CONTENTS

Ι.	EXPLORATION
II.	RESOURCE ASSESSMENT
III.	WELL DRILLING
IV.	CORROSION, SCALING AND MATERIALS SELECTION
٧.	DIRECT USE APPLICATIONS
	SIC 201Meat, Poultry Packing, Processing
	SIC 202Dairy Products Juices
	SIC 203Canned Dehydrated or Frozen Foods
	SIC 206Sugar Refining, Confections
	Alcohol Production
	Agricultural, Aguaculture, Greenhouses
. •	Mi scellaneous
VI.	LEGAL, INSTITUTIONAL, AND ENVIRONMENTAL CONSIDERATIONS
	ECONOMICS OF DIRECT USE DEVELOPMENT
	FINANCING DIRECT USE PROJECTS
	rannound beingt oom thoogeto terretering transfer the terretering the terretering to the

I. EXPLORATION

- 1. Aiken, C. L. V., and Ander, M E., 1981, Regional Strategy for Geothermal Exploration with Emphasis on Gravity and Magnetotelluries. NL Jounal of Vulcanology and Geothermal Research, 9; No. 1, 1-27, January 1981.
- 2. Anderson, D. N., 1973; Flow Chart of Critical Path in Geothermal Exploration. In, Proceedings, National Conference on Geothermal Energy, University of California, Riverside; National Science Foundation/ RANN.
- 3. Atwood, J. W., Killpack, T. J., and Glenn, W. E., 1980; Computer System for Digitizing, Analyzing and Plotting Well Log Data. (A User's Guide to Wellog, Revision 1), DOE/ID/12079-1, ESL-31.
- 4. Baldwin, E. M., 1964; Geology of Oregon. University of Oregon, Eugene.
- 5. Bamford, R. W., 1978; Geochemistry of Solid Materials from Two U.S. Geothermal Systems and Its Application to Exploration, 196 p., IDO/77.3.2, ESL-6.
- 6. Bamford, R. W., and Christensen, O. D., 1979; Multielement Geochemical Exploration Data for the Cove Fort-Sulphurdale Known Geothermal Resource Area, Beaver and Millard Counties, Utah. 48 p., DOE/ET/28392-28,ESL-19.
- 7. Bamford, R. W., Christensen, O. D., and Capuano, R. M., 1980; Multielement Geochemistry of Solid Materials in Geothermal Systems and Its Application, Part 1: The Hot-Water System at the Roosevelt Hot Springs KGRA, Utah. DOE/ET/27002-7, ESL-30.
- 8. Berg, J. W., Jr., and Thiruvathukal, J. W., 1967; Complete Bouger Gravity Anomaly Map of Oregon. Oregon Department of Geology and Mineral Industries Map GMS 4-b.
- 9. Blackwell, D. D., Hull, D. A., Bowen, R. G., and Steele, J. L., 1978; Heat Flow of Oregon. Oregon Department of Geology and Mineral Industries Special Paper 4.
- Bodvarsson, G., 1974; Dikes as Fluid Conductors in the Extraction of Terrestial Heat. Geothermal Energy 2, 9.
- 11. Bodvarsson, G., Palmason, G., 1964; Exploration of Subsurface Temperature in Iceland. In, Proceedings of United Nations Conference on New Sources of Energy, Vol. 2, Paper G/24, Rome, Italy, 1961, United Nations, New York, 1964.
- 12. Bowen, R. G., and Blackwell, D. D., 1975; The Cow Hollow Geothermal Anomaly, Malheur County, Oregon. OreBin, Vol. 37, N. 7.

- 13. Bowen, R. G., Blackwell, D. D., 1975; Geothermal Studies and Exploration in Oregon. Oregon Department of Geology and Mineral Industries Open File Report.
- 14. Bowen, R. G., Blackwell, D. D., and Hull, D. A., 1975; Geothermal Studies and Exploration Studies in Oregon. Oregon Department of Geology and Mineral Industries Open File Report 0-75-7.
- 15. Bowen, R. G., Blackwell, D. D., and Hull, D. A., 1977; Geothermal Exploration Studies in Oregon. Oregon Department of Geology and Mineral Industries Miscellaneous Paper 19.
- 16. Bowen, R. G., Peterson, N. V., and Riccio, J. F., 1978; Low-to-Intermediate Temperature Thermal Springs and Wells in Oregon. Oregon Department of Geology and Mineral Industries, GMS-10.
- 17. Capuano, R. M., and Bamford, R. W., 1978; Initial Investigation of Soil Mercury Geochemistry as an Aid to Drill Site Selection in Geothermal Systems. 32 p., IDO/78-1701.b.3.3., ESL-13.
- 18. Christensen, O. D., 1980; Geochemistry of the Colorado Geothermal Area, Pershing County, Nevada. DOE/ID/12079-9, ESL-39.
- 19. Christensen, O. D., Kroneman, R. L., and Capuano, R. M., 1980; Multielement Analysis of Geologic Materials by Inductively Coupled Plasma--Atomic Emission Spectroscopy. DOE/ID/12079-2, ESL-32.
- Clayton, C. M., 1976; Geology of the Breitenbush Hot Springs Area, Cascade Range, Oregon. Portland State University Master's Thesis.
- 21. Corcoran, R. E., Doak, R. A., Porter, P. W., Pritchett, F. I., and Privrasky, N. C., 1962; Geology of the Mitchell Butte Quadrangle. Oregon Department of Geology and Mineral Industries GMS-2.
- 22. Costain, J. K., 1979; Geothermal Exploration Methods and Results--Atlantic Coastal Plain. Geothermal Resources Council, Special Report No. 5, A Symposium of Geothermal Energy and Its Direct Uses in the Eastern United States, April 1979.
- 23. Couch, R. W., 1977; Analysis of Geophysical Data Pertaining to the Vale KGRA, Final Report to the Geothermal Research Program, U.S. Geological Survey Grant 15-08-001-6-222.
- 24. Couch, R. W., French, W., Gemperle, M., and Johnson, A., 1975; Geophysical Measurements in the Vale, Oregon Geothermal Resource Area. OreBin Vol. 37, N. 8.
- 25. Crosby, J. W., 1971; Geothermal Exploration. A Paper Presented at the First Northwest Conference on Geothermal Power, Olympia, Washington, 19 p.

- 26. Culver, G. G., Lund, J. W., and Svanevik, L. S., 1974; Klamath Falls Hot Water Well Study. Lawrence Livermore Laboratory, University of California UCRL-13614.
- 27. Dellechaie, F., 1978; A Geological and Hydro-Geochemical Study of the LaGrande Area, Union County, Oregon. In, Transactions, Geothermal Resources Council, Vol. 2.
- 28. Dobrin, M. B., 1976; Introduction to Geophysical Prospecting, 3rd Edition, 603 p. McGraw Hill Book Company, New York.
- 29. Donath, F. A., 1962; Analysis of Basin-Range Structure, South-Central Oregon. Geologic Society of America Bulletin, Vol. 73, N. 1.
- 30. Fox, R. C., 1978; Dipole-Dipole Resistivity Survey of a Portion of the Coso Hot Springs KGRA, Inyo County, California. 21 p., IDO/77.5.6., ESL-2.
- 31. Fox, R. C., 1978; Low Altitude Aeromagnetic Survey of a Portion of the Cose Hot Springs KGRA, Inyo County, California. 19 p., IDO/77.5.7., ESL-4.
- 32. Fox, R. C., Hohmann, G. W., and Rijo, L., 1978; Topographic Effects in Resistivity Surveys. 33 p., IDO/78-1701.b.3.2.1., ESL-11.
- 33. Frangos, W., and Ward, S. H., 1980; Bipole-Dipole Survey at Roosevent Hot Springs KGRA, Beaver County, Utah. DOE-ET/12079-15, ESL-43.
- 34. Galbraith, R. M., 1978; Geological and Geophysical Analysis of Coso Geothermal Exploration Hole No. 1 (GEH-1), Coso Hot Springs KGRA, California. 39 p., IDO-78-1701.b.4.2., ESL-5.
- 35. Glenn, W. E., and Hulen, J. B., 1979; Interpretation of Well Log Data from Four Drill Holes at Roosevelt Hot Springs KGRA. 74 p., DOE/ET/28392-38, ESL-28.
- 36. Glenn, W. E., Chapman, D. S., Foley, D., Capuano, R. M., Sibbett, B. S., Cole, D., and Ward S., H., 1980; Geothermal Exploration at Hill Air Force Base, Ogden, Utah. DOE/ET/28392-42, ESL-34.
- 37. Griscom, A., and Conrad, A., 1975; Principal Facts and Preliminary Interpretation for Gravity Profiles and Magnetometer Profiles in the Alvord Valley, Oregon. U.S. Geological Survey Open File Report 75-293.
- 38. Hammon, P. E., 1976; Preliminary Report on the Reconnaissance Geology of the Upper Clackamas and North Santiam Rivers Ares, Cascade Range, Oregon. Draft Report to Oregon Department of Geology and Mineral Industries.

- 39. Hampton, E. R., and Brown, S. G., 1964; Geology and Groundwater Resources of the Upper Grande Ronde River Basin, Union County, Oregon. U.S. Geological Survey Water Supply Paper 1597.
- 40. Higgins, M. W., and Waters, A. C., 1967; Newberry Caldera, Oregon; A Preliminary Report. OreBin, Vol. 29, N. 3.
- 41. Hohmann, G. W., and Jiracek, G. R., 1979; Bipole-Dipole Interpretation with Three-Dimensional Models (including a f eld study of Las Alturas, New Mexico). 48 p., DOE/ET/28392-29, ESL-20.
- 42. Hohmann, G. W., and Ting, S. C., 1978; Three Dimensional Magnetotelluric Modelling. 48 p., IDO/77.3.1., ESL-7.
- 43. Hulen, J. B., 1978; Stratigraphy and Alteration, 15 Shallow Thermal Gradient Holes, Roosevelt Hot Springs KGRA and Vicintiy, Millard and Beaver Counties. Utah, 15 p., IDO/78-1701.b.1.1., ESL-9.
- 44. Hulen, J. B., 1978; Geology and Alteration of the Coso Geothermal Area, Inyo County, California. 28 p., IDO/78-1701.b.4.1., ESL-3.
- 45. Hulen, J. B., 1979; Geology and Alteration of the Baltazor Hot Springs and Painted Hills Thermal Areas, Humboldt County, Nevada. 21 p., DOE/ET/28392-36, ESL-27.
- 46. Hull, D. A., 1976; Electrical Resistivity Survey and Evaluation of the Glass Butte Geothermal Anomaly. Oregon Department of Geology and Mineral Industries Open File Report 0-76-11.
- 47. Hull, D. A., Blackwell, D. D., and Black, G. L., 1978: Geothermal Gradient Data. Oregon Department of Geology and Mineral Industries, Open File Report 0-78-4.
- 48. Hull, D. A., Blackwell, D. D., Brown, R. G., Peterson, N. V., and Black, G. L., 1977; Geothermal Gradient Data. Oregon Department of Geology and Mineral Industries, Open File Report 0-77-2.
- 49. Hull, D. A., Blackwell, D. D., Brown, R. G., and Peterson, N. V., 1977; Heat Flow Study of the Brothers Fault Zone, Oregon. Oregon Department of Geology and Mineral Industries Open File Report 0-77-3.
- 50. Hull, D. A., Bowen, R. G., Blackwell, D. D., Peterson, N. W., 1975; Geothermal Gradient Data Brothers Fault Zone, Oregon. Oregon Department of Geology and Mineral Industries Open File Report 0-76-2.
- 51. Isachsen, Y. W., 1978; Preliminary Investigation of Two Areas in New York State in Terms of Possible Potential for Hot Dry Rock Geothermal Energy. Geological Survey, New York State Museum, Albany, New York. DOE Report COO-2694-4.

- 52. Killpack, T. J., and Hohmann, G. W., 1979; Interactive Dipole-Dipole Resistivity and IP Modeling of Arbitrary Two-Dimensional Structures (IP2D Users Guide and Documentation). 120 p., ID0/78-1701.b.3.2.3., ESL-15.
- 53. Larson, K., and Couch, R., 1975; Preliminary Gravity Maps of the Vale Area, Malheur County, Oregon. OreBin, Vol. 37, N. 8.
- 54. Lawrence, R. D., 1976; Strike-Slip Faulting Terminates the Basin and Range Province in Oregon. Geological Society of America Bulletin, Vol. 87.
- 55. Leonard, A. R., and Harris, A. B., 1974; Ground Water in Selected Areas in the Klamath Basin, Oregon. Oregon State Engineer Ground Water Report 21.
- 56. Long, C. L., and Gregory, D. I., 1975; Audio-Magnetotelluric Apparent Resistivity Maps for Parts of Harney County, Oregon. U.S. Geological Survey Open File Report 75-297.
- 57. Long, C. L., Hoover, D. G., and Bramsoe, E., 1976; Audio-Magnetotelluric Apparent Resistivity Maps, Weiser, Idaho--Vale, Oregon. U.S. Geological Survey Open File Report 75-103.
- 58. Lund, J. W., 1978; Geothermal Hydrology and Geochemistry of Klamath Falls, Oregon Urban Area. U.S. Geological Survey Grant No. 14-08-0001-G-291.
- 59. Mackelprang, C. E., 1980; Interpretation of a Dipole-Dipole Electrical Resistivity Survey, Colado Geothermal Area, Pershing County, Nevada. DOE/ID/12079-11, ESL-41.
- 60. MacLoed, N. S., Walker, G. W., and McKee, E. H., 1975; Geothermal Significance of Eastward Increase in Age of Upper Cenozoic Rhyolitic Domes in Southeastern Oregon. U.S. Geological Survey Open File Report 75-348.
- 61. Mariner, R. H., Rapp, J. B., Willey, L. M., and Presser, T. S., 1974; The Chemical Composition and Estimated Minimum Thermal Reservoir Temperatures of Selected Hot Springs in Oregon. U.S. Geological Survey Open File Report.
- 62. Mariner, R. H., Rapp, J. B., Willey, L. M., and Presser, T. S., 1975; The Minor and Trace Elements Gas, and Isotope Compositions of the Principal Hot Springs of Nevada and Oregon. U.S. Geological Survey, Open File Report.
- 63. Maxwell, J. C., 1979; Geothermal Exploration Methods and Results--Inland States. Geothermal Resources Council, Special Report No. 5, A Symposium of Geothermal Energy and Its Direct Uses in the Eastern United States.

- 64. McKinney, D. G., 1978; Annotated Bibliography of the Geology of the Roosevelt Hot Springs Known Geothermal Resource Area and the Adjacent Mineral Mountains. 15 p., IDO/78-1701.b.1.1.4, ESL-10.
- 65. Meyer, J., and Hook, J., 1978; Geothermal Study of the Lakeview, Lake County, Oregon. Northwest Geothermal Corporation Report.
- 66. Moore, J. N., 1979; Geology Map of the San Emidio, Nevada Geothermal Area. 8 p., DOE/ET/28392-33, ESL-23.
- 67. Moore, J. N., and Samberg, S. M., 1979; Geology of the Cove Fort-Sulphurdale KGRA with Bibliographic Annotations and Petrographic Desceriptions by B. Sibbett. 44 p., IDO/78-1701.bl.1.5., ESL-18.
- 68. Newcomb, R. C., and Hart, D. H., 1958; Preliminary Report on the Groundwater Resource of the Klamath River Basin, Oregon. U.S. Geological Survey Open File Report.
- 69. Newton, V. C., Jr., and Corcoran, R. E., 1963; Petroleum Geology of the Western Snake River Plain Basin. Oregon Department of Geology and Mineral Industries Oil and Gas Investigation 1.
- 70. Nielson, D. L., 1978; Radon Emanometry as a Geothermal Exploration Technique; Theory and an Example from Roosevelt Hot Springs KGRA, Utah. 31 p., IDO/78-1701.b.1.1.2, ESL-14.
- 71. Nielson, D. L., Ed., 1979; Program Review: Geothermal Exploration and Assessment Technology Program Including a Report of the Reservoir Engineering Technical Advisory Group. 128 p., DOE/ET/27002-6, ESL-29.
- 72. Nielson, D. L., Sibbett, B. S., McKinney, D. B., Hulen, J. B., Moore, J. N., and Samberg, S. M., 1978; Geology of Roosevelt Hot Springs KGRA, Beaver Coutny, Utah. 120 p., IDO/78-1701.b.1.1.3, ESL-12.
- 73. Nutter, C., 1980; GRAV2D, An Interpretative 2-1/2 Dimensional Gravity Modelling Program. (Users Guide and Documentation for Rev. 1), DOE/ID/12079-13, ESL-42.
- 74. Peck, P. L., et al., 1964; Geology of the Central and Northern Parts of the Western Cascade Range in Oregon. U.S. Geological Survey Professional Paper 449.
- 75. Peterson, V. V., and Groh, E. A., 1965; Newberry Volcano Area Field Trip, Lunar Geological Field Conference Guidebook. Oregon Department of Geology and Mineral Industries Bulletin 57.
- 76. Peterson, V. V., and Groh, E. A., 1969; The Ages of Some Holocene Volcanic Eruptions in the Newberry Volcano Area, Oregon. OreBin, Vol. 31, N. 4.
- 77. Peterson, V. V., and Groh, E. A., Taylor, E. M., Stensland, E. E., 1976; Geology and Mineral Resources of Deschutes County, Oregon. Oregon Department of Geology and Mineral Industries Bulletin 89.

