Instituto Tecnológico
GeoMinero de España

INFORME FINAL DEL PROYECTO PARA LA ELABORACION DE UN MANUAL DE ACIDIFICACION, MANTENIMIENTO Y REHABILITACION DE POZOS DE AGUA.

B I B L I O G R A F I A

Diciembre, 1.988

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DEPARTAMENTO DE INGENIERIA QUIMICA Y COMBUSTIBLES

ELABORACION DE UN MANUAL DE ACIDIFICACION PARA EL MANTENIMIENTO Y REHABILITACION DE POZOS DE AGUA

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MADRID
DICIEMBRE 1.988

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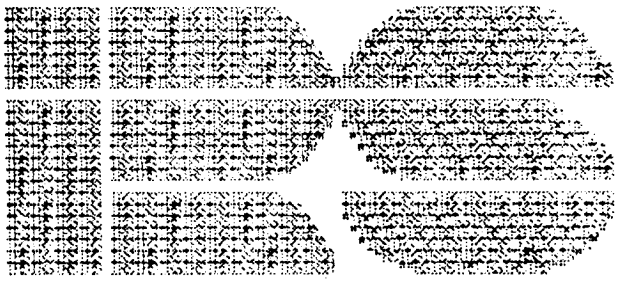
Avda Ramiro de Maeztu s/n
MADRID 28040
Spain



USER 003472 DATE:06/16/88 TIME:10:36:21

SEARCH HISTORY

SET	ITEMS	DESCRIPTION
1	104	WATER(W)WELL
2	489	ACIDIFICATION
3	2289	STIMULATION
4	0	1*2
5	1	1*3
6	0	WATER}I{_(W)
7	1020	WATER(W)WELL?
8	23523	MAINTENANCE
9	28	7*8
10	0	2*7
11	2	7*3
12	447	TECHNOLOGIE
13	64670	TECHNOLOGY
14	16	13*7

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NO.	FILE	ACCN/SET	FMT	ITEM-RANGE
1	4	9	4	1-28
2	4	14	4	1-16

SRCH TIME 5.87 PRINT COUNT 44 DESCS.: 13

8802-17425 Compendex 88017912
PUBLIC WORKS GOES HIGH TECH
Darnell, Tim
American City & County, Atlanta, GA, USA
Am City Cty v 102 n 10 Oct 1987 7p between p 50 and 61 Coden: ACCOD
ISSN: 0149-337X In ENGLISH
Doc. Type: JOURNAL ARTICLE Treatment Des.: Applications Economic/Cost Data/Market SurveyMANAGEMENT ASPECTS

In the often complicated and complex world of public works, technology and new forms of automation are making life easier for engineers and managers. A supervisory control and data acquisition (SCADA) system, monitors numerous plant operations. The system also can turn wells on and off after a pump's water level reaches a specified point. Cities are employing computers and other forms of automation to reduce time and manpower hours. These applications range from monitoring water- and wastewater-treatment plants to hand-held field computers, computerized utility billings, financial and budgetary programs, fleet-maintenance and pavement-management systems, and three-dimensional mapping programs

Card-A-Lert Codes: 403 (Urban and Regional Planning and Development) / 723 (Computer Software and Data Handling) / 445 (Water Treatment, General and Industrial) / 911 (Cost and Value Engineering; Industrial Economics) / 444 (Water Resources) / 618 (Compressors and Pumps) /
Controlled Terms: (*PUBLIC WORKS -- *Computer Applications) / (MUNICIPAL ENGINEERING -- Automation) / (WATER TREATMENT PLANTS -- Monitoring) / BUDGET CONTROL / MANAGEMENT / (WATER WELLS -- Pumps) /
Uncontrolled Terms: COMPUTERIZED TECHNIQUES / PACKAGED GENERIC SYSTEMS / COMPUTERIZED PUMP ROTATING SYSTEM / WELL PUMPS

8712-130084 Compendex 87126683
WATER SUPPLY SYSTEM REHABILITATION
Walski, Thomas M.
Water Supply Syst Rehabil Publ by ASCE, New York, NY, USA, 1987 328p
In ENGLISH
Doc. Type: MONOGRAPH REVIEW Treatment Des.: ApplicationsGENERAL REVIEWMANAGEMENT ASPECTS

This report was prepared to assist practicing engineers meet the challenge of rehabilitating old drinking water systems, many of which have been in existence for over 100 years and are deteriorating for a variety of reasons. Water systems inventory is covered first. Problems associated with different types of facilities are discussed separately including rehabilitation and maintenance of wells, water supply dams and reservoirs, water pumping station rehabilitation, water treatment plant rehabilitation, water main breaks, distribution system testing and rehabilitation techniques, piping system cleaning, and rehabilitation and maintenance of steel water storage tanks. Special sections are included on preventive maintenance and financing rehabilitation projects. Refs

Card-A-Lert Codes: 446 (Waterworks) / 444 (Water Resources) / 445 (Water Treatment, General and Industrial) / 441 (Dams and Reservoirs; Hydro Development) / 618 (Compressors and Pumps) / 619 (Pipes, Tanks and Accessories; Plant Engineering Generally) /
Controlled Terms: (*WATER SUPPLY -- *Management) / (WATER DISTRIBUTION SYSTEMS -- Maintenance) / WATER WELLS / DAMS / WATER TREATMENT PLANTS / WATER TANKS AND TOWERS /
Uncontrolled Terms: REHABILITATION / PREVENTIVE MAINTENANCE / FINANCING

8711-118712 Compendex 87122957
Sanitary Education and Community Participation in Rural Zones: The Case of Ivory Coast
EDUCATION SANITAIRE ET PARTICIPATION COMMUNAUTAIRE EN ZONES RURALES: CAS DE LA COTE D'IVOIRE
Seri, G.
Water Supply v 3 n 4 1985, Decade - Half Way, Part of the Proc of the Reg Conf of the IWSA, Libreville, Gabon, Jun 10-15 1985 p 235-244 Coden: WASUD ISSN: 0735-1917 In FRENCH
ISBN: 0-08-034142-X Doc. Type: JOURNAL ARTICLE Treatment Des.: ApplicationsGENERAL REVIEW

Since 1973, the Ivory Coast has implemented a national rural waterworks program which has permitted to ensure water supply to almost 78% of the rural population by 1984. Since 1982, a program has been put into effect to educate the population in the maintenance of waterworks, and in ensuring sanitary conditions. This program, based on rural health sectors, involves 2300 villages at present. The first phase of the program is concerned with the water-health relationship, while the second phase involves the training of the villagers in pump mechanics. (Edited author abstract) In French

Card-A-Lert Codes: 446 (Waterworks) / 452 (Sewage and Industrial Wastes Treatment) / 461 (Biotechnology) / 912 (Industrial Engineering and Management) / 618 (Compressors and Pumps) / 444 (Water Resources) /
Controlled Terms: (*WATER SUPPLY -- *Ivory Coast) / (SANITARY ENGINEERING -- Education) / (HEALTH CARE -- Education) / WELL PUMPS / WATER WELLS /
Uncontrolled Terms: SANITARY EDUCATION

8711-118710 Compendex 87122954
RURAL WATER SUPPLY DEVELOPMENT IN INDIA - A SUCCESS STORY
Desai, M. K.
Water Supply v 3 n 4 1985, Decade - Half Way, Part of the Proc of the Reg Conf of the IWSA, Libreville, Gabon, Jun 10-15 1985 p 191-199
Coden: WASUD ISSN: 0735-1917 In ENGLISH
ISBN: 0-08-034142-X Doc. Type: JOURNAL ARTICLE Treatment Des.: GENERAL REVIEW

The rural population in India did not have easy access to an adequate supply of safe drinking water prior to 1951. Since then, the Government concentrated on measures for the exploration and exploitation of groundwater resources as a reliable solution to this problem. The joint efforts of Government, UNICEF and Industry culminated in the development of the prestigious India Mark II Deep Well Hand Pumps which are extensively installed in rural India and have proved to be a total success. The development of an efficient maintenance organization and educational campaigns for community participation contributed in no small measure to the success. India fully supports the aims of the UN Decade and expects to achieve 100% provision of secure drinking water supply to its rural population by the end of the Decade. (Edited author abstract)

Card-A-Lert Codes: 446 (Waterworks) / 444 (Water Resources) / 618 (Compressors and Pumps) /
Controlled Terms: (*WATER SUPPLY -- *India) / (WATER RESOURCES -- Groundwater) / (WELL PUMPS -- India) / (WATER WELLS -- India) /
Uncontrolled Terms: RURAL WATER SUPPLY / DRINKING WATER / INDIA MARK II DEEP WELL HAND PUMPS / UN WATER DECADE / VILLAGES

8711-118704 Compendex 87122953
Maintenance of the Means for Pumping Out Water in Rural Waterworks. Experience in Africa South of the Sahara
ENTRETIEN DES MOYENS D'EXHAURE EN HYDRAULIQUE VILLAGEOISE. EXPERIENCES EN AFRIQUE AU SUD DU SAHARA
Benamour, A.
ARLAB, Nanterre, Fr
Water Supply v 3 n 4 1985, Decade - Half Way, Part of the Proc of the Reg Conf of the IWSA, Libreville, Gabon, Jun 10-15 1985 p 181-190 Coden: WASUD ISSN: 0735-1917 In FRENCH
ISBN: 0-08-034142-X Doc. Type: JOURNAL ARTICLE Treatment Des.: Applications Economic/Cost Data/Market SurveyGENERAL REVIEW

Rural waterworks consist mostly of small-diameter boreholes equipped with a manual pump for serving communities of 300-500 persons. The maintenance of these installations is often unsatisfactory and they are not fully used. Different experiences in Burkina Faso, Ivory Coast, Togo, Gabon and Central African Republic are briefly presented. Several projects suggesting solutions to these problems have been put into operation. It is suggested that the major responsibility for the maintenance of wells should be transferred to the village authorities. (Edited author abstract) In French

Card-A-Lert Codes: 446 (Waterworks) / 444 (Water Resources) / 618 (Compressors and Pumps) /
Controlled Terms: (*WATER SUPPLY -- *Africa) / (WATER WELLS -- Maintenance) / (WELL PUMPS -- Maintenance) /
Uncontrolled Terms: IVORY COAST / TOGO / GABON / CENTRAL AFRICAN REPUBLIC / BURKINA FASO

8711-118703 Compendex 87122952
Definition and Putting into Operation of Rural Water Supply Programs - Situation in CIEH Member Countries
DEFINITION ET MISE EN OEUVRE DES PROGRAMMES D'HYDRAULIQUE VILLAGEOISE - SITUATION DANS LES PAYS-MEMBRES DU CIEH
Diluca, C.
Water Supply v 3 n 4 1985, Decade - Half Way, Part of the Proc of the Reg Conf of the IWSA, Libreville, Gabon, Jun 10-15 1985 p 165-180 Coden: WASUD ISSN: 0735-1917 In FRENCH Refs: 122 refs. In French
ISBN: 0-08-034142-X Doc. Type: JOURNAL ARTICLE Treatment Des.: ApplicationsGENERAL REVIEWNUMERIC/STATISTICAL

The Water Decade has fixed the target of 100,000 water wells to be drilled between 1985 and 1990. Since 1980, midway through the decade, about 30,000 wells have been put into operation in the West African region. The planning of the construction of rural water supply systems, their costs, financing, operation, management, and maintenance is described. Data on the wells drilled and pumps installed in particular countries are given

Card-A-Lert Codes: 446 (Waterworks) / 461 (Biotechnology) / 403 (Urban and Regional Planning and Development) / 444 (Water Resources) / 618 (Compressors and Pumps) /
Controlled Terms: (*WATER SUPPLY -- *Africa) / (REGIONAL PLANNING -- Africa) / (HEALTH CARE -- Africa) / (WATER DISTRIBUTION SYSTEMS -- Africa) / WATER WELLS / WELL PUMPS /
Uncontrolled Terms: WATER WELL PUMPS / RURAL WATER SUPPLY SYSTEMS / TOGO / BURKINA FASO / NIGER

8711-118702 Compendex 87122947
DECADE - HALF WAY, PART OF THE PROCEEDINGS OF THE REGIONAL CONFERENCE OF THE IWSA. (HELD IN CONJUNCTION WITH THE 3RD CONGRESS OF THE UADE)
Dassonville, G. (Ed.)
Int Water Supply Assoc, London, Engl
Water Supply v 3 n 4 1985, Decade - Half Way, Part of the Proc of the Reg Conf of the IWSA, Libreville, Gabon, Jun 10-15 1985 372p Coden: WASUD ISSN: 0735-1917 In FRENCH, ENGLISH
ISBN: 0-08-034142-X Doc. Type: Conference Proceedings Treatment Des.: Applications Economic/Cost Data/Market SurveyGENERAL REVIEW

The Proceedings comprise 17 papers of which 14 are in French and 3 in English. The theme of the Conference was a review of the progress made, especially in subSaharan Africa, regarding water supply and sanitation, by the middle of the Water Decade proclaimed by the UN for the period from 1980-1990. Following the opening addresses by responsible officials and messages from international organizations, 17 papers dealt with the problems of low-cost water distribution systems for poor sectors of the population; the financing of large projects; rural wells, drill holes and hand pumps; the relationship between water supply and health; sanitary education and community participation, the management of the water metering policy and meter workshops, maintenance of large pumping stations and treatment plants, and computerized management of large water distribution systems. All of the papers are abstracted and indexed separately. Technical and professional papers from this conference are indexed and abstracted with the conference code no. 07610 in the Ei Engineering Meetings (TM) database produced by Engineering Information, Inc. In French and English

Card-A-Lert Codes: 446 (Waterworks) / 452 (Sewage and Industrial Wastes Treatment) / 444 (Water Resources) / 618 (Compressors and Pumps) /
Controlled Terms: (*WATER SUPPLY -- *Africa) / (WATER DISTRIBUTION SYSTEMS -- Africa) / (SANITARY ENGINEERING -- Africa) / (WATER TREATMENT PLANTS -- Africa) / (WATER WELLS -- Africa) / (WELL PUMPS -- Maintenance) /
Uncontrolled Terms: INTERNATIONAL ORGANIZATION / ARID REGIONS / AFRICAN UNION OF WATER DISTRIBUTORS / INTERNATIONAL WATER SUPPLY ASSOCIATION / EIREV

8711-118671 Compendex 87114015
STRATEGY OF COMBATING WATER WAR IN SCARCITY-PRONE AREAS IN MADHYA PRADESH
Baweja, I. S.; Raghuvanshi, S. S.
MP, Bhopal, India
J Indian Water Works Assoc v 19 n 1 Jan-Mar 1987 p 73-77 Coden: JIWAE In ENGLISH
Doc. Type: JOURNAL ARTICLE Treatment Des.: GENERAL REVIEW

Madhya Pradesh is the largest state in country with an area of 443,168 Sq. Kms. having 70,883 villages and 43,412 hamlets. Century's severe drought took place in the year 1979 when 30 out of 45 districts received less than 40 to 55% of rainfall. A plan of action included the following: to reserve water of the 'Irrigation tanks' for drinking purposes; to harness ground water source by drilling tube-wells on massive scale, to construct temporary earthen bunds to hold water in nallas and rivers; and to provide assistance to the local bodies for maintenance of wells

Card-A-Lert Codes: 444 (Water Resources) / 446 (Waterworks) /
Controlled Terms: (*WATER RESOURCES -- *Drought) / (WATER SUPPLY -- Planning) / (WATER WELLS -- Drilling) / (WATER DISTRIBUTION SYSTEMS -- Maintenance) /
Uncontrolled Terms: AVERAGE RAINFALL / WATER SUPPLY CATCHMENTS / ENVIRONMENTAL IMBALANCE / INDIA

8708-77094 Compendex 87081931
Maintenance and Repair of Water Boreholes: Analysis of Causes and Presentation of Some Examples
ENTRETIEN ET REFECTION DES FORAGES D'EAU: ANALYSE DES MOTIVATIONS ET PRESENTATION DE QUELQUES EXEMPLES
Denudt, Hubert; Maiaux, Claude; Ricour, Jacques
Bur de Recherches Geologiques et Minieres, Hellemmes-Lille, Fr
Hydrogeologie n 4 1986 p 327-332 Coden: HYGEE In FRENCH
Doc. Type: JOURNAL ARTICLE Treatment Des.: GENERAL REVIEW

The aging of water boreholes in France raises the twofold problem of their maintenance and the regularity of supply for private and public consumers. Some general conclusions may be drawn from the analysis of the examples. The structures are often oversized when the technical progress in hydrogeology which has taken place over the last 50 years is taken into account. In most cases, this allows a renovation of restoration with substantial savings compared to the cost of sinking and equipping a new borehole. Regular inspection of the wells should result in diagnosis precise and prompt to enable the investments necessary to be budgeted for water well improvement. (Edited author abstract) In French

Card-A-Lert Codes: 501 (Exploration and Prospecting) / 421 (Strength of Materials; Mechanical Properties) / 444 (Water Resources) / 471 (Marine Science and Oceanography) /
Controlled Terms: (*BOREHOLES -- *Aging) / (HYDROLOGY -- France) /
Uncontrolled Terms: WATER BOREHOLES / HYDROGEOLOGY

8706-58558 Compendex 87058171
GEOTHERMAL: A CAPITOL IDEA
Austin, John C.
CH2M Hill, Boise, ID, USA
ASHRAE J v 29 n 3 Mar 1987 p 42-44 Coden: ASHRA ISSN: 0001-2491
In ENGLISH
Doc. Type: JOURNAL ARTICLE Treatment Des.: GENERAL REVIEW

The state of Idaho is utilizing one of its material resources, geothermal energy, to heat the entire Capitol Mall complex in Boise. The 160 F geothermal water provides the space heating needs for 75,000 square feet of office space, idling four high-pressure steam boilers and virtually shutting off the natural gas valve. In the fall of 1980, a 2150-foot exploratory well was drilled at the east end of the five square block complex. Ultimately, the well produced nearly 4000 gpm of 160 F water under artesian pressure. This 'wild cat' well proved the state could develop its own geothermal source and supply the Capitol Mall energy requirements. Funding was obtained and the project design phase was underway. During the summer of 1981, a second well was drilled to 3000 feet, providing nearly 1000 gpm of 162 F artesian water. This later became the production well for the system. A retrofit design was completed in January 1982 and construction of the heat system began that spring

Card-A-Lert Codes: 643 (Space Heating and Air Conditioning) / 481 (Geology and Geophysics) / 402 (Buildings and Towers) / 444 (Water Resources) /
Controlled Terms: (*HEATING -- *Geothermal) / (OFFICE BUILDINGS -- Space Heating) / (WATER WELLS -- Drilling) /
Uncontrolled Terms: CAPITOL MALL COMPLEX / GEOTHERMAL WATER / ENERGY SAVING COSTS / MAINTENANCE COSTS

