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# Jeoloji Panorama

Jeoloji Panarama'ıın bu sayısmda "Dünya Penyodüderinde» CD-tarama sayfalarında "Mineralleriı Çevre Kirlillğ.ioe Etkisi ve Yeraltısıiyu Kirlenmesi" alt başlıkları altında. "Çevre Jeolojisi** konusuna ait önemi bazı makaleler araştırıcılara sunulmaktadıı. özler/Abstracts bölümünde 1996 ve 1997 yılları içinde- yurtdışında önemli dergilerde yayınlanmış Türkiye Jeolojisi ile ilgili 4 makaleye yer' verilmektedir. Sempozyıım/Seminer/Ronferans bölümünde 1996-1997 yıllarında TMMOB Jeoloji. Mühendisleri Odası -tarafindan düzenlenen " 1 . Ulusal Kırmataş Sempozyuma *96*\ "Su ve Çevre Sempozyumu '97[w] ve "GEOENV '97 Çevre Sempozyumu"nda yer alan. konu başlıklarına yer verilmektedir. Ayrıca aynı bölümde 1998 yılında yapılacak olan. bazı sempozyumlar hakkında duyurular yer almaktadır. Yeni Yayınlar/Kitaplar btitimünde 1997 yılında Türkiye'de yayınlanmış kitap tanıtanları okurlarımıza sunulmaktadır. Türkiye'deki jeolojik araştırmalara ve okurlarımıza katkı sağlıyaeağma inandığımız "Jeoloji Panorama" sizlerin görüş ve eleştirilerinizi 'beklemektedir.

Not: "Jeoloji Panorama*'* ile İlgili görüş ve düşunoeİerenizi ve yayınlanmasını istediğiniz konuları aşağıdaki, e-mail adresine yazabilirsiniz.

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## ÇEVRE. JEOLOJİSİ

### (Mineral Kirliliği ve Yeraltı Suyu. Kirliliği)
### **(1983-1993 GEOREF CD-taraması)**

Hazırlayanlar: Engin Öncü Sümer ve Mine Sümer

Kısaltmalar:

**Tl = *Başlık***
AU = *Yazar(lar)*
OS = *Yayınlandığıyer, **cilt, sayfa***
**AB = *Yayının özeti***
**YR** = *Yayınlandığı yıl*
LA. = *Yayının yazıldığı **dil***
DE = *Yajnmn anahtar **sözcükleri***

Tl: Retention **of acetonifrile** and **acrylonitrile on** clays.
AU: Zhang-Z-Z; Sparks-D-L; Scrivner-N-C
SO: American-Geophysical-Union, 72.. (17). p. 110 YR: 1991
DE: geochemistry-; processes-; sorption-; waste-disposal; injection-; hazardous-waste; experimental-studies; clay-minerals; sheet-silicates; silicates-; aoetonitrile-; acrylonitrile-; underground-storage

Tl::: Mapping subsurface: organic compounds **noninvasively by** their **reactions with** clays.
AU: Glhoeft-G-R; King-T-V-V
SO: Open-File-Report-U.-S.-Geolo^cal-Survey. p. 104 YR: 1991
DE: orgaféc-materials; analysis-; polymerization-; Calcasieu-Paiish-LoEİsiana; USGS-; waste-disposal; pollution-; hazardous-waste; montmorillonîte-; clay-minerals; sheet-silicates; silicates-; experimental-studies; Louisiana-; Southern-U.S.; United-States; southwestern-Louisiana; ion-exchange; toluene-; aromatic-hydrocarbons; hydrocarbons-

TI: Preliminary **interpretation of** geophysical logs ami in **situ** hydrologie properties in fractured **limestone** at **Loring** Air Force Base.
AU: Dearbora-L-L; Baker-P-S; Davis-I-B
SO: 'Geotechnieal.-and-Gronnd.water-AppIica.tions.S.. p.595-622. YR: 1989
DE: Maine-; engineering-geology; waste-disposal; seepage-; hazard- ' ous-waste; well-logging; electrical-logging; resistivity-; Lirnestone-County-Maine; New-England[1] Eastern-U.S , United-States* limestone-; carbonate-rocks; interpretation-; boreholes-; migration-; Loring-Air-Force-Base; in-situ

TI: Log evaluation required for permitting of a Class I hazardous waste injection well; a case history.
AU: Lowe-D-J
SO: Geophysics - for - Minerals, - Geotechnical, - and - Groundwater - Applications. 3. p. 261-268. YR: 1989
DE: Alaska-; engineering-geology; waste-disposal; well-logging; seismic-logging; applications-; Western-U.S.; United-States; hazardous-waste; case-studies; Endicott-Field; fluid-injection; techniques -

TI: Stabilizing compacted clay against chemical attack.
AU: Broderick-Gregory-P; Daniel-David-E
SO: Joumal-of-Geotechnical-Engineering. 116. (10). p. 1549-1569 YR: 1990
AB: Large increases in the hydraulic conductivity of compacted clay haYe been shown to be caused by concentrated organic chemicals. Mechanical and chemical methods of stabilizing four different types of compacted clay against chemical attack are investigated. Mechanical stabilization using a large compactive effort (modified Proctor compaction) or application of a compressive stress >10 psi (70 kPa) is found to render a compacted clay invulnerable to attack by concentrated organic chemicals under laboratory-test conditions. Attapulgite, a clay mineral having little electrical charge, was found to be relatively unaffected (compared to more common clay minerals such as kaolinite, illite and smectite) by concentrated organic chemicals. Addition of approximately 7 percent (by weight) of lime» portland cement, or lime plus sodium silicate greatly improved the ability of compacted clay to resist attack by concentrated organic chemicals; income cases the amended soils were less permeable to concentrated organic chemicals than the unamended soils were to water-Modified journal abstract.
DE: soil-mechanics; methods-" stabilization-; waste-disposal: seepage-• soil-liners; geochemistry-; clay-; clastic-sediments; hydraulic-conductivity; clay-liners; compaction-; hazardous-waste; lime-; sodium-silicate; organic-materials; kaolinite-; clay-minerals; sheet-silicates; silicates-; illite-

TI: Hydrologie **hydrochemical characterization of** Texas **Frio** Formation used for deep-well **injection** of chemical **wastes.**

TI: Scàwermetalle in der Donau im Raum Wien; Eine Vorstodie.
Translated title: **Heavy** metals in the Danube River in the vicinity of Vienna; a previous **study.**
AU. Kralik-M; Sager-M
SO' Nachrichten-DeuCsche-Geologische-Gesellscnaft. 33. p. 53-54 YR: 1985
DE: hydrology-; surveys-; Austria-; metals-; geochemistry-; clastic-sediments; environmental-geology; pollution-* organic-materials; sediments-; Danube-River; Vienna-; Central-Europe; Europe-; Lower-Austria; hydrogeology-; heavy-metals • hydrochemistry-" mineral-composition; fluvial-environment; environment-- surface-water

