DGE--2359-T1

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PHASE 1 REPORT:
INVESTIGATION OF GEOTHERMAL ENERGY
INFORMATION SOURCES

MASTER

Prepared for

Division of Geothermal Energy
Energy Research and Development Administration
20 Massachusetts Avenue
Washington, D.C. 20545

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1. INTRODUCTION

To provide a base for ERDA geothermal energy information activities, the Science Information Services Department (SIS) of The Franklin Institute Research Laboratories engaged in a geothermal literature survey under Contract E(49-18)-2359. The activity consists of two discrete phases: Phase 1, Investigate Available Information Services; and Phase 2, Design Information Dissemination Tools.

In this report the results of Phase 1 activities are presented.

The initial task under Phase 1 was the development of a subject screening list which would be used by acquisitions specialists as a guide to the orientation of pertinent literature. The subject screening list was derived primarily from the geothermal subset of the ERDA Energy Thesaurus and from the ERDA Energy Information Data Base Subject Categories (TID-4584). Removed from those sources were terms not pertinent to geothermal energy, and added were relevant terms and concepts not covered. The subject screening list is included in this report as Appendix A.

Subsequent to preparation of the subject screening list, a core list of serial publications containing geothermal energy information was generated by SIS library scientists in our Rockville, Philadelphia, Munich and Tokyo facilities. This list was correlated with the ERDA-TIC serial publications list (see Section 2) to produce a list of serial titles not currently available to ERDA-TIC (see Section 3). Included in both lists is an estimate of the annual geothermal information yield of the serial sources.

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In Section 4 is presented a listing of sources of geothermal energy information other than serial publications and in Section 5 the conclusions, including methods of acquisition to be utilized and the estimated annual volume of information from all sources is presented.

2. ERDA Serial Publications Scanned

Presented in this section is an alphabetical listing of serial publications scanned by ERDA-TIC and its commercial data base suppliers in recovering geothermal literature.

SERIAL TITLE	ESTIMATED ANNUAL YIELD
Acad. Roy. Sci. Outre-Mer	1
Accad. Naz. Lincei Rend	1
Acta Chim. Acad. Sci. Hung.	1
Acta Geod., Geophys. Montanistica	1
Acta Geophys. Pol.	2
Acta Phys. Chim. Debrecina	2
Acta Polytech. Scand., Electr. Eng. Ser.	1
Acustica	2
Adv. Astronaut. Sci.	3
Adv. Chem. Ser.	5
Adv. Geophys.	1
AEI (Assoc. Electr. Ind.) Eng.	1
AIChE Symp. Ser.	12
AIP (Am. Inst. Phys.) Conf. Proc.	1
Akust. Zh.	2
Am. Assoc. Pet. Geol. Bull.	33
Am. Assoc. Pet. Geol. Soc. Econ. Paleontol. Mineral. Annual.	9
Am. J. Sci.	41
Am. Mineral	17
Am. Sci.	4
Am. Soc. Civ. Eng. Proc. J. Hydraul. Div.	1
An. Acad. Bras. Cienc.	1
An. Fis.	1
Anal. Chim. Acta	1

Ann. Chim. (Paris)	1
Ann. Geofis. (Rome)	6
Ann. Geophys.	2
Ann. Mines	3
Ann. N.Y. Acad. Sci.	1
Ann. Univ. Sci. Budapest. Rolando Eotvos Nominatae, Sect. Geol.	1
An. Quim.	1
Arch. Energiewirtschaft.	1
Artic	1
Asahi Garasu Kenkyu Hokoku	1
Asoc. Mexica Geol. Petrol. Bul.	3
Assoc. Eng. Geol. Am. Meet. Prog. Abst.	3
Assoc. Pac. Coast Geogr. Yearbook	1
At. Energy Aust.	1
Atoomenerg. Haar Toepass.	1
Aufschluss	3
Aust., Bur. Miner. Resour., Geol. Geophys., Bull.	1
Aust. J. Phys.	4
Aust. Min.	1
Australas. Corros. Eng.	1
Australas. Eng.	1
Australas. Inst. Min. Metall. Proc.	1
Australas Oil Gas Rev.	2
Australasian Engr.	3
Aware	5
Balneol. Soc. Jap. J.	3
Ber. Bunsenges. Phys. Chem.	1
Berginstituts Namens Artem Stalin (RU)	1
Bol. Minero	1
Bol. Soc. Venez. Geol.	1
Boll. Geofis. Teor. Appl.	10
Boll. Soc. Geol. Ital.	4
Boll. Soc. Nat. Anpoli	4
Bot. Gaz. (Chicag9)	1

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Brennst. -Waerme-Kraft	1
Br. J. Appl. Phys.	3
Bull. of Acad. of Sciences of Georgian SSR Soobshch. Akad. Nauk Gruz. SSR	1
Bull. Chm. Soc. Jpn.	5
Bull., Eng. Geol. Hydrogeol. (Engl. Transl.)	1
Bull. Environ. Contam. Toxicol.	1
Bul. Inst. Min., Met.	1
Bull. Int. Assoc. Sci. Hydrol.	7
Bull. Natl. Geophys. Res. Inst.	2
Bull. Seismol. Soc. Am.	3
Bull. Soc. Chim. Fr.	1
Bull. Soc. Fr. Mineral. Cristallogr.	4
Bull. Soc. Geol. Fr.	1
Bull. Ver. Schweiz. Pet.-Geol. -Ing.	1
Bull. Volcanol.	61
Butsuri Tanko	6
Calif. Div. Oil Gas Summ. Oper. Calif. Oil Fields	1
California Geology	1
California Mining Journal	2
Calif. Univ. (Riverside Inst. Geophys.)	3
Can. Geogr.	1
Can. J. Chem.	4
Can. J. Chem. Eng.	1
Can. J. Earth Sci.	8
Can. J. Microbiol.	1
Can. J. Phys.	1
Can. Min. Metall. Bull.	3
Chem. Commun.	1
Chem. Eng. News	5
Chem. Eng. Prog.	1
Chem. Erde	1
Chem. Geol.	5
Chemistry	2
Chem. Process. (Chicago)	1

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Chem. Process Eng. (London)	1
Chem. Rev.	4
Chem. Technol.	1
Chem. Weekbl.	1
Chim. Ind. (Milan)	2
Chishitsu Chosasho Geppo	38
Ciencia (Mexico)	1
Clays Clay Miner.	3
Colo. Sch. Min., Miner. Ind. Bull.	2
Combustion	2
Comments Earth Sci., Geophys.	1
Com. Naz. Energ. Nucl., Not.	1
Compt. Rend. Soc. Geol. Gr.	1
Colo. Geol. Surv. Bul.	14
Congr. Assoc. Geol. Carpatho-Balkan. Bul.	1
Consult. Eng. (London)	1
Consult. Eng. (St. Joseph, Mich.)	1
Contrib. Mineral. Petrol.	11
Corrosion	1
Corrosion Abstracts	4
Corros. Sci.	1
C. R. Acad. Bulg. Sci.	2
C. R. Hebd. Seances Acad. Sci.	4
C. R. Hebd. Seances Acad. Sci., Ser. A, B	4
C. R. Hebd. Seances Acad. Sci., Ser. D	9
Curr. Sci. (India)	1
Current Science (Fortnightly Journal of Research)	2
Def. Sci. J. (New Delhi)	1
Desalination	2
Dokl. Akad. Nauk Azerb. SSR	4
Dokl. Akad. Nauk BSSR	3
Dokl. Akad. Nauk SSSR	48
Dokl. Akad. Nauk Uzb. SSR	1
Dokl. Earth Sci. Sect. (Engl. Transl.)	11