8601-118 Compendex 86011889
IRON BACTERIA IN WATER WELLS
Smith, Stuart A.
Stuart A. Smith Consulting Services, Columbus, OH, USA
Agric Eng v 66 n 8 Aug 1985 p 15-18 Coden: AGENA ISSN: 0002-1458
In ENGLISH
Doc. Type: JOURNAL ARTICLE Treatment Des.: GENERAL REVIEW

One cause of difficulty with wells and their associated pumping equipment is often the little recognized problem of iron bacteria. In this article, the author explores the causes of this phenomenon and offers suggestions for prevention and for treatment of existing problem situations. In agriculture, several common problems have been linked to bacterial-iron problems including poor coliform test results for dairy and processing plant wells and clogging of irrigation equipment

Card-A-Lert Codes: 821 (Agricultural Equipment and Methods) / 446 (Waterworks) / 444 (Water Resources) / 445 (Water Treatment, General and Industrial) / 461 (Biotechnology) /
Controlled Terms: (*AGRICULTURE -- *Water Supply) / (WATER WELLS -- Maintenance) / WATER BACTERIOLOGY /
Uncontrolled Terms: IRON BACTERIA / COLIFORM TEST

8511-111303 Compendex 85119002
PROCEEDINGS OF THE 57TH OKLAHOMA WATER AND POLLUTION CONTROL ASSOCIATION SHORT SCHOOL
Anon
Oklahoma Water & Pollution Control Assoc, OK, USA
Proc of the 57th Okla Water and Pollut Control Assoc Short Sch, Oklahoma City, OK, USA, Oct 31-Nov 4 1983 Available from Oklahoma Dep of Health, Oklahoma City, OK, USA, 1983 109p In ENGLISH
Doc. Type: Conference Proceedings Treatment Des.: Applications MANAGEMENT ASPECTSEXPERIMENTAL

Proceedings consists of eight papers on various water and pollution control topics. Specific subjects include: water well construction; emergency planning; food-to-mass ratio; anaerobic sludge digestion and handling; how roots grow in sewers; operating a lagoon system; corrosion indicators; and water meter instrumentation. Technical and professional papers from this conference are indexed and abstracted with the conference code no. 05059 in the Ei Engineering Meetings (TM) database produced by Engineering Information, Inc

Card-A-Lert Codes: 446 (Waterworks) / 453 (Water Pollution) / 444 (Water Resources) / 452 (Sewage and Industrial Wastes Treatment) / 943 (Mechanical and Miscellaneous Measuring Instruments) /
Controlled Terms: (*WATER SUPPLY -- *Oklahoma) / (WATER POLLUTION -- Control) / (WATER WELLS -- Construction) / (WASTEWATER -- Treatment) / (SEWERS -- Maintenance) / WATER METERS /
Uncontrolled Terms: EMERGENCY PLANNING / ANAEROBIC SLUDGE DIGESTION / PIPELINE CORROSION / LAGOON SYSTEM OPERATING / EIREV

8410-112167 Compendex 84107463
WEDGE-WIRE INTAKE SCREENS FOR SHALLOW SAND-BED RIVER
Ettema, Robert; Johnson, J. Craig
Univ of Iowa, Dep of Civil & Environmental Engineering, Iowa City, Iowa, USA
J Hydraul Eng v 110 n 8 Aug 1984 p 1139-1144 Coden: JHEND In ENGLISH Refs: 11 ref

To supplement an existing ground-water well field at The Kansas Power and Light Company's Jeffrey Energy Center (JEC), the Kansas River near Belvue, Kansas was selected as an alternate source of make-up water for the JEC's condenser cooling system. The design was based on additional requirements to provide protection of the screens from mechanical damage by floating debris, minimize sedimentation in the area of screens, and facilitate low maintenance. The intake system was also required to have the facility withdraw water at low flow periods, and to be environmentally acceptable. This paper describes the accepted design of the intake structure to satisfy these requirements. Also presented are results from a model study performed during design in order to confirm that sedimentation could be prevented from obstructing the screens

Card-A-Lert Codes: 446 (Waterworks) / 407 (Maritime and Port Structures; Rivers and Other Waterways) / 444 (Water Resources) / 481 (Geology and Geophysics) / 704 (Electric Components and Equipment) / 605 (Small Tools and Hardware) /
Controlled Terms: (*WATER DISTRIBUTION SYSTEMS -- *Design) / (RIVERS -- Sedimentation) / (SEDIMENTATION -- Measurements) / ELECTRIC POWER PLANT EQUIPMENT / (SCREENS AND SIEVES -- Design) /
Uncontrolled Terms: WEDGE WIRE INTAKE SCREENS / CONDENSER COOLING SYSTEMS / WATER INTAKE SYSTEMS / MAKE UP WATER

8406-61262 Compendex 84053240
SHALLOW WELLS AND HAND PUMPS, A TANZANIAN EXPERIENCE
Trietsch, Robert
DHV Consulting Engineers, Amersfoort, Neth
Water Supply v 1 n 4 1983 p 31-40 Coden: WASUD In ENGLISH Refs: 122 refs

At two recent conferences held in Tanzania, the construction of shallow wells was promoted as one of the most promising low-cost methods of providing the country's rural population with a clean and dependable water supply. Construction methods have changed during that time, from hand- and machine-dug wells to primarily hand-bored wells, mainly because of lower cost and better opportunities for transferring the construction techniques to local agencies. Hand pumps used are the 'Shinyanga' pump (a version of the Craelius or 'Kenya' pump), the 'Kangaroo' pump and the 'Nira' pump. All efforts are directed toward reducing the maintenance requirements of the hand pumps, as a result of which the Shinyanga pump will most probably no longer be used on a large scale. Technical cooperation and coordination between the various projects and their donor agencies has begun and is expected to lead to standardization of the methods, equipment and hand pumps used

Card-A-Lert Codes: 444 (Water Resources) / 446 (Waterworks) / 618 (Compressors and Pumps) /
Controlled Terms: (*WATER WELLS -- *Drilling) / (WATER SUPPLY -- Equipment) / (PUMPS -- Maintenance) /
Uncontrolled Terms: HAND PUMPS

8312-106623 Compendex 83106002
WELL AND BOREHOLE CONSTRUCTION AND REHABILITATION
Haman, Z.
Water Supply v 1 n 2/3 1983, World Water Supply, Proc of the World Congr of the Int Water Supply Assoc, 14th, Zurich, Switz, Sep 6-10 1982 SS3, 16p Coden: WASUD In ENGLISH, FRENCH

Pump type, diameter of riser pipes, pump setting, recommended future discharge and the lowest permissible future pumping water level are all indicated. A schedule for the regular maintenance check-ups of the pumps and frequency of treatment of wells with oxalic acid is recommended. It is recommended to continue with monthly measurements of discharge rates and pumping water level which should be regularly plotted on a graph. In English and French

Card-A-Lert Codes: 444 (Water Resources) /
Controlled Terms: (*WATER WELLS -- *Construction) /

8206-50858 Compendex 82048332
EFFICIENCY IMPROVEMENTS IN IRRIGATION WELL PUMPS
Hamrick, Joseph T.
Aerosp Res Corp, Roanoke, Va, USA
ASAE Publ 3. 81, Agric Energy, Sel Pap and Abstr from the ASAE Natl Energy Symp, v 2, Kansas City, Mo, USA, Sep 29-Oct 1 1980. Publ by ASAE, St. Joseph, Mich, USA, 1981 p 466-472 Coden: ASPUD

The paper reports on a study of well pump systems to analyze a commercially available turbine pump and modify it to improve efficiency; demonstrate the use of a water well packer allowing delivery of water through the annulus between the casing and column pipe as well as through the column pipe; demonstrate the use of a small, high strength line shaft; provide a means of installing and removing a pump with farm tools for easier and less costly maintenance; demonstrate the ability to deliver water to the surface with a system efficiency of 82 percent. Efficiency gains were realized with the packer, by polishing the pump impellers, and by cutting back the vanes to equalize the work input across the impeller outlet

Card-A-Lert Codes: 821 (Agricultural Equipment and Methods) / 618 (Compressors and Pumps) /
Controlled Terms: (*IRRIGATION -- *Pumps) / (WELL PUMPS -- Efficiency) / ENERGY CONSERVATION /

7712-92727 Compendex 77090806
INSTALLATION, OPERATION AND MAINTENANCE OF VERTICAL TURBINE PUMPS
Hodgins, Burnell
Int Water Supply Ltd, Barrie, Ont
Water Pollut Control (Don Mills Can) v 115 n 8 Aug 1977 p 19-20 Coden: WPCOA

The turbine pump described was developed to force water out of a relatively small diameter well with water levels beyond the suction capabilities of a horizontal type pump. The complete discharge column includes the eduction pipe, pipe couplings, line shaft and bearings. It is this component which gets the power to the pump bowls and conducts water from the bowls to the pump head

Card-A-Lert Codes: 444 (Water Resources) / 618 (Compressors and Pumps) /
Controlled Terms: (*PUMPS, TURBINE -- *Ejectors) / WATER WELLS /

7702-8721 Compendex 77009976
PROPER DRILL MAINTENANCE ASSURES 90-95% MACHINE AVAILABILITY
Metzger, Charles
Schramm, Inc
Pit Quarry v 69 n 4 Oct 1976 p 68-71 Coden: PIQUA

A complete line of self-propelled, truck-and crawler-mounted rotary drilling rigs was developed which are now in mining and water-well drilling service throughout the world. The chart covers the procedures which should be followed more or less on a daily basis throughout a six-month period

Card-A-Lert Codes: 603 (Machine Tools) /
Controlled Terms: (*DRILLS -- *Maintenance) /

7603-21297 Compendex 76015465
ELECTROHYDRAULIC STIMULATION OF WATER WELLS
Nissley, Michael S.
City of Los Angeles Dep of Water & Power, Calif
IEEE Trans Ind Appl v IA-11 n 6 Nov-Dec 1975 p 728-733 Coden: ITIAC
Refs: 43

The electrohydraulic effect has been applied to the stimulation of water wells. This effect is generated by an electrical arc, of short duration, underwater. The underwater arc creates a strong hydraulic shock wave capable of doing work. The electrohydraulic method of stimulation has proven successful when considering the increased output of a water well. This new method shows the potential of a considerable reduction in the cost of stimulating a water well

Card-A-Lert Codes: 444 (Water Resources) /
Controlled Terms: (*WATER WELLS -- *Maintenance) /

7508-56391 Compendex 75056283
Industrial Management and Technical Measures for the Planning, Selection and Maintenance of Filter Installations in Water Treatment
BETRIEBSWIRTSCHAFTLICH-TECHNISCHE MASSNAHMEN BEI PLANUNG, AUSWAHL UND UNTERHALTUNG VON FILTERANLAGEN IN DER WASSERWIRTSCHAFT
Gebhardt, Walter
Wasser Luft Betr v 19 n 6 Jun 1975 p 302-306 Coden: WSLBA

The paper deals with filter installations for wells, describes applications in industrial processes, and concludes with a survey for effluent treatment. 22 refs. In German with English abstract

Card-A-Lert Codes: 444 (Water Resources) / 445 (Water Treatment, General and Industrial) / 802 (Chemical Apparatus and Plants; Unit Operations; Unit Processes) /
Controlled Terms: *WATER FILTRATION / FILTERS / (WATER TREATMENT -- INDUSTRIAL) / WATER WELLS /
Uncontrolled Terms: EFFLUENT TREATMENT

7506-42350 Compendex 75041479
USE OF CHEMICALS TO RESTORE OR INCREASE WELL YIELD
Schafer, David D.
Univ Oil Prod Co, St. Paul, Minn
Public Works v 106 n 4 Apr 1975 p 71-74 Coden: PUWOA

Procedures used for the correction of the reduction in well production capacity are discussed and it is emphasized that an understanding of the basic causes of reduced well yield and a familiarity with chemicals available can be useful to water works personnel, well drilling contractors and cconsultants, in being sure that the right chemical is employed for the right job

Card-A-Lert Codes: 444 (Water Resources) / 913 (Production Planning and Control) /
Controlled Terms: (*WATER WELLS -- *Maintenance) /
Uncontrolled Terms: WATER WELL YIELD

7310-51621 Compendex 73052832
CHEMICAL QUALITY OF GROUND WATER INFLUENCES DESIGN AND PERFORMANCE OF WATER WELLS
Briggs, Gerald F.
Johnson Div-UOP, St. Paul, Minn
AIChE Symp Ser v 69 n 129 1973 p 309-315

Durability of well screens in water wells is reviewed by the study of well failurs resulting from corrosion. Corrosion and incrustation of well screens and relation of these occurrences to water chemistry are discussed. Chemical treatment of incrusted well screens is described along with other maintenance and rehabilitation procedures. Guidelines are given for well screen selection to ensure long life under both corrosive and incrusting ground-water environments

Card-A-Lert Codes: 444 (Water Resources) / 531 (Metallurgy and Metallography) /
Controlled Terms: *WATER WELLS / CORROSION /
Uncontrolled Terms: WELL SCREENS

72XO-26364 Compendex 72051790
How OxyLibya develops 500,000 b/d of water for oil recovery program
COFFEY CR
Occidental of Libya Inc, Tripoli
Petrol Eng v 43 n 6 June 1971 p 40-3 Coden: PENGA

Occidental of Libya Inc. has designed special drilling and completion programs to substantially upgrade and improve production from 50 water wells being used in a pressure maintenance program in its Intisar fields. Two continuous producing sands, located at around 2800 ft and at 3400 ft provide most of the 500,000 b/d of wter being produced. Technique of separating sand from water produced by water wells is described

Card-A-Lert Codes: 444 (Water Resources) / 511 (Oil Field Equipment and Production Operations) / 512 (Petroleum and Related Deposits) /
Controlled Terms: (*OIL WELL PRODUCTION -- *Flooding) / (OIL FIELDS -- Libya) / (WATER WELLS -- Drilling) /
Uncontrolled Terms: WATERFLOOD

71XO-59883 Compendex 71058072
Modern design techniques for efficient high capacity irrigation wells
REINKE JW; KILL DL
Universal Oil Products Co, St Paul, Minn
ASAE Pap 70-732 for meeting at Chicago, Ill, Dec 8-11 1970, 24 p Refs: 4

The design criteria are reviewed for construction of sand- %free and efficient irrigation wells with suggested procedures for operation and maintenance

Card-A-Lert Codes: 444 (Water Resources) / 821 (Agricultural Equipment and Methods) /
Controlled Terms: (*WATER WELLS -- *Drilling) / (IRRIGATION -- Water Supply) /

71XO-10606 Compendex 71009863
On the design and construction of infiltration galleries
BENNETT TW
Ground Water v 8 n 3 May-June 1970 p 16-24 Coden: GROWB Refs: 8

It is emphasized that reliable prediction of the yield of infiltration galleries can be made only on the basis of field testing combined with evaluation of surface flow- duration data. While extensive pump testing is often relatively expensive, the information obtained indicates the long- term utility of the system. Pump test procedures and methods of analysis are outlined. Design and maintenance suggestions are made for successful operations of galleries

Card-A-Lert Codes: 443 (Meteorology) / 444 (Water Resources) / 483 (Soil Mechanics and Foundations) /
Controlled Terms: (*WATER RESOURCES -- *Underground) / (SOILS -- Moisture) / WATER WELLS /

70X0-33539 Compendex 70029474
Design, construction and maintenance of deep water wells
GAFFEY,II JT
Headquarters Command, Bolling AFB, Washington, DC
Air Force Civ Engr v 10 n 3 Aug 1969 p 10-15

Review of principles governing well location, design, development, operation and maintenance in the Republic of Vietnam. A deep well, for purposes of the discussion, is one from which water is pushed from the casing, as opposed to being pulled up. The wells are deep enough to require positive displacement pumps rather than vacuum pumps. The discussion is limited to wells operating in '%'water- table'%' aquifers

Card-A-Lert Codes: 444 (Water Resources) /
Controlled Terms: (*WATER WELLS -- *South Vietnam) /

70X0-34054 Compendex 70029405
Well screens and gravel packs
BLAIR AH
Water Research Ass, Ferry Lane, Buckinghamshire England
Ground Water v 8 n 1 Jan-Feb 1970 p 10-21 Refs: 35

A review of the diverse types of well screens and packs available. Screen design and installation, basic requirements of gravel pack, gravel pack design, and well maintenance are discussed

Card-A-Lert Codes: 444 (Water Resources) /
Controlled Terms: *WATER WELLS /

69X0-49994 Compendex 69003888
Iron Deposition and Well Fouling at Brookhaven National Laboratory
HENNESSY JJ
ASME- Paper 68- WA/PEM- 1 for meeting Dec 1- 5 1968 11 p. Refs: 18

Iron deposition has resulted in diminution of available pumpage and increased well maintenance costs; our analysis indicates that colloidal iron precipitation associated with high pumping rate is cause rather than iron bacteria; this has been verified by use of electron microscopy and comparing results with graphical plots of pumpage and other associated factors, such as maintenance history, pumping rate, and extent of deposition; proposal for reduction and possible elimination of iron deposition is presented

Card-A-Lert Codes: 123 / 219 /
Controlled Terms: (*WATER WELLS -- *Corrosion) /

8802-17425 Compendex 88017912
PUBLIC WORKS GOES HIGH TECH
Darnell, Tim
American City & County, Atlanta, GA, USA
Am City Cty v 102 n 10 Oct 1987 7p between p 50 and 61 Coden: ACCOD
ISSN: 0149-337X In ENGLISH
Doc. Type: JOURNAL ARTICLE Treatment Des.: Applications Economic/Cost Data/Market SurveyMANAGEMENT ASPECTS

In the often complicated and complex world of public works, technology and new forms of automation are making life easier for engineers and managers. A supervisory control and data acquisition (SCADA) system, monitors numerous plant operations. The system also can turn wells on and off after a pump's water level reaches a specified point. Cities are employing computers and other forms of automation to reduce time and manpower hours. These applications range from monitoring water- and wastewater-treatment plants to hand-held field computers, computerized utility billings, financial and budgetary programs, fleet-maintenance and pavement-management systems, and three-dimensional mapping programs

Card-A-Lert Codes: 403 (Urban and Regional Planning and Development) / 723 (Computer Software and Data Handling) / 445 (Water Treatment, General and Industrial) / 911 (Cost and Value Engineering; Industrial Economics) / 444 (Water Resources) / 618 (Compressors and Pumps) /
Controlled Terms: (*PUBLIC WORKS -- *Computer Applications) / (MUNICIPAL ENGINEERING -- Automation) / (WATER TREATMENT PLANTS -- Monitoring) / BUDGET CONTROL / MANAGEMENT / (WATER WELLS -- Pumps) /
Uncontrolled Terms: COMPUTERIZED TECHNIQUES / PACKAGED GENERIC SYSTEMS / COMPUTERIZED PUMP ROTATING SYSTEM / WELL PUMPS