TI: **Groundwater** contamination incidents in Australia; **an** initial survey.
AU: Jacobson-G; Lau-J-E
SO: Report-Buieau-of-Mineral-to 21 p.
YR: 1988
DE: Australia-; environmental-geology; pollution-; ground-water; surveys-; Australasia-; pollu.tan.ts-; sewage-;; leaching-; Perth-Basin; Gambler-Limestone; aquifers--; water-management:; urban-environment ; environment-; agriculture-; water-quality

TI: Radon emanations m. surfit[1] i al geologic: deposits of Kenosha. Racine and Waukesha counties In southeastern Wisconsin.
AU: Kochis-Nancy-S.; Orlovsky-Steven-J; Leavitt-Steven-W
SO: Abstracts-with-Frogranis^^ 21. (4). p. 18
YR: 1989
DE: Wisconsin-; environmental-geology; pollution-; Keno&ha-County-Wisconsin; Racine-County-Wisconsin; Waukesha-County-Wisconsin; Oak-Creek-Formation; Horicon-Fonnation; Midwest-; United-States' southeastern-Wisconsin; radon-; noble-gases; air-; indoor-environment; Kettle-Moraine; Lake-Plain; in-situ; .geochemistry-; mineral-composition; textures-

TÏ: Impact **of mineral exploration** on **enviranment** .and üs management
AU: Nene-S~G; Panja-S-R
SO[1]: India, Mining, Geological and Metallurgical. Institute,. .India. 8 p. YR: 1987
DE: India-; environmental-geology; conservation-; pollution-; risk-assessment; mining-; human-activity; Indian-Peninsula; Asia-

TI: **India's environment;** problems and perspectives; proceedings of **the** seminar*
AU: Radhakrishna-B-P; Ramachandran-K-K
SO: Memoir-Geological-Society-of-India. 5. 298 p.. YR: 1986
DE: symposia-;; environmental-geology; pollution-; India-; Indian-P'eninsula; Asia-; shorelines-; mining-geology; mineral-resources

TI: .Effect of **mineral** sand, **mining** on iron **solubility** in a coastal aquifer..
AU: Viswanathan-M-N
SO: Univ. Kebangsaan, Selangor, Malaysia, p., F58-F68. YR: 1987
DE: ground-water; surveys-; New-Sonth-Wales; hydrogeology-; sands-; aquifers-; Newcastle-; Australia-; Australasia-;, **rutile-;** oxides-; zircon-; nesosilicates-; orthosilicates-.; silicates-;; ilmenite-; Tomago-Sandbeds; iron-; mathematical-geology; equations-; water-quality; bacteria-; pollution-; mining-geology; prin.ci.ples-

TI: The use: of stable isotopes **to determine** the: **source of** brine in Saskatchewan potash mines.
AU: Wittnip-M-B; Kyser-T-K; Danyluk-T
SO: Canada... Special-Publication-Saskatchewan-Geologkal-Socicly. 8. p.. 159-165, YR: 1986
DE: Saskatchewan-; economic-geology; potash-;, mineral-deposits; genesis-; environment-; oxygen-, isotopes-; 0-18/0-16; hydrogen-; D/H-; deuterium-; geochemistry-" brines-; tracers-; Western-Canada; Canada-; evaporites-; chemically-precipitated-.roc.ks; leakage-anomalies; water-; aquifers-; Mannville-Group; floods-;; Devonian-; Prairie-Evaporite-Formation; Cory-Division; Allan-Division; stable-isotopes; hydrogeoJogy-; pollution-- mineral-deposits,-genesis

**TI: Massenverlagerung** durch **Rohstoffgewinnung** und ihre um-**weltgeologischen** Folgen.
Translated title: Mass displacement by mineral exploitation and its impact on the geologic environment.
AU: **Meyer-D-E**
SO: Zeitschrift-der-Deutschen-Geologischen-Gesellschaft. **137.** (1>. p. 177-193. YR: 1986
DE; conservation-.; natural-resources; energy-sources:; raw-materials; exploitation-; production-; mass-balance; dynamics-; erosion-; pollution-;, lithosphère-; atmosphere-.; hydrosphère-; +-environmental-

TI: **Interaction of Fe>Ni-meta! with** preptan.efca.ry **nebula** gases **(H2O, H2S,** CO» **CO2); physkocbemica]** aspect.
AU: Mendybaev-R-A (Mendybayev, R. A.); Kuyunko-N-S; Lavrukhina-A-K
SO: Wa&son, John. T. Meteoritical Society, 52nd meeting; abstracts. Meteoritics. 24. (4). p. 303 YR: 1989
DE: meteorites-; geochemistry-.; ordinary-chondrites; chondrites-; stony-meteorites; nickel-; metals-.; iron-; solar-nebula.; gases-; effects-; regolith-; breccia-.; clastic-rocks; mineral-assemblages:; hydrogen-**disulfide; water-;** carbon-monoxide; carbon-dioxide

TI; The role of water-rock interaction and fluid evolution In **fonning** the: **porphyry-related Slsson Brook** W-Cu-Mo deposit, New Brunswick.,
AU: Nast-Heidi-J; Williams-Jones-Anthony-E
SO: Geology-and-fhe-BulletIn-of-the-'Soci.ety-of-Economic--Geoiogisls;. 86. (2).. p.. 302-317. YR: 1991
DE: New-Brunswick; economic-geology; base-metals; mineral-deposits; genesis-; ore-forming-fluids; paragenesis-; fluid-Inclusions:; geolo,gie-themo.metry; petrography-; Maritime-Provinces; Eastern-Canada.;; Canada-; metal-ores; evolution-; porphyry-; igneous-rocks; Sisson-Brook-Deposit; copper-ores; molybdenum-ores; tungsten-ores ; Devonian-; intrusions-;! host-rocks; metagabbro-; metaigneous-rocks; metavolcanic-rocks; metasedimentary-rocks; veins-; disseminated-deposits; hiotitization-; mass-balance; leaching-; temperature-; mineral-deposits,-genesis; mineral-composition; inclusions-; electron-probe-data

TI: Meteoric **interaction** with, **magmatic discharges** in. Japan and the significance for mineralization.
AU: Hedenquist-Jeffrey-W; Aoki-Masahiro Ä
SO: Geology-CBouIder). 19, (JO), p, 1041-1044. YR: 1991
DE: Japan-; hydrogeology-; thermal-waters; volcanology-; volcanoes;-;; mineral-deposits; genesis;-; metal'-ores; hydrothennal-processes; metals-; geochemistry-; Far-East; Asia-; Kyushu-; Kirishima-; Hokkaido-; Esan-Cape; fumaroles-; hot-springs; springs-;; geothermal-systems; meteoric-water; magmas-; gases-; pH-; mineral-deposits;,-genesis; epi thermal-processes

