine producible hydrocarbon intervals in the Devonian shale: Dallas, Society of Petroleum Engineers, 55th annual meeting [Dallas] preprint SPE-9271, 8 p.

13. HEAVY OIL AND TAR SANDS

- Brown, J.S., 1965, Formation evaluation in heavy oil sands: *Journal of Petroleum Technology*, v. 4(4), p. 177. Later published in 1966, in 7th annual logging symposium transactions, paper B: Houston, Society of Professional Well Log Analysts, 14 p.
- Carrigy, M.A., 1971, Deltaic sedimentation in Athabasca tar sands: *AAPG Bulletin*, v. 55(8), p. 1155-1169.
- Chestnut, D.A., and Cox, D.O., 1978, Log analysis in a Rocky Mountain heavy oil reservoir, in 19th annual logging symposium transactions, paper F: Houston, Society of Professional Well Log Analysts, 15 p.
- Collins, H.N., 1974, Log-core correlations in the Athabasca oil sands: Dallas, Society Petroleum Engineers, 49th annual meeting [Houston] preprint SPE-5037, 17 p. Later published in 1976, *Journal of Petroleum Technology*, v.28(10), p. 1157-1168.
- Cossette, B.B., 1981, Well log analysis in heavy oil sands, in 8th formation evaluation symposium transactions, paper K: Calgary, Canadian Well Logging Society 18 p.
- Fertl, W.H., 1981, Evaluation of heavy oil and tar sands deposits using geophysical well logging techniques in open and cased boreholes, in R.F. Meyer, C.T. Steele and J.C. Olson, editors, *Heavy crude oils and tar sands* [1st international UNITAR conference proceedings, 1979]: New York, Mineral Information Service, McGraw-Hill, Inc., p. 283-294.
- Fertl, W.H., 1984, Recent advances in the evaluation of heavy oil reservoirs based on geophysical well-logging concepts, in R.F. Meyer, J.C. Wynn and J.C. Olson, editors, *The future of heavy crude and tar sands* [2nd international UNITAR conference proceedings, 1982]: New York, Coal Age Mineral Information Service, McGraw-Hill Inc., p. 313-317.
- Fertl, W.H., and Chilingarian, G.V., 1978, Formation evaluation of tar sands using geophysical well-logging techniques, chapter 11, in G.V. Chilingarian and T.F. Yen, editors, *Bitumens, asphalts and tar sands*: New York, Elsevier, *Developments in Petroleum Science* no. 7, p. 259-276.
- Fertl, W.H., and Elliott, D.B., 1984, Well log assisted evaluation of heavy oil resources--A status report, in AAPG research conference on exploration for heavy crude oil and bitumen, proceedings, volume 1: Tulsa, American Association of Petroleum Geologists, 28 p.
- Fetzner, R.W., Henson, W.L., and Feigl, F.J., 1966, Athabasca oil sand evaluation using core and log analysis and geological data processing methods, in 7th annual logging symposium transactions, paper A: Houston, Society of Professional Well Log Analysts, 13 p.
- Flach, P.D., and Mossop, G.D., 1985, Depositional environments of Lower Cretaceous McMurray Formation, Athabasca oil sands, Alberta: *AAPG Bulletin*, v. 69(8), p. 11195-1207.

- Freedman, R., and Studlick, J.R.J., 1981, Evaluation of a heavy oil prospect Bandera Tank area Maverick and Zavala Counties, Texas, in 22nd annual logging symposium transactions, paper Y: Houston, Society of Professional Well Log Analysts, 39 p. Later published in 1981, Oil and Gas Journal, v. 79,(48), November 30, p. 63-76.
- Laramie Energy Research Center, 1981, A bibliography of publications dealing with tar sands: U.S. Department of Commerce, National Technical Information Service, Report DOE/LETC/RI-81-2 (DE81-026146), 294 p.
- Mraz, T.J., Rajeshwar, K., and Dubow, J.B., 1982, Thermophysical characterization of oil sands, part 2, acoustic properties: Fuel, v. 61(3), p. 240-244.
- Neuman, C.H., 1983, Application of the nuclear magnetism log and electromagnetic propagation tool to define steam potential in heavy oil reservoirs, in 12th annual convention proceedings, volume 2: Jakarta, Indonesian Petroleum Association, p. 265-273.
- Nelson, H.W., and Glaister, R. P., 1978, Subsurface environmental facies and reservoir relationships of the McMurray oil sands, northeastern Alberta: Bulletin of Canadian Petroleum Geology, v. 26(2), June, p. 177-207.
- Olson, D.M., 1986, Calibration of log and core saturation data—case history from the San Ardo field, in 27th annual logging symposium transactions, paper Z: Houston, Society of Professional Well Log Analysts, 11 p.
- Pilman, D., 1985, Petrophysical evaluation of the Orinoco heavy oil belt, Hamaca-Pao area Venezuela, in 3rd international UNITAR/UNDP heavy oil crude and tar sands conference [Long Beach, California, July 22-31, 1985], preprints: New York, United Nations Institute for Training and Research, Information Center for Heavy Crude and Tars, 29 p.
- Pirie, G., 1985, Geology of a single well (Maraven SDZ-86X) from cores and logs, Orinoco heavy oil belt, Venezuela, in 3rd international UNITAR/UNDP heavy oil crude and tar sands conference [Long Beach, California, July 22-31, 1985], preprints: New York, United Nations Institute for Training and Research, Information Center for Heavy Crude and Tars, 54 p.
- Putnam, P.E., 1982, Aspects of the petroleum geology of the Lloydminster heavy oil fields, Alberta and Saskatchewan: Bulletin of Canadian Petroleum Geology, v. 30(2), June, p. 81-111.
- Roux, C., Fertl, W.H., Frost, E., Stedman, D., and Elliott, D., 1981, Well logs evaluate and monitor heavy oil steam flood in Kern County, California, in 22nd annual logging symposium transactions, paper II: Houston, Society of Professional Well Log Analysts, 17 p.
- Sah, R.C., Chase, A.E., and Wells, L.E., 1974, Evaluation of the Alberta tar sands: Dallas, Society of Petroleum Engineers, 49th annual meeting [Houston] preprint SPE-5034, 15 p.

Vogel, A.W., Jr., 1982, Predicting possibility of oil production from tar sand deposits based on geologic, logging and chemical composition: Dallas, Society of Petroleum Engineers, Rocky Mountain regional meeting [Billings] preprint SPE-10884, 15 p.

Woodhouse, R., 1976, Athabasca tar sand reservoir properties derived from cores and logs: Canadian Well Logging Society Journal, v. 9(1), p. 83. Also published in 1976, in 17th annual logging symposium transactions, paper T: Houston, Society of Professional Well Log Analysts, 13 p.

14. COAL AND COALBED METHANE

- Agostini, A., 1977, Correlation of high resolution density log counts and ash content of coal: Australian Society of Exploration Geophysicists Bulletin, v. 8(2), p. 26-31.
- Abshier, J.F., McBride, G.E., and Beardsmore, S.F., 1979, Saving money with coal geophysics: Coal Age, v. 84(9), p. 100-110.
- Asten, M.W., 1983, Borehole log analysis using an interactive computer: Australian Society of Exploration Geophysicists Bulletin, v. 14, p. 3-10. Discussion of computer-assisted estimation of lithological and geotechnical parameters.
- Bond, L.O., Alger, R.P., and Schmidt, A.W., 1971, Well log applications in coal mining and rock mechanics: Transactions of the Society of Mining Engineers AIME, v. 250, December, p. 355-362. Reprinted in 1986, in Buchanan, D.J., and Jackson, L.J., editors, Coal geophysics: Tulsa, Society of Exploration Geophysicists, Geophysics reprint series no. 6, p. 28-35.
- Borsaru, M., Ceravolo, C., Charbucinski, J., Eisler, P., and Youl, S., 1985, Ash determination of black coal in exploration boreholes by neutron-gamma, in P. Kileen, editor, Borehole geophysics for mining and geotechnical applications [International symposium and workshop, (Ottawa, August 29-31, 1983), proceedings]: Geological Survey of Canada, Paper 85-27. Available in 1986.
- Borsaru, M., Charbucinski, J., Eisler, P.L., and Youl, S.F., 1985, Determination of ash content in coal by borehole logging in dry boreholes using gamma-gamma methods: Geoexploration, v. 23, p. 503-518.
- Brom, R.W.C., and Driedonks, F., 1981, Applications of petrophysical logging in the evaluation of coal deposits, in 22nd annual logging symposium transactions, paper KK: Houston, Society of Professional Well Log Analysts, 29 p.
- Buchanan, D.J., and Jackson, L.J., editors, 1986, Coal geophysics: Tulsa, Society of Exploration Geophysicists, Geophysics reprint series no. 6, p. 25-85. Reprints of 6 papers relating to identification and evaluation of coal via borehole logging.
- Charbucinski, J., Youl, S.F., Eisler, P.L., and Borsaru, M., 1986, Prompt neutron-gamma logging for coal ash in water-filled boreholes: Geophysics, v. 51(5), p. 1110-1118.
- Chironis, N.P., 1982, Better methods aid exploration of coal sites: Coal Age, v. 87(10), p. 82-88.
- Clark, W.J., and Copper, D.M., 1985, Sedimentological and wireline log aspects of the Walloon coal measures in GSQ Dalby 1 and GSQ Chincilla 3, Surat Basin, Queensland: Queensland Government Mining Journal, v. 86(1006), p. 386-394.

- Clayton, C.G., 1977, Applications of nuclear techniques in the coal industry, in Symposium on nuclear techniques in exploration, extraction and processing of mineral resources, 1977, proceedings: Vienna, International Atomic Energy Agency, p. 85-117.
- Clayton, C.G., Hassan, A.M., and Wormald, M.R., 1983, Multi-element analysis of coal during borehole logging by measurement of prompt gamma-rays from thermal neutron capture, in C.G. Clayton, editor, Nuclear geophysics--Selected papers on applications of nuclear techniques in mineral exploration, mining and process control: Oxford, England, Pergamon Press, p. 83-93. Reprinted in 1986, in Buchanan, D.J., and Jackson, L.J., editors, Coal geophysics: Tulsa, Society of Exploration Geophysicists, Geophysics reprint series no. 6, p. 74-84.
- Clayton, C.G., and Wormald, M.R., 1983, Coal analysis by nuclear methods, in C.G. Clayton, editor, Nuclear geophysics--Selected papers on applications of nuclear techniques in mineral exploration, mining and process control: Oxford, England, Pergamon Press, p. 3-22.
- Cobb, J.C., and Smath, R., 1981, Geophysical well logging for coal exploration in the eastern Kentucky coal field, in Coals and coal-bearing rocks of eastern Kentucky [annual Geological Society of America coal division field trip]: Kentucky Geological Survey, p. 74-81.
- Daniels, J.J., and Scott, J.H., 1980, Computer-assisted interpretation of geophysical well logs in a coal depositional environment, Illinois Basin, Kentucky: U.S. Geological Survey, Bulletin no. 1509, 44 p.
- Daniels, J.J., and Scott, J.H., 1982, Automated lithologic interpretation from geophysical well logs in a coal depositional environment, Carbon County, Wyoming, in K.D., Gurgel, editor, 5th Rocky Mountain coal symposium, proceedings: Utah Geological and Mineral Survey, Bulletin no. 118, p. 220-232.
- Daniels, J.J., Scott, J.H., and Liu, J., 1983, Estimation of coal quality parameters from geophysical well logs, in 24th annual logging symposium transactions, paper KK: Houston, Society of Professional Well Log Analysts, 20 p.
- Davis, D., 1977, Geophysical logging of coal, in D.K. Murray, editor, Geology of Rocky Mountain coal: Colorado Geological Survey, Resource Series no. 1, p. 115-119.
- Dyck, J.H., and McKenzie, C.T., 1979, Estimating certain analytical properties of lignite in Saskatchewan from gamma-gamma borehole density logs, in 7th formation evaluation symposium transactions, paper Z: Calgary, Canadian Well Logging Society, 16 p.
- Edwards, K.W., and Banks, K.M., 1978, A theoretical approach to the evaluation of in-situ coal: Canadian Institute of Mining and Metallurgy [CIM] Bulletin, v. 71(792), p. 124-131.

- Ferm, J.C., 1984, Geology of coal, chapter 5, in C.R. Ward, editor, Coal geology and coal technology: Boston, Blackwell Scientific Publishers, p. 151-176.
- Fertl, W.H., and DeVries, M.R., 1977, Coal evaluation using geophysical well logs, in 6th formation evaluation symposium transactions, paper F: Calgary, Canadian Well Logging Society, 17 p.
- Fishel, K.W., and Mayer, R., Jr., 1979, Extremely high resolution density coal logging techniques, in G.O. Argall, Jr., editors, Coal exploration 2 [2nd international coal exploration symposium, (Denver, 1978), proceedings]: San Francisco, Miller Freeman Publications Inc., p. 490-504.
- Hoffman, G.L., Jordan, G.R., and Wallis, G.R., 1982, Geophysical logging handbook for coal exploration: Edmonton, Alberta, Canada, The Coal Mining Research Centre, 270 p. The best single source for information on the tools, techniques and qualitative interpretation of logs for coal exploration.
- Hoffman, L.J.B., 1984, Determination of pyritic sulphur in coal using induced polarisation, in 25th annual logging symposium transactions, paper III: Houston, Society of Professional Well Log Analysts, 12 p.
- Kayal, J.R., 1979, Electrical and gamma-ray logging in Gondwana and Tertiary coal fields of India: Geoexploration, v. 17, p. 243-258.
- Kayal, J.R., 1981, Correlation of T-log with E-log in coal-bearing formations: Pure and Applied Geophysics, v. 119, p. 349-355.
- Kayal, J.R., 1981, In situ analysis of coal from single electrode resistance, self-potential and gamma-ray logs: Geophysical Research Bulletin, v. 19(2), p. 117-121.
- Kayal, J.R., and Christoffel, D.A., 1982, Relationship between electrical and thermal resistivities for differing grades of coal: Geophysics, v. 47(1), p. 127-129. Discussion and Reply in 1982, Geophysics, v. 47(10), p. 1461.
- Kayal, J.R., and Das, L.K., 1981, A method of estimating ash content of coal from combined resistivity and gamma-ray logs: Geoexploration, v. 19, p. 193-200.
- Kholin, S.V., 1984, Location of outburst prone zones within coal beds from correlation functions of well logs: Geophysical Journal, v. 5(6), p. 945-950.
- Kloosterman, R.A., and Brom, R.W.C., 1977, Application of wireline logging techniques in the assessment of surface mineable coal, in A. Priyono, C. Long, and R. Sweatman, editors, The Indonesian mining industry, its present and future [1st Indonesian mining symposium, (Jakarta, June 14-16), proceedings]: Jakarta, Indonesian Mining Association, p. 408-429.
- Kowalski, J., and Fertl, W.H., 1977, Application of geophysical well logging to coal mining operations: Energy Sources, v. 3(2), p. 133-147.

- Kowalski, J., and Holter, M.E., 1975, Coal analysis from well logs: Dallas, Society of Petroleum Engineers, 50th annual meeting reprint SPE-5503. Later published in 1976, Canadian Well Logging Society Journal, v. 9(1), p. 97-113.
- Lavers, B.A., and Smits, L.J.M., 1976, Recent developments in coal petrophysics, in 17th annual logging symposium transactions, paper S: Houston, Society of Professional Well Log Analysts, 19 p. Reprinted in 1976 in W.L.G. Muir, editor, Coal exploration [1st international coal exploration symposium, (London, May 18-21), proceedings]: San Francisco, Miller Freeman Publications Inc., p. 129-152. Later published in 1977, The Log Analyst, v. 18(1), January-February, p. 6-16.
- Mayer, R., Jr., and Fishel, K.W., 1979, Applications of electric logs in Appalachian coal exploration, in 6th European logging symposium transactions, paper DD: London, Society of Professional Well Log Analysts, London Chapter, 18 p.
- McCabe, P.J., 1984, Depositional environments of coal and coal-bearing strata in R.A. Rahmani and R.M. Flores, editors, Sedimentology of coal and coal-bearing sequences: Oxford, England, Blackwell Publishers, International Association of Sedimentologists, Special Publication no. 7, p. 13-42.
- Merritt, R.D., 1986, Exploration and mapping methods, chapter 3, in Coal exploration, mine planning and development: Park Ridge, New Jersey, Noyes Publications, p. 33-68.
- Merritt, R.D., 1986, Depositional modeling methods, chapter 5, in Coal exploration, mine planning and development: Park Ridge, New Jersey, Noyes Publications, p. 74-116.
- Miller, M.S., and Moore, M., 1980, Geophysical logging and exploration techniques in the Appalachian coal fields: Dallas, Society of Petroleum Engineers, 55th annual meeting [Dallas] preprint SPE-9466.
- Nelms, C.A., 1976, Application of electric well logging techniques to identifying coal beds in the Powder River Basin, Wyoming: U.S. Geological Survey Open-File Report 76-581, 20 p.
- Norris, J.O., and Thomas, R., 1980, An in situ coal quality prediction technique: Dallas, Society of Petroleum Engineers, 55th annual meeting [Dallas] preprint SPE-9467, 9 p.
- Petricola, M., Jumardi, and Saito, K., 1985, Formation evaluation in deltaic sand deposits—The effect of lignite debris on logs—Integration of sand-body analysis, in 14th annual convention proceedings: Jakarta, Indonesian Petroleum Association, p. 517-541.

- Reeves, D.R., 1971, In-situ analysis of coal by borehole logging techniques: Canadian Institute of Mining and Metallurgy [CIM] Bulletin, v. 64(606), p. 67-75. Reprinted in 1971, CIM Transactions, v. 74, p. 61-69. Reprinted in 1986, in Buchanan, D.J., and Jackson, L.J., editors, Coal geophysics: Tulsa, Society of Exploration Geophysicists, Geophysics reprint series no. 6, p. 36-44.
- Reeves, D.R., 1976, Application of wireline logging techniques to coal exploration, in W.L.G. Muir, editor, Coal exploration [1st international coal exploration symposium, (London, May 18-21), proceedings]: San Francisco, Miller Freeman Publications Inc., p. 112-128.
- Reeves, D.R., 1979, Some improvements and developments in coal wireline logging techniques, in G.O. Argall, Jr., editors, Coal exploration 2 [2nd international coal exploration symposium, (Denver, 1978), proceedings]: Miller Freeman Publications Inc., p. 468-489.
- Rieke, H.H., III, Oliver, D.W., and Fertl, W.H., McCord, J.P., 1980, Successful application of carbon/oxygen logging to coalbed exploration: Dallas, Society of Petroleum Engineers, 55th annual meeting [Dallas] preprint SPE-9464, 11 p. Later published in 1983, Journal of Petroleum Technology, v. 35(2), p. 421-428. Reprinted in 1981, Carbon/Oxygen Log: Houston, Dresser Industries, publication no. 9417.
- Rieke, H.H., Rightmire, C.T., and Fertl, W.H., 1979, Evaluation of gas bearing coal seams: Dallas, Society of Petroleum Engineers, 54th annual meeting [Las Vegas] preprint SPE-8359. Later published 1981, Journal of Petroleum Technology, v. 33(1), p. 195-204.
- Stanley, C.B., and Schultz, A.P., 1983, Coal-bed methane resource evaluation, Montgomery County, Virginia: Charlottesville, Virginia division of Mineral Resources, Publication no. 46, 59 p.
- Suau, J., 1981, Logging methods for coal exploration: Bulletin des Centres de Recherche Exploration-Production Elf-Aquitain, v. 5(2), p. 621-633.
- Sumner, J.S., 1979, The induced-polarization exploration method, in P.J. Hood, editor, Geophysics and geochemistry in the search for metallic ores [Exploration 77, (Ottawa, Canada, October 1977), proceedings]: Geological Survey of Canada, Economic Geology Report no. 31, p. 123-133.
- Verma, R.K., and Bhui, N.C., 1979, Use of electrical resistivity methods for study of coal seams in parts of the Jharia coalfield, India: Geosurvey, v. 17(2), p. 163-176.
- Ward, C.R., 1984, Coalfield exploration, chapter 6, in C.R. Ward, editor, Coal geology and coal technology: Boston, Blackwell Scientific Publishers, p. 177-219.
- Weltz, L.S., 1976, Log evaluation of sub-bituminous coals in Magallanes--Chile, in 17th annual logging symposium transactions, paper K: Houston, Society of Professional Well Log Analysts, 33 p.

Williams, C.C.G., 1983, Development of borehole logging, in G.O. Argall, editor, 4th international coal exploration symposium [Sydney, Australia, May 15-20], proceedings: San Francisco, Miller Freeman Publications Inc., 19 p.

15. FRACTURE DETECTION AND EVALUATION

(See also 20. Ground water; 21. Igneous and metamorphic; 22. Geothermal)

- Aguilera, R., 1973, Analysis of naturally fractured reservoirs from sonic and resistivity logs: Dallas, Society of Petroleum Engineers, Rocky Mountain regional meeting preprint SPE-4398. Later published in 1974, Journal of Petroleum Technology, v. 26(11), p. 1233-1238.
- Aguilera, R., 1975, Analysis of naturally fractured reservoirs from conventional well logs: Dallas, Society of Petroleum Engineers, Rocky Mountain regional meeting preprint SPE-5342. Later published in 1976, Journal of Petroleum Technology, v. 28(7), p. 764-772. Discussion and reply published in 1976, Journal of Petroleum Technology, v. 28(10), p. 1183-1184.
- Aguilera, R., 1980, Formation evaluation by well log analysis, chapter 3, in Naturally fractured reservoirs: Tulsa, Petroleum Publishing Co., p. 125-232. See references.
- Aguilera, R., 1981, A computerized well log interpretation process for the evaluation of naturally fractured reservoirs: Calgary, Petroleum society of CIM 32nd annual technical meeting [Calgary] preprint 81-32-6, 8 p.
- Aguilera, R., 1983, Exploring for naturally fractured reservoirs, in 24th annual logging symposium transactions, paper C: Houston, Society of Professional Well Log Analysts, 28 p.
- Aguilera, R., and Acevedo, L., 1982, FCL; a computerized well-log interpretation process for the evaluation of naturally fractured reservoirs: Journal of Canadian Petroleum Technology, v. 21(1), p. 31-37.
- Aguilera, R., and Van Poolen H.K., 1977, Current status on the study of naturally fractured reservoirs: The Log Analyst, v. 18(3), p. 3-23.
- Aguilera, R., and Van Poolen, H.K., 1978, How to evaluate naturally fractured reservoirs from various well logs: Oil and Gas Journal, v. 76, December 25, p. 202-208.
- Aguilera, R., and Van Poolen, H.K., 1979, Porosity and water saturation can be estimated from logs: Oil and Gas Journal, v. 77, January 8, p. 101-108.
- Anderson, R.N., O'Malley, H., and Newmark, R.L., 1984, Use of geophysical logs for quantitative determination of fracturing, alteration, and lithology in the upper oceanic crust, in C.B. Raleigh, editor, Observation of the continental crust through drilling, volume I [international symposium (Tarrytown, N.Y., May 20-25), proceedings]: New York, Springer-Verlag, p. 182-234.
- Anderson, R.N., O'Malley, H., and Newmark, R.L., 1984, Nuclear, multichannel-sonic, ultrasonic analyses for determination of degree of fracturing and alteration in a fast formation—The deep ocean crust, in 25th annual logging symposium transactions, paper Y: Houston, Society of Professional Well Log Analysts, 22 p.

- Babcock, E.A., 1978, Measurement of subsurface fractures from dipmeter logs: AAPG Bulletin, v. 62(7), p. 1111-1126.
- Beck, J., Schultz, A., and Fitzgerald, D., 1977, Reservoir evaluation of fractured Cretaceous carbonates in south Texas, in 18th annual logging symposium transactions, paper M: Houston, Society of Professional Well Log Analysts, 25 p.
- Bell, J.S., and Gough, D.I., 1979, Northeast-southwest compressive stress in Alberta—Evidence from oil wells: Earth and Planetary Science Letters, v. 45, p. 475-482.
- Bell, J.S., and Gough, D.I., 1982, The use of borehole breakouts in the study of crustal stress, in M.D. Zoback and B.C. Haimson, editors, Workshop on hydraulic fracturing stress measurements [December 2-5], proceedings: U.S. Geological Survey Open-file Report 82-1075, p. 539-557.
- Blumling, P., Fuchs, K., and Schneider, T., 1983, Orientation of the stress field from breakouts in a crystalline well in a seismic active area: Physics of the Earth and Planetary Interiors, v. 33, p. 250-254.
- Botter, B.J., 1982, Circumferential acoustic waves in boreholes for the delineation of vertical fractures, in 23rd annual logging symposium, paper S: Houston, Society of Professional Well Log Analysts, 21 p.
- Boydeldieu, C., and Martin, C., 1984, Fracture detection and evaluation, in 9th international formation evaluation symposium transactions, paper 21: Paris, Society of Professional Well Log Analysts, Paris Chapter (SAID), 9 p.
- Boydeldieu, C., and Winchester, A., 1982, Use of the Dual Laterolog for the evaluation of the fracture porosity in hard carbonate formations: Dallas, Society of Petroleum Engineers, Offshore South East Asia 82 conference preprint SPE-10464, 11 p.
- Brevetti, J.C., Greer, G., and Weis, B.R., 1985, Evaluation of fractured carbonates in the Mid-Continent region, in 26th annual logging symposium transactions, paper III: Houston, Society of Professional Well Log Analysts, 19 p.
- Brown, R.O., 1978, Application of fracture identification logs in the Cretaceous of north Louisiana and Mississippi: Gulf Coast Association of Geological Societies Transactions, v. 28, p. 75-91.
- Butler, M. Phelan, M.J., and Wright, A.W.R., 1976, Buchan field—Evaluation of a fractured sandstone reservoir, in 4th European formation evaluation symposium transactions, paper A: London, Society of Professional Well Log Analysts, London Chapter, 18 p. Later published in 1977, The Log Analyst, v. 18(2), March-April, p. 23-31.
- Cannon, D.E., 1979, Log evaluation of a fractured reservoir—Monterey Shale, in 20th annual logging symposium transactions, paper Q: Houston, Society of Professional Well Log Analysts, 13 p.

- Cheung, P.S.Y., 1984, Fracture detection using the sonic tool, in 9th international formation evaluation symposium transactions, paper 42: Paris, Society of Professional Well Log Analysts, Paris Chapter (SAID), 8 p.
- Chilingarian, G.V., and Yen, T.F., 1986, Notes on carbonate reservoir rocks, no. 3—Fractures: Energy Sources, v. 8(2/3), p. 261-275.
- Cox, J.W., 1970, The high resolution dipmeter reveals dip-related borehole and formation characteristics in 11th annual logging symposium transactions, paper D: Houston, Society of Professional Well Log Analysts, 26 p.
- Cox, J.W., 1983, Long axis orientation in elongated boreholes and its correlation with rock stress data, in 24th annual logging symposium transactions, paper J: Houston, Society of Professional Well Log Analysts, 17 p.
- Dart, R., 1985, Horizontal-stress directions in the Denver and Illinois basins from the orientations of borehole breakouts: U.S. Geological Survey, Open-File Report 85-733, 41 p.
- Davison, C.C., Keys, W.S., and Paillet, F.L., 1982, Use of borehole-geophysical logs and hydrologic tests to characterize crystalline rocks for nuclear-waste storage, Whiteshell nuclear research establishment, Manitoba, and Chalk River nuclear laboratory, Ontario, Canada: Battelle National Laboratory, Office of Nuclear Waste Isolation, Technical Report ONWI-418, 103 p.
- Delhomme, J.P., Panci, G., Leslie, D., Cigni, M., and Spila, M., 1981, An integrated approach to fracture detection from multipad sensors, in 7th European logging symposium transactions, paper 26: Paris, Society of Professional Well Log Analysts, Paris Chapter (SAID), 17 p.
- Engelhard, L., 1985, Shear wave well logging from wavetrain analysis, chapter 5, in G.P. Dohr, editor, Seismic shear waves, seismic exploration volume 15A, part A—Theory: London, Geophysical Press, p. 283-351.
- Etnyre, L., 1981, Fracture detection identification in the Panoma Field, Council Grove Formation: The Log Analyst, v. 22(6), November-December, p. 3-6.
- Fertl, W.H., 1980, Evaluation of fractured reservoirs using geophysical well logs, in SPE/DOE unconventional gas recovery symposium, proceedings, SPE/DOE-8938: Dallas, Society of Petroleum Engineers, p. 131-136.
- Fertl, W.H., 1983, Gamma ray spectral logging, part IV—Application in fractured shales: World Oil, v. 196(7), June, p. 189-204.
- Flower, J.G., 1981, Use of sonic-shear-wave/resistivity overlay as a quick-look method for identifying potential pay zones in the Ohio (Devonian) Shale: Dallas, Society of Petroleum Engineers, eastern regional meeting preprint SPE-10366. Later published in 1983, Journal of Petroleum Technology, v. 35(3), p. 638-642.

- Fordjor, C.K., Bell, J.S., and Gough, D.I., 1983, Breakouts in Alberta and stress in the North American plate: Canadian Journal of Earth Science, v. 20, p. 1445-1455
- Frank, R.W., and Simonson, R.B., 1983, Identification and interpretation of naturally fractured reservoirs in north Texas, in Exploration in a mature area [AAPG southwest section annual meeting]: Abilene, Texas, Abilene Geological Society, p. 143-167.
- Frisinger, M.R., and Gyllensten, A., 1986, Fracture detection in North Sea reservoirs, in 10th European formation evaluation symposium transactions, paper Q: Aberdeen, Society of Professional Well Log Analysts, Aberdeen Chapter, 18 p.
- Garotta, R., 1985, Observation of shear waves and correlation with P events, chapter 1, in G.P. Dohr, editor, Seismic shear waves, seismic exploration volume 15B, part B--Applications: London, Geophysical Press, p. 1-86. A discussion of P and S waves, their potential, and application in formation evaluation.
- Georgi, D.T., 1985, Geometrical aspects of borehole televiewer images, in 26th annual logging symposium transactions, paper O: Houston, Society of Professional Well Log Analysts, 20 p.
- Georgi, D.T., 1986, Guides for the interpretation of dipmeter fracture logs, in 27th annual logging symposium transactions, paper TT: Houston, Society of Professional Well Log Analysts, 16 p.
- Gough, D.I., and Bell, J.S., 1981, Stress orientations from oil-well fractures in Alberta and Texas: Canadian Journal of Earth Sciences, v. 18, p. 638-645.
- Gough, D.I., and Bell, J.S., 1982, Stress orientations from borehole fractures with examples from Colorado, east Texas, and northern Canada: Canadian Journal of Earth Sciences, v. 19(7), p. 1358-1370.
- Grove, G.P., and Whittaker, J.L., 1985, Continuous fracture probability determination as applied to the Monterey Formation, in 55th annual California regional meeting [March 27-29, Bakersfield] proceedings, SPE-13652: Dallas, Society of Petroleum Engineers, p. 591-598.
- Haimson, B.C., and Herrick, C.G., 1985, In situ stress evaluation from borehole breakouts, experimental studies, in E. Ashworth, editor, Research and engineering applications in rock masses [26th U.S. symposium on rock mechanics, South Dakota School of Mines and Technology, Rapid City, 26-28 June, proceedings], volume 2: Boston, A.A. Balkema, p. 1207-1218.
- Healy, J.H., Hickman, S.H., Zoback, M.D., and Ellis, W.L., 1984, Report on televiewer log and stress measurements in core hole USW-G1, Nevada test site, December 13-22, 1981: U.S. Geological Survey, Open-File Report 84-15, 47 p.

- Heflin, J.D., 1979, Fracture detection in West Coast reservoirs using well logs: Dallas, Society of Petroleum Engineers, California Regional meeting preprint SPE-7976, 16 p.
- Heflin, J.D., and Frost, E., Jr., 1981, Some novel approaches in the use of wireline logs for fracture detection, in 7th European logging symposium transactions, paper 22: Paris, Society of Professional Well Log Analysts, Paris Chapter (SAID), 42 p. Later published 1983, in C.M. Isaacs, R.E. Garrison, editors, Petroleum generation and occurrence in the Miocene Monterey Formation, California: Pacific Section of the Society of Economic Paleontologists and Mineralogists, p. 131-149.
- Heflin, J.D., Neill, B.E., and DeVries, M.R., 1976, Log evaluation in the California Miocene: Dallas, Society of Petroleum Engineers, 51st annual meeting [New Orleans] preprint SPE-6160, 17 p. Reprinted in 1981, Spectralog: Houston, Dresser Industries, publication no. 3334.
- Hickman, S.H., Healy, J.H., and Zoback, M.D., 1985, In situ stress, natural fracture distribution and borehole elongation in the Auburn geothermal well, Auburn, New York: Journal of Geophysical Research, v. 90(B7), p. 5497-5512.
- Hirsch, J.M., 1981, Recent experience with wireline fracture detection logs: Dallas, Society of Petroleum Engineers, 56th annual meeting [San Antonio] preprint SPE-10333, 10 p.
- Hsu, K., Brie, A., and Plumb, R.A., 1985, A new method for fracture identification using array sonic tools: Dallas, Society of Petroleum Engineers, 60th annual meeting [Las Vegas], preprint SPE-14397, 8 p.
- Jamtliid, A., Manusson, K., Olsson, O., and Stenberg, L., 1984, Electrical borehole measurements for the mapping of fracture zones in crystalline rock: Geoexploration, v. 22, p. 203-216.
- Jones, J.W., Simpson, E.S., and Neuman, S.P., 1984, Geophysical investigation of fractured crystalline rock near Oracle, Arizona, in D.M. Nielsen and M. Curl, editors, 1984 NWWA/EPA conference on surface and borehole geophysics methods in ground water investigations, proceedings: Worthington, Ohio, National Water Well Association, p. 877-896.
- Julian, P.J., 1982, Fracture detection techniques in the Georgetown and Austin chalk formations: Dallas, Society of Petroleum Engineers, 57th annual meeting [New Orleans] preprint SPE-11035.
- Keys, W.S., 1980, The application of the acoustic televiewer to the characterization of hydraulic fractures in geothermal wells, in Raft River well stimulation experiments, geothermal reservoir well stimulation program: U.S. Department of Energy, Report DOE/AL/10563-T7, p. A1-A11.
- Keys, W.S., 1982, Location and character of fractures in geothermal wells, in Fractures in geothermal reservoirs: Geothermal Resources Council, Special Report no. 12, p. 17-27.

- Kierstein, R.A., 1984, True location and orientation of fractures logged with the acoustic televiewer (including programs to correct fracture identification): U.S. Geological survey Water-Resources Investigations Report 83-4275, 73 p.
- King, M.S., and McConnell, B.V., 1975, Fracture evaluation with acoustic log in dry borehole, in E.R. Hoskins, Jr., editor, Applications of rock mechanics [15th symposium on rock mechanics, (September 17-19, 1973) proceedings] : New York, American Society of Civil Engineers, p. 273-292
- Kleinberg, R.L., Chow, E.Y., Plona, T.J., Orton, M., and Canady, W.J., 1982, Sensitivity and reliability of fracture detection techniques for borehole application: Dallas, Society of Petroleum Engineers, 57th annual meeting [New Orleans] preprint SPE-11036, 8 p.
- Koerperich, E.A., 1977, Investigation of acoustic boundary waves and interference patterns as techniques for detecting fractures: Dallas, Society of Petroleum Engineers, 52nd annual meeting [Denver] preprint SPE-6820. Later published in 1978, Journal of Petroleum Technology, v. 30(8), p. 1199-1207.
- Levine, E.N., Cybriwsky, Z.A., and Toksoz, M.N., 1984, Detection of permeable rock fractures and estimation of hydraulic conductivity by 3-D vertical seismic profiling, in D.M. Nielsen and M. Curl, editors, 1984 NWWA/EPA conference on surface and borehole geophysics methods in ground water investigations, proceedings: Worthington, Ohio, National Water Well Association, p. 853-876.
- Liu, O.Y., 1985, Fracture evaluation using borehole sonic velocity measurements: Dallas, Society of Petroleum Engineers, 60th annual meeting [Las Vegas], preprint SPE-14399, 8 p.
- Lui, O.Y., 1986, A new method of fracture detection using borehole sonic velocity measurements, in 10th European formation evaluation symposium transactions, paper R: Aberdeen, Society of Professional Well Log Analysts, Aberdeen Chapter, 13 p.
- Mathieu, F., and Toksoz, M.N., 1984, Determination of fracture permeability using acoustic logs, in 9th international formation evaluation symposium transactions, paper 47: Paris, Society of Professional Well Log Analysts, Paris Chapter (SAID), 39 p.
- McCoy, R.L., Kumar, R.M. and Pease, R.W., 1980, Fracture identification in Devonian shales using conventional well logs, in 11th annual Appalachian petroleum geology symposium: West Virginia Geological and Economic Survey, Circular C-16, p. 16-28. A condensed version published in 1980, Identifying fractures with conventional well logs: World Oil, v. 191(7), December, p. 91-98.

- Mickam, J.T., Levy, B.S., and Lee, G.W., Jr., 1984, Detection of fractures and solution channels in karst terranes using natural gamma ray and hole caliper borehole logs, in D.M. Nielsen and M. Curl, editors, 1984 NWWA/EPA conference on surface and borehole geophysics methods in ground water investigations, proceedings: Worthington, Ohio, National Water Well Association, p. 801-811.
- Minear, J.W., and Ajam, S.O., 1984, Full wave acoustic logging—Some examples: 5th offshore South East Asia conference, proceedings [February 21-24, Singapore], SPE-12399, 13 p.
- Minne, J.C., and Gartner, J., 1979, Fracture detection in the Middle East, in 1979 Middle East oil technical conference, proceedings, SPE-7773: Dallas, Society of Petroleum Engineers, p. 183-190.
- Moos, D., 1984, A case study of vertical seismic profiling in fractured crystalline rock, in M. Simaan, editor, Advances in geophysical data processing, volume 1: Greenwich, Connecticut, JAI Press, p. 9-37.
- Moos, D., and Zoback, M.D., 1983, In situ studies of velocity in fractured crystalline rocks: Journal of Geophysical Research, v. 88(B3), March 10, p. 2345-2358.
- Morris, R.L., Grine, D.R., and Arkfeld, T.E., 1964, Using compressional and shear acoustic amplitudes for the location of fractures: Journal of Petroleum Technology, v. 16(6), p. 623-632.
- Myung, J.I., 1976, Fracture investigation of the Devonian shale using geophysical well logging techniques: Dallas, Society of Petroleum Engineers, Eastern region annual meeting preprint SPE-6366, 16 p. Also published in 1976 in R.C. Shumaker and W.K. Overbey, Jr., editors, 7th Appalachian petroleum geology symposium, proceedings: Morgantown, West Virginia, U.S. Department of Energy Report MERC/SP-76/2, p. 212-238. Proceedings also published by West Virginia Geological and Economic Survey, p. 1-29.
- Myung, J.I., and Baltosser, R.W., 1977?, Fracture evaluation by the borehole logging method: Tulsa, Birdwell Division, Seismograph Service Corporation, 28 p.
- Nelson, R.A., 1985, Geologic analysis of naturally fractured reservoirs: Houston, Gulf Publishing Company, Contributions in Petroleum Geology and Engineering Series, volume 1, 320 p.
- Newmark, R.L., Anderson, R.N., Moos, D., and Zoback, M.D., 1985, Sonic and ultrasonic logging of hole 504B and its implications for the structure, porosity, and stress regime of the upper 1 km of the oceanic crust, in Initial reports of the the Deep Sea Drilling Project, v. 83: Washington D.C., U.S. Government Printing Office, p. 479-510. Also published in 1985 as, Structure, porosity and stress regime of the upper oceanic crust—Sonic and ultrasonic logging of DSDP hole 504B, Tectonophysics, v. 118, p. 1-42.

- Newmark, R.L., Zoback, M.D., and Anderson, R.N., 1984, Orientation of in situ stresses in the oceanic crust: *Nature*, v. 311, October 4, p. 424-429.
- Newmark, R.L., Zoback, M.D., and Anderson, R.N., 1985, Orientation of the in situ stresses near the Costa Rica rift and Peru-Chile trench—Deep Sea Drilling Project Hole 504B, in Initial reports of the Deep Sea Drilling Project, v. 83: Washington, D.C., U.S. Government Printing Office, p. 511-515.
- Paillet, F.L., 1981, A comparison of fracture characterization techniques applied to near-vertical fractures in a limestone reservoir, in 22nd annual logging symposium transactions, paper XX: Houston, Society of Professional Well Log Analysts, 29 p.
- Paillet, F.L., 1985, Applications of borehole-acoustic methods in rock mechanics, in E. Ashworth, editor, Research and engineering applications in rock masses [26th U.S. symposium on rock mechanics, South Dakota School of Mines and Technology, Rapid City, 26-28 June, proceedings]: Boston, A.A. Balkema, p. 207-220.
- Paillet, F.L., 1985, Problems in fractured-reservoir evaluation and possible routes to their solution: *The Log Analyst*, v. 26(6), November-December, p. 26-41.
- Paillet, F.L., Keys, W.S., and Hess, A.E., 1985, Effects of lithology on televiewer log quality and fracture interpretation, in 26th annual logging symposium transactions, paper JJJ: Houston, Society of Professional Well Log Analysts, 31 p.
- Paillet, F.L., and Keys, W.S., 1984, Applications of borehole geophysics in characterizing the hydrology of fractured rocks, in D.M. Nielsen and M. Curl, editors, 1984 NWWA/EPA conference on surface and borehole geophysics methods in ground water investigations [San Antonio, February 7-9], proceedings: Worthington, Ohio, National Water Well Association, p. 743-761.
- Paillet, F.L., and Kim, K., 1985, The character and distribution of borehole breakouts and their relationship to in situ stresses in deep Columbia River basalts: Richland, Washington, Rockwell Hanford Operations Report RHO-BW-CR-155, December, 27 p. Also submitted to *Geophysics*.
- Paillet, F.L., and Turpening, R., 1984, Borehole and surface-to-borehole seismic applications in fracture characterization: Tulsa, Society of Exploration Geophysicists, Expanded Abstracts with Biographies, 1984 Technical Program, p. 333-334.
- Peeters, M., and Hartley, R., 1984, Induced fracture height detection from wireline logs, in 25th annual logging symposium transactions, paper GGG: Houston, Society of Professional Well Log Analysts, 16 p.
- Pirson, S.J., 1983, Fracture intensity logging and mapping, chapter 7, in *Geologic well log analysis*, 3rd edition: Houston, Gulf Publishing Co., p. 191-215.

- Plumb, R.A., and Hickman, S.H., 1985, Stress-induced borehole elongation—A comparison between the four-arm dipmeter and the borehole televiewer in the Auburn geothermal well: *Journal of Geophysical Research*, v. 90(B7), p. 5513-5521.
- Rasmus, J.C., 1981, Determining the type of fluid contained in the fractures of the Twin Creek limestone by using the Dual Laterolog tool, in 1981 SPE/DOE low-permeability symposium [Denver], proceedings SPE-9857: Dallas, Society of Petroleum Engineers, p. Later published in 1982, *Journal of Petroleum Technology*, v. 34(11), p. 2673-2682.
- Reiss, L.H., 1980, Well logging in fractured reservoirs, appendix 1, in *The reservoir engineering aspects of fractured formations*: Houston, Gulf Publishing Co., p. 47-53.
- Rigby, F.A., 1980, Fracture identification in an igneous geothermal reservoir, Surprise Valley, California, in 21st annual logging symposium transactions, paper Z: Houston, Society of Professional Well Log Analysts, 9 p. Reprinted in 1982, *Geothermal log interpretation handbook*: Houston, Society of Professional Well Log Analysts, p. VII-111-VII-119.
- Schafer, J.N., 1979, A practical method of well evaluation and acreage development for the naturally fractured Austin Chalk Formation, in 20th annual logging symposium transactions, paper U: Houston, Society of Professional Well Log Analysts, 27 p. Later published in 1980, *The Log Analyst*, v. 21(1), January-February, p. 10-23.
- Senecal, J.E., and Mulhern, M.E., 1985, Monterey Formation analysis—State-of-the-art interpretation of lithology, fractures and fluid identification in fine-grained mineralogically variable rocks, in 26th annual logging symposium transactions, paper KKK: Houston, Society of Professional Well Log Analysts, 16 p.
- Setser, G.G., 1981, Fracture detection by circumferential propagation of acoustic energy: Dallas, Society of Petroleum Engineers, 56nd annual meeting [San Antonio] preprint SPE-10204, 8 p.
- Shanks, T.R., Kwon, B.S., DeVries, M.R., and Wichmann, P.A., 1976, A review of fracture detection with well logs: Dallas, Society of Petroleum Engineers, 51nd annual meeting [New Orleans] preprint SPE-6159, 17 p.
- Sibbit, A., and Faivre, O., 1985, The Dual Laterolog response in fractured rocks, in 26th annual logging symposium transactions, paper T: Houston, Society of Professional Well Log Analysts, 34 p.
- Springer, J.E., Thorpe, R.K., and McKague, H.L., 1984, Borehole elongation and its relation to tectonic stress at the Nevada test site: Lawrence Livermore National Laboratory, Report UCRL-53528, 43 p.
- Stephen, R.A., Cardo-Casa, F., and Cheng, C.H., 1985, Finite-difference synthetic acoustic logs: *Geophysics*, v. 50(10), p. 1588-1609.

- Stewart, G., Wittman, M.J., and van Golf-Racht, T., 1981, The application of the repeat formation tester to the analysis of naturally fractured reservoirs: Dallas, Society of Petroleum Engineers, 56th annual meeting [San Antonio] preprint SPE-10181, 19 p.
- Suau, J., and Gartner, J., 1980, Fracture detection from well logs: The Log Analyst, v. 21(2), March-April, p. 3-13.
- Tatham, R.H., 1985, Shear waves and lithology, chapter 2, in G.P. Dohr, editor, Seismic shear waves, seismic exploration volume 15B, part B--Applications: London, Geophysical Press, p. 87-133.
- Taylor, T.J., 1983, Interpretation and application of borehole televiewer surveys, in 24th annual logging symposium transactions, paper QQ: Houston, Society of Professional Well Log Analysts, 19 p.
- Teufel, L.W., 1985, Insights into the relationship between wellbore breakouts, natural fractures, and in situ stress, in E. Ashworth, editor, Research and engineering applications in rock masses [26th U.S. symposium on rock mechanics, South Dakota School of Mines and Technology, Rapid City, 26-28 June, proceedings], volume 2: Boston, A.A. Balkema, p. 1199-1206.
- Tselentis, G., 1985, A study of the hydrogeophysical properties of fissured aquifers using a double porosity model: Journal of Hydrology, v. 78, p. 331-344.
- Van Golf-Racht, T.D., 1982, Logging versus fracture evaluation, chapter 5, in Fundamentals of fractured reservoir engineering: Amsterdam, Elsevier, Developments in Petroleum Science no. 12, p. 255-294.
- White, J.E., 1983, Waves along cylindrical boreholes, chapter 5, in Underground sound, application of seismic waves: Amsterdam, Elsevier, Methods in Geochemistry and Geophysics no. 18, p. 139-245.
- Whitehead, W.S., Hunt, E.R., Finley, R.J., and Holditch, S.A., 1986, In-situ stresses--A comparison between log-derived values and actual field-measured values in the Travis Peak Formation of east Texas, in 1986 unconventional gas technology symposium, proceedings, SPE-15209: Dallas, Society of Petroleum Engineers, p. 19-34.
- Williams, G.B., 1970, Sonic principles applied to formation fracture location and cement bond logging: Canadian Well Logging Society Journal, v. 3, p. 7.
- Williams, J.H., Carswell, L.D., Lloyd, O.B., Jr., and Roth, W.C., 1984, Characterization of ground water circulation in selected fractured rock aquifers using borehole temperature and flow logs, in D.M. Nielsen and M. Curl, editors, 1984 NWWA/EPA conference on surface and borehole geophysics methods in ground water investigations, proceedings: Worthington, Ohio, National Water Well Association, p. 842-852.
- Yamaguchi, S., and Hirakawa, S., 1983, A method for well log interpretation of a fractured oil reservoir: Butsuri-Tanko [Geophysical Exploration], v. 36(1), p. 16-22 p.

Zemanek, J., Caldwell, R.L., Glenn, E.E., Jr., Holcomb, S.W., Norton, L.J., and Straus, A.J.D., 1968, The Borehole Televiewer—A new logging concept for fracture location and other types of borehole inspection: Dallas, Society of Petroleum Engineers, 43rd Annual meeting [Houston] preprint SPE-2402. Later published in 1969, Journal of Petroleum Technology, v. 21(6), p. 762-774.

Zoback, M.D., Moos, D., Mastin, L., and Anderson, R.N., 1985, Well bore breakouts and in situ stress: Journal of Geophysical Research, v. 90(B7), p. 5523-5530.

16. PERMAFROST AND GAS HYDRATES

- Bily, C., and Dick, J.W.L., 1974, Naturally occurring gas hydrates in the McKenzie Delta, N.W.T.: Bulletin Canadian Petroleum Geology, v. 22(3), September, p. 340-352.
- Collett, T.S., and Ehlig-Economides, C.A., 1983, Detection and evaluation of the in-situ natural gas hydrates in the north slope region, in 53rd annual California regional meeting, proceedings, SPE-11673: Dallas, Society of Petroleum Engineers p. 97-106.
- Collett, T.S., and Godbole, S.P., and Ehlig-Economides, C., 1984, Quantification of in-situ gas hydrates with well logs, in 35th annual meeting transactions, volume 2: Calgary, Petroleum Society of CIM and Canadian Association of Drilling Engineers, p. 571-582.
- Cox, J.W., 1973, A short note on resistivity measurement in permafrost: Canadian Well Logging Society Journal, v. 6, p. 47.
- Davidson, D.W., Elf-Defrawy, M.K., Fuglem, M.O., and Judge, A.S., 1978, Natural gas hydrates in northern Canada, in Third international conference on permafrost, proceedings, volume 1: Ottawa, Canada, National Research Council of Canada, p. 938-943.
- Desai, K.P., and Morre, E.J., 1967, Well log interpretation in permafrost, in 8th annual logging symposium transactions, paper N: Houston, Society of Professional Well Log Analysts, 27 p.
- Goodman, M.A., and Giussani, A.P., and Alger, R.P., 1982, Detection and evaluation methods for in-situ gas hydrates, in SPE/DOE unconventional gas recovery symposium, proceedings, SPE/DOE-10831: Dallas, Society of Petroleum Engineers, p. 355-371.
- Hnatiuk, J., and Randall, A.G., 1977, Determination of permafrost thickness in wells in northern Canada: Canadian Journal of Earth Sciences, v. 14(3), p. 375-383.
- Hoyer, W.A., Simmons, S.O., Spann, M.M., and Watson, A.T., 1975, Evaluation of permafrost with logs, in 16th annual logging symposium transactions, paper AA: Houston, Society of Professional Well Log Analysts, 15 p.
- Hunter, J.A., 1975, Borehole geophysical methods in permafrost, in A.V. Dyck, editor, Borehole geophysics applied to metallic mineral prospecting--A review: Geological Survey of Canada, Paper 75-31, p. 67.
- Katz, D.L., 1970, Depths to which frozen gas fields (gas hydrates) may be expected: Dallas, Society of Petroleum Engineers, 45th annual meeting [Houston] preprint SPE-3061. Later published in 1971, Journal of Petroleum Technology, v. 23(4), p. 419-423.
- Kieft, H., Clouter, M.J., and Gagnon, R.E., 1985, Determination of acoustic velocities of clathrate hydrates by Brillouin spectroscopy: Journal of Physical Chemistry, v. 89, p. 3103-3108.

- Kuustaa, V.A., and Hammershaimb, E.C., 1983, Handbook of gas hydrate properties and occurrence: U.S. Department of Energy, Report DOE/MC/19239-1546, 234 p.
- Kvenvolden, K.A., and McDonald, T.J., 1985, Gas hydrates of the Middle America Trench—Deep Sea Drilling Project leg 84, in S. Orlofsky, editor, Initial Reports of the Deep Sea Drilling Project, v. 84: Washington, D.C., U.S. Government Printing Office, p. 667-682.
- Malone, R.D., Mroz, T.H., and Dominic, K.L., 1986, Geologic analysis of gas hydrate deposits, in 1986 unconventional gas technology symposium, proceedings, SPE-15224: Dallas, Society of Petroleum Engineers, p. 193-202.
- Mathews, M., 1985, Logging characteristics of methane hydrate, in 10th formation evaluation symposium transactions, paper K: Calgary, Canadian Well Logging Society, 62 p. Later published in 1986, The Log Analyst, v. 27(3), May-June, p. 26-63.
- Mathews, M.A., and von Huene, R., 1985, Site 570 methane hydrate zone, in S. Orlofsky, editor, Initial reports of the Deep Sea Drilling Project, v. 84: Washington, D.C., U.S. Government Printing Office, p. 773-790.
- McKay, A.S., and O'Connell, L.P., 1976, The permafrost density logger: The Journal of Canadian Petroleum Technology, v. 15(1), p. 69-74.
- Merritt, R.K., 1979, Geophysical measurements in the permafrost zone, Canadian Arctic Islands, in W.J. Scott and R.J.E. Brown, editors, Permafrost field methods and permafrost geophysics [Saskatoon, Canada, October 3-4, 1977], proceedings: Ottawa, Canada, Associate Committee on Geotechnical Research, Technical Memorandum no. 124, p. 56-72.
- Osterkamp, T.E., and Payne, M.W., 1981, Estimates of permafrost thickness from well logs in northern Alaska: Cold Regions Science and Technology, v. 5, p. 13-27.
- Pearson, C.F., Halleck, P.M., McGuire, P.L., Hermes, R., and Mathews, M., 1983, Natural gas hydrate deposits—A review of in-situ properties: Journal of Physical Chemistry, v. 87, p. 4180-4185.
- Pollard, D.E., and Nash, R.G., 1971, Observations on permafrost logging in the Canadian Arctic: Canadian Well Logging Society Journal, v. 4(1), p. 37-84.
- Scott, J.H., Petersen, J.K., Osterkamp, T.E., and Kawasaki, K., 1985, Interpretation of geophysical well logs in permafrost: Fairbanks, Alaska, University of Alaska Geophysical Institute, report UAG-R(303) (Prepared for U.S. Department of Energy, Morgantown Energy Technology Center, contract DE-AI19-83 BC 10810), 125 p.
- Snegirev, A.M., 1984, Resistivity logging of frozen rocks, in Permafrost 4th international conference [Fairbanks, Alaska, July 17-22, 1983], proceedings: Washington, D.C., National Academy Press, p. 295-299.

- Stewart, J.M., and Weaver, J.S., 1983, Permafrost and hydrates under the Beaufort Sea, in 24th annual logging symposium transactions, paper K: Houston, Society of Professional Well Log Analysts, 18 p.
- Stoll, R.D., and Bryan, G.M., 1979, Physical properties of sediments containing gas hydrates: Journal of Geophysical Research, v. 84(B4), p. 1629-1634.
- Taylor, A.E., and Judge, A.S., 1981, Measurement and prediction of permafrost thickness, Arctic Canada: Tulsa, Society of Exploration Geophysicists, 51st annual meeting technical paper, v. 6, p. 3964-3977.
- Trofimuk, A.A., Makogon, Y.F., Tolkachev, M.V., and Cherskii, N.V., 1984, Some distinctive features of the discovery, prospecting, and exploitation of gas-hydrate bodies: Soviet Geology and Geophysics, v. 25,(9), p. 1-7.
- Walker, J.H.D., and Stuart, A.J., 1976, Permafrost investigations by crystal cable surveys, McKenzie Delta, N.W.T., in 17th annual logging convention transactions, paper J: Houston, Society of Professional Well Log Analysts, 10 p.
- Zimmerman, R.W., and King, M.S., 1986, The effect of the extent of freezing on seismic velocities in unconsolidated permafrost: Geophysics, v. 51(6), p. 1285-1290.