- 78. Peterson, N. V., and McIntyre, J. B., 1970; The Reconnaissance Geology and Mineral Resources of Eastern Klamath County and Western Lake County, Oregon. Oregon Department of Geology and Mineral Industries Bulletin 66.
- 79. Phillips, K. M., 1935; A Chemical Study of Fumaroles on Mount Hood. Mazama, Vol. 18.
- 80. Phillips, K. M., and Van Denburgh, A. S., 1971; Hydrology and Geochemistry of Abert, Summer and Goose Lakes and other Closed Basin Lakes in South-Central Oregon. U.S. Geological Survey Professional Paper 502-B.
- 81. Piper, A. M., Robinson, T. W., and Park, C. F., Jr., 1939; Geology and Groundwater Resources of the Harney Basin, Oregon. U.S. Geological Survey Water Supply Paper 841.
- 82. Plouff, D., and Conradi, A., Jr., 1975; Gravity and Magnetic Profiles and Maps, Crump Geyser Area, Oregon. U.S. Geological Survey Open File Report 75-346.
- 83. Raschen, R., and Cook, W. S., 1976; Exploration and Development of Geothermal Resources. U.S. Geological Survey, September, 1976; p. 8-15.
- 84. Raschen, R., and Cook, W. S., 1976; Exploration and Development of Geothermal Resources (with emphasis on surface disturbance). U.S. Geological Survey Open File Report, 29 p.
- 85. Reistad, G. M., Schmisseur, W. E., Shay, R. J., and Fitch, J. B., 1978; An Evaluation of Uses for Low to Intermediate Temperature Geothermal Fluids in the Klamath Basin, Oregon. Oregon State University Engineering Experiment Station, Bulletin, N. 55.
- 86. Riccio, J. F., 1979; Preliminary Geothermal Resource Map of Oregon.
 Oregon Department of Geology and Mineral Industries, GMS-11.
- 87. Ross, H. P., 1979; Numerical Modeling and Interpretation of Dipole-Dipole Resistivity and IP Profiles, Cove Fort-Sulphurdale KGRA, Utah. 39 p., DOE/ET/28392-37, ESL-26.
- 88. Sammel, W. A., 1976; Hydrologic Reconnaissance of the Geothermal Area Near Klamath Falls, Oregon. U.S. Geological Survey Water Resources Investigation Open File Report WRI 76-127.
- 89. Sass, J. H., Galinis, S. P., Munroe, R. H., and Urban, T. C., 1976; Heat Flow Data from Southeastern Oregon. U.S. Geological Survey Open File Report 76-217.
- 90. Sass, J. H., and Sammel, E. A., 1976; Heat Flow Data and Their Relation to Observed Geothermal Phenomena Near Klamath Falls, Oregon-Journal of Geophysical Research, Vol. 81, N. 26.

- 91. Sibbett B. S., 1979; Geology of the Soda Lake Geothermal Area. 27 p., DOE/ET/28392-24, ESL-24.
- 92. Sibbett B. S., and Bullett, M. J., 1980; Geology of the Colado Geothermal Area, Pershing County, Nevada. DOE/ID/12079-8, ESL-38.
- 93. Sibbett B. S., and Nielson, D. L., 1980; Geology of the Central Mineral Mountains, Beaver County, Utah. DOE/ET/28392-40, ESL-33.
- 94. Smith, C., 1979; Interpretation of Electrical Resistivity and Shallow Seismic Reflection Profiles, Whirlwind Valley and Horse Heaven Areas, Beowawe KGRA, Nevada. 43 p., DOE/ET/28392-35, ESL-25.
- 95. Smith, C., 1980; Delineation of an Electrical Resistivity Anomaly, Malpais Area, Beowawe KGRA, Eureka County, Nevada. DOE/ID/12079-10, ESL-40.
- 96. Stark, M., et al, 1980, Geothermal Exploration Assessment and Interpretation, Upper Klamath Lake Area, Klamath Basin, Oregon. LBL Berkeley, California LBL-10140.
- 97. Stewart, J. H., Walker, G. W., and Kleinhampl, F. J., 1975; Oregon-Nevada Lineament. Geology, Vol. 3, N. 5.
- 98. Struhsacker, E. M., 1980; The Geology of the Beowawe Geothermal System, Eureka and Lander Cout es, Nevada. DOE/ID/12079-7, ESL-37.
- 99. U.S. Geological Survey, AAPG-USGS, 1976; Subsurface Temperature Map of North America.
- 100. U.S. Geological Survey, AAPG-USGS, 1976; Temperature Gradient Map of North America.
- 101. Walker, G. W., 1963; Reconnaissance Geological Map of the Eastern Half of the Klamath Falls (AMS) Quadrangle, Lane and Klamath Counties, Oregon. U.S. Geological Survey Mineral Investigations Field Studies Map MF-260.
- 102. Walker, G. W., 1969; Geology of the High Lava Plains Province, Mineral and Water Resources of Oregon. Oregon Department of Geology and Mineral Industries Bulletin 64.
- 103. Walker, G. W., 1973; Reconnaissance Geologic Map of the Pendleton Quadrangle, Oregon and Washington. U.S. Geological Survey Miscellaneous Geologic Investigation Map 1-727.
- 104. Walker, G. W., 1974; Some Implications of Late Cenozoic Volcanism to Geothermal Potential in the High Lava Plains of South-Central Oregon. OreBin, Vol. 36, N. 7.
- 105. Walker, G. W., and Repenning, C. A., 1965; Reconnaissance Geologic Map of the Adel Quadrangle, Lake, Harney, and Malheur Counties, Oregon. U.S. Geological Survey Miscellaneous Geologic Investigation Map 1-446.

- 106. Ward, S. H., Ross, H. P., and Nielson, D. L., 1979; A Strategy of Exploration for High Temperature Hydrothermal Systems in the Basin and RAnge Province. 42 p., DOE/ET 27002-5, ESL-22.
- 107. Waring, G. W., 1965; Thermal Springs of the United States and Other Countries of the World--A Summary. U.S. Geological Survey Professional Paper 492.
- 108. White, C., 1980; Geology and Geochemistry of Mount Hood Volcano.
 Oregon Department of Geology and Mineral Industries Special Paper 8.
- 109. Wise, W. R., 1968; Geology of Mt. Hood Volcano. Andesite Conference Guidebook, Oregon Department of Geology and Mineral Industries Bulletin 62.
- 110. Wise, W. R., 1969; Geology and Petrology of the Mt. Hood Area; A Study of High Cascade Volcanism. Geological Survey of America Bulletin Vol. 80.
- 111. Withrow, C. A., 1980; Computer Plotting of Geochemical Data in Plan View. (PLANMAP, Rev. 1, Users Guide), DOE/ID/12079-3, ESL-35.
- 112. Withrow, C. A., 1980; Computer Plotting of Drill Hole Geochemical Data. (SECTION, Rev. 1, Users Guide), DOE/ID/12079-6, ESL-36.

II. RESOURCE ASSESSMENT

- APL/JHU QM-79-163/GT, 1980; Revised, Evaluation of Potential Geothermal Resource Areas.
- Bebout, D. G., Gavenda, V. J., Gregory, A. R., 1978; Geothermal Resources, Wilcox Group, Texas Gulf Coast. Bureau of Economic Geology, University of Texas, Austin, Texas. DOE Report ORO-4891-3.
- 3. Bebout, D. G., Loucks, R. G., and Gregory, A. R., 1978; Geopressured Geothermal Fairway Evaluation and Test-Well Site Location Frio Formation, Texas Gulf Coast. DOE Report ORO-4891-4, Bureau of Economic Geology, University of Texas, Austin, Texas.
- 4. Bilicki, Z. et al, 1980, Geothermal Two Phase Flow; A Selective, Annotated Guide to the Literature, Report No. GEOFLO/7, DOE/ET/272259.
- 5. Bodvarsson, G., 1974; Geothermal Resource Energetics. Geothermics, Vol. 3.
- 6. Brown, P. m., 1979; Cenozoic and Mesozoic Aquifer Systems of the Atlantic Coastal Plain. Geothemal Resources Council, Special Report No. 5, A Symposium of Geothermal Energyu and Its Direct Uses in the Eastern United States.
- 7. Cheremisinoff, P. N., Morresi, A. C., 1976; Geothermal Energy
 Technology Assessment. Technomic Publishing Co., Inc., Westport,
 Connecticut.
- 8. Coe, A., 1979; Geothermal Energy Development Potential in the San Luis Valley, Planning Region 8. Colorado Geological Survey.
- 9. Coe, B. A., 1979; Geothermal Energy Potential in Pagosa Springs, Colorado. Colorado Geological Survey.
- Coe, B. A., 1980; Geothermal Energy Potential in The San Luis Valley, Colorado. DOE/ID/12018-4.
- 11. Coe, B. A., 1981; Geothermal Energy Development Potential at Four Western Colorado Sites. Colorado Geological Survey (in preparation).
- 12. Costain, J. K., Glover, L. III, and Krishna Sinha, A., 1977: Evaluation and Targeting of Geothermal Energy Resources in the Southeastern United States. DOE Report VPI-SU-5103-5.
- 13. Costain, J. K., Glover, L. III, and Krishna Sinha, A., 1977-1979; Evaluation and Targeting of Geothermal Energy Resources in the Southeastern United States. DOE Report VPI-SU-5648-1 through 5.

- 14. Costain, J. K., Keller, G. V., Crewdson, R. A., 1976; Geological and Geophysical Study of the Origin of the Warm Springs in Bath County, Virginia. DOE Report TID-28271.
- 15. Culver, G. G., Lund, J. W., Svanevik, L. S., 1974; Klamath Falls Hot Water Well Study. UCRL-13614.
- 16. Cunniff, R. A., Glazner, G., Houldsworth, M., 1979; Geothermal Prospects for Lemmon, South Dakota. NMEI 30-6.
- 17. Cunniff, R. A., Rao, C. R., Nowotny, K. R., Glazner, G., and Brown, K., 1979; Geothermal Potential of Montana: An Economic Alternative to Conventional Energy. NMEI 10-7.
- 18. Donaldson, I. G., 1970; The Simulation of Geothermal Systems with a Simple Convective Model. Geothermics, Special Issue No. 2, Vol. 2, Part 1.
- 19. Facca, G., 1973; The Structure and Behavior of Geothermal Fields. Geothermal Energy: Review of Research and Development, UNESCO, Paris.
- 20. Gaugler, B., 1980; Geothermal Energy Development Potential in Planning Region B, Roosevelt-Custer Region, North Dakota. North Dakota Geothermal Energy Office, Bismark, North Dakota.
- 21. Glover, L., 1979; General Geology of the East Coast with Emphasis on Potential Geothermal Energy Regions: A Detailed Summary. GeothermalResources Council, Special Report No. 5, A Symposium of Geothermal Energy and Its Direct Uses in the Eastern United States.
- 22. Grim, P. J., Nichols, C. R., Wright, P. N., Berry, G. W., and Swanson, J., 1978; State Maps of Low Temperature Geothermal Resources. In, Geothermal Resources Council, Transactions, Vol. 2.
- 23. Gunaji, N. N., Chaturvedi, L., Thode, E., LaFrance, L., Swanberg, C., and Walvekar, A., 1978; A Geothermal Field Near New Mexico State University and Its Potential as Campus Energy Supplier. In, Geothermal Resources Council, Transactions, Vol. 2.
- 24. Hankins, B. E., and Karkalits, O. C., 1978; Geopressured-Geothermal Test of the Edna Delcambre No. 1 Well, Tigre Lagoon Field, Vermillion Parish, Louisiana: Analysis of Water and Dissolved Natural Gas. DOE Contract No. EY-76-S-05-4937, McNeese State University, Lake Charles, Louisiana.
- 25. Hannah, J. L., 1975; The Potential of Low Temperature Geothermal Resources in Northern California. California Division of Oil and Gas Report No. TR 13.

- Healy, F. C., 1980; Geothermal Energy Potential in Chaffee County, Colorado. Colorado Geological Survey Department of Natural Resources. DOE/ID/12018-5.
- 27. Hendron, R. H., 1978; Hot Dry Rock Energy Extraction Operations. In, Geothermal Resources Council, Transactions, Vol. 2.
- 28. Hill, J. H., 1978; The Los Alamos Scientific Laboratory Hot Dry Rock Geothermal Energy Development Project. In, Geothermal Resources Council, Transactions, Vol. 2.
- 29. Huggins, R., Ed., 1978; Northeast Oregon Geothermal Potential. Eastern Oregon Community Development Council, LaGrande, Oregon.
- 30. Justus, D. L., 1979; Geothermal Resources in Oregon: Site Data Base and Development Status. Geo-Heat Utilization Center, Oregon Institute of Technology, Klamath Falls, Oregon.
- Kettenacker, W. C., 1977; Two Dimensional Simulation of the Raft River Geothermal Reservoir and Wells, TREE 1085, EG&G Idaho.
- 32. Kremnjov, O. A., Zhuravlenko, J. A. V., and Shurstshkov, A. V., 1970; Technical Economic Estimation of Geothermal Sources. Geothermics, Special Issue No. 2, Vol. 2, Part 2.
- 33. Lienau, P. J., 1978; Agribusiness Geothermal Energy Utilization Potential of Klamath and Western Snake Rive Basins, Oregon. DOE Report, IDO-1621-1.
- 34. Lienau, P. J., Ed., 1978; Agribusiness Geothermal Energy Utilization Potential of Klamath and Western Snake Rive Basins, Oregon. Geo-Heat Utilization Center, Oregon Institute of Technology, Klamath Falls, Oregon, 180 p.
- 35. Loucks, R. G., 1978; Geothermal Resources, Vicksburg Formation, Texas Gulf Coast. DOE Report ORO-4891-2.
- 36. Luth, W. C., and Hardy, H. C., 1980, Comparative Assessment of Five Potential Sites for Hydrothermal-Magma Systems: Summary, Sandia National Labs, Albuquerque, New Mexico. DOE Report DOE/TIC 11303.
- 37. Makarenko, F. A., Mauritsky, B. F., Lokshin, B. A., and Knonov, V. I., 1970; Geothermal Resources of the USSR and Prospects for Their Practical Use. Geothermics, Special Issue No. 2, Vol. 2, Part 2.
- 38. Mancini, F., Hahman, W. R. Sr., White, D. H., and Wolfe, D., 1979; Potential of Geothermal Energy in Arizona. Appendix 6 of Regional Operations Research Program for Development of Geothermal Energy in the Southwest United States: Final Technical Report, June 1977 to August 1978.

- 39. McClain, D. W., December, 1978; Final Resource Assessment Report for 1978. Idaho Geothermal Operations Report, Idaho Office of Energy and the United States Department of Energy Division of Geothermal Energy.
- 40. McDevitt, P., and Nowotny, K. R., 1979; The Electricity Supply Potential of Geothermal Energy in the Rocky Mountain Basin and Range Region, 1980-1990. Technical Report, NMEI 30-1.
- 41. McDevitt, P. K., and Rao, C. R., 1978; The District Space Heating Potential of Low Temperature Hydrothermal Geothermal Resources in the Southwestern United States. Technical Report, NMEI 10-1.
- 42. McFarland, C. B., Jr., 1977; Resource Temperature as a Measure of Geothermal Potential. In, Geothermal Resources Council, Transactions, Vol. 1.
- 43. Mercer, J. W., and Faust, C. R., 1979; Reservoir Engineering and Evaluation. Geothermal Resources Council, Special Report No. 5, A Symposium of Geothermal Energy and Its Direct Uses in the Eastern United States.
- 44. Mink, L. L., 1977; Geothermal Potential of the West Boise Area. TREE-1162.
- 45. Muffler, L. J., ED., 1979; Assessment of Geothermal Resources of the United States, 1978. U.S. Geological Survey Circ. 790, 163 p.
- 46. National Academy of Sciences, 1979; Geothermal Resources and Technology in the United States. National Research Council Report, Washington, D.C.
- 47. Nichols, C. R., and Hollenbaugh, K. W., 1975; Geological Aspects of an Assessment of the National Potential for Non-Electrical Utilization for Geothermal Resources. ERDA ANCR-1213.
- 48. O'Dea, P., Cunniff, R., Heath, R., and Shales, M., 1979: Hydrothermal Sites in the Rocky Mountain Basin and Range Region of the United States. Data Report.
- 49. Osberg, P. H., Wetterauer, R., Rivers, M., Bother, W. A., and Creasy, J. W., 1978; Feasibility Study of the Conway Granite as a Geothermal Energy Resource. DOE Report COO-2686-1.
- 50. Paddison, F. C., 1979; A Prospectus for Geothermal Energy—The Atlantic Coastal Plain. Geothermal Resources Council, Special Report No. 5, A Symposium of Geothermal Energy and its Direct Uses in the Eastern United States.
- 51. Petroleum Information Corporation, 1979; The Geothermal Resource. Denver, Colorado.

- 52. Ragnars, K., Saemundsson, K., Benediktsson, S., and Einarsson, S. S., 1970; Development of the Namafjall Areas, Northern Iceland. Geothermics, Special Issue No. 2, Vol. 2, Part 1.
- 53. Reitzel, J., 1976; Utilization of U.S. Geothermal Resources. EPRI ER-382, Systems and Energy Group of TRW Inc., Redondo Beach, California.
- 54. Samuels, G., 1979; Geopressure Energy Resource Evaluation. Oak Ridge National Laboratory, Oak Ridge, Tennessee. DOE Report ORNL-PPA-79-2.
- 55. Sass, J. H., Diment, W. H., Lachenbruch, A. H., Marshall, B. V., Munroe, R. J., Moses, T. H., Jr., and Urban, T. C., 1976; A New Heat-Flow Contour Map of the Conterminous United States. United States Department of the Interior, Geological Survey, Open-File Report 76-756, Menlo Park, California.
- 56. Scherer, C. R., and Golabi, K., 1978; Geothermal Reservoir Management. University of California, Sanitary Engineering Research Laboratory, Berkeley, California. DOE Report UCB-SERL-78-5.
- 57. Spencer, S. G., and Callan, D. M., 1980; An Analysis of the Response of the Raft River Monitor Wells to the 1979 Injection Tests, Sept. 1980, EGG-2057, EG&G Idaho, Inc., Idaho Falls, Idaho.
- 58. Tester, J. W., and Albright, J. N., 1979; Hot Dry Rock Energy Extraction Field Test: 75 Days of a Prototype Reservoir at Fenton Hill, Segment 2 of Phase 1. Los Alamos Scientific Laboratory, University of California. DOE Report LA-7771-MS.
- 59. Sudol, G. A., Hamison, R. F., and Ramey, H. J., 1979; Annotated Research Bibliography for Geothermal Reservoir Engineering. U.S. DOE Report LBL-8664, GREMP-1, UC66a.
- 60. Trehan, R., Cohen, A., Gupta, J., Jacobsen, W., Leigh, J., and True, S., 1978; Site Specified Analysis of Geothermal Development--Data Files of Prospective Sites. DOE Report HCP-T4014-01-2.
- 61. Trexler, D. T., 1977; Summary Report of Availability of Geothermal Data for Potential Direct Heat Application in Nevada. DOE Report NVO-0671-1, Nevada Bureau of Mines and Geology, Reno, Nevada.
 - H., and Sanyal, S., 1976; A Comparison of Hydesthe Madakeser voirs of the Western United States. EPRI ER-364, Geonomics, Inc., Berke lyey, California.
- 63. U.S. Geological Survey, Geothermal Resources File (Geotherm) Revision 8, Computer Data File.