11: Strontium **isotopes** and **wafer-rock** interaction, **of Agrokipii [M]B" stockwork** deposit in the- **Troodos Ophiolite,** Cyprus;; **a** fossi **sabseafloor** ore body.
AU: Kawahata-Hodaka; Scoft-Steven-D
SO[1]: Geochemical-Journal. .24.. (6). p. 349-356. YR: 1990

DE: Cyprus-; economic-geology; metal-ores; minerals»; sulfidess chemical-composition; strontium-; isotopes-; Sr-87/Sr-86; igneous-rocks; ultramafless ophiolite-; mineral-deposits; genesis«; processes-; hydrothermal-processes; Troodos-Ophiolite; Middle-East; Asia-; Agrokipias stockwork-deposits; geochemistry-; alkaline-earth-metals; metals-; stable-isotopes; rock«water-înterface; hydrothermal-alteration; metasomatism-; mineral-deposits,-genesis

TI* Stable isotope and fluid inclusion studies of W-Sn-Ag deposits, Silver Mine District, southeastern Missouri» tectonic control of water-rock interaction in a magmatic hydrothermal system,
AU: Shelton-Kevin-L; Lofstron>Dotty-M
SO: Univ, Mo., Dep, GeoL and Geophys.» Rolla, MO, United-States, p, 368-377. YR: 1988
DE: Missouri-; economic-geology; metal-ores; mineral-deposits; genesis-; processes-; hydrothermal-processes; fluid-inclusions; geochemistry-; isotopes-; oxygens 0-18/0-16; hydrogens D/Hs ratios-; deuterium-; Madison-County-Missouri; southeastern-Missouri; stable» isotopes; inclusionss wolframites tungstates-; silver-ores; tin-ores; tungsten-ores; Midwest-; United-States; mineral-deposits,-genesis; Silver-Mine-District; structural-controls

TI: Oxygen isotopic composition of Lower Cretaceous tholeiites and Precambrian basement rocks from the Parana Basin (Brazil); the role of water-rock interaction»
AU: Iacumin-P; Piccirillo-E-M; Longinelli-A
SO: Chemical-Geology;-fcotope-Geoscience-Seetion. 86. (3). p. 225-237. YR: 1991
DE: Brazils geochemistry-; isotopes-; oxygen-; 0-18/0-16; igneous-rocks; basalts-; tholeiites metasomatism-; processes»; hydrothermal-alteration; lava-; South-America; Parana-Basin; stable-isotopes; volcanic rocks; Lower-Cretaceous; Cretaceous»; basement-; crystalline-rocks; Precambrians whole-rock; rock-water-interface; wallrock-alteration
TI: Fluid inclusion and stable isotope evidence for interaction be* tween granites and magmatic hydrothermal fluids during forma* tion of disseminated and pipe-style mineralization at the Zaaipla* ats tin mine,
AU: Pollard»P-J; Andrew-Anita-S; Taylor-R-G
SO: Economic-Geology-and-the-Bulletin-of-the-Society-of-Economic-Geologists, 86. (1), p. 121-141. YR: 1991
DE: South-Africa; economic-geology; tin-ores; fluid-inclusions; P-T-conditions; paleosalinitys isotopes-; stable-isotopes; oxygens 0-18/0* 16; hydrogens D/H-; mineral-deposits; genesis-; ore-forming-fluids; deuteriums geochemistry-; Southern-Africa; Africa-; metal-ores; inclusions-; granites«; hydrothermal-processes; mineral-deposits,-genesis; disseminated-deposits; pipes-; intrusions-; Zaaiplaats-Mine; host-rocks; Lease-Granite; Bobbejaankop-Granite; Lebowa-Granite-Suite; Bushveld-Complex; rare-earths; metals-; hydrothermal-alteration; metasomatism-; crystallization-; mineral-composition; geologic-thermometry; water-; salt-; evaporitess chemically-precipitated« rocks; carbon-dioxide; ore-bodies; ore-grade

TI: A new kinetic approach to modeling water-rock interaction; the role of niicleation, and Ostwald ripening,
AU: Steefel-Carl-I; Van-Cappellen-Philippe
SO: Geochimica-et-Cosmochimica-Acta. 54. (10). p. 2657-2677. YR: 1990
DE: crystal-growth; sheet-silicates; clay-minerals; nucleations mineralss igneous-rocks; granites-; rock-water-interface; geochemistry-; processes»; solution-; models-; kinetics-; dissolved-materials; hydrochemistry-; mineral-assemblages; surface-areas; Ostwald-ripening; weathering-; rainfall-; kaolinite-; silicates-; halloysite-; sheet-silicates,-clay-minerals; secondary-minerals; K-feldspar; alkali-feldspar; feldspar-group; framework-silicates; quantitative-analysis; phase-equilibria; muscovite-; mica-group; gibbsite-; oxides-

TI: The impact of synthetic leachate on the hydraulic conductivity of a smeetitic till underlying a landfill near Saskatoon, Saskatchewan.
AU: Yanful-Emest-K; Haug-Moir-D; Wong-Iionel-C
SO: Canadian - Geotechnical - Journal- = - Revue - Canadienne - de - Geotechnique. 27, (4). p. 507-519, YR: 1990
AB: A water-moulded till used in the construction of a liner for a landfill was tested for low-gradient triaxial permeability over a 7-month period with six pore volumes of test leachate. At a hydraulic gradient of approximately 100 the hydraulic conductivity was 3.0X10(-9) cm/s, compared with 6.0X10(-9) cm/s for the water-permeated sample at the same gradient. The k was also evaluated at gradients of 20 and 50 during water permeation and found to be 8.0X10(-9) and 6.8X10(-9) cm/s» respectively. The slightly decrease in k with increase in gradient was attributed to a decrease in void ratio, resulting from a net increase in applied effective stress at the outflow end of the specimen. An assessment of the clay mineral composition of the till at the end of permeability testing did not show collapse of the smectite peak. Instead, the leachate appeared to have actually enhanced the smectite peak relative to the illite peak, It was concluded that the leachate did not have any detrimental impact on the till and that the hydraulic conductivity of the 0.3-m-thick liner underlying the landfill may not be expected to increase as a result of interaction with leachate.-Modified journal abstract.

