

STATE OF HAWAII - U.S.A.
DEPARTMENT OF BUSINESS AND ECONOMIC DEVELOPMENT
CONTRACT No. 27272

AGREEMENT FOR ADVISORY SERVICES
FOR THE GEOTHERMAL/CABLE PROJECT



A REVIEW OF THE HAWAII GEOTHERMAL/CABLE PROJECT

THE KILAUEA EAST RIFT ZONE :
GEOTHERMAL EVALUATION OF THE EXISTING DATA

ANNEX C
REFERENCES

June 1991



ENEL

ENTE NAZIONALE PER L'ENERGIA ELETTRICA - ITALY



REFERENCES

Aki K., Chouet B., Fehler M., Zandt G., Koyangi R.Y., Colp J.L., Hay R., (1976). Seismic properties of a Shallow magma reservoir in Kilauea Iki by active and passive experiments, J. Geoph. Res. v. 83, pp. 2273-
2291.

Aumento F., Viale P., Choussy M. & Santana, (1982). Alteration mineralogy of the Ahuachapan Geothermal Field. GRC Transaction, 6, pp. 7-10.

Aumento F., (1985). Conceptual models of the circulation of geothermal fluids derived from alteration mineralogical data. Transactions, v. 9 Part. II.

Barnwell Industries, Inc., Honolulu, Hawaii. Technical documentation of the wells: Ashida-1, Lanupuna-1, Lanipuna-1 sidetrack, Lanipuna-6.

Baughman E.C., Uemura R.T., Thomas D., (1985). Chemistry, scale, and performance of the Hawaii Geothermal Project - A Plant. EPRI AP-4342 project 1195-12, Final Report.

Beck A.G., (1989). Experiments in direct use at Noi'i O Puna. Geoth. Res. Counc. Trans., v. 13, pp. 3-8.

Bethancourt H.R. & Dominco E., (1982). Characteristics of the of the Zunil Geothermal Field (Western Guatemala) GRG Transactions, 6.

Bischoff J.L. and Seyfried W.L., (1978). Hydrothermal chemistry of the sea water from 25 °C to 350 °C, Am J. Sci., v. 278, pp. 838-860.

Bliss J.D., (1983). Basic data for thermal springs and wells as recorded in Geothermal U.S. Department of the interior Geological Survey. Open-File Report 83-430, 1983.

Broyles M.L. (1977). The structure of the East Rift Zone of Kilauea, Hawaii, from seismic refraction, gravity and magnetic surveys. M. Sc. Thesis No. 1505, Univ. of Hawaii, Honolulu.

Broyles M.L., Suyenaga W., Furumoto A.S., (1979). Structure of the lower East Rift Zone of Kilauea volcano, Hawaii, from seismic and gravity data. J. Volc. Geoth. Res., v. 5, pp. 317-336.

Bruni P., Chelini W., Sbrana A., Verdiani G. (1983). Deep exploration of the S. Vito Area (Pozzuoli-Napoli) - Well S. Vito 1 - Third International Geothermal Update, Munich Nov. 29-Dec.1.

Buddemeier R., Kroopnick P., Lau L.S. (1976). Hydrology
- The Hawaii Geothermal Project - Initial Phase II
Progress Report.

Bullard F.M. (1978). Le eruzioni vulcaniche di tipo
hawaiiano. In: I vulcani della Terra. Cap. 10 pp. 292-
335. Newton Compton Editori.

Casadevall T.J., and Hazlett R.W. (1983). Thermal areas
on Kilauea and Mauna Loa Volcanoes, Hawaii. J. volc.
Geoth. Res., v. 16, pp. 173-188.

Cavaretta G., Gianelli G. & Puxeddu M. (1980).
Hydrothermal Metamorphism in the Larderello Geothermal
Field. Geothermics, 9, pp. 297-314.

Chen B.H., and Grabbem E., (1978). Planning for
geothermal development in Hawaii. Geoth. Res. Counc.
Trans., v. 2, pp. 95-98.

Chen B.H., Kihara D.H., Yuen P.C., Takahashi P.K.,
(1978). Well test results from HGP-A. Geoth. Res. Counc.
Trans., v. 2, pp. 99-102.