17. EVAPORITES

- Alger, R.P., and Crain, E.R., 1966, Defining evaporite deposits with electrical well logs, in J.L. Rau, editors, Second symposium on salt, volume 2: Cleveland, Northern Ohio Geological Society, p. 116-130.
- Bidgood, D.E.T., and Blanchard, J.E., 1970, Geophysical investigations of evaporites in Nova Scotia, in L.W. Morely, editor, Mining and groundwater geophysics—1967: Geological Survey of Canada Economic Report no. 26, p. 497-503.
- Costello, J.T., and Norquay, I.P., 1970, Logging the Prairie evaporite formation in Saskatchewan, in L.W. Morely, editor, Mining and groundwater geophysics—1967: Geological Survey of Canada Economic Report no. 26, p. 492-496.
- Crain, E.R., and Anderson, W.B., 1966, Quantitative log evaluation of the Prairie Evaporite Formation in Saskatchewan: Canadian Journal of Petroleum Technology, v. 5(3), p. 145-152.
- Crues, J.V., Jr., 1977, Lithology crossplots—Applications in an evaporite basin—the Maverick basin of southwest Texas, in 18th annual logging symposium transactions, paper L: Houston, Society of Professional Well Log Analysts, 23 p.
- Daniels, J.J., Scott, J.H., and Hite, R.J., 1979, Analysis of borehole geophysical data in an evaporite sequence at Salt Valley, Utah, in 20th annual logging symposium transactions, paper M: Houston, Society of Professional Well Log Analysts, 19 p.
- Edwards, J.M., Ottinger, N.H., and Haskell, R.E., 1967, Nuclear log evaluation of potash deposit, in 8th annual logging symposium transactions, paper L: Houston, Society of Professional Well Log Analysts, 12 p.
- Goldsmith, L.H., 1966, Some fundamentals of potash geology as a guide to exploration, in 7th annual logging symposium transactions, paper O: Houston, Society of Professional Well Log Analysts, 15 p.
- Haile, P.M., and Blunden, H.A., 1984, Zechstein magnesium rich evaporite deposits of northern Netherlands and their volumetric analysis by GLOBAL, in 9th international formation evaluation symposium transactions, paper 37: Paris, Society of Professional Well Log Analysts, Paris Chapter (SAID), 9 p.
- Nurmi, R.D., 1978, Use of well logs in evaporite sequences, in W.E. Dean and B.C. Schreiber, editors, Marine evaporites: Tulsa, Society of Economic Paleontologists and Mineralogists, Short Course Notes No. 4, p. 144-176.
- Ramondetta, P.J., and Merritt, R.M., 1982, Use of geophysical well logs for the determination of mud and anhydrite content in bedded salt, in Geology and geohydrology of the Palo Duro Basin, Texas panhandle: Texas Bureau of Economic Geology, Circular 82-7, p. 105-108.

- Ruppel S.C., and Ramondetta, P.J., 1982, Determination of salt purity using gamma-ray logs—San Andres Formation, Palo Duro Basin, in *Geology and geohydrology of the Palo Duro Basin, Texas panhandle*: Texas Bureau of Economic Geology, Circular 82-7, p. 183-200.
- Serra, O., 1980, Aspects of logging in evaporites [in French]: *Bulletin des Centres Recherches Exploration-Production Elf-Aquitaine*, v. 4(1), p. 411-431.
- Serra, O., and Curial, A., 1985, Recent progress in evaporite recognition through well logs [in French]: *Bulletin Societe Geologique de France*, v. 8(6), p. 797-806. The use of newer logging tools and computer software for evaporite recognition.

18. MINERAL (INCLUDING URANIUM) EXPLORATION AND EVALUATION

- Anderson, W.B., 1974, Potential uses for borehole logs in mineral exploration: CIM [Canadian Institute Mining Metallurgy] Bulletin, v. 67(743), p. 164-168.
- Aylmer, J.A., Charbucinski, J., Eisler, P.L., and Youl, S.F., 1984, Quantitative borehole logging of manganese ore by prompt neutron-gamma and neutron activation methods, in 25th annual logging symposium transactions, paper D: Houston, Society of Professional Well Log Analysts, 20 p.
- Aylmer, J.A., Eisler, P.L., Mathew, P.J., and Wylie, A.W., 1976, The use of natural gamma radiation for estimating the iron content of sedimentary iron formations containing shale bands, in Nuclear techniques in geochemistry and geophysics: Vienna, Austria, International Atomic Energy Agency, p. 53-74.
- Baicker, J.A., Stone, J.M., Lister, D.E., Schneider, G., Senftle, F., and Tanner, A., 1982, In-situ ore grade determination and other applications of high-resolution gamma ray spectroscopy in mineral and oil logging: Society of Mining Engineers of AIME, Fall meeting [Honolulu] preprint SME-AIME 82-365, 9 p.
- Balogh, I., and Horvath, J., 1983, Quantitative determination of Al_2O_3 content in buaxite-prospecting boreholes by means of neutron activation logging: Geophysical Transactions [Eotvos Lorand Geophysical Institute of Hungary], v. 29(2), June, p. 173-185.
- Baltosser, R.W., and Lawrence, H.W., 1970, Application of well logging techniques in metallic mineral mining: Geophysics, v. 35(1), p. 143-152.
- Bernard, J., Hentinger, R., Lebert, F., and Straub, A., 1985, Improvements in logging methods for mineral exploration: Transactions of the Institution of Mining and Metallurgy, Section B [Applied Earth Sciences], v. 94, February, B32-B38.
- Bristow, Q., and Killeen, P.G., 1982, Natural gamma-ray spectral logging using scintillation detectors, in Symposium on uranium exploration methods [Paris, June 1-4, 1982], proceedings: Paris, Nuclear Energy Agency, Organization for Economic Cooperation and Development, p. 777-791.
- Bristow, Q., Killeen, P.G., and Mwenifumbo, J.C., 1982, Comparison of standardized gamma-ray log calibration measurements—Ottawa, Adelaide and Grand Junction, in Symposium on uranium exploration methods [Paris, June 1-4, 1982], proceedings: Paris, Nuclear Energy Agency, Organization for Economic Cooperation and Development, p. 715-727.
- Brott, C.A., Millard, W.A., Lively, J.M., and Goff, D.D., 1985, In-situ mineral analysis in boreholes, in P. Killeen, editor, Borehole geophysics for mining and geotechnical applications [International symposium and workshop, Ottawa, August 29-31, 1983, proceedings]: Geological Survey of Canada, Paper 85-27. Available in 1986.

- Chapman, B.H., and Thompson, D.T., 1984, Applications of geophysical logging within skarn-type deposits: *The Log Analyst*, v. 25(2), March-April, p. 13-24.
- Charbucinski, J., 1983, A universal gamma-gamma method for simultaneous determination of rock and ore properties, in C.G. Clayton, editor, *Nuclear geophysics—Selected papers on applications of nuclear techniques in mineral exploration, mining and process control*: Oxford, England, Pergamon Press, p. 353-361.
- Charbucinski, J., and Umiastowski, K., 1977, Some factors affecting accuracy in determinations of heavy element concentrations in the selective gamma-gamma method, in *Nuclear techniques and mineral resources 1977*: Vienna, International Atomic Energy Agency, p. 281-300.
- Chrusciel, E., Niewodniczanski, J., Palka, K.W., and Roman, S., 1977, Determination of sulphur content in boreholes by neutron capture, in *Nuclear techniques and mineral resources 1977* [International symposium on nuclear techniques in exploration, extraction and processing of mineral resource, 1977, proceedings]: Vienna, International Atomic Energy Agency, p. 301-311.
- Clayton, C.G., 1977, Some recent applications of nuclear techniques in the exploration and mining of metalliferous minerals, in *Nuclear techniques and mineral resources 1977*: Vienna, International Atomic Energy Agency, p. 185-213.
- Conaway, J.G., 1979, Problems in gamma-ray logging—The effect of dipping beds on the accuracy of ore grade determinations: Geological Survey of Canada Paper 79-1A, p. 41-44.
- Conaway, J.G., 1980, Uranium concentrations and the system response function in gamma ray logging: Geological Survey of Canada, Paper 80-1A, p. 77-87.
- Conaway, J.G., 1982, Principles of inverse filtering applied to gamma ray logs, in *Symposium on uranium exploration methods* [Paris, June 1-4, 1982], proceedings: Paris, Nuclear Energy Agency, Organization for Economic Cooperation and Development, p. 753-766.
- Conaway, J.G., 1983, Digital filtering of geophysical logs in A.A. Fitch, editor, *Developments in geophysical methods—5*: London, Applied Science Publishers, p. 65-105.
- Conaway, J.G., Allen, K.V., Blanchard, Y.B. Bristow, Q., Hyatt, W.G., and Killeen, P.G., 1979, The effects of borehole diameter, borehole fluid, and casing thickness on gamma ray logs in large diameter boreholes: Geological Survey of Canada, Paper 79-1C, p. 37-40.
- Conaway, J.G., Bristow, Q., Killeen, P.G., 1980, Optimization of gamma-ray logging techniques for uranium: *Geophysics*, v. 45(2), p. 292-311.
- Conaway, J.G., and Killeen, P.G., 1980, Gamma-ray spectral logging for uranium: *Canadian Mining and Metallurgical Bulletin*, v. 73(813), p. 115-123.

- Conaway, J.G., Killeen, P.G., and Bristow, Q., 1981, Variable formation parameters and nonlinear errors in quantitative gamma ray log interpretation: Tulsa, Society of Exploration Geophysicists, 50th annual meeting technical papers, paper M-11, v. 5, p. 2523-2534.
- Cossy, S.P.J., and Frank, H.J., 1983, Uranium mineralization and use of resistance log character in deltaic point bars—Franklin Mines, Karnes County, Texas: AAPG Bulletin, v. 67(1), p. 131-151.
- Czubek, J.A., 1979, Modern trends in mining geophysics and nuclear borehole logging methods for mineral exploration, in P.J. Hodd, editor, Geophysics and geochemistry in the search for metallic ores [Exploration 77, Ottawa, Canada, October 1977, proceedings]: Geological Survey of Canada, Economic Geology Report no. 31, p. 231-272.
- Czubek, J.A., 1983, Advances in gamma-gamma logging, in C.G. Clayton, editor, Nuclear geophysics—Selected papers on applications of nuclear techniques in mineral exploration, mining and process control: Oxford, England, Pergamon Press, p. 153-172.
- Czubek, J.A., Loskiewicz, J., Gyurcsak, J., Lenda, A., Umiastowski, K., and Zorski, T., 1977, Geostatistical method of interpretation of nuclear well logs, in Nuclear techniques and mineral resources 1977: Vienna, International Atomic Energy Agency, p. 313-332.
- Daniels, J.J., and Dyck, A.V., 1984, Borehole resistivity and electromagnetic methods applied to mineral exploration: IEEE Transactions on Geoscience and Remote Sensing, v. GE-22(1), January, p. 80-87.
- Daniels, J.J., Olhoeft, G.R., and Scott, J.H., 1983, Interpretation of core and well log physical property data from drill hole UPH-3, Stephenson County, Illinois: Journal of Geophysical Research, v. 88(B9), September 10, p. 7346-7354.
- Daniels, J., and Scott, J., 1978, The role of borehole electrical measurements in uranium exploration: U.S. Geological Survey, Open-File Report 78-326, 18 p.
- Daniels, J.J., Scott, J.H., and Smith, B.D., 1979, Analysis of bore hole geophysical information across a uranium deposit in the Jackson Group, Karnes County, Texas: U.S. Geological Survey Open-File Report 79-585, 31 p.
- Dodd, P.H., 1966, Quantitative logging and interpretation systems to evaluate uranium deposits, in 7th annual logging symposium transactions, paper P: Houston, Society of Professional Well Log Analysts, 21 p. Reprinted in 1978, Gamma Ray, Neutron and Density Logging: Houston, Society of Professional Well Log Analysts, Reprint volume, paper DD, 21 p.
- Dodd, P.H., and Eschliman, D.H., 1972, Borehole logging techniques for uranium exploration and evaluation, in S.H.U. Bowie, M. Davis and D. Ostle, editors, Uranium prospecting handbook [1971 NATO-sponsored advanced study institute, proceedings]: London, Institution of Mining and Metallurgy, p. 244-276.

- Dodd, P.H., Drouillard, R.F., and Lathan, C.P., 1970, Borehole logging methods for exploration and evaluation of uranium deposits, in L.W. Morely, editor, Mining and groundwater geophysics--1967: Geological Survey of Canada, Economic Geology Report no. 26, p. 401-415.
- Drew, L.J., Bawiec, W.J., Page, N.J., and Schuenemeyer, J.H., 1985, The copper-nickel concentration log--A tool for stratigraphic interpretation within the ultramafic and basal zones of the Stillwater Complex, Montana: Journal of Geochemical Exploration, v. 23, p. 117-137.
- Dyck, A.V., 1975, Electrical borehole methods applied to mineral prospecting, in A.V. Dyck, editor, Borehole geophysics applied to metallic mineral prospecting--A review: Geological Survey of Canada Paper no. 75-31, p. 13-30.
- Dyck, A.V., and Young, R.P., 1979, Physical characterization of rock masses using borehole methods: Geophysics, v. 50(12), p. 2530-2541.
- Eisler, P.L., Huppert, P., Mathew, P.J., Wylie, A.W., and Youl, S.F., 1977, Use of neutron capture gamma radiation for determining grade of iron ore in blast hole and exploration holes, in Nuclear techniques and mineral resources 1977: Vienna, International Atomic Energy Agency, p. 215-228.
- Eisler, P.L., Mathew, P.J., and Youl, S.F., 1979, Nuclear activation logging for aluminum in iron ores and coal: Geoexploration, v. 17(1), p. 43-53.
- Furlong, V.L.R., 1982, Converting the numerical values to geologic reality, in Symposium on uranium exploration methods [Paris, June 1-4, 1982], proceedings: Paris, Nuclear Energy Agency, Organization for Economic Cooperation and Development, p. 767-775.
- George, D.C., 1982, Total count gamma-ray logging--Correction factors and logging model grade assignments, in Symposium on uranium exploration methods [Paris, June 1-4, 1982], proceedings: Paris, Nuclear Energy Agency, Organization for Economic Cooperation and Development, p. 729-751.
- George, D.C., and Scott, J.H., 1982, Review of magnetic susceptibility logging and its application to uranium exploration, in Symposium on uranium exploration methods [Paris, June 1-4, 1982], proceedings: Paris, Nuclear Energy Agency, Organization for Economic Cooperation and Development, p. 837-856.
- Gera, D.F., 1983, The use of gamma-gamma logging for detecting quartz veins in borehole sections [translated from the 1974 Russian paper]: Ottawa, Ontario, Geological Survey of Canada Translations, no. 798658, 8 p.
- Givens, W.W., Mills, W.R., Dennis, C.L., and Caldwell, R.L., 1976, Uranium assay logging using a pulsed 14-MEV neutron source and detection of delayed fission neutrons: Geophysics, v. 41(3), p. 468-490.
- Glenn, W.E., and Hohmann, G.W., 1981, Well logging and borehole geophysics in mineral exploration: Economic Geology, 75th anniversary volume, p. 850-862.

- Glenn, W.E., and Nelson, P.H., 1979, Borehole logging techniques applied to base metal ore deposits, in P.J. Hodd, editor, Geophysics and geochemistry in the search for metallic ores [Exploration 77, Ottawa, Canada, October 1977, proceedings]: Geological Survey of Canada, Economic Geology Report no. 31, p. 273-294.
- Goldman, L.H., and Marr, H.E., 1979, Applications of high resolution gamma ray spectroscopy to well logging, in 20th annual logging symposium transactions, paper GG: Houston, Society of Professional Well Log Analysts, 8 p.
- Hale, L.A., 1967, Phosphate exploration using gamma-radiation logs, Dry Valley, Idaho, in Anatomy of the western phosphate field—Intermountain Association of Geologists 15th annual field conference: Salt Lake City, Utah, Intermountain Association of Geologists, p. 147-159.
- Hallenburg, J.K., 1973, Interpretation of gamma-ray logs, in 14th annual logging symposium transactions, paper G: Houston, Society of Professional Well Log Analysts, 28 p. Reprinted in the 1973, The Log Analyst, v. 14(6), November-December, p. 3. Quantitative use of the gamma ray curve for uranium assay.
- Hallenburg, J.K., 1978, Use of the spontaneous potential curve in a mineral mapping technique, in 19th annual logging symposium transactions, paper U: Houston, Society of Professional Well Log Analysts, 12 p.
- Hallenburg, J.K., 1984, Geophysical logging for mineral and engineering applications: Tulsa, PennWell Books, 254 p.
- Hawkins, W.K., and Gearhart, M., 1968, Use of logging in uranium prospecting, in 9th annual logging symposium transactions, paper T.: Houston, Society of Professional Well Log Analysts.
- Hood, P.J., and Dyck, A.V., 1975, Magnetic drillhole measurements in mineral exploration, in A.V. Dyck, editor, Borehole geophysics applied to metallic mineral prospecting—A review: Geological Survey of Canada Paper no. 75-31, p. 35-38.
- Hood, P.J., editor, 1979, Geophysics and geochemistry in the search for metallic ores [Exploration 77, Ottawa, Canada, October 1977, proceedings]: Geological Survey of Canada, Economic Geology Report no. 31, p. See case histories.
- Howell, E.P. Grant, O.J., Jr., and Crebs, T.J., 1978, Slim hole logging and analysis for uranium exploration: Dallas, Society of Petroleum Engineers, 53rd annual meeting [Houston] preprint SPE-7434. Later published 1980, Journal of Petroleum Technology, v. 32(7), p. 1144-1150.
- Humphreys, D.R., Barnard, R.W., Bivens, H.M., Jensen, D.H., Stephenson, W.A., and Weinlein, J.H., 1983, Uranium logging with prompt fission neutrons, in C.G. Clayton, editor, Nuclear geophysics—Selected papers on applications of nuclear techniques in mineral exploration, mining and process control: Oxford, England, Pergamon Press, p. 261-268.

- IRT Corporation, 1976, Future research in borehole assaying technology, volume 1—Technology assessment of borehole logging techniques: U.S. Bureau of Mines, Open-File Report 119(1)-76 (Contract J0255018, Final Report, March 18, 1976), 325 p.
- IRT Corporation, 1976, Future research in borehole assaying technology, volume 2—Bibliography of borehole assaying techniques, 1965-75: U.S. Bureau of Mines, Open-File Report 119(2)-76 (Contract J0255018, Final Report, March 18, 1976).
- Jessop, A.M., and Judge, A.S., 1975, Temperature measurement in boreholes for the mining industry, in A.V. Dyck, editor, Borehole geophysics applied to metallic mineral prospecting—A review: Geological Survey of Canada Paper no. 75-31, p. 55-66.
- Kayal, J.R., Datta, S., and Madhusudan, I.C., 1982, Resistance and self-potential logging for copper deposits: Geophysical Research Bulletin, v. 20(4), p. 157-161.
- Keller, G.V., 1967, Induced polarization well logging, in 8th annual logging symposium transactions, paper W: Houston, Society of Professional Well Log Analysts, 16 p.
- Keller, G.W., 1970, Application of resistivity methods in mineral and groundwater exploration programs, in L.W. Morely, editor, Mining and groundwater geophysics—1967: Geological Survey of Canada Economic Geology Report 26, p. 51-66.
- Killeen, P.G., 1975, Nuclear techniques for borehole logging in mineral exploration, in A.V. Dyck, editor, Borehole geophysics applied to metallic mineral prospecting—A review: Geological Survey of Canada Paper no. 75-31, p. 39-52.
- Killeen, P.G., 1979, Gamma ray spectrometric methods in uranium exploration—Application and interpretation, in P.J. Hodd, editor, Geophysics and geochemistry in the search for metallic ores [Exploration 77, Ottawa, Canada, October 1977, proceedings]: Geological Survey of Canada, Economic Geology Report no. 31, p. 163-229.
- Killeen, P.G., 1982, Gamma-ray logging and interpretation, in A.A. Fitch, editor, Developments in geophysical exploration methods—3: London, Applied Science Publishers, p. 95-150.
- Killeen, P., 1983, Borehole logging for uranium by measurement of natural gamma-radiation: International Journal of Applied Radioactive Isotopes, v. 34(1), p. 231-260. Also published in 1983, in C.G. Clayton, editor, Nuclear geophysics—Selected papers on applications of nuclear techniques in mineral exploration, mining and process control: Oxford, England, Pergamon Press, p. 231-260.

- Killeen, P.G., editor, 1985, Borehole geophysics for mining and geotechnical applications [International symposium and workshop, Ottawa, Ontario, August 29-31, 1983, proceedings]: Geological Survey of Canada, Paper no. 85-27. Available in 1986.
- Koizumi, C.J., 1980, Thin, dipping ore zone logging models—Log studies: U.S. Department of Energy, Report GJBX-54(80), March, 43 p.
- Kuchurin, E.S., Zaramenskikh, N.M., and Lebrezon, L.M., 1976, The geologic efficiency of using nuclear geophysical well-logging methods to study boreholes in the main types of gold ore deposits in the eastern Transbaikal region [translated from the Russian]: Geological Survey of Canada Library, Report no. 461877, January 15, 1985, 6 p.
- Lovborg, L., 1972, Assessment of uranium by gamma-ray spectrometry, in S.H.U. Bowie, M. Davis and D.Ostle, editors, Uranium prospecting handbook [1971 NATO advanced study institute, proceedings]: London, The Institution of Mining and Metallurgy, p. 157-173.
- Lovborg, L., Nyegaard, P., Christiansen, E.M., Nielsen, B.L., 1980, Borehole logging for uranium by gamma-ray spectrometry: Geophysics, v. 45(6), p. 1077-1090.
- Lubecki, A., Doebele, R., and Herrmann, W., 1982, Direct uranium logging using X-ray fluorescence technique, in Symposium on uranium exploration methods [Paris, June 1-4, 1982], proceedings: Paris, Nuclear Energy Agency, Organization for Economic Cooperation and Development, p. 821-835.
- Moll, S.H., 1980, Spectral gamma logging in the Copper Mountain uranium district—A case study in fractured quartz monzonite, in, 21st annual logging symposium transactions, paper O: Houston, Society of Professional Well Log Analysts, 18 p.
- Moore, D.C., 1980, Interpretation of total gamma logs in thin and dipping beds: Geophysics, v. 45(1)2, p. 1847-1856.
- Mwenifumbo, C.J., 1985, Application of borehole geophysics in exploration of gold, in 26th annual logging symposium transactions, paper DD: Houston, Society of Professional Well Log Analysts, 24 p.
- Mwenifumbo, C.J., Urbancic, T.I., and Killeen, P.G., 1983, Preliminary studies on gamma ray spectral logging in exploration for gold, in Current Research, part A: Geological Survey of Canada Paper no. 83-1A, p. 391-397.
- Nargowalla, S.S., Kung, A., Legrady, O.J., Strever, J., Csillag, A., and Seigel, H.O., 1977, Nuclear Metalog grade logging in mineral deposits, in Nuclear techniques and mineral resources 1977: Vienna, International Atomic Energy Agency, p. 229-265.

- Newnham, L.A., and Packer, T.W., 1983, Development and application of energy-dispersive X-ray fluorescence borehole loggers and drill core analysers at the Renison tin mine in Tasmania, in C.G. Clayton, editor, Nuclear geophysics--Selected papers on applications of nuclear techniques in mineral exploration, mining and process control: Oxford, England, Pergamon Press, p. 345-352.
- Ogilvy, R.D., 1985, Down-hole IP/resistivity prospecting in mineral drill-holes--Some illustrative field examples: *Geoexploration*, v. 23, p. 257-273.
- Overton, A., 1975, Borehole gravimetry, in A.V. Dyck, editor, Borehole geophysics applied to metallic mineral prospecting--A review: Geological Survey of Canada Paper no. 75-31, p. 31-34.
- Overton, A., 1975, Borehole seismic methods, in A.V. Dyck, editor, Borehole geophysics applied to metallic mineral prospecting--A review: Geological Survey of Canada Paper no. 75-31, p. 3-12.
- Paul, J.M., Venuto, P.B., and Lundahl, R.B., 1984, In-Situ leaching of south Texas uranium ores, part 3--Post-leach assessment of recovery and sweep efficiency: Dallas, Society of Petroleum Engineers, 57th annual meeting [New Orleans], preprint SPE-11044. Later published in 1984, *Journal of Petroleum Technology*, v. 36(10), p. 1018-1026.
- Pirson, S.J., 1983, SP and Eh curves as redoxomorphic logs, chapter 1, in *Geologic well log analysis*, 3rd edition: Houston, Gulf Publishing Company, p. 1-43.
- Scott, J.H., 1974, Well-logging techniques for mineral deposit evaluation--A review: U.S. Bureau of Mines, Information Circular no. 8627, 45 P.
- Scott, J.H., 1986, Analysis of geophysical well logs from the Mariano Lake-Lake Valley drilling project, San Juan Basin, northwest New Mexico, in C.E. Turner-Peterson, E.S. Santos, N.S. Fishman, editors, A basin analysis case study--The Morrison Formation, Grants uranium region, New Mexico: Tulsa, AAPG Studies in Geology no. 22, p.241-256.
- Scott, J.H., and Daniels, J.J., 1976, Non-radiometric borehole geophysical detection of geochemical haloes surrounding sedimentary uranium deposits, in Symposium on exploration for uranium ore deposits [Vienna, 3/29-4/2/76], proceedings: Vienna, International Atomic Energy Agency, p. 379-390.
- Scott, J.H., Daniels, J.J., Habrouck, W.P., and Guu, J.Y., 1975, Hole-to-hole geophysical measurement for mineral exploration, in 16th annual logging symposium transactions, paper KK: Houston, Society of Professional Well Log Analysts, 14 p.
- Scott, J.H., Daniels, J.J., Reynolds, R.L., and Seeley, R.L., 1983, Magnetic-susceptibility logging in sedimentary uranium environments: *The Log Analyst*, v. 24(2), March-April, p. 16-21.

- Scott, J.H., and Sena, J., 1974, Acoustic logging for mining applications, in 15th annual logging symposium transactions, paper P: Houston, Society of Professional Well Log Analysts, 10 p.
- Smith, R.J., 1985, Geophysics in Australian mineral exploration: Geophysics, v. 50(12), p. 2637-2665. Case histories.
- Snyder, D.D., Merkel, R.H., and Williams, T.T., 1977, Complex formation resistivity—The forgotten half of the resistivity log, in 18th annual logging symposium transactions, paper Z: Houston, Society of Professional Well Log Analysts, 39 p.
- Sumner, J.S., 1976, Principles of induced polarization for geophysical exploration: New York, Elsevier Scientific Publishing Company, Developments in Economic Geology no. 5, 277 p.
- Sumner, J.S., 1979, The induced-polarization exploration method, in P.J. Hodd, editor, Geophysics and geochemistry in the search for metallic ores [Exploration 77, Ottawa, Canada, October 1977, proceedings]: Geological Survey of Canada, Economic Geology Report no. 31, p. 123-133.
- Tanner, A.B., 1982, Direct uranium logging by high-resolution gamma-ray spectrometry, in Symposium on uranium exploration methods [Paris, June 1-4, 1982], proceedings: Paris, Nuclear Energy Agency, Organization for Economic Cooperation and Development, p. 793-810.
- Threadgold, P., 1970, Applications of well-logging techniques to mining exploration boreholes, in Mining and petroleum geology [9th Commonwealth mining and metallurgical congress, 1969, proceedings]: London, The Institution of Mining and Metallurgy, p. 731-747.
- Tixier, M.P., and Alger, R.P., 1967, Log evaluation of non-metallic mineral deposits, in 8th annual logging symposium transactions, paper R: Houston, Society of Professional Well Log Analysts, 22 p. Later published in 1970, Geophysics, v. 35(1) p. 124-142. Reprinted in 1971, Well Logging: Dallas, Society of Petroleum Engineers, Reprint Series no. 1, p. 368-390.
- Tyne, E.D., 1981, Drill hole resistivity and induced polarization logging at Woodlawn, in R.J. Whiteley, editor, Geophysical case study of the Woodlawn orebody, NSW, Australia: New York, Pergamon Press, p. 531-553.
- Tyne, E.D., Thorburn, M.J., Daggar, D.H., 1985, A major advance in borehole IP logging technology: Exploration Geophysics [Bulletin of the Australian Society of Exploration Geophysicists], v. 16(2/3), p. 303-309.
- Uniastowski, K., and Buniak, M., 1977, Influence of the rock heterogeneity on the results of gamma-gamma logging, in Nuclear techniques and mineral resources 1977: Vienna, International Atomic Energy Agency, p. 273-280.
- Urbancic, T., and Mwenifumbo, C.J., 1985, Multiparameter logging techniques applied to gold exploration, in P. Kileen, editor, Borehole geophysics for mining and geotechnical applications [International symposium and workshop, Ottawa, August 29-31, 1983, proceedings]: Geological Survey of Canada Paper no. 85-27. Available in 1986

- Veneziani, I.I., Pirson, S.J., Colombo, U., and Broome, M.B., 1972, The Redox log, in 13th annual logging symposium transactions, paper D: Houston, Society of Professional Well Log Analysts, 18 p.
- Wilson, R.D., and Cosby, M.S., 1980, Field evaluation of direct uranium borehole logging methods, in 21st annual logging symposium transactions, paper S: Houston, Society of Professional Well Log Analysts, 35 p.
- Wylie, A.W., 1984, Nuclear assaying of mining boreholes: New York, Elsevier, Methods in Geochemistry and Geophysics no. 21, 344 p.
- Wylie, A.W., and Eisler, P.L., 1978, Determining the grade, bulk density and porosity of iron ores by the methods of nuclear geophysics: Atomic Energy in Australia, v. 21, p. 2-13.

19. GROUND WATER APPLICATIONS

(See also 15. Fracture detection; 20. Igneous and metamorphic rocks)

- Alger, R.P., 1966, Interpretation of electric logs in fresh water wells in unconsolidated formations, in 7th annual logging symposium transactions, paper CC: Houston, Society of Professional Well Log Analysts, p.
- Batt, L.S., 1973, The use of well logging techniques in water resources development, in 2nd annual logging symposium transactions, paper 7: Paris, Society of Professional Well Log Analysts, Paris Chapter (SAID), 25 p.
- Besenecker, H., and Lillich, W., 1978, The determination of permeability rates of aquifer-separating layers from non-hydrological data, in Hydrogeology of great sedimentary basins [Conference of May/June 1976, Budapest]: Budapest, Hungarian Geological Institute, p. 108-116.
- Biella, G., Lozej, A., and Tabacco, I., 1983, Experimental study of some hydrogeophysical properties of unconsolidated porous media: Ground Water, v. 21(6), November-December, p. 741-751. A discussion of the limitations of Archie's equation.
- Crosby, J.W., III, and Anderson, J.V., 1971, Some applications of geophysical well logging to basalt hydrogeology: Ground Water, v. 9(5), September-October, p. 12-20.
- DeLuca, R.J., and Buckley, B.K., 1985, Borehole logging to delineate fractures in a contaminated bedrock aquifer, in 1985 NWWA conference on surface and borehole geophysical methods in ground water investigations [Fort Worth, Texas, February 12-14], proceedings: Worthington, Ohio, National Water Well Association, p. 387-398.
- Dobecki, T.L., and Romig, P.R., 1985, Geotechnical and groundwater geophysics: Geophysics, v. 50(12), p. 2621-2636.
- Dyck, J.H., Keys, W.S., and Meneley, W.A., 1972, Application of geophysical logging to groundwater studies in southeastern Saskatchewan: Canadian Journal of Earth Sciences, v. 9, p. 78-94.
- Emerson, D.W., and Haines, B.M., 1972, Sampling and geophysical logging of water bores in unconsolidated sediments: Australian Society of Exploration Geophysicists Bulletin, v. 3(4), p. 17-32.
- Fligg, K., and Rodrigues, E., 1981, Case histories in the application of geophysical well logging in ground-water applications: Ontario Ministry of the Environment, Water Resources Branch, Water Resources Paper no. 12, 19 p.

- Greenhouse, J.P., and Pehme, P., 1985, Stratigraphy and physical properties of unconsolidated glacial deposits using borehole geophysics, in P. Kileen, editor, Borehole geophysics for mining and geotechnical applications [International symposium and workshop, Ottawa, August 29-31, 1983, proceedings]: Geological Survey of Canada Paper no. 85-27. Available in 1986.
- Hess, A.E., 1984, Use of a low-velocity borehole flowmeter in the study of hydraulic conductivity in fractured rock, in D.M. Nielsen and M. Curl, editors, 1984 NWWA/EPA conference on surface and borehole geophysics methods in ground water investigations, proceedings: Worthington, Ohio, National Water Well Association, p. 812-832.
- Hess, J.W., Wheatcraft, S.W., Spencer, D.D., and Adams, W.M., 1984, Evaluation of the applicability of some existing borehole instruments to hazardous waste site characterization and monitoring, in D.M. Nielsen and M. Curl, editors, 1984 NWWA/EPA conference on surface and borehole geophysics methods in ground water investigations, proceedings: Worthington, Ohio, National Water Well Association, p. 762-787.
- Keys, W.S., 1970, Borehole geophysics as applied to groundwater, in L.W. Morley, editor, Mining and groundwater geophysics—1967: Geological Survey of Canada, Economic Geology Report no. 26, p. 598-614. ✓
- Keys, W.S., and MacCary, L.M., 1971, Application of borehole geophysics to water-resources investigations: U.S. Geological Survey, Techniques of Water-Resources Investigations, book 2, chapter E1, 126 p. A revised and expanded edition is currently in preparation.
- Keys, W.S., and MacCary, L.M., 1973, Location and characteristics of the interface between brine and fresh water from geophysical logs of boreholes in the upper Brazos River basin, Texas: U.S. Geological Survey Professional Paper no. 809-B, 23 p.
- Kovacs, G., 1981, Exploration and exploitation of deep groundwaters, section 14, in Subterranean hydrology: Littleton, Colorado, Water Resources Publications, p.609-683.
- Kwader, T., 1982, Interpretation of geophysical logs in shallow carbonate environments and their applications to ground water resource investigations: T. Kwader Inc., 201 p.
- Kwader, T., 1984, The use of geophysical logs for determining formation water quality, in D.M. Nielsen and M. Curl, editors, 1984 NWWA/EPA conference on surface and borehole geophysics methods in ground water investigations, proceedings: Worthington, Ohio, National Water Well Association, p. 833-841. Later published in 1986, Ground Water, v. 24(1), p. 11-15.
- Kwader, T., 1984, Estimating aquifer permeability from formation resistivity factors, in D.M. Nielsen and M. Curl, editors, 1984 NWWA/EPA conference on surface and borehole geophysics methods in ground water investigations, proceedings: Worthington, Ohio, National Water Well Association, p. 713-721.

- Kwader, T., 1985, Resistivity-porosity cross plots for determining in situ formation water quality—Case examples, in 1985 NWWA conference on surface and borehole geophysical methods in ground water investigations [Fort Worth, Texas, February 12-14], proceedings: Worthington, Ohio, National Water Well Association, p. 415-424.
- Levine, E.N., Cybriwsky, Z.A., and Toksoz, M.N., 1984, Detection of permeable rock fractures and estimation of hydraulic conductivity by 3-D vertical seismic profiling, in D.M. Nielsen and M. Curl, editors, 1984 NWWA/EPA conference on surface and borehole geophysics methods in ground water investigations, proceedings: Worthington, Ohio, National Water Well Association, p. 853-876.
- Lindsey, G.P., 1985, Dry hole resistivity logging, in 1985 NWWA conference on surface and borehole geophysical methods in ground water investigations [Fort Worth, Texas, February 12-14], proceedings: Worthington, Ohio, National Water Well Association, p. 371-376.
- MacCary, L.M., 1978, Interpretation of well logs in a carbonate aquifer: U.S. Geological Survey, Water-Resources Investigations no. 78-88, 30 p. Later published in 1983 as Geophysical logging in carbonate aquifers: Ground Water, v. 21(3), p. 324-342.
- MacCary, L.M., 1980, Use of geophysical logs to estimate water-quality trends in carbonate aquifers: U.S. Geological Survey, Water-Resources Investigations no. 80-57, 23 p.
- McConnell, C.L., 1983, Spontaneous potential corrections for ground-water salinity calculations; Carter County, Oklahoma, U.S.A.: Journal of Hydrology, v. 65, p. 363-372.
- McConnell, C.L., 1985, Time dependence of the equivalent water resistivity in fresh water wells: The Log Analyst, v. 26(3), May-June, p. 12-17.
- Montgomery, R.J., Taylor, R.W., Koch, H.A., 1985, Use of downhole geophysical methods in determining the internal structure of a large landfill, in 1985 NWWA conference on surface and borehole geophysical methods in ground water investigations [Fort Worth, Texas, February 12-14], proceedings: Worthington, Ohio, National Water Well Association, p. 377-386.
- Pirson, S.J., 1983, Hydrodynamics of infiltration, chapter 10, in Geologic well log analysis, 3rd edition: Houston, Gulf Publishing Company, p. 291-332.
- Rao, S.V.V.P., 1985, Aquifer and aquiclude delineation and correlation of Quaternary sediments by borehole geophysical logs in Banganga River basin, Rajasthan: Geophysical Research Bulletin, v. 23(9), p. 169-176.
- Robinette, M.S., and Williams, R.E., 1979, Delineation of hydrostratigraphic units using borehole geophysical techniques, in Symposium on uranium mill tailings management, geotechnical engineering program [November 19-20]: Fort Collins, Colorado, Colorado State University, Civil Engineering Department, p. 3-12.

- Tanwar, B.S., 1980, Electric logging techniques applied to ground water exploration and waterwells: Irrigation Power [New Delhi], v. 37(2), p. 233-240.
- Taylor, K.C., Wheatcraft, S.W., and McMillion, L.G., 1985, A strategy for the hydrologic interpretation of well logs, in 1985 NWWA conference on surface and borehole geophysical methods in ground water investigations [Fort Worth, Texas, February 12-14], proceedings: Worthington, Ohio, National Water Well Association, p. 314-323.
- Taylor, T.A., and Dey, J.A., 1985, Bibliography of borehole geophysics as applied to ground-water hydrology: U.S. Geological Survey Circular no. 926, 62 p.
- Tselentis, G., 1985, The processing of geophysical well logs by microcomputers as applied to the solution of hydrogeological problems: Journal of Hydrology, v. 80, p. 215-236.
- Tselentis, G., 1985, A study of the hydrogeophysical properties of fissured aquifers using a double porosity model: Journal of Hydrology, v. 78, p. 331-344.
- Vaish, J.P., and Saini, I.S., 1982, Application of geophysical well-logging technique for detection of aquifers, in S.S. Merh, First national seminar on Quaternary environments [Baroda, India, November, 1977]: Delhi, India, Hindustan Publishing Corporation, p. 115-20.
- Vonhof, J.A., 1966, Water quality determination from spontaneous-potential electric log curves: Journal of Hydrology, v. 4, p. 341-347.
- Williams, J.H., Carswell, L.D., Lloyd, O.B., Jr., and Roth W.C., 1984, Characterization of ground water circulation in selected fractured rock aquifers using borehole temperature and flow logs, in D.M. Nielsen and M. Curl, editors, 1984 NWWA/EPA conference on surface and borehole geophysics methods in ground water investigations, proceedings: Worthington, Ohio, National Water Well Association, p. 842-852.
- Woodward, D.G., 1984, Areal lithologic changes in bedrock aquifers in southeastern Minnesota as determined from natural-gamma borehole logs, in D.M. Nielsen and M. Curl, editors, 1984 NWWA/EPA conference on surface and borehole geophysics methods in ground water investigations, proceedings: Worthington, Ohio, National Water Well Association, p. 788-800.
- Working Group on Nuclear Techniques in Hydrology, 1971, Nuclear well logging in hydrology: Vienna, Austria, International Atomic Energy Agency, Technical Reports Series, no. 126, 90 p.

20. IGNEOUS AND METAMORPHIC ROCKS
(See also 15. Fracture detection; 21. Geothermal)

- Anderson, R.N., and O'Malley, H., 1985, Frequency response and attenuation changes across highly altered fracture zones crosscutting a fast formation--The oceanic crust of the Mid-Atlantic Ridge in 26th annual well logging symposium transactions, paper LLL: Houston, Society of Professional Well Log Analysts, 12 p.
- Anderson, R.N., O'Malley, H., and Newmark, R.L., 1984, Use of geophysical logs for quantitative determination of fracturing, alteration, and lithology in the upper oceanic crust, in C.B. Raleigh, editor, Observation of the continental crust through drilling I [international symposium (Tarrytown, N.Y., May 20-25), proceedings]: New York, Springer-Verlag, p. 182-234.
- Anderson, R.N., O'Malley, H., and Newmark, R.L., 1984, Nuclear, multichannel-sonic, ultrasonic analyses for determination of degree of fracturing and alteration in a fast formation--The deep ocean crust, in 25th annual logging symposium transactions, paper Y: Houston, Society of Professional Well Log Analysts, 22 p.
- Anderson, R.N., O'Malley, H., and Newmark, R.L., 1985, Use of geophysical logs for quantitative determination of fracturing, alteration and lithostratigraphy in the upper oceanic crust, Deep Sea Drilling Project, holes 504B and 556, in Initial reports of the the Deep Sea Drilling Project, v. 83: Washington D.C., U.S. Government Printing Office, p. 443-478.
- Becker, K., Von Herzen, R.P., Francis, T.J.G., Anderson, R.N., Honnorez, J., Adamson, A.C., Alt, J.C., Emmermann, R., Kempton, P.D., Kinoshita, H., Laverne, C., Mottl, N.J., and Newmark, R.L., 1982, In situ electrical resistivity and bulk porosity of the oceanic crust Costa Rica rift: Nature, v. 300, December 16, p. 594-599.
- Blackwood, D.J., and Peveraro, R.C.A., 1983, Determination of rock properties in a metamorphic/igneous formation by integrated formation evaluation, in 24th annual logging symposium transactions, paper AAA: Houston, Society of Professional Well Log Analysts, 25 p.
- Carroll, R.D., 1968, Applications of inhole geophysical logs in volcanic rocks, Nevada Test Site, in E.B. Eckel, editor, Nevada Test Site: Boulder, Colorado, Geological Society of America, Memoir 110, p. 125-134.
- Chapman, B.H., and Thompson, D.T., 1984, Applications of geophysical logging within skarn-type deposits: The Log Analyst, v. 25(2), March-April, p. 13-24.
- Daniels, J.J., Scott, J.H., and Olhoeft, G., 1981, Interpreting Precambrian metamorphic geology, in 22nd annual logging symposium transactions, paper T: Houston, Society of Professional Well Log Analysts, 16 p.

- Davison, C.C., Keys, W.S., and Paillet, F.L., 1982, Use of borehole-geophysical logs and hydrologic tests to characterize crystalline rocks for nuclear-waste storage, Whiteshell nuclear research establishment, Manitoba, and Chalk River nuclear laboratory, Ontario, Canada: Battelle National Laboratory, Office of Nuclear Waste Isolation, Technical Report ONWI-418, 103 p.
- Douglas, A.C., and Millett, M.R., 1978, Total intensity magnetometer logging as a stratigraphic tool in Tertiary volcanic rock: Lawrence Livermore Laboratory Report, UCRL-52617, 11 p.
- Drury, M.J., 1985, The Iceland research drilling project crustal section; physical properties of some basalts from the Reydarfjordur borehole, Iceland: Canadian Journal of Earth Sciences, v. 22(11), p. 1588-1593.
- Hyndman, R.D., and Ade-Hall, J.M., 1972, Electrical resistivity of basalts, in T.A. Davies, editor, Initial reports of the Deep Sea Drilling Project, v. 26: Washington, D.C., Government Printing Office, 505-508.
- Hyndman, R.D., and Salisbury, M.H., 1984, The physical nature of young upper oceanic crust on the Mid-Atlantic Ridge, Deep Sea Drilling Project Hole 395A, in Initial reports of the Deep Sea Drilling Project, v. 78A: Washington, D.C., U.S. Government Printing Office, p. 839-848.
- Itoh, T., Kato, S., and Miyairi, M., 1982, A quick method of log interpretation for very low resistivity volcanic tuff by the use of CEC data, in 23rd annual logging symposium transactions, paper NN: Houston, Society of Professional Well Log Analysts, 26 p.
- Jones, J.W., Simpson, E.S., and Nueman, S.P., 1984, Geophysical investigation of fractured crystalline rock near Oracle, Arizona, in D.M. Nielsen and M. Curl, editors, 1984 NWWA/EPA conference on surface and borehole geophysics methods in groundwater investigations, proceedings: Worthington, Ohio, National Water Well Association, p. 877-896.
- Keys, W.S., 1979, Borehole geophysics in igneous and metamorphic rocks, in 20th annual logging symposium transactions, paper OO: Houston, Society of Professional Well Log Analysts, 26 p. Later published in 1979, The Log Analyst, v. 20(4), July-August, p. 14-28. Reprinted in 1982, Geothermal log interpretation handbook: Houston, Society of Professional Well Log Analysts, p. III-177 - III-191.
- Keys, W.S., 1984, A synthesis of borehole geophysical data at the Underground Research Laboratory, Manitoba, Canada: U.S. Department of Energy, Battelle Project Management Division, Report BMI/OCRD-15, 43 p.
- Khatchikian, A., 1982, Log analysis of oil-bearing igneous rocks, in 23rd annual logging symposium transactions, paper AA: Houston, Society of Professional Well Log Analysts, 34 p. Later published in condensed form 1983, World Oil v. 197(7), December, p. 79-98.

- Khatchikian, A., and Lesta, P., 1973, Log evaluation of tuffites and tuffaceous sandstones in southern Argentina, in 14th annual logging symposium transactions, paper K: Houston, Society of Professional Well Log Analysts, 23 p.
- Kirkpatrick, R.J., 1979, Results of downhole geophysical logging hole 396b, DSDP leg 46, in Initial reports of the Deep Sea Drilling Project, v. 46: Washington, D.C., U.S. Government Printing Office, p. 401-407. Also published in 1979 as, The physical state of the oceanic crust--Results of downhole geophysical logging in the mid-Atlantic ridge at 23°N: Journal of Geophysical Research, v. 84(B1), p. 178-188.
- Kiss, B., and Toth, J., 1985, Well log interpretation of metamorphic hydrocarbon-bearing formations: First Break, v. 3(5), may, p. 24-31.
- Lebreton, F., and Vaubourg, P., 1983, Contribution of well logs to determining permeability and porosity in crystalline rocks, in J.B.W. Day, editor, Recent advances in hydrogeological research in France: Institute of Geological Sciences, Natural Environment Research Council Report 82-6, p. 21-30.
- Mathews, M., Salisbury, M.H., and Hyndman, R., 1984, Basement logging on the Mid-Atlantic Ridge, Deep Sea Drilling Project hole 395A, in Initial reports of the Deep Sea Drilling Project, v. 78A: Washington, D.C., U.S. Government Printing Office, p. 717-730.
- McCann, D.M., Barton, K.J., and Hearn, K., 1983, Geophysical well logging in a crystalline rock mass, in 8th formation evaluation symposium transactions, paper G: London, Society of Professional Well Log Analysts London Chapter, 25 p.
- Moos, D., 1984, A case study of vertical seismic profiling in fractured crystalline rock, in M. Simaan, editor, Advances in geophysical data processing, volume 1: Greenwich, Connecticut, JAI Press, p. 9-37.
- Moos, D., and Zoback, M.D., 1983, In situ studies of velocity in fractured crystalline rocks: Journal of Geophysical Research, v. 88(B3), March 10, p. 2345-2358.
- Nelson, P.H., and Glenn, W.E., 1975, Influence of bound water on the neutron log in mineralized igneous rock, in 16th annual logging symposium transactions, paper M: Houston, Society of Professional Well Log Analysts, 9 p.
- Newmark, R.L., Anderson, R.N., Moos, D., and Zoback, M.D., 1985, Sonic and ultrasonic logging of hole 504B and its implications for the structure, porosity, and stress regime of the upper 1 km of the oceanic crust, in Initial reports of the the Deep Sea Drilling Project, v. 83: Washington D.C., U.S. Government Printing Office, p. 479-510. Also published 1985, Structure, porosity and stress regime of the upper oceanic crust--Sonic and ultrasonic logging of DSDP hole 504B: Tectonophysics, v. 118, p. 1-42.

- Paillet, F.L. and Keys, W.S., 1984, Applications of borehole geophysics in characterizing the hydrology of fractured rocks, in D.M. Nielsen and M. Curl, editors, 1984 NWWA/EPA conference on surface and borehole geophysics methods in ground water investigations, proceedings: Worthington, Ohio, National Water Well Association, p. 743-761.
- Ponomarev, V.N., and Nechoroshkov, V.L., 1983, Downhole magnetic measurements in oceanic crustal hole 395a on the Mid-Atlantic Ridge, in Initial reports of the Deep Sea Drilling Project, v. 78A: Washington, D.C., U.S. Government Printing Office, p. 731-739.
- Rabinowitz, P.D., and Borella, P.E., 1984, Well logging of the sediments and basement complex on the Walvis Ridge, in Initial reports of the Deep Sea Drilling Project, v. 74: Washington, D.C., U.S. Government Printing Office, p. 827-838. Also published in 1984, as A sonic well log of the basement complex of the Walvis Ridge: Geo-Marine Letters, v. 3(1), p. 1-7.
- Ritch, H.J., 1975, An open hole logging evaluation in metamorphic rocks, in 16th annual logging symposium transactions, paper V: Houston, Society of Professional Well Log Analysts, 11 p.
- Salisbury, M.H., Christensen, N.I., Becker, K., and Moos, D., 1985, The velocity structure of layer 2 at Deep Sea Drilling Project site 504 from logging and laboratory experiments, in Initial reports of the Deep Sea Drilling Project, v. 83: Washington, D.C., U.S. Government Printing Office, p. 529-539
- Salisbury, M.H., Scott, G.H., Becker, K., Bosum, W., Broglia, C., Carlson, R., Fisher, A., Gieskes, J., Holmes, M., Hoskins, H., Legrand, J., Moos, D., Rio, D., Stephen R., and Wilkens, R., 1985, Ocean drilling program--looking down an old hole: Nature, v. 316(6030), August 22, p. 682.
- Salisbury, M.H., Stephen, R., Christensen, N.I., Francheteau, J., Hamano, Y., Hobart, M., and Johnson, D., 1980, The physical state of the upper levels of Cretaceous oceanic crust from the results of logging, laboratory studies, and the oblique seismic experiment at Deep Sea Drilling Project Sites 417 and 418, in Initial reports of the Deep Sea Drilling Project, v. 51-53, part 2: Washington, D.C., U.S. Government Printing Office, p. 1579-1597.
- Sanyal, S.K., Juprasert, S., and Jusbasche, M., 1979, An evaluation of a rhyolite-basalt-volcanic ash sequence from well logs, in 20th annual logging symposium transactions, paper TT: Houston, Society of Professional Well Log Analysts, 14 p. Later published in 1980, The Log Analyst, v. 20(1), January-February, p. 3-9. Reprinted in 1982, Geothermal log interpretation handbook: Houston, Society of Professional Well Log Analysts, p. III-169-III-175.
- Schmoker, J.W., 1977, Density variations in a quartz diorite determined from borehole gravity measurements, San Benito County, California: The Log Analyst, v. 18(2), March-April, p. 32-38.

- Soonawala, N.M., 1983, Geophysical logging in granites: *Geoexploration*, v. 21(3), p. 221-230.
- Stefansson, V., Gudmundsson, A., and Emmerman, R., 1982, Gamma ray logging in Icelandic rocks: *The Log Analyst*, v. 23(6), November-December, p. 11-16.
- West, F.G., and Laughlin, A.W., 1976, Spectral gamma logging in crystalline basement rocks: *Geology*, v. 6, p. 617-618.
- Zoback, M.D., and Anderson, R.N., 1982, Ultrasonic borehole televiewer investigation of oceanic crustal layer 2a, Costa Rica rift: *Nature*, v. 295, February 4, p. 375-379.

21. GEOTHERMAL WELL-LOG EVALUATION

(See also III. Temperature logging; 15. Fracture detection; 19. Ground water;
20. Igneous rocks)

- Baker, L.E., Campbell, A.B., and Huguen, R.L., 1975, Well-logging technology and geothermal applications—A survey and assessment with recommendations: Sandia Laboratory, Report SAND 75-0275, 75 P.
- Becker, K., Langseth, M.G., Von Herzen, R.P., Anderson, R.N., and Hobart, M.A., 1985, Deep crustal geothermal measurements, hole 504b, Deep Sea Drilling Project legs 69, 70, 83, and 92, in Initial reports of the Deep Sea Drilling Project, v. 83: Washington, D.C., U.S. Government Printing Office, p. 405-418.
- Benoit, W.R., Sethi, D.K., Fertl, W.H., and Mathews, M., 1980, Geothermal well log analysis at Desert Peak, Nevada, in 21st annual logging symposium transactions, paper AA: Houston, Society of Professional Well Log Analysts, 41 p. Reprinted in 1982, Geothermal log interpretation handbook: Houston, Society of Professional Well Log Analysts, p. VII-69-VII-109.
- Chaturvedi, L., and Ory, J.K., 1981, A preliminary evaluation of geothermal potential of San Juan Basin, New Mexico, using bottom hole temperatures from oil and gas wells: Geothermal Resources Council, Transactions, v. 4, p. 21-24.
- Cheung, P.K., 1979, Geothermal gradient mapping—Oklahoma, in 7th formation evaluation symposium transactions, paper T: Calgary, Canadian Well Logging Society.
- Chilingar, G.V., Edwards, L., Fertl, W.H., and Rieke, H.H., III, 1982, Introduction, chapter 1, in L.M. Edwards, G.V. Chilingar, H.H. Rieke, III, W.H. Fertl, editors, Handbook of geothermal energy: Houston, Gulf Publishing Company, p. 1-43
- Cochran, L.E., 1979, Formation evaluation in the geothermal environment—The Geysers steam field, California: Dallas, Society of Petroleum Engineers, 54th annual meeting [Las Vegas] preprint SPE-8452, 12 p.
- Dennis, B.R., 1984, Logging technology for high-temperature geothermal boreholes, in C.B. Raleigh, editor, Observation of the continental crust through drilling, volume I [international symposium (Tarrytown, N.Y., May 20-25), proceedings]: New York, Springer-Verlag, p. 174-181.
- Dunlap, M.F., and Dorfman, M.H., 1981, Problems and partial solutions of using the SP log to predict water salinity in deep hot wells, in D.G. Bebout and A.L. Bachman, editors, 5th conference on geopressured-geothermal energy, proceedings: Baton Rouge, Louisiana State University, p. 189-192. Also published in 1981, Geothermal Resource Council Transactions, v. 5, October, p. 283-286.

- Ehring, T.W., Lusk, L.A., Grubb, J.M., Johnson, R.B., DeBries, M.R., and Fertl, W.H., 1978, Formation evaluation concepts for geothermal reservoirs, in 19th annual logging symposium transactions, paper FF: Houston, Society of Professional Well Log Analysts, 14 p.
- Ershaghi, I., and Abdassah, D., 1983, Interpretation of some wireline logs in geothermal fields of the Imperial Valley, California, in California regional meeting (Ventura), proceedings, SPE-11745: Dallas, Society of Petroleum Engineers, p. 727-736.
- Ershaghi, I., Dougherty, E.L., Herzberg, D., and Uco, H., 1981, Permeability determination in liquid dominated geothermal reservoirs using the Dual Induction Laterolog, in I. Ershaghi, E.E. Dougherty, L.L. Handy, editors, Formation evaluation in liquid dominated geothermal reservoirs: U.S. Department of Energy, Report DOE/ET/28384-T1, p. 41-59.
- Ershaghi, I., Dougherty, E.L., Uco, H., and Ghassemi, F., 1981, Problems in estimation of salinity profile in liquid dominated geothermal systems, in I. Ershaghi, E.E. Dougherty, L.L. Handy, editors, Formation evaluation in liquid dominated geothermal reservoirs: U.S. Department of Energy, Report DOE/ET/28384-T1, p. 36-38.
- Ershaghi, I., Ghaemian, S., and Abdassah, D., 1981, Lithology and hydrothermal alteration determination from well logs for the Cerro Prieto wells, Mexico: Los Alamos National Laboratory, Report LA-9075-MS, 28 p. Reprinted in 1982, Geothermal log interpretation handbook: Houston, Society of Professional Well Log Analysts, p. III-75-III-106.
- Ershaghi, I., Ghaemian, U., and Mathews, M., 1980, Detection of hydrothermal alteration in a sedimentary type geothermal system using well logs: Dallas, Society of Petroleum Engineers, 55th annual meeting [Dallas] preprint SPE-9499, 11 p.
- Ershaghi, I., Phillips, L.B., Dougherty, E.L., and Handy, L.L., 1979, Application of oil-field well log interpretation techniques to the Cerro Prieto Geothermal Field: Los Alamos Scientific Laboratory, Report LA-8130-MS, 142 p.
- Fertl, W.H., 1980, Geophysical well logs applied to geothermal resource evaluation, in P.F. Burollet and V. Ziegler, editors, Energy resources, colloquium C2, 26th international geological congress: Paris, Editions Technip, p. 461-468.
- Fertl, W.H., and Overton, H., 1982, Formation evaluation, chapter 8, in L.M. Edwards, G.V. Chilingar, H.H. Rieke, III, W.H. Fertl, editors, Handbook of geothermal energy: Houston, Gulf Publishing Company, p. 326-425.
- Glenn, W.E., and Ross, H.P., 1982, A study of well logs from Cove Fort-Sulpurdale KGRA, Millard and Beaver Counties, Utah: Earth Science Laboratory Division, University of Utah Research Institute, Report no. 75, 51 p.