- 64. Vetter, O. J., Critchlow, H. B., 1979, Injection, Injectivity and Injectability in Geothermal Operations: Problems and Possible Solutions, Phase I, Definition of Problems (Vetter Research, Costa Mesa, California, Petroleum Training and Technical Services Noman, OK), DOE Report: SAN-2044-1, (February 1979).
- 65. Waring, G. A., 1965; Thermal Springs of the United States and Other Countries of the World, A Summary. U.S. Geological Survey Professional Paper No. 492.
- 66. White, D. E., and Williams, D. L., Eds., 1975; Assessment of Geothermal Resources of the United States, 1975. U.S. Geological Survey Circ. 726, 155 p.
- 67. Wilkins, B., Jr., 1978; Operations Research and Systems Analysis of Geopressured/Geothermal Resources in Louisiana. Office of Advanced Studies and Research, Louisiana State University, Baton Rouge, Louisiana. DOE Report ORO-5442-1.
- 68. Williams, F., Cohen, A., Pfundstein, R., and Pond, S., 1978; Site-Specific Analysis of Geothermal Development--Data Files of Prospective Sites, Vol. III. DOE Report HCP-T4014-01-3.

III. WELL DRILLING

- 1. Altseimer, J. H., 1974; Geothermal Well Technology and Potential Applications of Subterrene Devices--A Statue Rev ew. Los Alamos Scientific Laboratory, Report LA-5689-MS.
- 2. Bammerman, J. K., Davis, N., and Wolke, R., 1978; Geothermal Drilling Fluid Systems. In, Geothermal Resources Council, Transactions, Vol. 2, p. 27-29.
- 3. Bodvarsson, G., 1972; Thermal Problems in the Siting of Reinjection Wells. Geothermics, Vol. 1.
- 4. Boldizsar, T., 1970; Geothermal Energy Production from Porous Sediments in Hungary. Geothermics, Special Issue No. 2, Vol. 2, Part 1.
- 5. Chappell, R. N., Prestwich, S. J., Miller, L G., and Ross, H. P., 1979; Geothermal Well Drilling Estimates Based on Past Well Costs. In, Geothermal Resources Council, Transactions, Vol. 3.
- 6. Cobb, L. B., Radford, L., and Glascock, M., 1979; Atlantic Coastal Plain Geothermal Test Holes, New Jersey--Hole Completion Reports, NVO-1558-1 through 4. Gruy Federal, Inc., Houston, Texas.
- 7. Cromling, J., 1973; How Geothermal Wells are Drilled and Completed. World Oil, Vol. 177, No. 7.
- 8. Kalousek, G. L., 1979; Development of Cement for Geothermal Wells, Brookhaven National Laboratory. DOE Report BNL-51024.
- 9. Kruger, P., and Otte, C., Eds., 1973; Geothermal Energy--Resources, Production, Stimulation. Stanford University Press, Stanford, California, 360 p.
- 10. Lange, R. N., 1979; Geothermal Exploration and Development Drilling Programs for 50 Heat Flow Holes and a Deep Test Well. Geothermal Energy and Its Direct Uses in The Eastern United States, April, 1979.
- Matsuno, K., 1973; Drilling for Geothermal Steam and Hot Water. In, Geothermal Energy, p. 73-83, Earth Science, 12.
- 12. Miller, L. G., Prestwich, S. M., and Gould, R. W., 1978; Drilling and Directional Drilling a Moderate-Temperature Geothermal Resource. In, Geothermal Resources Council, Transactions, Vol. 2, p. 455-456.
- 13. Petroleum Training and Technical Services et al., 1980, Geothermal reservoir Well Stimulation Program: Technology Transfer, Vols. 1-4, DOE Report DOE/AL/10563, Vols. 1-4, Republic Geothermal Inc., Santa Fe Springs, California.

- 14. Prestwich, S.., Bowman, J. A., et al., 1980; Completion and Testing Report; INEL Geothermal Exploratory Well One (INEL-1), DOE Report IDO-10096.
- 15. Roy, D. M., et al., 1980; New High Temperature Cementing Materials for Geothermal Wells: Stability and Properties. Final Report.

 Pennsylvania State University, University Park, Pennsylvania.
- Snyder, R. E., 1979, How Geothermal Wells are Completed and Produced, Completion Technology, Houston, Texas, World Oil; 189: No. 5, 81-86, 88 (October 1979).
- 17. Vernado, S. G., and Stroller, H. M., 1978; Geothermal Drilling and Completion Technology Development. In, Geothermal Resources Council, Transactions, Vol. 2, p. 675-678.
- 18. Warner, D. L., Orcutt, D. H., 1973; Industrial Wastewater-Injection Wells in United States, States of Use and Regulation. In, Underground Waste Mangement and Artificial Recharge, Vol. 2.

IV. CORROSION, SCALING, AND MATERIALS SELECTION

- American Society for Testing and Materials Task Group on Geothermal Seals, 1978; Proceedings of Technical Seminar. DOE CONF-7806141, Boston, Massachusetts.
- 2. , S. V., Ammerlaan, T. 1979, Economic Assessment of Using Non-Metallic Materials in the Direct Utilization of Geothermal Energy, Final Report, BNL-51112, Burns and Roe Industrial Services Corp., Paramus, New Jersey, February 1979.
- 3. Conover, M. F., Ellis, P. F., 1979, Materials Selection Guidelines for Geothermal Energy Systems, Radian Corp., Austin, Texas, pp 125-127 of Expanding the Geothermal Frontier GRC, Davis, California, from GRC Annual Meeting, Reno, Nevada (December 1979).
- Cornet, I. et al., Materials Selection and Corrosion Problems, NP-24319, California University, Lawrence Berkeley Laboratory, Berkeley California (June 1974).
- 5. Cosner, S. R., and Apps, J. A., 1978; A Compilation of Data on Fluids from Geothermal Resources in the United States. Lawrence Berkeley Laboratory, Berkeley, California. DOE Report LBL-5936.
- 6. Cramer, S. D., 1974; The Solubility of Oxygen in Geothermal Brines. In, Corrosion Probems in Energy Conversion and Generation, New York. Symposium Proceedings, p. 251-62.
- 7. Crane, C. H., and Kenkeremath, D. C., 1980, Geothermal Materials Program: Strategy. Final Report, EER, Falls Curch Virginia. DOE/RA/12183-01.
- 8. Daedalean Associates, Inc., 1978; The Results of the Initial Feasibility Program on Cavitation Descaling Techniques for Pipes and Tubes in Geothermal Energy Plants. Deadelean Associates, Inc. DOE Report HCP-T2289-01.
- 9. DeBerry, D. W., Ellis, P. F., and Thomas, C. C., 1978; Materials Selection Guidelines for Geothermal Power Systems. Austin, Texas, Radian Corporation, DOE Report ALO-3904-1.
- 10. Deutscher, S. B., et al., 1980, Scaling Rate and Scale Properties, UCID-18596 pp 3-36, Lawrence Livermore Laboratory (March 1980).
- 11. Deutscher, S. B., et al., 1980, Studies of the Disso Cution of Geothermal Scale, UCRL-52897, LLL Livermore, California.
- 12. Dodd, F. J., Johnson, A. E., and Ham, W. C., 1975; Material and Corrosion Testing at the Geysers Geothermal Power Plant. In, Proceedings of the Second United Nations Symposium on the Development and Use of Geothermal Resources, San Francisco, California.
- 13. ERDA, 1976, Conference on Scale Management in Geothermal Energy Development, San Diego, California, August 2-4, 1976, ERDA. COO-2607-4.

- 14. Ellis, A. J., and Mahon, W. A. J., 1977; Chemistry and Geothermal Systems. Academic Press, New York.
- 15. Feber, R. C., Editor, 1977; Proceedings of Workshop on Scale Control in Geothermal Energy Extraction Systems. Los Alamos Scientific Laboratory, Los Alamos, New Mexico. DOE Report LA-7664-C.
- 16. Foster, P. K., Marshall, T., and Tombs, A., 1961; Corrosion Investigation in Hydrothermal Water at Wairakei, New Zealand. In, United Nations Conference of New Sources of Energy, Rome.
- 17. George, P. F., Manning, J. A., Jr., and Schrieber, C. F., 1975; Desalination Materials Manual. Dow Chemical Company.
- 18. Geothermal Resources Council, 1976; Proceedings of the Second Workshop on Materials Problems Associated with the Development of Geothermal Energy Systems (El Centro, California, May 1975). BuMines OFR 128-76, PB 261-349.
- 19. Goldberg, A., and Kershaw, R. P., 1979; Evaluation of Materials Exposed to Scale-Control/Nozzle-Exhaust Experiments at the Salton Sea Geothermal Field. Lawrence Livermore Laboratory, University of California, Livermore, California.
- 20. Harrar, J. E., Otto, C. H., Jr., Deutscher, S. B., Ryon, R. W., and Tardiff, G. E., 1979; Studies of Brine Chemistry Precipitation of Solids and Scale Formation at the Salton Sea Geothermal Field. Lawrence Livermore Laboratory, University of California, Livermore, California.
- 21. Hermannsson, S., 1970; Corrosion of Metals and the Forming of Protective Coating on the Inside of the Pipes in the Thermal Water used by the Reykjavik Municipal District Heating Service.

 Geothermics, Special Issue No. 2, Vol. 2, Part 2, 1970.
- 22. Hirasuna, A. R., Bilyeu, G. D., Davis, D. L., Stephens, C. A., and Veal, G. R., 1977; Geothermal Elastomeric Materials. L'Garde, Inc., Newport Beach, California. DOE Report SAN-1308-1.
- 23. Kukacka, L. E., et al., 1978; Alternate Materials of Construction for Geothermal Applications for October, 1977 through March 1978.

 Brookhaven National Laboratory Progress Reports, 1976 through 1978; e.g., BNL-50834.
- 24. Lienau, P. J., 1978; Materials Performance Study of the OIT Geothermal Heating System. Geo-Heat Utilization Center Quarterly Bulletin, Oregon Institute of Technology, Klamath Falls, Oregon, June 1979.

- 25. Lund, J. W., Silva, J. F., Culver, G. G., and Lienau, P. J., 1976; Corrosion of Downhole Heat Exchangers. Report 76-3, Geoheat Utilization Center, Oregon Institute of Technology, Klamath/Falls, Oregon.
- 26. Marshall, T., and Braithwaite, W., 1973; Corrosion Control in Geothermal System. Geothermal Energy, Review of Research and Development, UNESCO, Paris, France.
- 27. McCright, R. D., et al., 1980, Evaluation of Tested Metallic Materials for Plant Applications, UCID-18596, pp. 73-95, Lawrence Livermore Laboratory (March 1980).
- 28. McCright, R. D., et al., 1980, Well Casing Materials, UCID-18596, pp. 115-135, Lawrence Livermore Laboratory (March 1980).
- 29. Miller, L. G., et al., 1977; Asbestos-Cement Pipeline Experience at the Raft River Geothermal Project. EG&G Idaho, Inc. DOE Report TREE-1114.
- 30. Miller, R. L., 1976; Corrosion Engineering in the Utilization of the Raft River Geothermal Resource, DOE Report ANCR-1342, Idaho Falls, Idaho, EG&G Idaho, Inc.
- 31. Miller, R. L., 1977; Results of Short-Term Corrosion Evaluation Tests at Raft River. DOE Report TREE-1176, Idaho Falls, EG&G Idaho, Inc.
- 32. Phillips, S. L., Mathur, A. K., Doebler, R. E., 1977; A Study of Brine Treatment. Lawrence Berkeley Laboratory, Berkeley, California (contains literature search of 348 citations). EPRI Report ER-476.
- 33. Persons, Jeffrey and Hart, David, 1980; What Experience Teaches Us About Scaling, Incrustation, and Corrosion; Discussion of Ryznar Stability Index, Groundwater Heat Pump Journal, Summer 1980, p. 12-16.
- 34. Reimann, G. A., and Shutz, H. W., 1975; Choosing Material for the Raft River Geothermal Power Plant, ANCR-1205, Idaho National Engineering Laboratory, Idaho Falls, Idaho.
- 35. Reynolds, S. L., Effect of Acid Addition for Scale Control on Geothermal Field and Plant Systems, EPRI-WS--79-166, pp. 3.9-3.14 Systems, Science and Software, La Jolla, California from 3rd Annual EPRI Geothermal Conference, Monterey, California (June 1979).
- 36. Shannon, D. W., 1977; Corrosion of Iron-Base alloys vs. Alternate Materials in Geothermal Brines (Interim Report). ERDA Contract No.Y-76-C-06-1830, PNL-2456: Richland, Washington, Battelle Pacific Northwest Laboratories.

- 37. Shannon, D. W., 1978; Geochemical Engineering Program Progess Report for the Period Ending December 1977. Pacific Northwest Laboratory, Richland, Washington. DOE Report PNL-2735.
- 38. Shannon, D. W., Walter, R. A., and Lessor, D. L., 1978; Brine Chemistry And Combined Heat/Mass Transfer. Battelle Pacific Northwest Laboratories, Richland, Washington. EPRI Report ER-634.
- 39. Sisson, W., 1973; Langelier Index Predicts Water's Carbonate Coating Tendancy. Power Engineering, p. 44.
- 40. Tolivia, M. E., 1970; Corrosion Measurements in a Geothermal Environment. Geothermics, Special Issue No. 2, Vol. 2, Part 2, 1970.
- 41. Vetter, O. J., Campbell, D. A., 1979; Scale Inhibition in Geothermal Operations--Experiments with Dequest 2060 Phosphonate in Republic's East Mesa Field. Earth Sciences Division, Lawrence Berkeley Laboratory, University of California. DOE Report LBL-9089.
- 42. Weres, O., 1979; Status of Geothermal Brine Treatment Technology EPRI-WS--79-166, pp. 6.32-638, From 3rd Annual EPRI Geothermal Conference, Monterey, California (June 1979).
- 43. Watson, J. C., 1978; Sampling and Analysis Methods for Geothermal Fluids and Gases. Pacific Northwest Laboratory, Report PNL-MA-572, Pacific Northwest Laboratories.
- 44. Yamagase, T., Suginohra, Y., and Yamagase, K., 1970; The Properties of Scales and Methods to Prevent Them. Geothermics, Special Issue No. 2, Vol. 2, Part 2, 1970.

V. DIRECT USE APPLICATIONS

SIC 201 Meat-Poultry Packing, Processing

- Longyear, A. B., 1979, Mountain Home Geothermal Project: Geothermal Energy Applications In An Integrated Livestock Meat and Feed Production Facility at Mountain Home, Idaho, DOE Report, DOE/ET/28442-1, EMMA, Ltd., San Francisco.
- 2. An Engineering and Economic Study of Swine Production and Slaughter, Potato Processing, and Waste Management Using a Geothermal Energy Source Near Mountain Home, Idaho.
- 3. Longyear, A. B., Kelly Hot Spring Geothermal Project: Kelly Hot Spring Agricultural Center Preliminary Design. Final Technical Report August 1980; DOE/ET/27041-1.
- 4. Abstract: A swine raising complex producing premium port in controlled-environment facilities. Produces methane gas to be delivered to a utility company for the production of electricity.

SIC 202--Dairy Products, Juices

- 1. Barmettles, E. R., "Controlled Environment Livestock Production System Computer Simulation and Analysis (Dairy)," <u>Direct Utilization of Geothermal Energy: A Symposium</u>, Geothermal Resources Council CONF-78D133, April 1978.
- 2. Belcastro, E., 1978, Geothermally Pasteurizing Milk Process, paper, Direct Utilization of Geothermal Energy: A Symposium: San Diego, California, CONF-780133, UC-66g; GRC, April 1978.
- 3. "Medo-Bel Creamery Inc." Klamath Falls, Oregon, uses Geothermal Heat in Pasturizing Milk. Tells processing techniques which are compared to other creameries.
- 4. Belcastro, E., 1979, Geothermally Pasteurizing Milk, paper, Symposium on Geothermal Energy and Its Direct Uses in the Eastern U.S., Special Report No. 5, DOE Report, SAN 2118-1, San Francisco, California.
- 5. Folkman, S. L., et al., A Study of the Technical and Economic Feasibility of Using Geothermal Water in the Dairy Industry; Prepared for ERDA, under Contract No. E(10-1)-1604, by the Utah State University Foundation, November 1976. A survey of processing diary products. Research of investment costs for replacing conventional heating and refrigeration with geothermal sources.