20

8712-130104 Compendex 88002571

RADIATION PROCESSING APPLICATIONS IN CZECHOSLOVAK WATER TREATMENT TECHNOLOGIES

Vacek, K.; Pastuszek, F.; Sedlacek, M.
Nuclear Research Inst, Rez, Czech

Radiat Phys Chem v 28 n 5-6 1986, Brdicka Days on Radiat Chem, Marianske Lazne, Czech p 573-580 Coden: RPCHD ISSN: 0146-5724 In ENGLISH Refs: fs

Doc. Type: JOURNAL ARTICLE Treatment Des.: Applications

The regeneration of biologically clogged water wells by radiation proved to be a successful and economically beneficial process among other promising applications of ionizing radiation in water supply technology. The application conditions and experience are mentioned. The potential pathogenic Mycobacteria occurring in warm washing and bathing water are resistant against usual chlorine and ozone concentrations. The radiation sensitivity of Mycobacteria suggested a device for their destruction by radiation. Some toxic substances in the underground water can be efficiently degraded by gamma radiation directly in the wells drilled as a hydraulic barrier surrounding the contaminated land area. Substantial decrease of CN**- concentration and C. O. D. value was observed in water pumped from such wells equipped with cobalt sources and charcoal. (Edited author abstract) 28

Card-A-Lert Codes: 445 (Water Treatment, General and Industrial) / 622 (Radioactive Materials) / 444 (Water Resources) / 446 (Waterworks) / 461 (Biotechnology) / 932 (High Energy Physics; Nuclear Physics; Plasma Physics) /

Controlled Terms: (*WATER TREATMENT -- *Radiation Effects) / (WATER WELLS -- Decontamination) / (WATER SUPPLY -- Czechoslovakia) / (WATER BACTERIOLOGY -- Radiation Effects) / (GAMMA RAYS -- Applications) / (WASTEWATER -- Radiation Effects) /

Uncontrolled Terms: MYCOBACTERIA / BIOLOGICALLY CLOGGED WATER WELLS / SLUDGE HYGIENIZATION

8710-100351 Compendex 87106360
PERDEUTERATED CHEMICALS FROM D//2O-GROWN MICROALGAE
Delente, Jacques J.
Trends Biotechnol v 5 n 6 Jun 1987 p 159-160 Coden: TRBID ISSN: 0167-9430 In ENGLISH Refs: 133 refs
Doc. Type: JOURNAL ARTICLE Treatment Des.: GENERAL REVIEW

The growth of microalgae in heavy water has been used for many years for the manufacture of deuterated research chemicals. Strains that can synthesize large amounts of lipids could expand the commercial scope of this technology to include specialty lubricants, polymers, and other products. Important factors in the commercial success of deuterated chemicals will include a high yield of chemicals from heavy water, well designed photobioreactors which can minimize losses, and the successful marketing of co-products to distribute high manufacturing costs over a broad product base

Card-A-Lert Codes: 804 (Chemical Products Generally) / 461 (Biotechnology) / 613 (Nuclear Power Plants) /
Controlled Terms: (*FATTY ACIDS -- *Biosynthesis) / (ALGAE -- Applications) / (AQUACULTURE -- Applications) / (HEAVY WATER -- Applications) / (LIPIDS -- Biosynthesis) / BIOCHEMICAL ENGINEERING /
Uncontrolled Terms: MICROALGAE / BIODEUTERATION / PERDEUTERATED BIOCHEMICALS / DEUTERATED LUBRICANTS / DEUTERATED POLYMERS

8709-92579 Compendex 87100698
SURFACE MINE BLASTING. PROCEEDINGS: BUREAU OF MINES TECHNOLOGY TRANSFER SEMINAR
Anon
US Bur of Mines, Washington, DC, USA
Inf Circ US Bur Mines 9135, Surf Mine Blasting. Proc: Bur of Mines Technol Transfer Semin, Chicago, IL, USA, Apr 15 1987. Publ by US Bur of Mines, Washington, DC, USA, 1987 114p Coden: XIMIA ISSN: 0096-1914 In ENGLISH
Doc. Type: Conference Proceedings Treatment Des.: EXPERIMENTAL

This conference proceedings contains 13 papers. The research described includes computer monitoring of rock motion, the influence of blast delay times on rock fragmentation, blasting effects on Appalachian water wells, blast vibration measurement near structures and reduction of accidents through improved blasting safety. Technical and professional papers from this conference are indexed and abstracted with the conference code no. 09984 in the Ei Engineering Meetings (TM) database produced by Engineering Information, Inc

Card-A-Lert Codes: 502 (Mine and Quarry Equipment and Operations) / 504 (Mines and Mining, Metal) / 505 (Mines and Mining, Nonmetallic) / 503 (Mines and Mining, Coal) / 931 (Applied Physics Generally) / 914 (Safety Engineering) /
Controlled Terms: (*MINES AND MINING -- *Blasting) / (COAL MINES AND MINING -- Blasting) / (VIBRATIONS -- Measurements) / (BLASTING -- Accident Prevention) / (BUILDINGS -- Walls) / (QUARRIES AND QUARRYING -- Blasting) /
Uncontrolled Terms: BLASTING VIBRATIONS / DELAY TIME / DELAY BLASTING CAPS / DAMAGE / EIREV

8702-20000 Compendex 87020728
LOW-COST TUBEWELLS FOR DEVELOPING COUNTRIES
Mal, B. C.; Mishra, A. P.
Rajendra Agricultural Univ, Samastipur, India
Int J Dev Technol v 4 n 3 Sep 1986 p 197-203 Coden: IJDTD ISSN: 0263-418X In ENGLISH Refs: 3Author abstract) 3 refs
Doc. Type: JOURNAL ARTICLE Treatment Des.: Economic/Cost Data/Market SurveyGENERAL REVIEW

The suitability and methods of construction of different types of low-cost tubewells are considered in this paper. Emphasis is given to shallow tubewells with bamboo strainers and cavity wells because of their suitability in less developed countries. The process of fabricating bamboo strainers is discussed, as are the two low-cost methods of drilling shallow tubewells, namely the hand-operated rotary method and the sludging method. The method of cavity development in cavity wells is also described. Finally, the comparative economics of shallow and cavity wells for accessing groundwater under typical conditions prevailing in India are given

Card-A-Lert Codes: 444 (Water Resources) / 911 (Cost and Value Engineering; Industrial Economics) /
Controlled Terms: (*WATER WELLS -- *Drilling) / (WATER -- UNDERGROUND -- Management) / (ECONOMICS -- Analysis) /
Uncontrolled Terms: SHALLOW TUBEWELLS / INITIAL INVESTMENT / CONSTRUCTION TECHNOLOGY

8611-116585 Compendex 86097495
GROUNDWATER INFILTRATION WITH BORED WELLS
Brandes, M. C.; Abbenhuis, H.; Bardet, J.; Cense, D.; Haitjema, H.; Olsthoorn, T. N.; van Zutphen, J. H.
Royal Inst of Engineers, Neth
Rijkswaterstaat Commun n 39 1985 204p Coden: RJWCA ISSN: 0165-7313
In ENGLISH
Doc. Type: Report Review Treatment Des.: GENERAL REVIEW EXPERIMENTAL

In some areas of the Netherlands restrictions exist on the amount of abstracted groundwater (if any) which may be discharged into surface waters. In such cases one solution consists of returning the water to the aquifer by bored wells (i. e. groundwater recharge). A number of groundwater recharge schemes in the Netherlands ran into problems, for which reason the Tunnel Technology Department appointed a study group on 'Groundwater Infiltration with Bored Wells' with the following terms of reference: compilation of a survey of past groundwater recharge schemes in the Netherlands; examination of the circumstances in which groundwater recharge is feasible in practice; formulation of the requirements which a groundwater recharge system should satisfy. The study group was unable to provide a general answer as to the economic feasibility of groundwater infiltration by bored wells. A survey of hydrological calculations methods is given and the factors that affect the costs are examined. The results of the study are summarized. (Edited author abstract) Refs

Card-A-Lert Codes: 444 (Water Resources) / 401 (Bridges and Tunnels) / 446 (Waterworks) / 471 (Marine Science and Oceanography) / 501 (Exploration and Prospecting) /
Controlled Terms: (*WATER RESOURCES -- *Groundwater) / (WATER DISTRIBUTION SYSTEMS -- Control) / (WATER WELLS -- Drilling) / WATER SUPPLY TUNNELS / HYDROLOGY / BOREHOLES /
Uncontrolled Terms: GROUNDWATER INFILTRATION / RECHARGE SYSTEMS / BORED WELLS / HYDROLOGICAL DESIGN / GAS/FILTER TESTS

8512-126656 Compendex 85128340
TAPPING THE PC FOR PROCESS CONTROL
Anon
J Am Water Works Assoc v 77 n 11 Nov 1985 p 90, 92 Coden: JAWWA ISSN: 0003-150X In ENGLISH
Doc. Type: JOURNAL ARTICLE Treatment Des.: GENERAL REVIEW

Glendale, Ariz. , is contiguous to the city of Phoenix in the Salt River Valley. In 1975, along with many other municipalities in the Sun Belt, Glendale began to experience tremendous growth. A design was begun on the city's first surface water treatment plant, necessary to provide an adequate supply for residents. Because of the many advances that have been made in digital technology, the city decided to use a computer to assist the plant operators with well monitoring. In addition, a digital philosophy had been adopted for two treatment facilities scheduled to be built within the next five-year period. The decision to use computers in the city's water and wastewater facilities was made with the understanding that personnel would need additional training

Card-A-Lert Codes: 445 (Water Treatment, General and Industrial) / 723 (Computer Software and Data Handling) / 444 (Water Resources) / 943 (Mechanical and Miscellaneous Measuring Instruments) /
Controlled Terms: (*WATER TREATMENT PLANTS -- *Computer Applications) / (WATER WELLS -- Monitoring) / (INSTRUMENTS -- DIGITAL -- Applications) / (WATER SUPPLY -- Glendale -- AZ) /
Uncontrolled Terms: TELEMETRY SYSTEM / TREATMENT PLANT PERSONNEL / PROCESS CONTROL APPLICATION / ROUTINE DAILY CALCULATIONS

8411-126124 Compendex 84123243
COMPUTER BUSINESS TRAINING
Stanley, Anita Bacco
Water Well Journal, Worthington, Ohio, USA
Water Well J v 38 n 8 Aug 1984 p 49-50 Coden: WWJOA ISSN: 0043-1443 In ENGLISH

The SBA has developed a computer-based training program in cooperation with Control Data Corp. The courses are offered through 38 SBA offices in nearby Control Data Learning Centers. Business people who take the courses, which use the Control Data PLATO technology, do not need to be computer users. Students progress at their own pace, responding to questions flashed on a computer terminal screen. The package includes a takehome workbook that gives a wealth of information, such as how to avoid stumbling blocks that kill bids, the differences between government and private bidding, use of pricing formulas, how to prepare bid sheets and relevant contract laws and sources of information

Card-A-Lert Codes: 444 (Water Resources) / 723 (Computer Software and Data Handling) /
Controlled Terms: (*WATER WELLS -- *Computer Applications) /

8406-61208 Compendex 84053237
LOW COST WATER SUPPLY - AN APPROPRIATE TECHNOLOGY FOR RURAL AREAS AND URBAN FRINGES?
Erbel, Klaus
German Agency for Technical Cooperation, Frankfurt am Main, West Ger
Water Supply v 1 n 4 1983 p 1-7 Coden: WASUD In ENGLISH

The use of low cost technologies in water supply seems to be the only promising way to reach the goals of the Decade - certainly for rural areas, occasionally in urban fringes, only exceptionally in the case of densely populated urban centers. But there is one condition: low cost technology must at the same time fulfill the criteria of 'appropriate technology'; otherwise, although being a step in the right direction, it will in many cases prove insufficient. The use of low cost water supply technologies implies increased efforts in basic hygiene education, if health hazards are to be avoided. A simple technology on the other hand facilitates the understanding of the users, how the contamination problem can be kept in check; in this way there is a good chance to more than compensate for certain accepted deficits in standards, reliability or safety

Card-A-Lert Codes: 446 (Waterworks) / 444 (Water Resources) /
Controlled Terms: (*WATER SUPPLY -- *Costs) / (WATER WELLS -- Contamination) / (WATER RESOURCES -- Reliability) /
Uncontrolled Terms: HYGIENE EDUCATION

8107-57283 Compendex 81054314
GEOPHYSICAL WELL LOGS APPLIED TO GEOTHERMAL RESOURCE EVALUATION
Fertl, W. H.
Dresser Atlas, Houston, Tex
Rev Inst Fr Pet v 35 n 3 May-Jun 1980, Numero Spec Consacre au Colloq Ressour Energ, 26th Congr Geol Int, Paris, Fr, Jul 7-17 1980 p 461-468 Coden: RIFPA ISSN: 0370-5552 Refs: 13

Geothermal reservoirs are frequently in fractured igneous and metamorphic rocks, which contain hot water or steam at temperature exceeding 150 degree C. The discussion focuses on present day logging technology, geologic and reservoir engineering objectives, and qualitative and quantitative formation interpretation techniques for geothermal resource evaluation. Specific field case studies illustrate the interpretive state-of-the-art, including examples from the Geysers dry steam field in the Imperial Valley of California, hot water fields in California, Nevada, and Idaho, and the LASL Hot Dry Rock test project in the Valles Caldera of New Mexico

Card-A-Lert Codes: 615 (Thermoelectric, Magnetohydrodynamic and Other Power Generators) / 641 (Heat and Mass Transfer; Thermodynamics) / 481 (Geology and Geophysics) / 444 (Water Resources) /
Controlled Terms: (*GEOTHERMAL ENERGY -- *United States) / (WATER WELLS -- Logging) /

8008-63417 Compendex 80061667
USE OF AQUIFERS FOR SEASONAL STORAGE OF SOLAR ENERGY: AN OVERVIEW
Eissenberg, D. M.
Oak Ridge Natl Lab, Tenn
Proc of Sol Energy Storage Options, v 1, San Antonio, Tex, Mar 19-20 1979 Prep for DOE by Trinity Univ, San Antonio, Tex, 1979. Available from NTIS (CONF-790328-P1), Springfield, Va pt 1 p 23-29

Aquifer Thermal Energy Storage (ATES) is a new concept currently being developed in the U. S. under the sponsorship of the Department of Energy, Division of Energy Storage Systems (DOE/STOR). Responsibility for management of technology development for ATES has been assigned by DOE/STOR to the Oak Ridge National Laboratory (ORNL), which is operated for the Department of Energy by Union Carbide Corporation-Nuclear Division. The attractiveness of the ATES concept is its ability to utilize commonly occurring natural geological formations (aquifers) with minimum man-made modification for the seasonl storage of large quantities of heat or cold with acceptable thermal recovery and cost using conventional water-well methodology and hardware. References to such use of aquifers for thermal energy storage have appeared in the literature since 1971

Card-A-Lert Codes: 615 (Thermoelectric, Magnetohydrodynamic and Other Power Generators) / 657 (Space Physics) / 444 (Water Resources) /
Controlled Terms: (*SOLAR ENERGY -- *Energy Storage) / AQUIFERS /

8003-18051 Compendex 80021383
WELL HYDRAULICS IN HETEROGENEOUS AQUIFER FORMATIONS
Streltsova-Adams, T. D.
Rice Univ, Houston, Tex
Adv Hydrosci v 11 1978 p 357-423 Coden: ADHYA ISSN: 0065-2768 Refs: 120

Advances in the understanding of and the general approach in studying and interpreting fluid flow behavior, developments of the flow models, and quantitative evaluation of the flow to a well are considered here. Section II deals with the analysis of fluid flow in fissured rocks and Section III deals with the analysis of flow in stratified formations. Advances in computer technology are facilitating the use of sophisticated analytical methods, the application of which will enlarge the scope of planning and development of well fields

Card-A-Lert Codes: 444 (Water Resources) /
Controlled Terms: (*AQUIFERS -- *Fluid Dynamics) / (WATER WELLS -- Hydraulic Fracturing) /

8002-14425 Compendex 80013487
DRILLING IN WATER DEPTHS IN EXCESS OF 3,000 FEET FROM MOORED AND DYNAMICALLY POSITIONED VESSELS
Smith, Glynn D.; Parlas, Solon C.
AIME, Soc of Pet Eng, Annu Fall Tech Conf and Exhib, 54th, Prepr, Las Vegas, Nev, Sep 23-26 1979 Publ by AIME, Soc of Pet Eng (SPE), Dallas, Tex, 1979 Pap n 8313, 11 p Refs: 3

Deep water exploration drilling has associated with it many unique problems including effects of weather, special equipment, logistics and specially trained personnel. However, deep water wells have been successfully drilled by moored and dynamically positioned drillships. Comparisons are made between two sister self propelled drillships; the Discoverer 534, which has drilled in 1,055m (3,461 ft.) of water moored by anchors, and the Discoverer Seven Seas currently completing a well in 1,487m (4,876 ft.) of water, utilizing dynamic positioning and various aspects of the ever increasing technology and required expertise of deep water drilling

Card-A-Lert Codes: 511 (Oil Field Equipment and Production Operations) / 512 (Petroleum and Related Deposits) / 671 (Naval Architecture) /
Controlled Terms: (*OIL WELL DRILLING -- *Offshore) / (NATURAL GAS WELLS -- Offshore) / (DRILLSHIPS -- Dynamic Positioning) /

7710-73200 Compendex 77072027
RURAL ENERGY CENTRE FOR AFRICA USING SOLAR, WIND AND BIOGAS ENERGIES
Lawand, T. A.; Alward, R.; Saulnier, B.; Budgen, H. P.; Brunet, E.
Brace Res Inst, McGill Univ, Ste. Anne de Bellevue, Que
Sharing the Sun; Sol Technol in the Seventies, Jt Conf of the Int Sol Energy Soc, Am Sect and Sol Energy Soc of Can, Inc, Winnipeg, Manit, Aug 15-20 1976 Publ by Int Sol Energy Soc, Am Sect, Cape Canaveral, Fla, 1976 v 9 p 282-309

The parameters of site selection, and the balance between the supply and demand for energies are discussed. In the Center, energy will be supplied for water pumping and potabilization, cooking and some lighting. The energy required for cooking is about 80% of the total demand. All social, technical and economic factors have been considered in making the selection of equipment needed. The concept of an Appropriate Technology approach has been followed in undertaking the study