Cheng P., and Lau K.H., (1973). Numerical modelling of
Hawaiian geothermal resources. Geothermics, v. 2, n. 3-
4, pp. 90-93.

Cheng P., and Lau K.H., (1978). Modelling of a volcanic Island geothermal reservoir. Hawaii Geothermal Project Report, College of Engineering, University of Hawaii, 39 pp..

Chouet B., (1978). Seismic activity in Kilauea Iki, Hawaii. EOS Am. Geoph. Union Trans., v. 59, p. 317.

Colp J.L., and Okamura R.T., (1978). Drilling into molten rock at Kilauea Iki. Geoth. Res. Counc. Trans., v. 2, pp. 105-108.

Cox M.E., (1980). Ground Radon survey of a geothermal area in Hawaii. Geoph. Res. Lett., v. 7, pp. 283-286.

Cox M.E., (1981). An approach to problems of a geothermal mercury survey, Puna, Hawaii. Geoth. Res. Counc. Trans., v. 5, pp. 67-70.

Cox M.E., Cuff K.E., Thomas D.M. (1980). Variation of ground Radon concentrations with activity of Kilauea volcano, Hawaii. Nature, v. 288 n. 5786, pp. 74-76.

Cox M.E., and Thomas D.M., (1979). Chloride/Magnesium ratio of shallow groundwaters as a regional geothermal indicator in Hawaii. Haw. Inst. Geoph., Tech Rep. HIG 79-9.

anic
j ect
39

Department of Business and Economic Development, State of Hawaii, (1988). Hawaii Geothermal Project - Overview of status development approach and financial fesability assessment.

I i,
L to
1S.,
mal
a
e.
of
ia
in
al
E

Department of Business and Economic Development, State of Hawaii, (1989 a). Hawaii Geothermal Project. A proposal to develop the Hawaii geothermal resource, verification and characterization program.

Department of Business and Economic Development, State of Hawaii, (1989 b). Enviromental review. 500 MW geothermal development within the three geothermal resource subzones of the Kilauea East Rift zone, Puna district, Island of Hawaii.

Department of Energy, USA, (1983). Map 07, The geothermal reservoir of Hawaii.

Department of Land and Natural Resources, division of Water and Land Development, State of Hawaii, (1984 a). A report on geothermal resource subzones for designation by the board of land and natural resources.

Department of Land and Natural Resources, division of water and Land Development, State of Hawaii, (1984 b). Assessment of available information relating to the existence of geothermal resources in Hawaii.

Department of Land and Natural Resources, division of Water and Land Development, State of Hawaii, (1984 c). Geothermal Technology, circular c-108.

Department of Land and Natural Resources, Division of Water and Land Development, State of Hawaii (1984 d). Statewide geothermal resource assessment, circular c-103.

Department of Land and Natural Resources, division of Water and Land Development, State of Hawaii, (1985). Proposed Kilauea south west rift geothermal resource subzone (Pahala), circular c-115.

Department of Planning and Economic Development, State of Hawaii, (1986). Geothermal resource subzone designation in Hawaii.

Diamond Shamrock-Thermal Power Company, San Francisco, California. Technical documentations of the wells: Kapoho State-1, Kapoho State-1A, Kapoho State-2.

D'Olier W.L., and Iovenitti J.L., (1984). Drilling and testing geothermal wells in an active volcanic domain, Puna geothermal field, Hawaii, U.S.A. - Presented at Asean Geothermal Workshop, Badung, Indonesia.

Druecker M., and Fan P.F., (1976). Hydrology and chemistry of ground water in Puna, Hawaii. Ground Water, v. 14, pp. 328-338.

Easton R.M., (1987). Stratigraphy of Kilauea volcano U.S.G.S. Professional Paper 1350, Volcanism in Hawaii, v. 1,11, pp. 243-260.

Elders, W.A., Hogland J.R. & Olson E.R. (1978). Hydrothermal Mineralogy and Isotopic Geochemistry in the Cerro Prieto Geothermal Field. III. Practical Applications. GRC Transactions, 2, pp. 177-180.