- SIC 203--Canned, Dehydrated or Frozen Fruits, Vegetables, Seafood, and Specialties
- 1. Abernathy, G. H., 1979; Drying Chile With Geothermal Energy, ASAE Technical paper, Winter Meeting of ASAE 1979. The use of geothermal energy in drying red chile could result in a cheaper and more dependable energy supply. Result of the economic analysis are presented.
- 2. Ammerlaan, A. C. F., et al., Direct Application of East Coast Geothermal Resources in Frozen Food Plant. Final Report. (DOE/ET/27228--T1) (Burns and Roe Industrial Services Corp., Paramus, New Jersey (USA); Campbell Soup Co., Camden, New Jersey (USA)). The technical and economic viability of retrofitting an existing frozen food plant in Salisbury, Maryland, to utilize the anticipated geothermal resources in that area is evaluated.
- 3. Barmettler, E. R., 1976, Geothermal Energy Utilization (Susanville Geothermal Project), ERDA Report, SAN-1077-4. Energy substitution and labor activity generation in four activities including onion dehydration. Economics are developed.
- 4. Basuino, D. J., et al., 1977, Multiflash Feed-and-Bleed Coupling For Evaporation and Crystallization Industry, DOE Report, SAN/1328-T2, Bechtel Inc., San Francisco. Preserved Fruits and Vegetables, Sugars, and Confectionary Products Industries are discussed.
- 5. Batdorf, J. A., et al., 1980, Industrial Applications of Geothermal Energy in Southeast Idaho, DOE Report, ID/12010-12, Idaho Falls, by Idaho Office Energy. Development activities in food and phosphate minire are addressed with respect to use of geothermal energy. Resource data and learning activities are examined.
- 6. Cole, L. T., et al., 1980, Fluidized-Bed Potato Waste Drying Experiments at the Raft River Geothermal Test Site, EGG-12036, EG&G Idaho, Inc., Idaho Falls, Idaho. A fluidized-bed dryer was built and operated at the Raft River Geothermal Test Site in South Central Idaho to test the feasibility of using low-temperature geothermal fluids as an energy source for drying operations. Test results, observations, and design recommendations are presented.
- 7. Davey, J. V., 1977, Survey Report: Study of Information/Educational Disussions with Private Industries and Public Institutions on the Direct Heat Utilization of Geothermal Energy, Lawrence Berkeley Lab. Report, LBL-5988. Berkeley, California. Includes discussions on food canning, drying, dehydration and dairying and industry response on West Coast.

- 8. Fettkether, L. M., Austin, J. C., 1979, Direct Application of Geothermal Energy for Industrial Processing, Paper, GRC Annual Meeting, 1979. Planned Retrofit of Ore-Ida Frozen Food Processing Plant at Ontario, Oregon.
- 9. Geothermal Resources Council, 1978, First Geothermal Vegetable Dryer Dedicated, Geothermal Resources Council Bulletin, Vol. 7, No. 5 (November-December): Davis, California.
- 10. Gries, J. P., 1979; Geothermal Applications on the Madison (PAHASAPA) Aquifer System in South Dakota, DOE Report, IDO/1625-2: Idaho, South Dakota School of Mines and Tecnology. Refers to absorption refrigeration, Geothermal Water classified as a top priority for domestic use.
- 11. Harris, R. L., Olson, G. K., Mah, C. S., and Bujalski, J. H., 1977; Geothermal Abosrption Refrigeration for Food Processing Industries, DOE Report, SAN/1319-1: Sacramento, California, Aerojet Energy Conversion Co.
- 12. Lieneau, P. J., 1979, Potato Processing, Q Bulletin, Geo-Heat Utility Center; 4: No. 2 14-18 (March 1979), Klamath Falls, Oregon.
- 13. Lieneau, P. J., et at., 1978, Argibusiness Geothermal Energy Utilization Potential of Klamath and Western Snake River Basins, Oregon, DOE Report, IDO/1621-1: Klamath Falls, Oregon, Geo-Heat Utilization Center, Oregon Inst. of Technology, Oregon Dept. of Geology and Mineral Industries and Oregon Dept. of Economic Development. Dried Onions, Frozen Potatoes, products of the region, have potential for use geothermal energy in processing.
- 14. Longyear, A. B., 1979; Mountain Home Geothermal Project: Geothermal Energy Applications In An Integrated Livestock Meat and Feed Production Facility at Mountain Home, Idaho, DOE Report, DOE/ET/28442-1, EMMA, Ltd., San Francisco, California. Considers potato processing.
- 15. Lund, T. W., 1978; Onion Dehydration, Geo-Heat Center Quarterly Buletin, 4, No. 1, November 1978. Klamath Falls, Oregon. Study of onion dehydration in Klamath and Snake River Basins--process, energy, economics.
- 16. May, S. C., Basuino, D. J., Doyle, P. T., and Rogers, A. N., 1977; Applications of Geothermal Resources in the Evaporation and Crystallization Industry, DOE Report, SAN/1328-1: San Francisco, Bechtel Corporation (Tomato Paste). The technical and economic feasibility of using low temperature geothermal brine in place of steam from conventional sources for industrial multi-effect evaporation and crystallation was studied. Geothermal resource characteristics, energy extraction process, and the duration of the evaporation/crystallation operation are the main factors to affect cost.

- 17. McLain, D., and Eastlake, B., 1980, Weiser Hot Springs Site Specific Development Analysis, DOE Report, DOE 13010-3, Idaho Office of Energy. Site specific development plan includes potato starch production, corn canning and processing and onion dehydration.
- 18. Siverman, M., 1979, "The Geothermal Loan Guaranty Program", paper, refers to Geothermal Food Processors GLGP Loan For Onion Processing Facility, Conf.-780133, UC-66g, GRC, April 1978.
- 19. Swink, D. G., 1976, Potential For Use of Intermediate Temperature Geothermal Heat in Food Processing, paper--11th Intersociety Energy Conversion Engineering Conference, Volume 1, AICE, New York. Sugar Beet. Dairy and Potato Processing Industries addressed.
- 20. , 1977, Economic Study of Low Temperature Geothermal Energy in Lassen and Modoc Counties, California, California Energy Commission Report, NP-23877, Sacramento, California. Applications include onion dehydration.

SIC 206--Sugar Refining, Confections

- 1. Basuino, D. J., et al., 1977, Multiflash Feed-and-Bleed Coupling For Evaporation and Crystallization Industry; DOE Report, SAN/1328-T2, Bechtel Inc., San Francisco. Preserved Fruits and Vegetables, Sugar, and Confectionary Products Industries are discussed. Abstract: That portion of the Hawaiian energy self-sufficiency program which is related to a conceptual use of geothermal heat for industrial and agricultural applications is discussed. It is concluded that a direct geothermal industrial park located near Pahoa, Hawaii, appears feasible.
- 2. Hawaiian Dredging and Construction Co., Honolulu, Hawaii DOE/ET/27233--T2 October 15, 1980.
- 3. Humme, J. T., et al., 1979, Engineering and Economic Analysis For The Utilization of Geothermal Fluids in a Cane Sugar Processing Plant, DOE Report, SAN/1743-3: San Francisco, PUNA Sugar Co.--AMFAC, Inc.
- 4. Hornburg, C. D., and Lindal, B., 1978, Preliminary Research on Geothermal Energy Industrial Complexes, DOE Report, IDO/1627-4: Ft. Lauderdale, Florida, DSS Engineers, Inc. (Beet Sugar).
- 5. Hornburg, C. D., and Morin, O. J., 1975, Geothermal Resources Utilization--paper and cane sugar industries, ERDA Report, Contract No. 2-7405 Eng. 48: Ft. Lauderdale, Florida, DSS Engineers, Inc.
- 6. Lienau, P. J., et al., 1978, Agribusiness geothermal energy utilization potential of Klamath and Western Snake River Basins, Oregon, DOE Report, IDO/1621-1: Klamath Falls, Oregon, Geo-Heat

- Utilization Center, Oregon Inst. of Technology, Oregon Dept. of Geology and Mineral Industries and Oregon Dept. of Economic Development (Beet Sugar).
- 7. May, S. C., Basuino, D. J., and Rogers, A. N., 1977, Applications of Geothermal Resources in the Evaporation and Crystallization Industry, DOE Report, SAN/1328-1: San Francisco, Bechtel Corporation.
- 8. Pearson, R. O., 1977, Use of Geothermal Heat For Sugar Refining, U.S. Department of Energy Report, SAN/1317-3: Redondo Beach, California, TRW Systems and Energy. The economic and technical feasibility of applying low grade geothermal heat (less than 300°F) in the best sugar refining industry for conversion of existing factories was assessed. The representative Holly Sugar factory at Brawley, California, was utilized as a baseline.
- 9. Vorum, M., Coury, G. E., Goering, S. W., and Fritzler, E. A., 1978, Non-electric utilization of geothermal energy in the San Luis Valley, Colorado, DOE Report, IDO/1626-3: Lakewood, Colorado, Coury and Associates, Inc. (Beet Sugar).

AGRICULTURE, GREENHOUSING, AQUACULTURE

- 1. Beall, S. E., 1973, Conceptual design of a food complex using waste warm water for heating. Journal of Environmental Quality. Vol. 2, No. 2.
- 2. Beleau, M. H., and Woiwode, J. G., 1980, Raft River Aquaculture Project. Final Report, July 1980. DOE Report, DOE/ID/01757-3, EG&G Idaho Inc., INEL, Idaho, Falls, Idaho.
- 3. Berry, J. W., and Miller, H. H., Jr., 1974. A Demonstration of Thermal Water Utilization in Agriculture. U.S. Environmental Protection Agency EPA-660/2-74-011. Corvallis, Oregon.
- 4. Bishop, A. A., 1975, Use of Geothermal Water For Agriculture, ANCR-1221, Aeroject Nuclear Co., INEL, Idaho Falls, Idaho.
- 5. Boersma, L., Davis, L. R., Reistad, G., M., Ringle, J. C., and Schmisseur, W. E., 1974. A Systems Analysis of the Economic Utilization of Warm Water Discharge from Power Generating Stations. Oregon State University Engineering Experiment Station Bullitin No. 48. Corvallis, Oregon.
- 6. Boren, K. L., 1979, Use of Geothermal Fluids To Heat A'Large Greenhouse Complex. SAN-2118-1, pp. 69-70, April 1979.
- 7. Campbell, G., 1973, Geothermal Hydroponics, Article. Geothermal World Directory, Glendora, California.
- 8. Campbell, D. K., et al., 1979, Raft River Geothermal Agriculture Experiment-Phase II, TREE-1370, Idaho National Engineering Laboratory Idaho Falls, Idaho, EG&G Idaho, Inc., August 1979.
- 9. Cone, B. W., 1978, "An Economic Analysis of Potential Uses of Geothermal Energy in Agriculture," PNL-2568, February 1978.
- 10. Fogleman, S. F., et al., 1978, Total Energy Recovery System for Agribusiness: Lake County Study, DOE San Francisco Operations Office SAN/1327-2, April 1978.
- 11. Gordon, T. J., et al., 1978; The Use of Geothermal Heat for Crop Drying and Related Agricultural Applications. DOE Idaho Operations Office IDO/162804, March 1978.
- 12. Hayes, A., and Johnson, W. C., 1980, Geothermal Aquaculture: A Guide to Freshwater Prawn Culture; Geo-Heat Utilization Center, OIT Klamath Falls, Oregon.
- 13. Head, J., 1970, Geothermal Energy for Greenhouse Heatings, Oregon BIN Vol. 32, pp 182-183.
- 14. Huttner, G. W., 1979, Feasibility Studies For a Greenhouse Complex in Central Oregon, paper, GRC Annual Meeting, 1979. International Energy Corp., Englewood, California.

- 15. Iverson, S. L., Prowse, D. R., Campbell, J. D., An Assessment of the Utilization of Waste Heat in Greenhouses, Atomic Energy of Canada, Ltd. AECL-5109, January 1976.
- Jensen, M. H., 1977, Energy Alternatives and Conservation for Greenhouses, HortScience 12: No. 1 14 24 (February 1977).
- 17. Johnson, W. C., Culture of Freshwater Prawns (Macrobraschium Rosenberg II) Using Geothermal Waste Water, Geo-Heat Utilization Center, OIT, Klamath Falls, Oregon 97601.
- 18. Kunze, J. F., Stoker, R. C., 1979, Floral Greenhouse Heating, Semi-Annual Technical Report (DOE/ET/127056--T1).
- 19. LaFrance, L. J., 1979, Feasibility Study of Geothermal Energy for Heating Greenhouses. Final Report, (NMEI-41) New Mexico Energy Institute, Los Cruces.
- 20. Lindal, B., 1973, Industrial and Other Applications of Geothermal Energy (Except Power Production and District Heating), Geothermal Energy, UN Educational, Scientific and Cultural Organ., Paris, France.
- 21. Lindal, B., 1974, Geothermal Energy for Process Use, Multipurpose Use of Geothermal Energy, p. 16-42, OIT Klamath Falls, Oregon.
- 22. Lineau, P. J., 1974, Innovative Geothermal Uses in Agriculture.
 Multipurpose Use of Geothermal Energy p. 113-120, OIT, Klamath Falls,
 Oregon.
- 23. Lienau, P. J., "Agribusiness Geothermal Energy Utilization Potential of Klamath and Snake River Basins, Oregon," <u>Direct Utilization of Geothermal Energy: A Symposium</u>, Geothermal Resources Council CONF-780133, April 1978.
- 24. MCDonald, S. E., et al., 1976, "Potential For Heating Western Tree Seedling Greenhouses with Geothermal Energy," USDA Forest Service Equipment Development Center NP-22082, November 1976.
- 25. Newman, R. W., "Adaptation of Grain Dryers to Use a Geothermal Heat Source," JHU/APL QM-78-167, August 7, 1978.
- 26. Newman, R. W., "Moisture Addition to Grain Dryers by Vitiated Air Fossil Fuel Heaters," JHU/APL QM-79-009, January 18, 1979. Oregon State University, 1978, Geothermal Resources for Aquaculture. Proceedings of a Workshop. Boise, Idaho, December 1977.
- 27. Ray, L., 1979, Channel Catfish (Ictalurus Punctatus) Production in Geothermal Water. Fish Breeders of Idaho, DOE Report, SAN-2118-1, p. 63-64. April 1979.

- 28. Roberts, P. A., 1975, Fish Culture Utilization of Geothermal Energy, Aerojet Nuclear Co., Idaho Falls, Idaho ANCR-1220, June 1975.
- 29. Rykbost, K. A., et al., 1974, Crop Response to Warming Soils Above Their Natural Temperatures, Oregon State University, Agricultural Experiment Station, Corvallis, Oregon.
- 30. Rykbosi, K. A., 1973, An Evaluation of Soil Warming for Increased Crop Production. PhD thesis. Oregon State University, Corvallis, Oregon.
- 31. Schaevitz, R. C., 1979, Geothermal Applications in Agricuture:
 Mushroom Farming in The Western U.S., Conf. Expanding The Geothermal
 Frontier, p. 629-632 GRC, Davis, California, 1979.
- 32. Sepaskhah, A. R., 1974, Experimental Analysis of Subsurface Heating and Irrigation on the Temperature and Water Content of Soils. PhD thesis. Oregon State University, Corvallis, Oregon.
- 33. Siegel, D. T., 1976, Design Guidelines For Agricultural Soil Warming Systems Utilizing Waste Heat, EPA-600/3-76-026, March 1976.
- 34. Stanley, N. E., Schmitt, R. C., 1980, Effects of Irrigation on Crops and Soils with Raft River Geothermal Water, EGG-2005, EG&G Idaho, Inc., Idaho Falls, Idaho.
- 35. Stanley, N. E., et al., 1980, Geothrmal Wetlands: An Annotated Bibliography of Pertinent Literature. EGG-2029, EG&G Idaho, Inc., Idaho Falls, Idaho.
- 36. Wright, T. C., 1977, Potential For Crop Drying with Geothermal Hot Water Resorces in the Western U.S. Futures Group, Clastonbury, Connecticut DOE Report IDO-1628-T1, Idaho Operations Office, Idaho Falls, Idaho, April 1977.
- 37. Yarosh, M. M., et al., "Agricultural and Aquacultrual Uses of Waste Heat," Oak Ridge National Laboratories ORNL-4797, July 1972.

ALCOHOL PRODUCTION

Miscellaneous References

- Garing, K. L., Coury, G. E., 1979, Adaptation of Geothermal Energy to Produce Alcohol From Agricultural Commodities, Coury & Associates Lakewood Colorado Conf-Expanding the Geothermal Frontier, GRC Davis, California, 1979.
- 2. Garing, K. L., Coury, G. E., 1978, Assessment of the Geothermal Resource in Colorado is the Energy Source for a Process to Produce Alcohol From Agricultural Commodities, Coury & Associates, Lakewood, Colorado, October 1978.
- 3. Lipinsky, E. S., et al., 1978, Sugar Crops As A Source Fuels, Vol II. Processing and Conversion Research, DOE Report, Battelle, Columbus Div., Columbus, Ohio, August 31, 1978.
- 4. Lund, J. W., 1979, Alcohol Fuel Production Using Geothermal Energy, Q. Bulletin Geo-Heat Utilization Center 4: 12-18 October, 1979, Geo-Heat Utilization Center, Oregon Inst. of Technology, Klamath Falls, Oregon.
- 5. Stenzel, et al., 1980, Ethanol Production for Automotive Fuel Usage, Final Technical Report DOE/ID/12050-3, Bechtel National Inc., San Francisco, California, August 1980.
- 6. Stiger, R. R., 1980, Hydrothermal Energy: A Source of Energy For Alcohol Production, Idaho National Engineering Lab. Idaho Falls, Idaho, Alcohol Alternative Conf., Chicago, Illinois, May 1980.
- 7. Struhsacker, D. W., 1980, The Use of Geothermal Energy For Biomass-Based Ethanol Production, GRC Conf. Paper Earth Science Laboratory, University Utah Research Inst., Salt Lake City, Utah.