Card-A-Lert Codes: 446 (Waterworks) / 901 (Engineering Profession) / 615 (Thermoelectric, Magnetohydrodynamic and Other Power Generators) / 657 (Space Physics) / 611 (Hydro and Tidal Power Plants) / 444 (Water Resources) /
Controlled Terms: *ENERGY RESOURCES / (SOLAR ENERGY -- Energy Utilization) / WIND POWER / WATER WELLS / PUMPING PLANTS /

7504-25356 Compendex 75028189
SEISMIC ANALYSIS OF SLENDER BURIED BEAMS
Yeh, G. C. K.
Bechtel Power Corp, Los Angeles, Calif
Bull Seismol Soc Am v 64 n 5 Oct 1974 p 1551-1562 Coden: BSSAA

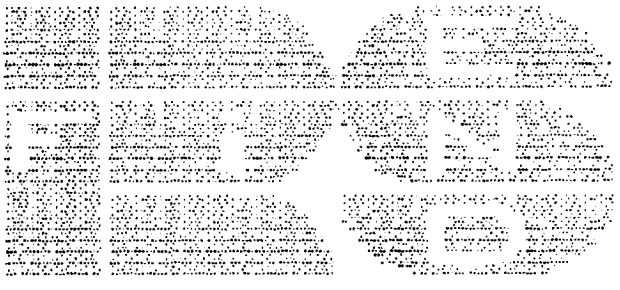
Nuclear reactor facilities often include segments of long tubular structures such as cooling water intake conduits, electrical ducts, and water well casings that are buried underground. During an earthquake such a buried structure responds to various seismic waves propagating through the surrounding soil as well as to the dynamic differential movements of the buildings to which the structure is connected. A rigorous analysis of the problem should consider the time-dependent stresses in the structure due to all the causes simultaneously. Such an analysis is beyond current technology. a procedure to estimate the stresses due to various effects separately and then to combine them properly for design purposes is presented. The resulting stresses can then be combined further with other applicable stresses to satisfy the design requirements. The analysis assumes that the soil is linearly elastic and homogeneous and the structure is a straight slender solid or hollow beam with a uniform, symmetrical cross section that satisfies the conditions of the elementary theory of slender beams

Card-A-Lert Codes: 621 (Nuclear Reactors) /
Controlled Terms: (*NUCLEAR REACTORS -- *Earthquake Effect) /

7310-51620 Compendex 73052662
INCREASING WELL YIELD WITH HYBRID WELLS
Helweg, Otto J.
Commission on Ecumenical Mission and Relations, New York, NY
Ground Water v 11 n 4 Jul-Aug 1973 p 12-17 Coden: GROWB Refs: 6

A regular deep well is combined with a gallery constructed similar to the qanats, a labor-intensive technology found in the Middle East. Qanats, tunnels that tap ground water for water supplies, are described. The author explains the method of constructing hybrid wells, some theoretical considerations using the nonequilibrium equation for pumping tests and the Donnan equation for drain design, and the economic gains from hybrid wells

Card-A-Lert Codes: 444 (Water Resources) /
Controlled Terms: *WATER WELLS / (WATER RESOURCES -- Underground) /
Uncontrolled Terms: HYBRID WELLS



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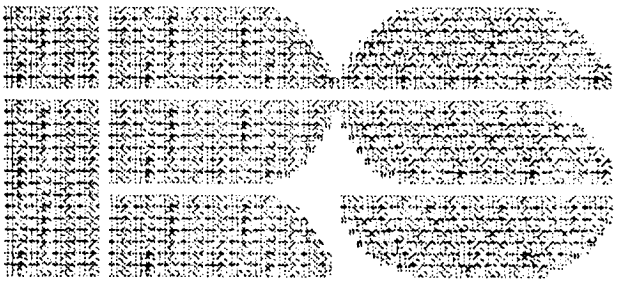


USER 003472 DATE:06/16/88 TIME:10:38:50

SEARCH HISTORY

SET	ITEMS	DESCRIPTION
1	37	WATER(W)WELL
2	3	ACIDIFICATION
3	81	STIMULATION
4	0	1*2
5	0	1*3
6	0	WATER}I{_(W)
7	67	WATER(W)WELL?
8	4926	MAINTENANCE
9	5	7*8
10	0	2*7
11	0	7*3
12	11	TECHNOLOGIE
13	5463	TECHNOLOGY
14	4	13*7
15	62	7-9
16	59	15-14

PRINT SUMMARY

NO.	FILE	ACCN/SET	FMT	ITEM-RANGE
1	48	9	4	1-5
2	48	14	4	1-4
3	48	16	4	1-59

SRCH TIME 2.50 PRINT COUNT 68 DESCS.: 11

0151843 Fluidex 84048946 Subfile: CH
Manual of water well maintenance and rehabilitation technology.
Gass, T.E.; Bennett, T.W.; Miller, J. ; Miller, R.
Ada, U.S.A., U.S. Environ. Protection Agency, 1981, 252p. In: English 1981 Avail-from BHRA: NH

This book deals with factors contributing to reduced water well performance, evaluation of well maintenance needs and well maintenance techniques, and methodologies. (N.G.)

Terms: pump / corrosion / hydrogeology / material / recharge well / case study

0105790 Fluidex 82024973 Subfile: CH
Maintenance of water wells.
Murthy, R.V.S.
J. Indian Water Works Assoc., vol.12, no.4, 1980, p.315-319. In: English 1980 Avail-from BHRA: NH Section Code(s): C12

After noting the importance of wells in India, the causes of failure of water wells are reviewed (depletion of the ground water supply, faulty construction, additional wells in the vicinity, but mainly corrosion and encrustation). Remedial measures available are then examined in some detail namely, acid treatment, chlorine treatment, and use of glassy phosphates. It is emphasized that water quality has much to do with encrustation and corrosion, and thus there is the need for regular chemical analysis of water. The use of the Langelier index and Ryznar stability index values is noted.

0073969 Fluidex 79046937 Subfile: CH
Groundwater manual. (First ed.).
U.S. Bur. Reclamation
Denver, U.S.A., U.S. Dept. Interior Bur. Reclamation, 1977, xxii + 480pp. (A Water Resources Tech. Publication). In: English 1977 Avail-from BHRA: NH Section Code(s): C12

Contents: Goundwater occurrence, properties, and controls; Theory of groundwater flow, aquifer properties, and definitions; well and aquifer relationships; Planning groundwater investigations and presentation of results; Analysis of discharging well and other test data; Estimates of aquifer yield, hydrologic budgets, and inventories; Initial operations and collection f correlative data; Geophysical investigations, bore hole logs, and surveys; Methods of determining aquifer characteristics; Permeability tests in individual drill holes; Components of a well and particulars of design; Infiltration galleries; Dewatering systems; Corrosion and incrustation; Well specifications; Water well drilling; Water well development; Well Sterilization; Vertical turbine pumps; Well and pump cost factors, operation and maintenance; Well rehabilitation; Appendix.

0063038 Fluidex 79003212 Subfile: PA
The mechanical failure of village water well pumps in rural areas.
Watt, S.
Appropriate Technol., Vol.4, No.3, Nov.1977, pp.24-25. In: English 1977 Avail-from BHRA:

The problems associated with village well pumps are considered such as lack of maintenance and rough usage. The Vergnet hydraulic pump is described in which water is forced into a flexible tube in order to push water in the displacement chamber up to the surface past a non-return valve. (C.M.W.)

0058413 Fluidex 78025048 Subfile: PA
The mechanical failure of village water well pumps in rural areas.
Watt, S.
Appropriate Technol., Vol.4, No.3, Nov.1977, pp.24-25. In: English 1977 Avail-from BHRA:

The problems associated with village well pumps are considered such as lack of maintenance and rough usage. The Vergnet hydraulic pump is described in which water is forced into a flexible tube in order to push water in the displacement chamber up to the surface past a non-return valve. (C.M.W.)

Rs.15.5 per running metre beyond 75 metres depth

0093517 Fluidex 81064204 Subfile: X
The contribution of scientific development of oil field by water flooding in Daqing.
Wenbing, T. ; Naiju, W.
Acta Pet. Sinica, no.10, Oct. 1980, p.27-41. In: Chinese 1980
Avail-from BHRA:

Outstanding achievements have been obtained in the application of water flooding for production of multizones in the Daqing oil field. From practice, it shows that the solution of the following basic problems is key to the effective development of an oil field by water flooding. 1. To have a scientific and valid development program, including a network of injection and production wells, a monitoring system of reservoir performances, a production technological system and a surface construction engineering system. The whole program should be organically coordinated and well planned for the systematic development of the oil field by water flooding. 2. To conserve sufficient reservoir energy and establish a pressure system to ensure replenishment and full utilization of the energy and to prevent the occurrence of three-phase flow in the reservoir so as to actively adjust the pressure difference for driving oil. 3. Based on the status of reserve, to develop production technology by injecting more water into the reservoir in such a way as to control water production from the oil wells and to keep more water underground in order to increase the sweep volume of flood and effectively raise the recovery factor. 4. In accordance with the heterogeneous nature of reservoir and the character of oil and water movement, to fix the main objectives of development of one period and devise ways to prolong the period of stabilized output successively in a planned way. (English abstract)

Terms: multiphase flow

0067540 Fluidex 79021220 Subfile: DA
Ocean mining: an historical perspective.
Mero, J.L.
Ocean Res. Inc.
Mar. Mining, vol.1, no.3, 1978, pp.243-255 In: English Coden: MARMDK Issn: -0149-0397 1978 Avail-from BHRA: Section Code(s): G17

The commercial mining of minerals from the ocean appears to have been initiated about 4000 years ago in China where methods were developed to extract common salt from sea water. Well over 100 years ago, aggregates were being mined from NorthSea areas and this activity has gradually developed into a major industry. The mining of tin alluvials by ladder bucketdredge was started in the offshore of Thailand in 1907 with these operations being continued to the present time. Deposits of gold, diamonds andock deposits have also been mined in offshore areas. Metalliferous muds were discovered in the approximate center of the RedSea in the early 1960's and these deposits, lying at a depth of about 2,000 meters, are presently being developed. Deposits of metalliferous nodules were discovered in the deep sea in the early 1870's and the technology of mining and processing these deposits presently is being developed by five major consortia with about .300 million expected to be spent in these efforts. Several governments have supported academic and environmental impact studies of the nodule deposits. While the deep sea deposits presently appear to be in a sort of political limbo, it is expected that they will eventually be mined and will provide considerable benefits for the world community. (A)

Terms: manganese nodules / manganese

0204900 Fluidex 88003190 Subfile: A
Windmills.
Swanson, G.J.
Water Well J., vol.41, no.7, Jul. 1987, p.39-42. In: English
Coden: Issn: 0043-1443 1987 Avail-from BHRA: Section Code(s): A17

The use of windmills in the Plains States of the U.S.A. for water well pumping is reviewed. Though at the height of their development just before the First World War, windmills still have an important role to play. The activities of two water well drilling companies which service at least 200 windmills a year are described. Windmills are still manufactured, particularly by the Aermotor Windmill Corp. and Essex Associates. (D.W.T.)

0204678 Fluidex 88002302 Subfile: CH
Earthquakes and water wells.
Hurlburt, S.
Water Well J., vol.41, no.8, Aug. 1987, p.73-77. In: English
Coden: WATEBC Issn: 0043-1443 1987 Avail-from BHRA: Section Code(s): C25

The effects of earthquakes on water wells, particularly in the U.S.A., are discussed. Data from instrumented water wells are playing a part in earthquake monitoring and prediction. The work of the Institute of Tectonics at the University of California, Santa Cruz in the field of earthquake prediction is described. Because of the fluctuations in water levels caused by earthquakes, water wells can serve as seismometers in some circumstances. (D.W.T.)

0203801 Fluidex 87062466 Subfile: CH
Water resources data for Maryland and Delaware, water year 1984.
James, R.W. ; Simmons, R.H.; Strain, B.F.
Towson, U.S.A., U.S. Geol. Surv., Jun. 1985, 329p. (USGS/WRD/HD-85-236;USGS/WDR/MD/DE-84-1) (PB86-136314) In: English
1985 Avail-from BHRA: NH Section Code(s): C25

Water resources data for the 1984 water year for Maryland and Delaware consist of records of stage, discharge and water quality of streams; stage and contents of lakes and reservoirs and water levels and water quality of ground water wells. This volume contains records for water discharge at 104 gauging stations; stage and contents at one reservoir; water quality at 17 gauging stations and 97 wells and water levels at 24 observation wells. Also included are data for 12 crest stage and 4 tidal crest stage partial record stations. (A)

0203796 Fluidex 87062446 Subfile: CH
Water resources data for New York, water year 1984. Volume 3. Western New York.
Hood, J.B.; Johnston, W.H. ; Zajd, H.J.
Ithaca, U.S.A., U.S. Geol. Surv., Jun. 1985, 188p. (USGS/WRD/HD-85-238;USGS/WDR/NY-84-3) (PB86-130630) In: English
1985 Avail-from BHRA: NH Section Code(s): C25

Water resources data for the 1984 water year for New York consist of records of stage, discharge and water quality of streams; stage and contents of lakes and reservoirs and water levels of ground water wells. This volume contains records for water discharge at 78 gauging stations; stage only at 14 stations; stage and contents at 6 gauging stations; water quality at 7 stations and water levels at 22 observation wells. Also included are data for 63 crest stage partial record stations. (A)

0203794 Fluidex 87062438 Subfile: CH
Water resources data for Illinois, water year 1984. Volume 2. Illinois River basin.
Fitzgerald, K.K.; Hayes, P.D.; Richards, T.E. ; Stahl, R.L.
Urbana, U.S.A., U.S. Geol. Surv., May 1985, 394p. (USGS/WRD/HD-85-240;USGS/WDR/IL-84-2) (PB86-135316) In: English
1985 Avail-from BHRA: NH Section Code(s): C25

Water resources data for the 1984 water year for Illinois consist of records of stage, discharge and water quality of streams; stage and contents of lakes and reservoirs and water levels of ground water wells. This volume contains records for water discharge at 74 gauging stations; stage only at 2 gauging stations; stage only a 3 lake stations; water quality at 94 gauging stations and water levels at 3 observation wells. Also included are data for 15 crest stage partial record stations. (A)

0202231 Fluidex 87056186 Subfile: CH
Water resources data for Marlyand and Delaware, water year 1985.
James, R.W. ; Simmons, R.H.; Strain, B.F.
Towson, U.S.A., U.S. Geol. Surv., Jul. 1986, 301p. (USGS/WRD/HD-86-245;USGS/WDR/MD/DE-85-1) (PB87-111878) In: English
1986 Avail-from BHRA: NH Section Code(s): C25

Water resources data for the 1985 water year for Maryland and Delaware consist of records of stage, discharge and water quality of streams, stage and contents of lakes and reservoir, and water levels and water quality of ground water wells. The volume contains records for water discharge at 101 gauging stations; stage and contents of 1 reservoir; water quality at 25 gauging stations and 123 wells; and water levels at 24 observation wells. Also included are data for 12 crest stage, 11 low flow, and 6 tidal crest stage partial record stations. (from authors' abstract)

0202157 Fluidex 87055890 Subfile: CH
Water resources data for Connecticut, water year 1983.
Thomas, C.E.; Weiss, L.A.; Gasperini, I.S.; Bingham, J.W.
Hartford, U.S.A., U.S. Geol. Surv., Jul. 1985, 312p.
(USGS/WRD/HD-85-256;USGS/WDR/CT-83-1) (PB86-130499) In: English
1985 Avail-from BHRA: NH Section Code(s): C25

Water Resources Data for the 1983 water year for Connecticut consist of records of stage, discharge, and water quality of streams; stage, contents, and water quality of lakes and reservoirs; and water levels and water quality of ground water wells. (from authors' abstract)

0196923 Fluidex 87034954 Subfile: X
Scale formation in thermal water wells.
Diczhazi, B.; Kocsis, J. ; Marik, J.
Koolaj & Foldgaz, vol.18, no.12, 1985, p.358-364. In: Hungarian
1986 Avail-from BHRA: NH

Problems caused by scale formation in thermal water wells are considered, particularly where a decrease in strata pressure is involved. Methods, equations and tables were evaluated for predicting trends in scale formation or aggressive corrosive behaviour. All were found to show only trends and were unreliable at the equilibrium point. The Ryznar index calculated with the Gulya's equation gave the best formula for describing the well behaviour. Preventive methods of continuous or occasional form are also described for scale separation, prevention and scale elimination. (from English abstract))

Terms: corrosion

0195208 Fluidex 87028094 Subfile: FE
Oil price slide clouds outlook for deepwater gulf.
Hagar, R.
Oil & Gas J., vol.84, no.48, Dec. 1, 1986, p.19-22. In: English
Coden: OIGJAV Issn: 0030-1388 1986 Avail-from BHRA:
Section Code(s): W4

Examines prospects for deep water offshore platforms in the Gulf of Mexico. Seven deep water production systems are on stream, five more are being installed. One of the five, the Placid project, is a floating/subsea production system. Exploration programmes are not very active. Notes that the deep water wells here do not match North Sea wells in flow rates. The Placid system uses a rigid production riser, containing twenty four well flow lines. Examines technological requirements for future commercial exploitation of the offshore oil in the Gulf of Mexico, noting that the geology of the area is quite complex. (C.J.U.)

0193230 Fluidex 87020182 Subfile: PA
How a submersible pump helped to improve a city's water supply from a deep limestone well.
Davis, E.C.
Water Well J., vol.40, no.3, Mar. 1986, p.69-71. In: English
Coden: WATEBC Issn: 0583-9246 1986 Avail-from BHRA:
Section Code(s): P17

The practicality and suitability of submersible pumps and motors for deep municipal water wells were tested in an experiment at Bluffton, Indiana. The 200-300 ft deep wells were completed in limestone which required annual cleaning of deposits from minerals and bacteria. This cleaning problem was the major deterrent in trying a submersible pump. The paper discusses how the valve and pump arrangements were modified. Details of other problems and how they were overcome are also given. (P.J.B.)

0001288 Fluidex 86033826 Subfile: X
The state-of-the-art closed-loop earth-coupled heat pumps.
Rawlings, P.
Waterwell J., vol.39, no.7, Jul. 1985, p.52-56. In: English
Coden: WATEBC Issn: 0583-9246 1985 Avail-from BHRA:

Two types of closed loop earth couplings are described for water source heat pumps. The vertical heat exchanger or geothermal well was installed by a water well driller; the water from the heat pump circulates through the well and exchanges heat with the earth as it travels down and back up to re-enter the heat pump. The second design of earth coupling is the horizontal earth coil, which can be installed in either series serpentine loops or in multiple leg parallel loops. General information on the installation of these systems, e.g. filling, purging, start up, antifreeze charging and establishing water pressure is presented. (A.J.)