TŸÏ Modeling water-rock interaction in the surfieial environment; the role of precursors, nucleation, and Ostwald ripening,
AU: Steefel-Ç-I; Van-Cappellen-Philippe; Nagy-K-L; Lasaga-A-C
SO: Chemical-Geology. 84. (1-4). p. 322-325. YR: 1990
DE; weathering-; geochemistry-; reactions-; phase-equilibria; crystal-growth; nucleations Ostwald-ripening; halloysite-; clay-minerals; sheet-silicates; silicates«; allophanes kaojinite-; rock-water-interface; thermodynamic-properties; transformations-; theoretical-studies; models-

TIi The composition of weathering solutions on granitic rocks; comparison between field observations and water-rock interaction simulations based on thermodynamic and kinetic laws,
AU: Made-B; Fritz-Bertrand
SO: Chemical-Geology. 84. (1-4), p, 100404, YR: 1990
DE: weathering-; geochemistrys solution-; thermodynamic-properties; kinetics-; aqueous-solutions; pH-; phase-equilibria; SİO2-A12O3-Na2O; rock-water-interface

TIi Platform limestone-shale basin interaction during diagenesis; an example from the Middle Ordovician of East Tennessee*
AU: Johnson-R-E; Walker-K-R; Amseth-R-W
SO: Abstracts - Society - of- Economic~Paleontologists-and-Mineralogists» -Annual-Midyear-Meeting. 1986 (Vol. 3). p. 57 YR: 1986
DE: Tennessee-; stratigraphy-; Ordovicians Middle-Ordovician; eastern-Tennessee; Southem-U,S,; United-States; clay-minerals; sheet-silicates; silicates-; limestone-; carbonate-rocks; shales clastic-rocks; diagenesis-; sedimentary-basins; lithofacies-; tectonic-controls; oxides-; pore-water; mineral-composition

TI: The characteristics of fluorine in groundwater of North China and the significance of fluorite-water interaction to fluorine transportation,
AU: Shen-Zhaoli; Zhou-Mi; Tang-Minggao
SO: uitemational-Symposium-on-Water-Rock-Interaction. 6. p. 801-804. YR: 1989
DE: China-; hydrogeologys ground-water; fluorine-; geochemistry-; surveys-; Far-East; Asia-; Northern-China; halogens*; fluorites fluorides-; halidess rock-water-interface; experimental-studies; theoretical-studies; solubility-; hydrochemistry-

TIi Thermal decompaction of rocks and its effect on permeability,

AU: Zaraisky-G-P (Zarayskiy, G. P.); Baiashov-V-N; Zonov=S-V
SO; Intemational-Symposium-on-Water-Roek-Interaction. 6. p. 797-800, YR: 1989
DE: metamorphism-; interpretation«; compaction-; igneous-rocks; granites-; properties-; elastic-properties; temperature-; permeability-; microcracks-; grain-boundaries; porosity-; percolation-; hydrothermal-conditions; thermal-effects

TI: Experimental modelling of metasomatic zoning at fluid-rock interaction.
AU: Zaraïsky-G-P (Zarayskiy, G. P.)
SO: International-Symposium-on-Water-Rock-Interaction, 6, p, 793-796. YR: 1989
DE: metasomatism-; experimental^studies; zoning«; models-; geochemistry-; rock-water-interface; interpretation-; brucite-; oxides«; numerical-models; infiltration-

TI: Experimental study about the activation and migration of gold and silver in volcanic rocks.
AU: Liang-Xiangji; Qiao-Li
SO: Interaational-Symposium-on-Water-Rock-Interaction, 6, p. 785-788. YR: 1989
DE: mineral-deposits; genesis-; interpretations ore-forming-fluids; potassium-; geochemistry-; metal-ores; sodium-; China-; economic-geology; gold-ores; silver-ores; experimental-studies; gold-; metals-; silver-; alkali-metals; volcanic-rocks; mineral=deposits,-genesis; Far-East; Asia-; cyanides-; thiosulfate-ion; bicarbonate-ion

TI: Sorptive interactions between organic micropollutants and the mineral fraction of Permo-Triassie sandstone.
AU: Williamson-D-J; Lerner-D-L; Astin-M
SO: International-Symposium'On-Water-Rock-Interaction. 6, p, 777-779, YR: 1989
DE: organic-materials; geochemistry-; pollutants-; soils-; pollution-; analysis-; processes-; sorption-; experimental-studies; continuous-flow-method; adsorption-; Permian-; Triassic-; sandstone-; clastic-rocks; sedimentary-rocks; rock-water-interface; minerals-; isotherms-; tracers-; environmental-geology; methods-

*Th* Diverse fluid phases associated with the crystallisation and alteration of lithium pegmatites at Moylisha and Stranakelly* SE Ireland.
AU: Whitworth-Martin-P; Rankin-Andrew-H
SO: Intemational-Symposium-on-Water-Rock-Interaction. 6, p. 769« 772. YR: 1989
DE: Ireland-; economic^geology; lithium-ores; mineral-deposits; genesis-; ore-forming-fluids; oxygen-; isotopes-; 0-18/0-16; lithium-; geochemistry-; pegmatite-; Western-Europe; Europe-; southeastern-Ireland; granites-; lithium-pegmatite; alkali-metals; metals-; crystallization-; Leinster-Granite; metal-ores; stable-isotopes; P-T-conditions; barren-deposits; mineral-=deposits,-genesis; Moylisha-; Stranakelly-; fluid-inclusions; inclusions-

*Til* Electron transfer mechanisms associated with the surface dis* solution and oxidation of magnetite and ilmenite,
AU: White-Art-F; Hochella-Michael-F Jr
SO: Intemational-Symposium-on-Water-Rock-Interaction, 6. p, 765-768. YR: 1989
DE: geochemistry-; processes-; solution«; ferrous-iron; electrons-; oxidation-; magnetite-; oxides-; ilmenite-; electron-transfer; mineral-water-interface; iron-; metals-; aqueous-solutions; Eh-; experimental-studies; iron-oxides; X»ray=spectra

TI: Surface structure and mineral dissolution kinetics; a Monte Carlo study.
AU: Wehrli-B
SO: International=5ymposium-on-Water-Rock-Interaction, 6. p. 751-753. YR: 1989
DE: crystal-structure; lattice-parameters; phase-equilibria; minerals-; weathering«; chemical-weathering; solution-; kinetics-; geochemistry-; Monte-Carlo-analysis; statistical-analysis; pH-; crystal-chemistry

TI» The paleohydrogeochemical conditions for the genesis of some sedimentary-reworked siderite deposits in China.
AU: Wang-Yanxin; Shen-Zhaoli
SO: International-Symposium-on-Water-Rock-Interaction, 6, p. 743-746. YR: 1989
DE: China-; economic-geology; iron-ores; mineral-deposits; genesis-; sedimentary-processes; Far-East; Asia-; siderite-; carbonates-; reworking-; metal-ores; mineral-deposits,-génesis; stratabound-deposits; geochemistry»; ore-forming-fluids; models-