Miscellaneous References

- Allegheny Ludlum Industries Inc., 1979, Piping Engineering, 4th Ed., Tube Turns Div., Allegheny Ludlum Industries, Inc., Louisville, Kentucky.
- 2. Allen, C. A., Grimmett, E. S., 1978; Liquid-Fluidized-Bed Heat Exhanger Design Parameters. DOE Report ICP-1153, Allied Chemical, Idaho Chemical Programs, Idaho National Engineering Laboratory, 1978.
- American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc., ASHRAE Handbooks, Equipment, 1975; Fundamentals, 1977; System, 1977; and Applications, 1978; New York.
- 4. Anderson, D., Lund, J., Eds., 1979; GRC Special Report No. 7--Direct Utilization of Geothermal Energy: A Technical Handbook. Geothermal Resources Council.

- 5. APL/JHU Letter Report CQ0-2544, 1979; The Crisfield, Maryland Well and Geothermal Energy.
- 6. Arnold, A. J., "Inventory and Case Studies of Louisiana, Non-Electric Industrial Applications of Geopressured Geothermal Resources," DOE Idaho Operations Office IDO/1629-4, February 1978.
- 7. Benner-Drury, D., and Unmack, K., 1979; Improving Utilization of Low Temperature Geothermal Resources with Augmentation. In, Transactions, Geothermal Resources Council, Vol. 3, September, 1979.
- 8. Bilicki, Z., et al., 1980, Geothermal Two-Phase Flow: A Selective Annotated Guide To the Literature, DOE Report DOE/ET/27225-11.
- 9. Blakemore, R. W., 1978; Geothermal Pump Test Facility. Barber-Nichols Engineering Company, Arvada, Colorado. DOE Report ALO-3715-1.
- 10. Bloomster, C. H., Faubender, L. L., and McDonald, C. L., Geothermal Energy Potential for District and Process Heating Applications in the U.S.--An Economic Analysis; Battelle Pacific Northwest Laboratories; August 1977.
- 11. Bodvarsson, G., and Zoega, J., 1961; Production and Distribution of Natural Heat for Domestic and Industrial Heating in Iceland. In, Proceedings of United Nations Conference on New Sources of Energy, Rome, Italy, 1961, (United Nations, New York, 1964).
- 12. Burrows, W., 1974; Utilization of Geothermal Energy in Rotorua, New Zealand. In, Proceedings International Conference on Geothermal Energy for Industry, Agriculture and Commercial-Residential Uses, Oregon Institute of Technology, Klamath Falls, Oregon, U.S.A., 1974.
- 13. Cerini, D. J., 1978; Demonstration of a Rotary Separator for Two-Phase Brine and Steam Flows. Bi-Phase Energy Systems, Research-Cottrell, Santa Monica, California. DOE Report TID-28519.
- 14. Charm, S. E., The Fundamentals of Food Engineering; The AVI Publishing Company, Inc., Westport, Connecticut; 1963.
- Coe, B. A., 1979; An Opportunity--Direct Use of Hydrothermal Energy in Colorado. In, Transactions, Geothermal Resources Council, Vol. 3, p. 117.
- 16. Coe, B. A., 1979, Geothermal Energy--An Example of Mineral Resource Planning, Colorado Geological Survey Department of Natural Resources, Denver, Colorado.
- 17. Coe, B. A., Bright, P., and Meyer, R. T., 1980 (Draft); Identification of Decision Criteria for Prospective Non-Electric Hydrothermal Industrial Energy Users. Western Energy Planners, Ltd.

- 18. Coe, B. A., Bright, P., and Meyer, R. T., 1980 (Draft); Typical Time Requirements (Months) for Development of Hydrothermal Non-Electric Applications. Western Energy Planners, Ltd.
- 19. Coe, B. A., Bright, P., and Meyer, R. T., 1980; Identification of Prospective Industrial Geothermal Energy Users. In, Transactions, Geothermal Resources Council, Vol. 4, p. 553.
- 20. Coe, B. A., and Zimmerman, J., 1980; Geothermal Energy Opportunities at Four Western Colorado Towns. Colorado Geological Survey Department of Natural Resources, Denver, Colorado.
- 21. Cole, L. T., and Schmitt, 1980, Fluidized Bed Potato Waste Drying Experiments at the Raft River Test Site, EGG-2036, EG&G Idaho, Idaho Falls, Idaho.
- 22. Cole, L. T., Allen, C. A., 1979, Liquid Fluidizing-Bed Heat Exchanger Flow Distribution Models, ICP-1151, Allied Chemical Corp., INEL, Idaho Falls, Idaho, January 1979.
- 23. Culver, G. G., Reistad, G. M., 1978, Evaluation and Design of Downhole Heat Exhangers For Direct Application, Final Report, DOE Report RLO-2429-7, Oregon Institution of Technology. Geo-Heat Utilization Center, Klamath Falls, Oregon, December 1978.
- 24. Cooke, W. L., 1970; Some Methods of Dealing with Low Enthalpy Water in the Retorua Area of New Zealand. Geothermics, Special Issue 2, Vol. 2, Part 2.
- 25. Crane, G., 1978; Mammoth Geothermal District Heating System. Electric Power Research Institute, EPRI-ER-660-SR.
- Culver, G. G., 1976; Optimization of Geothermal Home Heating Systems, Klamath Falls, Oregon. Geo-heat Utilization Center, ERDA Contract No. E-(10-1)-1548.
- Cunniff, R. A., Rao, C. R., O'Dea, P., Jenkins, J., Glazner, G., Shales, M., and Heath, R., 1979; Geothermal Potential Applications for the Rocky Mountain Basin and Range Region. Draft Special Data Report, MNEI 10-6.
- 28. Cunniff, R. A., Glazner, G., and Houldsworth, M., 1979; Geothermal Energy for Residential, Commercial, Industrial Users: A Computer Simulation Model BTHERM. NMEI 30-5.
- 29. Cunniff, R. A., Glazner, G., and Houldsworth, M., Brown, K., Knauf, K., O'Dea, P., Heath, R., Shales, M., and Liebert, P., 1980; Data Packet State Team Handout, Salt Lake City Conference, January 22-24, 1980.

- 30. DOE, Application of direct-contact heat exchangers to geothermal power production cycles. DOE. ID/1549-8.
- 31. DOE, 1976, Evaluation and design of downhole heat exchangers for direct application. Annual report, May 1, 1976-July 1, 1977. DOE RLO/2429-3.
- 32. DOE, Geothermal direct contact heat exchange. Final report. ERDA. SAN/1116-1.
- 33. DOE,, 1976, Study and testing of direct contact heat exchangers for geothermal brines. Final report, June 1975-July 1976. ERDA. ORO-4893-1.
- 34. DOE, 1978, Site-Specific Analysis of Geothermal Development, Vol. 1: Summary Report. MTR-7586 by MITRE/Metrek for DOE, August 1978.
- 35. Einarsson, S. S., 1970; Utilization of Low Enthalpy Water for Space Heating, Industrial, Agricultural, and other Uses. Geothermics, Special Issue 2, Vol. 2, Part 2.
- 36. Ellington, R. T., Kunst, C., Peck, R. E., and Reed, J. F., "The Absorption Cooling Process," Institute of Gas Technology Research Bulletin 14, August 1957.
- 37. Enderin, W. I., 1980; Assessment at Geothermal Energy As a Power Source for U.S. Aluminum Production Plants, PNL-3174.
- Fulton, R. L., 1979, Geothermal Energy for Industrial Applications, LBL-89-18, Lawrence Berkeley Laboratory, Berkeley, California, March 1979.
- 39. Geothermal Direct Heat Applications Program Summary, 1980; Semi-Annual Review Meeting--El Centro, California.
- Geothermal Resources Council, 1978; Direct Utilization of Geothermal Energy, A Symposium, San Diego, California, January--February, 1978.
- 41. Geothermal Resources Council, Davis, California, 1979; A Symposium of Geothermal Energy and its Direct Uses in the Eastern United States. Special Report No. 5, DOE Grant No. ET-78-G-03-2118.
- 42. Geothermal Resources Council, 1978, Direct Utilization of Geothermal Energy: A Symposium, January 31-February 2, 1978, San Diego, CONF-780133.
- 43. Geothermal Resources Council, 1978, A Conference on the Commercialization of Geothermal Resources, November 1978, San Diego, California.

- 44. Chormley, E. L., 1978, Geothermal Heat Exchanger Test at Heber, California. The Ben Holt Company, Pasadena, California. EPRI ER-572.
- 45. Grimmett, E. S., Fanous, A. F., and Allen, C. A., 1977; Advances in Liquid-Fluidized-Bed Heat Exchanger Development. ASME Publication, 77-HT-66.
- 46. Hornburg, C. D., 1978, Feasibility of Developing Geothermal Energy, Industrial Complexes, DSS Engineer, Inc., Ft. Lauderdale, Florida, July 1978, NATO-CCMS Conf. on Economics of Direct Uses of Geothermal Energy. NATO-CCMS-66.
- 47. Howard, J. H., Ed., 1975; Present Status and Future Prospects for Non-Electrical Uses of Geothermal Resources. Lawrence Livermore Laboratory, University of California, Livermore, California, ERDA Report UCRL-51926.
- 48. Ingle, W. D., III, 1979; Direct Heat Activated Cooling Adapted to Geothermal Energy. In, Geothermal Resources Council, Special Report No. 5, A Symposium of Geothermal Energy and Its Direct Uses in the Eastern United States.
- 49. Joslyn, M. A., and Heid, J. L.; Food Processing Operations; Volume One; The AVI Publishing Company, Inc.; Westport, Connecticut; 1963.
- 50. Jamison, R., A Corporate Energy Conservation Program Case History TAPPI, 58: No. 10, p. 62., Weyerhaeuser Co.
- 51. Jamison, R., Process Simulation Program, TAPPI 62: No. 2, p. 51. Weyerhaeuser Co.
- 52. Jacobs, H. R., 1977; Evaluation and Design Considerations for Liquid-Liquid Direct Contact Heat Exchangers for Geothermal Applications. AME Publication, 77-HT-2, August, 1977.
- 53. Jacobs, H. R., Boehm, R. F., and Hansen, A. C., 1978; Application of Direct Contact Heat Exchanger to Geothermal Power Production Cycles.
- 54. Jacobs, H. R., Plass, S. B., Hansen, A. C., and Gregory, R., 1977; Operational Limitations of Direct Contact Heat Exchangers for Geothermal Applications, ASME Publication 77-HT-5, August, 1977.
- 55. Keller, J. G., 1977; Heat Pumps Primer for Use with Low Temperature Geothermal Resources, GP-118 (informal).
- 56. Kunze, J. F., 1979, Fluid Heat Management for Direct Geothermal Energy Applications, Energy Services, Rexburg, Idaho, DOE Report SAN-2118-1.

- 57. Kunze, J. F., 1979; Fluid Heat Management for Direct Geothermal Energy Applications. In, Geothermal Resources Council, Special Report No. 5, A Symposium of Geothermal Energy and Its Direct Uses in the Eastern United States.
- 58. Larson, T. C., 1979, Market Prospects For Major Industrial Process Heat Uses of Geothermal Energy, SAI, Inc., La Jolla, California, GRC Annual Meeting-Expanding The Geothermal Frontier, Reno, Nevada, 1979.
- 59. Lienau, P. J., and Lund, J. W., Eds., 1974; Multipurpose Use of Geothermal Energy. In, Proceedings of the International Conference on Geothermal Energy for Industrial, Agricultural, and Commercial-Residential Uses, Oregon Institute of Technology, Klamath Falls, Oregon, 239 p.
- 60. Lindal, B., 1964; Geothermal Heating for Industrial Purposes in Iceland, In, Proceedings United Nations Conference on New Sources of Energy, Rome, Italy, 1961, United Nations, New York, 1964.
- 61. Lindal, B., 1973; Industrial and Other Applications of Geothermal Energy, Geothermal Energy Review of Research and Development, UNESCO, Paris, France, 1973.
- 62. Lindal, B., 1974; Geothermal Energy for Process Use: Multipurpose Use of Geothermal Energy. In, Proceedings of the International Conference on Geothermal Energy for Industrial, Agricultural, and Commercial-Residential Uses, Oregon Institute of Technology, Klamath Falls, Oregon.
- 63. Lokehine, B. A., and Dvorov, I. M., 1970; Applications Experimentales et Industrielles de l'energie Geothremique en URSS. Geothermics, Special Issue No. 2, Vol. 2, Part 2.
- 64. Lund, J. W., 1977; Geothermal Energy in Iceland. USDI--Geological Survey Report, Oregon Institute of Technology, Klamath Falls, Oregon.
- 65. Lund, J. W., 1979; Worldwide Direct Application Review. In, Geothermal Resources Council, Special Report No. 5. A Symposium of Geothermal Energy and Its Direct Uses in the Eastern United States, April 1979.
- 66. Malmason, G., Zoega, J., 1970; Geothermal Energy Development in Iceland, 1960-1969. Geothermics, Special Issue No. 2, Vol. 2, Part 1.
- 67. Meyer, R. T., 1980; Target Industries for Geothermal Direct Heat Application. In, Transactions, Geothermal Resources Council, September, 1980; Vol. 4, p. 589.
- 68. Michel, J. W., Heat Transfer Consideration in Utilizing Solar and Geothermal Energy, Alternate Energy Sources, Vol. 6, Veziroglu T.N., (ed.), Washington D.C. Hemisphire Publishing Corp. (1978).

- 69. National Research Council, 1979, Geothermal Resources and Technology in the United States, Supporting Paper 4, CONAES, 1979.
- 70. Neil D. T., Schmitt, R. C., 1979, Heat Pumps Coupled to Geothermal Resources Can Provide Economical Process Heat.
- 71. Neil D. T., 1976, Geothermal Shell and Tube Heat Exchanger Augmentation, TREE-1023, EG&G Idaho, Inc., INEL, Idaho Falls, Idaho, November 1976.
- 72. Newman, R. W., 1978; "Heat Exchanger Cost," OM 78-164, August 3, 1978, AS-039, Johns Hopkins University Applied Physics Laboratory, Laurel, Maryland.
- 73. Nichols, K. E., and Malgieri, A. J., 1978; Technology Assessment of Geothermal Pumping Equipment. Barber-Nichols Engineering Company, Arvada, Colorado, DOE Report ALO-4162-2.
- 74. Niess, R. C., 1979; Utilization of Geothermal Energy with an Emphasis on Heat Pumps. In, Geothermal Resources Council, Special Report No. 5, A Symposium of Geothermal Energy and Its Direct Uses in the Eastern United States, April 1979.
- 75. Olson, G. K., Benner-Drury, D. L., Cunnington, G. R., 1979; Multi-Use Geothermal Energy System with Augmentation for Enhanced Utilization of a Non-Electric Application of Geothermal Energy in Susanville, California. Aerojet Energy Conversion Company, Sacramento, California, Final Report, DOE-ET-248447-1.
- 76. Packer, M. B., et al., 1980, Method For Evaluating The Potential of Geothermal Energy in Industrial Process Heat Applications, Massachusetts Inst. of Technology, LMP/MRP-80-04.
- 77. Peterson, E. A., 1979; Possibilities for Direct Use of Geothermal Energy. ASHRAE Transactions, Vol. 85, Part 1.
- 78. Peterson, E. A., El-Ramby, N., and Dermengian, J. M., 1976; The Electric and Non-Electric Geothermal Industry in the United States. Geothermal World Directory, Bicentennial Edition, 1975-76.
- 79. Pettitt, R. A., 1979; Hot Dry Rock Program in the Eastern U.S. In, Geothermal Resources Council, Special Report No. 5, A symposium of Geothermal Energy and its Direct Uses in The Eastern United States, April 1979.
- 80. Ranney, M. W., 1979, Heat Exchange Fluids and Techniques, Noyes Data Corp., Park Ridge, New Jersey (1979).
- 81. Reistad, G. M., 1980, Direct Application of Geothermal Energy. ASHRAE Special Report, 1980.

- 82. Reistad, G. M., Culver, G. G., and Fukuda, M., 1979; Downhole Heat Exchangers for Geothermal Systems: Performance, Economics, and Applicability. ASHRAE Transactions, Vol. 85, Part 1.
- 83. Reistad, G. M., Schmisseur, W. E., Shay Jr., and Fitch, J. B., 1978; An Evaluation of Uses for Low to Intermediate Temperature Geothermal Fluids in the Klamath Basin, Oregon. Bulletin No. 55, Engineering Experiment Station, Oregon State University.
- 84. Reistad, G. M., Yao, B., and Gunderson, M., 1978; A Thermodynamic Study of Heating with Geothermal Energy. ASME Journal of Engineering for Power, Vol. 100, No. 4.
- 85. Reynolds, G., 1970; Cooling with Geothermal Heat. Geothermics, Special Issue No. 2, Vol. 2, Part 2.
- 86. Richardson, A. S., 1976; Survey of Industrial Dryers for Solids, ANCR-T317, Aerojet Nuclear Co., INEL, Idaho Falls, Idaho, July 1976.
- 87. Richardson, A. S., et al., 1977; Energy Oriented Study of Fluidized Bed System, TREE-1135, EG&G Idaho, Inc., INEL, Idaho Falls, Idaho, May 1977.
- 88. Roberts, K. D., et al., 1979; Industrial Markets for the Texas Geopressured-Geothermal Resource: A Market Survey, p. 577-580. Expanding the Geothermal Frontier, GRC, Davis, California.
- 89. Rodzianko, P., 1979; A Case History of Direct Use Geothermal Applications. In, Transactions, Geothermal Resources Council, Vol. 3, September 1979.
- 90. Schultz, R. J., et al., 1978; Geothermal Energy Market Potential Industrial Processing, Idaho National Engineering Laboratory, Idaho Falls, p. 27-30, Commercialization of Geothermal Resources, GRC, Davis, California, 1978.
- 91. EG&G, 1978 Draft Regional Hydrothermal Market Penetration Analysis-Rocky Mountain Basin and Range Region, EG&G Idaho, Inc., October 31, 1978.
- 92. Sherwood, P. B., and Newman, K. L., 1977; Engineering and Economic Feasibility of Utilizing Geothermal Heat from the Heber Reservoir for Industrial Processing Purposes at Valley Nitrogen Producers, Inc., El Centro Agricultural Chemical Plant. WESTEC Services, Inc., San Diego, California, DOE Report SAN-1323-3.
- 93. Sims, A. V., 1976; Geothermal Direct Contact Heat Exchange. The Ben Holt Company, Pasadena, California, ERDA Report SAN-1116-1.