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SCIENCE INFORMATION SERVICES

Dopov. Akad. Nauk Ukr. RSR, Ser. B	3
Earth Miner. Sci.	1
Earth Planet. Sci. Lett.	18
Earth Sci. Bull.	3
Earth-Sci. Rev.	2
Echo Mines, Met.	1
Ecology	3
Econ. Geol.	55
Eisei Kagaku	2
Electr. Eng. (Sydney)	1
Electr. Light Power (Boston)	3
Electrochim. Acta	1
Electronics	1
Electron. World	1
Electr. Times	2
Electr. World	8
Elektrotech. Z., B	3
Elektr. Stn.	3
Elettrotecnica	1
Energie	1
Energomashinostroenie	1
Energy Convers.	3
Energy Dig.	1
Energy Int.	4
Energy Sources	1
Eng. Geol. (Amsterdam)	3
Engineering	3
Eng. Min. J.	6
Environ. Lett.	2
Environment	1
Environ. Sci. Technol.	4
EOS, Trans., Am. Geophys. Union	57
ERA (Foeren. Elektr. Tation. Anvaendning)	1
Erdoel Kohle, Erdgas, Petrochem.	1

Fiz.-Khim. Mekh. Mater.	1
Fluid Mech. - Sov. Res.	1
Fortschr. Mineral	1
Fortune	2
Fr. Bur. Rech. Geol. Minieres Bull. (Ser. 2)	2
FukuokKyoiku Daigaku Kiyo, Dai-3-Bu, Rika-Hen	1
Ganseki Kobutsu Kosho Gakkaishi	4
Gas- Wasserfach	1
Genie Civil	9
Geochem. Int.	1
Geochemistry (Nagoya)	1
Geochem. J. (Nagoya)	12
Geochim. Cosmochim. Acta	38
Geoexploration	6
Geofiz. App.	8
Geofiz. Kozl.	6
Geofiz. Sb.	2
Geofiz. Sb., Akad. Nauk Ukr. SSR, Inst. Geofiz.	3
Geog. Rev.	2
Geol. Tech., Roma	3
Geokhimiya	37
Geol. Foeren. Stockh. Foerh.	2
Geol. Geofiz.	6
Geol. Jahrb., Reihe C	1
Geol. Mag.	2
Geol. Mijnbouw	4
Geol. Nauk	1
Geol. Nefti Gaza	10
Geol. Rud. Mestorozhd.	5
Geol. Rundsch.	5
Geol. Soc. Am. Abstr.	4
Geol. Soc. Am., Bull.	3
Geol. Geokhim, Goryuch. Iskop Akad. Nauk UKR. SSR	3
Geol. Zh. (Russ. Ed.)	2
Geophys. Geol. (Leipzig)	2

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Geophysical Research Letters	
Geophysics	33
Geophysics Res. Lett.	4
Geophys. J. R. Astron. Soc.	4
Geophys. Mag. (Tokyo)	1
Geoscience Documentation	2
Geotechnical Abstracts	6
Geophys. Prosp.	4
Geotektonika	3
Geotherm. Energy Mag.	124
Geothermal Resources Counc. Bull.	2
Geothermics	158
Geotimes	3
G. Fis. Sanit. Prot. Radiaz.	1
Gig. Sanit.	1
Glas. Prir. Muz. Beogr., Ser. A	1
Glastech. Ber.	1
Glueckauf	1
Ground Water	2
Gulf Coast Assoc. Geol. Soc. Trans.	1
Health Phys.	1
Heat., Piping Air Cond.	3
Heat Transfer - Sov. Res.	2
Hidrol. Koezl. (includes German Summary)	2
High Temp. (USSR) (Engl. Transl.)	2
Hung. Magy. All. Foeldt. Intez. Evi. Jel.	1
Hydrobiologia	5
IEEE Trans. Aerosp. Electron. Syst.	1
IEEE Trans. Geosci. Electron.	2
IEEE Trans. Power Appar. Syst.	1
IZD Nauka, Moscow	35
Impact Sci. Soc.	1
Ind. Eng. Chem., Process Des. Dev.	1
Indian J. Chem.	2
Indian J. Meteorol. Geophys.	1

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Indian J. Phys.	1
Indian J. Pure Appl. Phys.	1
Ind. Min.	2
Ind. Miner. (Paris)	1
Ingenieur (Utrecht)	1
Inogr. Chem.	1
Inorg. Mater. (USSR) (Engl. Transl.)	1
Inst. Min. Metall., Trans., Sect. B	1
Int. Geol. Rev.	6
Int. J. Heat Mass Transfer	5
Int. J. Mech. Sci.	1
Int. Ver. Theor. Angew. Limnol., Verh.	1
International Society for Geothermal Engineering Transactions	17
Isr. J. Chem.	1
Isr. J. Earth-Sci.	2
Izv. Akad. Nauk Arm. SSR, Nauki Zemle	1
Izv. Akad. Nauk Azerb. SSR, Ser. Fiz.-Tekh. Mat. Nauk	1
Izv. Akad. Nauk SSSR, Fiz. Zemli	5
Izv. Akad. Nauk SSSR, Ser. Geofiz.	8
Izv. Akad. Nauk SSSR, Ser. Geogr. Geofiz.	1
Izv. Akad. Nauk SSSR, Ser. Geol.	7
Izv. Akad. Nauk Turkm. SSR, Ser. Fiz.-Tekh., Khim. Geol. Nauk	1
Izv. Sib. Otd. Akad. Nauk SSSR, Ser. Tekh. Nauk	1
Izv. Sib. Otd. Geol. Kom.	1
Izv. Vyssh. Uchebn. Zaved., Chern. Metall.	1
Izv. Vyssh. Uchebn. Zaved., Energ.	3
Izv. Vyssh. Uchebn. Zaved., Geol. Razved.	11
Izv. Vyssh. Uchebn. Zaved., Gorn. Zh.	2
Izv. Vyssh. Uchebn. Zaved., Khim. Khim. Tekhnol.	2
Izv. Vyssh. Uchebn. Zaved., Neft Gaz	7
J. Acoust. Soc. Am.	1
J. Am. Ceram. Soc.	1
J. Am. Chem. Soc.	31

J. Am. Water Works Assoc.	2
J. Appl. Phys.	3
J. Chem. Educ.	1
J. Chem. Eng. Data	12
J. Chem. Phys.	3
J. Chem. Soc., A	7
J. Chem. Thermodyn.	1
J. Chim. Phys.	1
J. Earth Sci., Nagoya Univ.	1
J. Electrochem. Soc.	2
J. Eng. Power	1
J. Environ. Qual.	1
J. Fish. Res. Board Can.	1
J. Fluid Mech.	2
J. Geol.	15
J. Geophys. Res.	89
J. Hydrol.	5
J. Mar. Res.	1
Joekull (Reykjavik)	7
J. Petrol.	1
J. Pet. Technol.	14
J. Phycol.	1
J. Phys. Chem.	23
Jpn. J. Geol. Geogr.	4
J. Power Div., Am. Soc. Civ. Eng.	1
J. Res. U.S. Geol. Surv.	8
J. S. Afr. Chem. Inst.	1
J. Sci. Ind. Res.	3
J. Sci. Instrum.	7
J. Solution Chem.	7
J. Wash. Acad. Sci.	6
Kerntechnik	1
Khim. Tekhnol.	1
Koatsu Gasu	1
Kozan Chishitsu	2