0001217 Fluidex 86031026 Subfile: CH
Groundwater resource development.
Hamill, L.; Bell, F.G.
London, U.K., Butterworths, 1986, 360p. (ISBN 0-408-01409-1)
In: English Isbn: 0-408-01409-1 1986 Avail-from BHRA: NH
Section Code(s): C12

This book describes the stages involved in searching for productive aquifers. It takes into consideration the actual exploration, the construction and testing of water wells, water quality and pollution considerations. Models are put forward for analysis and discussion. It is intended for those involved in water engineering, but assumes little previous knowledge, with the exception of calculus. (R.I.H.)

0001219 Fluidex 86016090 Subfile: CH
Ground water software - trimming the confusion.
Graves, B.
Ground Water Monit. Rev., vol.6, no.1, 1986, p.44-53. In: English Issn: 0017-467X 1986 Avail-from BHRA: NH Section Code(s): C12

Described are the activities of the International Ground Water Modeling Center (IGWMC) which acts as an information clearing house for groundwater modelling software. Also described are the educational efforts of the National Water Well Association. The main body of the text is a collection of information about the various software packages for groundwater modelling that are currently available. (R.I.H.)

0171551 Fluidex 85055810 Subfile: CH
The application of microcomputers in the development of groundwater supplies.
Hall, P.L.
In: Papers of the Int.Conf. on Groundwater and Man, Volume 1: The Investigation and Assessment of Groundwater Resources, (Sydney, Australia: Dec. 5-9, 1983), Canberra, Australia, Australian Gov. Publishing Serv., 1983, p.121-130. (ISBN 0-644-02918-8) In: English Isbn: 0-644-02918-8 1983 Avail-from BHRA: NH Section Code(s): C25

In the early phases of groundwater development microcomputers are used to sort and plot water well records, using database management techniques. Hydrogeological data may be selectively sorted and plotted to aid in the preparation of contour and isopach maps. The records are also used to plot hydrogeologic sections. Data obtained from test drilling and pumping tests is processed and analyzed using a microcomputer. In selecting optimum pumping rates for production wells analytical and finite difference models are used to predict drawdown and interference around the between wells. Once the wells are placed in production, water levels and pumping rates are monitored by microprocessors. The data is then transmitted by telephones or satellite for processing. These techniques are illustrated with practical examples, from Alberta, Canada. (from authors' abstract)

88V21450* ENVIROLINE RESEARCH ARTICLE 88V21450
USING REVERSE OSMOSIS TO REMOVE AGRICULTURAL CHEMICALS FROM GROUNDWATER
BAIER JOSEPH H. ; LYKINS BENJAMIN N.
OFFICE OF WATER RESOURCES, HAUPPAUGE, NY
AWWA J, AUG 87, V79, N8, P55(6)

SINCE 1978, SUFFOLK COUNTY, NY, HAS SCREENED ITS GROUNDWATER FOR AGRICULTURAL AND ORGANIC CONTAMINANTS, AND THEIR DECAY PRODUCTS AS WELL. CONCERN BECAME PARAMOUNT WHEN SPECIFIC CHEMICALS WERE DETECTED IN PRIVATE DRINKING WELLS. TESTS OF VARIOUS TYPES OF MEMBRANES SUGGEST THAT REVERSE OSMOSIS COULD BE A VIABLE METHOD FOR PESTICIDE AND ORGANICS REMOVAL, BECAUSE OF THE MINIMUM LABOR AND TECHNOLOGY REQUIRED TO MAINTAIN THE SYSTEMS. THE AUTHORS SUGGEST THAT PILOT TESTS USING IN SITU WATER BE PERFORMED TO INSURE PROPER SYSTEMS DESIGN. (1 DIAGRAM, 3 GRAPHS, 6 REFERENCES, 9 TABLES)

Category: 19 / WATER POLLUTION
Controlled Terms: *AGRICULTURAL CHEMICALS / *CHEMICAL CONTAM CONTROL / CHEMICAL INDICATORS-WATER / CHEMICAL RESIDUES / ECONOMICS, WATER TREATMENT / ENV ACTION-STATE LOCAL / GROUNDWATER / OPERATING-MAINTENANCE COSTS / *REVERSE OSMOSIS / WATER WELLS

87V23877* ENVIROLINE ARTICLE 87V23877
STANDARDS AND SPECIFICATIONS FOR INFILTRATION PRACTICES
MARYLAND DEPT NATURAL RESOURCES REPORT, FEB 84 (186)

TATE/LOCAL GOVT REPORT .INFILTRATION PRACTICES ARE APPLIED TO STORMWATER RUUNOFF MANAGEMENT IN MARYLAND TO CONTROL PEAK FLOWS AND AUGMENT WATER QUALITY CONTROLS. PLANNING AND DESIGN PROCEDURES, INSPECTION, AND MAINTENANCE RESPONSIBILITIES FOR THE UTILIZATION OF INFILTRATION TECHNOLOGY ARE COMPILED. STANDARDS AND SPECIFICATIONS ARE DETAILED FOR INFILTRATION BASINS, INFILTRATION TRENCHES, DRY WELLS, POROUS ASPHALT PAVEMENT, VEGETATED SWALES WITH CHECK DAMS, AND VEGETATIVE FILTERS. HYDROLOGIC DESIGN METHODS ARE COVERED, AND SEVERAL CASE STUDIES ILLUSTRATE THE APPLICATION OF THESE STANDARDS IN THE STATE.

Category: 16 / RENEWABLE RESOURCES WATER
Controlled Terms: ASPHALT / FILTRATION / GRASSES / *INFILTRATION / *MARYLAND / STANDARDS, ENV / *STORM RUNOFF / WATER RESOURCES MANAGEMENT / WATER WELLS

87V23876* ENVIROLINE ARTICLE 87V23876
INSPECTOR'S GUIDELINES MANUAL FOR STORMWATER MANAGEMENT INFILTRATION PRACTICES
MARYLAND DEPT NATURAL RESOURCES REPORT, DEC 85 (65)

TATE/LOCAL GOVT REPORT .STORMWATER FACILITY INSPECTORS ARE PROVIDED WITH GUIDELINES FOR INSPECTING THE CONSTRUCTION OF INFILTRATION DEVICES, AND INSPECTING AND MAINTAINING THESE DEVICES ONCE THEY ARE PLACED INTO OPERATION. TO HELP DETERMINE WHEN MAINTENANCE ACTIVITIES ARE REQUIRED, INSPECTION/MAINTENANCE CHECKLISTS FOR INFILTRATION BASIN, INFILTRATION TRENCH, POROUS PAVEMENT, AND VEGETATED SWALE PRACTICES ARE INCLUDED. EXCAVATION AND CONSTRUCTION PROCEDURES ARE DELINEATED FOR THESE PRACTICES AS WELL AS FOR DRY WELL SYSTEMS.

Category: 16 / RENEWABLE RESOURCES WATER
Controlled Terms: ASPHALT / GREENBELTS / *INFILTRATION / *INSTRUCTION MANUALS / *STORM RUNOFF / WATER RESOURCES MANAGEMENT / WATER WELLS

86V36210* ENVIROLINE ACADEMIC REPORT 86V36210
A HOMEOWNER'S GUIDE TO DOMESTIC WELLS
SEVEBECK KATHRYN P.; KAHN JACOB H.; SPONENBERG TORSTEN D.
VIRGINIA POLYTECHNIC INST & STATE UNIV WATER RESOURCES RESEARCH CENTER REPORT, 1985 (32)

INFORMATION IS PROVIDED FOR THE HOMEOWNER CONCERNING THE LOCATION AND CONSTRUCTION OF GROUNDWATER WELLS. WELL SITING AND DRILLING CONSIDERATIONS ARE EXAMINED FOR WATER SUPPLIES IN VIRGINIA. DISINFECTION AND CONDITIONING METHODS FOR TREATING DRINKING WATER ARE ALSO EXPLAINED. GUIDELINES ARE COMPILED FOR ASSISTING IN WELL MAINTENANCE, WATER TESTING, AND GROUNDWATER PROTECTION.

Category: 16 / RENEWABLE RESOURCES WATER
Controlled Terms: CHLORINATION / DISINFECTION / DRILLING / GROUNDWATER / VIRGINIA / WATER ANALYSIS / *WATER SUPPLY, DOMESTIC / *WATER WELLS / WATER, DRINKING

85V03526* ENVIROLINE ARTICLE 85V03526
IMPACT OF CONSERVATION ON RATES AND OPERATING COSTS
BHATT NISHITH R.; COLE CHARLES A.
(DAUPHIN CONSOLIDATED WATER SUPPLY CO, PA) AND, (PENNSYLVANIA STATE UNIV)
J WATER RESOURCES PLANNING & MANAGEMENT DIV-ASCE, APR 85, V111, N2, P192(15) RESEARCH ARTICLE

THE SHORT- AND LONG-TERM ECONOMIC IMPACTS OF A 20% REDUCTION IN WATER USAGE THROUGH WATER CONSERVATION ARE PROJECTED FOR A STEWARTSTOWN BOROUGH, PA, UTILITY. ANALYSIS OF SHORT-TERM IMPACT INDICATES THE AVERAGE CUSTOMER BILL WOULD BE REDUCED BY 16%, WHILE LONG-RANGE IMPACT ANALYSIS SHOWS SAVINGS OF $71,280 IN PRESENT WORTH (1976) FOR OPERATING AND MAINTENANCE COSTS, WHICH WOULD EVENTUALLY TRANSLATE INTO CUSTOMER BILL REDUCTIONS. RESIDENTIAL, COMMERCIAL, INDUSTRIAL, AND MUNICIPAL WATER USAGE IS DETAILED, PROJECTIONS OF WATER DEMAND IN STEWARTSTOWN ARE GIVEN, AND RECOMMENDATIONS FOR FUTURE STUDY ARE MADE. (4 GRAPHS, 24 REFERENCES, 3 TABLES,)

Category: 16 / RENEWABLE RESOURCES WATER
Controlled Terms: AREA COMPARISONS / CALIFORNIA / COST BENEF ANALYSIS-WATER / ECONOMIC INCENTIVES, ENV / *ECONOMICS, ENV-WATER / *OPERATING-MAINTENANCE COSTS / PENNSYLVANIA / PRIVATE UTILITIES / SEWAGE MANAGEMENT / U S DEPT HOUSING URBAN DEVEL / WASTEWATER TREATMENT / *WATER CONSERVATION / WATER STORAGE / WATER WELLS

84V06021* ENVIROLINE JOURNAL ARTICLE 84V06021
WHY PRESENT VALUE CALCULATIONS SHOULD NOT BE USED IN CHOOSING RURAL WATER SUPPLY TECHNOLOGY
BALDWIN GEORGE B.
WORLD BANK
WORLD DEVELOPMENT, 1983, V11, N12, P1075 (7)

THE DISCOUNTING TECHNIQUE IS OFTEN USED IN EVALUATING COMPETING TECHNOLOGIES AND EQUIPMENT. ENGINEERS AND ECONOMISTS DISCOUNT FUTURE VALUES AND GROUP THEM INTO A SINGLE PRESENT VALUE WHEN ASSESSING BEST TECHNOLOGIES FOR CAPITAL INVESTMENTS. THE VALIDITY OF THIS PROCEDURE AS APPLIED TO SELECTION OF RURAL WATER SUPPLY SYSTEMS IS QUESTIONED. THIS METHODOLOGY CANNOT BE USED IN THE CONSIDERATION OF INVESTMENTS THAT WILL REGENERATE RECURRENT COSTS WHOSE PROVISION CANNOT BE ASSURED BY USER CHARGES AND MUST THEREFORE BE COVERED BY GOVERNMENT BUDGETS. INAPPROPRIATE APPLICATION OF CAPITAL INTENSITY MEASURES TO WATER SUPPLY PROJECTS IS ALSO DISCUSSED. (2 TABLES)

Category: 16 / RENEWABLE RESOURCES WATER
Controlled Terms: APPROPRIATE TECHNOLOGY / CAPITAL COSTS / CAPITAL INTENSIVENESS / *ECONOMICS, ENV-WATER / OPERATING-MAINTENANCE COSTS / PUMPING SYSTEMS / RURAL PLANNING / *WATER SUPPLY / WATER WELLS

84V02572 ENVIROLINE ARTICLE 84V02572
EFFICIENCY OF INFILTRATION GALLERIES AS A SOURCE OF WATER IN ARID LANDS
AMIN, MAGDI I.; QAZI RAZIQ; DOWNING THEODORE E.
KING ABDULAZIZ UNIV, SAUDI ARABIA
WATER INTL, WINTER 83, V8, N4, P158 (8)

INFILTRATION GALLERIES, OR QANATS, HAVE BEEN USED FOR THOUSANDS OF YEARS IN THE MIDDLE EAST TO COLLECT UNDERGROUND WATER BY GRAVITY. THE CONSTRUCTION AND OPERATION OF SUCH SYSTEMS IN SAUDI ARABIA IS DISCUSSED. MAINTENANCE PROGRAMS AND SYSTEM COSTS ARE ALSO SPECIFIED FOR INDIVIDUAL QANATS. (3 DIAGRAMS, 17 REFERENCES)

Category: 16 / RENEWABLE RESOURCES WATER
Controlled Terms: ECONOMICS, ENV-WATER / GROUNDWATER / *HOT ENVIRONMENTS / *INFILTRATION / SAUDI ARABIA / WATER RESOURCES DEVELOPMENT / *WATER SUPPLY / WATER WELLS

83V05323* ENVIROLINE ARTICLE 83V05323
FACE TO FACE
AWWA J, JAN 83, V75, N1, P22 (4)

AN INTERVIEW WITH KATHRYN HACH AND AMEY GRUBBS, MEMBERS OF ZONTA INT'L, AN ORGANIZATION THAT IS SPONSORING 4000 WATER WELLS EQUIPPED WITH HAND PUMPS FOR A DEVELOPING AREA OF SRI LANKA, IS PRESENTED. THE ZONTA INT'L $1 MILLION EFFORT WILL PROVIDE APPROXIMATELY 25,000 RURAL SETTLER FAMILIES WITH DRINKING WATER, AND SO ENABLE GREATER ECONOMIC DEVELOPMENT OF THE REGION. THE WOMEN ARE ASKED QUESTIONS ON THE HEALTH HAZARDS ASSOCIATED WITH UNSAFE DRINKING WATER, PROVISIONS FOR SATISFACTORY SANITATION, MAINTENANCE OF THE HAND PUMPS, AND METHODS OF RAISING MONEY FOR THE PROJECT. (3 PHOTOS)

Category: 16 / RENEWABLE RESOURCES WATER
Controlled Terms: PUMPING SYSTEMS / RURAL DEVELOPMENT / SANITATION / *SRI LANKA / WATER RESOURCES DEVELOPMENT / WATER RESOURCES FINANCING / *WATER SUPPLY / WATER WELLS / WATER, DRINKING

80V05940* ENVIROLINE SURVEY REPORT 80V05940
REGIONAL WATER SUPPLY IN GHANA
BANNERMAN R. R.
UPPER REGION WATER SUPPLY PROJECT, GHANA
PRESENTED AT LOUGHBOROUGH UNIV WATER & WASTE ENGINEERING FOR DEVELOPING COUNTRIES 5TH CONF, UK, APR 22-24, 79, P37 (15)

A REGIONAL WATER SUPPLY DEVELOPMENT PROGRAM INSTITUTED IN GHANA BY THE GHANA UPPER REGION WATER SUPPLY PROJECT IS DESCRIBED. THE PROGRAM WAS SET UP TO ALLOW FOR THE CONSTRUCTION OF HAND PUMP WELLS IN RURAL AREAS, THE CONSTRUCTION OF MECHANIZED WELLS FOR MEDIUM-SIZED TOWNS, THE REHABILITATION OF WELLS IN RURAL AREAS, AND THE TRAINING OF PERSONNEL FOR GROUNDWATER DEVELOPMENT AND EQUIPMENT MAINTENANCE. MANAGEMENT OF THE PROGRAM AND PLANNING CONSIDERATIONS THAT AFFECTED THE PROGRAM'S IMPLEMENTATION ARE REVIEWED. THE PROGRAM WILL SUCCEED IN IMPROVING THE WATER SUPPLY SITUATION IN RURAL GHANA. (2 GRAPHS, 4 MAPS, 1 TABLE)

Category: 16 / RENEWABLE RESOURCES WATER
Controlled Terms: CONF PAPER / *GHANA / RURAL AREAS / WATER RESOURCES DEVELOPMENT / *WATER RESOURCES PLANNING / *WATER SUPPLY / WATER WELLS

78V04643* ENVIROLINE TECHNICAL FEATURE 78V04643
MODEL AIDS MANAGERIAL EFFECTIVENESS IN MUNICIPAL WATER SYSTEMS
HOLLMAN, KENNETH W. ; SELLERS JAMES H.; BUSH RONALD R.; HAIR, JOSEPH F.; MILAM EDWARD E.
LOUISIANA STATE UNIV
WATER & SEWAGE WORKS, APR 30, 78, PR-114 (8)

AN ANALYSTICAL MODEL DEVELOPED TO IMPROVE WATER MANAGEMENT EFFICIENCY IS DESCRIBED. THE MODEL IS DESIGNED TO MEASURE SELECTED COST FACTORS AT VARIOUS LEVELS OF COST PER GALLON OF WATER DELIVERED TO CUSTOMERS. BY USING THE MODEL, WATER MANAGERS ARE ABLE TO DETERMINE PREVAILING STANDARDS OF COST PERFORMANCE; MEASURE CURRENT PERFORMANCE IN RELATION TO THESE STANDARDS; AND TAKE ACTION TO ALIGN PERFORMANCE WITH INDUSTRY AVERAGES. FACTORS NOT INCLUDED IN THE MODEL MUST ALSO BE CONSIDERED, HOWEVER, AND MARKET SITUATIONS MAY DIFFER FOR EACH WATER UTILITY. (7 TABLES)

Category: 16 / RENEWABLE RESOURCES WATER
Controlled Terms: CHLORINATION / CITIES / COUNTIES / ECONOMICS, ENV-WATER / FILTRATION / MATHEMATIC MODELS-WATER / *OPERATING-MAINTENANCE COSTS / *WATER RESOURCES MANAGEMENT / *WATER SUPPLY / WATER WELLS

88V41442* ENVIROLINE RESEARCH ARTICLE 88V41442
DETERMINATION OF TRACE SULFIDES IN TURBID WATERS BY GAS DIALYSIS/ION CHROMATOGRAPHY
GOODWIN LORNE R. ; FRANCOM DONNA; URSA ALESSANDRO; DIEKEN FRED P.
ALBERTA ENV CENTER, CANADA
ANALYTICAL CHEMISTRY, FEB 1, 88, V60, N3, P216(4)