TÏ: Electrostatic approach for calculating mineral solubilities and complex formation in supercritical volatilisait aqueous solutions,
AU: Walther-J-V; Schott-J
SO: International-Symposium-on-Water-Rock-Interaction. 6. p. 731-733, YR: 1989
DE: metamorphism»; theoretical-studies; thermodynamic-properties; geocheiTiistry-; properties-; solubility-; free-energy; volatiles-; electrical-properties; aqueous-solutions; P-T-conditions; dielectric-properties; ions-; rock-water-interface; complexing-

TIi Dissolution kinetics of calcite in CO2-H2O systems at 210 degrees C.
AU: Talman-5; Wiwchar-B; Gunter-W-D; Scarfe-C-M
SO: Intemational-Symposium-on-Water-Rock-Interaction, 6. p. 673-674, YR: 1989
DE; phase-equilibria; carbonates-; CO2-H2O; weathering-; minerals«; calcite-; geochemistry-; processes-; solution-; kinetics-; carbon-dioxide; aqueous-solutions; temperature-; experimental-studies; mineral-water-interface; rates-

TI: Alteration mineralogy of the Ellidaar geothermal field, Reykjavik, Iceland.
AU: Smarason-Omar-Bjarki; Tomasson-Jens; Ganda-Sugiarto
SO: International'Symposium-on-Water-Rock-Interaction. 6, p. 643-646. YR; 1989
DE: Iceland-; economic-geology; geothermal-energy; metasomatism-; processes»; hydrothermal-alteration; Western-Europe; Europe-; Reykjavik-region; Ellidaar-Field; geothermal-fields; secondary-minerals; laumontite-; zeolite-group; framework-silicates; silicates-; low-temperature; mineral-composition; genesis-; properties-; mineral-water-interface; vugs-; polyphase-processes; chabasite-; thomsonite-; mesolite-; scolesite-; stilbite-; heulandite-; epidote-; epidote-group; sorosilicates-; orthosilicates-; chlorite-; chlorite-group; sheet-silicates

TI: Kinetics and non-stoichiometry of labradorite dissolution,
AU; Sjoberg-Lennart
SO: Intemational-Symposium-on-Water-Rock-Interaction, 6. p, 639-642, YR; 1989
DE; crystal-chemistry; framework-silicates; plagioclase-; labradorite-; minerals-; phase-equilibria; interpretation-; geochemistry-; processes-; solution-; feldspar-group; silicates-; kinetics-; framework-silicates,» plagioclase; pH-; temperature-; weathering«; mineral-water-interface

*Tit* Pressure dependence of mineral-water reaction equilibrium in the low pressure range,
AU: Hiroshi-Shinohara; Koichiro-Fujimoto
SO: Intemational-Symposium-on-Water-Rock-Interaction. 6, p, 635-638. YR: 1989

DE: phase-equilibria; experimental-studies; P-T-conditions; equilibrium-; low-pressure; mineral-water-lnterface; thermodynamic-properti.es:; andaİEsîte-; nesosilicates-; orthosilicates-; silicates-; quartz-;; silica-minerals; framewock-sllicates; albite-; plagioclase«;. feldspar-group; sodium-chloride; high-temperature; minerals-;, geochemistry-

H: Rare earth element geochemistry and evolution of submarine geothermal system accompanied by Kuroko sulfide-sulfate mineralization in Japan.
AU; Shikazono-N; Matsumoto-Ryo
SO[l]: taternafional-S'ymposiiu.m-on-Water-Rock-lnteraction. 6.. p. 633.. YR: 1989
DE: Japan-; economic-geology; polymetallic-ores; mineral-deposits; genesis-; hydrothermal-processes; rare-earths; geochemistry-:; euiopium-; cerium-; trace-elements; metals-.; geothermal-systems; knrofcotype; sulßdes-; sulfates.-; Far-East; Asia-; anomalies-; host-rocks; volcanic-rocks; basalts-; Eh-; marine-environment; environment-; metal-ores ; mineral-deposits»-genesi.s

TI: Mixing diagrams of hydrothermal solutions and their applications to some hydrothermal ore deposits in Japan.
AU: Shifou.e-Yasuhi.ro
SO[l]: MSemational-Siymposium-on-Wafer-Rock-Inteffaction, 6, p. 625-628.. YR: 1989
DE: Japan-; economic-geology; tungsten-ores; mineral-deposits; genesis-; hydrothermal-processes; fluid-inclusions; geochemistry-; Far-East; .Asia-; metal-ores; mixing-; graphic-methods; temperature-;, chloride-ion; ore-fomilng-fluids; inclusions-;, Fejigatani-Deposit; Kiwada-Deposit; Kaneuchi-Deposit; Ohtani-Deposit; Yaguki-Depos.lt; mineral-deposits,~genesis; methods-; paleosalinity-

TI: A comparison of pyrite oxidation rates in batch, mixed How, and plug flow reactors.
AU: Rimstidt-J-Donald;Newcomb-Wiüiam-D
SO: Ihfeernational-Symposium-on-Water-Rock-Interaction. 6. p[l].. 581 - .584. YR: 1989
DE: geochemistry-; processes-; oxidation-; iron-; pyrite-;; sulfides-; experimental-studies; methods-; reactions-; ferric-iron; metals-; mineral-water-interface

TI: The effect of iron and magnesium on the stability of illite and smectite.
AU: Raz-Urs; Peters-Tjeck
SO: fotemation.al-Sym.posIu.m-on.-Water-R.ock-In.tera.ction.. 6. p. 569-572.. YR: 1989
DE: iron-; geochemistry-; clay-minerals; magnesium-; clay-mineralogy; experimenlal.-stu.dies; stability-; phase-equilibria; sheet-silicates; minerals-; metals;-; .alkaline-earth-metals; illite-; silicates-; smectite-; fenic-iron; ferrous-iron; the.rmodynami.c-prapeirti.es; muscovite~; mica-group; eeladonite-; pyrophyllitte-
TI: Quench fractionation in Columbia River Basalt and implications for basalt-ground water interaction..
AU: Hoover-James-D; Murphy-William-M
SO: Speci.aJ.-Paper-Geological-Society-of-Am.erica... 239.. p. 307-310., YR: 1989
DE: Columbia-Plateau; petrology-; Igneous-rocks:; basalts-:; chemical-fractionation; Columbia-River-Basalt; Grande-Ronde-Basalt; Cohassett-Basalt; Western-U.S.; United-States; North-America,; volcanic-rocks; groimd-water; composition-;; glasses-; mineral-composition; differentiation-; crystallization-; major-elements; chemical-composition; cooling-