Environment and Energy Services CO. (1989). A proposal to conduct studies for: Hawaii's proposed geothermal inter Island cable project, v. 11, cost. proposal.

Epp D., and Halunen A.J.Jr., (1979). Temperature profiles in wells on the island of Hawaii. Haw Inst. Geoph. Tech. Rept. HIG-79-7.

Fan P.F., (1978). Mineral assemblages of Hydrothermal alterations of basalts from Hawaii. Geothermal Energy: a novelty becomes resource. Geoth. Res. Counc. Trans., v. 2, pp. 185-187.

Feldman C., and Siegel B.Z., (1980). The impact of geothermal development on the geology and hydrology of

the hawaiian island. Hawaii Energy Resource Overviews, v. 2, U.S. Department of Energy, University of Hawaii.

Fiske R.S., and Jackson E.D., (1972). Orientation and growth of hawaiian volcanic rifts: the effects of regional structure and gravitational stresses. Proc. Roy. Soc. London, Ser. A, 329, 299-326.

Flanigan V.J., and Long C.L., (1987). Aeromagnetic and near-surface electrical expression of the Kilauea and Mauna Loa volcanic rift systems. U.S.G.S. professional paper 1350, Volcanism in Hawaii, v. 2, 39, pp. 935-946.

Flanigan V.J., Long C.L., Rohret D., Mohr P., (1986 a). Aeromagnetic map of the rift system of Kilauea and Mauna Loa Volcanoes, Island of Hawaii, Hawaii. U.S. Geological survey, MAP MF-1845-A.

Flanigan V.J., Long C.L., Rohret D., Mohr P., (1986 b). Apparent - resistivity map of the rift system of Kilauea and Mauna Loa Volcanoes, Island of Hawaii, Hawaii. U.S. Geological Survey, miscellaneous field studies Map, Map MF-1845-B.

Fornari D.J., Malahoff A., Heezen B.C., (1978). Volcanic structure of the crest of the Puna Ridg, Hawaii Geophysical implications of submarine volcanic terrain. Geol. soc. Am. Bull., v. 89, pp. 605-616.

Fouillac A.M., Fouillac C., Cesbron F., Pillard F. & Legendre O. (1986). Water-rock interaction between basalt and high salinity fluids in the Asal Rift (Republic of Djibouti). 5 th Int. Symp. on Water-Rock Interaction, Extended abstracts, Reykjavick, Iceland, 8th-17th August 1986, 197-200.

Furumoto A.S. (1978 a). Nature of the magma conduct under the East Rift zone of Kilauea volcano. Bull. Volc., v. 41, pp. 435-453.

Furumoto A.S. (1978 b). The relationship of a geothermal reservoir to the geological structure of the East Rift of Kilauea Volcano, Hawaii. Geoth. Res. counc. Trans., v. 2, pp. 199-201.

Furumoto A.S., Macdonald G.A., Druecker M., Fan P.F., (1977). Preliminary studies for geothermal exploration in Hawaii 1973-1975. Haw. Inst. Geoph. Tech. Rept. HIG-75-5.

Furumoto A.S., Suyenaga W., Norris R., (1977). Determine the dimension of a geothermal reservoir on Kilauea volcano, Hawaii, by seismic data. Geol. Soc. Am., Abstr. Programs, v. 9, p. 421.

Godson R.H., Zablocki C.J., Pierce H.A., Frayser J.B., Mitchell C.M., Sneddon R.A., (1981). Aeromagnetic map of

the Island of Hawaii. U.S. Geol. Survey Geoph. Invest.
MAP GP-946.

Grose L.T., Keller G.V., (1976). Petrology of deep drill hole, Kilauea volcano. EOS, Am. Geoph. Union Trans. v. 57, p. 1017.

Gutierrez, A.N. & Aumento F., (1982). The Los Azufres, Michoacan, Mexico, Geothermal Field. Journ. Hydrology, 56, pp. 297-314.

Hawaiian Electric Company, Inc., (1989 a). Request for proposal for the geothermal Inter-Island transmission project.

Hawaiian Electric company, Inc., (1989 b). Exhibits (responses) to the request for proposal for the geothermal Inter-Island transmission project.