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Kwart. Geol.	2
Leningrad, Gorn, Inst., Zap	3
Limnol. Oceanogr.	5
Lithos	1
Litol. Polez. Iskop.	2
Log Anal.	2
Magy. Allami Eotvos Lorand Geofiz. Int. Evi Jelentese	2
Magy. Geofiz.	5
Magy. Kem. Foly.	2
Mar. Geol.	1
Mar. Sci.	1
Mater. Prot.	1
Mater. Res. Stand.	1
Mech. Eng.	2
Mem. Fac. Eng., Kyoto Univ.	1
Mem. Fac. Sci., Kyushu Univ., Ser. C	1
Metall. Trans.	1
Min. Congr. J.	1
Min. Eng. (London)	8
Min. Eng. (N.Y.)	1
Min. Geol. (Soc. Min. Geol. Jap. English Summary)	1
Mineral. Mag.	2
Mines Mag.	4
Mines Metall.	1
Min. J. (London)	1
Mod. Geol.	2
Montan-Rundsch	1
Mozaic	6
Nat. Hist.	2
Natl. Water Supply Improvement Assoc. J.	3
National Journal	1
National Water Supply Improvement Association Journal, Vol. 1, No. 1 July '74, Imperial Valley	2
Nature (London)	29

Nature (London) Phys. Sci.	1
Naturen/Arg.	1
Naturwissenschaften	1
Neftegazov. Geol. Geofiz.	5
Neft. Khoz.	1
Nendo Kagaku	1
Nenryo Kyokai-shi	3
Neues Jahrb. Mineral., Abh.	2
Nev., Bur. Mines, Rep.	1
New Zealand Energy J.	6
Nippon Kagaku Kaishi	1
Nippon Kagaku Zasshi	2
Nippon Kaisui Gakkaishi	2
Nippon Kogyo Kaishi	1
Nor. Geol. Tidsskr.	7
Nucl. India	1
Nucl. Technol.	1
N. M. Acad. Sci. Bull.	2
N. M. Geol. Soc., Annu. Field Conf.	3
N. Z. J. Geol. Geophys.	34
N. Z. J. Sci.	31
N. Z. Sci. Rev.	2
Oil Gas J.	19
Oita-ken Unsen Chosa Kenkyu-kai Hokoku	2
Okeanologiya	1
Onsen Kagaku	34
Onsen Kogakkaishi	8
Opt. Spectra	1
Osvedomitelniy Bull.	3
Ovro. Preto, Esc. Minas. Rev.	1
Period. Mineral.	1
Pet. Geol.	4
Pet. Times	4
Philipp. J. Sci.	5

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Philos. Mag.	2
Philos. Trans. R. Soc. London, Ser. A	2
Phys. Chem. Glasses	1
Phys. Earth Planet. Inter.	3
Phys. Today	2
Planet. Phys. Tech.	1
Pochvovedenie	1
Power Eng.	4
Power (N.Y.)	5
Prikl. Geofiz.	6
Priroda	10
Proc. Am. Power Conf.	1
Proc. Fujihara Mem. Fac. Eng., Keio Univ. (Tokyo)	1
Proc. Indian Natl. Sci. Acad., Part A	1
Proc. Inst. Mech. Eng. (London)	2
Proc., Inst. Teknol. Bandung	2
Proc. Natl. Acad. Sci. U.S.A.	1
Proc. Phys. Soc. (London)	1
Proc. R. Soc. (London), Ser. A	3
Prot. Met. (USSR) (Engl. Transl.)	2
Przegl. Geol.	2
Public Power	1
Public Util. Fortn.	9
Pure Appl. Geophys.	5
Q. Colo. Sch. Mines	3
Q. J. Geol. Soc. London	1
Ore Bin	3
Queensl. Gov. Min. J.	1
Quennsl. Govt. Mining J.	1
R. Astron. Soc. Geophys. J.	1
Razved. Geofiz.	14
Razved. Okhr. Nedr.	12
Recherche (Paris)	1
Rec. Trav. Chim.	1

Research Outlook	1
Rev. Alu.	1
Rev. Electrotec.	1
Rev. Gen. Therm.	1
Rev. Geogr. Phys. Geol. Dyn.	1
Rev. Inst. Fr. Pet. Ann. Combust. Liquides	2
Rev. Roum. Chim.	1
Rev. Roum. Geol., Geophys. Geogr., Ser. Geol.	1
Rev. Sci. Instrum.	6
Rock Mech.	1
Sb. Tr., Mosk. Inzh.-Stroitel. Inst.	1
Schweiz Mineral Petrogr.	1
Schweiz. Mineral. Petrogr. Mitt.	2
Sci. Am.	4
Sci. Cult.	3
Science	36
Sci. Ind. (Karachi)	1
Sci. J.	2
Sci. News (Wash., D.C.)	3
Sci. Pap. Coll. Gen. Educ., Univ. Tokyo	1
Sci. Prog. Decouverte	2
Search	1
Semento Gijutsu Nenpo	1
Shizen	1
Silikaty	1
Soc. Pet. Eng. J.	2
Soil Sci. Soc. Am., Proc.	1
Soobshch. Akad. Nauk Gruz. SSR	4
South Africa Min. Engr. J.	1
Sov. Geol.	26
Sov. Geol. Geophysics	4
Sov. Phys. - Solid State (Engl. Transl.)	1
Spain Cent. Estd. Hidrogr., UNESCO Symp.	4
Spec. Publ., Geol. Soc. Aust.	1

Steirische Beitr. Hydrogeol.	1
Struct. Eng.	1
Stud. Univ. Babes-Bolyai, Ser. Chem.	1
Tappi	1
Tech. Mod.	1
Technol. Rev.	1
Tecnica (Lisbon)	1
Tectonophysics	22
Tek. Forum	1
Tekh. Molodezhi	2
Tellus	1
Teploenergetika (Moscow)	7
Teplofiz. Vys. Temp.	3
Termotecnica (Milan)	5
Tex. Univ. Bur. Econ. Geol., Geol. Cire	1
Tokyo Daigaku Jishin Kenkyusho Iho	10
Toshiba Rev., Int. Ed.	2
Trans. Am. Geophys. Union	16
Trans. Am. Microsc. Soc.	1
Trans. Am. Nucl. Soc.	24
Trans. Faraday Soc.	6
Trans., Gulf Coast Assoc. Geol. Soc.	1
Trans., Int. Soc. Geotherm. Eng.	3
Tr. Inst. Fiz. Zemli, Akad. Nauk SSSR	1
Tr. Mineral. Muz., Akad. Nauk SSSR	1
Tr. Mosk. Khim.-Tekhnol. Inst.	4
Tr. Novocherkassk. Politekh. Inst.	3
Tr., Vses. Nauchno-Issled. Inst. Yad. Geofiz. Geokhim.	3
Tschermaks Mineral. Petrogr. Mitt.	1
Uch. Zap. Gos. Pedagog. Inst.	1
Uch. Zap. Leningr. Gos. Univ., Ser. Fiz. Geol. Nauk	1
Ukr. Fiz. Zh. (Russ. Ed.)	1
Ukr. Khim. Zh.	2
Umschau	1