- Glenn, W.E., Ross, H.P., and Atwood, J.W., 1980, Review of well logging in the Basin and Range known geothermal resource areas: Dallas, Society of Petroleum Engineers, 55th annual meeting [Dallas] preprint SPE-9496. Later published in 1982, Journal of Petroleum Technology, v. 34(5), p. 1104-1118. Reprinted in 1982, Geothermal log interpretation handbook: Houston, Society of Professional Well Log Analysts, p. VII-121-VII-135.
- Gregory, A.R., and Backus, M.M., 1980, Geopressured formation parameters, geothermal well, Brazoria County, Texas, in M.H. Dorfman and W.L. Fisher, editors, 4th U.S. Gulf Coast geopressured-geothermal energy conference, proceedings, volume 1: Austin, University of Texas, Center for Energy Studies, p. 235-311.
- Halfman, S.E., Lippman, M.J., and Gilreath, J.A., 1984, Cerro Prieto case history—Use of wireline logs to characterize a geothermal reservoir, in 1984 SPE California regional meeting, proceedings, SPE-12739: Dallas, Society of Petroleum Engineers, p. 113-122.
- Halfman, S.E., Lippman, M.J., Zelwer, R., and Howard, J.H., 1984, Geologic interpretation of geothermal fluid movement in Cerro Prieto Field, Baja California, Mexico: AAPG Bulletin, v. 68(1), p. 18-30.
- Hill, D.G., 1985, Maximizing geothermal exploration drilling information with wire-line geophysical logs: Bulletin Geothermal Resources Council, v. 14(3), p. 19-22.
- Hirakawa, S., and Yamaguchi, S., 1982, Geothermal well logging and its interpretation, in P. Kruger, H.J. Ramey and others, editors, 7th DOE geothermal reservoir engineering workshop [Stanford, California], proceedings: U.S. Department of Energy, Report CONF-811201, p. 115-119.
- Hyndman, R.D., Langseth, M.G., and Von Herzen, R.P., 1984, A review of Deep Sea Drilling Project geothermal measurements through leg 71, in Initial reports of the Deep Sea Drilling Project, v. 78A: Washington, D.C., U.S. Government Printing Office, p. 813-837.
- Jones, P.H., 1977, Geopressured geothermal energy in the south-central United States—Frontier areas and exploration techniques, chapter 11, in M.D. Campbell, editor, Geology of alternate energy resources in the south-central United States: Houston, Houston Geological Society, p. 215-250.
- Keys, W.S., 1980, The application of the acoustic televiewer to the characterization of hydraulic fractures in geothermal wells, in Raft River well stimulation experiments, geothermal reservoir well stimulation program: U.S. Department of Energy, Report DOE/AL/10563-T7, p. A1-A11.
- Keys, W.S. 1982, Location and character of fractures in geothermal wells, in Fractures in geothermal reservoirs: Geothermal Resources Council, Special Report no. 12, p. 17-27.
- Keys, W.S., 1982, Borehole geophysics in geothermal exploration, in A.A. Fitch, editor, Developments in geophysical exploration methods—3: London, Applied Science Publishers, p. 239-268.

- Keys, W.S., and Sullivan, J.K., 1979, Role of geophysics in defining physical characteristics of the Raft River geothermal reservoir, Idaho: *Geophysics*, v. 44(6), p. 1116-1141.
- Lam, H.L., and Jones, F.W., 1986, An investigation of the potential for geothermal energy recovery in the Calgary area in southern Alberta, Canada, using petroleum exploration data: *Geophysics*, v. 51(8), p. 1661-1670.
- Littleton, R.T., and Burnett, E.E., 1976, The salinity profile of the East Mesa Field as determined from dual induction resistivity and SP logs, in 1st EPA workshop on sampling geothermal effluents, proceedings: U.S. Environmental Protection Agency, Report EPA-600/9-76-011, p. 114-125.
- Lyons, D.J., and van de Kamp, P.C., 1980, Subsurface geological and geophysical study of the Cerro Prieto Geothermal Field, Baja California, Mexico: Lawrence Berkeley Laboratory, Report LBL-10540, 95 p.
- McNitt, J.R., Sanyal, S.K., and Peterson, C.A., 1981, Synergistic interpretation of formation characteristics of a low temperature geothermal well in Susanville, California: *Geothermal Resources Council Transactions*, v. 5, p. 303-306.
- Muramoto, F.S., and Elders, W.A., 1984, Identification of zones of progressive hydrothermal metamorphism from wireline logs and their correlation to reservoir temperatures in the Salton Sea and Westmorland geothermal systems, Imperial Valley, California, in C.A. Rigsby, editor, *The Imperial basin tectonics, sedimentation, and thermal aspects*: Los Angeles, Society of Economic Paleontologists and Mineralogists, Pacific Section, p. 87-95.
- Noble, J.E., and Abril G.A., 1979, Analysis of Cerro Prieto well logs—Some results and problems: *Geothermics*, v. 8, p. 191-200.
- Peterson, F.L., 1974, Neutron well logging in Hawaii: Honolulu, University of Hawaii, Water Resources Research Technical Report 75, 42 p.
- Rainis, A.E., Skidmore, D.R., and Rieke, H.H., III, 1974, A computational method for determining segmental and overall geothermal gradients and geothermal heat flow values: *Geothermics*, v. 3(3), p. 113-117.
- Rigby, F.A., 1980, Fracture identification in an igneous geothermal reservoir, Surprise Valley, California, in 21st annual logging symposium transactions, paper Z: Houston, Society of Professional Well Log Analysts, 9 p. Reprinted in 1982, *Geothermal log interpretation handbook*: Houston, Society of Professional Well Log Analysts, p. VII-111-VII-119.
- Rigby, F.A., 1981, Applications of geothermal well log data for evaluation of reservoir potential: Los Alamos Scientific Laboratory, Report LA-8778-MS, 69 p. Reprinted in 1982, *Geothermal log interpretation handbook*: Houston, Society of Professional Well Log Analysts, p. III-3-III-73.

- Rigby, F., and McEuen, R.B., 1980, An example of resistivity log extrapolation with magnetotelluric data for a geothermal site: Dallas, Society of Petroleum Engineers, 55nd annual meeting [Dallas] preprint SPE-9497. Later published in 1982, Journal of Petroleum Technology, v. 34(11), p. 2683-2688.
- Rigby, F.A., and Zebal, G.P., 1981, Case history on geothermal well log interpretation Surprise Valley, California: Los Alamos Scientific Laboratory, Report no. LA-8598-MS, 58 p.
- Ross, E.W., Vagelatos, N., Dickerson, J.M., and Nguyen, V., 1982, Nuclear logging and geothermal log interpretation—Formation temperature sonde evaluation: Los Alamos National Laboratory Report no. LA-9159-MS, 56 p. Reprinted in 1982, Geothermal log interpretation handbook: Houston, Society of Professional Well Log Analysts, p. V-3-V-60.
- Rudman, A.J., 1978, Analysis of geophysical logs from the Hawaii geothermal project well: Hawaii Institute of Geophysics, Geothermal Resources Exploration in Hawaii 6, 26 p.
- Sanyal, S.K., 1981, Estimation of steam saturation and rock alteration from geothermal well logs—A theoretical inquiry: Geothermal Resources Council, Transactions, v. 5, p. 373-376.
- Sanyal, S.K., and Jusbasche, J.M., 1979, Calculation of geothermal water salinity from well logs—A statistical approach: Geothermal Resources Council Transactions, v. 3, September, p. 613-616.
- Sanyal, S.K., Che, M., Dunlap, R.E., and Twichell, M.K., 1982, Theoretical nuclear log responses of the components of the Geysers geothermal reservoir, California: Geothermal Resources Council Transactions, v. 6, p. 165-168.
- Sanyal, S.K., Che, M., Dunlap, R.E., and Twichell, M.K., 1982, Qualitative patterns on geophysical well logs from the Geysers, California: Geothermal Resources Council Transactions, v. 6, p. 313-316.
- Sanyal, S.K., Wells, L.E., and Mathews, M., 1979, Classification of geothermal reservoirs from the viewpoint of log analysis, in 20th annual logging symposium transactions, paper HH: Houston, Society of Professional Well Log Analysts, 20 p. Reprinted in 1982, Geothermal log interpretation handbook: Houston, Society of Professional Well Log Analysts, p. II-3-II-22.
- Sanyal, S.K., Wells, L.E., and Bickham, R.E., 1980, Geothermal well log interpretation state of the art—Final report: Los Alamos Scientific Laboratory, Report LA-8211-MS, 330 p.
- Seamount, D.T., Jr., and Elders, W.A., 1982, Use of wireline logs at Cerro Prieto in the identification of the distribution of hydrothermally altered zones and dike locations and their correlation with reservoir temperatures, in 3rd symposium on the Cerro Prieto Geothermal Field, Baja California, Mexico, [1981], proceedings: Lawrence Berkeley Laboratory, Report no. LBL-11967 (DOE Report CONF-810399), p. 123-133.

- Silva, P., and Bassiouni, Z, 1981, Accurate determination of geopressured aquifer salinity from the SP log, in D.G. Bebout and A.L. Bachman, editors, 5th conference on geopressured-geothermal energy, proceedings: Baton Rouge, Louisiana State University, p. 193-196. Also published in 1981, Geothermal Resources Council Transactions, v. 5, p. 737-740.
- Society of Professional Well Log Analysts, 1982, Geothermal log interpretation handbook: Houston, Society of Professional Well Log Analysts, variously paginated. Contains discussion of interpretation techniques, 17 reprints of significant papers and a comprehensive bibliography.
- Stefansson, V., and Steingrimsen, B., 1980, Geothermal logging, part I--An introduction to techniques and interpretation: Reykjavik, National Research Council of Iceland, Scientific and Technical Information Service, Report OS80017/JHD09, 117 p.
- Stoker, R.C., Goldman, D., and Kunze, J.F., 1977, Deducing production zones from well logs: Geothermal Resources Council, Transactions, v. 1, p. 279-280.
- Syms, M.C., Syms, P.H., and Bixley, P.F., 1982, Interpretation of flow measurements in geothermal wells without caliper data: The Log Analyst, v. 23(2), March-April, p. 34-45.
- Urban, T.C., and Diment, W.H., 1982, An interpretation of precision temperature logs in a deep geothermal well near Desert Peak, Churchill County, Nevada: Geothermal Resources Council, Transactions v. 6, p. 317-321.
- Wright, P.M., Ward, S.H., Ross, H.P., and West, R.C., 1985, State of the art geophysical exploration for geothermal resources: Geophysics, v. 50(12), p. 2666-2696.

First-Author Listing of Citations

- Aaboe, E., 1984, Influence of shaliness upon conductivity in shaly sandstones in the northern North Sea area, in 25th annual logging symposium transactions, paper LL: Houston, Society of Professional Well Log Analysts, 17 p.
- Abshier, J.F., McBride, G.E., and Beardsmore, S.F., 1979, Saving money with coal geophysics: Coal Age, v. 84(9), p. 100-110.
- Adams, S.C., and Kullerud, G., 1984, Depositional patterns of Pennsylvanian sediments in Sullivan County, west-central Indiana, USA: International Journal of Coal Geology, v. 3, p. 349-373.
- Agostini, A., 1977, Correlation of high resolution density log counts and ash content of coal: Australian Society of Exploration Geophysicists Bulletin, v. 8(2), p. 26-31.
- Aguilera, R., 1973, Analysis of naturally fractured reservoirs from sonic and resistivity logs: Dallas, Society of Petroleum Engineers, Rocky Mountain regional meeting preprint SPE-4398. Later published in 1974, Journal of Petroleum Technology, v. 26(11), p. 1233-1238.
- Aguilera, R., 1975, Analysis of naturally fractured reservoirs from conventional well logs: Dallas, Society of Petroleum Engineers, Rocky Mountain regional meeting preprint SPE-5342. Later published in 1976, Journal of Petroleum Technology, v. 28(7), p. 764-772. Discussion and reply published in 1976, Journal of Petroleum Technology, v. 28(10), p. 1183-1184.
- Aguilera, R., 1977, A new approach for log analysis of the pulsed neutron and resistivity log combination: Dallas, Society of Petroleum Engineers SPE-6995. Later published 1979, Journal of Petroleum Technology, v. 31(4), p. 415-418.
- Aguilera, R., 1980, Formation evaluation by well log analysis, chapter 3, in Naturally fractured reservoirs: Tulsa, Petroleum Publishing Co., p. 125-232. See references.
- Aguilera, R., 1980, Fractured shales, chapter 5, in Naturally fractured reservoirs: Tulsa, Petroleum Publishing Company, p. 355-414.
- Aguilera, R., 1981, A computerized well log interpretation process for the evaluation of naturally fractured reservoirs: Calgary, Petroleum society of CIM 32nd annual technical meeting [Calgary] preprint 81-32-6, 8 p.
- Aguilera, R., 1983, Exploring for naturally fractured reservoirs, in 24th annual logging symposium transactions, paper C: Houston, Society of Professional Well Log Analysts, 28 p.
- Aguilera, R., and Acevedo, L., 1982, FCL; a computerized well-log interpretation process for the evaluation of naturally fractured reservoirs: Journal of Canadian Petroleum Technology, v. 21(1), p. 31-37.
- Aguilera, R., and Van Poolen H.K., 1977, Current status on the study of naturally fractured reservoirs: The Log Analyst, v. 18(3), p. 3-23.

- Aguilera, R., and Van Poolen, H.K., 1978, How to evaluate naturally fractured reservoirs from various well logs: *Oil and Gas Journal*, v. 76, December 25, p. 202-208.
- Aguilera, R., and Van Poolen, H.K., 1979, Porosity and water saturation can be estimated from logs: *Oil and Gas Journal*, v. 77, January 8, p. 101-108.
- Ahmed, A.E., 1977, A neutron logging method for locating the top of cement behind borehole casing: *Journal of Petroleum Technology*, v. 29(9), p. 1089-1090, SPE-6498.
- Ahmed, H., 1984, Reservoir delineation and porosity evaluation from VSP: Tulsa, Society of Exploration Geophysicists, Expanded Abstracts with Biographies, 1984 Technical Program, p. 847-850.
- Ajam, S.O., Henzell, L.A., Wang, J., Syarif, A.M., and Soedirdja, H., 1982, Wellsite log evaluation of the Miocene carbonates in Salawati Basin, in 11th annual convention proceedings, volume 1: Jakarta, Indonesian Petroleum Association, p. 357-377.
- Ajam, S.O., and Rahal, V.E., 1985, Applications of thermal multigate decay pulsed neutron logs in unusual downhole logging environments: *Australian Petroleum Exploration Association [APEA] Journal*, v. 25, part 1, p. 265-274.
- Alexander, I., editor, 1982, Schlumberger well evaluation developments—Continental Europe 1982 [Baden-Baden, June]: Paris, Schlumberger Technical Services, 296 p.
- Alger, R.P., 1966, Interpretation of electric logs in fresh water wells in unconsolidated formations, in 7th annual logging symposium transactions, paper CC: Houston, Society of Professional Well Log Analysts, p.
- Alger, R.P., 1980, Geological use of wireline logs, in G.D. Hobson, editor, *Developments in petroleum geology no. 2*: London, Applied Science Publishers Ltd., p. 207-272.
- Alger, R.P., and Crain, E.R., 1966, Defining evaporite deposits with electrical well logs, in J.L. Rau, editors, *Second symposium on salt*, volume 2: Cleveland, Northern Ohio Geological Society, p. 116-130.
- Allan, D.R., 1975, Identification of sediments—Their depositional environment and degree of compaction from well logs, in G.V. Chilingarian and K.H. Wolf, editors, *Compaction of coarse-grained sediments*, part I: New York, Elsevier, *Developments in Sedimentology* 18A, p. 349-401.
- Allan, J.R., 1979, Prediction of permeability from logs by multiple regression, in 6th European formation evaluation symposium transactions, paper M: London, Society of Professional Well Log Analysts, London Chapter, 13 p.

- Almon, W.R., 1979, A geologic appreciation of shaly sands, in 20th annual logging symposium transactions, paper WW: Houston, Society of Professional Well Logging Analysts, 14 p. Reprinted in 1982, Shaly sand reprint volume: Houston, Society of Professional Well Log Analysts, p. 15-118.
- Almon, W.R., and Schultz, A.L., 1979, Electric log detection of diagenetically altered reservoirs and diagenetic traps: Transactions of the Gulf Coast Association of Geological Societies, v. 29, p. 1-10.
- American Association of Petroleum Geologists, 1974, Abnormal formation pressures: Tulsa, American Association of Petroleum Geologists, Reprint Series 11, 205 p. Contains 14 significant papers that appeared in the AAPG Bulletin.
- Anderson, B., 1986, The analysis of some unsolved induction interpretation problems using computer modeling, in 27th annual logging symposium transactions, paper II: Houston, Society of Professional Well Log Analysts, 18 p. Later published in 1986, The Log Analyst, v. 27(5), November-December, p. 60-73.
- Anderson, R.A., 1972, Fracture pressure gradient determination from well logs: Dallas, Society of Petroleum Engineers, 47th annual meeting [San Antonio] preprint SPE-4135, 15 p.
- Anderson, R.N., and O'Malley, H., 1985, Frequency response and attenuation changes across highly altered fracture zones crosscutting a fast formation--The oceanic crust of the Mid-Atlantic Ridge in 26th annual well logging symposium transactions, paper LLL: Houston, Society of Professional Well Log Analysts, 12 p.
- Anderson, R.N., O'Malley, H., and Newmark, R.L., 1984, Nuclear, multichannel-sonic, ultrasonic analyses for determination of degree of fracturing and alteration in a fast formation--The deep ocean crust, in 25th annual logging symposium transactions, paper Y: Houston, Society of Professional Well Log Analysts, 22 p.
- Anderson, R.N., O'Malley, H., and Newmark, R.L., 1984, Use of geophysical logs for quantitative determination of fracturing, alteration, and lithology in the upper oceanic crust, in C.B. Raleigh, editor, Observation of the continental crust through drilling, volume I [international symposium (Tarrytown, N.Y., May 20-25), proceedings]: New York, Springer-Verlag, p. 182-234. Also published in 1985 as, Use of geophysical logs for quantitative determination of fracturing, alteration and lithostratigraphy in the upper oceanic crust, Deep Sea Drilling Project, holes 504B and 556, in Initial reports of the the Deep Sea Drilling Project, v. 83: Washington D.C., U.S. Government Printing Office, p. 443-478. Also published in 1985 as, Nuclear, multichannel-sonic, ultrasonic analyses for determination of degree of fracturing and alteration in a fast formation--the deep oceanic crust, in 25th annual logging symposium transactions, paper Y: Houston, Society of Professional Well Log Analysts, 22 p.

- Anderson, R.N., Zoback, M.D., Hickman, S.H., and Newmark, R.L., 1985, Permeability versus depth in the upper oceanic crust—In situ measurements in Deep Sea Drilling Project hole 504B, eastern equatorial Pacific, in Initial reports of the the Deep Sea Drilling Project, v. 83: Washington D.C., U.S. Government Printing Office, p. 429-442. Also published in 1985, Journal of Geophysical Research, v. 90(B5), p. 3659-3669.
- Anderson, W.B., 1974, Potential uses for borehole logs in mineral exploration: CIM [Canadian Institute Mining Metallurgy] Bulletin, v. 67(743), p. 164-168.
- Angeleri, G.P., and Joli, F., 1986, Analysis of the applications of the VSP, in 27th annual logging symposium transactions, paper X: Houston, Society of Professional Well Log Analysts, 19 p.
- Anonymous, 1971, Logging oddities—radioactive clean dolomite: Canadian Well Logging Society Journal v. 4(1), p. 95-98.
- Arditty, P.C., Arens, G., and Staron, P., 1984, Improvement of formation properties evaluation through the processing and interpretation results of the EVA tool recordings: Tulsa, Society of Exploration Geophysicists, Expanded Abstracts with Biographies, 1984 Technical Program, p. 31-35.
- Arnold, D.M., and Paap, H.J., 1978, Quantitative monitoring of water flow behind and in wellbore casing: Dallas, Society of Petroleum Engineers, SPE-7107. Later published in 1979, Journal of Petroleum Technology, v. 31(1), p. 121-130.
- Aron, J. Murray, J., and Seeman, B., 1978, Formation compressional and shear interval transit-time logging by means of long spacings and digital techniques: Dallas, Society of Petroleum Engineers, 53rd annual meeting [Houston] preprint SPE-7446, 11 p.
- Asquith, G.B., 1979, Chapter 4, in Subsurface carbonate depositional models—A concise review: Tulsa, Petroleum Publishing Co., p. 103-116.
- Asquith, G.B., 1985, Handbook of log evaluation techniques for carbonate reservoirs: Tulsa, American Association of Petroleum Geologists, Methods in Exploration No. 5, 47 p.
- Asquith, G.B., and Gibson, C.R., 1982, Basic well log analysis for geologists: Tulsa, American Association of Petroleum Geologists, Methods in Exploration Series No. , 216 p.
- Astbury, S., and Worthington, M.H., 1986, The analysis and interpretation of full waveform sonic data, part I—Dominant phases and shear wave velocity: First Break, v. 4(4), p. 7-16.
- Astbury, S., and Worthington, M.H., 1986, The analysis and interpretation of full waveform sonic data, part 2—Multiples, mode conversions and reflections: First Break, v. 4(6), June, p. 15-24.

- Asten, M.W., 1983, Borehole log analysis using an interactive computer: Australian Society of Exploration Geophysicists Bulletin, v. 14, p. 3-10. Discussion of computer-assisted estimation of lithological and geotechnical parameters.
- Atwater, J.E., 1984, Spectrometric gamma ray logging of core: Canadian Well Logging Society Journal, v. 13, p. 29-39.
- Atwater, J.E., 1986, Correlation of cation exchange capacity with core spectral gamma ray logs, in 27th annual logging symposium transactions, paper QQ: Houston, Society Of Professional Well Log Analysts, 16 p.
- Augier, C., 1980, Log Interpretation in Complex Lithologies [in French]: Bulletin des Centres Recherches Exploration-Production Elf-Aquitaine, v. 4(1), p. 143-177.
- Autric, A., and Dumensil, P., 1985, Resistivity, radioactivity and sonic transit time logs to evaluate the organic content of low permeability rocks: The Log Analyst, v. 26(3), May-June, p. 36-45.
- Aylmer, J.A., Charbucinski, J., Eisler, P.L., and Youl, S.F., 1984, Quantitative borehole logging of manganese ore by prompt neutron-gamma and neutron activation methods, in 25th annual logging symposium transactions, paper D: Houston, Society of Professional Well Log Analysts, 20 p.
- Aylmer, J.A., Eisler, P.L., Mathew, P.J., and Wylie, A.W., 1976, The use of natural gamma radiation for estimating the iron content of sedimentary iron formations containing shale bands, in Nuclear techniques in geochemistry and geophysics: Vienna, Austria, International Atomic Energy Agency, p. 53-74.

- Babcock, E.A., 1978, Measurement of subsurface fractures from dipmeter logs: AAPG Bulletin, v. 62(7), p. 1111-1126.
- Babec, J.R., and Struss, S.E., 1985, Vertical seismic profiling (VSP)—Bridging the gap: Canadian Well Logging Society Journal, v. 14, p. 85.
- Bachu, S., 1985, Influence of lithology and fluid flow on the temperature distribution in a sedimentary basin—A case study from the Cold Lake area, Alberta, Canada: Tectonophysics, v. 120, p. 257-284.
- Baicker, J.A., Stone, J.M., Lister, D.E., Schneider, G., Senftle, F., and Tanner, A., 1982, In-situ ore grade determination and other applications of high-resolution gamma ray spectroscopy in mineral and oil logging: Society of Mining Engineers of AIME, Fall meeting [Honolulu] preprint SME-AIME 82-365, 9 p.
- Baker, J.D., 1984, Dipmeter Advisor—an expert log analysis system at Schlumberger in P.H. Winston and K.A. Prendergast, editors, The AI business; the commercial uses of artificial intelligence: Cambridge, Massachussetts, The MIT Press, p. 51-65.
- Baker, L.E., Campbell, A.B., and Hughen, R.L., 1975, Well-logging technology and geothermal applications—A survey and assessment with recommendations: Sandia Laboratory, Report SAND 75-0275, 75 P.
- Baker, L.J., 1981, The effect of the invaded zone on full wavetrain acoustic logging: Tulsa, Society of Exploration Geophysicists, 51st annual meeting [Los Angeles] preprint S11.2, v. 5, p. 2609-2625. Later published in 1984, Geophysics, v. 49(6), p. 796-809. An important discussion on the depth of investigation of acoustic logging tools.
- Baker, P.L., and Smoliar, S.W., 1984, Applying artifical intelligence to the interpretation of petroleum well logs, in Proceedings, first conference on artificial intelligence applications: The Institute of Electrical and Electronics Engineers Computer Society Press, p. 558-561.
- Balch, A.H., and Lee, M.W., editors, 1984, Vertical seismic profiling—technique, applications, and case histories: Boston, International Human Resource development Corporation (IHRDC), 488 p.
- Baldwin, A.D., Jr., and Miller, J., 1979, The use of a gamma logger to delineate glacial and bedrock stratigraphy in southwestern Ohio: Ground Water, v. 17(4), p. 385-389.
- Baldwin, J.L., Morris, C.L., Pegors, Latz, C.W., Wahsa, R.J., Harris, E.B., and Wishart, R.A., 1986, Pulsed neutron log application in California—Improved capability via borehole decay correction, in 1986 offshore technology conference, proceedings, OTC-5278: Dallas, Society of Petroleum Engineers, p. 463-480.
- Balogh, I., and Horvath, J., 1983, Quantitative determination of Al_2O_3 content in buaxite—prospecting boreholes by means of neutron activation logging: Geophysical Transactions [Eotvos Lorand Geophysical Institute of Hungary], v. 29(2), June, p. 173-185.

- Baltosser, R.W., and Lawrence, H.W., 1970, Application of well logging techniques in metallic mineral mining: *Geophysics*, v. 35(1), p. 143-152.
- Barber, T.D., 1986, Invasion profiling with the Phasor Induction Tool, in 27th annual logging symposium transactions, paper EE: Houston, Society of Professional Well Log Analysts, 14 p.
- Bardsley, S.R., and Algermissen, S.T., 1963, Evaluating oil shale by log analysis: *Journal of Petroleum Technology*, v. 15(1), p. 81-84. Later published in 1963, *Colorado School of Mines Quarterly*, v. 58(4), p. 175-184.
- Barlai, Z., 1976, Determination of permeability and specific surface area of the pore channels from well logs in fine grained sandstones, in 17th annual logging symposium transactions, paper C: Houston, Society of Professional Well Log Analysts.
- Bashem, W.H.M., and Dorfman, M.H., 1983, Facies characterization of carbonates by use of well logs, Sligo Formation (Lower Cretaceous), South Texas, in 24th annual logging symposium transactions, paper SS: Houston, Society of Professional Well Log Analysts, 17 p.
- Bateman, R.M., 1984, Log quality control: Boston, IHRDC Press, 398 p.
- Bateman, R.M., 1984, Cased-hole log analysis and reservoir performance monitoring: Boston, IHRDC Press, 380 p.
- Bateman, R.M., 1985, Openhole log analysis and formation evaluation: Boston, IHRDC Press, 647 p.
- Bateman, R.M. and Konen, C.E., 1977, Wellsite log analysis and the programmable pocket calculator, in 18th annual logging symposium transactions, paper B: Houston, Society of Professional Well Log Analysts, 35 p. Expanded into series published in *The Log Analyst*.
- Bateman, R.M., and Konen, C.E., 1977, The log analyst and the programmable pocket calculator, part 1— R_w from the SP and pulsed neutron log analysis: *The Log Analyst*, v. 18(5), September-October, p. 3-11.
- Bateman, R.M., and Konen, C.E., 1977, The log analyst and the programmable pocket calculator, part 2—Crossplot porosity and water saturation: *The Log Analyst*, v. 18(6), November-December, p. 3-11.
- Bateman, R.M., and Konen, C.E., 1978, The log analyst and the programmable pocket calculator, part 3—Dipmeter computation: *The Log Analyst*, v. 19(1), January-February, p. 3-9.
- Bateman, R.M., and Konen, C.E., 1978, The log analyst and the programmable pocket calculator, part 4—Dual induction-laterolog 8: *The Log Analyst*, v. 19(3), May-June, p. 14.
- Bateman, R.M., and Konen, C.E., 1978, The log analyst and the programmable pocket calculator, part 5— R_t and D_t from the dual laterolog: *The Log Analyst*, v. 19(4), July-August, p. 11-14.

- Bateman, R.M., and Konen, C.E., 1979, The log analyst and the programmable pocket calculator, part 6—Finding true stratigraphic thickness and true vertical thickness of dipping beds cut by directional wells: *The Log Analyst*, v. 20(2), March-April, p. 3-6.
- Batt, L.S., 1973, The use of well logging techniques in water resources development, in 2nd annual logging symposium transactions, paper 7: Paris, Society of Professional Well Log Analysts, Paris Chapter (SAID), 25 p.
- Beaudoin, B., Pinoteau, B., and Delhomme, J.P., 1983, Geological analysis of logs and dipmeter data for well-to-well correlation, in 24th annual logging symposium transactions, paper BBB: Houston, Society of Professional Well Log Analysts, 18 p. Deep-sea fan example.
- Beck, A.E., 1976, The use of thermal resistivity logs in stratigraphic correlation: *Geophysics* v. 41(2), p. 300-309. Reprinted in 1977, *The Log Analyst*, v. 17(1), January-February, p. 17-22.
- Beck, A.E., 1982, Precision logging of temperature gradients and the extraction of past climate: *Tectonophysics*, v. 83, p. 1-11.
- Beck, J., Schultz, A., and Fitzgerald, D., 1977, Reservoir evaluation of fractured Cretaceous carbonates in south Texas, in 18th annual logging symposium transactions, paper M: Houston, Society of Professional Well Log Analysts, 25 p.
- Becker, K., Langseth, M.G., Von Herzen, R.P., Anderson, R.N., and Hobart, M.A., 1985, Deep crustal geothermal measurements, hole 504b, Deep Sea Drilling Project legs 69, 70, 83, and 92, in Initial reports of the Deep Sea Drilling Project, v. 83: Washington, D.C., U.S. Government Printing Office, p. 405-418.
- Becker, K., Von Herzen, R.P., Francis, T.J.G., Anderson, R.N., Honnorez, J., Adamson, A.C., Alt, J.C., Emmermann, R., Kempton, P.D., Kinoshita, H., Laverne, C., Mottl, N.J., and Newmark, R.L., 1982, In situ electrical resistivity and bulk porosity of the oceanic crust Costa Rica rift: *Nature*, v. 300, December 16, p. 594-599.
- Bell, J.S., and Gough, D.I., 1979, Northeast-southwest compressive stress in Alberta—Evidence from oil wells: *Earth and Planetary Science Letters*, v. 45, p. 475-482.
- Bell, J.S., and Gough, D.I., 1982, The use of borehole breakouts in the study of crustal stress, in M.D. Zoback and B.C. Haimson, editors, Workshop on hydraulic fracturing stress measurements [December 2-5], proceedings: U.S. Geological Survey Open-file Report 82-1075, p. 539-557.
- Bengston, C.A., 1981, Statistical curvature analysis techniques for structural interpretation of dipmeter data: *AAPG Bulletin*, v. 65(2), p. 312-332.

- Bengston, C.A., 1982, Structural and stratigraphic uses of dip profiles in petroleum exploration, in M.T. Halbouty, editor, *The deliberate search for the subtle trap*: Tulsa, American Association of Petroleum Geologists, Memoir 32, p. 31-45.
- Benoit, W.R., Sethi, D.K., Fertl, W.H., and Mathews, M., 1980, Geothermal well log analysis at Desert Peak, Nevada, in 21st annual logging symposium transactions, paper AA: Houston, Society of Professional Well Log Analysts, 41 p. Reprinted in 1982, *Geothermal log interpretation handbook*: Houston, Society of Professional Well Log Analysts, p. VII-69-VII-109.
- Berg, R.R., 1986, Interpretation of reservoir morphology, chapter 3, in *Reservoir sandstones*: Englewood Cliffs, New Jersey, Prentice-Hall Inc., p. 75-103.
- Berilgen, B.A., Sinha, A.K., and Fertl, W.H., 1985, Estimation of productivity of Lobo 6 sand (Lower Wilcox, Texas) by identifying diagenetic clays using well log data: Dallas, Society of Petroleum Engineers, 60th annual meeting [Las Vegas], preprint SPE-14278, 15 p.
- Bernard, J., Hentinger, R., Lebert, F., and Straub, A., 1985, Improvements in logging methods for mineral exploration: Transactions of the Institution of Mining and Metallurgy, Section B [Applied Earth Sciences], v. 94, February, B32-B38.
- Berteig, V., Helgeland, J., Mohn, E., Langeland, T., and van der Wel, D., 1985, Geofacies determination by logging data, in 26th annual logging symposium transactions, paper TT: Houston, Society of Professional Well Log Analysts, 25 p.
- Besenecker, H., and Lillich, W., 1978, The determination of permeability rates of aquifer-separating layers from non-hydrological data, in *Hydrogeology of great sedimentary basins* [Conference of May/June 1976, Budapest]: Budapest, Hungarian Geological Institute, p. 108-116.
- Beyer, L.A., 1983, Borehole gravity surveys—Theory, mechanics and nature of measurements: U.S. Geological Survey, Open-File Report 83-0079, 91 p.
- Beyer, L.A., Robbins, S.L., and Clutson, F.G., 1985, Basic data and preliminary density and porosity profiles for twelve borehole gravity surveys made in the Los Angeles, San Joaquin, Santa Maria, and Ventura Basin, California: U.S. Geological Survey, Open-File Report 85-42, 66p.
- Bidgood, D.E.T., and Blanchard, J.E., 1970, Geophysical investigations of evaporites in Nova Scotia, in L.W. Morely, editor, *Mining and groundwater geophysics—1967*: Geological Survey of Canada Economic Report no. 26, p. 497-503.
- Biella, G., Lozej, A., and Tabacco, I., 1983, Experimental study of some hydrogeophysical properties of unconsolidated porous media: *Ground Water*, v. 21(6), November-December, p. 741-751. A discussion of the limitations of Archie's equation.

- Bigelow, E.L., 1982, Application of dip-related measurements to a complex-carbonate-clastic depositional environment: *The Log Analyst*, v. 23(2), p. 9-30.
- Bigelow, E.L., 1985, Making more intelligent use of log derived dip information, Part I—Suggested guidelines: *The Log Analyst*, v. 26(1), January-February, p. 41-51.
- Bigelow, E.L., 1985, Making more intelligent use of log derived dip information, Part II—Wellsite data gathering considerations: *The Log Analyst*, v. 26(2), March-April, p. 25-41.
- Bigelow, E.L., 1985, Making more intelligent use of log derived dip information, Part III—Computer processing considerations: *The Log Analyst*, v. 26(3), May-June, p. 18-31.
- Bigelow, E.L., 1985, Making more intelligent use of log derived dip information, Part IV—Structural interpretation: *The Log Analyst*, v. 26(4), July-August, p. 21-43.
- Bigelow, E.L., 1985, Making more intelligent use of log derived dip information, Part V—Stratigraphic interpretation: *The Log Analyst*, v. 26(5), September-October, p. 25-64.
- Bigelow, E.L., and Easton, S.B., 1986, Electrofacies fingerprints of eolian desert environments, in 10th European formation evaluation symposium transactions, paper V: Aberdeen, Society of Professional Well Log Analysts, Aberdeen Chapter, 19 p.
- Bily, C., and Dick, J.W.L., 1974, Naturally occurring gas hydrates in the McKenzie Delta, N.W.T.: *Bulletin Canadian Petroleum Geology*, v. 22(3), September, p. 340-352.
- Black, A.J., and Herring, A.T., 1983, Offset of borehole gravity densities due to geologic structures: Calgary, Canadian Society of Exploration Geophysicists, annual meeting preprint, 33 p. Available from Edcon, Inc., Denver, Colorado.
- Blackburn, J.S., and Brimage, R.C., 1978, Estimation of formation pressures in clean gas sands from the dual-spacing TDT log, in 19th annual logging symposium transactions, paper V: Houston, Society of Professional Well Log Analysts, 14 p.
- Blackwood, D.J., and Peveraro, R.C.A., 1983, Determination of rock properties in a metamorphic/igneous formation by integrated formation evaluation, in 24th annual logging symposium transactions, paper AAA: Houston, Society of Professional Well Log Analysts, 25 p.
- Blakeman, E.R., 1982, A case study of the effect of shale alteration on sonic transit times, in 23rd annual logging symposium transactions, paper II: Houston, Society of Professional Well Log Analysts, 14 p. Discusses the effects of invasion on the sonic log.

- Blenkinsop, M., Baker, P., Clavier, C., Kenyon, W., and des Ligneris, S., 1986, Deep Electromagnetic Propagation Tool interpretation, in 27th annual logging symposium transactions, paper XX: Houston, Society of Professional Well Log Analysts, 26 p.
- Blumling, P., Fuchs, K., and Schneider, T., 1983, Orientation of the stress field from breakouts in a crystalline well in a seismic active area: Physics of the Earth and Planetary Interiors, v. 33, p. 250-254.
- Boardman, C.R., Hammack, G.W., Fertl, W.H., and Atkinson, C.H., 1972, Evaluation of low-permeability gas-bearing formations in Rio Blanco County, Colorado: Dallas, Society of Petroleum Engineers, 47th annual meeting [San Antonio] preprint SPE-4097. Later published in 1973, Journal of Petroleum Technology, v. 25(10), p. 1125-1129.
- Bond, L.O., Alger, R.P., and Schmidt, A.W., 1971, Well log applications in coal mining and rock mechanics: Transactions of the Society of Mining Engineers AIME, v. 250, December, p. 355-362. Reprinted in 1986, in Buchanan, D.J., and Jackson, L.J., editors, Coal geophysics: Tulsa, Society of Exploration Geophysicists, Geophysics reprint series no. 6, p. 28-35.
- Bonnet, A., and Dahan, C., 1983, Oil-well interpretation using expert system and pattern recognition technique, in Eighth international joint conference on artificial intelligence, proceedings: Palo Alto, American Association on Artificial Intelligence, p. 185-189.
- Borai, 1985, A new correlation for cementation factor in low-porosity carbonates: Dallas, Society of Petroleum Engineers, 60th annual meeting [Las Vegas], preprint SPE-14401, 8 p.
- Borai, A.M., and Muhsin, M.A., 1985, LDT tool give improved formation evaluation: Oil and Gas Journal, v. 83(27), July 8, p. 60-63.
- Bornemann E., and Doveton, J.H., 1983, Lithofacies mapping of Viola Limestone in south central Kansas based on wireline logs: AAPG Bulletin, v. 67(4), p. 609-623.
- Borsaru, M., Ceravolo, C., Charbucinski, J., Eisler, P., and Youl, S., 1985, Ash determination of black coal in exploration boreholes by neutron-gamma, in P. Kileen, editor, Borehole geophysics for mining and geotechnical applications [International symposium and workshop, (Ottawa, August 29-31, 1983), proceedings]: Geological Survey of Canada, Paper 85-27. Available in 1986.
- Borsaru, M., Charbucinski, J., Eisler, P.L., and Youl, S.F., 1985, Determination of ash content in coal by borehole logging in dry boreholes using gamma-gamma methods: Geoexploration, v. 23, p. 503-518.
- Bosworth, A.F., 1972, Log calibrations surface and downhole: Canadian Well Logging Society Journal, v. 5(1), p. 39-68.

- Botter, B.J., 1982, Circumferential acoustic waves in boreholes for the delineation of vertical fractures, in 23rd annual logging symposium, paper S: Houston, Society of Professional Well Log Analysts, 21 p.
- Boutemy, Y., Calvier, C., and Simond, R.F., 1979, Field studies—A progress report on the contribution of logging: Dallas, Society of Petroleum Engineers, SPE-8178, 13 p.
- Boyce, R.E., 1980, Determination of the relationships of electrical resistivity, sound velocity, and density/porosity of sediment and rock by laboratory techniques and well logs from Deep Sea Drilling Project sites 415 and 416 off the coast of Morocco, in Initial reports of the Deep Sea Drilling Project, v. 50: Washington, D.C., U.S. Government Printing Office, p. 305-318.
- Boyce, R.E., 1984, Deep Sea Drilling Project drill sites 530 and 532 in the Angola Basin and on the Walvis Ridge—Interpretation of induction log data, and laboratory sound velocity, density, porosity-derived reflection coefficients, and vane shear strength, in Initial reports of the Deep Sea Drilling Project, v. 75, part 2: Washington, D.C., U.S. Government Printing Office, p. 1137-1187.
- Boyardieu, C., Coblenz, A., and Pelissier-Combescure, J., 1984, Formation evaluation in oil base mud wells, in 25th annual logging symposium transactions, paper BB: Houston, Society of Professional Well Log Analysts, 18 p.
- Boyardieu, C., and Martin, C., 1984, Fracture detection and evaluation, in 9th international formation evaluation symposium transactions, paper 21: Paris, Society of Professional Well Log Analysts, Paris Chapter (SAID), 9 p.
- Boyardieu, C., and Winchester, A., 1982, Use of the Dual Laterolog for the evaluation of the fracture porosity in hard carbonate formations: Dallas, Society of Petroleum Engineers, Offshore South East Asia 82 conference preprint SPE-10464, 11 p.
- Bradley, J.W., 1975, Application of the borehole gravimeter to the evaluation and exploration of oil and gas reserves: Tulsa, Society of Exploration Geophysicists, 45th annual meeting [Denver] preprint, 15 p.
- Branisa, F., 1974, Filtering of well-log curves: Geophysics, v. 39(4), August, p. 545-549.
- Brevetti, J.C., Greer, G., and Weis, B.R., 1985, Evaluation of fractured carbonates in the Mid-Continent region, in 26th annual logging symposium transactions, paper III: Houston, Society of Professional Well Log Analysts, 19 p.
- Bristow, Q., and Killeen, P.G., 1982, Natural gamma-ray spectral logging using scintillation detectors, in Symposium on uranium exploration methods [Paris, June 1-4, 1982], proceedings: Paris, Nuclear Energy Agency, Organization for Economic Cooperation and Development, p. 777-791.

- Bristow, Q., Killeen, P.G., and Mwenifumbo, J.C., 1982, Comparison of standardized gamma-ray log calibration measurements—Ottawa, Adelaide and Grand Junction, in Symposium on uranium exploration methods [Paris, June 1-4, 1982], proceedings: Paris, Nuclear Energy Agency, Organization for Economic Cooperation and Development, p. 715-727.
- Brock, J., 1984, Analyzing your logs, volume 1 (fundamentals of open hole log interpretation): Tyler, Texas, Petro-Media, Inc., 270 p.
- Brock, J., 1984, Analyzing your logs, volume 2 (advanced open hole log interpretation): Tyler, Texas, Petro-Media, Inc., 186 p.
- Brock, J., 1985, Analyzing your logs, volume 3—Cased hole log interpretation: Tyler, Texas, Petro-Media, Inc.
- Brock, J., 1986, Applied open-hole log analysis: Houston, Gulf Publishing Company, Contributions in Petroleum Geology and Engineering, volume 2, 292 p.
- Brom, R.W.C., and Driedonks, F., 1981, Applications of petrophysical logging in the evaluation of coal deposits, in 22nd annual logging symposium transactions, paper KK: Houston, Society of Professional Well Log Analysts, 29 p.
- Brott, C.A., Millard, W.A., Lively, J.M., and Goff, D.D., 1985, In-situ mineral analysis in boreholes, in P. Killeen, editor, Borehole geophysics for mining and geotechnical applications [International symposium and workshop, Ottawa, August 29-31, 1983, proceedings]: Geological Survey of Canada, Paper 85-27. Available in 1986.
- Brown, A.A., 1977, Permeability from well logs Shaybah Field, Saudi Arabia, in 18th annual logging symposium transactions, paper Q: Houston, Society of Professional Well Log Analysts, 22 p.
- Brown, A.R., and Lautzenhiser, T.V., 1982, The effect of dipping beds on a borehole gravimeter survey: Geophysics, v. 47(1), p. 25-30.
- Brown, G.A., 1986, A mathematical comparison of common saturation equations, in 27th annual logging symposium transactions, paper T: Houston, Society of Professional Well Log Analysts, 24 p.
- Brown, J.A., Jackson, J.A., and Koelle, A.R., 1985, Western gas sands project Los Alamos NMR well logging tool development: Los Alamos, Los Alamos National Laboratory, Report LA-10374-PR, March, 77 p.
- Brown, J.S., 1965, Formation evaluation in heavy oil sands: Journal of Petroleum Technology, v. 4(4), p. 177. Later published in 1966, in 7th annual logging symposium transactions, paper B: Houston, Society of Professional Well Log Analysts, 14 p.
- Brown, R.J.S., and Neuman, C.H., 1980, Processing and display of nuclear magnetism logging signals—Application to residual oil determination, in 21st annual logging symposium transactions, paper K: Houston, Society of Professional Well Log Analysts, 25 p.

- Brown, R.J.S., and Neuman, C.H., 1982, The nuclear magnetism log—A guide for field use: *The Log Analyst*, v. 23(5), September-October, p. 4-9.
- Brown, R.O., 1978, Application of fracture identification logs in the Cretaceous of north Louisiana and Mississippi: *Gulf Coast Association of Geological Societies Transactions*, v. 28, p. 75-91.
- Buchanan, D.J., and Jackson, L.J., editors, 1986, Coal geophysics: Tulsa, Society of Exploration Geophysicists, Geophysics reprint series no. 6, p. 25-85. Reprints of 6 papers relating to identification and evaluation of coal via borehole logging.
- Buchanan, J.C., Clearman, D.K., Heidbrink, L.J., and Smith, H.D., Jr., 1984, Applications of TMD pulsed neutron logs in unusual downhole environments, in 25th annual logging symposium transactions, paper KKK: Houston, Society of Professional Well Log Analysts, 17 p.
- Burck, L.J.S., and Forsyth, D., 1984, Permeability prediction in shaly sands, in 9th international formation evaluation symposium transactions, paper 19: Paris, Society of Professional Well Log Analysts, Paris Chapter (SAID), 18 p.
- Burke, J.A., Schmidt, A.W., and Campbell, R.L., Jr., 1969, The litho-porosity cross plot: *The Log Analyst*, v. 10(6), November-December, p. 25-43.
- Burns, D.R., and Cheng, C.H., 1986, Determination of in-situ permeability from tube wave velocity and attenuation, in 27th annual logging symposium transactions, paper KK: Houston, Society of Professional Well Log Analysts, 15 p.
- Busch, J.M., Fortney, W.G., and Berry, L.N., 1985, Determination of lithology from well logs by statistical analysis: Dallas, Society of Petroleum Engineers, 60th annual meeting [Las Vegas], preprint SPE-14301, 11 p.
- Bussian, A.E., 1983, A comparison of shaly sand models, in 24th annual logging symposium transactions, paper E: Houston, Society of Professional Well Log Analysts, 16 p.
- Butler, M. Phelan, M.J., and Wright, A.W.R., 1976, Buchan field—Evaluation of a fractured sandstone reservoir, in 4th European formation evaluation symposium transactions, paper A: London, Society of Professional Well Log Analysts, London Chapter, 18 p. Later published in 1977, *The Log Analyst*, v. 18(2), March-April, p. 23-31.

- Caldwell, R.L., Desai, K.P., and Mills, W.R., Jr., 1976, Geophysical well-logging using nuclear techniques, in Nuclear techniques in geochemistry and geophysics: Vienna, Austria, International Atomic Energy Agency, p. 3-19.
- Caldwell, R.L., Mills, W.R., Jr., Orr, W.L., and Allen, L.S., 1977, Nuclear techniques in oil and gas exploration and production, in Symposium on nuclear technology in exploration, extraction and processing mineral resources, 1977, proceedings: Vienna, International Atomic Energy Agency, p. 3-41.
- Cambell, D.L., Ballantyne, E.J., Jr., Mentemeier, S.H., and Wiggins, R., 1981, Manual of geophysical hand-calculator programs: Tulsa, Society of Exploration Geophysicists, variously paginated. Volumes for HP and TI calculators consisting of previously published programs.
- Cameron, G.I.F., 1986, Confidence and the identification of forsets in stratigraphic dipmeter surveys, in 10th European formation evaluation symposium transactions, paper O: Aberdeen, Society of Professional Well Log Analysts, Aberdeen Chapter, 17 p.
- Campbell, R., 1974, Abnormal pressure detection using log data, in 3rd European formation evaluation symposium transactions, paper T: London, Society of Professional Well Log Analysts, London Chapter, 16 p.
- Campbell, R.J., Jr., 1968, Stratigraphic applications of dipmeter data in Mid-Continent: AAPG Bulletin, v. 52(9), p. 1700-1719.
- Campbell, R.L., Jr., and Truman, R.B., 1986, Formation evaluation in the Devonian shale, in 1986 unconventional gas technology symposium, proceedings, SPE-15212: Dallas, Society of Petroleum Engineers, p. 63-74.
- Canadian Well Logging Society (CWLS), annually (1968-1985), Journal : Calgary, Canadian Well Logging Society.
- Canadian Well Logging Society (CWLS), biannually (1968-1985), Formation evaluation symposium transactions: Calgary, Canadian Well Logging Society.
- Canadian Well Logging Society, 1985, Log analysis handbook: Calgary, Canadian Well Logging Society, variously paginated. Type logs and analysis for major Canadian oil and gas fields.
- Cann, J.R., and Von Herzen, R.P., 1983, Downhole logging at Deep Sea Drilling Project sites 501, 504, and 505, near the Costa Rica rift, in L.N. Stout and M.G. Bailey, editors, Initial reports of the Deep Sea Drilling Project, v. 69: Washington, D.C., U.S. Government Printing Office, p. 281-299.
- Cannon, D.E., 1979, Log evaluation of a fractured reservoir—Monterey Shale, in 20th annual logging symposium transactions, paper Q: Houston, Society of Professional Well Log Analysts, 13 p.

- Cant, D.J., 1983, Subsurface sedimentology: *Geoscience Canada*, v. 10(3), p. 115-121.
- Carroll, R.D., 1968, Applications of inhole geophysical logs in volcanic rocks, Nevada Test Site, in E.B. Eckel, editor, *Nevada Test Site: Boulder, Colorado, Geological Society of America, Memoir 110*, p. 125-134.
- Carrigy, M.A., 1971, Deltaic sedimentation in Athabasca tar sands: *AAPG Bulletin*, v. 55(8), p. 1155-1169.
- Carstens, H., and Dypvik, H., 1981, Abnormal formation pressure and shale porosity: *AAPG Bulletin*, v. 65(2), p. 344-350.
- Carstens, H., and Finstad, K.G., 1981, Geothermal gradients of the northern North Sea basin, 59-62°N, in L.V. Illing and G.D. Hobson, editors, *Petroleum geology of the continental shelf of north-west Europe*: London, Heyden & Sons, Ltd., p. 152-161.
- Carvalho, M., and Venavente, V., 1979, Application of electrical and gamma ray logging to geotechnical prospection—An example, in *International symposium on the geotechnics of structurally complex formations [Capri, September 1977], supplement 1: Milan, Italy, Associazione Geotecnica Italiana*, unpaginated.
- Cassell, B., 1984, Vertical seismic profiles—An introduction: *First Break*, v. 2(11), November, p. 9-19.
- Castagna, J., 1985, Accuracy and limitation of sonic log and VSP measurements for seismic exploration, in 1985 technical program abstracts and biographies: *Tulsa, Society of Exploration Geophysicists*, p. 281-283.
- Castagna, J.P., and Gaiser, J.E., 1984, Digital processing improves sonic log reliability: *World Oil*, v. 198(5), April, p. 71-74.
- Caton, P.W., 1981, Improved methods for reducing borehole-gravity data—Applications and analyses of reduced gravity plots, in 22nd annual logging symposium transactions, paper RR: *Houston, Society of Professional Well Log Analysts*, 41 p.
- CER Corporation, 1984, Multiwell experiment—Well log analysis of the paludal interval: *Las Vegas, Nevada, CER Corporation [Prepared for Sandia National Laboratory]*, 103 p.
- CER Corporation, 1986, Multiwell experiment—Well log analysis of coastal interval: *Las Vegas, Nevada, CER Corporation [Prepared for Sandia National Laboratory]*, 98 p.
- Chace, D.M., Schmidt, M.G., Frost, E., and Fertl, W.H., 1985, Advance in cased hole logging - the multiparameter spectroscopy instrument continuous carbon/oxygen log, in 3rd international UNITAR/UNDP heavy crude and tar sands conference preprints [Long Beach, California, July 22-31, 1985]: *New York, United Nations Institute for Training and Research, Information Center for Heavy Crude and Tars*, v. 3, p. 1404-1419.

- Chang, M.M., Maerefat, N.L., Tomutsa, L., and Honarpour, M.M., 1986, Evaluation and comparison of residual oil saturation determination techniques, in SPE/DOE 5th symposium on enhanced oil recovery, proceedings, SPE/DOE-14887: Dallas, Society of Petroleum Engineers, p. 77-96.
- Chang, S.K., Everhart, A.H., and Hornby, B., 1984, Full waveform sonic logging in a shale formation—Field data and theoretical waveforms: Tulsa, Society of Exploration Geophysicists, Expanded Abstracts with Biographies, 1984 Technical Program, p. 3-5.
- Chapman, B.H., and Thompson, D.T., 1984, Applications of geophysical logging within skarn-type deposits: *The Log Analyst*, v. 25(2), March-April, p. 13-24.
- Chapman, D.S., Keho, T.H., Bauer, M.S., and Picard, M.D., 1984, Heat flow in the Unita Basin determined from bottom hole temperature (BHT) data: *Geophysics*, v. 49(4), p. 453-466.
- Chapman, R.E., 1983, Chapter 6, in *Petroleum geology*: New York, Elsevier, p. 107-137.
- Charbucinski, J., 1983, A universal gamma-gamma method for simultaneous determination of rock and ore properties, in C.G. Clayton, editor, *Nuclear geophysics—Selected papers on applications of nuclear techniques in mineral exploration, mining and process control*: Oxford, England, Pergamon Press, p. 353-361.
- Charbucinski, J., and Umiastowski, K., 1977, Some factors affecting accuracy in determinations of heavy element concentrations in the selective gamma-gamma method, in *Nuclear techniques and mineral resources 1977*: Vienna, International Atomic Energy Agency, p. 281-300.
- Charbucinski, J., Youl, S.F., Eisler, P.L., and Borsaru, M., 1986, Prompt neutron-gamma logging for coal ash in water-filled boreholes: *Geophysics*, v. 51(5), p. 1110-1118.
- Chaturvedi, L., and Ory, J.K., 1981, A preliminary evaluation of geothermal potential of San Juan Basin, New Mexico, using bottom hole temperatures from oil and gas wells: *Geothermal Resources Council, Transactions*, v. 4, p. 21-24.
- Chauvel, Y., Seeburger, D.A., and Castro-Orjuela, A., 1984, Applications of the SHDT (Stratigraphic High Resolution Dipmeter) to the study of depositional environments, in 25th annual logging symposium transactions, paper G: Houston, Society of Professional Well Log Analysts, 23 p.
- Chauvin, A., and Valachi, L., 1980, Sedimentology of the Brent and Statfjord Formations of Statfjord field, in *The sedimentation of the North Sea reservoir rocks [Proceedings of a conference, May 11-14, Geilo, Norway]*: Oslo, Norwegian Petroleum Society, 17 p.