Hawaii Natural Energy Institute (HNEI), University of Hawaii (1989). Environmental assessment and negative declaration. Scientific observation hole program, Puna district, Island of Hawaii.

Hazlett W., (1987). Geological field guide, Kilauea Volcano - Hawaii symposium on how volcanoes work. Diamond Jubilee (1912-1987). - Hawaiian Volcano Observatory.

o. Invest. Helsley C.E., (1977). Geothermal potential for Hawaii in light of HGP-A.. Geoth. Res. Counc. Trans., v. 1, pp. 137-138.

deep drill

Trans. v.

Hills A.L., (1988). Hawaii Geothermal Project. Overview of status, development approach and financial feasibility assessment. - Department of Business and Economic Development. State of Hawaii.

s Azufres,

I dirology,

equest for
r smission

Hinkle M.E., (1978). Helium, mercury, sulfur compounds, and carbon dioxide in soil gases of the Puhimau Thermal Area, Hawaii Volcanoes National Park Hawaii. - U.S. Department of the Interior Geological Survey. Open - File Report 78-246.

Exibits
for the Horai K.I., (1974). Heat Flow anomaly associated with dike intrusion, 1. - J. Geoph. Res. v. 79 pp. 1640-1646.

ersity of
negative Holcomb R.T., (1980). Preliminary geologic map of Kilauea volcano, Hawaii. - U.S. Geol. Survey Open-File Report 80-796.

:am, Puna

Kilauea

work.

Volcano

Holcomb R.T., (1987). Eruptive history and long term behaviour of Kilauea volcano. - U.S.G.S. professional paper 1350, Volcanism in Hawaii, v. 1, 12, pp. 261-350.

Imada J.A., (1984). Numerical modeling of the groundwater in the East Rift zone of Kilauea, Hawaii. -

Thesis for Master of Science in geology and Geophysics,
University of Hawaii, Honolulu, Hawaii.

Iovenitti J.L., and D'Olier W.L., (1984). Preliminary results of drilling and testing in the Puna geothermal system, Hawaii. - Proc. 1984 Stanford Geoth. Workshop, preprint.

Liguori P., Jarach, F., Choussy M., Campos T. & Escobar D. (1982). Reservoir Engineering of the Ahuchapan Geothermal Field. GRC Transactions, 6.

Jackson D.B., and Keller G.V., (1972). An electromagnetic sounding of the summit of Kilauea volcano, Hawaii. - J. Geoph. Res., v. 77, pp. 4957-4965.

Kauahikaua J.P., (1981). Interpretation of time-domain electromagnetic soundings in the East Rift geothermal area of Kilauea volcano, Hawaii. - U.S. Geol. Survey Open-File Report 81-979.

Kauahikaua J.P., and Mattice M.D., (1981). Geophysical reconnaissance of prospective geothermal areas on the Island of Hawaii using electrical methods. - Haw. Inst. Geoph. Tech. Rept. HIG-81-4.

Kauahikaua J.P., Mattice M.D., Jakson D.B., (1980). Mise-a-la-masse mapping of the HGP-A geothermal

physics, reservoir, Hawaii. - Geoth. Res. Counc. Trans. v. 4, pp. 65-68.

iminary thermal r'shop, Kauahikaua J.P., and Klein D.P., (1978). Results of electric survey in the area of Hawaii geothermal test well HGP-A. - Geoth. Res. Counc. Trans., v. 2, pp. 363-366.

T. & f the . An Kilauea - 965. Keller G.V., Skokan C.K., Skokan J.J., Daniels J., Kauahikaua J.P., Klein D.P., Zablocki C.J., (1977). Geoelectric studies on the East Rift Kilauea volcano, Hawaii Island. - Haw. Inst. Geoph. Tech. Rept. HIG-77-15.

Kihara D.H., Chen B.H, Seki A.S., Yuen P.C., (1978). Locating the producing layers in HGP.A. - Fourth Workshop on Geothermal Reservoir Engineering, Proc., Stanford, pp. 133-138.

Kihara D.H., Chen B.H, Takahashi P., (1976). Instrumentation and test results for Hawaii Geothermal Project's HGP-A well. - Summaries of second Workshop on Geothermal Reservoir Engineering, Stanford, pp. 109-115.