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Union Burma J. Sci. Technol.	1
U. S. Geol. Survey-Open File Rep. Stavebn. Geol., Prague, Czechoslovakia	6
USGS Bulletin	4
USGS Prof. Paper	2
Uzb. Geol. Zh.	6
Vestn. Akad. Nauk SSSR	2
Vestn. Leningr. Univ., Geol., Geogr.	1
Vestn. Leningr. Univ., Ser. Geol. Geogr.	1
Vestn. Ustred. Ustavu Geol.	2
Vodosnabzh. Sanit. Tekh.	1
Volcanol. Soc. Japan Bull.	2
Vopr. Razved. Geofiz.	1
Waerme- Stoffuebertrag.	1
Wash. Dep. Ecol. Tech. Rep.	1
Water Res.	1
Water Resour. Res.	4
Wear	1
West. Miner	2
World Oil	4
Zairyo	2
Z. Anal. Chem.	1
Z. Angew. Geol.	3
Zashch. Met.	2
Zavod. Lab.	1
Z. Dtsch. Geol. Ges.	1
Z. Elektrochem.	2
Z. Geophys.	2
Zh. Fiz. Khim.	6
Zh. Neorg. Khim.	3
Zh. Obshch. Khim.	1
Zh. Prikl. Khim.	15
Zh. Tekh. Fiz.	1
Z. Phys.	1

Z. Phys. Chem. (Frankfurt)	1
Z. Phys. Chem. (Leipzig), A	3
Z. Phys. Chem. (Leipzig), B	3
Total Journals	502
Total Yield	2453

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SCIENCE INFORMATION SERVICES

3. SERIAL PUBLICATIONS NOT COVERED BY ERDA-TIC

In this section, those serial publications found to contain scientific and technical geothermal energy information, but not covered by ERDA-TIC or its data base suppliers, are listed.

<u>SERIAL TITLE</u>	<u>ESTIMATE ANNUAL YIELD</u>
Acta Geologica	6
Acta Geologica Hispanica	2
Acta Geologica Polonica	4
Acta Universitas Carolinae	1
Akad. Nauk SSSR Lab. Vulkanol., Byull. Vulkanol. Sta.	7
Akademiya Nauk SSSR. Sibirskoe Otdelenie. Institut Geologii I Geofiziki. Trudy	11
Alternative Sources of Energy	16
Ann. Geofys.	2
Annali Dell'Osservatorio Vesuviano	11
Annali Di Geofisica	14
Applied Energy	4
Applied Mechanics Reviews	2
Applied Optics	1
Archiv Feur Energiewirtschaft	3
Atomo Petrolio Elettricità	9
Atti Fondazione Politecnica Per Il Mezzogiorno D'Italia	2
Atti XLV Riunione Societa' Italiana Progresso Delle Scienze	1
Atti Societa Italiana Di Scienze Naturale E Del Museo Civico Di Storia Naturale	1
Beitr. Angew. Geophys.	3
Bollettino Del Societa Geografica Italiana (S.G.I.)	2
Bulletin De L'Academie Polonaise Des Sciences	2

Bulletin De L'Association Francaise Pour L'Etude Du Quaternaire	1
Bulletin De L'Association Suisse Des Electriciens	5
Bundesamt. Bodenforsch., Geol. Jahrb. (In English with French Summary)	1
Canada. Statistics Canada Service Bulletin. Energy Statistics	3
California Div. of Mines and Geology. Bulletin	4
Capital Energy Letter	5
Carnegie Inst. Washington, News Serv. Bull.	2
Chaleur Industr.	1
Deutsche Gesellschaft Fuer Geologische Wissenschaften. Berichte. Reihe A	2
Earth Science Journal	2
Ecology Today	1
Economia Internazionale Delle Fonti Di Energia	5
Elektrizitaetswirtschaft	7
Elektroanzeiger	2
Elektroteknikeren	1
Elektrowaerme International	2
Energeticheskoe Khozyaistvo Belorusskoi S.S.R.	4
Energetik	4
Energetika	3
Energetyka	4
Energia Nuclear	1
Energia Nucleare	1
Energija	2
Energy	4
Energy Analects	7
Energy and Technology Review	1
Energy Communications	2
Energy Controls	1
Energy Developments	8
Energy Info	1
Energy Management and Federal Energy Guidelines	5
Energy Messenger	1

Energy Perspectives	3
Energy Policy	2
Energy Processing/Canada	1
Energy Report (Alton, Hampshire, England)	4
Energy Report (Oconomowoc, Wisc.)	3
Energy Resources Report	2
Energy Review	1
Energy Today	2
Energy Trends	4
Energy World	6
Engineering Geology (Sacramento)	4
Entropie	2
Environmental Quality	2
Fernwaerme International	1
Florida Naturalist	1
Foerdern Und Heben	2
Freiberger Forschungsh. Reihe C	1
Fresenius' Zeitschrift Fuer Analytische Chemie	2
Geoarcheologia	1
Geochile	1
Geoderma	2
Geofis. Pura Appl.	3
Geological Association of Canada. Special Papers	2
Geological Journal (Liverpool Geological Society and Manchester Geol. Assoc.)	1
Geological News Letter (Geological Soc. of the Oregon County)	2
Geological Society of Australia. Journal	2
Geological Society of India. Journal	1
Geological Society of Jamaica. Journal	1
Geological Society of Japan. Journal	11
Geological Society of London. Quarterly Journal	2
Geological Society of Norfolk. Bulletin	1
Geological Socety of South Africa. Trans. and Proc.	2

Geologicke Zpravy. Bratislava. Geologicky Ustav Dionyra Stura	5
Geol. Bauwesen	1
Beologische Gesellschaft in Wien. Mitteilungen	1
Geology	6
Geophysical Abstracts. U.S. Geological Survey. Geophysics Branch	
Geophysical Research Bull.	5
Geophysical Surveys	7
Geoscience Canada	3
Geotechnica	8
Heizung Lueftung Haustechnik	2
Iceland Review	9
Il Calore	4
Il Nuovo Clemento	3
Institutul Geologic Memoire	1
Internatl. Volcanol. Assoc.	5
Jap. Assoc. Mineralogists, Petrologists, Econ. Geologists	4
Jap. Geol. Surv. Bull.	5
Japanese Jour. Astron. Geophys.	8
Japan Geothermal Energy Assoc. Journal	22
Journal of Geography (Chigaku Zasshi)	3
Journal of Paleontology	1
Journal of Volcanology and Geothermal Resources	38
Lagena	3
La Termotecnica	14
L'Ectricien Industriel	4
L'Energia Elettrica	
L'Industria Mineraria	1
L'Ingegnere	3
L'Installateur	2
Mineraluim Deposita	1
National Wildlife	1
Natura (Milan)	1
Natura (Bucharest)	1

New Zealand Dept. Sci. Indust. Res. Bull.	3
New Zealand Engineering	6
New Zealand Geographer	2
Nitiziario C.N.E.N. (Comitato Nazionale Energia Nucleare)	1
N.Z.J. Sci. Tech.	3
Oceanology	1
Oil Gas Compact Bull.	1
Pacific Science	1
Petroleum Engineer	1
Promochiin A	1
Quarterly Journal of the Royal Meteorological Society	2
Reclamation ERA	1
Rendiconti Societa Italiana Di Mineralogia E Petrologia	1
Rendiconti Dell'Accademia Di Scienze Fisiche E Matematiche Di Napoli	2
Research/Development	3
Rev. Assoc. Fr. Tech. Pet.	1
Rev. Geominer.	1
Revue Generale De Thermique	8
Ricerca Scientifica CNR (Consiglio Nazionale delle Ricerche)	2
Rohre-Rohrleitungsbau-Rohrleitungstransport	1
Schweizerische Zeitschrift Fuer Hydrologie (Revue Swiss d'Hydrologie)	5
Scottish Journal of Geology	1
Scribner's Mag.	1
Smithsonian	1
Societa Geologica Italiana, Bolletino and Memorie	2
Statistical Office of European Communities Energy Statistics	4
Tanganyika Geol. Surv. Rec. (Africa)	1
Tsvetnye Metally	1
Utah Geol.	1
Utilization Transactions	2
VDI-Forschungshefte	1
VDI-Nachrichten	1

VDI-Zeitschrift	1
Verkfraedingafelag Islands Timarit Arg.	1
Zeitschrift Fuer Angewadte Geologie	1
Zeitschrift Fuer Geologische Wissenschaften	2
TOTAL JOURNALS 153	TOTAL YIELD 515

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4. ADDITIONAL SOURCES OF GEOTHERMAL INFORMATION

In addition to those periodical sources of information detailed in Sections 2 and 3, numerous "irregular" sources exist through which monographs, textbooks, open file reports and research reports could be obtained.