A CONTINUOUS-FLOW PROCEDURE HAS BEEN DEVELOPED THAT CONVERTS THE ACID-EXTRACTABLE SULFIDE TO H2S, WHICH IS SEPARATED FROM THE SAMPLE MATRIX BY A GAS DIALYSIS MEMBRANE AND THEN TRAPPED IN A DILUTE SODIUM HYDROXIDE SOLUTION. A 200-ML PORTION OF THIS SOLUTION IS INJECTED INTO THE ION CHROMATOGRAPH FOR ANALYSIS WITH AN ELECTROCHEMICAL DETECTOR. DETECTION LIMITS AS LOW AS 1.9 NG/ML HAVE BEEN OBTAINED. GOOD AGREEMENT WAS FOUND BETWEEN THE GAS DIALYSIS/ION CHROMATOGRAPHY AND METHYLENE BLUE METHODS FOR NONTURBID STANDARDS. THE ADDITION OF ASCORBIC ACID AS AN ANTIOXIDANT IS REQUIRED TO OBTAIN ADEQUATE RECOVERIES FROM SPIKED TAP AND WELL WATERS. (31 DIAGRAMS, 6 GRAPHS, 19 REFERENCES, 7 TABLES)

Category: 19 / WATER POLLUTION
Controlled Terms: HYDROGEN SULFIDE / MONITORING, ENV-WATER / *SULFIDES / TECHNOLOGY TRANSFER / *WATER POLLUTION INDICATORS / WATER WELLS / WATER, DRINKING

88V21450* ENVIROLINE RESEARCH ARTICLE 88V21450
USING REVERSE OSMOSIS TO REMOVE AGRICULTURAL CHEMICALS FROM GROUNDWATER
BAIER JOSEPH H. ; LYKINS BENJAMIN N.
OFFICE OF WATER RESOURCES, HAUPPAUGE, NY
AWWA J, AUG 87, V79, N8, P55(6)

SINCE 1978, SUFFOLK COUNTY, NY, HAS SCREENED ITS GROUNDWATER FOR AGRICULTURAL AND ORGANIC CONTAMINANTS, AND THEIR DECAY PRODUCTS AS WELL. CONCERN BECAME PARAMOUNT WHEN SPECIFIC CHEMICALS WERE DETECTED IN PRIVATE DRINKING WELLS. TESTS OF VARIOUS TYPES OF MEMBRANES SUGGEST THAT REVERSE OSMOSIS COULD BE A VIABLE METHOD FOR PESTICIDE AND ORGANICS REMOVAL, BECAUSE OF THE MINIMUM LABOR AND TECHNOLOGY REQUIRED TO MAINTAIN THE SYSTEMS. THE AUTHORS SUGGEST THAT PILOT TESTS USING IN SITU WATER BE PERFORMED TO INSURE PROPER SYSTEMS DESIGN. (1 DIAGRAM, 3 GRAPHS, 6 REFERENCES, 9 TABLES)

Category: 19 / WATER POLLUTION
Controlled Terms: *AGRICULTURAL CHEMICALS / *CHEMICAL CONTAM CONTROL / CHEMICAL INDICATORS-WATER / CHEMICAL RESIDUES / ECONOMICS, WATER TREATMENT / ENV ACTION-STATE LOCAL / GROUNDWATER / OPERATING-MAINTENANCE COSTS / *REVERSE OSMOSIS / WATER WELLS

88V01345* ENVIROLINE JOURNAL ARTICLE 88V01345
TAPPING THE WATER MARKET
MCCRAY KEVIN
NATL WELL WATER ASSN, OH
AMERICAN DEMOGRAPHICS, JAN 87, V9, N1, P42(5)

PRIVATE HOUSEHOLD WELLS CONSTITUTE THE LARGEST SHARE OF ALL WATER WELLS IN THE U.S., THE LARGEST WATER WELL MARKET IN THE WORLD. ALMOST 50% OF U.S. CITIZENS OBTAIN THEIR WATER SUPPLIES FROM GROUNDWATER. THE TRADITIONAL WATER WELL INDUSTRY IS IN FOR A SHAKEOUT, DUE TO SLUGGISH DRILLING TRENDS AND TECHNOLOGY DEVELOPMENTS THAT WILL TRANSLATE INTO LONGER WELL LIFETIMES AND A DECLINE IN FUTURE WELL CONSTRUCTION. HOWEVER, OPPORTUNITIES ABOUND IN ASSURING CONSUMERS THAT THEIR GROUNDWATER IS CLEAN. POLLS CONFIRM THAT MOST CONSUMERS ARE WILLING TO PAY FOR CLEANER WATER AND FOR POLLUTED WATER CLEANUPS. TO AVOID CONTAMINATED WATER SOURCES, MANY ARE TURNING TO BOTTLED WATER AND TAKING OTHER SAFETY PRECAUTIONS. (1 DRAWING, 1 TABLE)

Category: 16 / RENEWABLE RESOURCES WATER
Controlled Terms: ATTITUDE SURVEYS / DRILLING / ECONOMICS, ENV-WATER / *GROUNDWATER / WATER POLLUTION INDICATORS / WATER SUPPLY / WATER WELLS / WATER, BOTTLED / WATER, DRINKING

87V38274* ENVIROLINE JOURNAL ARTICLE 87V38274
A NEW APPLICATION FOR A TIRED TECHNOLOGY
VARANI ANNETTE
WATER ENGINEERING & MANAGEMENT, FEB 87, V134, N2, P27(3)

COLORADO'S GROUND WATER IS PLAGUED WITH THE HIGHEST CONCENTRATION OF DISSOLVED URANIUM IN THE COUNTRY. IN 1983, THE MARSHDALE ELEMENTARY SCHOOL IN THE JEFFERSON COUNTY DISTRICT DISCOVERED A URANIUM CONTAMINATION LEVEL OF 120 PCI/L IN A NEWLY-DRILLED DRINKING WATER WELL. THE SCHOOL DISTRICT FUNDED A BENCH-SCALE ION-EXCHANGE PILOT STUDY, WHICH PROVED SUCCESSFUL. ON JUNE 1, 1986, THE SCHOOL FINISHED CONSTRUCTION OF A FULL-SCALE ION-EXCHANGE FACILITY AT A COST OF $11,600. REMOVAL OF U234, U235 AND U238 IS IN EXCESS OF 97%. RADIOACTIVE BRINE PRODUCED DURING REGENERATION OF THE ION-EXCHANGE COLUMNS IS TRUCKED TO AN EXISTING SCHOOL WASTEWATER PLANT. (1 DIAGRAM, 2 PHOTOS, 2 TABLES)

Category: 14 / RADIOLOGICAL CONTAMINATION
Controlled Terms: *COLORADO / ECONOMICS, ENV-RADIATION / ENV ACTION-STATE LOCAL / FINANCING, ENV / *GROUNDWATER / MONITORING, ENV-WATER / *RADIOLOGICAL CONTAM INCIDENT / URANIUM 234 / URANIUM 235 / URANIUM 238

87V33942* ENVIROLINE JOURNAL ARTICLE 87V33942
UNDERGROUND STORAGE TANK MONITORING OBSERVATION WELL BASED SYSTEMS
SCHEINFELD RAYMOND A. ; ROBERTSON JOHN B.; SCHWENDEMAN TODD G.
ROY F. WESTON INC
GROUND WATER MONITORING REVIEW, FALL 86, V6, N4, P49(7)

STATE AND LOCAL GOVERNMENTS AND PETROLEUM-RELATED COMPANIES INCREASINGLY REQUIRE THE USE OF RELEASE DETECTION SYSTEMS FOR UNDERGROUND PETROLEUM STORAGE TANKS. THE AVAILABLE STATE OF THE ART TECHNOLOGY FOR LEAK DETECTION AND THE APPLICATION FOR WHICH EACH SYSTEM IS BEST SUITED ARE DISCUSSED. EMPHASIS IS PLACED ON COMMERCIALLY AVAILABLE DETECTION DEVICES INSTALLED IN GROUNDWATER OBSERVATION WELLS. THESE INCLUDE HYDROCARBON-DETECTING PASTE, BAILERS, INTERFACE PROBES, ELECTRICAL RESISTIVITY SENSORS, THERMAL-CONDUCTIVITY SENSORS, HYDROCARBON-SOLUBLE DEVICES, HYDROCARBON-PERMEABLE MATERIALS, AND VAPOR DETECTORS. (18 DIAGRAMS, 10 REFERENCES)

Category: 19 / WATER POLLUTION
Controlled Terms: *GROUNDWATER / HYDROCARBONS-WATER / MONITORING, ENV-WATER / OIL STORAGE / *UNDERGROUND FUEL STORAGE / *WATER POLLUTION INSTRUMENTS / WATER WELLS

87V23877* ENVIROLINE ARTICLE 87V23877
STANDARDS AND SPECIFICATIONS FOR INFILTRATION PRACTICES
MARYLAND DEPT NATURAL RESOURCES REPORT, FEB 84 (186)

TATE/LOCAL GOVT REPORT .INFILTRATION PRACTICES ARE APPLIED TO STORMWATER RUUNOFF MANAGEMENT IN MARYLAND TO CONTROL PEAK FLOWS AND AUGMENT WATER QUALITY CONTROLS. PLANNING AND DESIGN PROCEDURES, INSPECTION, AND MAINTENANCE RESPONSIBILITIES FOR THE UTILIZATION OF INFILTRATION TECHNOLOGY ARE COMPILED. STANDARDS AND SPECIFICATIONS ARE DETAILED FOR INFILTRATION BASINS, INFILTRATION TRENCHES, DRY WELLS, POROUS ASPHALT PAVEMENT, VEGETATED SWALES WITH CHECK DAMS, AND VEGETATIVE FILTERS. HYDROLOGIC DESIGN METHODS ARE COVERED, AND SEVERAL CASE STUDIES ILLUSTRATE THE APPLICATION OF THESE STANDARDS IN THE STATE.

Category: 16 / RENEWABLE RESOURCES WATER
Controlled Terms: ASPHALT / FILTRATION / GRASSES / *INFILTRATION / *MARYLAND / STANDARDS, ENV / *STORM RUNOFF / WATER RESOURCES MANAGEMENT / WATER WELLS

87V00429* ENVIROLINE RESEARCH ARTICLE 87V00429
ALKALINE FILTERS FOR PRIVATE WELLS
HEDBERG T.; JOHANSSON E.
CHALMERS UNIV OF TECHNOLOGY, SWEDEN
WATER QUALITY B, OCT 85, V11, N4, P206(7)

THE USE OF CALCIUM CARBONATE FILTERS FOR TREATING ACID GROUNDWATER IN PRIVATE WELLS IN SWEDEN IS EVALUATED. A TEST SYSTEM WITH A FILTER THROUGH WHICH WATER IS CIRCULATED CONTINUOUSLY, USING THE PRESSURE STORAGE ROOM AS A RESERVOIR, IS INVESTIGATED. THE DISSOLUTION OF CALCIUM WAS QUITE DIFFERENT IN FOUR CASES, LEADING TO DIFFERENT HYDROGEN CARBONATE CONCENTRATIONS AND PH VALUES.

Category: 19 / WATER POLLUTION
Controlled Terms: ACID RAIN / FILTERING / GROUNDWATER / SWEDEN / *WATER PURIFICATION / WATER WELLS

86V37420* ENVIROLINE JOURNAL ARTICLE 86V37420
POTENTIAL HEALTH EFFECTS OF MERCURY IN WATER SUPPLY WELLS
STOLZENBURG THOMAS R. ; STANFORTH ROBERT R.; NICHOLS DAVID G.
RESIDUALS MANAGEMENT TECHNOLOGY, WI
AWWA J, JAN 86, V78, N1, P45(4)

THE CYCLING OF MERCURY IN THE ENVIRONMENT AND IN WELL WATER WAS STUDIED TO DETERMINE THE MAGNITUDE OF THREATS TO HUMAN HEALTH. MODELING OF HG CYCLING INDICATES THAT, BECAUSE OF UNFAVORABLE CONDITIONS, HG IN WELL WATER IS HIGHLY UNLIKELY TO BE METHYLATED TO THE TOXIC METHYLMERCURY FORM. MORE IMPORTANT, AQUATIC ORGANISMS THAT CAN CONCENTRATE THE COMPOUND AND COULD BE CONSUMED BY HUMANS ARE NOT PRESENT IN WELL WATER.

Category: 02 / CHEMICAL AND BIOLOGICAL CONTAMINATION
Controlled Terms: BACTERIA / BIOACCUMULATION / FOOD CHAINS / *MERCURY / WATER POLLUTION EFFECTS / WATER WELLS / *WATER, DRINKING

85V29306* ENVIROLINE CONF PAPER 85V29306
HIGH TECHNOLOGY CONTAMINATION OF ARIZONA GROUNDWATER
EBERHARDT SANDRA I.
ARIZONA DEPT HEALTH SERVICES
UNIV OF MISSOURI/ET AL 18TH TRACE SUBSTANCES IN ENV HEALTH CONF, COLUMBIA, JUN 4-7, 84, P170(8)

TO IDENTIFY AND CHARACTERIZE VOLATILE ORGANIC COMPOUND POLLUTION IN ARIZONA GROUNDWATER, HUNDREDS OF WELLS WERE SAMPLED AND ANALYZED FOR SUCH COMPOUNDS NEAR INDUSTRIAL LOCATIONS AND DISPOSAL SITES. SEVENTEEN SITES WITH 113 CONTAMINATED WELLS WERE IDENTIFIED. THE MOST COMMON CONTAMINANTS WERE TRICHLOROETHYLENE AND TETRACHLOROETHYLENE. DISPOSAL OF SOLVENTS IN LANDFILLS WAS THE CAUSE OF POLLUTION AT THE GREATEST NUMBER OF SITES. (19 REFERENCES, 6 TABLES,)

Category: 02 / CHEMICAL AND BIOLOGICAL CONTAMINATION
Controlled Terms: *ARIZONA / *CHLORINATED HYDROCARBONS / *GROUNDWATER / HAZARDOUS WASTE DISPOSAL / SOLVENTS / WATER WELLS

85V15616* ENVIROLINE JOURNAL ARTICLE 85V15616
CROSS-MEDIA ENVIRONMENTAL IMPACTS OF AIR POLLUTION REGULATIONS FOR A COAL LIQUEFACTION PROCESS PLANT
KUMAR-TAYI GIRI; RUBIN EDWARD S.; LINCOLN DAVID R.
SUNY, ALBANY
APCA J, JAN 85, V35, N1, P35(6)

A MODELING APPROACH FOR SYSTEMATICALLY QUANTIFYING AND COMPARING WATER, LAND, AND AIR POLLUTANT EMISSIONS AND THE ASSOCIATED COSTS FROM COAL LIQUEFACTION PROCESSES IS DESCRIBED. COALIQ, THE COMPUTERIZED MODEL DEVELOPED UNDER THIS APPROACH, IS UTILIZED TO GAIN INSIGHTS ABOUT THE WAY EMISSIONS AND ENSUING ECONOMIC IMPACTS ARE AFFECTED BY PROCESS DESIGN PARAMETERS, COAL CHARACTERISTICS, CONTROL TECHNOLOGY, AND ENVIRONMENTAL REGULATIONS. (1 DIAGRAM, 39 REFERENCES, 2 TABLES,)

Category: 03 / ENERGY
Controlled Terms: *COAL LIQUEFACTION / ECON IMPACT-AIR POLL CONT / EMISSION CONTROL EQUIPMENT / EMISSION CONTROL STANDARDS / H COAL PROCESS / SOLVENT REFINED COAL PROCESS / SULFUR DIOXIDE / SULFUR RECOVERY *XL

84V06021* ENVIROLINE JOURNAL ARTICLE 84V06021
WHY PRESENT VALUE CALCULATIONS SHOULD NOT BE USED IN CHOOSING RURAL WATER SUPPLY TECHNOLOGY
BALDWIN GEORGE B.
WORLD BANK
WORLD DEVELOPMENT, 1983, V11, N12, P1075 (7)

THE DISCOUNTING TECHNIQUE IS OFTEN USED IN EVALUATING COMPETING TECHNOLOGIES AND EQUIPMENT. ENGINEERS AND ECONOMISTS DISCOUNT FUTURE VALUES AND GROUP THEM INTO A SINGLE PRESENT VALUE WHEN ASSESSING BEST TECHNOLOGIES FOR CAPITAL INVESTMENTS. THE VALIDITY OF THIS PROCEDURE AS APPLIED TO SELECTION OF RURAL WATER SUPPLY SYSTEMS IS QUESTIONED. THIS METHODOLOGY CANNOT BE USED IN THE CONSIDERATION OF INVESTMENTS THAT WILL REGENERATE RECURRENT COSTS WHOSE PROVISION CANNOT BE ASSURED BY USER CHARGES AND MUST THEREFORE BE COVERED BY GOVERNMENT BUDGETS. INAPPROPRIATE APPLICATION OF CAPITAL INTENSITY MEASURES TO WATER SUPPLY PROJECTS IS ALSO DISCUSSED. (2 TABLES)

Category: 16 / RENEWABLE RESOURCES WATER
Controlled Terms: APPROPRIATE TECHNOLOGY / CAPITAL COSTS / CAPITAL INTENSIVENESS / *ECONOMICS, ENV-WATER / OPERATING-MAINTENANCE COSTS / PUMPING SYSTEMS / RURAL PLANNING / *WATER SUPPLY / WATER WELLS

84V02780* ENVIROLINE CONF PAPER 84V02780
PRACTICAL INTERPRETATION OF GROUNDWATER MONITORING RESULTS
DUVEL, WILLIAM A.
ENV RESEARCH & TECHNOLOGY, MA
EPA/ET AL MANAGEMENT OF UNCONTROLLED HAZARDOUS WASTE SITES NATL SYM, DC, NOV 29-DEC 1, 82, P86 (5)

AS THE ANALYTICAL RESULTS OF GROUNDWATER MONITORING INVESTIGATIONS FORM THE BASIS FOR PUBLIC HEALTH RISK ASSESSMENTS, IT IS ESSENTIAL THAT THE ANALYTICAL INTERPRETATION OF RESULTS BE CORRECT. STATISTICAL METHODS AND SAMPLING PROCEDURES EMPLOYED FOR GROUNDWATER ANALYSIS ARE DETAILED. THE PROPER APPLICATION OF THESE TOOLS WILL ELIMINATE VARIABILITY IN DATA. TYPES OF ERRORS OFTEN ENCOUNTERED IN SUCH RESEARCH ARE IDENTIFIED, AND SAMPLING PROGRAM COST CONSIDERATIONS ARE EXAMINED. (1 GRAPH, 2 REFERENCES, 6 TABLES)