- Chemali, R., Gianzero, S., and Su, S.M., 1984, The depth of investigation of compressional wave logging for the standard and the long spacing sonde, in 9th international formation evaluation symposium transactions, paper 13: Paris, Society of Professional Well Log Analysts, Paris Chapter (SAID), 10 p.
- Cheng, C.H., Wilkens, R.H., and Meredith, J.A., 1986, Modelling of full waveform acoustic logs in soft marine sediments, in 27th annual logging symposium transactions, paper LL: Houston, Society of Professional Well Log Analysts, 14 p.
- Cheruvier, E., and Suau, J., 1986, Applications of micro-wave dielectric measurements in various logging environments, in 27th annual logging symposium transactions, paper MMM: Houston, Society of Professional Well Log Analysts, 23 p.
- Chestnut, D.A., and Cox, D.O., 1978, Log analysis in a Rocky Mountain heavy oil reservoir, in 19th annual logging symposium transactions, paper F: Houston, Society of Professional Well Log Analysts, 15 p.
- Cheung, P.K., 1979, Geothermal gradient mapping—Oklahoma, in 7th formation evaluation symposium transactions, paper T: Calgary, Canadian Well Logging Society.
- Cheung, P.S.Y., 1984, Fracture detection using the sonic tool, in 9th international formation evaluation symposium transactions, paper 42: Paris, Society of Professional Well Log Analysts, Paris Chapter (SAID), 8 p.
- Chilholm, J.L., Schenewerk, P.A., and Donaldson, E.C., 1985, A comparison of shaly sand interpretation techniques in the Mesaverde Group of the Uinta Basin, Utah: Dallas, Society of Petroleum Engineers, 60th annual meeting [Las Vegas], preprint SPE-14281, 12 p.
- Chilingar, G.V., Edwards, L., Fertl, W.H., and Rieke, H.H., III, 1982, Introduction, chapter 1, in L.M. Edwards, G.V. Chilingar, H.H. Rieke, III, W.H. Fertl, editors, Handbook of geothermal energy: Houston, Gulf Publishing Company, p. 1-43
- Chilingar, G.V., Fertl, W.H., and Yen, T.F., 1984, Classification of source rocks on the basis of shale resistivity ratio parameter: Energy Sources, v. 7(3), p. 271-274.
- Chilingarian, G.V., and Vorabutr, P., 1981, Drilling and drilling fluids: Amsterdam, Elsevier, Developments in Petroleum Science no. 11, 767 p.
- Chilingarian, G.V., and Yen, T.F., 1986, Notes on carbonate reservoir rocks, no. 3—Fractures: Energy Sources, v. 8(2/3), p. 261-275.
- Chironis, N.P., 1982, Better methods aid exploration of coal sites: Coal Age, v. 87(10), p. 82-88.

- Chmelik, F.B., Bouma, A.H., and Rezak, R., 1969, Comparison of electrical logs and physical parameters of marine sediment cores: Transactions of the Gulf Coast Association of Geological Societies, v. 19, p. 63-70.
- Chrusciel, E., Niewodniczanski, J., Palka, K.W., and Roman, S., 1977, Determination of sulphur content in boreholes by neutron capture, in Nuclear techniques and mineral resources 1977 [International symposium on nuclear techniques in exploration, extraction and processing of mineral resource, 1977, proceedings]: Vienna, International Atomic Energy Agency, p. 301-311.
- Clark, W.J., and Copper, D.M., 1985, Sedimentological and wireline log aspects of the Walloon coal measures in GSQ Dalby 1 and GSQ Chincilla 3, Surat Basin, Queensland: Queensland Government Mining Journal, v. 86(1006), p. 386-394.
- Clavier, C., 1985, Accuracy and limitations with special log data, in 1985 technical program abstracts and biographies: Tulsa, Society of Exploration Geophysicists, p. 286-289.
- Clavier, C., Coates, G., Dumanoir, J., 1977, Theoretical and experimental bases for the dual-water model for interpretation of shaly sands: Dallas, Society of Petroleum Engineers, 52nd annual meeting [Denver] preprint SPE-6859, 16 p. Reprinted in 1982, Shaly sand reprint volume: Houston, Society of Professional Well Log Analysts, p. V5-V20. Later published in 1984, Society of Petroleum Engineers Journal, v. 24(2), p. 153-169.
- Clavier, C., Heim, A., and Scala, C., 1976, Influence of pyrite on resistivity and other logging measurements, in 17th annual logging symposium transactions, paper HH: Houston, Society of Professional Well Log Analysts, 33 p.
- Clavier, C., Hoyle, W., Meunier, D., 1969, Quantitative interpretation of thermal neutron decay time logs—part I, fundamentals and techniques: Dallas, Society of Petroleum Engineers, 44th annual meeting [Denver] preprint SPE-2658-II. Later published in 1971, Journal of Petroleum Technology, v. 23(6), p. 743-763.
- Clavier, C., and Rust, D.H., 1976, MID plot—A new lithology technique: The Log Analyst, v. 17(6), November-December, p. 16-24.
- Clayton, C.G., 1977, Applications of nuclear techniques in the coal industry, in Symposium on nuclear techniques in exploration, extraction and processing of mineral resources, 1977, proceedings: Vienna, International Atomic Energy Agency, p. 85-117.
- Clayton, C.G., 1977, Some recent applications of nuclear techniques in the exploration and mining of metalliferous minerals, in Nuclear techniques and mineral resources 1977: Vienna, International Atomic Energy Agency, p. 185-213.

- Clayton, C.G., Hassan, A.M., and Wormald, M.R., 1983, Multi-element analysis of coal during borehole logging by measurement of prompt gamma-rays from thermal neutron capture, in C.G. Clayton, editor, Nuclear geophysics—Selected papers on applications of nuclear techniques in mineral exploration, mining and process control: Oxford, England, Pergamon Press, p. 83-93. Reprinted in 1986, in Buchanan, D.J., and Jackson, L.J., editors, Coal geophysics: Tulsa, Society of Exploration Geophysicists, Geophysics reprint series no. 6, p. 74-84.
- Clayton, C.G., and Wormald, M.R., 1983, Coal analysis by nuclear methods, in C.G. Clayton, editor, Nuclear geophysics—Selected papers on applications of nuclear techniques in mineral exploration, mining and process control: Oxford, England, Pergamon Press, p. 3-22.
- Clenchy, D.R., 1985, Effect of borehole diameter on log data quality and interpretation—Grand Banks area, east coast Canada, in 10th formation evaluation symposium transactions, paper V: Calgary, Canadian Well Logging Society, 26 p.
- Coates, G.R., and Dumanoir, J.L., 1973, A new approach to improved log-derived permeability, in 14th annual logging symposium transactions, paper R: Houston, Society of Professional Well Log Analysts, Later published in 1974, The Log Analyst, v. 15(1), January-February, p. 17-31.
- Cobb, J.C., and Smath, R., 1981, Geophysical well logging for coal exploration in the eastern Kentucky coal field, in Coals and coal-bearing rocks of eastern Kentucky [annual Geological Society of America coal division field trip]: Kentucky Geological Survey, p. 74-81.
- Cochran, L.E., 1979, Formation evaluation in the geothermal environment—The Geysers steam field, California: Dallas, Society of Petroleum Engineers, 54th annual meeting [Las Vegas] preprint SPE-8452, 12 p.
- Cohen, A., 1985, Enhanced lithological discrimination through application of graphical log cross-reference (crossplotting)—A case study of Shiqma 5 (Saqiye Group, Neogene, Israel): Geological Survey of Israel, Mineral Energy Infrastructure Report GSI/44/85, 22 p.
- Coleman, J.M., and Prior, D.B., 1982, Deltaic environments of deposition, in P.A. Scholle and D. Spearing, editors, Sandstone depositional environments: Tulsa, American Association of Petroleum Geologists, Memoir no. 31, p. 139-178.
- Collett, T.S., and Ehlig-Economides, C.A., 1983, Detection and evaluation of the in-situ natural gas hydrates in the north slope region, in 53rd annual California regional meeting, proceedings, SPE-11673: Dallas, Society of Petroleum Engineers p. 97-106.
- Collett, T.S., and Godbole, S.P., and Ehlig-Economides, C., 1984, Quantification of in-situ gas hydrates with well logs, in 35th annual meeting transactions, volume 2: Calgary, Petroleum Society of CIM and Canadian Association of Drilling Engineers, p. 571-582.

- Collins, D.R., and Doveton, J.H., 1986, Color images of Kansas subsurface geology from well logs: *Computers & Geosciences*, v. 12(4B), p. 519-526.
- Collins, H.N., 1974, Log-core correlations in the Athabasca oil sands: Dallas, Society Petroleum Engineers, 49th annual meeting [Houston] preprint SPE-5037, 17 p. Later published in 1976, *Journal of Petroleum Technology*, v.28(10), p. 1157-1168.
- Collins, H.N., 1984, Regression analysis - some loose ends: *Canadian Well Logging Society Journal*, v. 13, p. 61-65.
- Conaway, J.G., 1979, Problems in gamma-ray logging—The effect of dipping beds on the accuracy of ore grade determinations: Geological Survey of Canada Paper no. 79-1A, p. 41-44.
- Conaway, J.G., 1980, Uranium concentrations and the system response function in gamma ray logging: Geological Survey of Canada, Paper 80-1A, p. 77-87.
- Conaway, J.G., 1982, Principles of inverse filtering applied to gamma ray logs, in *Symposium on uranium exploration methods* [Paris, June 1-4, 1982], proceedings: Paris, Nuclear Energy Agency, Organization for Economic Cooperation and Development, p. 753-766.
- Conaway, J.G., 1983, Digital filtering of geophysical logs in A.A. Fitch, editor, *Developments in geophysical methods—5*: London, Applied Science Publishers, p. 65-105.
- Conaway, J.G., Allen, K.V., Blanchard, Y.B. Bristow, Q., Hyatt, W.G., and Killeen, P.G., 1979, The effects of borehole diameter, borehole fluid, and casing thickness on gamma ray logs in large diameter boreholes: Geological Survey of Canada, Paper 79-1C, p. 37-40.
- Conaway, J.G., Bristow, Q., Killeen, P.G., 1980, Optimization of gamma-ray logging techniques for uranium: *Geophysics*, v. 45(2), p. 292-311.
- Conaway, J.G., and Killeen, P.G., 1980, Gamma-ray spectral logging for uranium: *Canadian Mining and Metallurgical Bulletin*, v. 73(813), p. 115-123.
- Conaway, J.G., Killeen, P.G., and Bristow, Q., 1981, Variable formation parameters and nonlinear errors in quantitative gamma ray log interpretation: Tulsa, Society of Exploration Geophysicists, 50th annual meeting technical papers, paper M-11, v. 5, p. 2523-2534.
- Connolly, E.T., 1965, Resume and current status of the use of logs in production, in *6th annual logging symposium transactions*, paper L: Houston, Society of Professional Well Log Analysts, p. Reprinted in 1985, *Production logging*: Dallas, Society of Petroleum Engineers reprint series 19, p. 268-352.
- Connolly, E.T., 1970, Interpretation and recognition of calibration and recording abnormalities on production logs: *Canadian Well Logging Society Journal*, v. 3(1), December, p. 89-122.

- Connolly, E.T., 1973, Comprehensive bibliography of well logging literature 1942-1972: Canadian Well Logging Society Journal, v. 6(1), p. 51-87.
- Connolly, E.T., and Reed, P.A., 1983, Full spectrum formation evaluation: Canadian Well Logging Society Journal, v. 12(1), p. 23-69.
- Constant, W.D., and Bourgoyne, A.T., Jr., 1986, Fracture gradient prediction for offshore wells, in 56th SPE California regional meeting, proceedings, SPE-15105: Dallas, Society of Petroleum Engineers, p. 125-128. Also published in 1986 as, Method predicts frac gradient for abnormally pressured formations: Petroleum Engineer International, v. 58(1), January, p. 38-46.
- Cooke, C.E., Jr., and Meyer, A.J., 1979, Application of radial differential temperature (RDT) logging to detect and treat flow behind casing, in 20th annual logging symposium transactions, paper UU: Houston, Society of Professional Well Log Analysts, 10 p.
- Cooke-Yarborough, P., 1984, Reservoir analysis by wireline formation tester; pressures, permeabilities, gradients, and net pay: The Log Analyst, v. 26(6), November-December, p. 36-46.
- Cooley, B.B., 1974, The delta tension curve for better log quality, in 15th annual logging symposium transactions, paper F: Houston, Society of Professional Well Log Analysts, 9 p. Later reprinted in 1974, The Log Analyst, v. 15(4), July-August, p. 8-13.
- Coope, D.F., and Hendricks, W.E., 1984, Formation evaluation using measurements recorded while drilling, in 25th annual logging symposium transactions, paper FF: Houston, Society of Professional Well Log Analysts, 21 p. Later published in 1985 as, MWD logs provide fast, accurate formation data, World Oil, v. 20(2), August 1, p. 46-52.
- Coope, D.F., and Yearsley, E.N., 1986, Formation evaluation using EWR logs, in 1986 SPE international meeting on petroleum engineering [Beijing, China, March 17-20], proceedings, SPE-14062: Dallas, Society of Petroleum Engineers, p. 415-425.
- Coppinger, W.W., and Schlutz, A.L., 1983, Using the self-potential curve to define depositional trends in Lower Wilcox sands, McMullen County, Texas: Bulletin of the South Texas Geological Society, v. 23(6), p. 16-28.
- Corley, B.H., 1984, Predicting interval transit time for synthetic seismograms from nuclear well logs: Tulsa, Society of Exploration Geophysicists, Expanded Abstracts with Biographies, 1984 Technical Program, p. 360-363.
- Cossette, B.B., 1981, Well log analysis in heavy oil sands, in 8th formation evaluation symposium transactions, paper K: Calgary, Canadian Well Logging Society 18 p.
- Cossy, S.P.J., and Frank, H.J., 1983, Uranium mineralization and use of resistance log character in deltaic point bars—Franklin Mines, Karnes County, Texas: AAPG Bulletin, v. 67(1), p. 131-151.

- Costello, J.T., and Norquay, I.P., 1970, Logging the Prairie evaporite formation in Saskatchewan, in L.W. Morely, editor, Mining and groundwater geophysics—1967: Geological Survey of Canada Economic Report no. 26, p. 492-496.
- Cox, J.W., 1970, The high resolution dipmeter reveals dip-related borehole and formation characteristics in 11th annual logging symposium transactions, paper D: Houston, Society of Professional Well Log Analysts, 26 p.
- Cox, J.W., 1973, A short note on resistivity measurement in permafrost: Canadian Well Logging Society Journal, v. 6, p. 47.
- Cox, J.W., 1983, Long axis orientation in elongated boreholes and its correlation with rock stress data, in 24th annual logging symposium transactions, paper J: Houston, Society of Professional Well Log Analysts, 17 p.
- Cox, J.W., and Raymer, L.L., 1976, The effect of potassium-salt muds on gamma ray, and spontaneous potential measurements, in 17th annual logging symposium transactions, paper I: Houston, Society of Professional Well Log Analysts, , 20 p.
- Cox, P.T., 1983, Evaluation of the Texaco dielectric log in central Sumatra, in 12th annual convention proceedings, v. 2: Jakarta, Indonesian Petroleum Association, p. 255-264.
- Craft, M., and Keelan, D., 1985, Coring, part 7—Analytical aspects of sidewall coring: World Oil, v. 201(4), September, p. 77-90.
- Crain, E.R., 1981, Log evaluation results in the Deep Basin area of Alberta, in 8th formation evaluation symposium transactions, paper A: Calgary, Canadian Well Logging Society, 14 p.
- Crain, E.R., 1985, A primer on artificial intelligence and expert systems in the petroleum industry: Canadian Well Logging Society Journal, v. 14, p. 17.
- Crain, E.R., 1986, The log analysis handbook, volume 1—Quantitative log analysis methods: Tulsa, PennWell Books, 684 p.
- Crain, E.R., 1986, Calculator solutions for log analysis, chapter 13, in The log analysis handbook, volume 1—Quantitative log analysis methods: Tulsa, PennWell Books, p. 417-447.
- Crain, E.R., 1986, Log analysis using electronic spreadsheets, chapter 14, in The log analysis handbook, volume 1—Quantitative log analysis methods: Tulsa, PennWell Books, p. 448-462.
- Crain, E.R., 1986, Computer-aided log analysis, chapter 15, in The log analysis handbook, volume 1—Quantitative log analysis methods: Tulsa, PennWell Books, p. 463-487.

- Crain, E.R., and Anderson, W.B., 1966, Quantitative log evaluation of the Prairie Evaporite Formation in Saskatchewan: Canadian Journal of Petroleum Technology, v. 5(3), p. 145-152.
- Crain, E.R., and Boyd, J.D., 1979, Determination of seismic response using edited well log data, in 7th formation evaluation symposium transactions, paper V: Calgary, Canadian Well Logging Society.
- Cranmer, J.L., Jr., 1982, BASIC reservoir engineering manual: Tulsa, PennWell Books, 232 p. Programs for TRS-80 and IBM PC.
- Cratchley, C.R., 1978, Geophysical measurements in rock mechanics investigations, in Sciences de la terre et mesures [Orleans, France, May 5-6, 1977]: Paris, Bureau Recherches Geologiques et Minieres, Memoir 91, p. 446-456.
- Crosby, J.W., III, and Anderson, J.V., 1971, Some applications of geophysical well logging to basalt hydrogeology: Ground Water, v. 9(5), September-October, p. 12-20.
- Crosby, J.W., III, Konstantinidis, B., and Davis, P., 1981, Geotechnical applications of borehole physics: Journal of the Geotechnical Engineering Division, American Society of Civil Engineers, v. 107(GT10), p. 1255-1267.
- Crues, J.V., Jr., 1977, Lithology crossplots—Applications in an evaporite basin—the Maverick basin of southwest Texas, in 18th annual logging symposium transactions, paper L: Houston, Society of Professional Well Log Analysts, 23 p.
- Crues, J.V., Jr., 1982, Recognizing large SP anomalies in the Cretaceous carbonates along the Balcones systems and how to interpret them: Bulletin of the South Texas Geological Society, v. 23(4), December, p. 16-27.
- Curtis, J.B., and Fingleton, W.G., 1979, A preliminary evaluation of various log analysis techniques for the eastern Devonian shales, in 20th annual logging symposium transactions, paper I: Houston, Society of Professional Well Log Analysts, 20 p.
- Czubek, J.A., 1976, Comparison of nuclear well logging data with the results of core analysis, in Nuclear techniques in geochemistry and geophysics: Vienna, Austria, International Atomic Energy Agency, p. 93-106.
- Czubek, J.A., 1979, Modern trends in mining geophysics and nuclear borehole logging methods for mineral exploration, in P.J. Hodd, editor, Geophysics and geochemistry in the search for metallic ores [Exploration 77, Ottawa, Canada, October 1977, proceedings]: Geological Survey of Canada, Economic Geology Report no. 31, p. 231-272.
- Czubek, J.A., 1983, Advances in gamma-gamma logging, in C.G. Clayton, editor, Nuclear geophysics—Selected papers on applications of nuclear techniques in mineral exploration, mining and process control: Oxford, England, Pergamon Press, p. 153-172.

Czubek, J.A., 1986, Quantitative interpretation of gamma-ray logs in presence of random noise, in 27th annual logging symposium transactions, paper KKK: Houston, Society of Professional Well Log Analysts, 25 p.

Czubek, J.A., Loskiewicz, J., Gyurcsak, J., Lenda, A., Umiastowski, K., and Zorski, T., 1977, Geostatistical method of interpretation of nuclear well logs, in Nuclear techniques and mineral resources 1977: Vienna, International Atomic Energy Agency, p. 313-332.

- Daniels, J.J., and Dyck, A.V., 1984, Borehole resistivity and electromagnetic methods applied to mineral exploration: IEEE Transactions on Geoscience and Remote Sensing, v. GE-22(1), January, p. 80-87.
- Daniels, J.J., Olhoeft, G.R., and Scott, J.H., 1983, Interpretation of core and well log physical property data from drill hole UPH-3, Stephenson County, Illinois: Journal of Geophysical Research, v. 88(B9), September 10, p. 7346-7354.
- Daniels, J., and Scott, J., 1978, The role of borehole electrical measurements in uranium exploration: U.S. Geological Survey, Open-File Report 78-326, 18 p.
- Daniels, J.J., and Scott, J.H., 1980, Computer-assisted interpretation of geophysical well logs in a coal depositional environment, Illinois Basin, Kentucky: U.S. Geological Survey, Bulletin no. 1509, 44 p.
- Daniels, J.J., and Scott, J.H., 1982, Automated lithologic interpretation from geophysical well logs in a coal depositional environment, Carbon County, Wyoming, in K.D., Gurgel, editor, 5th Rocky Mountain coal symposium, proceedings: Utah Geological and Mineral Survey, Bulletin no. 118, p. 220-232.
- Daniels, J.J., Scott, J.H., and Hite, R.J., 1979, Analysis of borehole geophysical data in an evaporite sequence at Salt Valley, Utah, in 20th annual logging symposium transactions, paper M: Houston, Society of Professional Well Log Analysts, 19 p.
- Daniels, J.J., Scott, J.H., and Liu, J., 1983, Estimation of coal quality parameters from geophysical well logs, in 24th annual logging symposium transactions, paper KK: Houston, Society of Professional Well Log Analysts, 20 p.
- Daniels, J.J., Scott, J.H., and Olhoeft, G., 1981, Interpreting Precambrian metamorphic geology, in 22nd annual logging symposium transactions, paper T: Houston, Society of Professional Well Log Analysts, 16 p.
- Daniels, J.J., Scott, J.H., and Smith, B.D., 1979, Analysis of bore hole geophysical information across a uranium deposit in the Jackson Group, Karnes County, Texas: U.S. Geological Survey Open-File Report 79-585, 31 p.
- Dart, R., 1985, Horizontal-stress directions in the Denver and Illinois basins from the orientations of borehole breakouts: U.S. Geological Survey, Open-File Report 85-733, 41 p.
- Davidson, D.W., Elf-Defrawy, M.K., Fuglem, M.O., and Judge, A.S., 1978, Natural gas hydrates in northern Canada, in Third international conference on permafrost, proceedings, volume 1: Ottawa, Canada, National Research Council of Canada, p. 938-943.
- Davis, B.K., 1981, Log analysis in the search for brackish water in the Kurnub and Arad Groups in the northeastern Negev: Israel Journal of Earth Sciences, v. 30, p. 93-101.

- Davis, D., 1977, Geophysical logging of coal, in D.K. Murray, editor, *Geology of Rocky Mountain coal: Colorado Geological Survey, Resource Series no. 1*, p. 115-119.
- Davis, R., Austin, H., Carlbom, I., Frawley, B., Pruchnik, P., Sneiderman, R., and Gilreath, J.A., 1981, The Dipmeter Advisor--Interpretation of geological signals, in 7th international joint conference on artificial intelligence, [Vancouver, British Columbia, Canada], proceedings: p. 846-849.
- Davis, T.B., 1984, Subsurface pressure profiles in gas-saturated basins, in J.A. Masters, editor, *Elmworth--Case study of a Deep Basin gas field: Tulsa, American Association of Petroleum Geologists, Memoir no. 38*, p. 189-203.
- Davison, C.C., Keys, W.S., and Paillet, F.L., 1982, Use of borehole-geophysical logs and hydrologic tests to characterize crystalline rocks for nuclear-waste storage, Whiteshell nuclear research establishment, Manitoba, and Chalk River nuclear laboratory, Ontario, Canada: Battelle National Laboratory, Office of Nuclear Waste Isolation, Technical Report ONWI-418, 103 p.
- Dawson-Grove, G.E., 1979, Log analysis in tight gas sands--A reconnaissance study, in 7th formation evaluation symposium transactions, paper H: Calgary, Canadian Well Logging Society, 14 p.
- de Murville, E.C., and Dadrian, C., editors, 1973, Schlumberger well evaluation conference--Indonesia 1973 [Jakarta, June, 1970]: Paris, Schlumberger Technical Services, 83 p.
- de Witte, L., 1972, Formation evaluation, chapter 4, in G.V. Chilingar, R.W. Mannon, H.R. Rieke, III, editors, *Oil and gas production from carbonate rocks*: New York, Elsevier, 143-215.
- Debrandes, R., 1985, *Encyclopedia of well logging*: Houston, Gulf Publishing Company, 585 p.
- Delfiner, P., Delhomme, J.P., and Pelissier-Cobescure, J., 1983, Application of geostatistical analysis to the the evaluation of petroleum reservoirs with well logs, in 24th annual logging symposium transactions, paper WW: Houston, Society of Professional Well Log Analysts, 26 p.
- Delfiner, P.C., Peyret, O., and Serra, O., 1984, Automatic determination of lithology from well logs: Dallas, Society of Petroleum Engineers, 59th annual meeting [Houston] preprint SPE-13290, 8 p.
- Delhomme, J.P., Panci, G., Leslie, D., Cigni, M., and Spila, M., 1981, An integrated approach to fracture detection from multipad sensors, in 7th European logging symposium transactions, paper 26: Paris, Society of Professional Well Log Analysts, Paris Chapter (SAID), 17 p.
- Dellenbach, J., Espitalie, J., and Lebreton, F., 1983, Source rock logging, in 8th European logging symposium transactions, paper D: London, Society of Professional Well Log Analysts, London Chapter, 19 p.

- DeLuca, R.J., and Buckley, B.K., 1985, Borehole logging to delineate fractures in a contaminated bedrock aquifer, in 1985 NWWA conference on surface and borehole geophysical methods in ground water investigations [Fort Worth, Texas, February 12-14], proceedings: Worthington, Ohio, National Water Well Association, p. 387-398.
- Dennis, B.R., 1984, Logging technology for high-temperature geothermal boreholes, in C.B. Raleigh, editor, Observation of the continental crust through drilling, volume I [international symposium (Tarrytown, N.Y., May 20-25), proceedings]: New York, Springer-Verlag, p. 174-181.
- Dennis, B., 1985, Digital Sonic (SDT) - full waveform logging applications in western Canada: Canadian Well Logging Society Journal, v. 14, p. 63.
- Dennis, C.B., and Lawrence, T.D., 1984, Log evaluation of clastic shaly formations using corrected R_{wa} -ratio techniques, in 25th annual logging symposium transactions, paper R: Houston, Society of Professional Well Log Analysts, 16 p.
- Desai, K.P., and Morre, E.J., 1967, Well log interpretation in permafrost, in 8th annual logging symposium transactions, paper N: Houston, Society of Professional Well Log Analysts, 27 p.
- Dewan, J.T., 1983, Essentials of modern open-hole log interpretation: Tulsa, PennWell Books, 361 p.
- Dewan, J.T., 1986, Open-hole nuclear logging—State of the art, in 27th annual logging symposium transactions, paper MM: Houston, Society of Professional Well Log Analysts, 20 p.
- Dickey, P.A., 1979, Electrical and other wireline logs, chapter 5, in Petroleum development geology: Tulsa, Petroleum Publishing Co., p. 58-86.
- Dickey, P.A., 1979, Subsurface pressures, chapter 12, in Petroleum development geology: Tulsa, Petroleum Publishing Co., p. 250-308.
- Dion, E.P., and Allen, L.S., 1985, The accuracy of commercial natural gamma-ray spectral logs, in 1985 technical program abstracts and biographies: Tulsa, Society of Exploration Geophysicists, p. 283-285.
- Ditzhuijen, P.J.D., and Massan, D., 1984, A multilog-evaluation package using linear programming techniques to evaluate porosity and lithology in hydrocarbon bearing complex lithologies in 5th offshore South East Asia conference [February 21-24, Singapore], proceedings, SPE-12376: Dallas, Society of Petroleum Engineers, 17 p.
- Dobecki, T.L., and Romig, P.R., 1985, Geotechnical and groundwater geophysics: Geophysics, v. 50(12), p. 2621-2636.
- Dodd, P.H., 1966, Quantitative logging and interpretation systems to evaluate uranium deposits, in 7th annual logging symposium transactions, paper P: Houston, Society of Professional Well Log Analysts, 21 p. Reprinted in 1978, Gamma Ray, Neutron and Density Logging: Houston, Society of Professional Well Log Analysts, Reprint volume, paper DD, 21 p.

- Dodd, P.H., Drouillard, R.F., and Lathan, C.P., 1970, Borehole logging methods for exploration and evaluation of uranium deposits, in L.W. Morely, editor, *Mining and groundwater geophysics--1967: Geological Survey of Canada, Economic Geology Report no. 26*, p. 401-415.
- Dodd, P.H., and Eschliman, D.H., 1972, Borehole logging techniques for uranium exploration and evaluation, in S.H.U. Bowie, M. Davis and D.Ostle, editors, *Uranium prospecting handbook [1971 NATO-sponsored advanced study institute, proceedings]*: London, Institution of Mining and Metallurgy, p. 244-276.
- Donaldson, E.C., and Bizerra, M.J., 1985, Relationship of wettability to the Archie saturation component, in 3rd international UNITAR/UNDP heavy crude and tar sands conference preprints [Long Beach, California, July 22-31, 1985], v. 2: New York, United Nations Institute for Training and Research, Information Center for Heavy Crude and Tars, p. 664-684.
- Donovan, H.L., 1982, Determining water saturation in anisotropic shaly formations: *Canadian Well Logging Society Journal*, v. 11(1), p. 19-28.
- Donovan, M.P., and Nelson, R.F., 1985, The Dual Dipmeter service in high-resistivity formations in Eastern regional meeting [Morgantown, W. Vir., November 5-8], proceedings, SPE-14492: Dallas, Society of Petroleum Engineers, p. 39-46.
- Donovan, W.S., and Hilchie, D.W., 1979, Natural gamma ray emission in the Muddy J Formation in eastern Wyoming, in 7th formation evaluation symposium transactions, paper B: Calgary, Canadian Well Logging Society, 11 p. Later published in 1981, *The Log Analyst*, v. 22(2), February-March, p. 17-22.
- Dorfman, M.H., and Dupree, J., 1985, New techniques for facies determination of carbonates by use of well logs, in Third AGIP improved oil recovery European meeting [Rome, 4/16-18], proceedings, volume 1: Rome, Azienda Generale Italiana Petroli, p. 13-23.
- Douglas, A.C., and Millett, M.R., 1978, Total intensity magnetometer logging as a stratigraphic tool in Tertiary volcanic rock: Lawrence Livermore Laboratory Report, UCRL-52617, 11 p.
- Doveton, J.H., 1983, Automated lithofacies analysis from well logs, in 12th annual geochautauqua short course notes, November 8, 1983: Lawrence, Kansas Geological Survey/University of Kansas, 188 p.
- Doveton, J.H., 1986, Log analysis of subsurface geology--Concepts and computer methods: New York, John Wiley & Sons, 273 p.
- Doveton, J.H., and Bornemann, E., 1981, Log normalization by trend surface analysis: *The Log Analyst*, v. 22(4), July-August, p. 3-8.
- Doveton, J.H., and Cable, H.W., 1979, Fast matrix methods for the lithological interpretation of geophysical logs, in D. Gill and D.F. Merriam, editors, *Geomathematical and petrophysical studies in sedimentology*: Oxford, Pergamon Press, Computers in Geology Series, p. 101-116.

- Doveton, J.H., Ke-An, Z., and Davis, J.C., 1984, Three-dimensional trend mapping using gamma-ray well logs—Simpson Group, south-central Kansas: AAPG Bulletin, v. 68(6), p. 690-703.
- Dowdle, W.L., and Cobb, W.M., 1974, Static formation temperature from well logs—an empirical method: Dallas, Society of Petroleum Engineers, 49th annual meeting [Houston] preprint SPE-5036. Later published in 1975, Journal of Petroleum Technology, v. 27(11), p. 1326-1330. Reprinted in 1982, Geothermal log interpretation handbook: Houston, Society of Professional Well Log Analysts, p. V-61-V-65.
- Draxler, J.K., Jacob, K., and Stark, D.M., 1986, Cased hole evaluation with oil, gas and varying water salinities in the formation by pulsed neutron techniques, in 10th European formation evaluation symposium transactions, paper E: Aberdeen, Society of Professional Well Log Analysts, Aberdeen Chapter, 12 p.
- Dresser Atlas, 1981, Spectralog: Houston, Dresser Industries, publication no. 3334, variously paginated. Reprint volume containing papers on tool applications.
- Dresser Atlas, 1981, Carbon/Oxygen log: Houston, Dresser Industries, publication no. 9417, variously paginated. Reprints of papers on tool operation, interpretation and application.
- Dresser Atlas, 1982, Interpretive methods for production well logs, 2nd edition: Houston, Dresser Industries, Document no. 9441, 159 p.
- Dresser Atlas, 1983, Neutron Lifetime Log: Houston, Dresser Industries, publication no. 3319, 100 p. Interpretation and application manual.
- Dresser Atlas, 1984, Well logging and interpretation techniques, the home study course: Houston, Dresser Industries, publication no. 9333, variously paginated. Includes a discussion on the use of SP for evaluating depositional environments.
- Dresser Atlas, 1984, Wireline services catalog: Houston, Dresser Industries, publication no. 9102, 43 p. A brief discussion with illustrations of the various logging devices and processing services currently available.
- Drew, L.J., Bawiec, W.J., Page, N.J., and Schuenemeyer, J.H., 1985, The copper-nickel concentration log—A tool for stratigraphic interpretation within the ultramafic and basal zones of the Stillwater Complex, Montana: Journal of Geochemical Exploration, v. 23, p. 117-137.
- Drury, M.J., 1985, The Iceland research drilling project crustal section; physical properties of some basalts from the Reydarfjordur borehole, Iceland: Canadian Journal of Earth Sciences, v. 22(11), p. 1588-1593.
- Dudnick, R.A., 1986, Program for TI-59 to convert true dips to seismic section dips: Oil and Gas Journal, v. 84(14), April 7, p. 107-108.

- Dunlap, M.F., and Dorfman, M.H., 1981, Problems and partial solutions of using the SP log to predict water salinity in deep hot wells, in D.G. Bebout and A.L. Bachman, editors, 5th conference on geopressured-geothermal energy, proceedings: Baton Rouge, Louisiana State University, p. 189-192. Also published in 1981, Geothermal Resource Council Transactions, v. 5, October, p. 283-286.
- Dusenberry, R.A., and Osoba, J.S., 1986, Determination of formation water resistivity using shale properties, in 1986 SPE Permian Basin oil and gas recovery conference, proceedings, SPE-14137: Dallas, Society of Petroleum Engineers, p. 387-397.
- Dyck, A.V., 1975, Electrical borehole methods applied to mineral prospecting, in A.V. Dyck, editor, Borehole geophysics applied to metallic mineral prospecting--A review: Geological Survey of Canada Paper no. 75-31, p. 13-30.
- Dyck, A.V., editor, 1975, Borehole geophysics applied to metallic mineral prospecting--A review: Geological Survey of Canada, Paper 75-31, 67 p. Eight separate review papers each with a bibliography.
- Dyck, A.V., and Young, R.P., 1979, Physical characterization of rock masses using borehole methods: Geophysics, v. 50(12), p. 2530-2541.
- Dyck, J.H., 1973, Some applications of borehole logging to Quaternary research--A study in southern Saskatchewan: Geoexploration, v. 11(4), p. 233-247.
- Dyck, J.H., Keys, W.S., and Meneley, W.A., 1972, Application of geophysical logging to groundwater studies in southeastern Saskatchewan: Canadian Journal of Earth Sciences, v. 9, p. 78-94.
- Dyck, J.H., and McKenzie, C.T., 1979, Estimating certain analytical properties of lignite in Saskatchewan from gamma-gamma borehole density logs, in 7th formation evaluation symposium transactions, paper Z: Calgary, Canadian Well Logging Society, 16 p.
- Dypvik, H., and Eriksen, D.O., 1983, Natural radioactivity of clastic sediments and the contribution of U, Th, and K: Journal of Petroleum Geology, v. 5(4), April, p. 409-416.
- Eaton, B.A., 1972, The effect of overburden stress on geopressure prediction from well logs, in 3rd symposium on abnormal pore pressure, proceedings, SPE-3719: Dallas, Society of Petroleum Engineers. Later published in 1972, Journal of Petroleum Technology, v. 24(8), p. 929-934.
- Eaton, B.A., 1975, The equation for geopressure prediction from well logs: Dallas, Society of Petroleum Engineers, 50th annual meeting [Dallas] preprint SPE-5544, 9 p.
- Edcon, Inc., no date, Borehole gravity density logging: Denver, Edcon, Inc., 30 p.

- Edwards, D.P., 1983, Zones of sand production identified by log-derived mechanical properties—A case study, in 8th European formation evaluation symposium transactions, paper S: London, Society of Professional Well Log Analysts, London Chapter, 23 p.
- Edwards, D.P., Lacour-Gayet, P.J., and Suau, J., 1981, Log evaluation in wells drilled with inverted oil emulsion mud: Dallas, Society of Petroleum Engineers, 56th annual meeting [San Antonio] preprint SPE-10206, 19 p.
- Edwards, J.M., Ottinger, N.H., and Haskell, R.E., 1967, Nuclear log evaluation of potash deposit, in 8th annual logging symposium transactions, paper L: Houston, Society of Professional Well Log Analysts, 12 p.
- Edwards, K.W., and Banks, K.M., 1978, A theoretical approach to the evaluation of in-situ coal: Canadian Institute of Mining and Metallurgy [CIM] Bulletin, v. 71(792), p. 124-131.
- Ehring, T.W., Lusk, L.A., Grubb, J.M., Johnson, R.B., DeBries, M.R., and Fertl, W.H., 1978, Formation evaluation concepts for geothermal reservoirs, in 19th annual logging symposium transactions, paper FF: Houston, Society of Professional Well Log Analysts, 14 p.
- Eisler, P.L., Huppert, P., Mathew, P.J., Wylie, A.W., and Youl, S.F., 1977, Use of neutron capture gamma radiation for determining grade of iron ore in blast hole and exploration holes, in Nuclear techniques and mineral resources 1977: Vienna, International Atomic Energy Agency, p. 215-228.
- Eisler, P.L., Mathew, P.J., and Youl, S.F., 1979, Nuclear activation logging for aluminum in iron ores and coal: Geoexploration, v. 17(1), p. 43-53.
- Ekstrom, M.P., Dahan, C.A., Chen, M., Lloyd, P.M., and Rossi, D.J., 1986, Formation imaging with microelectrical scanning arrays, in 27th annual logging symposium transactions, paper BB: Houston, Society of Professional Well Log Analysts, 21 p.
- Elkington, P.A.S., Stouthamer, P., and Brown, J.R., 1982, Rock strength predictions from wireline logs: International Journal of Rock Mechanical Mineral Science and Geomechanical Abstracts, v. 19, p. 91-97. Reprinted in 1986, in Buchanan, D.J., and Jackson, L.J., editors, Coal geophysics: Tulsa, Society of Exploration Geophysicists, Geophysics reprint series no. 6, p. 45-51.
- Elkins, L.F., 1978, Evaluation, chapter 8, in Determination of residual oil saturation: Oklahoma City, Interstate Oil Compact Commission, p. 177-261.
- Elliott, L.R., Barolak, J.G., Coope, D.F., and Hendricks, W.E., 1983, Recording downhole formation data while drilling, in SPE production technology symposium [November 14-15, Lubbock], SPE-12360: Dallas, Society of Petroleum Engineers. Later published in 1985, Journal of Petroleum Technology, v. 37(7), p. 1231-1238.
- Ellis, D.V., 1985, Neutron porosity devices—What do they measure?, in 1985 technical program abstracts and biographies: Tulsa, Society of Exploration Geophysicists, p. 285-286.

- Ellis, D.V., 1986, Neutron porosity devices—What do they measure?: First Break, v. 4(3), p. 11-17.
- Ellis, D., and Boucau, J., 1983, The future development of logging techniques: Oil and Enterprise, n. 2, September, p. 60-66.
- Emerson, D.W., and Haines, B.M., 1972, Sampling and geophysical logging of water bores in unconsolidated sediments: Australian Society of Exploration Geophysicists Bulletin, v. 3(4), p. 17-32.
- Engelhard, L., 1985, Shear wave well logging from wavetrain analysis, chapter 5, in G.P. Dohr, editor, Seismic shear waves, seismic exploration volume 15A, part A—Theory : London, Geophysical Press, p. 283-351.
- Ernstson, K., and Scherer, H.U., 1986, Self-potential variations with time and their relation to hydrogeologic and meteorological parameters: Geophysics, v. 51(10), p. 1967-1977.
- Ershaghi, I., and Abdassah, D., 1983, Interpretation of some wireline logs in geothermal fields of the Imperial Valley, California, in California regional meeting (Ventura), proceedings, SPE-11745: Dallas, Society of Petroleum Engineers, p. 727-736.
- Ershaghi, I., Dougherty, E.L., Herzberg, D., and Uco, H., 1981, Permeability determination in liquid dominated geothermal reservoirs using the Dual Induction Laterolog, in I. Ershaghi, E.E. Dougherty, L.L. Handy, editors, Formation evaluation in liquid dominated geothermal reservoirs: U.S. Department of Energy, Report DOE/ET/28384-T1, p. 41-59.
- Ershaghi, I., Dougherty, E.L., Uco, H., and Ghassemi, F., 1981, Problems in estimation of salinity profile in liquid dominated geothermal systems, in I. Ershaghi, E.E. Dougherty, L.L. Handy, editors, Formation evaluation in liquid dominated geothermal reservoirs: U.S. Department of Energy, Report DOE/ET/28384-T1, p. 36-38.
- Ershaghi, I., Ghaemian, S., and Abdassah, D., 1981, Lithology and hydrothermal alteration determination from well logs for the Cerro Prieto wells, Mexico: Los Alamos National Laboratory, Report LA-9075-MS, 28 p. Reprinted in 1982, Geothermal log interpretation handbook: Houston, Society of Professional Well Log Analysts, p. III-75-III-106.
- Ershaghi, I., Ghaemian, U., and Mathews, M., 1980, Detection of hydrothermal alteration in a sedimentary type geothermal system using well logs: Dallas, Society of Petroleum Engineers, 55th annual meeting [Dallas] preprint SPE-9499, 11 p.
- Ershaghi, I., Phillips, L.B., Dougherty, E.L., and Handy, L.L., 1979, Application of oil-field well log interpretation techniques to the Cerro Prieto Geothermal Field: Los Alamos Scientific Laboratory, Report LA-8130-MS, 142 p.

- Ethridge, F.G., 1985, Surface and subsurface methods of investigation and classification of fluvial environments, in Recognition of fluvial depositional systems and their resource potential: Tulsa, Society of Economic Paleontologists and Mineralogists, Short Course No. 19, p. 9-32.
- Etnyre, L., 1981, Fracture detection identification in the Panoma Field, Council Grove Formation: The Log Analyst, v. 22(6), November-December, p. 3-6.
- Etnyre, L.M., 1982, Statistical detection of hydrocarbons from well logs, in 23rd annual logging symposiums transactions, paper Z: Houston, Society of Professional Well Log Analysts, 29 p. Later published in 1984 as, Practical application of weighted least squares method to formation evaluation, part I--The logarithmic transformation of non-linear data and selection of dependent variable: The Log Analyst, v. 25(1), January-February, p. 11-21. Part II--Evaluating the uncertainty in least squares results: The Log Analyst, v. 25(3), May-June, p. 11-20.
- Evans, C.B., 1980, The changing role of well logging in reservoir evaluation--A challenge of the 1980s, in Tenth world petroleum congress, proceedings, v. 3: London, Heyden, p. 181-189.
- Everett, R.V., Herron, M., Pirie, G., Schweitzer, J., and Edmundson, H., 1985, Faja case study results on a single well MFM-7S, in 10th formation evaluation symposium transactions, paper A: Calgary, Canadian Well Logging Society, 20 p.
- Evers, J.F., and Ezeanyim, R., 1983, Prediction of abnormal pressures in Wyoming sedimentary basins using well logs, in Rocky Mountain regional meeting [Salt Lake City], proceedings, SPE-11859: Dallas, Society of Petroleum Engineers, p. 363-374.

- Felder, B., editor, 1980, Schlumberger well evaluation conference—Venezuela 1980 [Caracas, May] [in Spanish]: Paris, Schlumberger Technical Services, variously paginated.
- Felder, R.D., and Hoyer, W.A., 1982, The use of well logs to monitor a surfactant flood pilot test: Dallas, Society of Petroleum Engineers, 57th annual meeting [New Orleans] preprint, SPE-11147, 24 p. Later published in 1984, Journal of Petroleum Technology, v. 36(8), p. 1379-1392.
- Ferm, J.C., 1984, Geology of coal, chapter 5, in C.R. Ward, editor, Coal geology and coal technology: Boston, Blackwell Scientific Publishers, p. 151-176.
- Fertl, W.H., 1972, Status of shaly sand evaluation, in 4th formation evaluation conference transactions, paper I: Calgary, Canadian Well Logging Society, 26 p.
- Fertl, W.H., 1976, Geophysical well-logging techniques detect and evaluate abnormal formation pressures, chapter 5, in Abnormal formation pressures: New York, Elsevier, p. 177-274.
- Fertl, W.H., 1976, Evaluation of oil shales using geophysical well-logging techniques, chapter 10, in F.F. Yen, editor, Oil shale: New York, Elsevier Scientific Publishing Company, p. 199-213.
- Fertl, W.H., 1977, Shale density studies and their application, in G.D. Hobson, editor, Developments in petroleum geology no. 1: London, Applied Science Publishers, p. 293-327.
- Fertl, W.H., 1978, How subsurface temperature affects formation evaluation: Oil and Gas Journal, v. 76(30), July 24, p. 54-62.
- Fertl, W.H., 1978, Open-hole crossplots—A powerful technique in well log analysis: Dallas, Society of Petroleum Engineers, European offshore petroleum conference preprint SPE-8115. Later published in 1981, Journal of Petroleum Technology, 33(3), p. 535-549. See references.
- Fertl, W.H., 1979, Interpretive well logging concepts assist south Texas formation evaluation problems: Transactions of the Gulf Coast Association of Geological Societies, v. 29, p. 64-73.
- Fertl, W.H., 1979, Practical log analysis, part 13—Hingle crossplot speeds long-interval evaluation: Oil and Gas Journal, v. 77(3), p. 110-118.
- Fertl, W.H., 1979, Determination of residual oil saturation from geophysical well logs in tertiary recovery projects: Energy Sources, v. 4(3), p. 259-277.
- Fertl, W.H., 1979, Gamma ray spectral data assists in complex formation evaluation, in 6th European formation evaluation symposium transactions, paper Q: London, Society of Professional Well Log Analysts, London Chapter. Later published in 1979, The Log Analyst, v. 20(5), September-October, p. 3-37. Reprinted in 1981, Spectralog: Houston, Dresser Industries, publication 3334.

- Fertl, W.H., 1980, Evaluation of fractured reservoirs using geophysical well logs, in SPE/DOE unconventional gas recovery symposium, proceedings, SPE/DOE-8938: Dallas, Society of Petroleum Engineers, p. 131-136.
- Fertl, W.H., 1980, Geophysical well logs applied to geothermal resource evaluation, in P.F. Burolet and V. Ziegler, editors, Energy resources, colloquium C2, 26th international geological congress: Paris, Editions Technip, p. 461-468.
- Fertl, W.H., 1980, Well log analysis concepts in clastic and argillaceous U.S. Gulf Coast sediments: Transactions of the Gulf Coast Association of Geological Societies v. 30, p. 81-89.
- Fertl, W.H., 1981, Evaluation of heavy oil and tar sands deposits using geophysical well logging techniques in open and cased boreholes, in R.F. Meyer, C.T. Steele and J.C. Olson, editors, Heavy crude oils and tar sands [1st international UNITAR conference proceedings, 1979]: New York, Mineral Information Service, McGraw-Hill, Inc., p. 283-294.
- Fertl, W.H., 1982, Well logging and its applications in cased holes, in International petroleum conference [Beijing], proceedings, SPE-10034: Dallas, Society of Petroleum Engineers, p. 541-561. Later published in 1984, Journal of Petroleum Technology, v. 36(2), p. 249-266.
- Fertl, W.H., 1983, Advances in well logging and well interpretation, in 11th world petroleum congress, proceedings, volume 3: New York, John Wiley, p. 341-354. Later published in condensed form in 1984, Oil and Gas Journal, v. 82(16), April 16, p. 85-91.
- Fertl, W.H., 1983, Gamma ray spectral logging—A new evaluation frontier, part I—Principles: World Oil, v. 196(4), March, p. 79-91. A seven-part series. See References.
- Fertl, W.H., 1983, Gamma ray spectral logging—A new evaluation frontier, part II—Application in carbonates: World Oil, v. 196(5), April, p. 87-98.
- Fertl, W.H., 1983, Gamma ray spectral logging—A new evaluation frontier, part III—Measuring source rock potential: World Oil, v. 196(6), May, p. 147-155.
- Fertl, W.H., 1983, Gamma ray spectral logging—A new evaluation frontier, part IV—Application in fractured shale: World Oil, v. 196(7), June, p. 189-204.
- Fertl, W.H., 1983, Gamma ray spectral logging—A new evaluation frontier, part V—Application in clastic reservoirs: World Oil, v. 197(2), August 1, p. 57-63.
- Fertl, W.H., 1983, Gamma ray spectral logging—A new evaluation frontier, part VI—Clay analysis in shaly sands: World Oil, v. 197(4), October, p. 99-112.

- Fertl, W.H., 1983, Gamma ray spectral logging—A new evaluation frontier, part VII—Application in workovers/recompletions: *World Oil*, v. 197(5), November, p. 85-88.
- Fertl, W.H., 1984, Recent advances in the evaluation of heavy oil reservoirs based on geophysical well-logging concepts, in R.F. Meyer, J.C. Wynn and J.C. Olson, editors, *The future of heavy crude and tar sands* [2nd international UNITAR conference proceedings, 1982]: New York, Coal Age Mineral Information Service, McGraw-Hill Inc., p. 313-317.
- Fertl, W.H., 1985, Logs help approximate reservoir temperature: *Oil and Gas Journal*, v. 83(17), April 29, p. 89-95.
- Fertl, W.H., 1985, Determination of true static formation temperature: *Canadian Well Logging Society Journal*, v. 14, p. 77.
- Fertl, W.H., 1986, Log-derived evaluation of shaly clastic reservoirs, in 1986 SPE international meeting on petroleum engineering [March 17-20, Beijing, China], proceedings, SPE-14061: Dallas, Society of Petroleum Engineers, p. 173-192.
- Fertl, W.H., and Chilingarian, G.V., 1978, Formation evaluation of tar sands using geophysical well-logging techniques, chapter 11, in G.V. Chilingarian and T.F. Yen, editors, *Bitumens, asphalts and tar sands*: New York, Elsevier, *Developments in Petroleum Science* no. 7, p. 259-276.
- Fertl, W.H., Chilingarian, G.V., and Yen, T.F., 1982, Use of natural gamma ray spectral logging in evaluation of clay minerals: *Energy Sources*, v. 6(4), p. 335-360.
- Fertl, W.H., Chilingarian, G.V., and Yen, T.F., 1986, Determination of true static formation temperature from well logs: *Energy Sources*, v. 8(2/3), p. 277-290.
- Fertl, W.H., Conley, S., Frost, E., and Thompson, J.B., 1983, Evaluation and monitoring of enhanced recovery projects in California and cased-hole exploration and recompletions in west Texas based on the continuous carbon/oxygen log [combined SPE-9714 and SPE-10739]: *Journal of Petroleum Technology*, v. 35(1), p. 143-157.
- Fertl, W.H., and DeVries, M.R., 1977, Coal evaluation using geophysical well logs, in 6th formation evaluation symposium transactions, paper F: Calgary, Canadian Well Logging Society, 17 p.
- Fertl, W.H., and Elliott, D.B., 1984, Well log assisted evaluation of heavy oil resources—A status report, in AAPG research conference on exploration for heavy crude oil and bitumen, proceedings, volume 1: Tulsa, American Association of Petroleum Geologists, 28 p.
- Fertl, W.H., and Frost E., Jr., 1979, Evaluation of shaly clastic reservoir rocks: Dallas, Society of Petroleum Engineers, 54th annual meeting [Las Vegas] preprint SPE-8450. Later published in 1980, *Journal of Petroleum Technology*, v. 31(9), p. 1641-1646. Reprinted in 1981, *Spectralog*: Houston, Dresser Industries, publication no. 3334.

- Fertl, W.H., and Hammack, G.W., 1971, A comparative look a water saturation computations in shaly pay sands, in 12th annual logging symposium transactions, paper R: Houston, Society of Professional Well Log Analysts, 18 p. Reprinted in 1972, The Log Analyst, v. 13(2), March-April, p. 12-20.
- Fertl, W.H., and Hammack, G.W., 1976, Solid particle penetration into porous reservoir rocks and its effect on well log analysis, in 17th annual logging symposium transactions, paper F: Houston, Society of Professional Well Log Analysts, 10 p.
- Fertl, W.H., King, E.E., and Kumar., R., 1978, Important SP and gamma ray log anomalies explained: Oil and Gas Journal, v. 76(34), August 21, p. 70-75.
- Fertl, W.H., King, E.E., Vercellino, W.C., Kumar, R., Denoo, S., Schoonover, L.G., and Aguilera, R., 1978, Practical log analysis—A twenty-two part series: Oil and Gas Journal, v. 76-77, May 15, 1978 through September 19, 1979.
- Fertl, W.H., and Overton, H., 1982, Formation evaluation, chapter 8, in L.M. Edwards, G.V. Chilingar, H.H. Rieke, III, W.H. Fertl, editors, Handbook of geothermal energy: Houston, Gulf Publishing Company, p. 326-425.
- Fertl, W.H., and Rieke, H.H., III, 1979, Gamma ray spectral evaluation techniques identify fractured shale reservoirs and source-rock characteristics: Dallas, Society of Petroleum Engineers, 54th annual meeting [Las Vegas] preprint SPE-8454. Later published in 1980, Journal of Petroleum Technology, v. 32(11), p. 2053-2062.
- Fertl, W.H., and Wichmann, P.A., 1977, How to determine static BHT from well data: World Oil, v. ?, January, p. 105-106.
- Fertl, W.H., and Wichmann, P.A., 1977, Exploration for and evaluation of hydrocarbon resources in cased boreholes, in Fifth European logging symposium transactions, paper 25: Paris, Society of Professional Well Log Analysts, Paris Chapter (SAID), 17 p.
- Fetzner, R.W., Henson, W.L., and Feigl, F.J., 1966, Athabasca oil sand evaluation using core and log analysis and geological data processing methods, in 7th annual logging symposium transactions, paper A: Houston, Society of Professional Well Log Analysts, 13 p.
- Finklea, E.E., 1981, Advanced logging techniques, in Workshop proceedings: world oil and natural gas supplies, [June 1979]: Electric Power Research Institute, WS-79-182, Paper 3-11, 23 p.
- Fishel, K.W., and Mayer, R., Jr., 1979, Extremely high resolution density coal logging techniques, in G.O. Argall, Jr., editors, Coal exploration 2 [2nd international coal exploration symposium, (Denver, 1978), proceedings]: San Francsico, Miller Freeman Publications Inc., p. 490-504.
- Fisher, W.L., 1969, Facies characterization of Gulf Coast basin delta systems with some Holocene analogues: Transactions of the Gulf Coast Association of Geological Societies, v. 19, p. 239-261.