Presented in this section are both individuals and organizations throughout the world through which geothermal information can be obtained. In Section 4.1, 139 organizations with geothermal energy interests are listed. It is expected that these sources will yield between 480 and 560 discrete pieces of information per year. These estimates are based upon personal communication with the organizational contacts.

In Section 4.2, 568 individuals names are presented. These scientists can be expected to generate approximately 1140 geothermally-oriented articles and monographs per year. Estimates are based upon work that they have previously performed. Of those 1140, approximately 610 will not appear in sources listed in Sections 2 and 3.

4.1 ORGANIZATIONS WITH GEOTHERMAL ENERGY INTEREST

Dr. Michael Davies
Direktor
Direktion Kernenergie, sonstige Primärenergiequellen,
Elektrizität
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B-1049 Brüssel

Institute of Geophysics
Balgarska Akademija na naukite
(Bulgarian Academy of Sciences)
6 Moskovska Street,
Sofia, Bulgaria
Dir. L. Krastanor (Academician)

Higher Institute of Mining and Geology
Darvenitza
Sofia - Bulgaria
Dean Geology Prof. R. Raskor

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Ustar Geologickeho Inzenyrstvi
(Geological Engineering Institute)
Mozartova 1
Brno, Czechoslovakia
Dir. Bolumir Svoboda

Ustredin Ustar Geologicky
(Geological Survey of Pragen)
Malostranska nam 19
Prag 1 - Czechoslovakia

Charles University
Faculty of Sciences
Alberttor 6
Prague 2

Experimental Mineralogy and Geochemistry Institute
Ceskoslovenska Akademie Ved
Prof. J. Kaspar
Jilska 16, MalaStrana
Prague 1

Geofysikalni ustav
Ceskoslovenska Akademie Ved
V. Bucha
Bocni II, No 1401, Sporilov
Prague 4

Geofysikaalinen Observatorio
Dir. Prof. Lauri A. Vnorela
Murmijarvi

Geofysikaalinen Observatorio
Dir. Eero Kataja
Sodankylo 99600

Geologinen Tutkimuslaitos (Geol. Survey of Finland)
02150 Otaniemi, Finland
Geophysics department: Manna Puranen

International Union of Geodesy and Geophysics (IUGG)
51 Boulevard de Montmorency
75016 Paris

M. Albo
Compagnie Generale de Geophysique
Massy

Institut National d'Astronomie et de Geophysique
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92 Mendon, France
Dir. Jean Delhaye

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Bureau de recherches Geologiques et Minieres (BRGM)
74 rue de la Federation
75 Paris (15e), France
Scientific and Technical Centre
Orleans-la-Source
BP 6009
45 Orleans 2 - France
Geothermal Section: Jacques Lavigne

Centre de recherches Geophysiques
Paris Office: 9 quai St. Bernard
75 Paris (5e) - France
Address Geophysics Station: BP1, 58 Garchy
Dir.: Prof. Louis Cagniard

Centre de Recherches Petrographiques et Geochemiques
15 rue Notre-Dame-des-Panures, Case Officielle 1
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Association Francaise pour l'etude du Quaternaire
Laboratoire de Geologie 1
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75230 Paris 5

Ecole Nationale Supérieure de Geologie et de Prospection Minière
Dir. Prof. P. Blazy
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54 Nancy

Bureau de Recherches Geologiques et Minieres - BRGM
Orleans
Mr. J. Goguel

Institut National d'Astronomie et de Geophysique
Meudon
Mr. Jean Goguel

Electricite de France
Chatou
Mr. M. Aureille

Dr. Kappelmeyer
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7500 Karlsruhe 1
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Projektleitung Energieforschung
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FRG

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3400 Gottingen
FRG

Institut fur Geophysik der Univ.
Gievenbecker Weg 61
4400 Munster/Westfalen
FRG

Gelsenberg AG
Rosastrasse 2
4300 Essen
FRG

Wintershall AG
Nauweg 8
6740 Landau/Pf.
FRG

Preussag AG
Erdol und Erdgas
Arndstrasse 1
3000 Hannover
FRG

Prakla-Seismos GmbH
Postfach 4667
3000 Hannover
FRG

Dornier-System GmbH
Dr. Tanner
Abteilung neue Technologien
Postfach 1360
7990 Friedrichshafen
FRG

Dr. Horster
Philips GmbH
Forschungslaboratorien
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5100 Aachen
FRG

Staatliches Forschungsinstitut fur Geochemie
Concordiastrasse 28
6600 Bamberg
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Priv. Doz. Dr. Hans Meier

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Kraftanlagen AG
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Dir. Dr. P. Muller

Geological Institute
Magyar Tudomanyos Akademia
Akademiai Kiado
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H-1363 Budapest

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Magyar Tudomanyos Akademia (MTA)
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Sopron

Reykjavik Municipal Heating Service
Reykjavik

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Istituto di Geotecnica
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Universita die Palermo
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Politecnico di Milano
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Laboratorio di Geofisica della Litosfera (CNR)
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Dir. Prof. G. Capriz (CNR)
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Centro informazioni studi esperienze (CISE)
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Mining Geology and Mineralogy Research Centre
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09100 Cagliari

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00144 Roma

ENEL - Direzione Studi e Ricerche
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I-00198 Roma
Prof. Ing. Teo Leardini, Direttore Centrale
Dott. Ing. Pietro Di Mario, Esercizio impianti, rapporti di
consulenza con l'estero

ENEL - Centro di Ricerca Geotermica
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Dott. Raffaele Cataldi, Ricerca ed esplorazione, geologia, geofisica
P.M. Adriano Calamai, Ricerca ed esplorazione, geologia, geofisica
Dott. Plinio Baldi, Ricerca ed esplorazione, geologia, geofisica
Dott. G. Mauro Cameli, Ricerca ed esplorazione, geologia, geofisica
Dott. Graziano Manetti, Fisica del serbatoio
Dott. Ing. Antonio Barelli, Fisica del serbatoio
Dott. G. Carlo Ferrara, Geochimica

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Dott. Ing. Anselmo Giovannoni, Capo Servizio minerario

Dott. Giancarlo Stefani, Ricerca ed esplorazione, geologia, geofisica

Dott. Ing. Ugo Cigni, Perforazioni

Dott. Ing. Manlio Vidalo, Perforazioni

Dott. Ing. Giovanni Allegrini, Esercizio Impianti

Dott. Ing. Giampiero Ricci, Esercizio Impianti

Dott. Ing. Giovanni Viviani, Esercizio Impianti

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Prof. Ezio Tongiorgi, Direttore