Category: 19 / WATER POLLUTION
Controlled Terms: CAPITAL COSTS / DISPOSAL SITES / ECONOMICS, ENV-WATER / *GROUNDWATER / *HAZARDOUS WASTE DISPOSAL / MATHEMATIC MODELS-ECONOMICS / MATHEMATIC MODELS-WATER / *MONITORING, ENV-WATER / WATER SAMPLING / WATER WELLS

84V02758* ENVIROLINE CONF PAPER 84V02758
NITROGEN CIRCULATION AND NITRATE IN GROUND WATER IN AN AGRICULTURAL CATCHMENT IN SOUTHERN INDIA
JACKS G.; SHARMA V. P.
(ROYAL INST OF TECHNOLOGY, STOCKHOLM) AND, (CENTRAL GROUND WATER BOARD, INDIA)
INTL ASSN HYDROGEOLOGISTS IMPACT OF AGRICULTURAL ACTIVITY ON GROUND WATER SYM, PRAGUE, SEP 5-11, 82, V16, N2, P169 (10)

HIGH CONTENTS OF NITRATE IN GROUNDWATER, RANGING UP TO 1500 MG/L, HAVE BEEN FOUND IN AN AGRICULTURAL CATCHMENT IN SOUTHERN INDIA. ELEVATED LEVELS ARE MORE COMMON IN VILLAGE WELLS THAN IN IRRIGATION WELLS. LOSSES OF NITROGEN FROM THE SOIL ZONE THROUGH DEEP LEACHING INTO GROUNDWATER ARE SMALL, AVERAGING 260 KG N/SQ KM. HOWEVER, DUE TO A SMALL NET INFILTRATION, THE MEDIAN CONTENT IN GROUNDWATER APPROACHES THE PERMISSIBLE LIMIT OF 50 MG/L NO3. (1 DIAGRAM, 3 GRAPHS, 11 REFERENCES)

Category: 19 / WATER POLLUTION
Controlled Terms: AGRICULTURAL DRAINAGE / AGRICULTURAL RUNOFF / *GROUNDWATER / *INDIA / INFILTRATION / IRRIGATION / LEACHING / *NITRATES / NITROGEN FIXATION / WATER WELLS

84V01884* ENVIROLINE CONF PAPER 84V01884
LONG-RANGE GROUNDWATER LEVEL PREDICTION BASED ON TIME SERIES ANALYSIS
KONTUR I.
BUDAPEST UNIV OF TECHNOLOGY, HUNGARY
INTL ASSN HYDROLOGICAL SCIENCES SCIENTIFIC GENERAL ASSEMBLY 1ST SYM, EXETER, UK, JUL 19-30, 82, P187 (7)

A 40-YEAR-LONG RECORD OF GROUNDWATER LEVEL VARIATIONS IN THE HUNGARIAN LOWLANDS IS DISCUSSED. THESE DATA AFFORD THE POSSIBILITY OF DEVELOPING FORECASTING MODELS. PREDICTION OF GROUNDWATER REGIME BEHAVIOR BY TIME SERIES ANALYSIS IS DESCRIBED. TREND, PERIODICITY, ASYMMETRY, AND REGULARITY COMPONENTS OF SUCH ANALYSES ARE ADDRESSED. (5 GRAPHS, 2 REFERENCES)

Category: 16 / RENEWABLE RESOURCES WATER
Controlled Terms: *GROUNDWATER / HUNGARY / MATHEMATIC MODELS-WATER / *WATER LEVELS / WATER WELLS

83V05338* ENVIROLINE ARTICLE 83V05338
IRAN'S MODE OF MODERNIZATION GREENING THE DESERT, DESERTING THE GREENERY
PAZWASH H.
CIVIL ENGINEERING-ASCE, MAR 83, V53, N3, P48 (4)

TECHNIQUES THAT HAVE BEEN APPLIED TO EXTRACT AND UTILIZE GROUNDWATER IN IRAN, A COUNTRY THAT IS 50% DESERT, ARE DISCUSSED. WELL DIGGING WAS GRADUALLY DEVELOPED INTO THE ART OF QANAT CONSTRUCTION. QANAT CONSTRUCTION TECHNOLOGY IS SIMILAR TO TUNNELING AND REQUIRES AN UNDERSTANDING OF GROUNDWATER FLOW IN ADDITION TO ACCURATE SURVEYING AND PRECAUTIONS FOR VENTILATION AND FOR THE PREVENTION OF COLLAPSE IN SOFT SOILS. QANATS COLLECT FRESH GROUNDWATER FROM RICH AQUIFERS IN MOUNTAIN SLOPES AND TRANSFER IT TO THE CENTERS OF PLAINS LAND, ALLOWING THE ADEQUATE IRRIGATION OF THE LAND AND SUPPLYING DOMESTIC NEEDS. THE ECONOMICS OF QANATS, THE IMPACTS OF LARGE DAMS, AND POOR LAND USE PLANNING ARE ANALYZED. (2 PHOTOS)

Category: 16 / RENEWABLE RESOURCES WATER
Controlled Terms: AQUIFERS / DAM CONSTRUCTION / ECONOMICS, ENV-WATER / GROUNDWATER / *IRAN / IRRIGATION / PUMPING SYSTEMS / SEDIMENTATION / *WATER WELLS

82V02618* ENVIROLINE SURVEY REPORT 82V02618
GROUNDWATER MONITORING
JOSEPHSON JULIAN
ENV SCIENCE & TECHNOLOGY, SEP 81, V15, N9, P993 (4)

GROUNDWATER MONITORING PROMISES TO BECOME A RAPIDLY GROWING INDUSTRY DUE TO LAWS, REGULATIONS, AND INCREASING POLLUTION PROBLEMS. HOWEVER, IMPROVEMENTS IN GEOHYDROLOGICAL AND GEOCHEMICAL UNDERSTANDING AND IN SAMPLING TECHNIQUES ARE NEEDED. CURRENT GROUNDWATER SAMPLING TECHNOLOGY IS EVALUATED, AND NONDRILLING TECHNIQUES ARE SURVEYED. (1 DIAGRAM, 4 PHOTOS)

Category: 19 / WATER POLLUTION
Controlled Terms: *GROUNDWATER / *MONITORING, ENV-WATER / WATER SAMPLING / WATER WELLS

81V05013* ENVIROLINE TECHNICAL FEATURE 81V05013
DETECTION OF TRACE ORGANICS IN WELL WATER NEAR A SOLID WASTE LANDFILL
DEWALLE FOPPE B.; CHIAN EDWARD S. K.
(UNIV OF WASHINGTON), (GEORGIA INST TECHNOLOGY)
AWWA J, APR 81, V73, N4, P206 (6)

ALTHOUGH SANITARY LANDFILL GUIDELINES HAVE REDUCED THE IMMEDIATE PUBLIC HEALTH HAZARDS FROM VECTOR EXPOSURE, ENVIRONMENTAL DEGRADATION CAN OCCUR THROUGH LEACHING OF ORGANICS FROM SOLID WASTE BY INFILTRATING RAINWATER. SUCH MIGRATION FROM A LANDFILL TO AN ARTESIAN WATER SYSTEM WAS STUDIED IN DELAWARE. THE ATTENTUATION ORGANICS IN SOIL WAS ALSO INVESTIGATED. A COUNTER PUMPING PROGRAM WAS FOUND TO BE EFFECTIVE IN HALTING THE MIGRATION OF TRACE CONTAMINANTS. (3 GRAPHS, 2 MAPS, 13 REFERENCES, 3 TABLES)

Category: 02 / CHEMICAL AND BIOLOGICAL CONTAMINATION
Controlled Terms: AQUIFERS / BENZENE / CHEMICAL OXYGEN DEMAND / CHLORINATED HYDROCARBONS / DELAWARE / ECONOMICS, ENV-WATER / IRON / *LANDFILL, SANITARY / LEACHING / *ORGANIC COMPOUNDS / *WATER WELLS

81V00653* ENVIROLINE TECHNICAL REPORT 81V00653
CONTAMINATION OF FRESH WATER AQUIFERS BY OIL SPILLS
KAMATH, KRISHNA I.; PASINI, JOSEPH; KUSH BEVERLY J.
DOE MORGANTOWN ENERGY TECHNOLOGY CENTER, W VA
PRESENTED AT UNIV OF WISCONSIN MUNICIPAL & INDUSTRIAL WASTE RESEARCH & PRACTICE 3RD CONF, MADISON, SEP 10-12, 80, P174 (13)

THE FLOW AND DISTRIBUTION OF SPILLED WATER-IMMISCIBLE LIQUIDS WITHIN SAND AND GRAVEL AQUIFERS IS DISCUSSED. SINGLE AND TWO-PHASE FLOW IN POROUS MEDA, WATER WELL HYDRAULICS, AND THE EFFECTS OF OIL CONTAMINATION ARE ASSESSED. CONSIDERED ARE WELL CONTAMINATION BY BURIED WASTE OILS, GASOLINE FROM SERVICE STATIONS, AND TOXIC OIL WASTES. DECONTAMINATION CAN BE PARTIALLY SUCCESSFUL THROUGH PUMPING SYSTEMS AND THE USE OF SOLVENTS. (3 DIAGRAMS, 1 GRAPH, 7 REFERENCES)

Category: 19 / WATER POLLUTION
Controlled Terms: *AQUIFERS / CONF PAPER / GASOLINE / HAZARDOUS WASTE DISPOSAL / MATHEMATIC MODELS-WATER / *OIL SPILL ANALYSIS / PERCOLATION / PERMEABILITY / WASTE OIL

80V03858* ENVIROLINE TECHNICAL REPORT 80V03858
WORLD EMPLOYMENT PROGRAMME APPROPRIATE CONSTRUCTION TECHNOLOGY FOR WATER CONTROL AND IRRIGATION WORKS IN DEVELOPING COUNTRIES
PRESENTED AT UN (PERGAMON) WATER CONF, MAR DEL PLATA, MAR 77, V2, P819 (28)

MASS UNEMPLOYMENT IS ONE OF THE MOST SERIOUS PROBLEMS AFFECTING DEVELOPING NATIONS. ONE WAY TO ALLEVIATE THIS PROBLEM IS TO USE LABOR-INTENSIVE APPROACHES TO PROJECTS. THE CONSTRUCTION OF WATER CONTROL AND IRRIGATION WORKS CAN BE COMPLETED IN DEVELOPING NATIONS BY EMPLOYING HUGE LABOR RESOURCES, RATHER THAN IMPORTING EXPENSIVE EQUIPMENT AND CONSTRUCTION MACHINERY. THE USE OF SUCH METHODS IN CONSTRUCTING FLOOD CONTROL LEVEES IN THE PHILIPPINES AND DAMS IN INDIA IS DESCRIBED. (6 GRAPHS, 6 TABLES)

Category: 16 / RENEWABLE RESOURCES WATER
Controlled Terms: APPROPRIATE TECHNOLOGY / CAPITAL COSTS / CONSTRUCTION COSTS / DAM CONSTRUCTION / *DEVELOPING NATIONS / ECONOMICS, ENV-WATER / *EMPLOYMENT, NON U S / FLOOD CONTROL / SEASONAL COMPARISONS / U N CONF PAPER / *WATER RESOURCES DEVELOPMENT / WATER RESOURCES INVESTMENT / WATER RESOURCES PLANNING / WATER WELLS

79V00412* ENVIROLINE FEATURE ARTICLE 79V00412
CITIZEN PARTICIPATION FOR SUCCESSFUL VILLAGE WATER SUPPLY
ELMENDORF MARY ; MCGARRY MICHAEL G.
(WORLD BANK), (INTL DEVELOPMENT RESEARCH CENTRE, CANADA)
CIVIL ENGINEERING ASCE, AUG 78, V48, N8, P68 (3)

PUBLIC PLANNING AND THE USE OF THE APPROPRIATE TECHNOLOGY ARE THE TWO KEYS TO THE SUCCESS OF VILLAGE WATER SUPPLY PROJECTS IN DEVELOPING NATIONS. LOCAL INVOLVEMENT DURING THE PLANNING AND CONSTRUCTION OF A WATER PROJECT ENSURES THAT THE VILLAGE GETS A SYSTEM THAT FITS THE PARTICULAR NEEDS OF THAT VILLAGE, THAT IS AFFORDABLE TO THE VILLAGERS, AND THAT CAN BE REPAIRED BY LOCAL WORKERS. (3 PHOTOS)

Category: 16 / RENEWABLE RESOURCES WATER
Controlled Terms: KENYA / MALAWI / MEXICO / *PUBLIC PARTICIPATION / *WATER RESOURCES MANAGEMENT / *WATER SUPPLY / WATER WELLS

78V04127* ENVIROLINE TECHNICAL REPORT 78V04127
CONTAMINANT TRANSPORT TO DEEP WELLS
PHILLIPS KEVIN J. ; GELHAR LYNN W.
(ROY F. WESTON, NY), (NEW MEXICO INST OF MINING AND TECHNOLOGY)
J HYDRAULICS DIV-ASCE, JUN 78, V104, N6, P807 (13)

THE EFFECTS OF A PUMPING WELL ON THE THREE-DIMENSIONAL FLOW OF GROUNDWATER AND ON THE POTENTIAL FOR INCREASED CONTAMINATION OF THE WELL ARE EVALUATED. THE PROCESS OF CONVECTIVE TRANSPORT OF CONTAMINANTS TO A DEEP, PARTLY SCREENED PUMPING WELL IS DESCRIBED IN ANALYTICAL AND NUMERICAL TERMS. THE THREE-DIMENSIONAL WELL IS TREATED AS A POINT SINK IN AN ANISOTROPIC-MEDIUM. THE EFFECTS OF A PHREATIC SURFACE ABOVE THE WELL, A REGIONAL DOWNWARD FLOW, AND AN IMPERVIOUS LOWER BOUNDARY ARE EXAMINED. THE THEORETICAL RESULTS WERE APPLIED TO THE NITRATE CONTAMINATION OF WELLS ON LONG ISLAND, N. Y., WHERE LOCAL CONVECTIVE TRANSPORT DUE TO PUMPING SIGNIFICANTLY INCREASED THE RATE OF CONTAMINATION AND DECONTAMINATION OF THE WELLS. THE MODEL PROVIDED A REASONABLE REPRESENTATION OF THE ACTUAL CONTAMINATION PROCESS. (4 DIAGRAMS, 8 GRAPHS, 12 REFERENCES, 2 TABLES)

Category: 19 / WATER POLLUTION
Controlled Terms: AQUIFERS / *GROUNDWATER / *LONG ISLAND / MATHEMATIC MODELS-WATER / SEPTIC TANKS / WASTE DISPOSAL, SUBSURFACE / *WATER WELLS

77V06654 ENVIROLINE SURVEY REPORT 77V06654
WATER TREATMENT IN DEVELOPING COUNTRIES
PICKFORD JOHN
UNIV OF TECHNOLOGY, UK
WILEY WATER, WASTES & HEALTH IN HOT CLIMATES, APR 6, 77, P162 (33)

INADEQUATE ATTENTION TO WATER TREATMENT PROCESSES MAY ENDANGER PUBLIC HEALTH. IF THE RAW WATER IS CONTAMINATED WITH DISEASE-CAUSING ORGANISMS THAT ARE NOT PROPERLY REMOVED, THEN A LARGE NUMBER OF PEOPLE CAN BE INFECTED WITHIN A SHORT TIME. TREATMENT INVOLVES ASPECTS OF QUALITY OTHER THAN THOSE LIKE REMOVAL OF PATHOGENS THAT DIRECTLY AFFECT HEALTH. IF TREATED WATER IS NOT ACCEPTABLE FOR OTHER REASONS-SUCH AS DISCOLORATION OR BAD TASTE DUE TO TREATMENT-THEN USERS WILL CONTINUE TO DRAW WATER FROM TRADITIONAL SOURCES AND WILL NOT BENEFIT FROM THE DISEASE REDUCTION OF THE TREATED WATER. FACTORS TO BE CONSIDERED WHEN PREPARING WATER FOR PUBLIC USE ARE BACTERIOLOGICAL QUALITY, TOXICITY, FLUORIDE CONTENT, MINERAL MATTER, SALINITY, HARDNESS, COLOR, TASTE AND ODOR, OXYGEN CONTENT, ORGANIC MATTER, AND INCRUSTATION AND CORROSION. WATER RESOURCES DEVELOPMENT PLANS AND PROGRAMS TO MINIMIZE TREATMENT AND TO SATISFY THE USERS ARE PRESENTED. (8 DIAGRAMS, 4 DRAWINGS, 1 PHOTO, 41 REFERENCES)

Category: 16 / RENEWABLE RESOURCES WATER
Controlled Terms: AERATION / BACTERIA / *DEVELOPING NATIONS / DISINFECTION / FILTRATION / HEALTH, ENV / *HOT ENVIRONMENTS / MICROORGANISMS / ORGANIC COMPOUNDS / SEDIMENTATION / WATER HARDNESS / WATER ODORS / *WATER PURIFICATION / WATER WELLS

75V03286 ENVIROLINE RESEARCH REPORT 75V03286
IRON AND MANGANESE BACTERIA IN RANNEY WELLS
BARBIC , FRANC F. ; BRACILOVIC DRAGOMIR M.; DJINDJIC MIODRAG V.; DJORELIJEVSKI SVETOZAR M.; Z IVKOVIC JORDAN S.; KRAJINC ANIC BRANKA V.
INST FOR TECHNOLOGY OF RAW MATERIALS, YUGOSLAVIA
WATER RESEARCH, NOV 74, V8, N11, P895 (4)

IRON AND MANGANESE BACTERIA DEPOSIT HYDROXIDES THAT BLOCK DRAINS AND REDUCE THE WATER FLOW THROUGH THEM. THE IRON AND MANGANESE BACTERIA IN THE WATER OF RANNEY WATER WELLS ARE DESCRIBED. (2 TABLES)

Category: 19 / WATER POLLUTION
Controlled Terms: *BACTERIA / *WATER WELLS

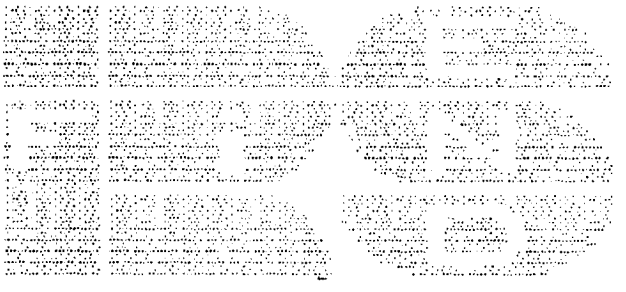
72V04409* ENVIROLINE ARTICLE 72V04409
WATER WELL CONSTRUCTION TECHNOLOGY
CAMPBELL, MICHAEL D.
WATER WELL JOURN MAR 1972 V26 N3 P42 (4)