TI: Interaction between surface water and basalt flows of the Grand Ronde Formation,, Columbia River basalt group; secondary hydroexplosion structures.
AU: Ctool-L-L; Cmnmings-M-L
SO: B^lletin-New-Mexico-Bureau-of-Mines-and-Mineral-Resources. 131. p. 209. YR: 1989
DE: Washington-; stratigraphy-; Miocene-; Idaho-; petrology-, igneous-rocks; Giande-Ronde-Basalt; Columbia-River-BasaJt; surface-water, basalts-; volcanic-rocks, phreatomagmatisrn-; northeastemnQregon; Grande-Ronde-RIver; Wenaha-River; lava-' textures-; lava-flows; volcanic-breccia; breccia-; clastic-rocks; mixing-" oxidation-, Mossbauer-spectra; shear-; fractures-; vaporization-; joints-; patterns-, magnetite-" oxides-; Neogene-, Tertiary-; Paclic-Coast, Western-U.S." United-States

TI: Calculating the theoretical change in the mode of a rock by simple and ideal water-rock interaction.
AU: TsuzuJd-Yoshiro
SO: Geochemical-JournaJ. 23. (3). p. 117-128. YR. 1989
DE: metasomatism-; processes-; hydrotnermal-alteraiion; phase-equilibria- minerals-; theoretical-studies- rock-water-interface; mineral-composition; dissolved-materials; reactions-; precipitation-, physicochemlcal-properties; matrix-; geothermal-gradient; temperature-; models-; mineral-assemblages, veins-; wallrock-alteration; petrology-; glbbsite-" oxides-; kaolini te-; clay-minerals, sheet-silicates; silicates-; quartz-, silica-minerals, framework-silicates, solubility-, equations-; qualitative-analysis

TI; The effect of temperature gradient on the interaction between geo thermal water and rock; an approach by numerical simulation.
AU: Takeno-Naoto
SO: Mining-Geology. 39. (5(217)),. p. 295-304. YR: 1989
DE: metasomatism-; processes-; hydrothermal-alteration; mineral-deposits; genesis-; hydrothermal-processes; igneous-rocks; pyroclastics-; tuff-; alteration-; nraneral-deposits,-genesis; geochemistry-; experimental-studies ; volcanic-rocks

TI: Epidosites; implications for water/rock interaction in submarine hydrothermal systems,
AU: Bettison-Lori-A; Schiffman-Peter; Smith-Brian-M
SO: Anonymous. AGU 1987 fall meeting. Eos,,TransactIons,(-American-Geopfcysical-Unlon.. 68.. (44). p. 1546 YR: 1987
DE: metasomatic-rocks; mineral-assemblages; interprétation-; epidosites epid.otlza.tion-; hydfolhermal-alteratlon.; metasomatism-:; hydrothernial-conditions; salinity-; chemical-composition.; oxygen-; isotopes-; O-I8/O-16; stable-isotopes; vents-

TI: Tbermobarometry of hydrothermal alteration in the Los Azufres geothermal system (Michoacan^ Mexico); significance of Hold-inclusion data.
AU: Catheïineau-M; Izquierdo-G; Nieva-D
SO: Chemical-Geology. 76.. (3-4). p. 229-238. YR: 1989
DE: Mexico-; economic-geology; geothermal-energy; metasomatism-; processes-; hydrothermal-alteration:; fluid-inclusions ; P-T-conditions ; geologic-thermometry; Michoacan-; Los-Azufres; reservoir-properties; geothermal-fields; geologic-barometry; inclusions-; mineral-inclusions ; hydrothermal-conditions.

TI: Kinetics of the interaction, of plagioclase with a water-salt fluid at SO» degrees C and! Pfl 1 khar.
AU: KoteF-nikov-A-R; Shchekina-T-I
SO[l]: Geochemi.stry-Internati.onal. 24. (4), p. 13-22. YR: 1987
DE: geochemistry-; processes-; ion-exchange; phase-eqinlibria; framework-silicates; plagioclase-:; P-T-conditions; feldspar-group; silicates-;, minerals-; framework-silicates,-plagioclase; kinetics;-.; chemical-composition

TI: Geochemistry of groundwater-lake interaction in a carbonate terrain; application to geochemical exploration.

AU: **Welhan-J-A;** MIllar-W-D; Gate-J-E
SO: **Canadian-Geophysical-UnionrJoint-Annual-Meeting,** 13. p.. A133 YR: 1988
DE: Newfoundland-; geochemistry-; water-; **ground-water;** lakes.-; lacustrine-features; carbonate-rocks; saturation-; ealeite-; carbonates-; runoff-; mathematical-models; models-; **FHREEQE-;** data-processing; mixing-; **carbon-dioxide; Danid's-Harbour;** western-Newfoundland; Eastern-Canada; Canada-; discharge-; zinc-; metals-; mineral-exploration; geochemical'-methods; zinc-ares; metal-ores

Tl.: **Geochemical** modelling **of** water-rock **interaction** in deep **groondwater.**
**AU:** Pitkanem-P; **Pirhonen-V;** Snellman-M
SO: Water-Science-and-Technology.. 20. (3).. p. 245-246. YR: 198®
DE: Finland-; hydrogeology-; ground-water; geochemistry-; models-; surveys-; Scandinavia-; Western-Europe:; Europe-; Lavia-; rock-water-interface; PHREEQE-; EQ-3/6; chemical-composition.; mineral-composition.; intrusions-; equilibrium-; igneous-rocks

TI: Partition between trace and major elements during **mineral** dissolution.
AU: Michard-Gil
• SO: **Intemational-Symposium-on-Water-Rock-Interaction.** 5. p.. **386-**389. YR: 1986
DE: crystal-chemistry; sulfates-; partitioning-:; trace-elements.; major-elements; solution-; partition-coefficients; precipitation-; **solubility-**

TI: Chemical and isotopic systematic« **of -oceanic hot** springs,.
AU: Bowers-Teiesa-Suter 1
SO: totemational-Symposium-on~Water-Rock-In.tera.ction. 5. p. 76-78,. YR: 1986
DE: Pacific-Ocean; oeeano.gra.phy-; ocean-floors; rock-water-interfàce; sea-water; basalts-; volcanic-rocks; hot-springs; springs-; oxygen-; - hydrogen-; isotopes-; O-18/Q-16; stable-isotopes; D/H-; deuterium-; sulfur-; S-34/S-32; mid-ocean-ridge-basalts; mineral-composition; East-Pacific-Rise; thermal-waters ; hydrogeology-