- 94. Sperry Research Center, Sudbury, Massachusetts, 1977; Feasibility Demonstration of the Sperry Down-Well Pumping System. DOE Report COO-2838-1.
- 95. Suratt, W. B., and Lee, C. O., 1978; Study and Testing of Direct Contact Heat Exchangers for Geothermal Brines. DSS Engineers, Inc., Fort Lauderdale, Florida, DOE Report ORO-4893-2.
- 96. Suratt, W. B., and Hart, G. K., 1977; Testing of Direct Contact Heat Exchangers for Geothermal Brines. ASME Publication, 77-HT-4.
- 97. The Swedish Pulp and Paper Industry, Fact Sheets on Sweden, September 1976, The Swedish Institute.
- 98. Taylor, R. J., Toth, W. J., and Stowe, D. W., "Ammonia Absorption Geothermal District Heating and Air Conditioning System," JHU/APL QM-77-108, March 1, 1977.
- 99. Trice, J. B., 1979; Industrial Process Heat GEIS Systems at Reigel Textile Corp: Another First. Solar Age: 4 No. 3, p. 22-24, March 1979.
- 100. Toth, W. J., "Geothermal Energy and the Eastern U.S., A Scenario for Geothermal Development, the Eastern Gulf Coastal Plain," JHU/APL QM-77-129-3, February 1978.
- 101. Toth, W. J., and Paddison, F. C., "Geothermal Energy Markets on the Atlantic Coastal Plain," Proc. Sixth Energy Technology Conf., 1979.
- 102. Toth, W. J., "Geothermal Energy Markets on the Atlantic Coastal Plain," Proc. Symp. of Geothermal Energy and Its Direct Uses in the Eastern United States, Geothermal Resources Council Special Report No. 5, April 1979, p. 95-98.
- 103. Turner, S. E., 1977, HEDCOR-A Heat Exchanger Cost and Design Optimization Routine, TREE-1113, EG&G Idaho, Inc., INEL, Idaho Falls April 10, 1977.
- 104. Urbanek, M. W., 1978; Development of Direct Heat Exchangers for Geothermal Brines. DSS Engineers, Inc., Fort Lauderdale, Florida, DOE Report LBL-8558, UC-66D.
- 105. U.S. DOE, 1979; Direct Heat Application Summary. Presented at the Geothermal Resources Council Annual Meeting, September 1979.
- 106. Vorum, M., Coury, G. E., Goering, S. W., and Fritzler, E. A., 1978; Non-Electric Utilization of Geothermal Energy in the San Luis Valley, Colorado. Coury and Associates, Inc., Lakewood, Colorado, DOE Report IDO-1626-3.

- 107. Wahl, E. F., 1977; Geothermal Energy Utilization. A Wiley-Interscience Publication, John Wiley and Sons, New York, p. 302.
- 108. Whitbeck, J. F., 1975, Design Concepts for Flash Steam Systems for Use with Medium Temperature Geothermal Water, ANCR-1210, Aerojet Nuclear Co., INEL, Idaho Falls, Idaho, July 1975.
- 109. White, I. L., et al., 1979; Energy From the West: Energy Resource Development Systems Report Vol. VI: Geothermal Final Report 1975-1978. Radian Corp., Austin, Texas, March 792.
- 110. Wilson, R. D., 1974; Use of Geothermal Energy at Tasman Pulp and Paper Company Ltd., New Zealand--Multipurpose Use of Geothermal Energy. In, Industrial, Agricultural, and Commercial-Residential Uses, Oregon Institute of Technology, Klamath Falls, Oregon.
- 111 Wingate, C. A., Jr., 1978; Heat Pump System Design Charts for Geothermal Heat Pumps Selection QM-78-200, AS-053 September 6, 1978 Johns Hopkins University, Applied Physics Lab, Laurel, Maryland.
- 112. Wong, C. M., 1970; Geothermal Energy and Desalination, Partners in Progress. Geothermics, Special Issue No. 2, Vol. 2, Part 1.
- 111. Yu, K., and Paddison, F. C., 1980; Technical Assistance--Hydrothermal Resource Application in the Eastern United States. In, Transactions, Geothermal Resources Council, Vol. 4.

V1. LEGAL, INSTITUTIONAL, AND ENVIRONMENTAL CONSIDERATIONS

- Aidlin, J. W., 1974; Development of Geothermal Laws and Regulations. In, Preliminary Study Guide, California Department of Oil and Gas/Geothermal Resources Council, Short Course No. 2.
- 2. Allen, E. M., 1980; Legal and Institutional Factors. Unpublished report to the Oregon Geothermal Task Force.
- 3. Anders, D. N., 1973; Goethermal Laws and Regulations in the Western United States. California Department of Oil and Gas/Geothermal Resources Council, Short Course.
- 4. Anglin, R. L., Jr. 1978, Local Government Management of Geothermal Resources, p. 13-19, of Geothermal Energy, A Novelty Becomes a Resource, Vol. 2, GRC, Davis, California.
- 5. APL/JHU 79-145, 1979; A Framework for a Site Prospectus for Geothermal Energy Development, Delmarva Peninsula.
- 6. APL/JHU Gens-006, 1979; Geothermal Energy Market Penetration: Development of a Model for the Residential Sector.
- 7. Armstead, H. C. H., 1973; Geothermal Energy: Review of Research and Development. UNESCO Press, Paris.
- 8. Armstead, H. C. H., 1978; Geothermal Energy. Halstead Press, John Wiley and Sons, New York.
- 9. Aspinwall, C., Caplan, J., James, R., and Marcotte, K., 1980; Wyoming Geothermal Institutional Handbook. U.S. Department of Energy, Division of Geothermal Energy, Idaho Falls Operation Office, DOE/ID/12013-2.
- Beeland, G. V., Sebran, D. J., and Whiteright, D. K., 1978; Geothermal Development on Federal Lands--The Impediments and Potential Solutions. U.S. Department of Energy TID-28270.
- 11. Birkby, J., Brown, K., Chapman, M., 1979; Montana Geothermal Commercialization Program, Semi-Annual Report, January--June. United States Department of Energy, Division of Geothermal Energy, Idaho Falls Operations Office, DOE/ID/12014-1.
- 12. Birkby, J., and Chapman, M., 1980; Montana Geothermal Planning Project, Semi-Annual Progress Report, July--December. In, State Geothermal Commercialization Programs in the Rocky Mountain Basin and Range Region, Semi-Annual Progress Report, July-December, 1979. U.S. Department of Energy, Division of Geothermal Energy, Idaho Falls Operations Office, DOE/ID/12101-1.

- 13. Birkby, J., Brown, K., and Chapman, M., 1980; Montana Geothermal Planning Project Semi-Annual Progress Report. Energy Division, Montana Department of Natural Resources and Conservation, Helena, Montana.
- 14. Birkby, J., and Chapman, M., 1980; Montana Geothermal Commercialization Project, Semi-Annual Progress Report, January--August 1980. In, State Geothermal Commercialization Programs in the Rocky Mountain Basin and Range Region, Semi-Annual Progress Report, January--June 1980. U.S. Department of Energy, Division of Geothermal Energy, Idaho Falls Operations Office (in preparation).
- 15. Blake, G. L., 1978; Semi-Annual Progress Report for the Idaho Geothermal Program, October 1, 1977 to March 31, 1978. EG&G, Idaho, Inc., Idaho National Engineering Laboratory, Idaho Falls, Idaho. DOE Report TREE-1728.
- 16. Blake, G. L., 1978; Semi-Annual Progress Report for the Idaho Geothermal Program, April 1 to September 30, 1978. EG&G Idaho, Inc., Idaho National Engineering Laboratory, Idaho Falls, Idaho, DOE Report TREE-1295.
- 17. Block, R., B., 1978; Linking Public and Private Institutions to Stimulate the Small-Scale Applications of GTE, paper by APPRO TECH, Inc., presented at DOE Workshop on Small-Scale Applications of GTE, November 15, 1978.
- 18. Bodvarsson, G., et al., 1974; Systems Study for the Use of Geothermal Energies in the Pacific Northwest. Final Report Prepared for the USAEC, Report No. RLO-2227-T19-1.
- 19. Bourland, W. C., and Farrar, S. S., 1978; South Carolina Geothermal Program Final Report. Division of Geology, South Carolina State Development Board, Columbia, South Carolina. DOE Report ORO-5104-1.
- 20. Bronder, L., et al., 1979; Evaluation of State Taxes and Tax Incentives and their Importance on the Development of Geothermal Energy in Western States, WEPL Ltd., Denver, Colorado.
- 21. Brown, K. E., 1978; Montana Geothermal Planning and Resource Inventory: 1978 Report. Oregon Institute of Technology.
- 22. Brown, M. C., Duffield, R. B., Siciliana, C. L. B., and Smith, M. C., 1979; Hot Dry Rock Geothermal Energy Development Program, Annual Report, Fiscal Year 1978. Los Alamos Scientific Laboratory, University of California. DOE Report LA-7807-HDR.

- 23. California, State of, 1976; Geothermal Energy in California. California Energy Commission, Sacramento, California, Final Report plus Appendix.
- 24. California, State of, 1976; Statewide Geothermal Regulations: California Admin. Code, Title 14, Sec. 1900-1993.
- 25. California, State of, 1978; California Laws for Conservation of Geothermal Resources. California Division of Oil and Gas, Public No. PRC 02.
- 26. California, State of, 1978; Guidelines for Processing Permits for Development Projects. Office of Planning and Research.
- 27. California, State of, 1978; Report of the State Geothermal Resources Task Force. Office of Planning and Research, p. 94, plus appendices.
- 28. California, State of, 1978; State EIR Guidelines. The Resources Agency of California.
- 29. Caplan, J., and Marcotte, K., 1980; Big Horn Basin, Wyoming Area Development Plan. Ed. by Carole Aspinwall and Rick James, Wyoming Geothermal Commercialization Office.
- 30. Clark, N. A., Booth, G. M., III, Webber, D., and Helseth, B. K., 1979; Nevada Southwest Regional Geothermal Development Operations Research Project. Appendix 8 of Regional Operations Research Program for the Development of Geothermal Energy in the Southwest United States: Final Technical Report, June 1977 to August 1978. New Mexico Energy Institute, New Mexico State University, Las Cruces, New Mexico.
- 31. Chiang, S. L., 1977; Geothermal Development and Environmental Protection Measures. U.S. Geological Survey Open File Report 77-838, p. 15.
- 32. Christianson, H., and Lidel, P., 1980; The South Dakota Office of Energy Policy Geothermal Program, 1980; South Dakota Geothermal Institutional Handbook. U.S. Department of Energy, Division of Gothermal Energy, Idaho Falls Operations Office, DOE/ID/12012-1.
- 33. Coe, B. A., 1978; Information Series 9--Geothermal Energy Development in Colorado: Processes, Promises & Problems. Denver, Colorado: Colorado Geological Survey Department of Natural Resources.
- 34. Coe, B. A., 1979; Colorado Geothermal Commercialization Program, Semi-Annual Report. U.S. Department of Energy, Division of Geothermal Energy, Idaho Falls Operations Office, DOE/ID/12018-1.
- 35. Coe, B. A., 1979; 1979 Year-End Report of the Colorado Geothermal Commercialization Project. Colorado Geological Survey.

- 36. Coe, B. A., 1979; Geothermal Energy--An Example of Mineral Resource Planning. Denver, Colorado: Colorado Geological Survey Department of Natural Resources.
- 37. Coe, B. A., 1980; Colorado Geothermal Commercialization Project, Semi-Annual Progress Report. In, State Geothermal Commercialization Programs in the Rocky Mountain Basin and Range REgion, Semi-Annual Progress Report, July--December 1979; U.S. Department of Energy.
- 38. Coe, B. A., 1980; Geothermal Energy--An Example of Mineral Resource Planning. Presented to Governor's Fifth Environmental Geology Conference.
- 39. Coe, B. A., 1980; Geothermal Energy in Colorado--A Synopsis of Resources, Market Potential and Development Activity. Western Energy Planners, Ltd.
- 40. Coe, B. A., 1980; The Effect of Human Judgement on Geothermal Leasing--A Case Study. In, Transactions, Vol. 4, p 767, Geothermal Resources Council.
- 41. Coe, B. A., and Forman, N. A., 1979; Regulation of Geothermal Energy in Colorado. Colorado Geological Survey, Denver, Colorado.
- 42. Coe, B. A., and Forman, N. A., 1980; Regulation of Geothermal Energy Development in Colorado. Colorado Geological Survey Department of Natural Resources, Denver, Colorado.
- 43. Coe, B. A., and Zimmerman, J., 1980; Geothermal Energy Opportunities at Four Western Colorado Towns. Colorado Geological Survey Department of Natural Resources, Denver, Colorado.
- 44. Coe, B. A., Meyer, R. T., and Gertsch, W. D., 1980; Chapter One Summary of DOE/State Geothermal Commercialization Projects in the RMB&R Region. In, State Geothermal Commercialization Programs in the Rocky Mountain Basin and Range Region, Semi-Annual Progress Report, July--December 1979.
- 46. Colorado Geological Survey in Cooperation with the New Mexico Energy Institute. Geothermal Energy—Colorado's Untapped Resource. Pamphlet.
- 47. Craig, R. B., 1979; Environmental Constraints on Geothermal Energy, ORNL, TN, from International Conf. on Energy Use Management, Los Angeles, California, October 1979.
- 48. Craig, R. B., Suter, G. W., II, 1979; Environmental Implications for Geothermal Development, ORNL, TN, From 19th annual Meeting Institute of Environmental Science, Seattle, Washington, April 1979.

- 48. Crow, N. B., 1978; An Environmental Overview of Geothermal Development: Report UCRL-52496, Lawrence Livermore Laboratory, University of California, Livermore, California.
- 49. Cunniff, R. A., Glazner, G., O'Dea, P., Gose, D., Houldsworth, M., Shales, M., Heath, R., and Bybee, S., 1979; Geothermal Prospects for Urban Development Action Grants Special Data Report. NMEI 30-3.
- 50. Cunniff, R. A., Rao, C. R., Nowotny, K. R., and Glazner, G., 1979; Geothermal Market Penetration Assessment for Colorado, New Mexico, Montana. NMEI 30-2.
- 51. D'Alessio, G. J., Hartley, R., 1978. Pollution Control Guidance for the Geothermal Industry, p. 133-135, Geothermal Energy, A Novelty Beomes a Resource, Vol. 2, GRC, Davis, California.
- 52. Dietz, J. F., 1979; Geothermal Environmental Baseline Data Acquisition, Heber Region, Imperial Valley, California. San Diego Gas and Electric Company, San Diego, California. EPRI ER-352.
- 53. Division of Water Rights, 1980; Utah Water/Geothermal Report. Salt Lake City, Utah.
- 54. Eastlake, B., and McClain, D., April 1980; Idaho Geothermal Commercialization Program. Idaho Office of Energy, Statehouse, Boise, Idaho.
- 55. EG&G Idaho, Inc., 1978; Regional Hydrothermal Commercialization Plan.
- 56. EG&G Idaho, Inc.; Hydrothermal Commercialization Baseline--Documents for States of Arizona, New Mexico, Utah, Idaho, Colorado, Montana, etc.; twelve states are complete.
- 57. Electric Power Research Intitute, 1978; Geothermal Energy Prospects for the New 50 Years. EPRRI, Special Report, February, 1978; ER-611-SR.
- 58. Fassbender, L. L., Bloomster, C. H., and Schilling, A. H., 1978; Feasibility of Potential Geothermal Energy Applications for Riverside, California. In, Transactions, Geothermal Resources Council, Vol. 2, July 1978.
- 59. Fedor, D., 1980; New Mexico Geothermal Commercialization Planning Semi-Annual Progress Report, July--December 1979. In, State Geothermal Commercialization Programs in the Rocky Mountian Basin and Range Region, Semi-Annual Progress Report, July--December 1979. U.S. Department of Energy, Division of Geothermal Energy, Idaho Falls Operations Office, DOE/ID/12101-1, 179-215.