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Dott. Aristide Rossi, Ricerca ed esplorazione, geologia, geofisica

Dott. Paolo Squarci, Ricerca ed esplorazione, geologia, geofisica

Dott. Learco Taffi, Ricerca ed esplorazione, geologia, geofisica

Dott. Costanzo Panichi, Geochimica

Dott. Franco d'Amore, Geochimica

Dott. Pietro Noto, Geochimica

Dott. Sergio Nuti, Geochimica

Ministero Dell'Industria del Commercio e dell'Artigianato

Divisione V - Impianti Enel

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Compania Mediterraneo di Prospezioni

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Milano

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I-00100 Roma

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Dir. Pasquale Nicotra

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Geological Bureau of the Mining District
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Universiteit van Amsterdam
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Delft

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Netherlands Organization for Applied
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Universitetet i Bergen
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Cracow 19, Poland

Instytut Geologiczny
Ul. Rakowiecka 4
Warsaw 12, Poland

Geophysics Institute
Universytet Warszawski
Al Zwirki: Wigury 6-8
Warsaw, Poland

Geotechnics Institute
Politechnika Wroclawska
pl. Grunwaldzki 9
Wroctaw, Poland

Polskie Towarzystwo Geofizyczne
ul Smolenskigo 16
Warsaw, Poland

Institutul Geologie
Soseana Kiseleff 55
Bucharest, Romania

Institutul De Petrol, Gaze S. Geologie Din Bucuresti
Technical Geology
Strada Traian Vina 6
Bucharest, Romania

Faculty of Geology and Geography
Universitatea Din Bucuresti
Bulevardul Gheorge Gheorgin Dej. 64
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Instituto Geologico y Minero De Espana
Dir. D. Jose Ignazio, Izaguirre Rimmel
Rios Rosas
23 Madrid 3

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Instituto Nacional de Geología
Avenida Jose Antonio 585
Facultad de Ciencias Universidad Barcelona
Barcelona

Kiruna Geofysiska Observatorium
Dir, Prof. Bengt Hultqvist
S-981 01 Kiruna

Svenska Nationalkommitten for Geodesi/och Geofysik
Box 12 108
S-10026 Stockholm 34
Sec. Dr. R. Berggren

AB Atomenergie, Studsvik Fack
S-611 01 Nyköping

Institute of Petroleum
61 New Cavendish Street
London W1M 8AR
UK

Institute of Geological Sciences
Geochemical Division
Mr. S.H.U. Bowie
Geophysical Division
W. Bullerwell
Exhibition Road, South Kensington
London SW7 2DE
UK

Belfast Geologists' Society
H. S. Black
6 Gibson Park Avenue
Belfast 6
UK

Manchester Geological and Mining Society
Manchester
UK

Shell Research Ltd.
Thornton Research Centre
P. O. Box 1
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Natural Environment Research Council
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Geochemistry and Analytical Chemistry Institute
Dir. Acad. A.P. Vinogradov
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Geochemistry Institute
Dir. L. V. Tauson
Ulitsa Favorskogo 1a
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Moscow Geological Prospecting Institute
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Moscow I.M. Gubkin Oil, Chemical and Gas Industry Institute
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Leninsky Prospekt 65
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Dean Prof. A. A. Bogdanov
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and Chemistry of the Earth's Interior
(IAVCEI) (Association Internationale de Volcanologie
et de Chimie de l'Interieur de la Terre)
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Geology and Geophysics Institute
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61001 Ljubljana
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M. Proletarstik Brigada 37
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4.2 INDIVIDUALS WITH GEOTHERMAL ENERGY INTEREST

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Abdelgawad, M.
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Abrams, M. J.
California Institute of Technology

Adams, W. H.
University of California

Adams, W. M.
University of Hawaii

Agagu, O. K.
University of Texas at Austin

Albright, James N.
University of California

Alger, T. W.
University of California at Livermore

Allen, G. W.
Pacific Gas and Electric Co.

Altseimer, John H.
University of California

Anderson, David N.
California Division of Oil and Gas

Anderson, J. Hilbert

Anderson, O. L.
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Armstrong, D. E.
University of California

Armstrong, P. E.
University of California

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5. CONCLUSIONS

The analysis and evaluations of geothermal energy information sources has yielded some interesting statistics. There are currently 655 periodical sources of geothermal information in which appear 2,606 pertinent articles per year. Of these 655 journal titles, ERDA or its commercial data base suppliers, is scanning 502. SIS has direct access, through the Franklin Institute Library in Philadelphia or through the Munich and Tokyo offices of SIS, to all 655 titles. By supplementing the ERDA coverage with the 153 titles, SIS could add approximately 515 articles per year to the ERDA-TIC data base.

In addition, by establishing and maintaining communications with those irregular sources presented in Section 4, SIS could add roughly 1,110 non-periodical citations per year to the Energy Data Base.

While the sources covered by ERDA-TIC are "high-yield" and the majority of the additional sources discovered by SIS are not, it is our contention that the excess information available is of a quality and quantity sufficient to dictate its collection and processing.

Under Phase 2 of the subject contract, SIS will present specific recommendations for the collection, processing and dissemination of the entire global collection of geothermal information.

APPENDIX A

ERDA SUBJECT SCREENING LIST

AERIAL PROSPECTING
ABUNDANCE
ABSORPTION SPECTROSCOPY
ARAGONITE
AERIAL MONITORING
ALGAE
AIR CONDITIONING
AIR POLLUTION
ALKALI METAL COMPOUNDS/THERMAL CONDUCTIVITY
ALKALI METALS
ALKALI METALS/CHEMICAL ANALYSIS
ALLOYS/CORROSION
ALLOYS/CORROSION RESISTANCE
ALUMINUM/CORROSION
ALUMINUM/GEOTHERMOMETRY
ALUMINUM ALLOYS/CORROSION
ALUMINUM OXIDES/CHEMICAL REACTION KINETICS
ALUMINUM OXIDES/PHASE STUDIES
ALUMINUM OXIDES/THERMAL EXPANSION
ALUMINUM SILICATES
ALUMINUM SILICATES/CHEMICAL REACTION KINETICS
ALUMINUM SILICATES/HYDROTHERMAL ALTERATION
AMMONIA/ABUNDANCE
AMMONIA/RECOVERY
AMMONIA COMPOUNDS
AMPHIBOLE
ANALCIME
ANAPRILINE
ANHYDRIDES/ISOTOPE RATIO
ANTIMONY
APATITES
AQUEOUS SOLUTIONS
AQUIFERS
ARAGONITE/GEOTHERMOMETRY
ARGON
ARSENIC
ARTESIAN BASINS
ATMOSPHERIC PRECIPITATION
BARIUM/ABUNDANCE
BARIUM CHLORIDES
BARIUM OXIDES
BARIUM SULFATES/SOLUBILITY
BASALT
BENTONITE/SYNTHESIS
BERYLLIUM/ABUNDANCE
BINARY CYCLES
BIOLOGICAL WASTES
BIOTITE
BORAX/RECOVERY
BORNEOLES
BORIC ACID
BORON
BRASS
BRINES