TI: **Groundwater/rock interaction;** 'water **interaction with** clinker from Powder River basin.
AU: Herring-James-R; Wilson-Stephen-A
SO*: American-Geophysical-Union. 6«. (44). p.. 1291 YR: 1987
DE: United-States; hydrogeology-; ground-water; water-:; elin.ke.r-; mineral-composition; composition-; **temperature-; aquifers-;** water-quality; Western-U.S.; Southwestern-U.S.; experimental-studies; hydrochemistry-; geochemistry-

TI: (18)O/(I6)O evidence for fluid-rock interaction in **the** upper **mantle;** data from **ultramafic** nodules **and K-rich volcanic rocks in** Italy.
AU: Taylor-Hugh-P Jr; Gregory-Robert-T; Tun-Bruno
SO: Mathematical-and-Physical-Sciences. 218. p. 1-37. YR: 1987
DE: Italy-; geochemistry-; isotopes-; oxygen-; 0-18/016; magmas-; differentiation.-; fractional-crystallization; igneous-rocks; volcanic-rocks; Southern-Europe; Europe-; ultramafic-composition; stable-isotopes; **rock-water-interface; upper-mantle;** mantle-:; alkali-basalts; basalts-; kimberiite-; ultramafics-; mineral-composition; concretions--:; secondary-structures; sedimentary-structures; open-systems; **Alban-**Hills; Mount-Vulsini

TI: Interaction **of organic adds** with carbonate mimera! surfaces in **seawater and** related, solutions; I,, Fatty .acid adsorption..
AU: Zullig-James-J; Morse-John-W
SO: Geochimica-et-Cosmochimica-Acta. 52., (6). p.. 1667-1678, YR: 1988
DE: sea-water; geochemistry-; organic-materials; fatty-acids; processes-; adsorption-; diagenesis-; carbonates-; aqueous-solutions; solubility-; calcite-; aragonite-; dolomite-; magnesite-; desorption-; thermodynamic-pcopeities

TI: A study **of** lake-ground water Interaction, in west-central Minnesota; Mineral Lake.
AU': **McArdell-Biian-W;** Leete-Jeanette-H; Nohring-Eric
SO: American-Geophysical-Uûion. 68, (44).. p. 1274 YR: 1987
DE: Minnesota-; hydrogeology-; hydrology-:; Ottertail-; Midwest-; United-States; lakes.-:; ground-water; surveys-; 'west-central-Minnesota; Mineral-Lake; Ottertail-County; legislation-; changes-of-level; water-management; **laboratory-studies**

TI: The interaction of water **with day mineral surfaces.**
AU: **Newman-A-C-D**
SO': **Monograph-Mineralogical-Society.** 6. p.. 237-274, YR: 1987
DE: clay-mineralogy; experimental-studies; water-:; spectra-; EPR-spectra; isotherms-; ions-; vermiculite-; clay-minerals; sheet-silicates; silicates-; montmorillonite»; beid.eii.te-; smectite-; sepiolite-; palygorskite-; mixed-layer-minerals; sorption-; halloysite-; thermodynamic-properties; infrared-spectra; expansive-materials; mathematical-models' models-

TI: Interaction of radium with freshwater sediments and! their mineral components; III» Muscovite and feldspar.
AU: Benes-P; Borovec-Z; Strejc-P
SO: Joumal-of-Radioanalytical-and-Nuclear-Chemistry. 90. (1). p. 91-103, YR: 1986
DE: radium-; isotopes-; Ra-224; sediments-; geochemistry-; fresh-water-environment; adsorption-; desorption-; radioactive-tracers; muscovite-; mica-group; sheet-silicates; silicates-:; feldspar-group; framework-silicates; albite-; plagioclase-; migration-; composition-; mineral-composition

TI: Mineral **alteration** and fluids **characterization of Miaravalies** geothermal field, Costa Rica.
AU: Pietro-Viale; **Corrales-Rodrigo; Maineri-**Alfredo; **Mayra-Corella;** Vaca-lLeoneî
SO: mternational-Symposium-on-Water-Rock-Interaction. 5. p. 667-670. YR: 1986
DE: Costa-Rica; hydrogeology-; thermal-waters; Central-America; geothermal-fieids; Miaravalles-; mineral-assemblages; hydrothermal-aïteration; metasomatism-; northestern-Costa-Rica; aquifers-; chemical-composition ; rock-water-interface

**TI: Experimental** study of **the** interaction between carbonate rocks and **F-bearing** solutions **under a flow** condition at elevated, pressure and temperatures..
AU: Ylsham-Zeng; Juying-Wei; Dingguo-Xiong
SO: Intemational-Symposi'um-on-Water-Rock-In'teraction. 5.. p.. 656-659. YR: 1.986
DE: China-; **economic-geology;** min.erai-resou.rces; P-T-conditions; carbonate-rocks; fluorine-:; rock-water-interface; chemical-composition; thennodynamic-properâes; mineral-assemblages; hy-**drothennal-alteiation;** metasomatism-; hydrothermal-processes; min-eral-depositts,-genesis; Far-East; Asia-; Inner-Mongolia; Northern-China

**TI:** The: **geochemical** environment **of formation of** the **unconformity uranium** deposits **of northern Australia.**
AU: Vidale-Buden-Rosemary
SO: btemational-Symposium-on-Water-Rock-Interaction. 5.. p. .597-600, YR: 1986

DE: Northern-Territory; economic-geology; uranium-ores; metal-ores; mineral-deposits,-gene&is; unconfoimities-; chemical-composition; .metasedimentacy-rocks; host-rocks; schists-; .mineral-assemblages; ore-fccmmg-fiuids; Nabarlek-; Jahiluka-; Ranger-; Koongaira-; Australia-; Au.stralas.ia-

TI: Hydrothermal alteration in wells **LA-3,** LA-4 and **LÀ-6 Aluto-Langano geotberma]** field. Ethiopia.
AU: Teklemariam-Meseret
SO: intemalIond-SymposIuni-on-Water-Rock-Interactîon.. 5. p. 565-568. YR: 1986
DE: Ethiopia-; petrology-; metasomatism-; geotherraal-fields; East-Africa; Africa-; wells-;; hydrotheimal-alteration; **Aluto-; Langano-;** permeability-; high-temperature; clay-minerals; sheet-silicates; silicates-; carbon-dioxide; mineral-assemblages; basalts-; volcanic-rocks; geologic-thermometry