Kihara D.H., Chen B.H, Yuen P.C., Takahashi P., (1976). Summary of HGP-A well testing: - Proc. of third Workshop on Geothermal Reservoir Engineering, Stanford, pp. 138-144.

Kingston Reynolds Thom and Allardice Ltd. (1976). Hawaii Geothermal Project well completion report , HGP-A. Auckland, New Zealand. Report prepared For University of Hawaii Research Corporation and U.S. Energy Research and Development Administration.

Kinoshita W.T., (1965). A gravity survey of the Island of Hawaii. Pacific Science, v. 19, 3, p. 339.

Kinoshita W.T., Swanson D.A., Jackson D.B., (1974). The measurement of crustal deformation related to volcanic activity at kilaeua volcano, Hawaii. In Civelta L., Gasparini P., Luongo G., Rapolla A., eds., Physical Volcanology: New York, Elsevier, pp. 87-115.

Kitamura E., (1980). Preliminary report on the location of producing layers of geothermal well HGP-A, Puna, Hawaii. Report founded by: Berenice Pauahi Bishop Estate. Hawaii Natural Energy Institute.

Klein F.W., Koyanagy R.Y., Nakata J.S., Tanigawa W.R., (1987). The seismicity of Kilauea's magma system. U.S.G.S. Professional Paper 1350, Volcanism in Hawaii, V. 2, C. 43, pp. 1019-1189.

Koyangi R.Y., Nakata J.S., Tanigawa W.R., (1981). Seismicity of the lower East Rift Zone of Kilauea volcano, Hawaii, 1960-80. U.S.G.S. Open-File Report 81-984.

Krasnik G., Mansur J., (1987). Hawaii deep water cable program - Environmental assessment. Phase II-C, task 1 - Hawaiian Electric Company Inc. and Department of Business and Economic Development.

Kristmannsdottir, H. (1978). Hydrothermal Alteration of Basaltic Rocks in Icelandic Geothermal Areas. GRS Trans. 2, pp. 441-445.

Kristmannsdottir, H. (1982). Alteration in the IRDP Drill Hole Compared with Other Drill Holes in Iceland. Journ. Geoph. Res. V. 87, No B8, pp. 6525-6531.

Kroopnick P.M., Lau L.S., Buddemeier R.W., Thomas D.M., (1978a). Hydrology and Geochemistry of a Hawaiian geothermal system: HGP-A. - Haw. Inst. Geoph. Tech. Rept. HIG-78-6.

Kroopnick P.M., Buddemeier R.W., Thomas D., Lau L.S., Bills D. (1978 b). Geochemistry of a Hawaii geothermal well: HGP-A. - Geoth. Res. Counc. Trans., v. 2, pp. 375-377.

Kroopnick P.M., Thomas D.M., Lau L.S., Boddemeier R.W. and Bills D., (1980). Geochemical techniques in geothermal research. The Hawaii example. Tectonophysics, v. 62, pp. 87-97.

Langenhein V.A.M., Clague D.A., (1987). The Hawaiian - Emperor volcanic chain. Part II. Stratigraphic framework of volcanic rocks of the Hawaiian Island. U.S.G.S. Professional Paper 1350, volcanism in Hawaii, v. 1, pp. 55-84.

Larsen-Basse J., Kam-Fai L., (1984). Corrosion tests in Hawaiian geothermal fluids. Proc. Int. Congress on metallic corrosion, toronto, June 3-7, 1984, v. 3, pp. 641-648.

Lau K.M., and Cheng P., (1974). The effect of Dike intrusion on free convection in geothermal reservoirs. Hawaii Geoth. Project Engineering program, Tech. Rept. n. 7.

Lesperance G.O., (1989). The Hawaii 500 Megawatt project. Geoth. Res. Counc. Trans., v. 13, pp. 613-616.

Macdonald G.A., (1949). Petrography of the Island of Hawaii. U.S.G.S. Prof. Paper 214-D, pp. 51-96.