APPENDIX A

ANHYDRITE
ARAGONITE
BACTERIA
BIOLOGICAL EFFECTS
BENTONITE
BLOWOUTS
ALIGNMENT
DRILL CORES
DRILLING FLUIDS
BROMIDES
BY-PRODUCTS
CALIBRATION
CALORIMETRY
CEMENTS
DIFFUSION
CHEMICAL EXPLOSIONS
CHEMICAL COMPOSITION
CHEMICAL REACTION KINETICS
CHEMICAL REACTIONS
CHEMICAL PROPERTIES
CRYSTALLIZATION
COMPRESSED AIR
COOLING
COMPRESSION STRENGTH
CONTAMINATION
CRYSTAL GROWTH
CORROSION RESISTANCE
CORROSION PROTECTION
CORROSION EFFECTS
CORROSION
FITTING CORROSION
COST-BENEFIT ANALYSIS
CRITICAL PRESSURE
DEMINERALIZATION
DEPTH
DENSITY
DIAGENESIS
DISTILLATION
DISTRIBUTION
DEPOSITS
DIFFUSION
DEFORMATION
DEBYE TEMPERATURE
DIFFERENTIAL THERMAL ANALYSIS
CRITICAL TEMPERATURE
DEPOSITION
DISSOLUTION
ECONOMICS
EFFICIENCY
ELECTRIC MEASURING INSTRUMENTS
ELECTRICAL EQUIPMENT
ELECTRICAL PROPERTIES
ELASTICITY
ELECTROMAGNETIC RADIATION
ELEMENTS
ENGINEERING
ENERGY BALANCE
ENTHALPY

APPENDIX A

BROMIDE/ABUNDANCE
BROMIDE/RECOVERY
BRONZE/CORROSION
CALCITE
CALCIUM
CALCIUM CARBONATES
CALCIUM CHLORIDES
CALCIUM COMPOUNDS
CALCIUM FLUORIDES
CALCIUM HALIDES
CALCIUM OXIDES
CALCIUM SILICATES
CALORIMETERS
CAP ROCK/PETROLOGY
CARBON
CARBON DIOXIDE
CARBON ISOTOPES
CARBON STEELS
CARBONATES
CARBONATITES/CRYSTALLIZATION
CESIUM
CESIUM CHLORIDES/THERMAL
CESIUM IODIDES/SOLUTION HEAT
CHEMICAL ANALYSIS
CHLORATES
CHLORIDES
CHLORINE
CHLORINE COMPOUNDS
CHLORINE ISOTOPES
CHLORITE MINERALS
CHROMATES/CHEMICAL REACTION KINETICS
CLAYS
CLINOPTILOLITE
COMPOSITE MATERIALS/MATERIALS TESTING
CONVECTION
COOLANT LOOPS
COPPER
COPPER ALLOYS
COPPER SULFIDES
CORUNDUM
CRYSTALS
DESALINIZATION
DEUTERIUM
DOLOMITE
DRILL CORES
DRILLING
DRILLING FLUIDS
DRY STEAM SYSTEMS
EARTH CRUST
EARTH MANTLE
EARTHQUAKES
ELECTRIC CONDUCTIVITY
ELECTRIC POWER
ELECTRIC PROBES
ELECTRICAL SURVEYS
ELECTROLYTES
ELECTROMAGNETIC SURVEYS
ENERGY RESERVES

APPENDIX A

ENERGY TRANSFER
ENERGY YIELD
ENERGY SOURCES
EROSION
ENVIRONMENTAL EFFECTS
EXTRACTION
ENVIRONMENTAL IMPACTS
EQUILIBRIUM
ENERGY CONVERSION
FLUORIDE
FLASHING
FLUID FLOW
FLUIDS
FORECASTING
FRACTURE PROPERTIES
FLOW RATE
FRACTURES
FLOCCULATION
GAMMA RADIOGRAPHY
GAMMA SPECTROMETERS
GAS FLOW
GASEOUS WASTES
GELATION
GEOLOGICAL SURVEYS
GEOPHYSICAL
GEOMORPHOLOGY
GRANODIORITES
GRAYWACKE
HEATING
HEAT STORAGE
HYDRODYNAMICS
HYDRAULIC FRACTURING
IMPURITIES
INCLUSIONS
IN-SITU PROCESSING
ION EXCHANGE
ION SPECTROSCOPY
ISOTOPE DATING
ISOTOPE RATIO
ISOTOPES
ISOTOPIC EXCHANGE
ISOTOPE SEPARATION
LEVELS
LINNOLOGY
LITHOLOGY
MAGNETIC PROPERTIES
MAGNETOMETER SURVEYING
MAGNETIC PROPERTIES
MASS TRANSFER
MEASURING METHODS
MELTING
MATERIAL BALANCE
METAMORPHISM
MICROORGANISMS
MIXING HEAT
NATURAL GAS
NATURAL OCCURRENCE
NATURAL CONVECTION

APPENDIX A

ENVIRONMENT
EPIDOTES
EQUIPMENT
EVAPORATORS
EXPLORATION
EXPLOSIVE STIMULATION
FELDSPARS
FLUORIDES
FLUORINE
FUMAROLAS
FUMAROLIC FLUIDS
GALENA
GARNETS
GAS ANALYSIS
GAS TURBINES
GASES
GEOCHEMICAL SURVEYS
GEOCHEMISTRY
GEOLOGIC DEPOSITS
GEOLOGIC FAULTS
GEOLOGIC FISSURES
GEOLOGIC STRATA
GEOLOGY
GEOPHYSICAL SURVEYS
GEOPHYSICS
GEOPRESSURED SYSTEMS
GEOTHERMAL ENERGY
GEOTHERMAL ENERGY CONVERSION
GEOTHERMAL EXPLORATION
GEOTHERMAL FIELDS
GEOTHERMAL FLUIDS
GEOTHERMAL GRADIENTS
GEOTHERMAL POWER PLANTS
GEOTHERMAL RESOURCES
GEOTHERMAL SYSTEMS
GEOTHERMAL WELLS
GEOTHERMOMETERS
GEOTHERMOMETRY
GERMANIUM
GEYSERS
GLASS
GRANITES
GRAVIMETRY
GRAVITY SURVEYS
GREENHOUSES/HEATING
GROUND SUBSIDENCE
GROUND WATER
HALIDES
HALOGENS
HEAT EXCHANGERS
HEAT FLOW
HEAT PUMPS
HEAT TRANSFER
HELIUM
HOT SPRINGS
HOT-DRY-ROCK SYSTEMS
HOT-WATER SYSTEMS
HYDRATES

APPENDIX A

HYDROCARBONS
HYDROCHLORIC ACID
HYDROFLUORIC ACID
HYDROGEN
HYDROGEN COMPOUNDS
HYDROGEN ISOTOPES
HYDROGEN PRODUCTION
HYDROGEN SULFIDES
HYDROLOGY
HYDROTHERMAL ALTERATION
HYDROTHERMAL STAGE
HYDROTHERMAL SYSTEMS
HYDROXIDES
IGNEOUS ROCKS
ILLITE
ILMENITE
IMPERMEABLE DRY ROCK
INDUSTRIAL PLANTS
INFRARED SURVEYS
INJECTION WELLS
INORGANIC COMPOUNDS
IODIDES
IODINE
IRON
IRON COMPOUNDS
IRON ORES
IRON OXIDES
IRON SILICATES
IRON SULFIDES
KACLIN
KROV MACHINE
LAKES
LAVA
LEAD
LEAD IONS/DIFFUSION
LEAD ISOTOPES/ISOTOPE RATIO
LEAD NITRATES/ELECTRIC CONDUCTIVITY
LEAD SULFIDES
LIGNITE
LIMESTONE
LIQUID WASTES/UNDERGROUND DISPOSAL
LITHIUM
LITHIUM CHLORIDES
LITHIUM FLUORIDES
LITHIUM HALIDES
MAGMA
MAGMA SYSTEMS
MAGMATIC WATER
MAGNESIUM
MAGNESIUM CHLORIDES
MAGNESIUM COMPOUNDS
MAGNESIUM OXIDES
MAGNESIUM SILICATES
MAGNESIUM SULFATES
MAGNETIC SURVEYS
MAGNETITE
MAGNETOMETERS/DESIGN
MANGANESE