**TI:** Tie **chemical characteristics.of the hydrothermal fluids at the Krafla and Reykjanes systems,** as inferred from **the** coexisting **mineralogy.**
AU : Sveinbjomsdottir- Arny-E
SO: fatematlonal-Symposiuni-on-Water-Rock-ln.teractlon. 5. p. **546-**549. YR: 1986
DE: Iceland-; hydrogeology-; thermal-waters; Western-Europe; Europe-; Kralla-; hydrothermal-alteration.; metasomatism-;, geothermal-systems; mineral-assemblages; chemical-composition; smectite-;; clay-minerals; sheet-silicates; silicates-; chlorite-; chlorite-gronp; amphibole-graup; chain-silicates; epidote-; epidote-gioup; sorosilicates-; orthosilicates-; Reykjanes-Pemnsula

TI: Acid **hydrothermal** alteration occurrences in Philippine **geo**thermal areas.
AU: Reyes-Agnes-G
SO: international-Symposium-on-Water-Rocfc-Interaction. 5. p. **461-**465. YR: 1986
DE: Philippine-Islands; petrology-; metasomatism-; hydrothermal-alteration.; Far-East; Asia-; **mineral-assemblages;** acids-; geothermal-fields; pH-; fluid-inclusions; chemscal-composition,; Palimpinon-; **hot**springs; springs-;, fumaroles-; SEM-data; petrography-; rock-water-interface; oxid.ati.on-; hydrolysis-

TI: Study on experiments **of iron-bearing** ore solution formed *bj* Interaction of potassium-sodium halogenide water with rocks.
AU: Liang-Xiangji
SO: Memational-Symposium-on-Water-Rock-toecaction, 5. p. **.368-371.** YR: 1986
DE: China-; economic-geology; iron-ores; experimental-studies; rock-water-interface; high-temperature,; high-pce.ss.urc; Far-East; Asia-; solution-; metal-ores; potassium-; sodium-; geochemistry-; **hydrother**rııal-processes; ore-fonning-fluid^; inmeial-depositSrgenesis; diabase-

TI: Moderate: **temperature zeolitic** alteration in a **cooling pyrodas**tic deposit..
AU: Levy-Scnon-S; O*-Neil-James-R
SO: Internat!onal-Symposium-on-Water-Rock-mteraction. 5. p. 361-364. YR: 1986
DE: Nevada-; petrology-; metasomatism-; Nye-; Topopah-Spring-Mernber; Paintbrush-Tuff; pyrodastics-; volcanic-rocks; Yucca-Mountain; southwestern-Nevada; Western-U.S.; United-States; zeolite-group; framework-silicates; silicates-; alteration-; temperature-; cooling-; zeolitization-; oxygen-; isotopes-; O-18/Ö-16; stable-isotopes; smectite-; clay-minerals; sheet-silicates; Nye-County; vitrophyre-; mineral-assemblages; hydrothermal-alteration; Miocene-; Neogene-; Tertiary-

TI: The distribution of alteration phases during basalt-**groundwater** interactions; preliminary insights from flow-through experiments.
AU: Lane-D-L; Rawson-S-A; Allen-C-C; Bumell-J-R
SO: Intemational-Symposium-on-Water-Rock-Interaction. 5. p. 349-452. YR: 1986
DE: Washington-; engineering-geology; waste-disposal; rock-water-interface; basalts-; volcanic-rocks; ground-water; Pacific-Coast; Western-U.S.; United-States; repository-; radioactive-waste; construction-; experimental-studies; alteration-; mineral-assemblages; movement-

Tl: Alteration mineralogy and ground water composition in the East **Bull** Lake anorthosite-gabbro complex, NE Ontario» Canada.
AU: Kamineni-D-C; Gascoyne-M
SO: Ihtemational-Symposium-on-Water-Rock-Interaction. 5. p. 310-312. YR: 1986
DE: Canadian-Shield; hydrogeology-; ground-water; **East-Bull-Lake;** anorthosite-; gabbros-; North-America.; platonic-rocks; alteration-; rock-water-interface; epidote-; epidote-group; sorosilicates-; oithosiHcates-; silicates-; amphibole-group; chain-silicates; prchnite-; sheet-silicates; **pumpellyite-;** zeolite-group; framework-silicates; P-T-ooonditions; clay-minerals; chemical-composition; hydrogen-; oxygen-; metamorphism- ; mineral-assemblages; k>w-grade-.metamorphism; isotopes-; D/H-; stable-isotopes; O-18/O-16

TI: **Hydrothermal** alteration at Mururoa **Atoll (French** Polynesia),
AU: Ducioignon-P" Meunier-A; Beaufort-D; Gachon-A; Buigues-D
SO: International-Symposium-on-Water-Rock-Interaction. 5. p. 175-178. YR: 1986
DE: Polynesia-; petrology-; metasomatism-; French-Polynesia; Mururoa-Atoll; Tuamotu-Islands; basalts-- volcanic-rocks; hydrothermal-alteration; secondary-minerals; physicochemical-properties; election-probe-data* paragenesis-; trachytes-; mineral-assemblages; olivine-; olivine-group; nesosilicates-; orthosilicates-- silicates-- ankerite-; carbonates-; calcite-; nontronite-; clay-minerals; sheet-silicates

TI: Tourmalines in hydrothermal minerai assemblages from liprderello geothermal field (Italy).
AU: Cavarretta-Giuseppe; **Puxeddu-Mariano**
SO: Intemational-Symposium-on-Water-Rock-Interaction. 5. p. **10.8-**111. YR: 1986
DE: Italy-; petrology-; metamorphism-; Larderello-; Southern-EurGnL[a]-Europe-" mineral-assemblages; tourmaline-; ring-silicates; silicates-, geothermal-fields- authigenic-minerals • contact-metaeiorphism, emplacement-; San-Pompeo-Well

TI: A nodal domain intégration model of two-dimensional heat and soil-water flow coupled by soil-water phase change.
AU: Hromadka-Ted
SO: International - **Journal** - of - Rock. - Mechanics - and - Mining - Sciences -and-Cteomechanics-Abstracts.. 87-9,. 124 p. YR: 1.987
AB: A model of phase change in freezing and thawing soils is developed for cold regions engineering problems which require two-dimensional analysis of the thermal regime of soils. These problems include complex boundary conditions such as atmosphere/gra^nd surface thermal interaction and snowpack insulation. Other concerns include complex soil conditions such as the presence of a peaty muskeg or tundra-like soil which may provide thermal insulation for underlying muskeg or tundra-like soil which may provide thermal insulation for underlying ice-rich mineral soil. A simple two-dimensional model is developed for use in cold regions engineering studies. A Fortran computer program is available which accommodates two-dimensional heat and soil-water flow models as coupled by an isothermal phase change model. The program can be used to analyze two-dimensional freezing-thawing problems which have-sufficient known information to supply the necessary modeling parameters, boundary conditions, and initial conditions.—Modified journal abstract.