- 60. Fedor, D., 1980; New Mexico Geothermal Commercialization Planning Semi-Annual Progress Report, January--June 1980. In, State Geothermal Commercialization Programs in the Rocky Mountain Basin and Range Region, Semi-Annual Progress Report, January--June 1980; (in preparation).
- 61. Fedor, D., 1979; The Geothermal Option--A Choice for New Mexico. New Mexico Energy Institute, New Mexico State University, NMEI 0-3.
- 62. Field, A. A., 1978; Geothermal Energy Rediscovered. (Heating/Piping/Air Conditioning), January 1975.
- 63. Fredrickson, C. D., 1977; Analysis of Requirements for Accelerating the Development of Geothermal Energy Resources in California. Jet Propulsion Laboratory, California Institute of Technology, Pasadena, California. DOE Report JPL-PUB-77-63.
- 64. Ganzel, R., 1979; Geothermal Handbook for Nevada. Nevada Department of Energy (draft).
- 65. Garnish, J. D., 1978; Progress in Geothermal Energy. Endeavour, New Series, Vol. 2, No. 2, p. 66-71.
- 66. Gaugler, B., 1980; Geothermal Energy Development Potential in Planning Region 8, Roosevelt-Custer Region, North Dakota. North Dakota Geothermal Energy Office, Bismarck, North Dakota.
- 67. Gaugler, B. A., 1980; North Dakota Geothermal Commercialization Program, Semi-Annual Progress Report, July--December, 1979. In, State Geothermal Commercialization Programs in the Rocky Mountain Basin and Range Region, Semi-Annual Progress Report, July--December, 1979. U.S. Department of Energy, Division of Geothermal Energy, Idaho Falls Operations Office, DOE/ID/12101-1, p. 216-233.
- 68. Gaugler, B., Wetch, J., Ritz, J. D., 1980; North Dakota Geothermal Commercialization Project, Mid-Year Progress Report, January--June 1980. In, State Geothermal Commercialization Programs in the Rocky Mountain Basin and Range Region, Semi-Annual Progress Report, January--June 1980. U.S. Department of Energy, Division of Geothermal Energy, Idaho Falls Operations Office (in preperation).
- 69. Geonomics. Inc., 1976; Geotechnical Environmental Aspects of Geothermal Power Generation at Heber, Imperial Valley, California. EPRI ER-299.
- 70. Geothermal Resources Council, 1977; Goethermal: State of the Art. Transactions, Vol. 1, San Diego, California, May 1977.
- 71. Geothermal Resources Council, 1978; Geothermal Energy: A Novelty Becomes a Resource. Transactions, Vol. 2, Sections 1 and 2, Hilo, Hawaii, July 1978.

- 72. Geothermal Resources Council, 1979; Expanding the Geothermal Frontier. Transactions, Vol. 3, Reno, Nevada, September 1979.
- 73. Geothermal Resources Council, 1979; Geothermal Resources and the Institutional Maze. In, Proceedings, Management Survey Course No. 1, Davis, California.
- 74. Geothermal Resources Council, 1980; Geothermal: Energy for the Eighties. Transactions, Vol. 4, Salt Lake City, Utah, September 1980.
- 75. Goguel, J., 1976; Geothermics, McGraw-Hill Book Company, 1976.
- 76. Green, S., 1979; Developing Geothermal Legislation for Utah. In, Transactions, Vol. 3, p. 279, Geothermal Resources Council, September 1979.
- 77. Green, S., and Wagstaff, W. L., 1980; Utah Geothermal Commercialization Project, Semi-Annual Progress Report, July--December 1979. In, State Geothermal Commercialization Programs in the Rocky Mountain Basin and Range Region, Semi-Annual Progress Report, July--December 1979. U.S. Department of Energy, Division of Geothermal Energy, Idaho Falls Operations Office, DOE/ID/12101-1, p. 259-283.
- 78. Green, S., Wagstaff, W. L., Nielsen, D., 1980; Utah Geothermal Commercialization Project, Semi-Annual Project Report, July, 1980. In, State Geothermal Commercialization Programs in the Rocky Mountain Basin and Range Region, Semi-Annual Progress Report, January--June 1980. U.S. Department of Energy, Division of Geothermal Energy, Idaho Falls Operations Office (in preparation).
- 79. Gustavson, T. C., and McGraw, M. M., 1978; Potential Environmental Concerns Associated with the Development of Geopressured-Geothermal Resources of the United States Gulf Coast. In, Transactions Geothermal Resources, Vol. 2, July 1978.
- 80. Gustavson, T. C., Kreitler, C. W., 1979, Environmental Overview of Geopressured-Geothermal Deveopment. Texas Gulf Coast, Texas University, Austin, UCRL-15094.
- Ecological Implications of Geopressured-Geothermal Energy Development Texas--Louisiana Gulf Coast Region. Energy Resource, p 1-17, (March 1978).
- 82. Hahman, R., Sr., Mancini, F., White, D., Chehab, M., Goldstone, L., and Weibel, B., 1979; Final Summary Report, Arizona Team Geothermal Planning Project, January 1--December 31, 1979 (in printing by DOE-ID).

- 83. Hahman, R., Sr., White, D., Goldstone, L., Mancini, F., Chehab, M., and Weibel, B., 1979; Arizona Geothermal Commercialization Planning Semi-Annual Progress Report, January 1--June 30, 1979.
- 84. Hammer, G. D., Esposito, L., and Montgomery, M., 1979; Idaho Geothermal Handbook. Idaho Office of Energy, Boise, Idaho.
- 85. Hanny, J. A., Junis, B. C., 1979; Hydrothermal Commercialization Baseline for the States of Idaho, New Mexico, Colorado, South Dakota, and Wyoming. DOE Reports, EG&G Idaho, Inc., Idaho Falls, Idaho, 1979.
- 86. Herrell, T. A., 1978; Legal Impediments to the Development of the Geopressured Resource, Louisiana St. University, Baton Rouge, Interstate Oil Compact Comm. Bull. 20: No. 1, 24-31, June 1978.
- 87. Huggins, R., et al., 1978; Northeast Oregon Geothermal Project. Eastern Oregon Community Development Council, LaGrande, Oregon, January 1978.
- 88. Hussey, E. T., 1976, Internal Operating Procedures for Public Agency Involvement in Geothermal Development In Lake County, California, JPL, NP-24236.
- 89. Idaho Geothermal Handbook, 1979; published by the Idaho Office of Energy, p. 36-42.
- 90. Informatics, Inc., 1975; Geothermal Energy, p. 100-102.
- 91. IGCC, Interagency Geothermal Coordinating Council, 1978; Geothermal Energy Research, Development and Demonstration Program. Second Annual Report. DOE Report DOE-ET-0039-1, IGCC-3, April 1978.
- 92. IGCC, Interagency Geothermal Coordinating Council, 1979; Geothermal Energy Research, Development, and Demonstration Program. Third Annual Report. DOE Report DOE-ET-0090, EGCC-4, March 1979.
- 93. Jackson, K. L., Sasek, R., Clark, N., 1979; Nevada Geothermal Commercialization Planning Semi-Annual Progress Report, January 1--June 30, 1979. Nevada Department of Energy, Phoenix, Arizona.
- 94. James, R. W., 1978; Geothermal Operations Report for Wyoming. The Oregon Institute of Technology, Klamath Falls, Oregon.
- 95. James, R. W., 1979; Wyoming Geothermal Commercialization Planning Semi-Annual Progress Report, January 1--June 30, 1979. Wyoming Geothermal Commercialization Office, University of Wyoming, Laramie, Wyoming.
- 96. James, R. W., Marcotte, K., Aspinwall, C., and Caplan, J., 1980;
 Wyoming Geothermal Commercialization Planing, Semi-Annual Progess

- Report, July--December 1979. In, State Geothermal Commercialization Programs in the Rocky Mountain Basin and Range Region, Semi-Annual Progress Report, July--December, 1979. U.S. Department of Energy, Division of Geothermal Energy, Idaho Falls Operations Office, DOE/ID/12101-1, p. 184-306.
- 97. James, R. W., Marcotte, K., MacDonald, J., 1980; Wyoming Geothermal Commercialization Office, Semi-Annual Progress Report, January 1--June 30, 1980. U.S. Department of Energy, Division of Geothermal Energy, Idaho Falls Operations Office (in preparation).
- 98. Justus, D., Basescu, N., Bloomquist, R. G., Higbee, C., and Simpson, S., 1980; Oregon: A Guide to Geothermal Energy Development. Report to U.S. DOE Region X Office.
- 99. Koenig, J. B., 1973; Worldwide Status of Geothermal Resources Development. In, Geothermal Energy, Kruger, P., Ott, C., Ed., Stanford University Press, Stanford, California, p. 15-58.
- 100. Komagata, S., Nakamura, H., and Minokara, U., 1970; The Status of Geothermal Utilization in Japan. Geothermics, Special Issue No. 2, Vol. 2 Part 1.
- 101. Kruger, P., and Ott, C., 1972; Editors; Geothermal Energy, Stanford University Press.
- 102. Kunze, J. F., 1978; Geothermal R&D Project Report for Period April 1--September 30, 1977; DOE Report TREE-1256, EG&G Idaho, Inc., Idaho National Engineering Laboratory, Idaho Falls, Idaho, March 1978.
- 103. Kunze, J. F., 1977; Geothermal R&D Project Report for Period October 1, 1976 through March 31, 1977. ERDA Report TREE-1134, EG&G Idaho, Inc., Idaho National Engineering Laboratory, Idaho Falls, Idaho, May 1977.
- 104. Kunze, J. F., and Richardson, A. S., 1975; National Programs
 Definition Study for the Non-Electrical Utilization of Geothermal
 Energy. INEL Report ANCR-1214, June 1975.
- 105. Lidel, P., February 1980; Handbook of State Government Institutional Procedures, Geothermal Resources. Submitted to Office of Energy Policy. Resource Management Services, Inc., Pierre, South Dakota (draft being revised).
- 106. Lidel, P., 1980; South Dakota Commercialization Program, Semi-Annual Progress Report, July-December 1979. In, State Geothermal Commercialization Programs in the Rocky Mountain Basin and Range Region, Semi-Annual Progress Report, July-December 1979. U.S. Department of Energy, Division of Geothermal Energy, Idaho Falls Operations Office, DOE/ID/12101-1, p. 234-258.

- 107. Lidel, P., and Brakke, V., South Dakota Geothermal Commercialization Program, January--June 1980. In, State Geothermal Commercialization Programs in the Rocky Mountain Basin and Range Region, Semi-Annual Progress Report, January--June 1980. U.S. Department of Energy, Division of Geothermal Energy, Idaho Falls Operations Office (in preparation).
- 108. Lyons, T., 1977; Geothermal Resources Leasing Program--Administrative Requirements for Development of Geothermal Resources. Geothermal Energy Magazine, November 1977.
- 109. Malysa, L., 1979; Arizona Geothermal Institutional Handbook. Arizona Geothermal Commercialization Planning Team, January 1--December 31, 1979 (in printing by DOE-ID).
- 110. Marcotte, K., 1980; Fremont County, Wyoming--Area Development Plan. Wyoming Geothermal Commercialization Office.
- 111. Meyer, R. T., 1978; Summary of Federal, State, anmd Private Actions Recommended to Accelerate Geothermal Energy Development in The Southwest Region. New Mexico Energy Institute and Western Energy Planners, Ltd.
- 112. Meyer, R. T., and Bronder, L. D., 1980; Evaluation of State Taxes and Tax Incentives and Their Impact on the Development of Geothermal Energy in Western States. In, Transactions, Vol. 4, p. 739, Geothermal Resource Council.
- 113. Meyer, R. T., Coe, B. A., Nasr, L. H., and Bixler, M., 1980; The Geothermal Loan Guaranty Program: Recommendations for Improvement Including New Simplified Application Procedures for Small Projects. Western Energy Planners, Ltd.
- 114. Meyer, R. T., Coe, B. A., and Gertsch, W. D., 1980; Geothermal Market Development and Commercialization Programs in the Western States. Abstract of paper presented for the National Conference on Renewable Energy Technologies, December 7-11, 1980.
- 115. Meyer, R. T., Davidson, R., 1978; Summary Report--Southwest Regional Geothermal Operations Research Program, First Project Year, June 1977 through August 1978. Department of Energy, Idaho Operations Office, December 1978.
- 116. MacDonald, J., and Marcotte, K., 1980; Converse and Natrona Counties, Wyoming-Area Development Plan. James, R., Ed.; Wyoming Geothermal Commercialization Office.
- 117. McClain, D. W., and Eastlake, W. B., 1979; Idaho Geothermal Commercialization Planning Semi-Annual Progress Report, January 1--June 30, 1979. Idaho Office of Energy, Boise, Idaho.

- 118. McClain, D. W., and Eastlake, W. B., 1979; Idaho Geothermal Report; Final Progress Report State Geothermal Commercialization Planning for Idaho, January 1--December 31, 1979. Idaho Office of Energy, Office of the Governor.
- 119. McDevitt, P. K., and Rao, C. R., 1979; The Prospects for Geothermal Energy Development in New Mexico. NMEI 0-4.
- 120. McDevitt, P. K., and Rao, C. R., 1979; Regional Operations Research Program for Development of Geothermal Energy in the Southwest United States: Final Technical Report, June 1977 to August 1978.
- 121. McDevitt, P. K., and Rao, C. R., 1979; Regional Operations Research Program for Development of Geothermal Energy in the Southwest United States: Appendix 5 of Final Technical Report, June 1977 to August 1978.
- 122. McNamara, J. J., 1979; Federal Land-Use Planning and the Future of Geothermal Resources Development in the U.S.: An Unfolding History. Geothermal Resources Council, Special Report 170.6, Davis, California, 1979.
- 123. Miller, A. B., 1978, A Brine-Steam Properties Computer Program for Geotheraml Energy Calculations, Lawrence Livermore Laboratory UCRL-52495, June 1978.
- 124. Nannen, L. W., et al., 1978; An Investigation of the Technical and Economic Feasibility of Using Low Temperature Geothermal Sources in Coorado. Final Report to Colorado Energy Institute.
- 125. National Conference of State Legislatures, 1978; Issues in Geothermal Legislation. Denver, Colorado, National Conference of State Legislatures, 28 pages.
- 126. National Conference of State Legislatures Geothermal Policy Project, 1978; Legislative Recommendations on Geothermal Policy. National Conference of State Legislatures, Denver, Colorado.
- 127. National Conference of State Legislatures Geothermal Policy Project, 1978; Workshop on State Legislative Issues in Geothermal Development, Geothermal Policy Project. National Conference of State Legislatures, Denver, Colorado.
- 128. Newchurch, E. J., et al., Preliminary Environmental Assessment of Selected Geopressured-Geothermal Prospect Areas: Louisiana Gulf Coast Region, Vol. II, Environmental Baseline Data, Louisiana St. University Institute for Environmental Studies, Baton Rouge, ORO--5862-7, Vol. 2, October 1978.
- 129. New Mexico Business Journal, Vol. 4, April 1980, 27-29; Geothermal Hot Energy for the Future.

- 130. New Mexico Energy Institute, 1978; Regional Operations Research for the Development of Geothermal Energy. RPPM Data Base.
- 131. New Mexico Energy Institute, 1978; Regional Operations Research for the Development of Geothermal Energy. RPPM Data Base.
- 132. Oakes, K. M., 1980, Land Use Siting Considerations for Hydrothermal Energy Facilities, ORNL, TN, From 26 Annual Meeting of Institute of Environmental Science, Philadelphia, Pennsylvania, May 1980.
- 133. Oregon Nuclear and Thermal Energy Council, 1974; Statewide Siting Task Force Report. Oregon Department of Energy.
- 134. Ortiz, T. A., and Fedor, D., 1979; New Mexico Southwest Regional Geothermal Development Operations Research Project, Appendix 9 of Regional Operations Research Program for Development of Geothermal Energy in the Southwest United States: Final Technical Report, June 1977 to August 1978. New Mexico Energy Institute at New Mexico State University, Las Cruces, New Mexico.
- 135. O'Dea, P., Cunnif, R., Heath, R., and Shales, M., 1979; Geothermal Energy: Rocky Mountain Basin and Range Geothermal Operations/Research Program. NMEI 10-4.
- 136. Pearl, R. A., 1979; Geothermal Energy Development in Colorado,
 Appendix 7 of Regional Operations Research Program for Development of
 Geothermal Energy in the Southwest United States Final Technical
 Report, June 1977 to August 1978. United States Department of Energy,
 Division of Geothermal Energy.
- 137. Pearl, R., and Healy, F., 1980; 1980 Mid-Term Report--The Colorado Geothermal Commercialization Project. In, State Geothermal Commercialization Programs in the Rocky Mountain Basin and Range Region, Semi-Annual Progress Report, January Through June 1980.
- 138. Perlmutter, S. J., 1980; Montana Handbook for Geothermal Development.
 Montana Department of Natural Resources and Conservation Geothermal
 Program (draft), Helena, Montana.
- 139. Perlmutter, S. J., and Birkby, J., 1980; Montana Geothermal Handbook. U.S. Department of Energy, Division of Geothermal Energy, Idaho Falls Operations Office, DOE/ID/12014-2.
- 140. Pugsley, M., December 1979; Nevada Geothermal Commercialization Planning Annual Progress Report, January 1 through December 31, 1979. Nevada Department of Energy, Carson City, Nevada.
- 141. Reistad, G. M., 1975; Analysis of Potential Nonelectrical Applications of Geothermal Energy and Their Place in the National Economy. Lawrence Livermore Laboratory, Report UCRL-51747, 1975.

- 142. Roberts, V., et al., 1978; Geothermal Energy Prospects for the Next 50 years. Electric Power Research Institute Report EPRI-ER-611-SR.
- 143. Rodriguez, P., Scudella, G., and Fedor, D., 1979; New Mexico Geothermal Commercialization Planning Semi-Annual Progress Report, January 1 through June 30, 1979. New Mexico Energy and Minerals Department, Santa Fe, New Mexico.
- 144. Sacarto, D. M., 1976; State Policies for Geothermal Development. National Conference of State Legislatures, Denver, Colorado.
- 145. Sacarto, D. M., 1979; State Policies for Geoheating. National Conference of State Legislatures, Denver, Colorado, p. 11.
- 146. Sanyal, S., Weiss, R., 1978; Geothermal Environmental Impact
 Assessment. Subsurface Environmental Assessment for Four Geothermal
 Systems, Geonomics, Inc., Berkeley, California, PB--300851 for EPA
 November 1978. (Imperial Valley, Geysers, California; Klamath Falls,
 Oregon, Rio Grande Rift, New Mexico.
- 147. Sato, S., and Crocker, T. D., 1977; Property Rights to Geothermal Resources. RANN Report NSF-RA-770077, published in the Ecology Law Quarterly, School of Law, University of California, Berkeley, California, 1977.
- 148. Scudella, G., and Fedor, D., 1980; New Mexico Handbook for Geothermal Resource Development State and Local Government Regulations. Energy And Minerals Department, Energy Resources and Development Division, Santa Fe, New Mexico, DOE/ID/12017-2.
- 149. Silver, R. M., 1978; Federal Reservation of Geothermal Resources, National Resource J.; 18: No. 1, vp, January 1978.
- 150. Spencer, S. G., Russell, B. F., Sullivan, J. F., Eds., 1979; Potential Use of Geothermal Resources in the Snake River Basin. An Environmental Overview, Vols. 1 and 2. U.S. DOE Report EGG-2001.
- 151. Spencer, S, C., 1975, Environmental Report Deep Geothermal Test Walls in Raft River Valley. ANCR-1203, Aerojet Nuclear Corp. INEL, Idaho Falls, Idaho.
- 152. Staats, E. B., 1980, Geothermal Energy: Obstacles and Uncertainties Impede its Widespread Use, GAO Washington, D.C., January 1980.
- 153. Steele, R. V., et al., Leading Trends in Environmental Regulation that Affect Energy Development. Final Report DOE Report DOE/EV/-01682; January 1980.