Macdonald G.A., (1976). Geological summary. In Hawaii Geothermal Project well completion report, HGP-A, pp. 22-24. Honolulu, Hawaii

Macdonald G.A., Abbott A.I., (1970). Volcanoes in the sea: the geology of Hawaii. - Honolulu, University of Hawaii Press, 441 pp..

in -
etwork
I.G.S.
pp.
ts in
s on
pp.
Dike
cirs.
Rept.
rawatt
6 6.
nd of
Kaii
pp.
n the
t of

Macdonald, G.A., Abbott, A.T., Peterson, F.L., (1983). Volcanoes in the Sea: The Geology of the Hawaiian Islands. 2nd ed., Honolulu, Univ. press of Hawaii.

Macdonald, G.A. and Eaton J.P., (1964). Hawaiian Volcanoes during 1955: U.S.G.S. Bulletin 1171, 170 p.

Malahoff A., Woppard G.P., (1965). Magnetic Survey over the Hawaiian Ridge. Haw. Inst. Geoph. Tech. Rept. HIG-65-11.

Mc Murtry G.M., Fan P.F., Coplen T.B., (1977). Chemical and isotopic investigations of groundwater in potential geothermal areas in Hawaii. Am. Jour. Sci., v. 277, pp. 438-458.

Moore R.B., (1983). Distribution of differentiated tholeiitic basalts on the lower East Rift Zone of Kilauea volcano, Hawaii: A possible guide to geothermal exploration. Geology, v. 11, 3, pp. 136-140.

Murata K.J., Ault W.U., White D.E., (1964). Halogen acids in fumarolic gases of Kilauea volcano: Bull. Volc., v. 27, pp. 367-368.

Naughton J.J., Finlayson J.B., Lewis V.A., (1975). Some results from recent chemical studies of Kilauea volcano, Hawaii. Bull. volc., v. 39, pp. 64-69.

Naughton J.J., Greenberg V.A., Goguel R., (1976). Incrustations and fumarolic condensates at Kilauea volcano, Hawaii: field, drill-hole and laboratory observations. - Jour. Volc. Geoth. Res., v.1, pp. 149-165.

Naughton J.J., Thomas D.M., (1978). Helium in fumarole and well gases as an index of long-term geothermal potential. - Geoth. Res. Counc. Trans., v. 2, p. 479.

Palamiter D. (1976). - Geology of HGP-A from macroscopic study of cores and cutting. Unpublished report. Honolulu, Hawaii.

Peterson D.W., and Moore R.B., (1987). Geological history and evolution of geologic concepts, Island of Hawaii. U.S.G.S. Professional Paper 1350. Volcanism in Hawaii, v. 1, c. 7, pp. 149-189.

Research Corporation of the University of Hawaii (RCUH), (1983). Report on Hawaii geothermal power plant project.

Richard M.A., Carey D.L., Russell J.S., (1989). Environmental mediation and the development of the Puna Geothermal Venture Project: Hawaii tries a new regulatory process to unlock a decade of confrontation. Geoth. Res. Counc. Trans., v. 13, pp. 57-61.

Ross H.P., (1982). A review of public geophysical data, Kilauea East Rift area, Hawaii. Thermal Power Co., Unpublished Report.

Rudman A.J., (1978). Analysis of geophysical logs from the Hawaii Geothermal Project well. - Haw. Inst. Geoph. Tech. Rept. HIG-78-9.

Rudman A.J., Epp. D., (1983). Conduction models of the temperature distribution in the East Rift Zone of Kialuea volcano. Jour. Volc. Geoth. Res., v. 16, pp. 189-203.

Ryan M.P., (1987). Elasticity and contractancy of hawaiian olivine tholeiite and its role in the stability and structural evolution of subcaldera magma reservoirs and rift systems.

U.S.G.S. Professional Paper 1350, Volcanism in Hawaii, v. 2, c. 52, pp. 1395-1447.

Ryan M.P., (1988). The mechanics and three dimensional internal structure of active magmatic system: Kilauea volcano, Hawaii. - Jour. Geoph. Res., v. 93, B5, pp. 4213-4248.

Shito S., (1974). Warm water wells on the island of Hawaii. - Technical Memorandum No. 1, Hawaii Geothermal Project, Univ. of Hawaii, Honolulu.