- Fitch, A.A., 1984, Interpretation of vertical seismic profiles: First Break, v. 2(6), June, p. 19-23.
- Fitzgerald, D.D., Theriot, J.C., and York, P.L., 1980, Dipmeter validity in deviated boreholes: The Log Analyst, v. 21(3), May-June, p. 8.
- Flach, P.D., and Mossop, G.D., 1985, Depositional environments of Lower Cretaceous McMurray Formation, Athabasca oil sands, Alberta: AAPG Bulletin, v. 69(8), p. 11195-1207.
- Fligg, K., and Rodrigues, E., 1981, Case histories in the application of geophysical well logging in ground-water applications: Ontario Ministry of the Environment, Water Resources Branch, Water Resources Paper no. 12, 19 p.
- Flores, R.M., Toth, J.C., and Moore, T.A., 1982, Use of geophysical logs in recognizing depositional environments in the Tongue River Member of the Fort Union Formation, Powder River Area, Wyoming and Montana: U.S. Geological Survey, Open-File Report 82-756, 22 p.
- Flower, J.G., 1981, Use of sonic-shear-wave/resistivity overlay as a quick-look method for identifying potential pay zones in the Ohio (Devonian) Shale: Dallas, Society of Petroleum Engineers, eastern regional meeting preprint SPE-10366. Later published in 1983, Journal of Petroleum Technology, v. 35(3), p. 638-642.
- Fons, L., 1969, Geological applications of well logs, in 10th annual logging symposium transactions, paper AA: Houston, Society of Professional Well Log Analysts, 44 p.
- Fordjor, C.K., Bell, J.S., and Gough, D.I., 1983, Breakouts in Alberta and stress in the North American plate: Canadian Journal of Earth Science, v. 20, p. 1445-1455
- Frank, R.W., 1978, Formation evaluation with logs in the Ark-La-Tex Cotton Valley: Transactions of the Gulf Coast Association of Geological Societies, v. 28, part 1, p. 131-141.
- Frank, R.W., 1986, Prospecting with old E-logs: Houston, Schlumberger Educational Services, ? p.
- Frank, R.W., and Simonson, R.B., 1983, Identification and interpretation of naturally fractured reservoirs in north Texas, in Exploration in a mature area [AAPG southwest section annual meeting]: Abilene, Texas, Abilene Geological Society, p. 143-167.
- Franke, M., and Hepp, V., 1973, Dipmeter outlines petroleum entrapment on flanks of diapiric shale dome, in 14th annual logging symposium transactions, paper J: Houston, Society of Professional Well Log Analysts.

- Freedman, R., and Studlick, J.R.J., 1981, Evaluation of a heavy oil prospect Bandera Tank area Maverick and Zavala Counties, Texas, in 22nd annual logging symposium transactions, paper Y: Houston, Society of Professional Well Log Analysts, 39 p. Later published in 1981, Oil and Gas Journal, v. 79,(48), November 30, p. 63-76.
- Frisinger, M.R., and Gyllensten, A., 1986, Fracture detection in North Sea reservoirs, in 10th European formation evaluation symposium transactions, paper Q: Aberdeen, Society of Professional Well Log Analysts, Aberdeen Chapter, 18 p.
- Frost, E., Jr., and Fertl, W.H., 1982, Shear wave travel time determination using an unconventional approach: Dallas, Society of Petroleum Engineers, 57th annual meeting [New Orleans] preprint SPE-11032, 11 p.
- Furlong, V.L.R., 1982, Converting the numerical values to geologic reality, in Symposium on uranium exploration methods [Paris, June 1-4, 1982], proceedings: Paris, Nuclear Energy Agency, Organization for Economic Cooperation and Development, p. 767-775.

- Galloway, W.E., 1968, Depositional systems of the Lower Wilcox Group, north-central Gulf Coast Basin: Transactions of the Gulf Coast Association of Geological Societies, v. 18, p. 275-289.
- Galloway, W.E., and Hobday, D.K., 1983, Terrigenous clastic depositional systems: New York, Springer-Verlag, 423 p.
- Galloway, W., and Smith W.D.M., 1981, The successful application of a neutron acoustic crossplot to the dolomite sandstone of the Belloy, in 8th formation evaluation symposium transactions, paper Y: Calgary, Canadian Well Logging Society, 15 p.
- Ganer, B.L., 1985, Case history of Cotton Valley sand log interpretation for a north Louisiana field: Journal of Petroleum Technology, v. 37(11), SPE-12182, p. 1995-2205.
- Garb, F.A., 1978, Property evaluation with hand-held computers, part 3--Clean sand log analysis and shaly formation sonic-density log analysis: Petroleum Engineer International, v. 50(3), March, p. 50-80.
- Garb, F.A., 1978, Property evaluation with hand-held computers, part 4--Water saturation by five shaly sand equations and interpolation of deviated tops: Petroleum Engineer International, v. 50(4), April, p. 47-52.
- Garb, F.A., 1978, Property evaluation with hand-held calculators, part 5--Neutron and neutron-density log analysis procedures: Petroleum Engineer International, v. 50(5), May, p. 52-69.
- Gardner, G.H.F., Gardner, L.W., and Gregory, A.R., 1974, Formation velocity and density--The diagnostic basics for stratigraphic traps: Geophysics, v. 39(6), December, p. 770-780.
- Garotta, R., 1985, Observation of shear waves and correlation with P events, chapter 1, in G.P. Dohr, editor, Seismic shear waves, seismic exploration volume 15B, part B--Applications: London, Geophysical Press, p. 1-86. A discussion of P and S waves, their potential, and application in formation evaluation.
- Gautier, D.L., Starkey, H.C., and Takahashi, K.I., 1983, Clays, cations and geophysical log response of gas-producing and non-producing zones in the Gammon Shale (Cretaceous), southwestern North Dakota: Clays and Clay Minerals, v. 31(2), p. 122-128.
- Gearhart, L.M., Moselely, L.M., and Foster, M., 1986, Current state of the art of MWD and its application in exploration and development drilling, in 1986 SPE international meeting on petroleum engineering [Beijing, China, March 17-20], proceedings, SPE-14071: Dallas, Society of Petroleum Engineers, p. 515-523.
- George, D.C., 1982, Total count gamma-ray logging--Correction factors and logging model grade assignments, in Symposium on uranium exploration methods [Paris, June 1-4, 1982], proceedings: Paris, Nuclear Energy Agency, Organization for Economic Cooperation and Development, p. 729-751.

- George, D.C., and Scott, J.H., 1982, Review of magnetic susceptibility logging and its application to uranium exploration, in Symposium on uranium exploration methods [Paris, June 1-4, 1982], proceedings: Paris, Nuclear Energy Agency, Organization for Economic Cooperation and Development, p. 837-856.
- Georgi, D.T., 1985, Geometrical aspects of borehole televiewer images, in 26th annual logging symposium transactions, paper O: Houston, Society of Professional Well Log Analysts, 20 p.
- Georgi, D.T., 1986, Guides for the interpretation of dipmeter fracture logs, in 27th annual logging symposium transactions, paper TT: Houston, Society of Professional Well Log Analysts, 16 p.
- Gera, D.F., 1983, The use of gamma-gamma logging for detecting quartz veins in borehole sections [translated from the 1974 Russian paper]: Ottawa, Ontario, Geological Survey of Canada Translations, no. 798658, 8 p.
- Gershman, A., 1982, Building a geological expert system for dipmeter interpretation, in European conference on artificial intelligence [Orsay, France, July 12-14], proceedings: ?, p. 139-140.
- Gevers, E.C.A., and Watson, S.W., 1978, Quantitative interpretation of seismic data using well logs: Dallas, Society of Petroleum Engineers, 53rd annual meeting [Houston] preprint SPE-7439, 4 p.
- Gilchrist, W.A., Jr., Quirein, J.A., Boutemy, Y.L., and Tabanou, J.R., 1982, Application of gamma ray spectroscopy to formation evaluation, in 23rd annual logging symposium transactions, paper B: Houston, Society of Professional Well Log Analysts, 28 p.
- Gilreath, J.A., 1968, Electric log characteristics of diapiric shale, in J. Braunstein and G.D. O'Brien, editors, Diapirism and diapirs: Tulsa, American Association of Petroleum Geologists, Memoir no. 8, p. 137-144.
- Gilreath, J.A., 1977, Dipmeter, chapter 22, in L.W. LeRoy, D.O. LeRoy and J.W. Raese, editors, Subsurface geology, 4th edition: Golden, CO., Colorado School of Mines, p. 389-396.
- Gilreath, J.A., Cox, J.W., Fett, T.H., and Grace, L.M., 1985, Practical dipmeter interpretation: Houston, Schlumberger Educational Services, variously paginated.
- Gilreath, J.A., Healy, J.S., and Yelverton, J.N., 1969, Depositional environments defined by dipmeter interpretation: Transactions of the Gulf Coast Association of Geological Societies, v. 19, p. 101-111.
- Gilreath, J.A., and Maricelli, J.J., 1964, Detailed stratigraphic control through dip computations: AAPG Bulletin, v. 48(12), p. 1902-1910.
- Gilreath, J.A., and Stephens, R.W., 1971, Distributary front deposits: Transactions of the Gulf Coast Association of Geological Societies, v. 21, p. 233-243.

- Givens, W.W., 1986, Formation factor, resistivity index, and related equations based upon a conductive rock matrix model (CRMM), in 27th annual logging symposium transactions, paper P: Houston, Society of Professional Well Log Analysts, 18 p.
- Givens, W.W., Mills, W.R., Dennis, C.L., and Caldwell, R.L., 1976, Uranium assay logging using a pulsed 14-MEV neutron source and detection of delayed fission neutrons: Geophysics, v. 41(3), p. 468-490.
- Glanville, C.R., 1970, Log interpretation of thinly-bedded oil-productive sands with unusually low resistivities, in 11th annual logging symposium transactions, paper M: Houston, Society of Professional Well Log Analysts.
- Glanville, C.R., 1984, A method for direct log calculation of excess conductivity applied to shaly sand log interpretation, in 25th annual logging symposium transactions, paper X: Houston, Society of Professional Well Log Analysts, 17 p.
- Glenn, W.E., and Hohmann, G.W., 1981, Well logging and borehole geophysics in mineral exploration: Economic Geology, 75th anniversary volume, p. 850-862.
- Glenn, W.E., and Nelson, P.H., 1979, Borehole logging techniques applied to base metal ore deposits, in P.J. Hodd, editor, Geophysics and geochemistry in the search for metallic ores [Exploration 77, Ottawa, Canada, October 1977, proceedings]: Geological Survey of Canada, Economic Geology Report no. 31, p. 273-294.
- Glenn, W.E., and Ross, H.P., 1982, A study of well logs from Cove Fort-Sulpurdale KGRA, Millard and Beaver Counties, Utah: Earth Science Laboratory Division, University of Utah Research Institute, Report no. 75, 51 p.
- Glenn, W.E., Ross, H.P., and Atwood, J.W., 1980, Review of well logging in the Basin and Range known geothermal resource areas: Dallas, Society of Petroleum Engineers, 55th annual meeting [Dallas] preprint SPE-9496. Later published in 1982, Journal of Petroleum Technology, v. 34(5), p. 1104-1118. Reprinted in 1982, Geothermal log interpretation handbook: Houston, Society of Professional Well Log Analysts, p. VII-121-VII-135.
- Gobran, B.D., Saldana, M.A., Brown, S.L., and Sanyal, S.K., 1980, A comprehensive mathematical approach and a hand-held calculator program for analysis of shaly gas sands: The Log Analyst, v. 21(5), September-October, p. 11-21.
- Goetz, J.F., Dupal, L., and Bowler, J., 1979, An investigation in to discrepancies between sonic log and seismic check shot velocities: Australian Petroleum Exploration Association Journal, V. 19(1), P. 131-141.
- Goetz, J.F., Prins, W.J., and Logar, J.F., 1977, Reservoir delineation by wireline techniques: The Log Analyst, v. 18(5), September-October, p. 12-40.

- Goldberg, D., Moos, D., and Anderson, R.N., 1985, Attenuation changes due to diagenesis in marine sediments in 26th annual well logging symposium transactions, paper KK: Houston, Society of Professional Well Log Analysts, 18 p.
- Goldberg, D.S., Grant, W.T., Siegfied, R.W., and Castagna, J.P., 1984, Processing and interpretation of sonic log waveforms--A case study: Tulsa, Society of Exploration Geophysicists, Expanded Abstracts with Biographies, 1984 Technical Program, p. 28-31.
- Goldman, L.H., and Marr, H.E., 1979, Applications of high resolution gamma ray spectroscopy to well logging, in 20th annual logging symposium transactions, paper GG: Houston, Society of Professional Well Log Analysts, 8 p.
- Goldsmith, L.H., 1966, Some fundamentals of potash geology as a guide to exploration, in 7th annual logging symposium transactions, paper O: Houston, Society of Professional Well Log Analysts, 15 p.
- Goldstein, B.A., and Hubbard, J.J., 1984, Comparison and geologic interpretation of alternative dipmeter analyses from a Permo-Carboniferous sequence in the Fitroy graben, in P.G. Purcell, editor, The Canning Basin, Western Australia: Perth, Australia, Geological Society of Australia, p. 505-519.
- Gomez-Rivero, O., 1982, Physical basis of well logging, chapter 6, in K.C. Jain and R.J.P. deFigueiredo, editors, Concepts and techniques in oil and gas exploration: Tulsa, Society of Exploration Geophysicists, p. 161-198.
- Goodman, M.A., and Giussani, A.P., and Alger, R.P., 1982, Detection and evaluation methods for in-situ gas hydrates, in SPE/DOE unconventional gas recovery symposium, proceedings, SPE/DOE-10831: Dallas, Society of Petroleum Engineers, p. 355-371.
- Gough, D.I., and Bell, J.S., 1981, Stress orientations from oil-well fractures in Alberta and Texas: Canadian Journal of Earth Sciences, v. 18, p. 638-645.
- Gough, D.I., and Bell, J.S., 1982, Stress orientations from borehole fractures with examples from Colorado, east Texas, and northern Canada: Canadian Journal of Earth Sciences, v. 19(7), p. 1358-1370.
- Gournay, L.S., and Lyle, W.D., 1984, Determination of hydrocarbon saturation and porosity using a combination borehole gravimeter and deep investigating electric log, in 25th annual logging symposium transactions, paper WW: Houston, Society of Professional Well Log Analysts, 14 p.
- Gournay, L.S., and Maute, R.E., 1982, Detection of bypassed gas using borehole gravimeter and pulsed neutron capture logs: The Log Analyst, v. 23(3), May-June, p. 27-32.

- Grau, J.A., Roscoe, B.A., and Tabanou, J.R., 1985, A borehole correction model for capture gamma-ray spectroscopy logging tools: Dallas, Society of Petroleum Engineers, 60th annual meeting [Las Vegas], preprint SPE-14462, 8 p.
- Greengold, G.E., 1986, The graphical representation of bulk volume water on the Pickett crossplot: *The Log Analyst*, v. 27(3), May-June, p. 21-25.
- Greenhouse, J.P., and Pehme, P., 1985, Stratigraphy and physical properties of unconsolidated glacial deposits using borehole geophysics, in P. Kileen, editor, *Borehole geophysics for mining and geotechnical applications* [International symposium and workshop, Ottawa, August 29-31, 1983, proceedings]: Geological Survey of Canada, Paper 85-27. Available in early 1986
- Gregory, A.R., and Backus, M.M., 1980, Geopressured formation parameters, geothermal well, Brazoria County, Texas, in M.H. Dorfman and W.L. Fisher, editors, 4th U.S. Gulf Coast geopressured-geothermal energy conference, proceedings, volume 1: Austin, University of Texas, Center for Energy Studies, p. 235-311.
- Gretener, P.E., 1981, Geothermics--Using temperature in hydrocarbon exploration: Tulsa, AAPG Education Course Note Series, No. 17, 156 p.
- Grief, M.A., and Koopersmith, C.A., 1985, Petrophysical evaluation of thinly bedded reservoirs in high angle/displacement development wells with the NL Baroid recorded lithology logging system, in 10th formation evaluation symposium transactions, paper S: Calgary, Canadian Well Logging Society, 12 p.
- Griffiths, C.M., 1982, A proposed geologically consistent segmentation and reassignment algorithm for petrophysical borehole logs, in J.M. Cubitt and R.A. Reymont, editors, *Quantitative stratigraphic correlation*: New York, John Wiley & Sons, p. 287-298.
- Grisafi, T.W., Rieke, H.H., III, and Skidmore, D.R., 1974, Approximation of geothermal gradients in northern West Virginia using bottom-hole temperature from electric logs: *AAPG Bulletin*, v. 58(2), p. 321-323.
- Grooms, G.E., and Schulte, R.K., 1985, Contributions of observation well logging to the evaluation of polymer-augmented waterflood pilots: Dallas, Society of Petroleum Engineers, 60th annual meeting [Las Vegas], preprint SPE-14396, 12 p.
- Grove, G.P., and Whittaker, J.L., 1985, Continuous fracture probability determination as applied to the Monterey Formation, in 55th annual California regional meeting [March 27-29, Bakersfield] proceedings, SPE-13652: Dallas, Society of Petroleum Engineers, p. 591-598.
- Gundestrup, N.S., and Hansen, B.L., 1984, Bore-hole survey at Dye 3, south Greenland: *Journal of Glaciology*, v. 30(106), p. 282-288.

Gunter, J.M., and Moore, C.V., 1986, Improved use of wireline testers for reservoir evaluation, in 1986 SPE international meeting on petroleum engineering [Beijing, China, March 17-20], proceedings, SPE-14063: Dallas, Society of Petroleum Engineers, p. 401-413.

- Habiger, R., and Robinson, R.H., 1983, Using a multiple log approach to evaluate Green River oil shale in the Piceance Creek Basin, in J.H. Gary, editor, 16th oil shale symposium, proceedings: Golden, Colorado, Colorado School of Mines, p. 45-67.
- Hagiwara, T., 1986, Archie's "m" for permeability: The Log Analyst, v. 27(1), January-February, p. 39-42.
- Haile, P.M., and Blunden, H.A., 1984, Zechstein magnesium rich evaporite deposits of northern Netherlands and their volumetric analysis by GLOBAL, in 9th international formation evaluation symposium transactions, paper 37: Paris, Society of Professional Well Log Analysts, Paris Chapter (SAID), 9 p.
- Haimson, B.C., and Herrick, C.G., 1985, In situ stress evaluation from borehole breakouts, experimental studies, in E. Ashworth, editor, Research and engineering applications in rock masses [26th U.S. symposium on rock mechanics, South Dakota School of Mines and Technology, Rapid City, 26-28 June, proceedings], volume 2: Boston, A.A. Balkema, p. 1207-1218.
- Hale, L.A., 1967, Phosphate exploration using gamma-radiation logs, Dry Valley, Idaho, in Anatomy of the western phosphate field--Intermountain Association of Geologists 15th annual field conference: Salt Lake City, Utah, Intermountain Association of Geologists, p. 147-159.
- Halfman, S.E., Lippman, M.J., and Gilreath, J.A., 1984, Cerro Prieto case history--Use of wireline logs to characterize a geothermal reservoir, in 1984 SPE California regional meeting, proceedings, SPE-12739: Dallas, Society of Petroleum Engineers, p. 113-122.
- Halfman, S.E., Lippman, M.J., Zelwer, R., and Howard, J.H., 1984, Geologic interpretation of geothermal fluid movement in Cerro Prieto Field, Baja California, Mexico: AAPG Bulletin, v. 68(1), p. 18-30.
- Halker, A., Kusznir, N.J., Mellor, D.W., and Whitworth, K.R., 1982, The synthesis of fracture/strength logs using borehole geophysics--A new geotechnical service: The Quarterly Journal of Engineering Geology [London], v. 15, p. 15-28. Reprinted in 1986, in Buchanan, D.J., and Jackson, L.J., editors, Coal geophysics: Tulsa, Society of Exploration Geophysicists, Geophysics reprint series no. 6, p. 52-64.
- Hallenburg, J.K., 1973, Interpretation of gamma-ray logs, in 14th annual logging symposium transactions, paper G: Houston, Society of Professional Well Log Analysts, 28 p. Reprinted in the 1973, The Log Analyst, v. 14(6), November-December, p. 3. Quantitative use of the gamma ray curve for uranium assay.
- Hallenburg, J.K., 1978, Use of the spontaneous potential curve in a mineral mapping technique, in 19th annual logging symposium transactions, paper U: Houston, Society of Professional Well Log Analysts, 12 p.
- Hallenburg, J.K., 1984, Geophysical logging for mineral and engineering applications: Tulsa, PennWell Books, 254 p.

- Hallenburg, J.K., 1984, HP41C formation evaluation programs: Tulsa, PennWell Books, 120 p.
- Hallenburg, J.K., 1985, LOGCOMP petroleum formation evaluation programs: Tulsa, PennWell Books, 104 p. For IBM-XT.
- Hammack, G.W., and Fertl, W.H., 1974, Anomalies observed on well logs, in 15th annual logging symposium transactions, paper V: Houston, Society of Professional Well Log Analysts, 21 p. Also published in 1974, World Oil, v. 179(7), p. 69-73.
- Hamouz, M.A., and Mueller, S.L., 1984, Some new ideas for well log pore-pressure prediction: Dallas, Society of Petroleum Engineers, 59th annual meeting [Houston] preprint SPE-13204, 11 p.
- Han, D., Nur, A., and Morgan, F.D., 1986, Velocity measurement and empirical modeling in sandstones, in 27th annual logging symposium transactions, paper OO: Houston, Society of Professional Well Log Analysts, 23 p.
- Hardage, B.A., 1985, Vertical seismic profiling—a measurement that transfers geology to Geophysics, in O.R. Berg and D.G. Woolverton, editors, Seismic stratigraphy II—an integrated approach to hydrocarbon exploration: Tulsa, American Association of Petroleum Geologists, Memoir 39, P. 13-34.
- Hardage, B.A., 1985, The uses and abuses of vertical seismic profiling: World Oil, v. 201(7), December, p. 53-56.
- Harris, P.M., Dodman, C.A., and Bliefnick, D.M., 1984, Permian (Guadalupian) reservoir facies, McElroy Field, west Texas, in Harris, P.M., editor, Carbonate sands—A core workshop: Tulsa, Society of Economic Paleontologists and Mineralogists, Core Workshop No. 5, p. 136-174.
- Harrison, W.E., and Luza, K.V., 1986, Temperature-gradient information from several boreholes drilled in Oklahoma: Oklahoma Geological Survey, Special Publication No. 86-2, 42 p. Valuable study of the length of time required for borehole-fluid temperature stabilization.
- Hartley, K.B., 1979, Evaluation of wireline down-log information and effects of increased log speeds on data quality: Dallas, Society of Petroleum Engineers, 54th annual meeting [Las Vegas] preprint SPE-8363. Later published in 1980, Journal of Petroleum Technology, v. 32(7), p. 1151-1160. Also published in 1981, Oil and Gas Journal, v. 79(8 and 9), February 23, p. 66-76, and March 2, p. 99-100.
- Hartley, K.B., 1981, Factors affecting sandstone acoustic compressional velocities and an examination of empirical correlations between velocities and porosities, in 22nd annual logging symposium transactions, paper PP: Houston, Society of Professional Well Log Analysts, 20 p.
- Hartmann, D.J., 1975, Effect of bed thickness and pore geometry on log response, in 16th annual logging symposium transactions, paper Y: Houston, Society of Professional Well Log Analysts.

- Hashmy, K.H., Hefter, T., and Chicks, R., 1982, Quantitative log evaluation in the Devonian shales of the northeast United States, in 1982 SPE/DOE unconventional gas recovery symposium proceedings, SPE/DOE-10795: Dallas, Society of Petroleum Engineers, p. 55-66.
- Hassan, M., 1973, Radio elements and diagenesis in shale and carbonate sediments, in 2nd annual logging symposium transactions, paper 7: Paris, Society of Professional Well Log Analysts, Paris Chapter (SAID), 12 p.
- Hawkins, J.M., Snyder, R.W., and Pahwa, S.B., 1977, How well logs were used to improve evaluation of a gas storage project: Dallas, Society of Petroleum Engineers, 52nd annual meeting [Denver] preprint SPE-6429. Later published in 1977, Journal of Petroleum Technology, v. 29(12), p. 1550-1558.
- Hawkins, W.K., and Gearhart, M., 1968, Use of logging in uranium prospecting, in 9th annual logging symposium transactions, paper T.: Houston, Society of Professional Well Log Analysts.
- Healy, J.H., Hickman, S.H., Zoback, M.D., and Ellis, W.L., 1984, Report on televiewer log and stress measurements in core hole USW-G1, Nevada test site, December 13-22, 1981: U.S. Geological Survey, Open-File Report 84-15, 47 p.
- Hearst, J.R., 1977, Estimation of dip and lateral extent of beds with borehole gravimetry: Geophysics, v. 42, p. 990-994.
- Hearst, J.R., 1977, On the range of investigation of a borehole gravimeter, in 18th annual logging symposium transactions, paper E: Houston, Society of Professional Well Log Analysts, 11 p.
- Hearst, J.R., and Carlson, R.C., 1982, Measurement and analysis of gravity in boreholes, in A.A. Fitch, editor, Developments in geophysical exploration methods 3: London, Applied Science Publishers, p. 269-303.
- Hearst, J.R., and McKague, H.L., 1976, Structure elucidation with borehole gravimetry: Geophysics, v. 41(3), p. 491-505.
- Hearst, J.R., and Nelson, P.H., 1985, Well logging for physical properties: New York, McGraw-Hill, 576 p.
- Heckel, B.H., 1985, Enhanced hydrocarbon recognition - a new approach to well evaluation for sand-shale sequences, in 10th formation evaluation symposium transactions, paper L: Calgary, Canadian Well Logging Society, 17 p.
- Heflin, J.D., 1979, Fracture detection in West Coast reservoirs using well logs: Dallas, Society of Petroleum Engineers, California Regional meeting preprint SPE-7976, 16 p.

- Heflin, J.D., and Frost, E., Jr., 1981, Some novel approaches in the use of wireline logs for fracture detection, in 7th European logging symposium transactions, paper 22: Paris, Society of Professional Well Log Analysts, Paris Chapter (SAID), 42 p. Later published 1983, in C.M. Isaacs, R.E. Garrison, editors, Petroleum generation and occurrence in the Miocene Monterey Formation, California: Pacific Section of the Society of Economic Paleontologists and Mineralogists, p. 131-149.
- Heflin, J.D., Neill, B.E., and DeVries, M.R., 1976, Log evaluation in the California Miocene: Dallas, Society of Petroleum Engineers, 51st annual meeting [New Orleans] preprint SPE-6160, 17 p. Reprinted in 1981, Spectralog: Houston, Dresser Industries, publication no. 3334.
- Heinze, D.M., 1985, Clay identification and amount measured by laboratory techniques compared to well log responses--Application to tight gas sands and shales: Albuquerque, Sandia National Laboratory Report SAND85-0312, March, 36 p.
- Helander, D.P., 1983, Fundamentals of formation evaluation: Tulsa, Oil and Gas Consultants International, 332 p.
- Helgoy, R., 1984, Prediction techniques from logging tools--Are the results confirmed by testing?: Norwegian Petroleum Society offshore North Seas conference [August 21-24, Stavanger] paper G4, 25 p.
- Hempkins, W.B., 1977, Multivariate statistical approaches in formation evaluation, in 18th annual logging symposium transactions, paper DD: Houston, Society of Professional Well Log Analysts, 23 p.
- Henry, K.C., 1979, Gas detection in the extremely shaly Bowdoin Formation of northern Montana, in 20th annual logging symposium transactions, paper T: Houston, Society of Professional Well Log Analysts, 45 p.
- Herrick, R.C., Couturie, S.H., and Best, D.L., 1979, An improved nuclear magnetism logging system and its application to formation evaluation: Dallas, Society of Petroleum Engineers, 54th annual meeting [Las Vegas] preprint SPE-8361, 7 p.
- Herring, E.A., 1973, Estimating abnormal pressures from data in the North Sea: Dallas, Society of Petroleum Engineers, 2nd annual European meeting [London, April 2-3], preprint SPE-4301, 8 p.
- Herron, S.L., 1986, A total organic carbon log for source rock evaluation, in 27th annual logging symposium transactions, paper HH: Houston, Society of Professional Well Log Analysts, 11 p.
- Heslop, A., 1972, Gamma-ray log response of shaly sandstone: Canadian Well Logging Society Journal, v. 5(1), p. 29-38. Reprinted in 1982, Shaly sand reprint volume: Houston, Society of Professional Well Log Analysts, p. II59-II69.
- Heslop, A., 1978, Using cross-plots to quantify the effect of shaliness: Canadian Well Logging Society Journal, v. 10, p. 79-91.

- Hess, A.E., 1984, Use of a low-velocity borehole flowmeter in the study of hydraulic conductivity in fractured rock, in D.M. Nielsen and M. Curl, editors, 1984 NWWA/EPA conference on surface and borehole geophysics methods in ground water investigations, proceedings: Worthington, Ohio, National Water Well Association, p. 812-832.
- Hess, J.W., Wheatcraft, S.W., Spencer, D.D., and Adams, W.M., 1984, Evaluation of the applicability of some existing borehole instruments to hazardous waste site characterization and monitoring, in D.M. Nielsen and M. Curl, editors, 1984 NWWA/EPA conference on surface and borehole geophysics methods in ground water investigations, proceedings: Worthington, Ohio, National Water Well Association, p. 762-787.
- Hickman, S.H., Healy, J.H., and Zoback, M.D., 1985, In situ stress, natural fracture distribution and borehole elongation in the Auburn geothermal well, Auburn, New York: Journal of Geophysical Research, v. 90(B7), p. 5497-5512.
- Hietala, R.W., and Connolly, E.T., 1984, Integrated rock-log calibration in the Elmworth Field, Alberta Canada--Part II, Well log analysis methods and techniques, in J.A. Masters, editors, Elmworth--case study of a Deep Basin gas field: Tulsa, AAPG Memoir 38, p. 215-242.
- Hietala, R.W., Connolly, E.T., King, H.R., and Sneider, R.M., 1984, Integrated rock-log calibration in the Elmworth Field, Alberta Canada--Part III, Selected samples illustrating integration of rock-log data to determine reservoir petrophysical characteristics, in J.A. Masters, editors, Elmworth--case study of a Deep Basin gas field: Tulsa, AAPG Memoir 38, p. 243-282.
- Hilchie, D.W., 1977, Caliper and temperature logging, chapter 15, in L.W. LeRoy, D.O. LeRoy and J.W. Raese, editors, Subsurface geology, 4th edition: Golden, CO., Colorado School of Mines, p. 342-346.
- Hilchie, D.W., 1977, Nuclear well logging for petroleum, in J.G. Morse, editor, Nuclear methods in mineral exploration and production: New York, Elsevier, Developments in Economic Geology 7, p. 201-213.
- Hilchie, D.W., 1978, Applied openhole log interpretation: Golden, CO., D.W. Hilchie, Inc., variously paginated.
- Hilchie, D.W., 1979, Old (pre-1958) electrical log interpretation: Golden, CO., D.W. Hilchie Inc., 161 p.
- Hilchie, D.W., 1979, Cumulative index, 1960-1978--The Log Analyst, SPWLA symposium papers, SPWLA European symposium papers, CWLS symposium papers, and CWLS Journal: The Log Analyst, v. 20(1), January-February, p. 6-39.
- Hilchie, D.W., 1982, Advanced well log interpretation: Golden, CO., D.W. Hilchie, Inc., variously paginated.

- Hilchie, D.W., 1984, Reservoir description using well logs: *Journal of Petroleum Technology*, v. 36(7), p. 1067-1073. A discussion and reply published in 1984, *Journal of Petroleum Technology*, v. 36(12), p. 2195-2196.
- Hilchie, D.W., 1985, SP (spontaneous potential) hydrocarbon suppression (a conceptual approach): *Canadian Well Logging Society Journal*, v. 14, p. 43.
- Hill, D.G., 1985, Maximizing geothermal exploration drilling information with wire-line geophysical logs: *Bulletin Geothermal Resources Council*, v. 14(3), p. 19-22.
- Hilton, J., 1978, Wireline evaluation of the Devonian shale, in G.L. Schott, W.K. Overbey, Jr., A.E. Hunt, and C.A. Komar, editors, 1st eastern gas shales symposium, proceedings: Morgantown, West Virginia, U.S. Department of Energy Report MERC/SP-77/5, p. 68-79.
- Hirakawa, S., and Miyake, Y., 1983, A method for well log interpretation of a carbonate oil reservoir: *Butsuri-Tanko*, v. 36(4), p. 22-31.
- Hirakawa, S., and Yamaguchi, S., 1982, Geothermal well logging and its interpretation, in P. Kruger, H.J. Ramey and others, editors, 7th DOE geothermal reservoir engineering workshop [Stanford, California], proceedings: U.S. Department of Energy, Report CONF-811201, p. 115-119.
- Hirsch, J.M., 1981, Recent experience with wireline fracture detection logs: Dallas, Society of Petroleum Engineers, 56th annual meeting [San Antonio] preprint SPE-10333, 10 p.
- Hnatiuk, J., and Randall, A.G., 1977, Determination of permafrost thickness in wells in northern Canada: *Canadian Journal of Earth Sciences*, v. 14(3), p. 375-383.
- Hoard, R.E., 1983, Sonic waveform logging—A new way to obtain subsurface geologic information, in 24th annual logging symposium transactions, paper XX: Houston, Society of Professional Well Log Analysts, 16 p. Later published in 1985, *Oil and Gas Journal*, v. 83(26), July 1, p. 70-74.
- Hobson, G.D., and Tiratsoo, E.N., 1975, Formation evaluation, chapter 7, in *Introduction to petroleum geology*: Beaconsfield, England, Scientific Press, Ltd., p. 176-204.
- Hoffman, G.L., Jordan, G.R., and Wallis, G.R., 1982, Geophysical logging handbook for coal exploration: Edmonton, Alberta, Canada, The Coal Mining Research Centre, 270 p. The best single source for information on the tools, techniques and qualitative interpretation of logs for coal exploration.
- Hoffman, L.J.B., 1984, Determination of pyritic sulphur in coal using induced polarisation, in 25th annual logging symposium transactions, paper III: Houston, Society of Professional Well Log Analysts, 12 p.

- Holbrook, P.W., 1985, A new method for estimating hydrocarbon saturation in shaley sands for exploration applications, in 26th annual logging symposium transactions, paper GGG: Houston, Society of Professional Well Log Analysts, 27 p.
- Holgate, M.M., 1960, The microlog as a porosity datum for the neutron log in the Swan Hills field, Alberta: CIM [Canadian Institute of Mining and Metallurgy] Bulletin, v. 53, p. 324-328.
- Hollo, R., and Fifadara, H., 1981, TI-59 reservoir engineering manual, 2nd edition: Tulsa, PennWell Books, 249 p.
- Holmes, M., 1980, A new method for calculating water resistivity from logs within hydrocarbon-bearing intervals, in 21st annual logging symposium transactions, paper C: Houston, Society of Professional Well Log Analysts, 15 p.
- Holt, O.R., 1972, Structural geologic considerations in diplog interpretation, in 13th annual logging symposium transactions, paper Q: Houston, Society of Professional Well Log Analysts, 30 p. Later published in 1973, The Log Analyst, v. 14(2), March-April, p. 3-9.
- Holt, O.R., 1983, Relating diplogs to practical geology: Houston, Dresser Industries, publication no. 1603, 69 p.
- Honarpour, M., DeGroat, C., and Manj Nath, A., 1986, How temperature affects relative permeability measurement: World Oil, v. 202(5), May, p. 116-126.
- Hood, P.J., editor, 1979, Geophysics and geochemistry in the search for metallic ores [Exploration 77, Ottawa, Canada, October 1977, proceedings]: Geological Survey of Canada, Economic Geology Report no. 31, p. See case histories.
- Hood, P.J., and Dyck, A.V., 1975, Magnetic drillhole measurements in mineral exploration, in A.V. Dyck, editor, Borehole geophysics applied to metallic mineral prospecting—A review: Geological Survey of Canada Paper no. 75-31, p. 35-38.
- Hopkinson, E.C., Fertl, W.H., and Oliver, D.W., 1981, The continuous carbon/oxygen log—basic concepts and recent field experiences, in 1981 SPE Middle East oil technical conference [Manama, Bahrain, March 9-12], proceedings, SPE-9613: Dallas, Society of Petroleum Engineers. Later published in 1982, Journal of Petroleum Technology, v. 34(10), p. 2441-2448. Reprinted in 1981, in Carbon/oxygen log: Houston, Dresser Industries, publication no. 9417, paper 6.
- Hornby, B.E., and Chang, S.K., 1985, A case study of shale and sandstone alteration using a digital sonic tool in 26th annual well logging symposium transactions, paper H: Houston, Society of Professional Well Log Analysts, 10 p.
- Horner, S.C., and Sanyal, S.K., 1984, The prediction of saturation using the carbon/oxygen log: U.S. Department of Energy, Report DOE/SF/11564--9, 36 p.

- Hottman, C.E., and Johnson, R.K., 1965, Estimation of formation pressures from log-derived shale properties: *Journal of Petroleum Technology*, v. 17(6), p. 717-722, SPE-1110. Reprinted in 1971, *Well logging*: Dallas, Society of Petroleum Engineers, Reprint Series no. 1, p. 299-305. One of the first papers on the use of logs for pressure detection-evaluation.
- Howard, W.E., and Hunt, E.R., 1986, Travis Peak—An integrated approach to formation evaluation, in 1986 unconventional gas technology symposium, proceedings, SPE-15208: Dallas, Society of Petroleum Engineers, p. 7-17.
- Howell, E.P. Grant, O.J., Jr., and Crebs, T.J., 1978, Slim hole logging and analysis for uranium exploration: Dallas, Society of Petroleum Engineers, 53rd annual meeting [Houston] preprint SPE-7434. Later published 1980, *Journal of Petroleum Technology*, v. 32(7), p. 1144-1150.
- Hoyer, W.A., Simmons, S.O., Spann, M.M., and Watson, A.T., 1975, Evaluation of permafrost with logs, in 16th annual logging symposium transactions, paper AA: Houston, Society of Professional Well Log Analysts, 15 p.
- Hoyle, I.B., 1986, Computer techniques for the zoning and correlation of well-logs: *Geophysical prospecting*, v. 34(5), August, p. 648-664.
- Hsu, K, Brie, A., and Plumb, R.A., 1985, A new method for fracture identification using array sonic tools: Dallas, Society of Petroleum Engineers, 60th annual meeting [Las Vegas], preprint SPE-14397, 8 p.
- Hull, R.L., and Johnson, D.E., 1985, The Muldoon field—an evaluation of behind-casing pay zones in a freshwater environment: Dallas, Society of Petroleum Engineers, 60th annual meeting [Las Vegas], preprint SPE-14464, 5 p.
- Humphreys, D.R., Barnard, R.W., Bivens, H.M., Jensen, D.H., Stephenson, W.A., and Weinlein, J.H., 1983, Uranium logging with prompt fission neutrons, in C.G. Clayton, editor, *Nuclear geophysics—Selected papers on applications of nuclear techniques in mineral exploration, mining and process control*: Oxford, England, Pergamon Press, p. 261-268.
- Hunt, E.R., Raymond, D.H., Haskett, C.E., and Pirie, R.G., 1981, Application of new well logs and geology to fracturing and producibility in tight gas sands, Cotton Valley Group, in 1981 SPE/DOE symposium on low permeability gas reservoirs, proceedings, SPE/DOE-9832: Dallas, Society of Petroleum Engineers, p. 35.
- Hunter, J.A., 1975, Borehole geophysical methods in permafrost, in A.V. Dyck, editor, *Borehole geophysics applied to metallic mineral prospecting—A review*: Geological Survey of Canada, Paper 75-31, p. 67.
- Hunts, E.R., Walls, J.D., and Scala, C., 1985, An integrated log and core analysis study of an east Texas tight gas well, in 26th annual logging symposium transactions, paper HHH: Houston, Society of Professional Well Log Analysts, 18 p.

- Husten, P., 1979, Analysis of sonic wave trains, in 6th European formation evaluation symposium transactions, paper D: London, Society of Professional Well Log Analysts, London Chapter, 15 p.
- Hutomo, P., and Jordan, W.V., 1985, Wireline pressures detect fluid contacts, Ikan Pari field, Natuna Sea, in 14th annual convention proceedings: Jakarta, Indonesian Petroleum Association, p. 543-563.
- Hyndman, R.D., and Ade-Hall, J.M., 1972, Electrical resistivity of basalts, in T.A. Davies, editor, Initial reports of the Deep Sea Drilling Project, v. 26: Washington, D.C., Government Printing Office, 505-508.
- Hyndman, R.D., and Salisbury, M.H., 1984, The physical nature of young upper oceanic crust on the Mid-Atlantic Ridge, Deep Sea Drilling Project Hole 395A, in Initial reports of the Deep Sea Drilling Project, v. 78A: Washington, D.C., U.S. Government Printing Office, p. 839-848.
- Hyndman, R.D., Langseth, M.G., and Von Herzen, R.P., 1984, A review of Deep Sea Drilling Project geothermal measurements through leg 71, in Initial reports of the Deep Sea Drilling Project, v. 78A: Washington, D.C., U.S. Government Printing Office, p. 813-837.
- Hyne, N.J., editor, 1983, Well log response chart: Houston, PennWell Publishers, 1 sheet.

- Interstate Oil Compact Commission, 1978, Determination of residual oil saturation: Oklahoma City, Interstate Oil Compact Commission, 302 p.
- IRT Corporation, 1976, Future research in borehole assaying technology, volume 1—Technology assessment of borehole logging techniques: U.S. Bureau of Mines, Open-File Report 119(1)-76 (Contract J0255018, Final Report, March 18, 1976), 325 p.
- IRT Corporation, 1976, Future research in borehole assaying technology, volume 2—Bibliography of borehole assaying techniques, 1965-75: U.S. Bureau of Mines, Open-File Report 119(2)-76 (Contract J0255018, Final Report, March 18, 1976), 325 p.
- Itoh, T., Kato, S., and Miyairi, M., 1982, A quick method of log interpretation for very low resistivity volcanic tuff by the use of CEC data, in 23rd annual logging symposium transactions, paper NN: Houston, Society of Professional Well Log Analysts, 26 p.

- Jackson, J.A., 1984, Nuclear magnetic resonance logging: *The Log Analyst*, v. 25(5), September-October, p. 16.
- Jackson, J.A., Brown, J.A., and Crawford, T.R., 1981, Remote characterization of tight gas formations with a new NMR logging tool, in 1981 SPE/DOE symposium on low permeability gas reservoirs, proceedings, SPE/DOE-9860: Dallas, Society of Petroleum Engineers, p. 313-320.
- Jageler, A.H., 1975, Improved hydrocarbon reservoir evaluation through use of borehole gravimeter data: Dallas, Society of Petroleum Engineers, 50th annual meeting [Dallas] preprint SPE-5511, 20 p. Later published in 1976, *Journal of Petroleum Technology*, v. 28(6), p. 709-718.
- Jageler, A.H., and Matuszak, D.R., 1972, Use of well logs and dipmeters in stratigraphic-trap exploration, in R.E. King, editor, *Stratigraphic oil and gas fields—Classification, exploration methods and case histories*: Tulsa, American Association of Petroleum Geologists, Memoir no. 16, p. 107-135.
- Jain, K.C., 1982, Well logs in exploration, chapter 7, in K.C. Jain and R.J.P. deFigueiredo, editors, *Concepts and techniques in oil and gas exploration*: Tulsa, Society of Exploration Geophysicists, p. 199-226.
- Jameson, J.B., McGhee, B.F., Blackburn, J.S., and Leach, B.C., 1976, Dual-spacing TDT applications in marginal conditions: Dallas, Society of Petroleum Engineers, Rocky Mountain meeting [Casper] preprint SPE-5904. Later published in 1977, *Journal of Petroleum Technology*, v. 29(9), p. 1067-1077.
- Jamtliid, A., Manusson, K., Olsson, O., and Stenberg, L., 1984, Electrical borehole measurements for the mapping of fracture zones in crystalline rock: *Geoexploration*, v. 22, p. 203-216.
- Janssen, J.C., and Nunn, J.A., 1985, Bulk density, velocity, and porosity relationships in Tertiary sandstones of southwest Louisiana, in B.F. Perkins and G.B. Martin, editors, *Habitat of oil and gas in the Gulf Coast* [Gulf Coast Section SEPM 4th annual research conference (Houston, November 27-30, 1983), proceedings]: Houston, Gulf Coast Section Society of Economic Paleontologists and Mineralogists, p. 129-138.
- Jennings, H.Y., and Timur, A., 1973, Significant contributions in formation evaluation and well testing: *Journal of Petroleum Technology*, v. 25(12), p. 1432-1446, SPE-4704.
- Jennings, J.B., and Carroll, H.B. Jr., editors, 1982, Western tight gas sands advanced logging workshop [March 17-18, 1981], proceedings: U.S. Department of Energy, Bartlesville Energy Technology Center, Report CONF-8103113, April 1982, 253 p.
- Jensen, J.L., and Lake, L.W., 1985, Optimization of regression-based porosity-permeability predictions, in 10th formation evaluation symposium transactions, paper R: Calgary, Canadian Well Logging Society, 22 p.

- Jessop, A.M., and Judge, A.S., 1975, Temperature measurement in boreholes for the mining industry, in A.V. Dyck, editor, Borehole geophysics applied to metallic mineral prospecting--A review: Geological Survey of Canada Paper no. 75-31, p. 55-66.
- Johnson, H.D., and Stewart, D.J., 1985, Role of clastic sedimentology in the exploration and production of oil and gas in the North Sea, in P.J. Brenchley and B.P.J. Williams, editors, Sedimentology--Recent developments and applied aspects: Boston, Blackwell Scientific Publications, p. 249-310.
- Johnson, R.B., and Johnson, L.A., 1978, Investigation of a damsite utilizing drill-hole, down-hole geophysical and surface geophysical data: Association of Engineering Geologists Bulletin, v. 15(3), p. 285-294.
- Johnson, W., 1978, Effect of shale on log response: Canadian Well Logging Society Journal, v. 10(1), p. 29-57.
- Johnson, W.L., and Linke, W.A., 1977, Some practical applications to improve formation evaluation of sandstones in the Mackenzie Delta, in 6th formation evaluation symposium transactions, paper R: Calgary, Canadian Well Logging Society, 19 p. Reprinted in 1978, in 19th logging symposium transactions, paper C: Houston, Society of Professional Well Log Analysts, 19 p. Reprinted in 1982, Shaly sand reprint volume: Houston, Society of Professional Well Log Analysts, p. V47-79.
- Jones, B.R., 1972, The use of downhole gravity data in formation evaluation, in 13th annual logging symposium transactions, paper M: Houston, Society of Professional Well Log Analysts, 13 p. Later published in abridged form in 1972, as Downhole gravity tool spots distant porosity: World Oil, v. 175(2), August 1, p. 56-59.
- Jones, F.W., Lam, H.L., and Majorowicz, J.A., 1985, Temperature distributions at the Paleozoic and Precambrian surfaces and their implications for geothermal energy recovery in Alberta: Canadian Journal of Earth Science, v. 22, p. 1774-1780.
- Jones, F.W., Majorowicz, J.A., Linville, A., and Osadetz, K.G., 1986, the relationship of hydrocarbon occurrences to geothermal gradients and time-temperature indices in Mesozoic formations of southern Alberta: Bulletin of Canadian Petroleum Geology, v. 34(2), June, p. 226-239.
- Jones, J.W., Simpson, E.S., and Neuman, S.P., 1984, Geophysical investigation of fractured crystalline rock near Oracle, Arizona, in D.M. Nielsen and M. Curl, editors, 1984 NWWA/EPA conference on surface and borehole geophysics methods in ground water investigations, proceedings: Worthington, Ohio, National Water Well Association, p. 877-896.
- Jones, P.H., 1977, Geopressured geothermal energy in the south-central United States--Frontier areas and exploration techniques, chapter 11, in M.D. Campbell, editor, Geology of alternate energy resources in the south-central United States: Houston, Houston Geological Society, p. 215-250.

- Jones, R.L., 1982, Bootstrapping your way into TDT analysis: The Log Analyst, v. 23(4), July-August, p. 3-13.
- Jorden, J.R., and Campbell, F.L., 1984, Well logging I--Rock properties, borehole environment, mud and temperature logging: Dallas, Society of Petroleum Engineers, Monograph Series No. 9, 167 p.
- Jorden, J.R., and Campbell, F.L., 1986, Well logging II--Electric and acoustic logging: Dallas, Society of Petroleum Engineers, Monograph Series No. 10, 192 p.
- Joyner, H.D., 1975, A correlation of electric-log-indicated reservoir temperature with actual reservoir temperature - southwest Louisiana: Journal of Petroleum Technology, v. 27(2), p. 181-182.
- Juhasz, I., 1986, Assessment of the distribution of shale, porosity and hydrocarbon saturation in shaly sands, in 10th European formation evaluation symposium transactions, paper AA: Aberdeen, Society of Professional Well Log Analysts, Aberdeen Chapter, 15 p.
- Julian, P.J., 1982, Fracture detection techniques in the Georgetown and Austin chalk formations: Dallas, Society of Petroleum Engineers, 57th annual meeting [New Orleans] preprint SPE-11035.

- Kapadia, S.P., and Menzie, D.E., 1985, Determination of permeability variation factor V from log analysis: Dallas, Society of Petroleum Engineers, 60th annual meeting [Las Vegas], preprint SPE-14402, 10 p.
- Kartawidjaja, F., and Luciani, J.P., 1985, The streaming SP—A flow indicator, in 14th annual convention proceedings: Jakarta, Indonesian Petroleum Association, p. 611-633.
- Karus, E.V., and Shimelevich, Y.S., 1983, Nuclear geophysics in prospecting, exploration and development of oil and gas fields, in C.G. Clayton, editor, Nuclear geophysics—Selected papers on applications of nuclear techniques in mineral exploration, mining and process control: Oxford, England, Pergamon Press, p. 95-117.
- Kashik, A.S., Gogonenkov, G.N., and Sokhranov, N.N., 1980, Use of well logging for defining oil and gas pool limits, in Tenth world petroleum congress, proceedings volume 3: London, Heyden, p. 157-163.
- Katz, D.L., 1970, Depths to which frozen gas fields (gas hydrates) may be expected: Dallas, Society of Petroleum Engineers, 45th annual meeting [Houston] preprint SPE-3061. Later published in 1971, Journal of Petroleum Technology, v. 23(4), p. 419-423.
- Kayal, J.R., 1979, Electrical and gamma-ray logging in Gondwana and Tertiary coal fields of India: Geoexploration, v. 17, p. 243-258.
- Kayal, J.R., 1981, Correlation of T-log with E-log in coal-bearing formations: Pure and Applied Geophysics, v. 119, p. 349-355.
- Kayal, J.R., 1981, In situ analysis of coal from single electrode resistance, self-potential and gamma-ray logs: Geophysical Research Bulletin, v. 19(2), p. 117-121.
- Kayal, J.R., and Christoffel, D.A., 1982, Relationship between electrical and thermal resistivities for differing grades of coal: Geophysics, v. 47(1), p. 127-129. Discussion and Reply in 1982, Geophysics, v. 47(10), p. 1461.
- Kayal, J.R., and Das, L.K., 1981, A method of estimating ash content of coal from combined resistivity and gamma-ray logs: Geoexploration, v. 19, p. 193-200.
- Kayal, J.R., Datta, S., and Madhusudan, I.C., 1982, Resistance and self-potential logging for copper deposits: Geophysical Research Bulletin, v. 20(4), p. 157-161.
- Keelan, D., 1985, Coring, part 8—Plug and full diameter analysis: World Oil, v. 201(6), November, p. 103-111.
- Keelan, D.K., and McGinley, D.C., 1979, Application of cation exchange capacity in a study of the Shannon Sand of Wyoming, in 20th annual logging symposium transactions, paper W: Houston, Society of Professional Well Log Analysts.

- Keet, B., 1982, Temperature log analysis with a pocket calculator—Interpretation program for discrete temperature logs in small-diameter well: *Geologie en Mijnbouw*, v. ?, p. 293-295.
- Kehle, R.O., Schoeppel, R.J., and Deford, R.K., 1970, The AAPG geothermal survey of North America [U.N. symposium on the development and utilization of geothermal resources (Pisa, Italy)]: *Geothermics*, special issue no. 2, part 1, p. 358-367.
- Keith, B.D., and Pittman, E.D., 1983, Bimodal porosity in oolitic reservoir—Effect on productivity and log response, Rodessa Limestone (Lower Cretaceous), East Texas Basin: *AAPG Bulletin*, v. 67(9), p. 1391-1399.
- Keller, G.V., 1967, Induced polarization well logging, in 8th annual logging symposium transactions, paper W: Houston, Society Of Professional Well Log Analysts, 16 p.
- Keller, G.W., 1970, Application of resistivity methods in mineral and groundwater exploration programs, in L.W. Morely, editor, *Mining and groundwater geophysics—1967: Geological Survey of Canada Economic Geology Report 26*, p. 51-66.
- Kelley, D.R., 1969, A summary of major geophysical logging methods: *Pennsylvania Geological Survey Bulletin M61*, 82 p.
- Kemp, F., 1982, An algorithm for the stratigraphic correlation of well logs: *Mathematical Geology*, v. 14(3), p. 271-285.
- Kenyon, W.E., and Baker, P.L., 1984, EPT interpretation in carbonates drilled with salt muds: Dallas, Society of Petroleum Engineers, 59th annual meeting [Houston] preprint SPE-13192. Later published in 1986, *SPE Formation Evaluation*, v. 1(5), p. 521-531.
- Kern, J.W., Hoyer, W.A., and Spann, M.M., 1976, Low porosity gas sand analysis using cation exchange and dielectric constant data, in 17th annual logging symposium transactions, paper PP: Houston, Society Of Professional Well Log Analysts, 17 p. Reprinted in 1982, *Shaly sand reprint volume*: Houston, Society of Professional Well Log Analysts, p. 169-185.
- Kersey, D.G., 1986, Coring, part 9—Geological aspects: *World Oil*, v. 202(1), January, p. 103-108.
- Kerzner, M.G., 1983, Formation dip determination—An artificial intelligence approach: *The Log Analyst*, V. 24(5), September-October, P. 10-22.
- Kerzner, M.G., 1986, *Image processing in well log analysis*: Boston, IHRDC Press, 140 p.
- Kerzner, M.G., and Frost, E., Jr., 1982, Blocking—A new technique for well log interpretation: Dallas, Society of Petroleum Engineers, 57th annual meeting [New Orleans] preprint SPE-11093, 14 p. Later published in 1984, *Journal of Petroleum Technology*, v. 36(2), p. 267-275.

- Keys, W.S., 1970, Borehole geophysics as applied to groundwater, in L.W. Morley, editor, Mining and groundwater geophysics--1967: Geological Survey of Canada, Economic Geology Report no. 26, p. 598-614.
- Keys, W.S., 1979, Borehole geophysics in igneous and metamorphic rocks, in 20th annual logging symposium transactions, paper OO: Houston, Society of Professional Well Log Analysts, 26 p. Later published in 1979, The Log Analyst, v. 20(4), July-August, P. 14-28. Reprinted in 1982, Geothermal log interpretation handbook: Houston, Society of Professional Well Log Analysts, p. III-177 - III-191.
- Keys, W.S., 1980, The application of the acoustic televiewer to the characterization of hydraulic fractures in geothermal wells, in Raft River well stimulation experiments, geothermal reservoir well stimulation program: U.S. Department of Energy, Report DOE/AL/10563-T7, p. A1-A11.
- Keys, W.S., 1982, Borehole geophysics in geothermal exploration, in A.A. Fitch, editor, Developments in geophysical exploration methods--3: London, Applied Science Publishers, p. 239-268.
- Keys, W.S., 1982, Location and character of fractures in geothermal wells, in Fractures in geothermal reservoirs: Geothermal Resources Council, Special Report no. 12, p. 17-27.
- Keys, W.S., 1984, A synthesis of borehole geophysical data at the Underground Research Laboratory, Manitoba, Canada: U.S. Department of Energy, Battelle Project Management Division, Report BMI/OCRD-15, 43 p.
- Keys, W.S., and MacCary, L.M., 1971, Application of borehole geophysics to water-resources investigations: U.S. Geological Survey, Techniques of Water-Resources Investigations, book 2, chapter E1, 126 p. A revised and expanded edition is currently in preparation.
- Keys, W.S., and MacCary, L.M., 1973, Location and characteristics of the interface between brine and fresh water from geophysical logs of boreholes in the upper Brazos River basin, Texas: U.S. Geological Survey Professional Paper no. 809-B, 23 p.
- Keys, W.S., and Sullivan, J.K., 1979, Role of geophysics in defining physical characteristics of the Raft River geothermal reservoir, Idaho: Geophysics, v. 44(6), p. 1116-1141.
- Khatchikian, A., 1982, Log analysis of oil-bearing igneous rocks, in 23rd annual logging symposium transactions, paper AA: Houston, Society of Professional Well Log Analysts, 34 p. Later published in condensed form 1983, World Oil v. 197(7), December, p. 79-98.
- Khatchikian, A., and Lesta, P., 1973, Log evaluation of tuffites and tuffaceous sandstones in southern Argentina, in 14th annual logging symposium transactions, paper K: Houston, Society of Professional Well Log Analysts, 23 p.