APPENDIX A

NATURAL RADIOACTIVITY

NOISE

NUCLEAR EXPLOSION

OPERATION

OXIDATION

ORE COMPOSITION

ORIGENESIS

PHASE STUDIES

PERMEABILITY

P_H VALUE

PHYSICAL PROPERTIES

PETROLEUM

PETROLOGY

PERFORMANCE

PHYSICOCHEMICAL CONDITIONS

PHOTOGRAPHY

POLLUTION

POLYMERIZATION

POROSITY

POWER DEMAND

POWER POTENTIAL

PRODUCTION

PRESSURE DEPENDENCE

PRESSURE MEASUREMENT

PUMPS

PRESSURE GRADIENTS

QUALITATIVE CHEMICAL ANALYSIS

QUANTITY RATIO

RADIOACTIVITY

RADIATION MONITORING

RECOVERY

REFRIGERATION

RECORDING SYSTEMS

RELIABILITY

RESERVES

RECRYSTALLIZATION

RADIUM ISOTOPES

RADON ISOTOPES

RADIANT HEAT TRANSFER

REACTION HEAT

REACTION ANALYSIS

SAFETY

SALINITY

SAMPLING

SCALING

SEISMIC DETECTION

SEISMIC EFFECTS

SENSITIVITY

SILICATES SYNTHESIS

SIMULATION

SITE SELECTION

SOLUTION HEAT

SOLUBILITY

SPACE HEATING

SOLVENT PROPERTIES

SULFATES

STABILITY

STIMULATION

APPENDIX A

MANGANESE OXIDES
MEASURING INSTRUMENTS
MERCURY
MERCURY SULFIDES
METALS
METAMORPHIC ROCKS
METEORIC WATER
METHANE
METHANOL
MHD GENERATORS
MICA
MICROEARTHQUAKES
MINERAL RESOURCES
MINERAL SPRINGS
MINERALIZATION
MINERALS
MOLENITE
MOLYBDENUM
MONEL
MONTMORILLONITE
MUSCOVITE
NATURAL STEAM
NICKEL
NICKEL SULFIDES
NITRATES
NITRIC ACID
NITROGEN
NOZZLES
OLIVINES
OLIVINES/HYDROTHERMAL ALTERATION
ORES
OXIDES
OXYCHLORIDES
OXYGEN
OXYGEN ISOTOPES
OXSULFIDES
PEGMATITES
PHASE TRANSFORMATIONS
PIPELINES
PIPES
FLOWSHARE PROJECT
POLYMERS
POLYMETALLIC ORES
POTASSIUM
POTASSIUM BROMIDES
POTASSIUM CARBONATES
POTASSIUM CHLORIDES
POTASSIUM COMPOUNDS
POTASSIUM HYDRIDES
POTASSIUM IODIDES
POTASSIUM NITRATES
POTASSIUM OXIDES
POTASSIUM SULFATES
POWER GENERATION
PRECIPITATION
PROSPECTING
PYRITE(S)
PYROMETERS

APPENDIX A

PYROPHYLLITE
PYROXENES
QUARTZ
QUARTZITES
RADIATION DETECTORS
RADIUM
RADON
RARE EARTHS
REMOTE SENSING
ROCK DRILLING
ROCKS
RUBIDIUM
RUBIDIUM CHLORIDES
SALT DEPOSITS
SALTS
SAMPLERS
SAND
SANDSTONES
SCANDIUM
SEAS
SEAWATER
SEDIMENTARY ROCKS
SEDIMENTS
SEISMIC NOISE/SPECTRA
SEISMIC SURVEYS
SEISMIC WAVES
SEISMOGRAPHS
SERPENTINE
SHALES
SILICATES
SILICIC ACID/POLYMERIZATION
SILICON
SILICON OXIDES
SILVER
SILVER CHLORIDES
SILVER COMPOUNDS
SILVER NITRATES
SILVER SULFIDES
SODIUM
SODIUM CARBONATES
SODIUM CHLORIDES
SODIUM COMPOUNDS
SODIUM HYDROXIDES
SODIUM IODIDES
SODIUM IONS
SODIUM NITRATES
SODIUM OXIDES
SODIUM SILICATES
SODIUM SULFATES
SODIUM SULFIDES
SOILS
SOLUTION HEAT/MEASURING INSTRUMENTS
SPECIFIC HEAT/MEASURING METHODS
SPHALERITES
STAINLESS STEELS
STEAM
STEAM CONDENSERS
STEAM MUFFLERS

APPENDIX A

STEAM SEPARATORS
STEAM TURBINES
STEELS
STRONTIUM
SUBTERRENE PENETRATORS
SULFIDES
SULFUR
SULFUR COMPOUNDS
SULFUR DIOXIDE
SULFUR ISOTOPES
SULFUR OXIDES
SULFURIC ACID
SULFUROUS ACID
SURFACE WATER
SURFACTANTS
TALC
TECTONICS
TEMPERATURE MEASUREMENT
TEMPERATURE MONITORING
THALLIUM BROMIDES
THERMAL CONDUCTIVITY
THERMAL RADIATION
THERMAL WATERS
THERMISTORS
THERMODYNAMIC CYCLES
THERMODYNAMICS
THERMOMETERS
THORIUM
TITANIUM
TITANIUM OXIDES
TITANIUM SILICATES
TRANSVAAL
TRITIUM
TUFF
TURBINES
TURBOGENERATORS
UNDERGROUND EXPLOSIONS
VERMICULITE
VOLCANIC REGIONS
VOLCANIC ROCKS
VOLCANOES
WAIRAKITE
WASTE HEAT
WATER
WATER POLLUTION
WATER RESERVOIRS
WATER RESOURCES
WATER VAPOR
WELL CASINGS
WELL DRILLING
WELL LOGGING
ZEOLITES
ZINC
ZINC HALIDES
ZINC ORES/GEOTHERMOMETRY
ZINC SULFIDES
ZIRCONIUM
ZIRCONITE

APPENDIX A

STRAINS
STRESSES
STRONTIUM ISOTOPES
SULFATES
STRATIGRAPHY
SUPERHEATERS
SUSPENSIONS
SYNTHESIS
TEMPERATURE DEPENDENCE
TEMPERATURE DISTRIBUTION
TEMPERATURE GRADIENTS
TEMPERATURE NOISE
THERMAL DIFFUSION
THERMAL EQUILIBRIUM
THERMAL EXPANSION
THERMAL STRESSES
THERMAL SHOCK
THERMAL EFFICIENCY
THERMODYNAMIC PROPERTIES
THERMOELECTRIC PROPERTIES
THERMOLUMINESCENCE
THORIUM ISOTOPE
TRANSITION TEMPERATURE
TRACER TECHNIQUES
TWO-PHASE FLOW
TWO-DIMENSIONAL CALCULATIONS
VAPORIZATION HEAT
VAPOR CONDENSATION
VAPOR PRESSURE
VARIATIONS
VELOCITY
VISCOSITY
WASTE DISPOSAL
WAVE PROPAGATION
WORKING FLUIDS