Shupe J.W. (1973). Geothermal power for Hawaii Phase I. Report prepared for presentation at the U.S. - Italy cooperative research seminary on geothermal energy held at the University of Pisa, Italy November 5-10, 1973. HGP-MRI-A.

Stearns, H.T. and Macdonald, G.A., (1946). Geology and Groundwater Resources of the Island of Hawaii. Bulletin 9, Hawaii Division of Hydrography.

Stone C., Fan P.F., (1978). Hydrothermal alteration of basalts from Hawaii Geothermal Project Well-A, Kilauea, Hawaii. - Geology, v. 6, pp. 401-404.

Strange W.E., Wppard G.P., Rose J., (1965). An analysis of the gravity field over the Hawaiian Islands in terms of Crustal Structure. - Pac. Sci., v. 19, pp. 381-389.

Sumida G.A., Hills A.L., Lee P.E., Suyat S.D., Takushi R.P., (1986). Alternative approaches to the legal, institutional and financial aspects of developing an inter-island electrical transmission cable-system. - Department of Planning and economic development - State of Hawaii.

Suyenaga W., Broyles M., Furumoto A.S., Norris R., Mattice M.D., (1978). Seismic studies on Kilauea volcano, Hawaii Island. Haw. Inst. Geoph. Tech. Rept. HIG-78-8.

Italy Swanson D.A., Duffield W.A., Fiske R.S., (1976).

h ld Displacement of the south flank of Kilauea volcano the
1973. result of forceful intrusions of magma into the rift
zones: - U.S.G.S.. Prof. Paper 963, 39 pp.

v and Swain L.A. (1973). Chemical quality of ground water in
le in Hawaii, Honolulu. U.S. Geological Survey and State of
Hawaii Dept. Land and Natural Resources Rept. R 48.

on of : Taliaferro, W.J. (1959). Rainfall of the Hawaiian
au a, Islands. Hawaii Water Authority, Report R 12.

l} is Thomas D.M. (1980). Water and gas chemistry from HGP-A
terms well. Geoth. Res. Counc. Trans., v. 4. p. 181.

- 19. Thomas D.M., (1982 a). A geochemical case history of
kushi HGP-A well, 1976-1982. Proc. Pac. Geoth. Conf. 1982,
pp. 273-278)

le al, Thomas D.M., (1982 b). An overview of the hawaiian
ng an geothermal resources assessment program. - Proc. Pac.
em - Geoth. Conf. 1982, pp. 279-283.

s R., Thomas D.M., (1982 c). Process chemistry monitoring at
il uea the HGP-A power plant: analytical results, process
Rept. problems and modifications. - Geoth. Res. Counc. Trans.,
v. 6, pp. 401-404.

Thomas D.M., (1982 d). Sampling and analytical methods development at the HGP-A generator facility. - Geoth. Res. Counc. Trans., v. 6, pp. 405-408.

Thomas D.M., (1982 e). A summary of the chemical characteristics of the HGP-A well, Puna, Hawaii. - Proc. of the eighth Workshop on Geothermal Reservoir Engineering, Stanford University, pp. 209-313.

Thomas D.M., (1983). Status summary of the HGP-A generator facility: 1983. - Geoth. Res. Counc. Trans., v. 7, pp. 75-80.

Thomas D.M., (1983). Geothermal Resource of Hawaii (map). Hawaii Institute of Geophysics - University of Hawaii.

Thomas D.M., (1984). Geothermal resources assessment in Hawaii, Final Report, February 21, 1984. Geothermal Energy, v. 12, 10, pp. 13-15.

Thomas D.M., (1985). Characteristics of the geothermal resources associated with the volcanic sistem in Hawaii. - Geoth. Res. Counc. Trans., v. 9, II, pp. 417-422.

Thomas D.M., (1986). Assessment of geothermal resources in Hawaii. - Geothermics, v. 15, 4, pp. 435-514.

Thomas D.M., (1987). A geochemical model of the Kilauea East Rift zone. - U.S.G.S. Professional Paper 1350, Volcanism in Hawaii, v. 2, c. 56, pp. 1507-1525.