- Kholin, S.V., 1984, Location of outburst prone zones within coal beds from correlation functions of well logs: *Geophysical Journal*, v. 5(6), p. 945-950.
- Kiefte, H., Clouter, M.J., and Gagnon, R.E., 1985, Determination of acoustic velocities of clathrate hydrates by Brillouin spectroscopy: *Journal of Physical Chemistry*, v. 89, p. 3103-3108.
- Kierstein, R.A., 1984, True location and orientation of fractures logged with the acoustic televiewer (including programs to correct fracture identification): U.S. Geological Survey Water-Resources Investigations Report 83-4275, 73 p.
- Killeen, P.G., 1975, Nuclear techniques for borehole logging in mineral exploration, in A.V. Dyck, editor, *Borehole geophysics applied to metallic mineral prospecting—A review*: Geological Survey of Canada Paper no. 75-31, p. 39-52.
- Killeen, P.G., 1979, Gamma ray spectrometric methods in uranium exploration—Application and interpretation, in P.J. Hodd, editor, *Geophysics and geochemistry in the search for metallic ores [Exploration 77, Ottawa, Canada, October 1977, proceedings]*: Geological Survey of Canada, Economic Geology Report no. 31, p. 163-229.
- Killeen, P.G., 1982, Gamma-ray logging and interpretation, in A.A. Fitch, editor, *Developments in geophysical exploration methods—3*: London, Applied Science Publishers, p. 95-150.
- Killeen, P., 1983, Borehole logging for uranium by measurement of natural gamma-radiation: *International Journal of Applied Radioactive Isotopes*, v. 34(1), p. 231-260. Also published in 1984, in C.G. Clayton, editor, *Nuclear geophysics—Selected papers on applications of nuclear techniques in mineral exploration, mining and process control*: Oxford, England, Pergamon Press, p. 231-260.
- Killeen, P.G., editor, 1985, *Borehole geophysics for mining and geotechnical applications [International symposium and workshop, Ottawa, Ontario, August 29-31, 1983, proceedings]*: Geological Survey of Canada, Paper no. 85-27. Available in 1986.
- King, M.S., and McConnell, B.V., 1975, Fracture evaluation with acoustic log in dry borehole, in E.R. Hoskins, Jr., editor, *Applications of rock mechanics [15th symposium on rock mechanics, (September 17-19, 1973) proceedings]*: New York, American Society of Civil Engineers, p. 273-292.
- Kirkpatrick, R.J., 1979, Results of downhole geophysical logging hole 396b, DSDP leg 46, in *Initial reports of the Deep Sea Drilling Project*, v. 46: Washington, D.C., U.S. Government Printing Office, p. 401-407. Also published in 1979 as *The physical state of the oceanic crust—Results of downhole geophysical logging in the mid-Atlantic ridge at 23°N*: *Journal of Geophysical Research*, v. 84(B1), p. 178-188.
- Kiss, B., and Toth, J., 1985, Well log interpretation of metamorphic hydrocarbon-bearing formations: *First Break*, v. 3(5), may, p. 24-31.

- Klein, G. deV., 1980, Sandstone depositional models for exploration for fossil fuels: Minneapolis, Cepco Division, Burgess Publishing Co., 149 p.
- Klein, G. deV., 1984, Vertical sequences and log shapes of major sandstone reservoir systems: Boston, IHRDC Press, 1 sheet.
- Kleinberg, R.L., Chow, E.Y., Plona, T.J., Orton, M., and Canady, W.J., 1982, Sensitivity and reliability of fracture detection techniques for borehole application: Dallas, Society of Petroleum Engineers, 57th annual meeting [New Orleans] preprint SPE-11036, 8 p.
- Kloosterman, R.A., and Brom, R.W.C., 1977, Application of wireline logging techniques in the assessment of surface mineable coal, in A. Priyono, C. Long, and R. Sweatman, editors, The Indonesian mining industry, its present and future [1st Indonesian mining symposium, (Jakarta, June 14-16), proceedings]: Jakarta, Indonesian Mining Association, p. 408-429.
- Knight, B.L., and Davarzani, M.J., 1984, Injection well logging using viscous EOR fluids: Dallas, Society of Petroleum Engineers, 59th annual meeting [Houston] preprint SPE-13143. Later published in 1986, SPE Formation Evaluation, v. 1(3), p. 300-308.
- Knutson, C.F., 1984, Reservoir evaluation and geologic modeling for the Clinton eastern tight gas formation, phase I final report: U.S. Department of Energy, Morgantown Center Report DOE/MC/21148, 73 p.
- Knutson, C.F., and Boardman, C.R., 1978, Continuity and permeability development in the tight gas sands of the eastern Uinta Basin, Utah: U.S. Department of Energy, Report NVO/0011-1, 54 p.
- Koepnick, R.B., 1985, Distribution and permeability of stylolite-bearing horizons within a Lower Cretaceous carbonate reservoir in the Middle East: Dallas, Society of Petroleum Engineers, 60th annual meeting [Las Vegas], preprint SPE-14173, 7 p.
- Koerperich, E.A., 1974, Applications of Waxman-Smiths and Archie equations for determination of oil saturation in shaly sand reservoirs: Dallas, Society of Petroleum Engineers, 49th annual meeting [Houston] preprint SPE-5038. Later published 1975, Journal of Petroleum Technology, v. 27
- Koerperich, E.A., 1977, Investigation of acoustic boundary waves and interference patterns as techniques for detecting fractures: Dallas, Society of Petroleum Engineers, 52nd annual meeting [Denver] preprint SPE-6820. Later published in 1978, Journal of Petroleum Technology, v. 30(8), p. 1199-1207.
- Koerperich, E.A., 1979, Shear wave velocities determined from long- and short-spaced borehole acoustic devices: Dallas, Society of Petroleum Engineers, 54th annual meeting [Las Vegas] preprint SPE-8237. Later published in 1980, Society of Petroleum Engineers Journal, v. 20(5), p. 317-326.
- Koizumi, C.J., 1980, Thin, dipping ore zone logging models—Log studies: U.S. Department of Energy, Report GJBX-54(80), March, 43 p.

- Koizumi, C.J., 1985, Computer determination of calibration and environmental corrections for a natural spectral gamma ray logging system: Dallas, Society of Petroleum Engineers, 60th annual meeting [Las Vegas], preprint SPE-14186, 12 p.
- Kork, J.O., 1981, FENCE—A computer program to create files of borehole data and to construct fence sections of boreholes interactively: U.S. Geological Survey, Open-File Report 81-0183, 62 p.
- Kork, J.O., 1986, JKDIT, a program to control a digitizing board for geologists, written in BASIC for an IBM Personal Computer: U.S. Geological Survey, Bulletin 1616, 69 p.
- Kostecke, S.T., 1980, Speed of hand-calculator programs can be improved: Oil and Gas Journal, v. 78(32), August 11, p. 107-116.
- Kovacs, G., 1981, Exploration and exploitation of deep groundwaters, section 14, in Subterranean hydrology: Littleton, Colorado, Water Resources Publications, p.609-683.
- Kowalski, J.J., 1975, Formation strength parameters from well logs, in 16th annual logging symposium transactions, paper N: Houston, Society of Professional Well Log Analysts, 19 p. Reprinted in 1978, Acoustic logging: Houston, Society of Professional Well Log Analysts, Reprint Volume, paper Z, 19 p.
- Kowalski, J.J., and Asekun, S.O., 1979, It may not be shale, in 20th annual logging symposium transactions, paper P: Houston, Society of Professional Well Log Analysts, 15 p. Also published in 1979, in 7th formation evaluation symposium transactions, paper G: Calgary, Canadian Well Logging Society.
- Kowalski, J., and Fertl, W.H., 1977, Application of geophysical well logging to coal mining operations: Energy Sources, v. 3(2), p. 133-147.
- Kowalski, J., and Holter, M.E., 1975, Coal analysis from well logs: Dallas, Society of Petroleum Engineers, 50th annual meeting reprint SPE-5503. Later published in 1976, Canadian Well Logging Society Journal, v. 9(1), p. 97-113.
- Krueger, W.C., 1968, Depositional environments of sandstones as interpreted from electrical measurements—An introduction: Transactions of the Gulf Coast Association of Geological Societies, v. 18, p. 226-241.
- Kuchurin, E.S., Zaramenskikh, N.M., and Lebrezon, L.M., 1976, The geologic efficiency of using nuclear geophysical well-logging methods to study boreholes in the main types of gold ore deposits in the eastern Transbaikal region [translated from the Russian]: Geological Survey of Canada Library, Report no. 461877, January 15, 1985, 6 p.
- Kukal, G.C., 1978, Log evaluation of compacted shaly sands of the Mesaverde Group, Uinta Basin, Utah, in 4th annual DOE symposium on enhanced oil and gas recovery and improved drilling methods, proceedings, volume 2, paper E-1: U.S. Department of Energy, 18 p.

- Kukal, G.C., 1979, Formation evaluation and gas detection in shallow, low-permeability shaly sands of the Northern Great Plains province, in 1979 SPE symposium on low permeability gas reservoirs, proceedings, SPE-7920: Dallas, Society of Petroleum Engineers, p. 85-98. Later published in 1981, Journal of Petroleum Technology, v. 33(10), p. 1976-1984.
- Kukal, G.C., 1981, Determination of fluid corrected porosity in tight gas sands and in formations exhibiting shallow invasion profiles, in 1981 SPE symposium on low permeability gas reservoirs, proceedings, SPE-9856: Dallas, Society of Petroleum Engineers, p. 289-299.
- Kukal, G.C., 1983, Log analysis in low-permeability gas sand sequence—Correcting for variable unflushed gas saturation, in 23rd annual logging symposium transactions, paper F: Houston, Society of Professional Well Log Analysts, 18 p.
- Kukal, G.C., 1984, A systematic approach for the effective log analysis of tight gas sands, in SPE/DOE/GRI unconventional gas recovery symposium, proceedings, SPE/DOE/GRI-12851: Dallas, Society of Petroleum Engineers, p. 209-220.
- Kukal, G.C., Biddison, C.L., Hill, R.E., Monson, E.R., and Simons, K.E., 1983, Critical problems hindering accurate log interpretation of tight gas sand reservoirs, in 1983 SPE/DOE symposium on low permeability gas reservoirs, proceedings, SPE/DOE-11620: Dallas, Society of Petroleum Engineers, p. 181-190.
- Kukal, G.C., Biddison, C.L., Hill, R.E., Monson, E.R., and Simons, K.E., 1983, Tight gas sands log interpretation—Problem study: Chicago, Gas Research Institute, final report GRI-82/0094, July 1982, 181 p.
- Kukal, G.C., and Hill, R.E., 1986, Log analysis of clay volume—An evaluation of techniques and assumptions used in an Upper Cretaceous sand-shale sequence, in 27th annual logging symposium transactions, paper RR: Houston, Society of Professional Well Log Analysts, 21 p.
- Kukal, G.C., and Simons, K.E., 1985, Log analysis techniques for quantifying the permeability of sub-millidarcy sandstone reservoirs, in 1985 SPE/DOE symposium on low permeability reservoirs, proceedings, SPE/DOE-13880: Dallas, Society of Petroleum Engineers, p. 303-310. Later published in SPE Formation Evaluation, v. 1(6), December, p. 609-622.
- Kuustera, V.A., and Hammershaimb, E.C., 1983, Handbook of gas hydrate properties and occurrence: U.S. Department of Energy, Report DOE/MC/19239-1546, 234 p.
- Kvenvolden, K.A., and McDonald, T.J., 1985, Gas hydrates of the Middle America Trench—Deep Sea Drilling Project leg 84, in S. Orlofsky, editor, Initial Reports of the Deep Sea Drilling Project, v. 84: Washington, D.C., U.S. Government Printing Office, p. 667-682.
- Kwader, T., 1982, Interpretation of geophysical logs in shallow carbonate environments and their applications to ground water resource investigations: T. Kwader Inc., 201 p.

- Kwader, T., 1984, Estimating aquifer permeability from formation resistivity factors, in D.M. Nielsen and M. Curl, editors, 1984 NWWA/EPA conference on surface and borehole geophysics methods in ground water investigations, proceedings: Worthington, Ohio, National Water Well Association, p. 713-721.
- Kwader, T., 1984, The use of geophysical logs for determining formation water quality, in D.M. Nielsen and M. Curl, editors, 1984 NWWA/EPA conference on surface and borehole geophysics methods in ground water investigations, proceedings: Worthington, Ohio, National Water Well Association, p. 833-841. Later published in 1986, Ground Water, v. 24(1), p. 11-15.
- Kwader, T., 1985, Resistivity-porosity cross plots for determining in situ formation water quality--Case examples, in 1985 NWWA conference on surface and borehole geophysical methods in ground water investigations [Fort Worth, Texas, February 12-14], proceedings: Worthington, Ohio, National Water Well Association, p. 415-424.

- Lachance, D.P., and Winston, R.T., 1985, Recognition of waterflood sweep and formation lithology in a giant Egyptian oil field by applied petrophysics: Dallas, Society of Petroleum Engineers, 60th annual meeting [Las Vegas], preprint SPE-14277, 8 p.
- LaFehr, T.R., 1983, Rock density from borehole gravity surveys: *Geophysics*, v. 48(3), p. 341-356.
- Lalouel, P., 1979, Log interpretation in deltaic sequences, in 8th annual convention, proceedings: Indonesian Petroleum Association, p. 247-290.
- Lam, H.L., and Jones, F.W., 1982, A statistical analysis of bottom-hole temperature data in the Hinton area of west-central Alberta: *Tectonophysics*, v. 103, p. 273-281.
- Lam, H.L., and Jones, F.W., 1986, An investigation of the potential for geothermal energy recovery in the Calgary area in southern Alberta, Canada, using petroleum exploration data: *Geophysics*, v. 51(8), p. 1661-1670.
- Lam, H.L., Jones, F.W., and Majorowicz, J.A., 1985, A statistical analysis of bottom-hole temperature data in southern Alberta: *Geophysics*, v. 50(4), p. 677-684.
- Lane, R.A., and MacPherson, L.A., 1974, A review of geopressure evaluation from well logs--Louisiana Gulf Coast: Dallas, Society of Petroleum Engineers, 49th annual meeting [Houston] preprint SPE-5033, 16 p. Later published in 1976, *Journal of Petroleum Technology*, v. 28(9), p. 963-971.
- Lang, W.H., Jr., 1972, Porosity-resistivity cross-plotting, in 13th annual logging symposium transactions, paper F: Houston, Society of Professional Well Log Analysts, 9 p. Later published in 1973, *The Log Analyst*, v. 14(1), January-February, p. 16-20.
- Lang, W.H., Jr., 1978, Determination of prior depth of burial using interval transit time, in 19th annual logging symposium transactions, paper B: Houston, Society of Professional Well Log Analysts. Later published in 1980, *Oil and Gas Journal*, v. 78(4), January 28, p. 222-232.
- Lang, W.H., 1980, Determination of prior depth of burial using interval transit time: *Oil and Gas Journal*, v. 78(4), January 28, p. 222-232.
- Lang, W.H., Jr., 1986, Correlation with multiple logs: *The Log Analyst*, v. 27(1), January-February, p. 43-52.
- Lanning, E.N., and Johnson, D.M., 1983, Automated identification of rock boundaries--An application of the Walsh transform to geophysical well-log analysis: *Geophysics*, v. 48(2), p. 197.
- Lanyon, G.W., 1986, Interactive computer analysis of borehole televiewer data, in 10th European formation evaluation symposium transactions, paper S: Aberdeen, Society of Professional Well Log Analysts, Aberdeen Chapter, 14 p.

- Lapointe, P., Morris, W.A., and Harding, K.L., 1986, Interpretation of magnetic susceptibility--A new approach to geophysical evaluation of the degree of rock alteration: Canadian Journal of Earth Sciences, v. 23(3), p. 393-401.
- Laramie Energy Research Center, 1981, A bibliography of publications dealing with tar sands: U.S. Department of Commerce, National Technical Information Service, Report DOE/LETG/RI-81-2 (DE81-026146), 294 p.
- Larkin, T.J., and Taylor, P.W., 1979, Comparison of downhole and laboratory shear-wave velocities: Canadian Geotechnical Journal, v. 16(1), p. 152-162.
- Lauman, J., 1985, Basic well log analysis using the HP-11C: Geobyte, v. 1(1), Winter, p. 108.
- Lavers, B.A., and Smits, L.J.M., 1976, Recent developments in coal petrophysics, in 17th annual logging symposium transactions, paper S: Houston, Society of Professional Well Log Analysts, 19 p. Reprinted in 1976 in W.L.G. Muir, editor, Coal exploration [1st international coal exploration symposium, (London, May 18-21), proceedings]: San Francisco, Miller Freeman Publications Inc., p. 129-152. Later published in 1977, The Log Analyst, v. 18(1), January-February, p. 6-16.
- Lawrence, T.D., Ball, S., and Harris, M., 1984, Continuous carbon/oxygen and neutron lifetime log proposed interpretation for organic and/or shaly depositional environments, in 25th annual logging symposium transactions, paper QQ: Houston, Society of Professional Well Log Analysts, 19 p.
- Lawrence, T.D., Ball, S., and Harris, M., 1984, Continuous carbon/oxygen and neutron lifetime log proposed interpretation for organic and/or shaly depositional environments, in 25th annual logging symposium transactions, paper QQ: Houston, Society of Professional Well Log Analysts, 19 p.
- Le Blanc, R.J., Sr., 1976, Distribution and continuity of sandstone reservoirs, part I and part II: Dallas, Society of Petroleum Engineers, 51st annual meeting [New Orleans] preprint SPE-6137A,B. Later published in 1977, Journal of Petroleum Technology, v. 29(9), p. 776-804.
- LeBlanc, D.P., 1982, Shaly sand and carbonate analysis on the HP-41C: Canadian Well Logging Society Journal, v. 11, p. 31-41.
- LeBlanc, D.P., 1983, Enhanced shaly sands and carbonate analysis on the HP-41C: Canadian Well Logging Society Journal, v. 12, p. 135-145.
- Lebreton, F., and Vaubourg, P., 1983, Contribution of well logs to determining permeability and porosity in crystalline rocks, in J.B.W. Day, editor, Recent advances in hydrogeological research in France: Institute of Geological Sciences, Natural Environment Research Council Report 82-6, p. 21-30.
- Leeth, R., and Cossette, B., 1979, The velocity ratio plot in tight Canadian carbonate formations, in 7th formation evaluation symposium transactions, paper X: Calgary, Canadian Well Logging Society, 17 p.

- Leeth, R., and Holmes, M., 1978, Log interpretation of shaly formations using the velocity ratio plot, in 19th annual logging symposium transactions, paper CC: Houston, Society of Professional Well Log Analysts, 9 p.
- Leslie, H.D., and Mons, F., 1982, Sonic waveform analysis—Applications, in 23rd annual logging symposium transactions, paper GG: Houston, Society of Professional Well Log Analysts, 25 p.
- Lesso, W.G., Jr., and Burgess, T.M., 1986, Pore pressure and porosity from MWD measurements, in 1986 IADC/SPE drilling conference, proceedings, IADC/SPE-14801: Dallas, Society of Petroleum Engineers, p. 643-656.
- Levine, E.N., Cybriwsky, Z.A., and Toksoz, M.N., 1984, Detection of permeable rock fractures and estimation of hydraulic conductivity by 3-D vertical seismic profiling, in D.M. Nielsen and M. Curl, editors, 1984 NWWA/EPA conference on surface and borehole geophysics methods in ground water investigations, proceedings: Worthington, Ohio, National Water Well Association, p. 853-876.
- Lewkowicz, J.f., Resichman, R., and Walsh, J.J., 1983, Results from open hole and cased hole vertical seismic profiles, in 24th annual logging symposium transactions, paper MM: Houston, Society of Professional Well Log Analysts, 13 p.
- Lindberg, P.H., and Fertl, W.H., 1980, Occurrence and distribution of overpressures in the northern North Sea: Dallas, Society of Petroleum Engineers, 55th annual meeting [Dallas] preprint SPE-9339, 21 p.
- Lindseth R.O., 1979, Synthethic sonic logs—A process for stratigraphic interpretation: Geophysics, v. 44(1), p. 3-26.
- Lindseth, R.O., and Ward, J.A., 1983, Delineation of hydrocarbon reservoirs with synthethic sonic logs, in AAPG stratigraphic interpretation of seismic data [course notes, Colorado Springs, Colorado, November 29-December 3]: Tulsa, American Association of Petroleum Geologists, 80 p.
- Lindsey, G.P., 1985, Dry hole resistivity logging, in 1985 NWWA conference on surface and borehole geophysical methods in ground water investigations [Fort Worth, Texas, February 12-14], proceedings: Worthington, Ohio, National Water Well Association, p. 371-376.
- Linehan, J.M., and Sutterlin, P.G., 1986, WSULOG, microcomputer-based well-log evaluation for carbonate reservoirs in Kansas [with source code in Fortran 77]: Computers & Geosciences, v. 12(4B), p. 499-517.
- Littleton, R.T., and Burnett, E.E., 1976, The salinity profile of the East Mesa Field as determined from dual induction resistivity and SP logs, in 1st EPA workshop on sampling geothermal effluents, proceedings: U.S. Environmental Protection Agency, Report EPA-600/9-76-011, p. 114-125.
- Liu, O.Y., 1985, Fracture evaluation using borehole sonic velocity measurements: Dallas, Society of Petroleum Engineers, 60th annual meeting [Las Vegas], preprint SPE-14399, 8 p.

- Lloyd, P.M., Dahan, C., and Hutin, R., 1986, Formation imaging with micro electrical scanning arrays—a new generation of stratigraphic high resolution dipmeter tool, in 10th European formation evaluation symposium transactions, paper L: Aberdeen, Society of Professional Well Log Analysts, Aberdeen Chapter, 19 p.
- Lock, B.E., 1982, Towards a better understanding of Gulf Coast Miocene deep water sediments: Transactions of the Gulf Coast Association of Geological Societies, v. 32, p. 283-288.
- Logar, J.F., editor, 1983, Schlumberger well evaluation conference—West Africa 1983 [Libreville, October]: Paris, Schlumberger Technical Services, variously paginated.
- Looyestijn, W.J., 1982, Deconvolution of petrophysical logs—Applications and limitations, in 23rd annual logging symposium transactions, paper W: Houston, Society of Professional Well Log Analysts, 20 p. A discussion of improving the vertical resolution of different logging tools.
- Loren, J.D., 1972, Permeability estimates from NML measurements: Dallas, Society of Petroleum Engineers, 47th annual meeting reprint SPE-3334. Later published in 1972, Journal of Petroleum Technology, v. 24(8), p. 923-928.
- Lovborg, L., 1972, Assessment of uranium by gamma-ray spectrometry, in S.H.U. Bowie, M. Davis and D.Ostle, editors, Uranium prospecting handbook [1971 NATO advanced study institute, proceedings]: London, The Institution of Mining and Metallurgy, p. 157-173.
- Lovborg, L., Nyegaard, P., Christiansen, E.M., Nielsen, B.L., 1980, Borehole logging for uranium by gamma-ray spectrometry: Geophysics, v. 45(6), p. 1077-1090.
- Lowe, T.A., and Dunlap, H.F., 1986, Estimation of mud filtrate resistivity in fresh water drilling muds: The Log Analyst, v. 27(2), March-April, p. 77-84.
- Lubecki, A., Doebele, R., and Herrmann, W., 1982, Direct uranium logging using X-ray fluorescence technique, in Symposium on uranium exploration methods [Paris, June 1-4, 1982], proceedings: Paris, Nuclear Energy Agency, Organization for Economic Cooperation and Development, p. 821-835.
- Lui, O.Y., 1986, A new method of fracture detection using borehole sonic velocity measurements, in 10th European formation evaluation symposium transactions, paper R: Aberdeen, Society of Professional Well Log Analysts, Aberdeen Chapter, 13 p.
- Lyons, D.J., and van de Kamp, P.C., 1980, Subsurface geological and geophysical study of the Cerro Prieto Geothermal Field, Baja California, Mexico: Lawrence Berkeley Laboratory, Report LBL-10540, 95 p.

- MacCary, L.M., 1978, Interpretation of well logs in a carbonate aquifer: U.S. Geological Survey, Water-Resources Investigations no. 78-88, 30 p. Later published in 1983 as Geophysical logging in carbonate aquifers: Ground Water, v. 21(3), p. 324-342.
- MacCary, L.M., 1980, Use of geophysical logs to estimate water-quality trends in carbonate aquifers: U.S. Geological Survey, Water-Resources Investigations no. 80-57, 23 p.
- MacCary, L.M., 1984, Relation of formation factor to depth of burial in aquifers along the Texas Gulf Coast, in D.M. Nielsen and M. Curl, editors, 1984 NWWA/EPA conference on surface and borehole geophysics methods in ground water investigations, proceedings: Worthington, Ohio, National Water Well Association, p. 722-742.
- Maciula, E.A., and Cochrane, J.E., 1967, Quantitative use of calibration data to correct miscalibrated well logs: Dallas, Society of Petroleum Engineers, 42nd annual meeting [Houston] preprint SPE-1940. Later published in 1968, Journal of Petroleum Technology, v. 20(7), p. 663-670.
- Magara, K., 1976, Thickness of removed sedimentary rocks, paleopore pressure, and paleotemperature, southwestern part of western Canada basin: AAPG Bulletin, v. 60(4), p. 554-565. Valuable uses of sonic log data.
- Magara, K., 1978, Compaction and fluid migration—Practical petroleum geology: New York, Elsevier Scientific Publishing Company, Developments in Petroleum Science, no. 9, 319 p.
- Magara, K., 1979, Formation water salinity and its exploration application, in 7th formation evaluation symposium transactions, paper S: Calgary, Canadian Well Logging Society, 8 p.
- Magara, K., 1979, Identification of sandstone body types by computer method: Journal of the International Association for Mathematical Geology, v. 11(3), p. 269-283.
- Magara, K., 1981, Direct estimate of hydrocarbon volume from a conductivity log: Journal of the Japanese Association of Petroleum Technologists [Sekiyu Gijutsu Kyokaishi] v. 46(3), p. 183-188.
- Magnusson, K.A., and Duran, O., 1984, Comparison between core log and hydraulic and geophysical measurements in boreholes: Geoexploration, v. 22, p. 169-186.
- Mair, B.F., and Adams, J.T., 1986, An approach to the sedimentological interpretation of dipmeter results, in 10th European formation evaluation symposium transactions, paper N: Aberdeen, Society of Professional Well Log Analysts, Aberdeen Chapter, 22 p.
- Majorowicz, J.A., Jones, F.W., Lam, H.L., and Jessop, A.M., 1985, Terrestrial heat flow and geothermal gradients in relation to hydrodynamics in the Alberta basin, Canada: Journal of Geodynamics, v. 4(1-4), p. 265-283.

- Malone, R.D., Mroz, T.H., and Dominic, K.L., 1986, Geologic analysis of gas hydrate deposits, in 1986 unconventional gas technology symposium, proceedings, SPE-15224: Dallas, Society of Petroleum Engineers, p. 193-202.
- Mann, C.J., 1979, Obstacles to quantitative lithostratigraphic correlation, in D. Gill and D.F. Merriam, editors, Geomathematical and petrophysical studies in sedimentology: New York, Pergamon Press, p. 149-165.
- Mann, C.J., and Dowell, T.P.L., Jr., 1977, Quantitative lithostratigraphic correlation of subsurface sequences: Computers and Geosciences, v. 4, p. 295-306.
- Manning, M.J., and Athavale, K.A., 1986, Dielectric properties of pyrite samples at 1100 MHz: Geophysics, v. 51(1), p. 172-182.
- Maple, L., 1985, A crossplot approach to electromagnetic propagation tool (EPT) interpretation, in 26th annual logging symposium transactions, paper N: Houston, Society of Professional Well Log Analysts, 18 p.
- Mares, S., 1984, Geophysical logging, chapter 7, in Introduction to applied geophysics: Boston, D. Reidel Publishing Co., p. 474-568.
- Marett, G., Chevalier, P., Souhaite, P., and Suau, J., 1976, Shaly sand evaluation using gamma ray spectrometry applied to the North Sea Jurassic, in 17th annual logging symposium transactions, paper DD: Houston, Society of Professional Well Log Analysts, 20 p. Reprinted in 1982, Shaly sand reprint volume: Houston, Society of Professional Well Log Analysts, p. IV43-IV63.
- Marmissolle-Daguerre, D., editor, 1984, Schlumberger well evaluation conference—Mexico 1984 [Mexico City, September] [in Spanish]: Paris, Schlumberger Technical Services, variously paginated.
- Martin, K.I., 1982, The application of log-derived transmissibility in well completion design and well performance evaluation, in 11th annual convention proceedings, volume 1: Jakarta, Indonesian Petroleum Association, p. 401-414.
- Mathews, D.M., and Bassiouni, Z., 1984, Resistivity-spontaneous potential crossplot for enhanced interpretation of well logs: The Log Analyst, v. 25(4), July-August, p. 14-19.
- Mathews, M., 1985, Logging characteristics of methane hydrate, in 10th formation evaluation symposium transactions, paper K: Calgary, Canadian Well Logging Society, 62 p. Later published in 1986, The Log Analyst, v. 27(3), May-June, p. 26-63.
- Mathews, M., and LaDelfe, C., 1981, Log comparison and quantification, in 8th formation evaluation symposium transactions, paper I: Calgary, Canadian Well Logging Society.

- Mathews, M., Salisbury, M.H., and Hyndman, R., 1984, Basement logging on the Mid-Atlantic Ridge, Deep Sea Drilling Project hole 395A, in Initial reports of the Deep Sea Drilling Project, v. 78A: Washington, D.C., U.S. Government Printing Office, p. 717-730.
- Mathews, M.A., and von Huene, R., 1985, Site 570 methane hydrate zone, in S. Orlofsky, editor, Initial reports of the Deep Sea Drilling Project, v. 84: Washington, D.C., U.S. Government Printing Office, p. 773-790.
- Mathieu, F., and Toksoz, M.N., 1984, Application of full waveform acoustic logging data to the estimation of reservoir permeability: Tulsa, Society of Exploration Geophysicists, Expanded Abstracts with Biographies, 1984 Technical Program, p. 9-12.
- Mathieu, F., and Toksoz, M.N., 1984, Determination of fracture permeability using acoustic logs, in 9th international formation evaluation symposium transactions, paper 47: Paris, Society of Professional Well Log Analysts, Paris Chapter (SAID), 39 p.
- Mathur, S.P., 1977, Borehole geophysical methods, in V.L.S. Bhimasankaram and V.K. Gaur, editors, Lectures on exploration geophysics for geologists and engineers: Hyderabad, India, The Association of exploration Geophysicists, p. 265-286.
- Matthews, W.R., McClendon, R.T., and Soucek, C.R., 1972, How to predict formation pressures of Cretaceous-Jurassic age sediments in Mississippi in 3rd symposium on abnormal subsurface pore pressure, proceedings, SPE-3895: Dallas, Society of Petroleum Engineers, p. 137-144.
- Matuszak, D.R., 1972, Stratigraphic correlation of subsurface geologic data by computer: Mathematical Geology, v. 4(4), p. 331-343. Discussion of Holgate crossplots.
- Maute, R.E., and Gournay, L.S., 1985, Determination of residual oil saturation with the borehole gavity meter, in 4th Middle East oil technology conference, proceedings, SPE-13703: Dallas, Society of Petroleum Engineers, p. 185-190.
- Maxant, J., 1975, Distribution and regional variation of density in the western Canada basin: Geophysics, v. 40(1), p. 56-78.
- Maxant, J., 1980, Variation of density with rock type, depth, and formation in Western Canada basin from density logs: Geophysics, v. 45(6), p. 1061-1076.
- May, J.A., and Eyles, D.R., 1985, Well log and seismic character of Tertiary Terumbu carbonate, South China Sea, Indonesia: AAPG Bulletin, v. 69(9), p. 1339-1358.
- Mayer, R., Jr., and Fishel, K.W., 1979, Applications of electric logs in Appalachian coal exploration, in 6th European logging symposium transactions, paper DD: London, Society of Professional Well Log Analysts, London Chapter, 18 p.

- McCabe, P.J., 1984, Depositional environments of coal and coal-bearing strata in R.A. Rahmani and R.M. Flores, editors, *Sedimentology of coal and coal-bearing sequences*: Oxford, England, Blackwell Publishers, International Association of Sedimentologists, Special Publication no. 7, p. 13-42.
- McCall, C., Van Gonten, W.D., and Osoba, J.S., 1971, The effect of hydrocarbons on the SP opposite sands, in 12th annual logging symposium transactions, paper C: Houston, Society of Professional Well Log Analysts, 20 p.
- McCann, D.M., and McCann, C., 1976, The application of borehole acoustic logging techniques in engineering geology, in 4th european formation evaluation symposium transactions, paper N: London, Society of Professional Well Log Analysts, London Chapter, 22 p. Later published in 1977, *The Log Analyst*, v. 18(3), May-June, p. 30-37.
- McCann, D.M., Barton, K.J., and Hearn, K., 1983, Geophysical well logging in a crystalline rock mass, in 8th formation evaluation symposium transactions, paper G: London, Society of Professional Well Log Analysts London Chapter, 25 p.
- McCluskey, L.D., 1986, Moveable hydrocarbon determination--fact, fancy, or differential pressure, in 27th annual logging symposium transactions, paper A: Houston, Society of Professional Well Log Analysts, 13 p.
- McConnell, C.L., 1983, Spontaneous potential corrections for ground-water salinity calculations; Carter County, Oklahoma, U.S.A.: *Journal of Hydrology*, v. 65, p. 363-372.
- McConnell, C.L., 1985, Time dependence of the equivalent water resistivity in fresh water wells: *The Log Analyst*, v. 26(3), May-June, p. 12-17.
- McConnell, C.L., 1985, Salinity and temperature anomalies over structural oil fields, Carter County, Oklahoma: *AAPG Bulletin*, v. 69(5), p. 781-787.
- McConnell, C.L., 1986, Equivalent mud filtrate resistivities in fresh water wells: *The Log Analyst*, v. 27(2), March-April, p. 85-90.
- McCoy, R.L., 1983, *PETROCALC 1--Reservoir engineering and formation evaluation*: Houston, Gulf Publishing Co., 144 p. For IBM, Apple, and HP.
- McCoy, R.L., Kumar, R.M. and Pease, R.W., 1980, Fracture identification in Devonian shales using conventional well logs, in 11th annual Appalachian petroleum geology symposium: West Virginia Geological and Economic Survey, Circular C-16, p. 16-28. A condensed version published in 1980, *Identifying fractures with conventional well logs*: *World Oil*, v. 191(7), December, p. 91-98.
- McCoy, R.L., and Smith R.F., 1979, The use of interlog relationships for geological and geophysical evaluations, in 20th annual logging symposium transactions, paper G: Houston, Society of Professional Well Log Analysts.

- McCulloh, T.H., Kandle, J.R., and Schoellhamer, 1968, Application of gravity measurements in wells to problems of reservoir evaluation, in 9th annual logging symposium transactions, paper O: Houston, Society of Professional Well Log Analysts, 28 p.
- McGinley, T.R., and McKnight, T.N., Jr., 1984, Log-derived stratigraphic reservoir description: Dallas, Society of Petroleum Engineers, Transactions of the 1984 Permian Basin oil and gas recovery conference [Midland, March 8-9], SPE-12597, p. 179-188.
- McGlothlin, R.E., and Krause, H., 1980, Water base drilling fluids, in Research on environmental fate and effects of drilling fluids and cuttings symposium, proceedings, volume I: U.S. Department of Energy, Report DOE/CONF-800172, p. 30-37. A concise description of the composition and uses of commonly used water-based drilling muds.
- McGovney, J.E., and Radovich, B.J., 1985, Seismic stratigraphy and facies of the Frigg fan complex, in O.R. Berg and D.G. Woolverton, editors, Seismic stratigraphy II—An integrated approach to hydrocarbon exploration: Tulsa, American Association of Petroleum Geologists, Memoir no. 39, p. 139-154.
- McGregor, J.R., 1965, Quantitative determination of reservoir pressures from conductivity logs: AAPG Bulletin, v. 49(9), p. 1502-1511. Reprinted in 1974, Abnormal subsurface pressure: Tulsa, American Association of Petroleum Geologists, Reprint Series 11, p. 37-46. One of the first papers on pressure detection using well logs.
- McGuire, J.A., Rogers, L.T., and Watson, J.T., 1985, Improved lithology and hydrocarbon saturation determination using the gamma spectrometry log: Dallas, Society of Petroleum Engineers, 60th annual meeting [Las Vegas], preprint SPE-14465, 9 p.
- McKay, A.S., and O'Connell, L.P., 1976, The permafrost density logger: The Journal of Canadian Petroleum Technology, v. 15(1), p. 69-74.
- McKinley, R.M., 1982, Production logging, in International petroleum exhibition and technical symposium [Beijing] proceedings, SPE-10035: Dallas, Society of Petroleum Engineers, p. 563-594. Reprinted in 1985, Production logging: Dallas, Society of Petroleum Engineers, reprint series 19, p. 176-207.
- McMordie, W.C. Jr., 1980, Oil base drilling fluids, in Research on environmental fate and effects of drilling fluids and cuttings symposium, proceedings, volume I: U.S. Department of Energy, Report DOE/CONF-800172, p. 38-42. A concise description of the composition and uses of oil-based drilling muds.
- McNitt, J.R., Sanyal, S.K., and Peterson, C.A., 1981, Synergistic interpretation of formation characteristics of a low temperature geothermal well in Susanville, California: Geothermal Resources Council Transactions, v. 5, p. 303-306.
- Meehan, D.N., and Vogel, E.L., 1982, HP-41 reservoir engineering manual: Tulsa, PennWell Books, 364 p.

- Meissner, F.F., 1978, Petroleum geology of the Bakken Formation Williston basin, North Dakota and Montana, in Williston basin symposium: Montana Geological Society, p. 207-227. Later reprinted in 1984, in G.Demaision and R.J. Murris, editors, Petroleum geochemistry and basin evaluation: Tulsa, American Association of Petroleum Geologists, Memoir no. 35, p. 159-179.
- Mendelson, J.D., and Toksoz, M.N., 1985, Source rock characterization using multivariate analysis of log data, in 26th annual logging symposium transactions, paper UU: Houston, Society of Professional Well Log Analysts, 21 p.
- Merkel, R.H., 1979, Well log formation evaluation: Tulsa, American Association of Petroleum Geologists, Continuing Education Course Note Series No. 14, 82 p.
- Merkel, R.H., and Head, W.J., 1977, The use of computerized log analysis to determine in situ lithologic characteristics pertinent to secondary recovery: Bulletin of Canadian Petroleum Geologists, v. 25(2), May, p. 291-304.
- Merritt, R.D., 1986, Exploration and mapping methods, chapter 3, in Coal exploration, mine planning and development: Park Ridge, New Jersey, Noyes Publications, p. 33-68.
- Merritt, R.D., 1986, Depositional modeling methods, chapter 5, in Coal exploration, mine planning and development: Park Ridge, New Jersey, Noyes Publications, p. 74-116.
- Merritt, R.K., 1979, Geophysical measurements in the permafrost zone, Canadian Arctic Islands, in W.J. Scott and R.J.E. Brown, editors, Permafrost field methods and permafrost geophysics [Saskatoon, Canada, October 3-4, 1977], proceedings: Ottawa, Canada, Associate Committee on Geotechnical Research, Technical Memorandum no. 124, p. 56-72.
- Messineo, A.V., 1980, The use of computers in log interpretation to evaluate complex reservoirs, in Tenth world petroleum congress, proceedings, volume 3: London, Heyden, p. 171-179.
- Meyer, B.L., and Nederlof, M.H., 1984, Identification of source rocks on wireline logs by density/resistivity and sonic transit time/resistivity crossplots: AAPG Bulletin v. 68(2), p. 121-129.
- Mickam, J.T., Levy, B.S., and Lee, G.W., Jr., 1984, Detection of fractures and solution channels in karst terranes using natural gamma ray and hole caliper borehole logs, in D.M. Nielsen and M. Curl, editors, 1984 NWWA/EPA conference on surface and borehole geophysics methods in ground water investigations, proceedings: Worthington, Ohio, National Water Well Association, p. 801-811.
- Middleton, M.F., 1979, A model for bottom-hole temperature stabilization: Geophysics, v. 44(8), p. 1458-1462.

- Middleton, M.F., 1979, Correlation between well log and surface resistivity measurements; a case study in the Eromanga Basin, Queensland: Bulletin of Australian Society of Exploration Geophysicists, v. 10(2), p. 176-178.
- Miller, M.S., and Moore, M., 1980, Geophysical logging and exploration techniques in the Appalachian coal fields: Dallas, Society of Petroleum Engineers, 55th annual meeting [Dallas] preprint SPE-9466.
- Minear, J.W., 1982, Clay models and acoustic velocities: Dallas, Society of Petroleum Engineers, 57th annual meeting [New Orleans] preprint SPE-11031, 11 p.
- Minear, J.W., 1986, Full wave logging—A brief perspective, in 27th annual logging symposium transactions, paper AAA: Houston, Society of Professional Well Log Analysts, 20 p.
- Minear, J.W., and Ajam, S.O., 1984, Full wave acoustic logging—some examples, in 5th offshore South East Asia conference [February 21-24, Singapore], proceedings, SPE-12399: Dallas, Society of Petroleum Engineers, 13 p.
- Minne, J.C., and Gartner, J., 1979, Fracture detection in the Middle East, in 1979 Middle East oil technical conference, proceedings, SPE-7773: Dallas, Society of Petroleum Engineers, p. 183-190.
- Misk, A., Mowat, G.R., Goetz, J.F., Vivet, B., 1977, Effects of hole conditions on log measurement and formation evaluation, in 5th European logging symposium transactions, paper 22: Paris, Society of Professional Well Log Analysts, Paris Chapter (SAID), 16 p. Reprinted in 1978, in Measuring accuracy of parameters used in formation evaluation in the North Sea, Norwegian Petroleum Society conference [10/30-11/2/77]: Oslo, Norwegian Information Publishers, p. 21-37.
- Mitchell-Tapping, H.J., 1983, Petrophysical evaluation of the Smackover oomoldic porosity of East Texas and Southern Arkansas: The Log Analyst, v. 24(4), July-August, p. 3-13.
- Mitchell-Tapping, H.J., 1986, Depositional environment determination using a SSP-resistivity method: The Log Analyst, v. 27(2), March-April, p. 15-20.
- Mok, J.S., editor, 1985, Schlumberger well evaluation conference—China 1985 [Beijing, September]: Paris, Schlumberger Technical Services, 359 p.
- Moll, S.H., 1980, Spectral gamma logging in the Copper Mountain uranium district—A case study in fractured quartz monzonite, in, 21st annual logging symposium transactions, paper O: Houston, Society of Professional Well Log Analysts, 18 p.
- Montgomery, R.J., Taylor, R.W., Koch, H.A., 1985, Use of downhole geophysical methods in determining the internal structure of a large landfill, in 1985 NWWA conference on surface and borehole geophysical methods in ground water investigations [Fort Worth, Texas, February 12-14], proceedings: Worthington, Ohio, National Water Well Association, p. 377-386.

- Moore, C.V., and Kaufman, R.L., 1981, Your unsuspected problems—Fluid resistivity and water analysis, in 22nd annual logging symposium transactions, paper C: Houston, Society of Professional Well Log Analysts, 15 p.
- Moore, D.C., 1980, Interpretation of total gamma logs in thin and dipping beds: *Geophysics*, v. 45(1)2, p. 1847-1856.
- Moos, D., 1984, A case study of vertical seismic profiling in fractured crystalline rock, in M. Simaan, editor, *Advances in geophysical data processing*, volume 1: Greenwich, Connecticut, JAI Press, p. 9-37.
- Moos, D., and Zoback, M.D., 1983, In situ studies of velocity in fractured crystalline rocks: *Journal of Geophysical Research*, v. 88(B3), March 10, p. 2345-2358.
- Moran, J.H., and Chemali, R., 1985, Focused resistivity logs in A.A. Fitch, editor, *Developments in geophysical exploration methods—6*: London, Elsevier Applied Science Publishers, p. 225-260.
- Morgan, W.D., and Hertzog, R.C., 1983, The application of induced gamma-ray spectroscopy in cased hole formation evaluation in Sumatra, Indonesia, in 12th annual convention proceedings, v. 2: Jakarta, Indonesian Petroleum Association, p. 275-300.
- Morin, R.H., 1985, Physical properties of calcareous sediments from the southwest Pacific, chapter 31, in J.P. Kennett and C.C. von der Borch, editors, *Initial reports of the Deep Sea Drilling project*, volume 90: Washington, D.C., U.S. Government Printing Office, p. 1239-1246.
- Morris, R.L., Grine, D.R., and Arkfeld, T.E., 1964, Using compressional and shear acoustic amplitudes for the location of fractures: *Journal of Petroleum Technology*, v. 16(6), p. 623-632.
- Mosa, M.M., 1983, Lithology computer program—Three minerals plus shale contamination and porosity, appendix 2, in S.J. Pirson, *Geologic well log analysis*, 3rd edition: Houston, Gulf Publishing Company, p. 343-362.
- Moss, B., and Harrison, R., 1985, Statistically valid log analysis method improves reservoir description: Dallas, Society of Petroleum Engineers, Offshore Europe conference [Aberdeen, 9/10-13/85], SPE-13981 32 p.
- Mraz, T.J., Rajeshwar, K., and Dubow, J.B., 1982, Thermophysical characterization of oil sands, part 2, acoustic properties: *Fuel*, v. 61(3), p. 240-244.
- Muramoto, F.S., and Elders, W.A., 1984, Identification of zones of progressive hydrothermal metamorphism from wireline logs and their correlation to reservoir temperatures in the Salton Sea and Westmorland geothermal systems, Imperial Valley, California, in C.A. Rigsby, editor, *The Imperial basin tectonics, sedimentation, and thermal aspects*: Los Angeles, Society of Economic Paleontologists and Mineralogists, Pacific Section, p. 87-95.

- Murphy, R.P., Foster, G.T., and Owens, W.W., 1976, Evaluation of waterflood residual oil saturations using log-inject-log procedures, in 4th SPE-AIME symposium on improved oil recovery [Tulsa], proceedings: Dallas, Society of Petroleum Engineers. Later published in 1977, Journal of Petroleum Technology, v. 29(2), p. 178-186.
- Murphy, R.P., and Owens, W.W., 1971, A new approach for low resistivity sand log analysis: Dallas, Society of Petroleum Engineers, 46th annual meeting [New Orleans] preprint SPE-3569. Later published in 1972, Journal of Petroleum Technology, v. 24(11), p. 1302-1306.
- Murphy, R.P., and Owens, W.W., 1972, The use of special coring and logging procedures for defining reservoir residual oil saturations [Symposium on improved oil recovery, Tulsa]: Dallas, Society of Petroleum Engineers, SPE-3793. Later published in 1973, Journal of Petroleum Technology, v. 25(7), p. 841-850.
- Murphy, W.F., III, 1984, Acoustic measures of partial gas saturation in tight sandstones: Journal of Geophysical Research, v. 89(B13), p. 11,549-11,559.
- Murthy, V.R., and Gupta, A.K., 1982, Evaluation of formation porosities in Bombay High field using cased hole compensated neutron log: Bulletin ONGC [India Oil Natural Gas Commission], v. 19(2), December, p. 243-256.
- Mwenifumbo, C.J., 1985, Application of borehole geophysics in exploration of gold, in 26th annual logging symposium transactions, paper DD: Houston, Society of Professional Well Log Analysts, 24 p.
- Mwenifumbo, C.J., Urbancic, T.I., and Killeen, P.G., 1983, Preliminary studies on gamma ray spectral logging in exploration for gold, in Current Research, part A: Geological Survey of Canada Paper no. 83-1A, p. 391-397.
- Myung, J.I., 1976, Fracture investigation of the Devonian shale using geophysical well logging techniques: Dallas, Society of Petroleum Engineers, Eastern region annual meeting preprint SPE-6366, 16 p. Also published in 1976 in R.C. Shumaker and W.K. Overbey, Jr., editors, 7th Appalachian petroleum geology symposium, proceedings: Morgantown, West Virginia, U.S. Department of Energy Report MERC/SP-76/2, p. 212-238, (these proceedings were also published by West Virginia Geological and Economic Survey, p. 1-29.)
- Myung, J.I., and Baltosser, R.W., 1977?, Fracture evaluation by the borehole logging method: Tulsa, Birdwell Division, Seismograph Service Corporation, 28 p.

- Nargowalla, S.S., Kung, A., Legrady, O.J., Strever, J., Csillag, A., and Seigel, H.O., 1977, Nuclear Metalog grade logging in mineral deposits, in Nuclear techniques and mineral resources 1977: Vienna, International Atomic Energy Agency, p. 229-265.
- Nations, J.F., 1974, Lithology and porosity from acoustic shear and compressional wave transit time relationships, in 15th annual logging symposium transactions, paper Q: Houston, Society of Professional Well Log Analysts, 16 p. Later published in 1975, *The Log Analyst*, v. 16(6), November-December, p. 3-8. Reprinted in 1978, *Acoustic logging*: Houston, Society of Professional Well Log Analysts, Reprint Volume, paper Y, 16 p.
- Neasham, J.W., 1977, The morphology of dispersed clay in sandstone reservoir and its effect on sandstone shaliness, pore space and fluid flow properties: Dallas, Society of Petroleum Engineers, 52nd annual meeting [Denver] preprint SPE-6858, 8 p. Reprinted in 1982, *Shaly sand reprint volume*: Houston, Society of Professional Well Log Analysts, p. I87-I94.
- Neitzel, E.B., and Kan, T.K., 1984, Reconciliation of measurement differences observed from seismic, well logs, and VSP: Tulsa, Society of Exploration Geophysicists, Expanded Abstracts with Biographies, 1984 Technical Program, p. 25-28.
- Nelms, C.A., 1976, Application of electric well logging techniques to identifying coal beds in the Powder River Basin, Wyoming: U.S. Geological Survey Open-File Report 76-581, 20 p.
- Nelson, H.W., and Glaister, R. P., 1978, Subsurface environmental facies and reservoir relationships of the McMurray oil sands, northeastern Alberta: *Bulletin of Canadian Petroleum Geology*, v. 26(2), June, p. 177-207.
- Nelson, P.H., and Glenn, W.E., 1975, Influence of bound water on the neutron log in mineralized igneous rock, in 16th annual logging symposium transactions, paper M: Houston, Society of Professional Well Log Analysts, 9 p.
- Nelson, R.A., 1985, Geologic analysis of naturally fractured reservoirs: Houston, Gulf Publishing Company, Contributions in Petroleum Geology and Engineering Series, volume 1, 320 p.
- Neuman, C.H., 1983, Application of the nuclear magnetism log and electromagnetic propagation tool to define steam potential in heavy oil reservoirs, in 12th annual convention proceedings, volume 2: Jakarta, Indonesian Petroleum Association, p. 265-273.
- Neuman, C.H., and Brown, R.J.S., 1981, Applications of nuclear magnetism logging to formation evaluation: Dallas, Society of Petroleum Engineers, 56th annual meeting [San Antonio] preprint SPE-10108, 10 p. Later published in 1982, *Journal of Petroleum Technology*, v. 34(12), p. 2853-2862.

- Newmark, R.L., Anderson, R.N., Moos, D., and Zoback, M.D., 1985, Sonic and ultrasonic logging of hole 504B and its implications for the structure, porosity, and stress regime of the upper 1 km of the oceanic crust, in Initial reports of the the Deep Sea Drilling Project, v. 83: Washington D.C., U.S. Government Printing Office, p. 479-510. Also published in 1985 as, Structure, porosity and stress regime of the upper oceanic crust--Sonic and ultrasonic logging of DSDP hole 504B: Tectonophysics, v. 118, p. 1-42.
- Newmark, R.L., Zoback, M.D., and Anderson, R.N., 1984, Orientation of in situ stresses in the oceanic crust: Nature, v. 311, October 4, p. 424-429.
- Newmark, R.L., Zoback, M.D., and Anderson, R.N., 1985, Orientation of the in situ stresses near the Coast Rica rift and Peru-Chile trench--Deep Sea Drilling Project Hole 504B, in Initial reports of the Deep Sea Drilling Project, v. 83: Washington, D.C., U.S. Government Printing Office, p. 511-515.
- Newnham, L.A., and Packer, T.W., 1983, Development and application of energy-dispersive X-ray fluorescence borehole loggers and drill core analysers at the Renison tin mine in Tasmania, in C.G. Clayton, editor, Nuclear geophysics--Selected papers on applications of nuclear techniques in mineral exploration, mining and process control: Oxford, England, Pergamon Press, p. 345-352.
- Noble, J.E., and Abril G.A., 1979, Analysis of Cerro Prieto well logs--Some results and problems: Geothermics, v. 8, p. 191-200.
- Norris, J.O., and Thomas, R., 1980, An in situ coal quality prediction technique: Dallas, Society of Petroleum Engineers, 55th annual meeting [Dallas] preprint SPE-9467, 9 p.
- Norris, S.E., 1972, The use of gamma logs in determining the character of unconsolidated sediments and well construction features: Ground Water, v. 10(6), p. 14-21.
- Norwood, E.M., 1974, Lithofacies mapping--A descriptive tool for ancient delta systems of the Louisiana outer continental shelf: Transactions of the Gulf Coast Association of Geological Societies, v. 24, p. 175-188.
- Nuhfer, E.B., and Nurmi, R.D., 1976, Bibliography of references for recognition of depositional environment from wireline log data: West Virginia Geological and Economic Survey, Mineral Briefs Series, 15 p.
- Nur, A., and Raible, C., 1983, Sonic and electrical properties of partially saturated tight gas sands: U.S. Department of Energy, Report DOE/BC/10498-5, March 1983, 54 p.
- Nurmi, R.D., 1978, Use of well logs in evaporite sequences, in W.E. Dean and B.C. Schreiber, editors, Marine evaporites: Tulsa, Society of Economic Paleontologists and Mineralogists, Short Course Notes No. 4, p. 144-176.

- Nurmi, R.D., 1984, Geological evaluation of high resolution dipmeter data, in 25th annual logging symposium transactions, paper YY: Houston, Society of Professional Well Log Analysts, 23 p.
- Nurmi, R.D., 1985, Eolian sandstone reservoirs--bedding facies and production geology modeling: Dallas, Society of Petroleum Engineers, 60th annual meeting [Las Vegas], preprint SPE-14172, 8 p.
- Nyberg, O., Lindberg, P.A., Lien, K., and Smistad, J.K., 1978, Mineral composition, an aid in classical log analysis used in Jurassic sandstones of the northern North Sea, in 19th annual logging symposium transactions, paper M: Houston, Society of Professional Well Log Analysts, 35 p.
- Nydegger, G.L., Rice, D.D., and Brown, C.A., 1979, Development of shallow gas reserves in low-permeability reservoirs of Late Cretaceous age, Bowdoin Dome area, north-central Montana, in 1979 SPE symposium on low permeability gas reservoirs, proceedings, SPE-7945: Dallas, Society of Petroleum Engineers, p. 315-323. Later published in 1980, Journal of Petroleum Technology, v. 32(12), p. 2111-2120.

- O'Brian, W.J., Brown, S.L., and Sanyal, S.K., 1982, Crossplot technique for the analysis of the carbon/oxygen log, in California regional meeting, proceedings, SPE-10740: Dallas, Society of Petroleum Engineers, p. 243-266.
- O'Brian, W.J., Sanyal, S.K., and Brown, S.L., 1983, Comprehensive analysis of the carbon/oxygen log: U.S. Department of Energy, Report DOE/ET/12056-28, January 1983, 69 p.
- Ogbe, D., and Bassiouni, Z., 1978, Estimation of acquifer permeabilities from electric well logs: The Log Analyst, v. 19(5), September-October, p. 21-27.
- Ogilvy, R.D., 1985, Down-hole IP/resistivity prospecting in mineral drill-holes--Some illustrative field examples: Geoexploration, v. 23, p. 257-273.
- Oliver, D.W., Wyatt, D.F., Jr., and Smith, H.D., Jr., 1986, Reservoir monitoring with the thermal multigate decay log, in 1986 SPE Permian Basin oil and gas recovery conference, proceedings, SPE-14137: Dallas, Society of Petroleum Engineers, p. 7-26. Also published in 1986, in 1986 SPE international meeting on petroleum engineering [Beijing, China, March 17-20], proceedings: Dallas, Society of Petroleum Engineers, p. 217-236.
- Olsen, R.S., 1982, Depositional environment of Jurassic Smackover Sandstones, Thomasville Field, Rankin County Mississippi: Transactions of the Gulf Coast Association of Geological Societies, v. 32, p. 59-66.
- Olson, D.M., 1986, Calibration of log and core saturation data--case history from the San Ardo field, in 27th annual logging symposium transactions, paper Z: Houston, Society of Professional Well Log Analysts, 11 p.
- Omnes, G., 1978, The vertical seismic profile--A bridge between velocity logs and surface seismograms: Dallas, Society of Petroleum Engineers, 53rd annual meeting [Houston] preprint SPE-7436, 12 p.
- Omnes, G., 1979, Logs from P and S vertical seismic profiles: Dallas, Society of Petroleum Engineers, 54th annual meeting [Las Vegas] preprint SPE-8364. Later published in 1980, Journal Petroleum Technology, v. 32(10), p. 1843-1849.
- Oristaglio, M.L., 1985, A guide to current use of vertical seismic profiles: Geophysics, v. 50(12), p. 2473-2479.
- Osoba, J., Gist, R., and Carroll, H., 1980, Porosity determination from density logs in western gas sands, in 21st annual logging symposium transactions, paper JJ: Houston, Society of Professional Well Log Analysts, 10 p.
- Osoba, J., Gist, R., and Carroll, H., 1981, Log evaluation techniques in Uinta basin found faulty: World Oil, v. 192(6), June, p. 235-244.