- 154. Stone, R. T., Cullins, H. L., and Grittenden, M. D., 1979; The Role of the U.S. Geological Survey in the Federal Geothermal Leasing Program. In, Transactions, Geothermal Resources Council, Vol. 2, p. 617-621.
- 155. Sung, R., et al., Surface Containment For Geothermal Brines. Final Report, Tried Inc., Redondo Beach, California, Report No. PB-80-169246.
- 156. System Development Corporation, 1979; Regional Systems Development for Geothermal Energy Resources, Pacific Region (California and Hawaii). U.S. DOE Report DOE-ET-28432-1 and 2, March 1979.
- 157. Tikhonov, A. N., and Dvorov, I. M., 1970; Development of Research and Utilization of Geothermal Resources in the USSR. Geothermics, Special Issue No. 2, Vol. 2, Part 2, 1970.
- 158. Toman, J., 1977, Air Pollution Emissions Control for Geothermal Energy Plants, Geothermal Resources Council, Transactions, Vol. 1, May 1977, VTN Consol., Inc.
- 159. Toth, W. J., 1979; Geothermal Energy Markets on the Atlantic Coastal Plain. Geothermal Resources Council, Special Report No. 5, A Symposium of Geothermal Energy and Its Direct Uses in the Eastern United States, April 1979.
- 160. Tuttle, J., Coe, B. A., Gertsch, W. D., and Meyer, R. T., 1980 (in preparation); Chapter One--Summary of DOE/State Geothermal Commercialization Projects in the RMB&R Region. In, State Geothermal Commercialization Programs in the Rocky Mountain Basin and Range Region, Semi-Annual Progress Report, January through June 1980.
- 161. United Nations, 1961; Proceedings of the United Nations Conference on New Sources of Energy, Vols. 2 and 3, and Rome, Italy, August 1961.
- 162. United Nations, 1970; Proceedings of the United Nations Symposium on the Development and Utilization of Geothermal Resources, Pisa, Italy, September through October 1970. Geothermics, Special Issue No. 2, Part 2, 1970.
- 163. United Nations, 1976; Proceedings of the Second United Nations Symposium on the Development and Use of Geothermal Resources, San Francisco, May 1975. Published by Lawrence Berkeley Laboratory, Berkeley, California, 1976; Vols. 1, 2, and 3.
- 164. U.S. Department of Energy, 1977; Guidelines to the Preparation of Environmental Reports for Geothermal Development Projects. DOE Document ERHQ-0001, February 1977.
- 165. U.S. Department of Energy, 1978; Legal and Institutional Impediments to Geothermal Energy Resource Development: A Bibliography.

 Oak Ridge, Tennesse, Technical Information Center, p. 99, U85
 Citations. TID-3365.

- 166. U.S. Department of Energy, 1979; Environmental Development Plan: Geothermal Systems, DOE Document DOE/EDP--0036.
- 167. U.S. Department of Energy, Division of Geothermal Energy, DOE-Idaho Operations Office, EG&G Idaho, Inc. and University of Utah Research Institute Earth Science Laboratory, 1978; Regional Hydrothermal Commercialization Plan--Rocky Mountain Basin and Range Region.
- 168. U.S. Department of Energy, Division of Geothermal Energy, 1978;
 Pacific Region Federal Geothermal Commercialization Plan, Working
 Draft. Prepared by San Francisco Operations Office for Pacific Region
 Program Manager, October 1978.
- 169. U.S. Department of Interior. U.S. Fish and Wildlife Service, 1976; Goethermal Handbook, p. 144-158.
- 170. U.S. Department of the Interior, 1976; Guidelines for Federal Geothermal Units. U.S. Geological Survey, Conservation Division, Menlo Park, California.
- 171. U.S. Department of the Interior, 1977; Guidelines for Acquiring Environmental Baseline Data on Federal Geothermal Leases. U.S. Geological Survey, Conservation Division, Menlo Park, California.
- 172. U.S. Department of the Interior, 1979; Geothemal Regulations on the Leasing of Geothermal Resources.
- 173. U.S. Department of the Interior, 1980; Geothermal Resource Operational Orders 1 through 7. U.S. Geological Survey, Conservation Division, Menlo Park, California.
- 174. U.S. Geological Survey 1975; Geothermal Steam Act of 1970 and Regulations on the Leasing of Geothermal Resources. U.S. Geological Survey.
- 175. U.S. Geological Survey, 1978; Environmental Analysis Guidelines and Procedures. U.S. Geological Survey, Conservation Division, Menlo Park, California.
- 176. U.S. Energy Research and Development Adminstration, 1976; A National Plan for Energy Research, Development, and Demonstration: Creating Energy Choices for the Future, Vols. 1 and 2. ERDA 76-1, 1976.
- 177. U.S. Energy Research and Development Adminstration, 1977; Program Approval Document, Geothermal Energy Development. ERDA, January 17, 1977.
- 178. Vantil, C. J., 1979, Guidelines Manual For Surface Monitoring of Geothermal Areas, LBL-8617, Woodward-Clyde Consultant, San Francisco, California, May 1979.

- 179. Wagstaff, L. W., and Green, S., 1979; Utah Southwest Regional Geothermal Development Operations Research Project, Appendix 10 of Regional Operations Research Program for Development of Geothermal Energy in the Southwest United States: Final Technical Report, June 1977 to August 1978. New Mexico Energy Institute at New Mexico State University, Las Cruces, New Mexico.
- 180. Wagstaff, L. W., and Green, S., 1979; Utah Geothermal Commercialization Planning Semi-Annual Progress Report, January 1 through June 30, 1979. Utah Division of Water Rights, Salt Lake City, Utah.
- 181. Wagstaff, L. W., and Green, S., 1979; Time Phased Project Plan for Roosevelt Hot Springs Geothermal Area. Utah Division of Water Rights, Salt Lake City, Utah.
- 182. Wagstaff, L. W., and Green, S., 1980; Utah Geothermal Commercialization Project Semi-Annual Progress Report (in printing by DOE-ID).
- 183. Washington, State of, 1978; Geothermal Drilling Rules and Regulations, Chap. 332-17 WAC. Department of Natural Resources.
- 184. Wells, M., 1971; Early Development of Western Geothermal Resources.

 Journal of the West, Vol. X, No. 1, 1971.
- 185. Wharton, J. C., 1977; Geothermal Resource Development: Laws and Regulations. Lawrence Livermore Laboratory UCRL-52327.
- 186. Wonstolen, K. A., 1979; District Heating: Legal and Institutional Parameters. In, Transaction, Geothermal Resources Council, Vol. 3, September 1979.
- 187. Woodward, Clyde Consultants, 1978; Impact Prediction Manual For Geothermal Development, PB-288128, Woodward Clyde Consultants, San Francisco, California.
- 188. Wright, P. M., Foley, D., Nichols, C. R., and Grim, P. J., 1978; Western States Cooperative Direct Heat Geothermal Program of DOE. In, Transactions, Geothermal Resources Council, Vol. 2, July 1978.
- 189. PNL, 1980, Environmental, Safety and Health Standards for Geothermal Energy, PNL-3300, Part 5, p. 61-63.
- 190. Geothermal Energy Omnibus Legislation: Recommendations of the Institutional Barrier Panel to the Interagency Geothermal Coordinating Council.
- 191. National Energy Act 1978: Applications to Geothermal Development. (Legal analysis by Earl Warren Legal Institute, November 7, 1978.)

VII. ECONOMICS OF DIRECT USE DEVELOPMENT

- Allen, D. H., and Page, R. C., "Revised Technique for Predesign Cost Estimating," Chem. Eng. 82:142, March 3, 1975.
- 2. Anthony, R. N., and Reece, J. S., <u>Management Accounting</u>, Homewood, Illinois: Richard D. Irwin, Inc., 1974, p. 621.
- 3. APL/JHU Report GEMS-003, 1979; Economic Evaluation Model for Direct Use of Moderate Temperature Geothermal Resources in the Northern Atlantic Coastal Plain.
- 4. APL/JHU Report GEMS-008, 1989; GRITS: A Computer Program for Economic Evaluations of Direct Use Applications of Geothermal Energy.
- 5. APL/JHU QM-78-232, 1978; Direct Applications of Geothermal Energy in The Eastern United States and Estimates of Life Cycle Costs.
- 6. APL/JHU QM-80-125, 1980; A Program for Capital Recovery Assessment for the HP-97 and Other Desk Calculators.
- 7. Armstead, H. C., 1969; Geothermal Heat Costs. Energy International, Brussels.
- 8. Bakewell, C. A., and Herron, E. H., 1979; Low Temperature, Direct Use Geothermal Energy Costs. In, Geothermal Resources Council, Transactions, Vol. 3.
- 9. Barron, W., Dubin, R., and Kane, S., 1980; An Analysis of Cost of Accelerated Market Penetration by a Geothermal Community Heating System. In, Geothermal Resources Council Transactions, Vol. 4.
- 10. Bodvarsson, G., and Reistad, B. M., 1976; Econometric Analysis of Forced Geoheat Recovery for Low Temperature Uses in the Pacific Northwest. In, Proceedings--Second United Nations Symposium on the Development and Use of Geothermal Resources, San Francisco, published by Lawrence Berkeley Laboratory, Berkeley, California, Vol. 3.
- 11. Bloomster, C. H., Fassbender, L. L., and McDonald, C. L., 1977; Geothermal Energy Potential for District and Process Heating Applications in the U.S.--An Economic Analysis. BNWL-2311.
- 12. Bloomster, C. H., Price, B. A., and Fassbender, L. L., 1980; Residential Heating Costs--A Comparison of Geothermal, Solar, and Conventional Resources. PNL-3200.
- 13. Bloomster, C. H., Price, B. A., and Fassbender L. L., 1980; A Comparison of Geothermal, Solar, and Conventional Space Heating Costs in the United States. PNL-SA-8244.

- 14. California, State of, 1977; Economic Study of Low Temperature Geothermal Energy in Lassen and Modoc Counties, California. VTN-CSL, Sacramento, California, State of California Division of Oil and Gas and the Energy Resourses Conservation and Development Commission.
- 15. Costello, R. M., Ammerlaan, R., Cabibbo, S. V., and Kikacka, L. E., 1979; Economic Assessment of Using Nonmetallic Materials in the Direct Utilization of Geothermal Energy. In, Geothermal Resources Council, Transactions, Vol. 3.
- 16. Guthrie, Kenneth M., <u>Process Plant Estimating</u>, <u>Evaluation</u>, and <u>Control</u>, Los Angeles: Craftsman Book Co., 1974.
- 17. Coulbois, P., Herault, J., 1976; Conditions for the Competitive Use of Geothermal Energy in Home Heating. In, Proceedings--Second United Nations Symposium on the Development and Use of Geothermal Resources, San Francisco, May 1975; published by Lawrence Berkeley Laboratory, Berkeley, California, Vol. 3.
- 18. Engen, I. A., 1978; Residential Space Heating Cost: Geothermal vs. Conventional Systems. EG&G Idaho National Engineering Laboratory, Idaho Falls. DOE Report TREE-1182.
- 19. Fassbender, L. L., and Bloomster, C. H., 1979; Economics of Geothermal Fluid Transport. Geothermal Energy 7 (8), 28-35.
- 20. Fassbender. L. L., and Bloomster, C. H., 1980; Systems Analysis of Geothermal District Heating Costs. PNL-SA-7906.
- 21. Goodman, A. C., 1980; Geothermal Market Penetration in the Residential Sector: Capital Stock Impediments and Compensartory Incentives. In, Geothermal Resources Council Transactions, Vol. 4.
- 22. Huber, H. D., McDonald, C. L., Bloomster, C. H., and Walter, R.A., 1975; User Manual for GEOCOST: A Computer Model for Geothermal Cost Analysis. BNWL-1942V1. Battelle PNL Richland, Washington. Intertechnology Corp. 1977, Analysis of the Economic Potential of Solar Thermal Energy to Provide Industrial Process Heat, Report COO/2829.
- 23. Keller, J. G., and Kunze, J. F., 1976; Space Heating Systems in the Northwest--Energy Usage and Cost Analysis. ANCR-1276, INEL.
- 24. Kohler, B., 1973; The Economic and Environmental Aspects of District Heating in Sweden. District Heating, October--November 1973.
- 25. Kunze, J. F., Forsgren, K. F., 1978; The Economics of the Heat Pump as a Device to Assist in Geothermal District Space Heating. In, Geothermal Resource Council, In, Transactions, Vol. 2.

- 26. Lund, J. W., 1976; The Utilization and Economics of Low Temperature Geothermal Water for Space Heating. 11th IECEC.
- 27. Meal, H. C., Guillamon-Duch, H., 1979; Substitution Value of Geothermal Energy as Process Heat and Electric Power. In, Transactions, Geothermal Resources Council, Vol. 3, September 1979.
- 28. McDonald, C. L., Bloomster, C. H., and Schulte, S. C., 1977; GEOCITY: A Computer Code for Calculating Costs of District Heating Using Geothermal Resources.
- 29. McDonald, C. L., and Bloomster, C. H., 1977; The Geocity Model: Description and Application. BNWL-SA-6343.
- 30. Meyer, R. T., and Roberts, S. G., 1979; Economic Analysis of Geothermal Energy Options for the Baca Grande Development. Western Energy Planners, Ltd. and Science Applications, Inc.
- 31. Newnan, D. G., 1980; Engineering Economic Analysis, Revised Edition, California State University, San Jose, California.
- 32. Pikulik, A., and Diaz, H. E., "Cost Estimating for Major Process Equipment," Chem. Eng. 84:107, October 10, 1977.
- 33. Sharpe, W. F., <u>Investments</u>, Englewood Cliffs, New Jersey: Prentice-Hall, <u>Inc.</u>, 1978.
- 34. Toth, W. J., Baron, W. F., Kane, S., and Milo, B., 1980; GRITS: A Computer Model for Economic Evaluation of Direct Use of Geothermal Energy. In, Geothermal Resources Council Transactions, Vol. 4.
- 35. U.S. Department of Energy, 1978; Proceedings: NATO-CCMS Conference on the Economics of Direct Uses of Geothermal Energy, Washington, D.C., June 1977; CONF-770681, NATO-CCMS Report No. 66.
- 36. Wagstaff, W., Utah Division of Water Rights; Cost Comparison Heat Pump District Heating for Block 53, Salt Lake City, Utah.
- 37. Weissbrod, R., and Barron, W., 1979; Cost Analysis of Hydrothermal Resource Applications in the Atlantic Coastal Plain. Geothermal Resources Council, Special Report No. 5, A Symposium of Geothermal Energy and Its Direct Uses in the Eastern United States. See also DOE Report, SAN-2118-1.
- 38. Weissbord, R., and Barron, W., 1979; Modeling the Impact of Resource and Economic Conditions on the Competiveness of Moderate Temperature Geothermal Energy Resources. In, Geothermal Resources Council Transactions, Vol. 3.

- 39. White, J. A., Agee, M. H., and Case, K. E., 1977; Principles of Engineering Economic Analysis. John Wiley & Sons, New York.
- 40. Anonymous; Life Cycle Costing Emphasizing Energy Conservation: United States Energy Research and Development Administration: September 1976.

VIII. FINANCING DIRECT USE PROJECTS

- Campbell, N., 1978; Financing Small Business in Oregon. Portland, Oregon, Department of Economic Development.
- 2. EPRI, 1978, Proceedings: Workshop on Capital Investment Decisions, EPRI, WS-77-18, May 1978.
- 3. Martindale-Hubbell Law Directory, 1978; Martindate-Hubbel, Inc., Summit, New Jersey.
- 4. Robert Morris Assoc., 1978; R.M.A. Annual Statement Studies, Philadelphia, Pennsylvania.
- 5. Robinson, R., and Wrightsman, D., 1974; Financial Markets: The Accumulation and Allocation of Wealth. McGraw Hill, New York, New York.
- 6. Rubel, S., 1977; <u>Guide to Venture Capital Sources</u>. Capital Publishing Corporation, Chicago, Illinois.
- 7. U.S. Department of Energy, 1979; Federal Loan Guarantees for Geothermal Energy Utilization. Washington, D.C., Federal Register Part VI, January 5, 1979.
- 8. U.S. Senate Joint Committee on Taxation, 1978; Section by Section Summary of the Revenue Act of 1978; Energy Tax Act of 1978; Foreign Earned Income Act of 1978; Fringe Benefits Act: Washington, D.C., prepared for use of the Committee on Ways and Means. U.S. House of Representatives Committee on Finance, November 27, 1978.
- 9. Van Horne, J., 1974; <u>Financial Management and Policy</u>, Prentice Hall, Englewood Cliffs, New Jersey.