Thomas D.M., Cox M., Erlandson D., Kajiwara L., (1979). Potential geothermal resources in Hawaii: a preliminary regional survey. - Haw. Inst. Geoph. Tech. Rept. HIG-79-4.

Thomas D.M., Cox M.E., Liener B.R., Kauahikaua J.P., Mattice M.D., (1980 a). Preliminary geothermal assessment surveys for the state of Hawaii. - Geoth. Res. Counc. Trans., v. 4, pp. 185-188.

Thomas D.M., Cox M.E., Kauahikaua P.J., Mattice M.D., (1980 b). Hawaii geothermal resource assessment program, direct heat resource assessment, Phase II, Final Report, February 1, 1979. January 31, 1980. - HIG DOE/ID/27023-4.

Thomas D.M., Liener B.R., Cox M.E., Kauahikaua J.P., Mattice M.D., (1982). Hawaii geothermal resource assessment: 1982. - Geoth. Res. Counc. Trans., v. 6, pp. 63-66.

Thomas D.M., Kroopnick P.M., (1978). Isotopes and gases in an hawaiian geothermal system: HGP-A. - Geoth. Res. Counc. Trans., v. 2, II, pp. 653-654.

Thomas D.M., Sakai H., (1978). Chemical and isotopic studies of the HGP-A geothermal well. - Fourth International Symposium on Water-Rock Interaction, Misasa, Japan, 1983, pp. 479-482.

Waibel A. (1983). A review of the hydrothermal mineralogy of Hawaii Geothermal Project well-A, Kilauea, Hawaii. - Geoth. Res. Counc. Trans, v. 7, pp. 205-209.

Walker G.P.L., (1986). Koolau dike complex, Oahu: Intensity and origin of a sheeted-dike complex high in a Hawaii volcanic edifice. - Geology, v. 14, pp. 310-313.

Walker, G.P.L., (1987). The Dike Complex of Koolau Volcano, OAHU: Internal Structure of a Hawaiian Rift Zone. U.S.G.S. Professional Paper 1350, Volcanism in Hawaii, v. 2, c. 41, pp. 961-993.

Walker G.P.L., (1988). Three hawaiian calderas: an origin through loading by shallow intrusions? - Jour. Geoph. Res. v. 93, B 12, pp. 14,773-14,784.

Walker G.P.L., (1989). Kilauea volcano field trip. - Dept. of Geology and Geophysics, University of Hawaii at Manoa Honolulu, HI 96822.

Wiegand J.W., Cummings C., (1978). Status report geothermal operations research project for California

and Hawaii. - Geoth. Res. Counc. Trans., v. 2, pp. 717-719.

Wright T.L., and Fiske R.S., (1971). Origin of the differentiated and hybrid lavas of Kilauea volcano, Hawaii. - Jour. Petrol., v. 12, pp. 1-56.

Wright T.L., and Helz R.T., (1987). Recent advances in hawaiian petrology and geochemistry. - U.S.G.S. Professional Paper 1350, Volcanism in Hawaii, v. 1, c. 23, pp. 625-640.

Yuen P.C., Chen B.H., Kihara D.H., Seki A.S., Takahashi P.K., (1978). HGP-A Reservoir Engineering. Hawaii Geothermal Project, University of Hawaii.

Yuen P.C., Chen B.H., Kihara D.H., Takahashi P.K., (1977). Preliminary well test results from HGP-A. - Geoth. Res. Counc. Trans., v. 1, pp. 309-310.

Zablocki C.J., (1976). Mapping thermal anomalies on an active volcano by the self-potential method, Kilauea, Hawaii. - Proc. of the second U.N. Symposium on the development and use of geothermal resources, San Francisco, California, May 1975, v. 2, p. 1299-1309.

Zablocki C.J., (1978). Streaming potentials resulting from the descent of meteoric water. A possible source

mechanism for Kilauean self potential anomalies. Geoth.
Res. Counc. Trans., v. 2, II, pp. 747-748.

Zohdy A.D.R., and Jackson D.B., (1969). Application of deep electrical soundings for ground water exploration in Hawaii. - Geophysics, v. 34, pp. 584-600.