- Osoba, J.S., and Raible, C.J., 1982, Study of sonic, neutron and density logging of low permeability gas sands: U.S. Department of Energy, Bartlesville Energy Technology Center, Report DOE/BC/00010-33, May 1982, 63 p.
- Osterkamp, T.E., and Payne, M.W., 1981, Estimates of permafrost thickness from well logs in northern Alaska: Cold Regions Science and Technology, v. 5, p. 13-27.
- Overton, A., 1975, Borehole gravimetry, in A.V. Dyck, editor, Borehole geophysics applied to metallic mineral prospecting--A review: Geological Survey of Canada, Paper 75-31, p. 31-34.
- Overton, A., 1975, Borehole seismic methods, in A.V. Dyck, editor, Borehole geophysics applied to metallic mineral prospecting--A review: Geological Survey of Canada Paper no. 75-31, p. 3-12.
- Overton, H.L., 1978, Appraisal of water movement from subsurface data: The Log Analyst, v. 19(5), September-October, p. 3-20.
- Owen, J.D., 1975, Log analysis of Ekofisk field, in J.E. Kastrop, editor, Oil and gas production handbook: Dallas, Petroleum Engineer Publishing Co., p. 14-21.
- Oxburgh, E.R., and Andrews-Speed, C.P., 1981, Temperature, thermal gradients and heat flow in the southwestern North Sea, in L.V. Illing and G.D. Hobson, editors, Petroleum geology of the continental shelf of north-west Europe: London, Heyden & Sons, Ltd., p. 141-151.

- Pachett, P.G., Berry W.R., II, Burlingame, R.W., Moore, C.V., Spalding, J.S., Wichmann, P.A., and Woodhouse, R., 1986, Problematic overview--A series of six studies on difficult log analysis, in 27th annual logging symposium transactions, paper NNN: Houston, Society of Professional Well Log Analysts, 23 p.
- Paillet, F.L., 1981, A comparison of fracture characterization techniques applied to near-vertical fractures in a limestone reservoir, in 22nd annual logging symposium transactions, paper XX: Houston, Society of Professional Well Log Analysts, 29 p.
- Paillet, F.L., 1985, Applications of borehole-acoustic methods in rock mechanics, in E. Ashworth, editor, Research and engineering applications in rock masses [26th U.S. symposium on rock mechanics, South Dakota School of Mines and Technology, Rapid City, 26-28 June, proceedings]: Boston, A.A. Balkema, p. 207-220.
- Paillet, F.L., 1985, Problems in fractured-reservoir evaluation and possible routes to their solution: The Log Analyst, v. 26(6), November-December, p. 26-41.
- Paillet, F.L., and Keys, W.S., 1984, Applications of borehole geophysics in characterizing the hydrology of fractured rocks, in D.M. Nielsen and M. Curl, editors, 1984 NWWA/EPA conference on surface and borehole geophysics methods in ground water investigations [San Antonio, February 7-9], proceedings: Worthington, Ohio, National Water Well Association, p. 743-761.
- Paillet, F.L., Keys, W.S., and Hess, A.E., 1985, Effects of lithology on televiewer log quality and fracture interpretation, in 26th annual logging symposium transactions, paper JJJ: Houston, Society of Professional Well Log Analysts, 31 p.
- Paillet, F.L., and Kim, K., 1985, The character and distribution of borehole breakouts and their relationship to in situ stresses in deep Columbia River basalts: Richland, Washington, Rockwell Hanford Operations Report RHO-BW-CR-155, December, 27 p. Also submitted to Geophysics.
- Paillet, F.L., and Turpening, R., 1984, Borehole and surface-to-borehole seismic applications in fracture characterization: Tulsa, Society of Exploration Geophysicists, Expanded Abstracts with Biographies, 1984 Technical Program, p. 333-334.
- Palomino Cardenas, J.R., and Carozzi, A.V., 1979, Sedimentology and electric log interpretation of the Cabo Blanco Sandstone (Lower Eocene), Talara Basin, northeast Peru: Archives des Sciences [Societe de Physique et d'Histoire Naturelle de Geneve], v. 32(2), p. 127-149.
- Pape, H., Riepe, L and Schopper, J.R., 1984, Calculating permeability from electrical logging data, in 9th international formation evaluation symposium transactions, paper 22: Paris, Society of Professional Well Log Analysts, Paris Chapter (SAID), 11 p.

- Passaretti, M., Eslinger, E., and Hinterlong, G., 1986, High gamma ray zone from a core within a Permian dolostone sequence: Dallas, Society of Petroleum Engineers, unsolicited paper SPE-15333, 12 p.
- Pasternack, E.S., and Goodwill, W.P., 1983, Applications of digital borehole televiewer logging, in 24th annual logging symposium transactions, paper X: Houston, Society of Professional Well Log Analysts, 12 p.
- Patchett, J.G., 1975, An investigation of shale conductivity, in 16th annual symposium transactions, paper U: Houston, Society of Professional Well Log Analysts, 41 p. Reprinted in 1982, Shaly sand reprint volume: Houston, Society of Professional Well Log Analysts, p. I95-I135.
- Patchett, J.G., 1986, The determination of the properties of clays in shales from logs with an example of one interpretation technique, in 10th European formation evaluation symposium transactions, paper P: Aberdeen, Society of Professional Well Log Analysts, Aberdeen Chapter, 23 p.
- Patchett, J.G., and Coalson, E.B., 1982, The determination of porosity in sandstone and shaly sandstone, part 2—Effects of complex mineralogy and hydrocarbons, in 23rd annual logging symposium transactions, paper T: Houston, Society of Professional Well Log Analysts, 50 p.
- Paul, J.M., Venuto, P.B., and Lundahl, R.B., 1984, In-Situ leaching of south Texas uranium ores, part 3—Post-leach assessment of recovery and sweep efficiency: Dallas, Society of Petroleum Engineers, 57th annual meeting [New Orleans], preprint SPE-11044. Later published in 1984, Journal of Petroleum Technology, v. 36(10), p. 1018-1026.
- Payre, X., and Serra O., 1979, Turbidites recognized through dipmeter, in 6th European logging symposium transactions, paper K: London, Society of Professional Well Log Analysts, London Chapter, 26 p.
- Pearson, C.F., Halleck, P.M., McGuire, P.L., Hermes, R., and Mathews, M., 1983, Natural gas hydrate deposits—A review of in-situ properties: Journal of Physical Chemistry, v. 87, p. 4180-4185.
- Pecine, R.J., Welbridge, E.W., Vandegrift, Herzenberg, C.L., Seitz, M.G., and Heemstra, R., 1984, Assessment of gamma-inject logging techniques for the determination of residual oil saturation: U.S. Department of Energy, Bartlesville Center Report DOE/BC/10383-30, 74 p.
- Peeters, M., and Fung, L.L., 1983, Triple-fluid evaluations using density, neutron, and electromagnetic propagation logs, in 8th European formation evaluation symposium transactions, paper Q: London, Society of Professional Well Log Analysts, London Chapter, 23 p. Later published in 1986, SPE Formation Evaluation, v. 1(2), April, p. 193-204.
- Peeters, M., and Hartley, R., 1984, Induced fracture height detection from wireline logs, in 25th annual logging symposium transactions, paper GGG: Houston, Society of Professional Well Log Analysts, 16 p.

- Penn, I.E., Cox, B.M., and Gallois, R.W., 1986, Towards precision in stratigraphy--Geophysical log correlation of Upper Jurassic (including Callovian) strata of the eastern England shelf: *Journal of the Geological Society* [London], v. 143, p. 381-410.
- Pennebaker, E.S., 1968, An engineering interpretation of seismic data: Dallas, Society of Petroleum Engineers, 43rd annual meeting [Houston] preprint SPE-2165, 12 p. Also published, in part, 1968, *World Oil*, v. 166(7), June, p. 73-77. Important uses and interpretations of sonic log data.
- Peterson, F.L., 1974, Neutron well logging in Hawaii: Honolulu, University of Hawaii, Water Resources Research Technical Report 75, 42 p.
- Petovello, B.G., 1975, Evaluation of well performance through production logging: *Canadian Well Logging Society Journal*, v. 8(1), p. 47-56. Reprinted in 1975, in 16th annual logging symposium transactions, paper E: Houston, Society of Professional Well Log Analysts. Reprinted in 1985, in *Production Logging*: Dallas, Society of Petroleum Engineers, reprint series 19, p. 112-117.
- Petricola, M., Jumardi, and Saito, K., 1985, Formation evaluation in deltaic sand deposits--The effect of lignite debris on logs--Integration of sand-body analysis, in 14th annual convention proceedings: Jakarta, Indonesian Petroleum Association, p. 517-541.
- Petrocraft Products, 1979, Logging device response chart: Calgary, Petrocraft Products, 1 sheet. Also available through Petrocraft Products Inc., Denver. Illustrates the response of different logging devices to varying lithologies of different geologic ages and contains a summary of how each tool responds to different lithologic parameters.
- Peveraro, R.C.A., and Russell, K.J., 1984, Interpretation of wireline log and core data from a Mid-Jurassic sand/shale sequence: *Clay Minerals*, v. 19, p. 483-505.
- Phillips, I.C., and Roberts, W.R., 1986, Use of fine resolution logging tools to evaluate thinly laminated North Sea reservoirs, in 10th European formation evaluation symposium transactions, paper BB: Aberdeen, Society of Professional Well Log Analysts, Aberdeen Chapter, 10 p.
- Pickering, L.A., and Indelicato, G.J., 1985, Abnormal formation pressure--A review: *The Mountain Geologist*, v. 22(2), April, p. 78-89.
- Pickett, G.R., 1973, Pattern recognition as a means of formation evaluation, in 14th annual logging symposium transactions, paper A: Houston, Society of Professional Well Log Analysts, 20 p. Later published in 1973, *The Log Analyst*, v. 14(4), July-August, p. 3-11.
- Pickett, G.R., 1977, Resistivity, radioactivity and acoustic logs, chapter 13, in L.W. LeRoy, D.O. LeRoy and J.W. Raese, editors, *Subsurface geology*, 4th edition: Golden, CO., Colorado School of Mines, p. 304-336.

- Pilman, D., 1985, Petrophysical evaluation of the Orinoco heavy oil belt, Hamaca-Pao area Venezuela, in 3rd international UNITAR/UNDP heavy oil crude and tar sands conference [Long Beach, California, July 22-31, 1985], preprints: New York, United Nations Institute for Training and Research, Information Center for Heavy Crude and Tars, 29 p.
- Pinnington, D.J., editor, 1981, Schlumberger well evaluation conference--United Arab Emirates/Qatar 1981 [Abu Dhabi, November]: Paris, Schlumberger Technical Services, 271 p.
- Pirie, G., 1982, Geology and log study of tight gas sandstones--Cotton Valley Group: Transactions of the Gulf Coast Association of Geological Societies, v. 32, p. 77-88.
- Pirie, G., 1984, Computer-generated interpretations of stratigraphy and depositional environments from a logging/core study--Cotton Valley Group, East Texas, in W.P.S. Ventress, D. Bebout, B.F. Perkins and C.H. Moore, editors, The Jurassic of the Gulf rim: Gulf Coast Section of the Society of Economic Paleontologists and Mineralogists p. 323-331.
- Pirie, G., 1985, Geology of a single well (Maraven SDZ-86X) from cores and logs, Orinoco heavy oil belt, Venezuela, in 3rd international UNITAR/UNDP heavy oil crude and tar sands conference [Long Beach, California, July 22-31, 1985], preprints: New York, United Nations Institute for Training and Research, Information Center for Heavy Crude and Tars, 54 p.
- Pirie, G., 1985, Geological evaluation of a single well from cores and logs Faja petrolifera del Orinoco, eastern Venezuela, in 10th formation evaluation symposium transactions, paper B: Calgary, Canadian Well Logging Society, 35 p.
- Pirson, S.J., 1963, Handbook of well log analysis for oil and gas formation evaluation: Englewood Cliffs, New Jersey, Prentice-Hall, 325 p.
- Pirson, S.J., 1983, Geologic well log analysis, 3rd edition: Houston, Gulf Publishing Company, 475 p.
- Pirson, S.J., 1983, SP and Eh curves as redoxomorphic logs, chapter 1, in Geologic well log analysis, 3rd edition: Houston, Gulf Publishing Company, p. 1-43.
- Pirson, S.J., 1983, Sedimentological studies by log curve shapes, chapter 2, in Geologic well log analysis, 3rd edition: Houston, Gulf Publishing Co., 475 p.
- Pirson, S.J., 1983, Continuous dipmeter as a structural and sedimentation tool, chapters 4 and 5, in Geologic well log analysis, 3rd edition: Houston, Gulf Publishing Co., p. 97-162.
- Pirson, S.J., 1983, Paleo-facies logging and mapping, chapter 6, in Geologic well log analysis, 3rd edition: Houston, Gulf Publishing Company, p. 163-190.

- Pirson, S.J., 1983, Fracture intensity logging and mapping, chapter 7, in Geologic well log analysis, 3rd edition: Houston, Gulf Publishing Co., p. 191-215.
- Pirson, S.J., 1983, Geostatic equilibrium, chapter 9, in Geologic well log analysis, 3rd edition: Houston, Gulf Publishing Co., p. 259-290.
- Pirson, S.J., 1983, Hydrodynamics of infiltration, chapter 10, in Geologic well log analysis, 3rd edition: Houston, Gulf Publishing Company, p. 291-332.
- Pirson, S.J., 1983, Basic log analysis package for the HP-41CV programmable calculator, appendix 4, in Geologic well log analysis, 3rd edition: Houston, Gulf Publishing Company, p. 363-460.
- Plint, A.G., Walker, R.G., and Bergman, K.M., 1986, Cardium Formation, part 6—Stratigraphic framework of the Cardium in subsurface: Bulletin of Canadian Petroleum Geology, v. 34(2), June, p. 213-225.
- Plumb, R.A., and Hickman, S.H., 1985, Stress-induced borehole elongation—A comparison between the four-arm dipmeter and the borehole televiewer in the Auburn geothermal well: Journal of Geophysical Research, v. 90(B7), p. 5513-5521.
- Pochitaloff, A., and Verdier, M., editors, 1982, Geological and mud logging in drilling control - catalog of typical cases: Houston, Gulf Publishing Co., 81 p.
- Pollard, D.E., and Nash, R.G., 1971, Observations on permafrost logging in the Canadian Arctic: Canadian Well Logging Society Journal, v. 4(1), p. 37-84.
- Ponomarev, V.N., and Nechoroshkov, V.L., 1983, Downhole magnetic measurements in oceanic crustal hole 395a on the Mid-Atlantic Ridge, in Initial reports of the Deep Sea Drilling Project, v. 78A: Washington, D.C., U.S. Government Printing Office, p. 731-739.
- Prard, Y.M., Prins, W.J., and Cramez, C., 1976, Recent developments in logging techniques and interpretation in Indonesia, in 5th annual convention proceedings, volume 1: Jakarta, Indonesian Petroleum Association, p. 171-199.
- Premsky, S.E., 1986, Geological applications of well logs—A selected bibliography of well logging literature published through December 31, 1985: U.S. Geological Survey Open-File Report 86-170, 103 p.
- Premsky, S.E., 1986, Geologic implications of large-scale trends in well-log response, northern Green River basin, Wyoming, in 27th annual logging symposium transactions, paper EEE: Houston, Society of Professional Well Log Analysts, 24 p.
- Premsky, S.E., and Dickinson, W.W., 1986, Computer-generated well-log data plots assist in regional subsurface evaluation, northern Green River basin, Wyoming: Geobyte, v.1(2), Spring, p. 52-58.

- Priisholm, S., and Michelsen, O., 1979, The use of porosity logs in lithology determination, lithostratigraphy and basin analysis, in D.Gill and D.F. Merriam, editors, Geomathematical and petrophysical studies in sedimentology: Oxford, Pergamon Press, Computers in Geology Series, p. 71-79.
- Pritchett, W.C., 1978, Physical properties of shales and possible origins of high pressures: Dallas, Society of Petroleum Engineers, 53rd annual meeting [Houston] preprint SPE-7506. Later published in 1980, Society of Petroleum Engineers Journal v. 20(5) p. 341-348.
- Proctor, C.V., 1980, Distribution of Middle Jurassic facies in the east Shetlands basin and their control of reservoir capability, in The sedimentation of the North Sea reservoir rocks [Proceedings of a conference, May 11-14, Geilo, Norway]: Oslo, Norwegian Petroleum Society, 22 p.
- Putnam, P.E., 1982, Aspects of the petroleum geology of the Lloydminster heavy oil fields, Alberta and Saskatchewan: Bulletin of Canadian Petroleum Geology, v. 30(2), June, p. 81-111.

Quirein, J., Kimminau, S., Lavigne, J., Singer, J., and Wendel, F., 1986, A coherent framework for developing and applying multiple formation evaluation models, in 27th annual logging symposium transactions, paper DD: Houston, Society of Professional Well Log Analysts, 16 p.

- Rabinowitz, P.D., and Borella, P.E., 1984, Well logging of the sediments and basement complex on the Walvis Ridge, in Initial reports of the Deep Sea Drilling Project, v. 74: Washington, D.C., U.S. Government Printing Office, p. 827-838. Also published in 1984, as A sonic well log of the basement complex of the Walvis Ridge: Geo-Marine Letters, v. 3(1), p. 1-7.
- Rafavich, R., Kendall, C.H., St., C., and Todd, T.P., 1984, The relationship between acoustic properties and the petrographic character of carbonate rocks: Geophysics, v. 49(10), p. 1622-1636.
- Rahman, A.U., and Jacka, A.D., 1986, Petrographic images and log response of the Lower San Andres Formation, northwestern shelf of the Permian Basin, New Mexico: The Log Analyst, v. 27(3), May-June, p. 72-80.
- Raiga-Clemenceau, J., Fraisse, C., and Grosjean, Y., 1984, The dual-porosity model, a newly developed interpretation method for shaly sands, in 25th annual logging symposium transactions, paper F: Houston, Society of Professional Well Log Analysts, 16 p.
- Raiga-Clemenceau, J., Martin, J.P., and Nicoletis, S., 1986, The concept of acoustic formation factor for more accurate porosity determination from sonic transit time data, in 27th annual logging symposium transactions, paper G: Houston, Society of Professional Well Log Analysts, 14 p.
- Rainis, A.E., Skidmore, D.R., and Rieke, H.H., III, 1974, A computational method for determining segmental and overall geothermal gradients and geothermal heat flow values: Geothermics, v. 3(3), p. 113-117.
- Rambow, F.H.K., 1984, The borehole televiewer—Some field examples, in 25th annual logging symposium transactions, paper C: Houston, Society of Professional Well Log Analysts, 21 p.
- Ramirez, A.L., Lytle, R.J., and Harben, P., 1984, Crosshole geophysical methods used to investigate the near vicinity of high level waste repositories: Lawrence Livermore National Laboratory Report NUREG/CR-3758 [UCID-20060], 65 p.
- Ramli, N., 1986, Depositional model of a Miocene barred wave- and storm-dominated shoreface and shelf, southeastern Malay Basin, offshore west Malaysia: AAPG Bulletin, v. 70(1), p. 34-47.
- Ramondetta, P.J., and Merritt, R.M., 1982, Use of geophysical well logs for the determination of mud and anhydrite content in bedded salt, in Geology and geohydrology of the Palo Duro Basin, Texas panhandle: Texas Bureau of Economic Geology, Circular 82-7, p. 105-108.
- Ranganathan, V., and Tye, R.S., 1986, Petrography, diagenesis, and facies controls on porosity in Shannon Sandstone, Harzog Draw field, Wyoming: AAPG Bulletin, v. 70(1), p. 56-69.

- Ransom, R.C., 1977, Methods based on density and neutron well-logging responses to distinguish characteristics of shaly sandstone reservoir rock: *The Log Analyst*, v. 18(3), p. 47-62. Reprinted in 1982, Shaly sand reprint volume: Houston, Society of Professional Well Log Analysts, p. III105-III120.
- Ransom, R.C., editor, 1984, Glossary of terms and expressions used in well logging, 2nd edition: Houston, Society of Professional Well Log Analysts, 116 p.
- Ransom, R.C., 1986, A method for calculating pore pressures from well logs: *The Log Analyst*, v. 27(2), March-April, p. 72-76.
- Rao, S.V.V.P., 1985, Aquifer and aquiclude delineation and correlation of Quaternary sediments by borehole geophysical logs in Banganga River basin, Rajasthan: *Geophysical Research Bulletin*, v. 23(9), p. 169-176.
- Rasmus, J.C., 1981, Determining the type of fluid contained in the fractures of the Twin Creek limestone by using the Dual Laterolog tool, in 1981 SPE/DOE low-permeability symposium [Denver], proceedings SPE-9857: Dallas, Society of Petroleum Engineers, p. Later published in 1982, *Journal of Petroleum Technology*, v. 34(11), p. 2673-2682.
- Rasmus, J.C., 1986, A summary of the effects of various pore geometries and their wettabilities on measured and in-situ values of cementation and saturation exponents, in 27th annual logging symposium transactions, paper PP: Houston, Society of Professional Well Log Analysts, 25 p.
- Rasmus, J.C., and Kenyon, W.E., 1985, An improved petrophysical evaluation of oomoldic Lansing-Kansas City Formations utilizing conductivity and dielectric log measurements, in 26th annual logging symposium transactions, paper V: Houston, Society of Professional Well Log Analysts, 18 p. Reprinted 1985, in 10th formation evaluation symposium transactions, paper G: Calgary, Canadian Well Logging Society, 18 p.
- Rasmussen, N.F., 1975, Borehole gravimeter finds bypassed oil, gas: *Oil and Gas Journal*, v. 73(39), September 29, p. 100-104.
- Rasmussen, N.F., 1975, The successful use of the borehole gravity meter in northern Michigan: *The Log Analyst*, v. 16(5), September-October, p. 3-10.
- Rathbun, F.C., 1968, Abnormal pressures and conductivity anomaly, northern Green River basin, Wyoming: Dallas, Society of Petroleum Engineers, 43rd annual meeting [Houston] preprint SPE-2205, 8 p. Later reprinted under Rathbun, F.C., and Dickey, P., 1969, Abnormal pressures and conductivity anomaly, northern Green River basin, Wyoming: *The Log Analyst*, v. 10(4), July-August, p. 3-8.
- Raymer, L.L., and Burgess, K.A., 1980, The role of well logs in reservoir modeling: Dallas, Society of Petroleum Engineers, 55th annual meeting [Dallas] preprint SPE-9342.

- Raymer, L.L., and Freeman, P.M., 1984, In-situ determination of capillary pressure, pore throat size and distribution, and permeability from wireline data, in 25th annual logging symposium transactions, paper CCC: Houston, Society of Professional Well Log Analysts, 12 p.
- Raymer, L.L., Hunt, E.R., and Gardner, J.S., 1980, An improved sonic transit time-to-porosity transform, in 21st annual logging symposium transactions, paper P: Houston, Society of Professional Well Log Analysts, 12 p.
- Reeves, D.R., 1971, In-situ analysis of coal by borehole logging techniques: Canadian Institute of Mining and Metallurgy [CIM] Bulletin, v. 64(606), p. 67-75. Reprinted in 1971, CIM Transactions, v. 74, p. 61-69. Reprinted in 1986, in Buchanan, D.J., and Jackson, L.J., editors, Coal geophysics: Tulsa, Society of Exploration Geophysicists, Geophysics reprint series no. 6, p. 36-44.
- Reeves, D.R., 1976, Application of wireline logging techniques to coal exploration, in W.L.G. Muir, editor, Coal exploration [1st international coal exploration symposium, (London, May 18-21), proceedings]: San Francisco, Miller Freeman Publications Inc., p. 112-128.
- Reeves, D.R., 1979, Some improvements and developments in coal wireline logging techniques, in G.O. Argall, Jr., editors, Coal exploration 2 [2nd international coal exploration symposium, (Denver, 1978), proceedings]: Miller Freeman Publications Inc., p. 468-489.
- Reiss, L.H., 1980, Well logging in fractured reservoirs, appendix 1, in The reservoir engineering aspects of fractured formations: Houston, Gulf Publishing Co., p. 47-53.
- Reiter, M., Eggleston, R.E., Broadwell, B.R., and Minier, J., 1986, Estimates of terrestrial heat flow from deep petroleum tests along the Rio Grand rift in central and southern New Mexico: Journal of Geophysical Research, v. 91(B6), May 10, p. 6225-6245.
- Reiter, M., Mansure, A.J., and Peterson, B.K., 1980, Precision continuous temperature logging and comparison with other types of logs: Geophysics, v. 45(12), p. 1857-1868. Also published in 1981, as Deep subsurface temperature studies in the basins of New Mexico and neighboring geologic areas—Precision continuous temperature logging and comparison with other types of logs: New Mexico Energy Research and Development Program Report EMD-2-67-2321, 30 p.
- Reyment, R., 1982, Correlating between electrical borehole logs in paleocology, in J.M. Cubitt and R.A. Reyment, editors, Quantitative stratigraphic correlation: New York, John Wiley, p. 233-240.
- Reynolds, E.B., Timko, D.J., Zanier, A.M., 1972, Potential hazards of acoustic-log shale pressure plots: Dallas, Society of Petroleum Engineers, 47th annual meeting [San Antonio] preprint, SPE-4020. Later published in 1973, Journal of Petroleum Technology, v. 25(9), p. 1039-1044.

- Richardson, J.E., 1977, Monitoring flood profiles with induction logs: Dallas, Society of Petroleum Engineers, 52nd annual meeting [Denver] preprint SPE-6785. Later published in 1979, Journal of Petroleum Technology, v. 31(1), p. 19-24.
- Rider, M.H., 1978, Dipmeter log analysis—An essay, in 19th annual logging symposium transactions, paper G: Houston, Society of Professional Well Log Analysts, p.
- Rider, M.H., 1986, The geological interpretation of well logs: New York, John Wiley & Sons, Inc., 175 p.
- Rider, M.H., and Laurier, D., 1979, Sedimentology using a computer treatment of well logs, in 6th European formation evaluation symposium transactions, paper J: London, Society of Professional Well Log Analysts, London Chapter, 12 p.
- Rieke, H.H., III, Oliver, D.W., and Fertl, W.H., McCord, J.P., 1980, Successful application of carbon/oxygen logging to coalbed exploration: Dallas, Society of Petroleum Engineers, 55th annual meeting [Dallas] preprint SPE-9464, 11 p. Later published in 1983, Journal of Petroleum Technology, v. 35(2), p. 421-428. Reprinted in 1981, Carbon/Oxygen Log: Houston, Dresser Industries, publication no. 9417.
- Rieke, H.H., Rightmire, C.T., and Fertl, W.H., 1979, Evaluation of gas bearing coal seams: Dallas, Society of Petroleum Engineers, 54th annual meeting [Las Vegas] preprint SPE-8359. Later published 1981, Journal of Petroleum Technology, v. 33(1), p. 195-204.
- Riepe, L., Schopper, J.R., and Wehr, R., 1986, Permeability estimations from nuclear measurements (NMR-, spectral gr-data), in 10th European formation evaluation symposium transactions, paper X: Aberdeen, Society of Professional Well Log Analysts, Aberdeen Chapter, 15 p.
- Rigby, F.A., 1980, Fracture identification in an igneous geothermal reservoir, Surprise Valley, California, in 21st annual logging symposium transactions, paper Z: Houston, Society of Professional Well Log Analysts, 9 p. Reprinted in 1982, Geothermal log interpretation handbook: Houston, Society of Professional Well Log Analysts, p. VII-111-VII-119.
- Rigby, F.A., 1981, Applications of geothermal well log data for evaluation of reservoir potential: Los Alamos Scientific Laboratory, Report LA-8778-MS, 69 p. Reprinted in 1982, Geothermal log interpretation handbook: Houston, Society of Professional Well Log Analysts, p. III-3-III-73.
- Rigby, F., and McEuen, R.B., 1980, An example of resistivity log extrapolation with magnetotelluric data for a geothermal site: Dallas, Society of Petroleum Engineers, 55nd annual meeting [Dallas] preprint SPE-9497. Later published in 1982, Journal of Petroleum Technology, v. 34(11), p. 2683-2688.
- Rigby, F.A., and Zebal, G.P., 1981, Case history on geothermal well log interpretation Surprise Valley, California: Los Alamos Scientific Laboratory, Report no. LA-8598-MS, 58 p.

- Ritch, H.J., 1975, An open hole logging evaluation in metamorphic rocks, in 16th annual logging symposium transactions, paper V: Houston, Society of Professional Well Log Analysts, 11 p.
- Robbins, S.L., 1980, Bibliography with abridged abstracts of subsurface gravimetry (especially borehole) and corresponding in-situ rock density determinations: U.S. Geological Survey, Open-File Report, 80-710, 47 p.
- Robinette, M.S., and Williams, R.E., 1979, Delineation of hydrostratigraphic units using borehole geophysical techniques, in Symposium on uranium mill tailings management, geotechnical engineering program [November 19-20]: Fort Collins, Colorado, Colorado State University, Civil Engineering Department, p. 3-12.
- Robinette, M.S., and Williams, R.E., 1980, Geophysical techniques for selection, analysis and monitoring uranium waste disposal sites, chapter 10, in C.O. Brawner, editor, First international conference on uranium mine waste disposal, proceedings [May 19-21, Vancouver, British Columbia, Canada]: New York, Society of Mining Engineers of AIME, p. 93-99.
- Robinson, J.D., Loren, J.D., Vajnar, E.A., and Hartman, D.E., 1972, Determining residual oil with the nuclear magnetism log [Symposium on improved oil recovery, Tulsa]: Dallas, Society of Petroleum Engineers, SPE-3797. Later published in 1974, Journal of Petroleum Technology, v. 26(2), p. 226-236.
- Robinson, J.E., 1977, Pitfalls in automatic lithostratigraphic correlation: Computers and Geosciences, v. 4, p. 273-275.
- Robinson, J.E., 1982, Computer analysis of well logs, chapter 12, in Computer applications in petroleum geology: New York, Hutchinson Publishing Company, p. 143-151. Discussion of unusual graphic displays of log data.
- Robinson, J.E., 1986, Correcting well-log information for computer processing and analysis: Computers & Geosciences, v. 12(4B), p. 493-498.
- Robinson, W.S., 1974, Field results from the noise-logging technique: Dallas, Society of Petroleum Engineers, 49th annual meeting [Houston] preprint SPE-5088. Later published in 1976, Journal of Petroleum Technology, v. 28(11), p. 1370-1376. Reprinted in 1985, Production logging: Dallas, Society of Petroleum Engineers, reprint series 19, p. 233-239.
- Roehl, P.O., and Choquette, editors, 1985, Carbonate petroleum reservoirs: New York, Springer-Verlag, 622 p. Contains 35 papers on facies and petrophysics of selected carbonate petroleum reservoirs of different geologic ages.
- Rolle, F., 1985, Late Cretaceous-Tertiary sediments offshore central west Greenland—Lithostratigraphy, sedimentary evolution, and petroleum potential: Canadian Journal of Earth Science, v. 22, p. 1001-1019.
- Roscoe, B.A., and Grau, J.A., 1985, Response of the carbon/oxygen measurement for an inelastic gamma ray spectroscopy tool: Dallas, Society of Petroleum Engineers, 60th annual meeting [Las Vegas], preprint SPE-14460, 7 p.

- Rosepiller, M.J., 1981, Calculation and significance of water saturations in low porosity shaly gas sands, in 23rd annual logging symposium transactions, paper C: Houston, Society of Professional Well Log Analysts, 21 p. Also published in condensed form 1981, Oil and Gas Journal, v. 79(28), July 13, p. 180-187.
- Ross, E.W., Vagelatos, N., Dickerson, J.M., and Nguyen, V., 1982, Nuclear logging and geothermal log interpretation--Formation temperature sonde evaluation: Los Alamos National Laboratory Report no. LA-9159-MS, 56 p. Reprinted in 1982, Geothermal log interpretation handbook: Houston, Society of Professional Well Log Analysts, p. V-3-V-60.
- Roux, B., Sanyal, S.K., and Brown, S.L., 1980, An improved approach to estimating true reservoir temperature from transient temperature data, in 50th California regional meeting proceedings, SPE-8888: Dallas, Society of Petroleum Engineers, p. ?. Reprinted in 1982, Geothermal log interpretation handbook: Houston, Society of Professional Well Log Analysts, p. V-53-V-60.
- Roux, C., Fertl, W.H., Frost, E., Stedman, D., and Elliott, D., 1981, Well logs evaluate and monitor heavy oil steam flood in Kern County, California, in 22nd annual logging symposium transactions, paper II: Houston, Society of Professional Well Log Analysts, 17 p.
- Roy, K.K., and Saha, A., 1975, Discussion on SP log interpretation: Canadian Well Logging Society Journal, v. 8(1), p. 41-46.
- Rudman, A.J., 1978, Analysis of geophysical logs from the Hawaii geothermal project well: Hawaii Institute of Geophysics, Geothermal Resources Exploration in Hawaii 6, 26 p.
- Rudman, A.J., Whaley, J.F., Blakely, R.G., and Biggs, M.E., 1975, Transformation of resistivity to pseudovelocisty logs: AAPG Bulletin, v. 59(7), p. 1151-1165. Also published in 1976, The Log Analyst, v. 16(2), March-April, p. 11.
- Ruhovets, N., and Fertl, W.H., 1981, Digital shaly sand analysis based on Waxman-Smiths model and log-derived clay typing, in 7th European formation evaluation symposium transactions, paper 25: Paris, Society of Professional Well Log Analysts, Paris Chapter (SAID), 26 p. Reprinted in 1982, The Log Analyst, v. 23(3), May-June, p. 7-23. Reprinted in 1982, Shaly sand reprint volume: Houston, Society of Professional Well Log Analysts, p. V107-V134.
- Ruhovets, N., and Fertl, W.H., 1982, Volumes, types and distribution of clay minerals in reservoir rocks based on well logs, in SPE/DOE unconventional gas recovery symposium, proceedings, SPE/DOE-10796: Dallas, Society of Petroleum Engineers, p. 67-82.
- Ruhovets, N., and Oliver, D.W., 1985, Log analysis problems and solutions in complex lithology reservoirs: Dallas, Society of Petroleum Engineers, 60th annual meeting [Las Vegas], preprint SPE-14187, 12 p.

- Ruoff, W.A., 1976, A technique for interpreting depositional environments of sandstone from the SP log using a computer: *The Log Analyst*, v. 17(4), July-August, p. 3-10.
- Ruppel S.C., and Ramondetta, P.J., 1982, Determination of salt purity using gamma-ray logs--San Andres Formation, Palo Duro Basin, in *Geology and geohydrology of the Palo Duro Basin, Texas panhandle*: Texas Bureau of Economic Geology, Circular 82-7, p. 183-200.
- Russell, D.J., 1985, Depositional analysis of a black shale by using gamma-ray stratigraphy--The Upper Devonian Kettle Point Formation of Ontario: *Bulletin of Canadian Petroleum Geology*, v. 33(2), June, p. 236-253.
- Russell, M.J., and Ogehenejobo, M.J.O., 1984, Experience with a new petrophysical evaluation tool--the gamma ray spectroscopy tool (GST): 8th annual international SPE Nigeria sectional conference, paper SPE-LS-126, 14 p.
- Ryley, D.J., 1980, Well logging, in R. DiPippo, H.E. Khalifa, D.J. Ryley, editors, *Sourcebook on the production of electricity from geothermal energy*: Washington, D.C., U.S. Government Printing Office [Department of Energy Report DOE/RA/4051-1], p. 155-172.

- Saavedra, L.L., 1985, A review of the methods of detection and estimation of geopressure from well logs: South Texas Geological Society Bulletin, v. 26(2), p. 21-37.
- Safinya, K. Habashy, T., Randall, C., Clark, B., Perez-Falcon, A., 1985, Experimental and theoretical study of the Electromagnetic Propagation Tool in layered and homogeneous media: Dallas, Society of Petroleum Engineers, 60th annual meeting [Las Vegas], preprint SPE-14188, 17 p.
- Sah, R.C., Chase, A.E., and Wells, L.E., 1974, Evaluation of the Alberta tar sands: Dallas, Society of Petroleum Engineers, 49th annual meeting [Houston] preprint SPE-5034, 15 p.
- Saito, K., Tono, S., and Kamili, Z.A., 1985, Sand body correlation in deltaic setting, East Ketaling field, Sumatra basin, in 14th annual convention proceedings: Jakarta, Indonesian Petroleum Association, p. 499-515.
- Saitta, B.S., and Visser, G.S., 1968, Subsurface study of the southern portion of the Bluejacket delta, in A guidebook to the geology of the Bluejacket-Bartlesville Sandstone, Oklahoma: Oklahoma Geological Society, p. 52-65.
- Salich, H.A., 1980, Methods of identifying those oil and gas reservoirs which can be developed commercially in rocks with poor reservoir properties, in Tenth world petroleum congress, proceedings v. 3: London, Heyden, p. 191-199.
- Salisbury, M.H., Christensen, N.I., Becker, K., and Moos, D., 1985, The velocity structure of layer 2 at Deep Sea Drilling Project site 504 from logging and laboratory experiments, in Initial reports of the Deep Sea Drilling Project, v. 83: Washington, D.C., U.S. Government Printing Office, p. 529-539
- Salisbury, M.H., Donnelly, T.W., and Francheteau, J., 1980, Geophysical logging in Deep Sea Drilling Project hole 417D, in Initial reports of the Deep Sea Drilling Project, v. 51-53, part 1, : Washington, D.C., U.S. Government Printing Office, p. 705-713.
- Salisbury, M.H., Scott, G.H., Becker, K., Bosum, W., Broglia, C., Carlson, R., Fisher, A., Gieskes, J., Holmes, M., Hoskins, H., Legrand, J., Moos, D., Rio, D., Stephen R., Wilkens, R., 1985, Ocean drilling program--looking down an old hole: Nature, v, 316(6030), August 22, p. 682.
- Salisbury, M.H., Stephen, R., Christensen, N.I., Francheteau, J., Hamano, Y., Hobart, M., and Johnson, D., 1980, The physical state of the upper levels of Cretaceous oceanic crust from the results of logging, laboratory studies, and the oblique seismic experiment at Deep Sea Drilling Project Sites 417 and 418, in Initial reports of the Deep Sea Drilling Project, v. 51-53, part 2: Washington, D.C., U.S. Government Printing Office, p. 1579-1597.

- Sallee, J.E., and Wood, B.R., 1982, Use of microresistivity from the dipmeter to improve formation evaluation in thin sands, northeast Kalimantan, Indonesia, in Offshore South East Asia conference, proceedings: Dallas, Society of Petroleum Engineers SPE-10462, 24 p. Later published in 1984, Journal of Petroleum Technology, v. 36(9), p. 1535-1544.
- Sanyal, S.K., 1981, Estimation of steam saturation and rock alteration from geothermal well logs—A theoretical inquiry: Geothermal Resources Council, Transactions, v. 5, p. 373-376.
- Sanyal, S.K., Che, M., Dunlap, R.E., and Twichell, M.K., 1982, Theoretical nuclear log responses of the components of the Geysers geothermal reservoir, California: Geothermal Resources Council Transactions, v. 6, p. 165-168.
- Sanyal, S.K., Che, M., Dunlap, R.E., and Twichell, M.K., 1982, Qualitative patterns on geophysical well logs from the Geysers, California: Geothermal Resources Council Transactions, v. 6, p. 313-316.
- Sanyal, S.K., Juprasert, S., and Jusbasche, M., 1979, An evaluation of a rhyolite-basalt-volcanic ash sequence from well logs, in 20th annual logging symposium transactions, paper TT: Houston, Society of Professional Well Log Analysts, 14 p. Later published in 1980, The Log Analyst, v. 20(1), January-February, p. 3-9. Reprinted in 1982, Geothermal log interpretation handbook: Houston, Society of Professional Well Log Analysts, p. III-169-III-175.
- Sanyal, S.K., and Jusbasche, J.M., 1979, Calculation of geothermal water salinity from well logs—A statistical approach: Geothermal Resources Council Transactions, v. 3, September, p. 613-616.
- Sanyal, S.K., Wells, L.E., and Bickham, R.E., 1980, Geothermal well log interpretation state of the art—Final report: Los Alamos Scientific Laboratory, Report LA-8211-MS, 330 p.
- Sanyal, S.K., Wells, L.E., and Mathews, M., 1979, Classification of geothermal reservoirs from the viewpoint of log analysis, in 20th annual logging symposium transactions, paper HH: Houston, Society of Professional Well Log Analysts, 20 p. Reprinted in 1982, Geothermal log interpretation handbook: Houston, Society of Professional Well Log Analysts, p. II-3-II-22.
- Saskai, A., 1984, An empirical method and a few problems for estimating formation temperature from bottom-hole temperature recorded during logging [in Japanese, except for English abstract]: Journal of the Japanese Association for Petroleum Technology, v. 49(5), September, p. 7.
- Schad, S.T., 1986, BASIC log analysis programs: Oil and Gas Journal, v. 84(18), May 5, p. 185-187.

- Schafer, J.N., 1979, A practical method of well evaluation and acreage development for the naturally fractured Austin Chalk Formation, in 20th annual logging symposium transactions, paper U: Houston, Society of Professional Well Log Analysts, 27 p. Later published in 1980, The Log Analyst, v. 21(1), January-February, p. 10-23.
- Schlumberger, 1970, Well evaluation conference--Libya 1970 [Tripoli, Autumn]: Paris, Schlumberger Technical Services, variously paginated.
- Schlumberger, 1972, The essentials of log interpretation practice: New York, Schlumberger Ltd., document no. M-081002, 57 p.
- Schlumberger, 1972, Log interpretation volume 1--Principles: Houston, Schlumberger Well Services, document no. C-11759, 112 p.
- Schlumberger, 1973, Production log interpretation: Houston, Schlumberger Well Services, document no. C-11811, 91 p.
- Schlumberger, 1973, Well evaluation conference--Argentina 1973 [Buenos Aires, June]: Paris, Schlumberger Technical Services.
- Schlumberger, 1974, Log interpretation volume 2--Applications: Houston, Schlumberger Well Services, document no. C-11943, 116 p.
- Schlumberger, 1974, Schlumberger well evaluation conference--Nigeria 1974, 2nd edition, [Lagos, April]: Paris, Schlumberger Technical Services, variously paginated.
- Schlumberger, 1974, Schlumberger well evaluation conference--North Sea 1974 [London, June]: Paris, Schlumberger Technical Services, 171 p.
- Schlumberger, 1975, Cased hole applications: Houston, Schlumberger Well Services, 123 p.
- Schlumberger, 1975, Schlumberger well evaluation conference--Arabia 1975 [Bahrain, May]: Paris, Schlumberger Technical Services, 152 p.
- Schlumberger, 1976, Schlumberger well evaluation conference--Iran 1976 [Tehran, May]: Paris, Schlumberger Technical Services, 179 p.
- Schlumberger, 1976, The essential of thermal decay time logging: New York, Schlumberger Ltd., document no. M-081003, 31 p.
- Schlumberger, 1979, Schlumberger well evaluation conference--Algeria 1979 [Algiers, December]: Paris, Schlumberger Technical Services, variously paginated.
- Schlumberger, 1981, RFT--Essentials of pressure test interpretation: Paris, Schlumberger Technical Services, document no. M-081022, 77 p.
- Schlumberger, 1982, Essentials of natural gamma ray spectrometry interpretation: Paris, Schlumberger Technical Services, document no. M-081025, 69 p.

- Schlumberger, 1983, Schlumberger well evaluation conference--India 1983 [New Delhi, December]: Paris, Schlumberger Technical Services, 263 p.
- Schlumberger, 1983-1986, Service modules: Paris, Schlumberger Technical Services. Concise descriptions of the newest generation of open- and cased-hole logging tools and their interpretation. In 14 individual full color pamphlets.
- Schlumberger, 1984, Production services catalog: Houston, Schlumberger Well Services, document no. SMP-7005, 60 p. A brief discussion with illustrations of the various logging devices and processing services currently available.
- Schlumberger, 1985, Openhole services catalog: Houston, Schlumberger Well Services, document no. SMP-7004, 72 p. A brief discussion with illustrations of the various logging devices and processing services currently available.
- Schlumberger, 1985, Well evaluation conference--Nigeria 1985 [Lagos, June]: Paris, Schlumberger Technical Services, 292 p.
- Schlumberger, 1986, Log interpretation charts: Houston, Schlumberger Well Services, document no. SMP-7006, 112 p.
- Schlumberger, 1986, Dipmeter interpretation--Fundamentals: Houston, Schlumberger Well Services, document no. SMP-7002, 76 p.
- Schmidt, G.W., 1973, Interstitial water composition and geochemistry of deep Gulf Coast shales and sandstones: AAPG Bulletin, v. 57(2), p. 321-337.
- Schmoker, J.W., 1977, Density variations in a quartz diorite determined from borehole gravity measurements, San Benito County, California: The Log Analyst, v. 18(2), March-April, p. 32-38.
- Schmoker, J.W., 1977, The relationship between density and gamma-ray intensity in the Devonian shale sequence, Lincoln County, West Virginia, in G.L. Schott, W.K. Overbey, Jr., A.E. Hunt, C.A. Komar, editors, First eastern gas shales symposium, proceedings: U.S. Department of Energy, Morgantown Energy Research Center, p. 266-271.
- Schmoker, J.W., 1978, Accuracy of borehole gravity data: Geophysics, v. 43(3), p. 538-542.
- Schmoker, J.W., 1979, Determination of organic content of Appalachian Devonian shales from formation-density logs: AAPG Bulletin, v. 63(9), p. 1504-1509.
- Schmoker, J.W., 1981, Determination of organic-matter content of Appalachian Devonian shales from gamma-ray logs: AAPG Bulletin, v. 65(7), p. 1285-1298.
- Schmoker, J.W., and Hester, T.C., 1983, Organic carbon in Bakken Formation, U.S. Portion of Williston Basin: AAPG Bulletin, v. 67(12), p. 2165-2174.

- Schoeppel, R.J., and Gilarranz, S., 1965, Use of well log temperatures to evaluate regional geothermal gradients: Dallas, Society of Petroleum Engineers, 40th annual meeting [Denver] preprint SPE-1297. Later published in 1966, *Journal of Petroleum Technology*, v. 18(6), p. 667-673.
- Schoonover, L.G., and Fertl, W.H., 1979, Practical log analysis, part 17—How to find temperature, R_w , and salinity with hand calculators: *Oil and Gas Journal*, v. 77(27), July 2, p. 109-111.
- Schoonover, L.G., and Fertl, W.H., 1979, Practical log analysis, part 18—Estimate R_{wa} and water saturation with hand calculator programs: *Oil and Gas Journal*, v. 77(29), July 16, p. 67-68.
- Schoonover, L.G., and Fertl, W.H., 1979, Practical log analysis, part 19—Porosity and water saturation using handheld calculators: *Oil and Gas Journal*, v. 77(31), July 30, p. 170-172.
- Schoonover, L.G., and Fertl, W.H., 1979, Practical log analysis, part 20—Calculator programs used for shaly sand log analysis: *Oil and Gas Journal*, v. 77(33), August 13, p. 120-126.
- Schoonover, L.G., and Fertl, W.H., 1979, Practical log analysis, part 21—Using the S_w and q-factor approach to quicker shaly-sand analysis: *Oil and Gas Journal*, v. 77(35), August 27, p. 122-125.
- Schultz, A.L., 1979, Electric log evidence for hydrocarbon production and trapping in sandstones possessing diagenic clay minerals: *Houston Geological Society Bulletin*, v. 21(2), p. 4-8.
- Schulze, R.P., Ives, G.L., and Smalley, E.A., 1985, Evaluation of low-resistivity Simpson series of formations: Dallas, Society of Petroleum Engineers, 60th annual meeting [Las Vegas], preprint SPE-14282, 8 p.
- Scott, J.H., 1974, Well-logging techniques for mineral deposit evaluation—A review: U.S. Bureau of Mines, Information Circular 8627, 45 p.
- Scott, J.H., 1978, A computer program for borehole compensation of dual-detector density well logs: U.S. Geological Survey, Open-File Report 78-515, 7 p.
- Scott, J.H., 1978, A FORTRAN algorithm for correcting normal resistivity logs for borehole diameter and mud resistivity: U.S. Geological Survey, Open-File Report 78-779, 12 p.
- Scott, J.H., 1986, Analysis of geophysical well logs from the Mariano Lake-Lake Valley drilling project, San Juan Basin, northwest New Mexico, in C.E. Turner-Peterson, E.S. Santos, N.S. Fishman, editors, A basin analysis case study—The Morrison Formation, Grants uranium region, New Mexico: Tulsa, AAPG Studies in Geology no. 22, p.241-256.

- Scott, J.H., and Daniels, J.J., 1976, Non-radiometric borehole geophysical detection of geochemical haloes surrounding sedimentary uranium deposits, in Symposium on exploration for uranium ore deposits [Vienna, 3/29-4/2/76], proceedings: Vienna, International Atomic Energy Agency, p. 379-390.
- Scott, J.H., Daniels, J.J., Habrouck, W.P., and Guu, J.Y., 1975, Hole-to-hole geophysical measurement for mineral exploration, in 16th annual logging symposium transactions, paper KK: Houston, Society of Professional Well Log Analysts, 14 p.
- Scott, J.H., Daniels, J.J., Reynolds, R.L., and Seeley, R.L., 1983, Magnetic-susceptibility logging in sedimentary uranium environments: The Log Analyst, v. 24(2), March-April, p. 16-21.
- Scott, J.H., Petersen, J.K., Osterkamp, T.E., and Kawasaki, K., 1985, Interpretation of geophysical well logs in permafrost: Fairbanks, Alaska, University of Alaska Geophysical Institute, report UAG-R(303) (Prepared for U.S. Department of Energy, Morgantown Energy Technology Center, contract DE-AI19-83 BC 10810), 125 p.
- Scott, J.H., and Sena, J., 1974, Acoustic logging for mining applications, in 15th annual logging symposium transactions, paper P: Houston, Society of Professional Well Log Analysts, 10 p.
- Seamount, D.T., Jr., and Elders, W.A., 1982, Use of wireline logs at Cerro Prieto in the identification of the distribution of hydrothermally altered zones and dike locations and their correlation with reservoir temperatures, in 3rd symposium on the Cerro Prieto Geothermal Field, Baja California, Mexico, [1981], proceedings: Lawrence Berkeley Laboratory, Report no. LBL-11967 (DOE Report CONF-810399), p. 123-133.
- Segesman, F.F., 1980, Well-logging method: Geophysics, v. 45(11), p. 1667-1684. A concise history of well logging, see references.
- Self, G.A., Breard, S.Q., Rael, H.P., Stein, J.A., Traugott, M.O., Thayer, P.A., and Eason, W.D., 1986, Lockhart Crossing field--New Wilcox trend in southeastern Louisiana: AAPG Bulletin, v. 70(5), p. 501-515. Later published in abridged form in 1986, Oil and Gas Journal, v. 84(33), p. 81-87.
- Selley, R.C., 1974, Environmental analysis of subsurface sediments, in 3rd European formation evaluation symposium transactions, paper J: London, Society of Professional Well Log Analysts, London Chapter, 15 p. Later published in 1976, Subsurface environmental analysis of North Sea sediments: AAPG Bulletin, v. 60(2), p. 184-195. Also published in 1976, The Log Analyst, v. 17(1), January-February, p. 3-11.
- Selley, R.C., 1975, Subsurface diagnosis of deltaic deposits with reference to the northern North Sea, in Jurassic of the northern North Sea symposium, paper JNNSS/13: Norwegian Petroleum Society, 22 p.
- Selley, R.C., 1978, Ancient sedimentary environments, 2nd edition: New York, Cornell University Press, 287 p.

- Selley, R.C., 1979, Dipmeter and log motifs in North Sea submarine-fan sands: AAPG Bulletin, v. 63(6), p. 905-917.
- Selley, R.C., 1985, Methods of exploration, chapter 3, in Elements of petroleum geology: New York, W.H. Freeman & Company, p. 37-131.
- Semmelbeck, M., Holditch, S.A., 1985, The effects of mud filtrate invasion on the interpretation of induction logs in Eastern regional meeting [Morgantown, West Virginia, November 5-8], proceedings, SPE-14491: Dallas, Society of Petroleum Engineers, p. 27-38.
- Senecal, J.E., and Mulhern, M.E., 1985, Monterey Formation analysis—State-of-the-art interpretation of lithology, fractures and fluid identification in fine-grained mineralogically variable rocks, in 26th annual logging symposium transactions, paper KKK: Houston, Society of Professional Well Log Analysts, 16 p.
- Senftle, F.E., 1980, Field studies of borehole gamma-ray spectrometer methods for mineral exploration—A selected bibliography: U.S. Geological Survey Open-File Report 80-503, 41 p.
- Sengel, E.W., 1984, Well logging handbook: Oklahoma City, Institute for Energy Development (IED), 168 p.
- Senger, J.A., 1985, Defining glacial stratigraphy with the neutron log, in 1985 NWWA conference on surface and borehole geophysical methods in ground water investigations [Fort Worth, Texas, February 12-14], proceedings: Worthington, Ohio, National Water Well Association, p. 355-368.
- Serpas, C.J., Wichmann, P.A., Fertl, W.H., DeVries, M.R., and Randall, R.R., 1977, The dual detector Neutron Lifetime Log—theory and practical applications, in 18th annual logging symposium transactions, paper CC: Houston, Society of Professional Well Log Analysts, 37 p.
- Serra, O., 1980, Aspects of logging in evaporites [in French]: Bulletin des Centres Recherches Exploration-Production Elf-Aquitaine, v. 4(1), p. 411-431.
- Serra, O., 1984, Fundamentals of well-log interpretation volume 1—the acquisition of data: New York, Elsevier, Developments in Petroleum Science no. 15A, 423 p.
- Serra, O., 1985, Fundamentals of well-log interpretation volume 2—interpretation of various well logs [Diagraphies differees - Bases de l'interpretation] [in French]: Pau, France, Bulletin des Centres de Recherches Exploration-Production Elf-Aquataine Memoire 7, 632 p. Not yet translated into English. An excellent reference on application of well logs to determination of facies and depositional environments, sedimentology, (sedimentary structures, diagenesis and compaction), structural geology, and fractures.
- Serra, O., 1985, Sedimentary environments from wireline logs: Paris, Schlumberger Technical Services, Document no. M-081030/SMP-7008, 211 p.

- Serra, O., and Abbott, H.T., 1980, The contribution of logging data to sedimentary sedimentology and stratigraphy: Dallas, Society of Petroleum Engineers, 55th annual meeting [Dallas] preprint SPE-9270, 19 p. Later published in 1982, Society of Petroleum Engineers Journal, v. 22(1), p. 117-131.
- Serra, O., and Curial, A., 1985, Recent progress in evaporite recognition through well logs [in French]: Bulletin Societe Geologique de France, v. 8(6), p. 797-806. The use of newer logging tools and computer software for evaporite recognition.
- Serra, O., Delfiner, P., Levert, J.C., 1985, Lithology determination from well-logs—Case studies, in 26th annual logging symposium transactions, paper WW: Houston, Society of Professional Well Log Analysts, 19 p.
- Serra, O., and Sulpice, L., 1975, Sedimentological analysis of sand-shale series from well logs, in 16th annual logging symposium transactions, paper W: Houston, Society of Professional Well Log Analysts, 23 p.
- Sethi, D.K., 1981, Well log applications in rock mechanics, in 1981 SPE/DOE symposium on low permeability gas reservoirs, proceedings: Dallas, Society of Petroleum Engineers, SPE/DOE-9833, p. 45-53.
- Setser, G.G., 1981, Fracture detection by circumferential propagation of acoustic energy: Dallas, Society of Petroleum Engineers, 56nd annual meeting [San Antonio] preprint SPE-10204, 8 p.
- Setser, G., and Williams, M.R., 1985, Measurement of remaining oil saturation in northern Michigan using nuclear magnetism log data and pressure core: Dallas, Society of Petroleum Engineers, 60th annual meeting [Las Vegas], preprint SPE-14276, 10 p.
- Shanks, T.R., Kwon, B.S., DeVries, M.R., and Wichmann, P.A., 1976, A review of fracture detection with well logs: Dallas, Society of Petroleum Engineers, 51nd annual meeting [New Orleans] preprint SPE-6159, 17 p.
- Sharma, M.M., and Wunderlich, R.W., 1985, The alteration of rock properties due to interactions with drilling fluid components: Dallas, Society of Petroleum Engineers, 60th annual meeting [Las Vegas], preprint SPE-14302, 12 p.
- Sharma, S.K., Nohwar, U.V.S., Raj, H., Koithara, J., and Chilingar, G.V., 1980, Interrelationships among various petrophysical parameters of carbonate reservoir rocks in the Bombay High oil field, India: Energy Sources, v. 5(1), p. 53-69.
- Shaw, B.R., 1977, Parametric interpolation of digitized log segments: Computers and Geosciences, v. 4, p. 277-283.
- Shaw, B.R., and Cubitt, J.M., 1979, Stratigraphic correlation of well logs—An automated approach, in D. Gill and D.F. Merriam, editors, Geomathematical and petrophysical studies in sedimentology: New York, Pergamon Press, p. 127-148.

- Shen, L.C., 1985, Problems in dielectric-constant logging and possible routes to their solution: *The Log Analyst*, v. 26(6), November-December, p. 14-25.
- Shen, L.C., and Hardman, R.H., 1986, Effect of formation dip or hole deviation on induction logs, in 27th annual logging symposium transactions, paper I: Houston, Society of Professional Well Log Analysts, 13 p.
- Shen, L.C., Manning, M.J., and Price, J.M., 1984, Application of Electromagnetic Propagation Tool to formation evaluation, in 25th annual logging symposium transactions, paper J: Houston, Society of Professional Well Log Analysts, 14 p.
- Shen, L.C., Savre, W.C., Price, J.M., and Athavale, K., 1985, Dielectric properties of reservoir rocks at ultra-high frequencies: *Geophysics*, v. 50(4), p. 692-704. An important paper on the interpretation of dielectric (EPT) logs.
- Shen, P.Y., and Beck, A.E., 1983, Determination of surface temperature history from borehole temperature gradients: *Journal of Geophysical Research*, v. 88(B9), September 10, p. 7385-7493.
- Sherman, M.M., 1985, The calculation of porosity from dielectric constant measurements—A study using laboratory data, in 26th annual logging symposium transactions, Paper HH: Houston, Society of Professional Well Log Analysts. 15 p. Reprinted in 1986, *The Log Analyst*, v. 27(1), January-February, p. 15-24.
- Shields, C., 1974, The dipmeter used to recognize and correlate depositional environment, in 3rd European formation evaluation symposium transactions, paper, H: London, Society of Professional Well Log Analysts, London Chapter, 15 p.
- Shields, C., and Gahan, M.J., 1974, The dipmeter used to recognize depositional environments: APEA [Australian Petroleum Exploration Association] *Journal*, v. 14, part 1, p. 181-188.
- Shultz, A.L., Bell, W.T., and Urbanosky, H.J., 1974, Advancements in uncased-hole, wireline formation-tester techniques: Dallas, Society of Petroleum Engineers, 49th annual meeting [Houston] preprint SPE-5035. Later published in 1975, *Journal of Petroleum Technology*, v. 27(11), p. 1331-1336.
- Sibbit, A., and Faivre, O., 1985, The Dual Laterolog response in fractured rocks, in 26th annual logging symposium transactions, paper T: Houston, Society of Professional Well Log Analysts, 34 p.
- Silva, P., and Bassiouni, Z., 1981, A new approach to the determination of formation water resistivity from the SP log, in 22nd annual logging symposium transactions, paper G: Houston, Society of Professional Well Log Analysts, 15 p.

- Silva, P., and Bassiouni, Z., 1981, Accurate determination of geopressured aquifer salinity from the SP log, in D.G. Bebout and A.L. Bachman, editors, 5th conference on geopressured-geothermal energy, proceedings: Baton Rouge, Louisiana State University, p. 193-196. Also published in 1981, Geothermal Resources Council Transactions, v. 5, p. 737-740.
- Silva, P., and Bassiouni, Z., 1985, One step chart for SP log interpretation, in 10th formation evaluation symposium transactions, paper Q: Calgary, Canadian Well Logging Society, 22 p.
- Simpson, J.P., 1985, The drilling mud dilemma, recent examples: Journal of Petroleum Technology, v. 37(2), p. 201-206. Discussion and reply v. 37(7), p. 1230.
- Slack, H.A., and Otte, C., 1960, Electric log interpretation in exploration for stratigraphic traps in shaly sands: AAPG Bulletin, v. 44(12), p. 1874-1894.
- Smagala, T.M., Brown, C.A., and Nydegger, G.L., 1984, Log-derived indicator of thermal maturity, in J. Woodward, F.F. Meissner, J.L. Clayton, editors, Hydrocarbon source rocks of the greater Rocky Mountain region: Denver, Rocky Mountain Association of Geologists, p. 355-363.
- Smith R.G., and Baker, J.D., 1983, The Dipmeter Advisor system, a case study in commercial expert system development, in 8th international joint conference on artificial intelligence, proceedings: International Joint Conference on Artificial Intelligence, p. 122-129.
- Smith, C.M., editor, 1984, Well evaluation conference--Egypt 1984 [Cairo, March]: Paris, Schlumberger Technical Services, variously paginated.
- Smith, J.W., Thomas, H.E., and Trudell, L.G., 1968, Geologic factors affecting density logs in oil shale, in 9th annual logging symposium transactions, paper P: Houston, Society of Professional Well Log Analysts, 17 p. Reprinted in 1978, Gamma Ray, Neutron and Density Logging: Houston, Society of Professional Well Log Analysts, paper CC, 17 p.
- Smith, R.F., McCoy, R.L., Ausburn, B.E., and Pottorf, B.R., 1978, Determining acoustic velocity of subsurface formations from well log data: Dallas, Society of Petroleum Engineers, 53rd annual meeting [Houston] preprint SPE-7435. Later published in 1979, Journal of Petroleum Technology, v. 31(11), p. 1453-1461.
- Smith, R.G., and Young, R.L., 1984, The design of the dipmeter advisor system, in ACM annual conference [October, 1984], proceedings: New York, Association for Computing Machinery, p. 15-23.
- Smith, R.J., 1985, Geophysics in Australian mineral exploration: Geophysics, v. 50(12), p. 2637-2665. Case histories.
- Smith, S.W., and Keen, D., 1979, A simplified true vertical thickness (TVT) calculation using a programmable pocket calculator: The Log Analyst, v. 20(2), March-April, p. 28-32.

- Smolen, J.J., 1986, Production logging: Missouri City, Texas, J.J. Smolen, variously paginated.
- Smolen, J.J., 1986, Cased-hole logging—A perspective, in 27th annual logging symposium transactions, paper K: Houston, Society of Professional Well Log Analysts, 22 p.
- Smolen, J.J., and Litsey, L.R., 1977, Formation evaluation using wireline formation tester pressure data: Dallas, Society of Petroleum Engineers, 52nd annual meeting [Denver] preprint SPE-6822. Later published in 1979, Journal of Petroleum Technology, v. 31(1), p. 25-32.
- Snedden, J.W., 1984, Validity of the use of the spontaneous potential curve shape in the interpretation of sandstone depositional environments: Transactions of the Gulf Coast Association of Geological Societies, v. 34. p. 255-263.
- Snegirev, A.M., 1984, Resistivity logging of frozen rocks, in Permafrost 4th international conference [Fairbanks, Alaska, July 17-22, 1983], proceedings: Washington, D.C., National Academy Press, p. 295-299.
- Sneider, R.M., and King, H.R., 1984, Integrated rock-log calibration in the Elmworth Field, Alberta Canada—Part I, reservoir rock detection and characterization, in J.A. Masters, editors, Elmworth—case study of a Deep Basin gas field: Tulsa, AAPG Memoir 38, p. 205-214.
- Snyder, D.D., 1976, The borehole Bouguer gravity anomaly—Application to interpreting borehole gravity surveys, in 17th annual logging symposium transactions, paper AA: Houston, Society of Professional Well Log Analysts.
- Snyder, D.D., and Fleming, D.B., 1985, Well logging—A 25-year perspective: Geophysics, v. 50(12), p. 2504-2529. See references.
- Snyder, D.D., and Merkel, R.H., 1977, Induced polarization measurements in and around boreholes, in Induced polarization for exploration geologists and geophysicists [short course, March 14-16, 1977]: Tucson, University of Arizona Department of Geosciences, p. 161-220.
- Snyder, D.D., Merkel, R.H., and Williams, T.T., 1977, Complex formation resistivity—The forgotten half of the resistivity log, in 18th annual logging symposium transactions, paper Z: Houston, Society of Professional Well Log Analysts, 39 p.
- Society of Petroleum Engineers, 1971, Well logging: Dallas, Society of Petroleum Engineers, Reprint Series No. 1, 410 p. Contains 26 significant papers on tool development, application and interpretation. A revised edition to be published in early 1987.
- Society of Petroleum Engineers, 1972, Third symposium on abnormal subsurface pore pressure, transactions: Dallas, Society of Petroleum Engineers, 159 p. Includes preprints of 16 papers.

- Society of Petroleum Engineers, 1985, Production logging: Dallas, Society of Petroleum Engineers, Reprint Series no. 19, 375 p. Contains 26 significant papers on tool design and application.
- Society of Professional Well Log Analysts (SPWLA), Annually (1960-1985), Logging symposium transactions: Houston, Society of Professional Well Log Analysts.
- Society of Professional Well Log Analysts (SPWLA), Biannually (1972-1986), European formation evaluation symposium transactions: Houston, Society of Professional Well Log Analysts.
- Society of Professional Well Log Analysts (SPWLA), bimonthly (1960-1985), The Log Analyst: Houston, Society of Professional Well Log Analysts.
- Society of Professional Well Log Analysts (SPWLA), irregular, Reprint volumes: Houston, Society of Professional Well Log Analysts.
- Society of Professional Well Log Analysts, 1978, Acoustic logging reprint volume: Houston, Society of Professional Well Log Analysts, various pagination. Contains 26 significant papers on tool development, operation and application.
- Society of Professional Well Log Analysts, 1978, Gamma ray, neutron and density logging reprint volume: Houston, Society of Professional Well Log Analysts, variously paginated. Contains 32 significant papers in these areas.
- Society of Professional Well Log Analysts, Houston Chapter, 1979, The art of ancient log analysis: Houston, Society of Professional Well Log Analysts, 131 p. + reprints of 22 classic papers on interpretation of old electric (normal and lateral) logs.
- Society of Professional Well Log Analysts, 1979, Pulsed neutron logging reprint volume: Houston, Society of Professional Well Log Analysts, 448 p. Contains 32 significant papers on tool operation and application.
- Society of Professional Well Log Analysts, 1982, Geothermal log interpretation handbook: Houston, Society of Professional Well Log Analysts, reprint volume, variously paginated. Contains reprints of 17 significant papers and an extensive bibliography.
- Society of Professional Well Log Analysts, 1982, Shaly sand reprint volume: Houston, Society of Professional Well Log Analysts, variously paginated. Contains 38 significant papers + extensive bibliography. Excellent source for studying the shaly sand problem.
- Soeder, D.J., 1986, Porosity and permeability of eastern Devonian gas shale, in 1986 unconventional gas technology symposium, proceedings, SPE-15213: Dallas, Society of Petroleum Engineers, p. 75-88.
- Somturk, A.R., and Des Ligneris, S., 1985, LITHO; a computerized approach to lithofacies determination: Geological Society of Malaysia Bulletin [Buletin Persatuan Geologi Malaysia], v. 18, p. 101-118.

- Soonawala, N.M., 1983, Geophysical logging in granites: *Geoexploration*, v. 21(3), p. 221-230.
- Speece, M.A., Bowen, T.D., Folcik, J.L., and Pollack, H.N., 1985, Analysis of temperatures in sedimentary basins—The Michigan Basin: *Geophysics*, v. 50(8), p. 1318-1334.
- Spencer, T.W., and Wu, R.C., 1985, Polarization method for the determination of Poisson's ratio in boreholes: *Geophysics*, v. 50(12), p. 2808-2816.
- Springer, J.E., Thorpe, R.K., and McKague, H.L., 1984, Borehole elongation and its relation to tectonic stress at the Nevada test site: Lawrence Livermore National Laboratory, Report UCRL-53528, 43 p.
- Standen, E., 1985, The use of dipmeter synthetic data to determine rock texture and depositional environment, in 10th formation evaluation symposium transactions, paper AA: Calgary, Canadian Well Logging Society, 12 p.
- Stanley, C.B., and Schultz, A.P., 1983, Coal-bed methane resource evaluation, Montgomery County, Virginia: Charlottesville, Virginia division of Mineral Resources, Publication no. 46, 59 p.
- Startzman, R.A., and Kuo, T.B., 1986, An artificial intelligence approach to well log correlation, in 27th annual logging symposium transactions, paper WW: Houston, Society of Professional Well Log Analysts, 21 p. Also published in 1986 as, A rule-based system for well log correlation, in Symposium on petroleum industry applications of microcomputers [Silver Creek, Colorado, June 18-20], proceedings, SPE-15295: Dallas, Society of Petroleum Engineers, p. 113-124.
- Staub, W.P., and Treat, N.L., 1981, Analysis of bottom-hole temperature data from oil and gas wells of the Tennessee Valley region: Geothermal Resources Council, Transactions, v. 5, p. 129-132.
- Stefansson, V., Gudmundsson, A., and Emmerman, R., 1982, Gamma ray logging in Icelandic rocks: *The Log Analyst*, v. 23(6), November-December, p. 11-16.
- Stefansson, V., and Steingrimsen, B., 1980, Geothermal logging, part I—An introduction to techniques and interpretation: Reykjavik, National Research Council of Iceland, Scientific and Technical Information Service, Report OS80017/JHD09, 117 p.
- Stein, N., 1975, Mechanical properties of friable sands from conventional log data: Dallas, Society of Petroleum Engineers, 50th annual meeting [Dallas] preprint SPE-5500. Later published in 1976, *Journal of Petroleum Technology*, v. 28(7), p. 757-763. Discussion and reply published in 1976, *Journal of Petroleum Technology*, v. 28(11), p. 1303-1304.
- Stephen, R.A., Cardo-Casa, F., and Cheng, C.H., 1985, Finite-difference synthetic acoustic logs: *Geophysics*, v. 50(10), p. 1588-1609.
- Stevenson, J.A., 1981, Log evaluation of wells in the Tuscaloosa trend of south Louisiana, in *Tuscaloosa Trend of South Louisiana*: New Orleans, Louisiana, New Orleans Geological Society, p. 27-46.

- Stewart, G., Wittman, M.J., and van Golf-Racht, T., 1981, The application of the repeat formation tester to the analysis of naturally fractured reservoirs: Dallas, Society of Petroleum Engineers, 56th annual meeting [San Antonio] preprint SPE-10181, 19 p.
- Stewart, J.M., and Weaver, J.S., 1983, Permafrost and hydrates under the Beaufort Sea, in 24th annual logging symposium transactions, paper K: Houston, Society of Professional Well Log Analysts, 18 p.
- Stewart, R.R., Huddleston, P.H., and Kan, T.K., 1984, Seismic versus sonic velocities—a vertical seismic profiling study, in A.H. Balch and M.W. Lee, editors, Vertical seismic profiling—technique, applications, and case histories: Boston, International Human Resource development Corporation (IHRDC), p. 385-423.
- Stoker, R.C., Goldman, D., and Kunze, J.F., 1977, Deducing production zones from well logs: Geothermal Resources Council, Transactions, v. 1, p. 279-280.
- Stoll, R.D., and Bryan, G.M., 1979, Physical properties of sediments containing gas hydrates: Journal of Geophysical Research, v. 84(B4), p. 1629-1634.
- Stone, D.G., and Evans, H.B., 1980, Extrapolating logs run in exploration or development wells using seismic data, in 21st annual logging symposium transactions, paper KK: Houston, Society of Professional Well Log Analysts, 35 p.
- Stosur, J.J., and David, A., 1975, Petrophysical evaluation of the diatomite formation of the Lost Hills field, California: Dallas, Society of Petroleum Engineers, 50th annual meeting [Dallas] preprint SPE-5501. Later published in 1976, Journal of Petroleum Technology, v. 28(10), p. 1138-1144.
- Stuart-Bruges, W.P., 1984, A dipmeter for use in oil based muds, in 9th international formation evaluation symposium transactions, paper 32: Paris, Society of Professional Well Log Analysts, Paris Chapter (SAID), 8 p.
- Souder, W.W., and Williams, J.S., 1979, Interactive calculators can aid wellsite log analysis: Oil and Gas Journal, v. 77(47), November 26, p. 69-76.
- Suau, J., 1981, Logging methods for coal exploration: Bulletin des Centres de Recherche Exploration-Production Elf-Aquitain, v. 5(2), p. 621-633.
- Suau, J., Boyeldieu, C., Roccabianca, R., Cigni, M., and Spila, M., 1978, Evaluation of very low-porosity carbonates (Malossa, Italy), in 19th annual logging symposium transactions, paper W: Houston, Society of Professional Well Log Analysts.
- Suau, J., and Gartner, J., 1980, Fracture detection from well logs: The Log Analyst, v. 21(2), March-April, p. 3-13.

- Suau, J., and Spurlin, J., 1982, Interpretation of micaceous sandstones in the North Sea, in 23rd annual logging symposium transactions, paper G: Houston, Society of Professional Well Log Analysts, 32 p.
- Sujono, A.D., and Sumaryana, 1985, Resistivity measurements and their interpretation using dual laterolog and dual induction log in Gunung Kemala and Benuang fields, south Palembang district, Pertamina UEP-II, in 14th annual convention proceedings: Jakarta, Indonesian Petroleum Association, p. 587-609.
- Sukandar, S., Siregar, S.A., and Leverbvre, L., 1982, A reservoir description, based on wireline logs, geological and production data, aids selection of new well locations for optimum oil production, in 11th annual convention proceedings, volume 1: Jakarta, Indonesian Petroleum Association, p. 415-427.
- Sumner, J.S., 1976, Principles of induced polarization for geophysical exploration: New York, Elsevier Scientific Publishing Company, Developments in Economic Geology no. 5, 277 p.
- Sumner, J.S., 1979, The induced-polarization exploration method, in P.J. Hood, editor, Geophysics and geochemistry in the search for metallic ores [Exploration 77, (Ottawa, Canada, October 1977), proceedings]: Geological Survey of Canada, Economic Geology Report no. 31, p. 123-133.
- Swanson, B.F., 1985, Microporosity in reservoir rocks—Its measurement and influence on electrical resistivity, in 26th annual logging symposium transactions, paper F: Houston, Society of Professional Well Log Analysts, 17 p. Later published in 1985, The Log Analyst, v.26(6), November-December, p. 42-52.
- Swilius, T.M., 1984, Porosity calibration of neutron logs, SACROC unit: Dallas, Society of Petroleum Engineers, 59th annual meeting [Houston] preprint SPE-13289. Later published in 1986, Journal of Petroleum Technology, v. 38(4), p. 468-476.
- Syms, M.C., Syms, P.H., and Bixley, P.F., 1982, Interpretation of flow measurements in geothermal wells without caliper data: The Log Analyst, v. 23(2), March-April, p. 34-45.
- Szendro, D., 1983, A statistical method for lithologic interpretation from well logs: The Log Analyst, v. 24(3), May-June, p. 16-23.

- Takahashi, K., and Ishikawa, K., 1974, Geological investigation and judgment of engineering nature, utilizing borehole measurements: *Rock Mechanics in Japan*, v. 2, p. 158-160.
- Taneja, P.K., and Carroll, J.F., 1985, Abnormal pressure detection using a pulsed neutron log in 26th annual well logging symposium transactions, paper MM: Houston, Society of Professional Well Log Analysts, 10 p.
- Tanner, A.B., 1982, Direct uranium logging by high-resolution gamma-ray spectrometry, in Symposium on uranium exploration methods [Paris, June 1-4, 1982], proceedings: Paris, Nuclear Energy Agency, Organization for Economic Cooperation and Development, p. 793-810.
- Tanner, H.L., 1985, Evaluation of low-resistivity cased-off reserves using the shale-compensated chlorine log: Dallas, Society of Petroleum Engineers, 60th annual meeting [Las Vegas], preprint SPE-14459, 8 p.
- Tanwar, B.S., 1980, Electric logging techniques applied to ground water exploration and waterwells: *Irrigation Power* [New Delhi], v. 37(2), p. 233-240.
- Tatham, R.H., 1985, Shear waves and lithology, chapter 2, in G.P. Dohr, editor, *Seismic shear waves, seismic exploration volume 15B, part B—Applications*: London, Geophysical Press, p. 87-133.
- Taylor, A.E., and Judge, A.S., 1981, Measurement and prediction of permafrost thickness, Arctic Canada: Tulsa, Society of Exploration Geophysicists, 51st annual meeting technical paper, v. 6, p. 3964-3977.
- Taylor, K.C., Wheatcraft, S.W., and McMillion, L.G., 1985, A strategy for the hydrologic interpretation of well logs, in 1985 NWWA conference on surface and borehole geophysical methods in ground water investigations [Fort Worth, Texas, February 12-14], proceedings: Worthington, Ohio, National Water Well Association, p. 314-323.
- Taylor, T.A., and Dey, J.A., 1985, Bibliography of borehole geophysics as applied to ground-water hydrology: U.S. Geological Survey Circular no. 926, 62 p.
- Taylor, T.J., 1983, Interpretation and application of borehole televiewer surveys, in 24th annual logging symposium transactions, paper QQ: Houston, Society of Professional Well Log Analysts, 19 p.
- Teufel, L.W., 1985, Insights into the relationship between wellbore breakouts, natural fractures, and in situ stress, in E. Ashworth, editor, *Research and engineering applications in rock masses* [26th U.S. symposium on rock mechanics, South Dakota School of Mines and Technology, Rapid City, 26-28 June, proceedings], volume 2: Boston, A.A. Balkema, p. 1199-1206.
- Texas Instruments, 1978, Programmable TI-59 specialty packettes—Oil, gas, energy: Texas Instruments, Inc. 40 p.

- Thomas, D.H., 1977, Seismic applications of sonic logs, in 5th European logging symposium transactions, paper 7: Paris, Society of Professional Well Log Analysts, Paris Chapter (SAID), 23 p. Later published in 1978, The Log Analyst, v. 19(1), January-February, p. 23-32.
- Thomas, E.C., and Ausburn, B.E., 1976, Determining swept-zone residual oil saturation in a slightly consolidated Gulf Coast sandstone reservoir, in SPE-AIME improved oil recovery symposium, proceedings, SPE-5803: Dallas, Society of Petroleum Engineers. Later published in 1979, Journal of Petroleum Technology, v. 31(4), p. 513-524.
- Thomas, E.C., Richardson, J.E., Shannon, M.T., and Williams, M.R., 1986, ROS measurement and flood monitoring techniques, in 1986 SPE international meeting on petroleum engineering [Beijing, China, March 17-20], proceedings, SPE-14060: Dallas, Society of Petroleum Engineers, p. 193-208.
- Thomas, E.C., and Steiber, S.J., 1975, The distribution of shale in sandstones and its effect upon porosity, in 16th annual logging symposium transaction, paper T: Houston, Society of Professional Well Log Analysts, 15 p.
- Thompson, K.D., 1978, Well log interpretation of shaly sands with the programmable calculator, in 19th annual logging symposium transactions, paper X: Houston, Society of Professional Well Log Analysts, 26 p.
- Threadgold, P., 1970, Applications of well-logging techniques to mining exploration boreholes, in Mining and petroleum geology [9th Commonwealth mining and metallurgical congress, 1969, proceedings]: London, The Institution of Mining and Metallurgy, p. 731-747.
- Threadgold, P., 1971, Some problems and uncertainties in log interpretation, in 13th annual logging symposium transactions, paper, W: Houston, Society of Professional Well Log Analysts, 19 p. Later reprinted in 1972, The Log Analyst, v. 12(2), March-April, p. 3-11.
- Threadgold, P., 1985, Advances in formation evaluation, chapter 3 in R.A. Dawe and D.C. Wilson, editors, Developments in petroleum engineering, volume 1: New York, Elsevier Applied Science Publishers, p. 43-87.
- Throckmorton, H.C., and Al-Shaieb, Z., 1986, Core-calibrated logs utilization in recognition of depositional facies and reservoir rock of the Henryhouse Formation (Silurian), Anadarko Basin, in 27th annual logging symposium transactions, paper L: Houston, Society of Professional Well Log Analysts, 17 p.
- Tilly H.P., Gallagher, B.J., and Taylor, T.D., 1981, Methods for correcting porosity data in a gypsum-bearing carbonate reservoir, in 1981 SPE Permian Basin oil and gas recovery symposium, proceedings, SPE-9716: Dallas, Society of Petroleum Engineers. Later published in 1982, Journal of Petroleum Technology, v. 34(10), p. 2449-2454.

- Timko, D.J., and Fons, L.C., 1971, Definition, identification and measurement of normal and abnormal subsurface pressures, in Abnormal subsurface pressures, a study group report, 1969-1971: Houston Geological Society, p. 20-30.
- Timur, A., 1967, Pulsed nuclear magnetic resonance studies of porosity, movable fluid and permeability of sandstones: Dallas, Society of Petroleum Engineers, 42nd annual meeting [] preprint SPE-2045. Later published in 1969, Journal of Petroleum Technology, v. 21(6), p. 775-786.
- Timur, A., 1968, Effective porosity and permeability of sandstones investigated through nuclear magnetic principles, in 9th annual logging symposium transactions, paper K: Houston, Society of Professional Well Log Analysts, 18 p. Later published in 1969, The Log Analyst, v. 10(1), January-February, p. 3-11.
- Timur, A., 1968, An investigation of permeability, porosity, and residual water saturation relationships for sandstone reservoirs in 9th annual well logging symposium transactions, paper J: Houston, Society of Professional Well Log Analysts, 18 p. Later published in 1968, The Log Analyst, v. 9(4), July-August, p. 8-17.
- Timur, A., 1982, Open hole well logging, in International petroleum conference [Beijing] proceedings, SPE-10037: Dallas, Society of Petroleum Engineers, p. 639-674. Later published in condensed form 1982, Advances in well logging: Journal of Petroleum Technology, v. 34(6), p. 1181-1185.
- Timur, A., and Toksoz, M.N., 1985, Downhole geophysical logging: Annual Reviews of Earth and Planetary Science, v. 14, p. 315-344.
- Ting-Dong, T., 1985, Log interpretation characteristics of China's offshore hydrocarbon reservoirs, in Offshore China '85 symposium [Canton, November 26-30] proceedings, v. 1: Canton, Third Offshore China Oil Exhibition and Conference, Ltd., p. 371-393.
- Tittman, J., 1986, Geophysical well logging: New York, Academic Press, Inc., 175 p.
- Tixier, M.P., and Alger, R.P., 1967, Log evaluation of non-metallic mineral deposits, in 8th annual logging symposium transactions, paper R: Houston, Society of Professional Well Log Analysts, 22 p. Later published in 1970, Geophysics, v. 35(1) p. 124-142. Reprinted in 1971, Well Logging: Dallas, Society of Petroleum Engineers, Reprint Series no. 1, p. 368-390.
- Tixier, M.P., and Curtis, M.R., 1967, Oil shale yield predicted from well logs, in 7th world petroleum congress, proceedings, volume 3: New York, Elsevier, p. 713-715.
- Tixier, M.P., Loveless, G.W., and Anderson, R.A., 1973, Estimation of formation strength from the Mechanical Properties Log: Dallas, Society of Petroleum Engineers, 48th annual meeting [Las Vegas] preprint SPE-4532, 14 p. Later published in 1975, Journal of Petroleum Technology, v. 27(12), p. 283-293. Reprinted in 1978, Acoustic Logging: Houston, Society of Professional Well Log Analysts, Reprint Volume, paper X, 11p.

- Tixier, M.P., Morris, R.L., and Connell, J.G., 1968, Log evaluation of low resistivity pay sands in the Gulf Coast, in 9th annual logging symposium transactions, paper E (abstract only): Houston, Society of Professional Well Log Analysts. Later published in 1968, *The Log Analyst*, v. 9(6), p. 3-21. Reprinted in 1971, *Well logging*: Dallas, Society of Petroleum Engineer, Reprint Series 1, p. 342-367. Reprinted in 1982, *Shaly sand reprint volume*: Houston, Society of Professional Well Log Analysts, p. IV125-IV142.
- Tizzard, P.G., and Lerbekmo, J.F., 1975, Depositional history of the Viking Formation, Suffield area, Alberta, Canada: *Bulletin of Canadian Petroleum Geology*, v. 23(4), p. 715-752.
- Toksoz, M.N., Wilkens, R.H., and Cheng, C.H., 1985, Shear wave velocity and attenuation in ocean bottom sediments from acoustic log waveforms: *Geophysical Research Letters*, v. 12(1), p. 37-40.
- Tootle, J.R., 1979, The prediction of well productivity from wireline logs, McAllen Ranch field, in 20th annual logging symposium transactions, paper H: Houston, Society of Professional Well Log Analysts. Reprinted in 1979, in 7th formation evaluation symposium transactions, paper AA: Calgary, Canadian Well Logging Society.
- Tosaya, C., and Nur, A., 1982, Effects of diagenesis and clays on compressional velocities in rocks: *Geophysical Research Letters*, v. 9(1), p.
- Treguer, J.P., 1981, Temperature measurement in oil wells, in Heat flow; combined proceedings of the joint ASCOPE/CCOP workshops I [Jakarta, 1981] and II [Bangkok, 1984]: New York, United Nations, CCOP Project Office Report CCOP/TP 15, p. 61-69.
- Trofimuk, A.A., Makogon, Y.F., Tolkachev, M.V., and Cherskii, N.V., 1984, Some distinctive features of the discovery, prospecting, and exploitation of gas-hydrate bodies: *Soviet Geology and Geophysics*, v. 25,(9), p. 1-7.
- Trojan, M., 1985, Effects of diagenesis on reservoir properties and log response, Upper Jurassic Taylor Sandstone, Cotton Valley Group, Lincoln Parish, Louisiana: *Transactions of the Gulf Coast Association of Geological Societies*, v. 35, p. 515-523.
- Truman, R.B., and Campbell, R.L., Jr., 1985, Devonian shale well log analysis: Eastern Devonian Gas Shales Technology Review [Gas Research Institute], v. 2(3), December, p. 6-17.
- Truman, R.B., Howard, W.A., Davies, D.K., and Vessell, R.K., 1986, Utilization of rock characterization data to improve well log interpretation, in 27th annual logging symposium transactions, paper V: Houston, Society of Professional Well Log Analysts, 19 p.
- Tsang, P.B., 1978, The log analyst and the programmable pocket calculator, Part I—R, from the SP—Addendum: *The Log Analyst*, v. 19(1), January-February, p. 10-11.

- Tsay, F.S., and Fang, J.H., 1986, A core-log study of the Hartselle Sandstone in north Alabama with emphasis in log interpretation problems in tight gas sands, in 1986 unconventional gas technology symposium, proceedings, SPE-15211: Dallas, Society of Petroleum Engineers, p. 47-62.
- Tselentis, G., 1985, A study of the hydrogeophysical properties of fissured aquifers using a double porosity model: *Journal of Hydrology*, v. 78, p. 331-344.
- Tselentis, G., 1985, The processing of geophysical well logs by microcomputers as applied to the solution of hydrogeological problems: *Journal of Hydrology*, v. 80, p. 215-236.
- Tselentis, G., 1986, On-site assessment of rock discontinuities from resistivity logs; T-L log—A new logging technique: *Journal of Hydrology*, v. 83, p. 269-283.
- Tubman, K.M., Cheng, S.T., Willen, D.E., Toksoz, M.N., 1984, Determination of formation properties in cased boreholes using full waveform acoustic logs, in 25th annual logging symposium transactions, paper CC: Houston, Society of Professional Well Log Analysts, 19 p.
- Turner, J.R., 1984, Problematic petrophysical characteristics of the Smackover at Bayou Middle Fork field, Claiborne Parish, Louisiana, in M.W. Presley, editor, *The Jurassic of east Texas* [East Texas Jurassic exploration conference, Tyler, Texas, March 27-28]: East Texas Geological Society, p. 95-106.
- Turner, W.J., 1980, Hand-held calculator programs for frequently used formulas, part 8—Directional well surveys, radius of curvature method: *Petroleum Engineer International*, v. 52(7), June, p. 102-114.
- Tyler, N., and Ambrose, W.A., 1985, Facies architecture and production characteristics of strandplain reservoirs in the Frio Formation, Texas: Austin, Texas Bureau of Economic Geology, Report of Investigations no. 146, 42 p. Later published in 1986, *AAPG Bulletin*, v. 70(7), 809-829.
- Tyne, E.D., 1981, Drill hole resistivity and induced polarization logging at Woodlawn, in R.J. Whiteley, editor, *Geophysical case study of the Woodlawn orebody*, NSW, Australia: New York, Pergamon Press, p. 531-553.
- Tyne, E.D., Thorburn, M.J., Daggar, D.H., 1985, A major advance in borehole IP logging technology: *Exploration Geophysics* [Bulletin of the Australian Society of Exploration Geophysicists], v. 16(2/3), p. 303-309.

- Ucok, H., 1981, A laboratory study of the effect of temperature gradient on the development of spontaneous-potential in geothermal wellbore, in 22nd annual logging symposium transactions, paper K: Houston, Society of Professional Well Log Analysts, 16 p.
- Umiastowski, K., and Buniak, M., 1977, Influence of the rock heterogeneity on the results of gamma-gamma logging, in Nuclear techniques and mineral resources 1977: Vienna, International Atomic Energy Agency, p. 273-280.
- University of Tulsa, 1985, Index to well logging literature: Tulsa, University of Tulsa, 399 p.
- Urban, T.C., and Diment, W.H., 1982, An interpretation of precision temperature logs in a deep geothermal well near Desert Peak, Churchill County, Nevada: Geothermal Resources Council, Transactions v. 6, p. 317-321.
- Urban, T.C., and Diment, W.H., 1985, Convection in boreholes--Limits on interpretation of temperature logs and methods for determining anomalous fluid-flow, in 1985 NWWA conference on surface and borehole geophysical methods in ground water investigations [Fort Worth, Texas, February 12-14], proceedings: Worthington, Ohio, National Water Well Association, p. 399-414.
- Urbancic, T., and Mwenifumbo, C.J., 1985, Multiparameter logging techniques applied to gold exploration, in P. Kileen, editor, Borehole geophysics for mining and geotechnical applications [International symposium and workshop, Ottawa, August 29-31, 1983, proceedings]: Geological Survey of Canada Paper no. 85-27. Available in 1986

- Vacquier, V., 1985, Calculation of terrestrial heat flow solely from oil well logging records, in Joint ASCOPE/UN CCOP heat flow workshop [Jakarta, Indonesia, 10/19-23/81], proceedings: New York, United Nations CCOP Technical Publication 15, p. 45-48.
- Vaish, J.P., and Saini, I.S., 1982, Application of geophysical well-logging technique for detection of aquifers, in S.S. Merh, First national seminar on Quaternary environments [Baroda, India, November, 1977]: Delhi, India, Hindustan Publishing Corporation, p. 115-20.
- Vajner, E.A., Kidwell, C.M., and Haley, R.A., 1977, Surprising productivity from low-resistivity sands, in 18th annual logging symposium transactions, paper EE: Houston, Society of Professional Well Log Analysts, 11 p. Reprinted in 1978, Low resistivity masks high potential of Gulf Coast sands, World Oil, v. 186(2), February 1, p. 49-54.
- Van Golf-Racht, T.D., 1982, Logging versus fracture evaluation, chapter 5, in Fundamentals of fractured reservoir engineering: Amsterdam, Elsevier, Developments in Petroleum Science no. 12, p. 255-294.
- Veach, C.L., and Wheatley, J.C., 1977, A look at the development of neutron logging, in 24th annual southwestern petroleum shortcourse [Lubbock, Texas, April 21-22], proceedings: Lubbock, Texas, Southwestern Petroleum Short Course Association, p. 105-112.
- Veneziani, I.I., Pirson, S.J., Colombo, U., and Broome, M.B., 1972, The Redox log, in 13th annual logging symposium transactions, paper D: Houston, Society of Professional Well Log Analysts, 18 p.
- Verdier, M., editor, 1986, Wireline logging tool catalog, 2nd edition: Houston, Gulf Publishing Co., 409 p.
- Verma, R.K., 1977, Temperature logging and its application to geophysical problems, in V.L.S. Bhimasankaram and V.K. Gaur, editors, Lectures on exploration geophysics for geologists and engineers: Hyderabad, India, The Association of exploration Geophysicists, p. 287-300.
- Verma, R.K., and Bhuin, N.C., 1979, Use of electrical resistivity methods for study of coal seams in parts of the Jharia coalfield, India: Geoexploration, v. 17(2), p. 163-176.
- Vincent, Ph., Gartner, J.E., and Attali, G., 1977, An approach to detailed dip determination using correlation by pattern recognition: Dallas, Society of Petroleum Engineers, 52nd annual meeting [Denver] preprint SPE-6823. Later published in 1979, Journal of Petroleum Technology, v. 31(2), p. 232-240.
- Vinegar, H.J., and Waxman, M.H., 1984, Induced polarization of shaly sands: Geophysics, v. 49(8), p. 1267-1287. An investigation of this method for direct in-situ log determination of CEC for use in shaly sand evaluation.

- Vinegar, H.J., Waxman, M.H., Best, M.H., and Reddy, K., 1985, Induced polarization logging—Tool development, borehole departure curves and field test results, in 26th annual logging symposium transactions, paper AAA: Houston, Society of Professional Well Log Analysts, 62 p.
- Vinegar, H.J., Waxman, M.H., Best, M.H., and Reddy, I.K., 1986, Induced polarization logging—Borehole modelling, tool response and field tests: The Log Analyst, v. 27(2), March-April, p. 25-61.
- Viro, E.J., editor, 1985, Well evaluation conference—Brazil 1985 [November] [in Portuguese]: Paris, Schlumberger Technical Services, variously paginated.
- Visher, G.S., 1965, Use of vertical profile in environmental reconstruction: AAPG Bulletin, v. 49(1), p. 41-61. Paper generally cited as the basis of environmental interpretation of the SP curve.
- Visser, R., and van Baaren, J.P., 1985, Optimisation [sic] of the shale correction using well logs, in 26th annual logging symposium transactions, paper C: Houston, Society of Professional Well Log Analysts, 14 p.
- Vittachi, A.R., 1985, A high resolution, three mineral lithology analysis utilizing sonic and litho-density measurements, in 10th formation evaluation symposium transactions, paper F: Calgary, Canadian Well Logging Society, 9 p.
- Vogel, A.W., Jr., 1982, Predicting possibility of oil production from tar sand deposits based on geologic, logging and chemical composition: Dallas, Society of Petroleum Engineers, Rocky Mountain regional meeting [Billings] preprint SPE-10884, 15 p.
- Volk, L.J., Carroll, H.B., and Raible, C.J., 1979, Influence of shale conductivities on the electrical conductivity of low-permeability rocks, in 1979 symposium on low-permeability gas reservoirs [Denver], proceedings, SPE-7918: Dallas, Society of Petroleum Engineers, p. Later published in 1980, Journal of Petroleum Technology, v. 32(5), p. 865-867.
- Vonhof, J.A., 1966, Water quality determination from spontaneous-potential electric log curves: Journal of Hydrology, v. 4, p. 341-347.

- Wahab, A., 1975, An analysis of dipmeter survey results in the Langkat area, in 4th annual convention proceedings, volume 1: Jakarta, Indonesian Petroleum Association, p. 83-112.
- Walker, J.H.D., and Stuart, A.J., 1976, Permafrost investigations by crystal cable surveys, McKenzie Delta, N.W.T., in 17th annual logging convention transactions, paper J: Houston, Society of Professional Well Log Analysts, 10 p.
- Wallace, W.E., 1965, Abnormal subsurface pressures measured from conductivity or resistivity logs, in 6th annual logging symposium, paper I: Houston, Society of Professional Well Log Analysts, 13 p. Also published in 1965, The Log Analyst, v. 5(4), February-March, p. 26-38., and in 1965, Oil and Gas Journal, v. 63, July 5, p. 102-106. One of the first papers on use of logs for pressure detection.
- Ward, C.R., 1984, Coalfield exploration, chapter 6, in C.R. Ward, editor, Coal geology and coal technology: Boston, Blackwell Scientific Publishers, p. 177-219.
- Ward, G.S., and Pendergast, R.D., 1979, Evaluation of pressures and salinities of the Cardium Formation in Western Canada, in 7th formation evaluation symposium transactions, paper R: Calgary, Canadian Well Logging Society.
- Watney, W.L., 1979, Gamma-ray-neutron [sic] cross-plots as an aid in sedimentological analysis, in D. Gill and D.F. Merriam, editors, Geomathematical and petrophysical studies in sedimentology: Oxford, Pergamon Press, Computers in Geology Series, p. 81-100.
- Waxman, M.H., and Smits, L.J.M., 1967, Electrical conductivities in oil-bearing shaly sands: Dallas, Society of Petroleum Engineers, 42nd annual meeting [Houston] preprint SPE-1863-A, 16 p. Later published in 1968, Society of Petroleum Engineers Journal, v. 8(2), p. 107-122. Reprinted in 1971, Well Logging: Dallas, Society of Petroleum Engineers, Reprint Series 1, p. 101-116. Reprinted in 1982, Shaly sand reprint volume: Houston, Society of Professional Well Log Analysts, p. V145-V160.
- Waxman, M.H., and Thomas, E.C., 1972, Electrical conductivities in shaly sands—I. The relation between hydrocarbon saturation and resistivity index; II. The temperature coefficient of electrical conductivity: Dallas, Society of Petroleum Engineers, 47th annual meeting [San Antonio] preprint SPE-4094. Later published in 1974, Journal of Petroleum Technology, v.26(2), p. 213-225. Reprinted in 1982, Shaly sand reprint volume: Houston, Society of Professional Well Log Analysts, p. V161-V173.
- Weber, K.J., 1971, Sedimentological aspects of oil fields in the Niger Delta: Geologie en Mijnbouw, v. 50(3), p. 559-576.
- Weltz, L.S., 1976, Log evaluation of sub-bituminous coals in Magallenes—Chile, in 17th annual logging symposium transactions, paper K: Houston, Society of Professional Well Log Analysts, 33 p.

- Wescott, W.A., 1983, Diagenesis of Cotton Valley Sandstone (Upper Jurassic), east Texas—Implications for tight gas formation pay recognition: AAPG Bulletin, v. 67(6), p. 1002-1013. A discussion and reply published in 1985, AAPG Bulletin v. 69(5), p. 813-816.
- West, F.G., and Laughlin, A.W., 1976, Spectral gamma logging in crystalline basement rocks: Geology, v. 4(10), p. 617-618.
- West, G., 1981, An ultrasonic velocity borehole logger for use in rock: Ultrasonics, v. 19(2), p. 67-71.
- Westaway, P., Whittman, M., and Rochette, P., 1979, Applications of nuclear techniques to reservoir monitoring, in 1979 Middle East oil technical conference [Manama, Bahrain, March 25-29], proceedings, SPE-7776: Dallas, Society of Petroleum Engineers. Later published in 1981, Journal of Petroleum Technology, v. 33(1), p. 46-54.
- White, J.E., 1983, Waves along cylindrical boreholes, chapter 5, in Underground sound, application of seismic waves: Amsterdam, Elsevier, Methods in Geochemistry and Geophysics no. 18, p. 139-245.
- Whitehead, W.S., Hunt, E.R., Finley, R.J., and Holditch, S.A., 1986, In-situ stresses—A comparison between log-derived values and actual field-measured values in the Travis Peak Formation of east Texas, in 1986 unconventional gas technology symposium, proceedings, SPE-15209: Dallas, Society of Petroleum Engineers, p. 19-34.
- Whittaker, A., editor, 1985, Mud logging, principles and interpretations: Boston, International Human Resources Development Corporation, 92 p.
- Whittaker, A., editor, 1985, Theory and evaluation of formation pressures, a pressure detection reference handbook: Boston, International Human Resources Development Corporation, 92 p.
- Whittaker, A., Holliday, D.W., and Penn, I.E., 1985, Geophysical logs in British stratigraphy: London, Blackwell Scientific Publications, Geological Society Special Report no. 18, 74 p.
- Wichmann, P.A., 1973, A review of the use of logs to determine abnormal pressures: Canadian Well Logging Society Journal, v. 6(1), December, p. 7-32. Later published in 1974, in 15th annual logging symposium transactions, paper C: Houston, Society of Professional Well Log Analysts, 16 p.
- Wilkinson, J., 1978, Effect of shale distribution on porosity and water saturation: Canadian Well Logging Society Journal, v. 10(1), p. 61-77.
- Williams, C.C.G., 1983, Development of borehole logging, in G.O. Argall, editor, 4th international coal exploration symposium [Sydney, Australia, May 15-20], proceedings: San Francisco, Miller Freeman Publications Inc., 19 p.

- Williams, G.B., 1970, Sonic principles applied to formation fracture location and cement bond logging: Canadian Well Logging Society Journal, v. 3, p. 7.
- Williams, H., and Dunlap, H.E., 1984, Short-term variations in drilling fluid parameters; their measurement and implications: The Log Analyst, v. 25(5), September-October, p. 3.
- Williams, J.H., Carswell, L.D., Lloyd, O.B., Jr., and Roth, W.C., 1984, Characterization of ground water circulation in selected fractured rock aquifers using borehole temperature and flow logs, in D.M. Nielsen and M. Curl, editors, 1984 NWWA/EPA conference on surface and borehole geophysics methods in ground water investigations, proceedings: Worthington, Ohio, National Water Well Association, p. 842-852.
- Willis, M.E., and Toksoz, M.N., 1983, Automatic P and S velocity determination from full waveform digital acoustic logs: Geophysics, v. 48(12), p. 1631-1644.
- Wilson, M.D., and Pittman, E.D., 1977, Authigenic clays in sandstones--recognition and influence on reservoir properties and paleoenvironmental analysis: Journal of Sedimentary Petrology, v. 47(1), p. 3-31. Reprinted in 1982, Shaly sand reprint volume: Houston, Society of Professional Well Log Analysts, p. 1137-1165.
- Wilson, R.D., and Cosby, M.S., 1980, Field evaluation of direct uranium borehole logging methods, in 21st annual logging symposium transactions, paper S: Houston, Society of Professional Well Log Analysts, 35 p.
- Winchester, A., editor, 1981, Schlumberger well evaluation conference--South East Asia 1981 [Singapore, October]: Paris, Schlumberger Technical Services, 238 p.
- Witherbee, L.J., Godfrey, R.D., and Dimelow, T.E., 1983, Predicting turbidite-contourite reservoir intervals in tight gas sands--A case study from the Mancos B Sandstone, in 1983 SPE/DOE symposium on low permeability gas reservoirs, proceedings, SPE/DOE-11609: Dallas, Society of Petroleum Engineers, p. 87-94.
- Wolff, M., and Pelissier-Combescure, J., 1982, Faciolog--Automatic electrofacies determination in 23rd annual logging symposium transactions, paper FF: Houston, Society of Professional Well Log Analysts, 23 p.
- Wood, B.R., and Westaway, P., 1982, Applications of the electromagnetic propagation tool in Indonesia, in 11th annual convention proceedings, v. 1: Jakarta, Indonesian Petroleum Association, p. 379-400.
- Woodhouse, R., 1976, Athabasca tar sand reservoir properties derived from cores and logs: Canadian Well Logging Society Journal, v. 9(1), p. 83. Also published in 1976, in 17th annual logging symposium transactions, paper T: Houston, Society of Professional Well Log Analysts, 13 p.

- Woodruff, K.D., 1976, Geophysical log characteristics of coastal plain units in Delaware, in A.M. Thompson, editor, Guidebook to the stratigraphy of the Atlantic coastal plain in Delaware [third annual field trip]: New York, Petroleum Exploration Society, p. 81-92.
- Woodruff, K.D., 1976, Selected logging data and examples of geophysical logs for the coastal plain of Delaware: Delaware Geological Survey, Report of Investigation 25, 40 p.
- Woodward, D.G., 1984, Areal lithologic changes in bedrock aquifers in southeastern Minnesota as determined from natural-gamma borehole logs, in D.M. Nielsen and M. Curl, editors, 1984 NWWA/EPA conference on surface and borehole geophysics methods in ground water investigations, proceedings: Worthington, Ohio, National Water Well Association, p. 788-800.
- Working Group on Nuclear Techniques in Hydrology, 1971, Nuclear well logging in hydrology: Vienna, Austria, International Atomic Energy Agency, Technical Reports Series, no. 126, 90 p.
- Worthington, P.F., 1985, The evolution of shaly-sand concepts in reservoir evaluation: The Log Analyst, v. 26(1), p. 23-40. A concise discussion of the development of models for evaluation of shaly sands. See references.
- Worthington, P.F., and Collar, F.A., 1982, The relevance of induced polarization to quantitative formation evaluation, in 23rd annual logging symposium transactions, paper U: Houston, Society of Professional Well Log Analysts, 42 p.
- Worthington, P.F., Pallatt, N., and Toussaint-Jackson, J.E., 1985, Influence of microporosity upon the evaluation of hydrocarbon saturation: Dallas, Society of Petroleum Engineers, 60th annual meeting [Las Vegas], preprint SPE-14296, 12 p.
- Wright, P.M., Ward, S.H., Ross, H.P., and West, R.C., 1985, State of the art geophysical exploration for geothermal resources: Geophysics, v. 50(12), p. 2666-2696.
- Wu, C.H., and Krudwig, M.C., 1980, Density-neutron crossplot analysis using polar coordinates: The Log Analyst, v. 21(4), July-August, p. 3-8.
- Wu, C.H., and Krug, J., 1978, Density-neutron crossplot analysis for shaly gas sands using hand-carried calculators: The Log Analyst, v. 19(4), July-August, p. 3-10.
- Wu, C.H., and Krug, J., 1979, Shaly gas-sand analysis using hand-carried calculators: The Log Analyst, v. 20(3), May-June, p. 20-25.
- Wu, X., and Nyland, E., 1986, Well log data interpretation using artificial intelligence technique, in 27th annual logging symposium transactions, paper M: Houston, Society of Professional Well Log Analysts, 16 p.

- Wyatt, D.F., Smith, H.D., Jr., and Oliver, D.W., 1986, Reservoir monitoring with the thermal multigate decay log, in 1986 SPE international meeting on petroleum engineering, proceedings, SPE-14137: Dallas, Society of Petroleum Engineers, p.
- Wylie, A.W., 1984, Nuclear assaying of mining boreholes: New York, Elsevier, Methods in Geochemistry and Geophysics 21, 344 p.
- Wylie, A.W., and Eisler, P.L., 1978, Determining the grade, bulk density and porosity of iron ores by the methods of nuclear geophysics: Atomic Energy in Australia, v. 21, p. 2-13.
- Wyman, R.E., 1977, How should we measure residual-oil saturation?: Bulletin of Canadian Petroleum Geology, v. 25(2), May, p. 233-270.
- Wyman, R.E., 1978, Logging methods, chapter 5, in Determination of residual oil saturation: Oklahoma City, Interstate Oil Compact Commission, p. 89-116.
- Wyman, R.E., 1981, Well logging, in S.P. Parker, editor, Encyclopedia of energy, 2nd edition: New York, McGraw-Hill, p. 778-785.

- Yale, D.P., 1985, Recent advances in rock physics: *Geophysics*, v. 50(12), p. 2480-2491. See references.
- Yamaguchi, S., and Hirakawa, S., 1983, A method for well log interpretation of a fractured oil reservoir: *Butsuri-Tanko [Geophysical Exploration]*, v. 36(1), p. 16-22 p.
- Yang, Y., Xiancai, Q., and Guocai, Y., 1986, Determination of residual oil saturation in place by carbon/oxygen (C/O) logging in Daqing oilfield, in 1986 SPE international meeting on petroleum engineering Beijing, China, March 17-20], proceedings, SPE-14838: Dallas, Society of Petroleum Engineers, p. 209-215.
- Yost, A.B., II, Frohne, K., Komar, C.A., and Ameri, S., 1980, Techniques to determine natural and induced fracture relationships in Devonian shale: Dallas, Society of Petroleum Engineers, 55nd annual meeting [Dallas] preprint SPE-9271. Later published in 1982, *Journal of Petroleum Technology*, v. 34(6), p. 1371-1377.
- Yost, A.B., II, Komar, C.A., and Ameri, S., 1980, Application of core and log data to determine producible hydrocarbon intervals in the Devonian shale: Dallas, Society of Petroleum Engineers, 55th annual meeting [Dallas] preprint SPE-9271, 8 p.
- Youngblood, W.E., 1979, The application of pulsed-neutron-decay time logs to monitor waterfloods with changing salinity, in 1979 Middle East oil technical conference [Bahrain], proceedings, SPE-7777: Dallas, Society of Petroleum Engineers, p.

- Zelt, F.B., 1985, Natural gamma-ray spectrometry, lithofacies and depositional environments of selected Upper Cretaceous marine mudrocks, western United States, including Tropic Shale and Tununk Member of Mancos Shale: Princeton University, unpublished PhD. dissertation, 354 p.
- Zelt, F.B., 1985, Paleocenographic events and lithologic/geochemical facies of the Greenhorn marine cycle (Upper Cretaceous) examined using natural gamma-ray spectroscopy, in L. Pratt, E.G. Kaufmann, F.B. Zelt, editors, SEPM field trip guidebook number 4, 1985 midyear meeting, Golden, Colorado: Tulsa, Society of Economic Paleontologists and Mineralogists, p. 49-59.
- Zemanek, J., Caldwell, R.L., Glenn, E.E., Jr., Holcomb, S.W., Norton, L.J., and Straus, A.J.D., 1968, The Borehole Televiewer—A new logging concept for fracture location and other types of borehole inspection: Dallas, Society of Petroleum Engineers, 43rd Annual meeting [Houston] preprint SPE-2402. Later published in 1969, Journal of Petroleum Technology, v. 21(6), p. 762-774.
- Zemanek, J., Williams, D.M., Caldwell, R.L., Dennis, C.L., and Angona, F.A., 1985, New developments in acoustic logging, in 14th annual convention proceedings: Jakarta, Indonesian Petroleum Association, p. 565-586.
- Zhixing, H., and Liandi, S., 1986, Mechanism of transit time increase and its interpretation after water injection into reservoir M in Lao Jun Miao oil field, in 1986 SPE international meeting of petroleum engineering [Beijing, March 17-20], proceedings, SPE-14846: Dallas, Society of Petroleum Engineers, p.427-447.
- Zimmerman, R.W., and King, M.S., 1986, The effect of the extent of freezing on seismic velocities in unconsolidated permafrost: Geophysics, v. 51(6), p. 1285-1290.
- Zivy, G.M., 1984, the role of expert systems in producing log interpretation software: Expert Systems, v. 1(1), p. 57-62.
- Zoback, M.D., and Anderson, R.N., 1982, Ultrasonic borehole televiewer investigation of oceanic crustal layer 2a, Costa Rica rift: Nature, v. 295, February 4, p. 375-379.
- Zoback, M.D., Moos, D., Mastin, L., and Anderson, R.N., 1985, Well bore breakouts and in situ stress: Journal of Geophysical Research, v. 90(B7), p. 5523-5530.

USCS LIBRARY-REXTON



3 1818 00045841 2