Category: 16 / RENEWABLE RESOURCES WATER
Controlled Terms: GROUND WATER / MINING / PETROLEUM / *WATER SUPPLY / WATER WELLS

71V02505 ENVIROLINE ARTICLE 71V02505
HOT LINE TO TECHNOLOGY NEW NWWA RESEARCH OFFICE
WATER WELL JOURN APR 1971 V25 N4 P54 (4)

Category: 16 / RENEWABLE RESOURCES WATER
Controlled Terms: WATER SUPPLY / WATER WELLS

E.S.A. 8-10 Rue Mario Nikis, 75738 PARIS Cedex 15 Tel: (1) 42 73 72 01 Tlx: 202 746 IRS *Information Retrieval Service*



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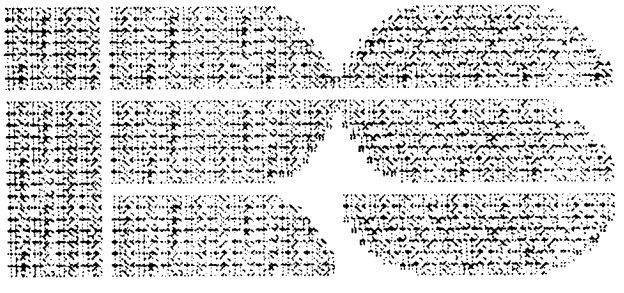
Mr Rafael Portaencasa
Avda Ramiro de Maeztu s/n
MADRID 28040
Spain



USER 003472 DATE:06/16/88 TIME:10:42:38

SEARCH HISTORY

SET	ITEMS	DESCRIPTION
1	33	WATER(W)WELL
2	174	ACIDIFICATION
3	4395	STIMULATION
4	0	1*2
5	1	1*3
6	0	WATER}I{_(W)
7	59	WATER(W)WELL?
8	25424	MAINTENANCE
9	0	7*8
10	0	2*7
11	1	7*3
12	36	TECHNOLOGIE
13	98482	TECHNOLOGY
14	1	13*7

PRINT SUMMARY

NO.	FILE	ACCN/SET	FMT	ITEM-RANGE
1	8	11	4	1-1
2	8	14	4	1-1

SRCH TIME 1.45 PRINT COUNT 2 DESCS.: 12

B76007762 INSPEC Journal Paper Issue 7602 76017986
Electrohydraulic stimulation of water wells
Nissley, M.S.
City of Los Angeles Dept. of Water & Power, Los Angeles, CA, USA
IEEE Trans. Ind. Appl. (USA)
vol.IA.11, no.6, Nov.-Dec. 1975, p.728-33, 43 Refs, Coden: itiacr,
Treatment: P (PRACTICAL)

The electrohydraulic effect has been applied to the stimulation of water wells. This effect is generated by an electrical arc, of short duration, underwater. The underwater arc creates a strong hydraulic shock wave capable of doing work. The electrohydraulic method of stimulation has proven successful when considering the increased output of a water well. This new method shows the potential of a considerable reduction in the cost of stimulating a water well

Classification Codes: B5890
Controlled Terms: arcs (electric) ; shock wave effects
Uncontrolled Terms: water wells ; electrical arc ; underwater arc ; hydraulic shock wave ; electrohydraulic stimulation

A87067437, B87042266 INSPEC Conference Paper Issue 8714 87130324

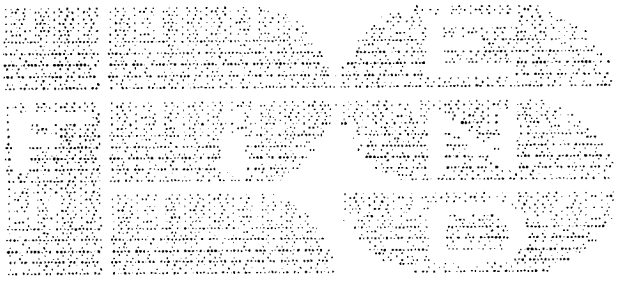
Radiation processing applications in the Czechoslovak water treatment technologies

Vacek, K.; Pastuszek, F.; Sedlacek, M.
Nucl. Res. Inst., Rez, Czechoslovakia,

Brdicka Days on Radiation Chemistry
Marianske Lazne, Czechoslovakia 1986
Radiat. Phys. & Chem. (GB)
vol.28, no.5-6, 1986, p.573-80, 28 Refs, Coden: RPCHDM, ISSN: 0146-5724, CCCC: 0146-5724/86/$3.00+0.00,
Treatment: P (PRACTICAL); X (EXPERIMENTAL)

The regeneration of biologically clogged water wells by radiation proved to be a successful and economically beneficial process among other promising applications of ionizing radiation in the water supply technology. The application conditions and experience are mentioned. The potential pathogenic Mycobacteria occurring in warm washing and bathing water are resistant against usual chlorine and ozone concentrations. The radiation sensitivity of Mycobacteria suggested a device for destroying them by radiation. Some toxic substances in underground water can be efficiently degraded by gamma radiation directly in the wells drilled as a hydraulic barrier surrounding the contaminated land area. Substantial decrease of CN/sup -/concentration and COD value was observed in water pumped from such well equipped with cobalt sources and charcoal. The removal of pathogenic contamination remains the main goal of radiation processing in water purification technologies. The decrease of liquid sludge specific filter resistance and sedimentation acceleration by irradiation have minor technological importance. The hygienization of sludge cake from the mechanical belt filter press by electron beam appears to be the optimum application in the Czechoslovak conditions. Potato and barley crop yields from experimental plots treated with sludge were higher in comparison with using manure. Biological sludge from municipal and food industry water purification plants contains nutritive components. The proper hygienization is a necessary condition for using them as a livestock feed supplement. Feeding experiments with broilers and pigs confirmed the possibility of partial (e.g. 50%) replacement of soya-, bone- or fish meal in feed mixtures by dried sludge hygienized either by heat or by the irradiation

Classification Codes: A0780 ; A8750G ; B7720
Controlled Terms: biological effects of ionising radiation ; electron beam applications ; water pollution detection and control ; water treatment
Uncontrolled Terms: radiation processing ; washing water ; potato crop yields ; biological sludge ; soya flour ; bone meal ; fish meal ; chemical oxygen demand ; nutrition ; Czechoslovak water treatment technologies ; regeneration ; biologically clogged water wells ; ionizing radiation ; water supply technology ; pathogenic Mycobacteria ; bathing water ; toxic substances ; underground water ; gamma radiation ; hydraulic barrier ; pathogenic contamination ; liquid sludge ; specific filter resistance ; sedimentation acceleration ; sludge cake ; mechanical belt filter press ; electron beam ; barley crop yields ; water purification plants ; hygienization ; livestock feed supplement ; broilers ; pigs ; dried sludge



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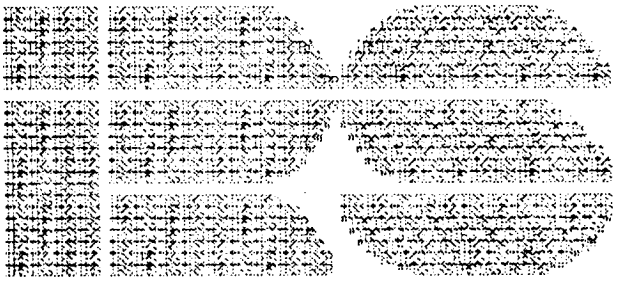


USER 003472 DATE:06/16/88 TIME:10:45:49

SEARCH HISTORY

SET	ITEMS	DESCRIPTION
1	514	WATER(W)WELL
2	2218	ACIDIFICATION
3	54561	STIMULATION
4	0	1*2
5	1	1*3
6	0	WATER}I{_(W)
7	1249	WATER(W)WELL?
8	12272	MAINTENANCE
9	11	7*8
10	2	2*7
11	4	7*3
12	58711	TECHNOLOGIE
13	33813	TECHNOLOGY
14	25	13*7
15	24	12*7

PRINT SUMMARY

NO.	FILE	ACCN/SET	FMT	ITEM-RANGE
1	14	9	4	1-11
2	14	10	4	1-2
3	14	11	4	1-4
4	14	14	4	1-25

SRCH TIME 3.18 PRINT COUNT 42 DESCS.: 14

88-X-0113262 PASCAL 88225895
GANDHI'S GROUP BACKS BAREFOOT MECHANICS
- LE GROUPE DE GANDHI RENFORCE LA "MECANIQUE AU PIED NU" -
SANJIT ROY
WORLD WATER//WORLD WATER; 0140-9050; GBR; Date: 1987; Vol: 10; No: 9 ; p.: 20; Cote: CNRS/17992; Langue: Anglais Type: TP, LA
CC: 295.A.10.B
DS: *ASIE / ADDUCTION EAU / POMPAGE / PUITS EAU / POMPE / COMMANDE MANUELLE / MAINTENANCE / ORGANISATION / DESERT / INDE / POMPE A BRAS / SERVICE ENTRETIEN / *ASIA / WATER CONVEYANCE / PUMPING / WATER WELL / PUMP / MANUAL CONTROL / MAINTENANCE / ORGANIZATION / DESERT / INDIA / *ASIA / ADUCCION AGUA / BOMBEO / POZO AGUA / BOMBA / MANDO MANUAL / MANTENIMIENTO / ORGANIZACION / DESIERTO / INDIA
ORGANISATION D'UN SERVICE DE MAINTENANCE DES POMPES A BRAS DANS LE RAJASTAN EN INDE EN FAVEUR DE LA "MECANIQUE AU PIED NU"

87-X-0393292 PASCAL 87785615
WEST GERMAN WATER: NEW APPROACH TO PUMP O & M
KIPKE (H.); POTTHOF (C.)
WORLD WATER//WORLD WATER; 0140-9050; GBR; Date: 1987; Vol: 10; No: 3 ; p.: S.8-S.10; 2 P.h.t.; Cote: CNRS/17992; Langue: Anglais Type: TP, LA
CC: 295.A.10.B
DS: *AFRIQUE / ADDUCTION EAU / PUITS EAU / POMPAGE / POMPE / COMMANDE MANUELLE / SOUDAN / AIDE INTERNATIONALE / POMPE A MAIN / *AFRICA / WATER CONVEYANCE / WATER WELL / PUMPING / PUMP / MANUAL CONTROL / SUDAN / INTERNATIONAL ASSISTANCE / *AFRICA / ADUCCION AGUA / POZO AGUA / BOMBEO / BOMBA / MANDO MANUAL / SUDAN / AYUDA INTERNACIONAL
PROJET DU GOUVERNEMENT DE L'ALLEMAGNE DE POMPES A MAIN POUR LE SUD DU SOUDAN AVEC LA PARTICIPATION DES COMMUNES ET DES ENTREPRISES PRIVEES POUR LA MAINTENANCE

87-X-0353877 PASCAL 87706819
GROUNDWATER, UN HANDPUMP PROJECT REPORT DISPOSES OF MANY MYTHS: EXPERTS/3ND. AFRICAN WATER TECHNOLOGY CONFERENCE, NAIROBI, KENYA, FEBRUARY 1987
- EAU SOUTERRAINE. UN RAPPORT DE PROJET DE POMPE A MAIN DISPOSE DE BEAUCOUP DE MYTHES. EXTRAIT DE LA 3EME CONFERENCE AFRICAINE SUR LA TECHNOLOGIE DE L'EAU QUI S'EST TENUE A NAIROBI AU KENYA EN FEVRIER 1987 -
WORLD WATER//WORLD WATER; 0140-9050; GBR; Date: 1987; Vol: 10; No: 4 ; p.: 24-30; 4 P.h.t.; TAFRICAN WATER TECHNOLOGY CONFERENCE. 3/1987-02/NAIROBI; Cote: CNRS/17992; Langue: Anglais Type: TP, SC, LM, ME
CC: 295.A.10.A
DS: ADDUCTION EAU / PUITS EAU / POMPAGE / POMPE / COMMANDE MANUELLE / CHOIX / CONCEPTION / FABRICATION / MAINTENANCE / ESSAI LABORATOIRE / CONGRES / AFRIQUE / WATER CONVEYANCE / WATER WELL / PUMPING / PUMP / MANUAL CONTROL / CHOICE / DESIGN / MANUFACTURING / MAINTENANCE / LABORATORY TEST / CONGRESS / AFRICA / NAIROBI / 1987
RESULTATS GLOBAUX D'ESSAIS DE 2700 POMPES DE 70 TYPES DIFFERENTS DANS 17 PAYS. PRINCIPES DE CONCEPTION. FABRICATION LOCALE ET SELECTION DES POMPES. ESSAIS EN LABORATOIRE

87-2-0196897 PASCAL 87393267
AN AUTOMATED HELIUM ANALYSIS STATION
- STATION D'ANALYSE AUTOMATIQUE DE L'HELIUM -
FRIEDMAN (IRVING); JURCEKA (JOE); DOERING (WILLIS); LONG (WILLIAM); MCNAIR (DON)
AFF: U. S. GEOL. SURV./USA
GEOL. SURV. BULL. (WASH.); 0364-4510; USA; Date: 1986; Vol: 1622; p.: 213-218; Illustrations: ILL.; Langue: Anglais Type: TP, LA
CC: 220.B.01; 226.A; 226.B
DS: METHODOLOGIE ANALYSE / HELIUM / SAISIE DONNEE / GAZ / SEISME / PREVISION / SPECTROMETRIE / SPECTROMETRIE MASSE / PUITS EAU / ETUDE FAISABILITE / PHENOMENE PRECURSEUR / INDICATEUR GEOCHIMIQUE / EAU SOUTERRAINE / METHODOLOGIE / TRAITEMENT DONNEE / CHEMICAL ANALYSIS / HELIUM / DATA ACQUISITION / GASES / EARTHQUAKES / PREDICTION / SPECTROSCOPY / MASS SPECTROSCOPY / WATER WELLS / FEASIBILITY STUDIES / PRECURSORS / GEOCHEMICAL INDICATORS / GROUND WATER / METHODS / AUTOMATED ANALYSIS / DATA PROCESSING
02AN AUTOMATED DEVICE FOR THE ANALYSIS OF HELIUM IN WELL WATER HAS OPERATED WITH MINIMUM MAINTENANCE AT A REMOTE SITE FOR MORE THAN 5 YEARS. THIS EQUIPMENT MAKES AN ANALYSIS ONCE AN HOUR AND TELEMETERS THE DATA EVERY 3 HOURS VIA SATELLITE. A COMPARISON OF THE TELEMETERED DATA WITH DATA RECORDED ONSITE AND WITH DATA SECURED BY THE ANALYSIS IN DENVER, COLO., OF WATER SAMPLES COLLECTED DAILY FROM THE WELL SHOWS THE THREE SETS OF DATA TO BE COMPATIBLE.

86-X-0232438 PASCAL 86464247
ENTRETIEN DES MOYENS D'EXHAURE EN HYDRAULIQUE VILLAGEOISE. EXPERIENCES EN AFRIQUE AU SUD DU SAHARA
BENAMOUR (A.)
AFF: ARLAB, 78 RUE DES SUISSES/NANTERRE 92000/FRA
WATER SUPPLY//WATER SUPPLY; 0735-1917; GBR; Date: 1985; Vol: 3; No: 4; p.: 181-190; TASSOCIATION INTERNATIONALE DES DISTRIBUTEURS D'EAU. CONFERENCE REGIONALE: UNION AFRICAINE DES DISTRIBUTEURS D'EAU. CONGRES. 3/1985/LIBREVILLE; Cote: CNRS/20290; Langue: Francais Type: TP, SC, LA
CC: 295.A.10.B; 001.D.14.J
DS: *AFRIQUE / CAPTAGE EAU / PUITS EAU / POMPAGE / POMPE / ENTRETIEN / COUT ENTRETIEN / AIDE FINANCIERE / RESIDENT / COTE D'IVOIRE / GHANA / TOGO / GABON / ZONE RURALE / *AFRICA / WATER HARNESSING / WATER WELL / PUMPING / PUMP / INTERVIEW / MAINTENANCE COST / FINANCIAL ASSISTANCE / RESIDENT / IVORY COAST / GHANA / TOGO / GABON / RURAL AREA / *AFRICA / BOMBEO / BOMBA / MANTENIMIENTO / RESIDENTE / COSTA DE MARFIL / GHANA / TOGO / GABON / ZONA RURAL
LE PROBLEME DE L'ENTRETIEN DES INSTALLATIONS (POMPES) EST CRUCIALE DANS LES PAYS EN DEVELOPPEMENT. EXPERIENCES DE LA COTE D'IVOIRE, DU GHANA, DU TOGO, DU GABON. COUT DE L'ENTRETIEN; CONTRIBUTION FINANCIERE DES VILLAGEOIS

86-2-0081963 PASCAL 86163715
MAINTENANCE OF WATER WELLS - PROGRESS AND PROSPECTS
- LA MAINTENANCE DES PUITS D'EAU. PROGRES ET PERSPECTIVES -
FOUZDAR (D. K.)
AFF: DANIDA/NEW DELHI/IND
INTERNATIONAL WORKSHOP ON RURAL HYDROGEOLOGY AND HYDRAULICS IN FISSURED BASEMENT ZONES/1985/ROORKEE; IND; Ed: ROORKEE: UNIV. ROORKEE DEP. EARTH SCI.; Date: 1985; p.: 119-125; 6 REF.; Tables: 2; Illustrations: TABL.; Cote: BRGM; Langue: Anglais Type: TC, LA
CC: 226.A
DS: *ASIE / GESTION RESSOURCE EAU / APPROVISIONNEMENT EAU / PUITS EAU / POMPAGE / EAU POTABLE / INSTRUMENTATION / INDE / *ASIA / WATER MANAGEMENT / WATER SUPPLY / WATER WELLS / PUMPING / DRINKING WATER / INSTRUMENTS / INDIA

84-2-0179286 PASCAL 84350457
MOUNT ST. HELENS ERUPTIVE IMPACTS TO THE TOUTLE COMMUNITY GROUND-WATER SUPPLY
SWEET (H. RANDY); EDWARDS (JOHN E.)
AFF: SWEET, EDWARDS ASSOC./KELSO, WA/USA
BULL. ASSOC. ENG. GEOL.; 0004-5691; USA; Date: 1983-05; Vol: 20; No: 2; p.: 145-150; 3 REF.; Illustrations: COUPE GEOL.; Langue: Anglais Type: TP, LA
CC: 226.B
DS: WASHINGTON / PUITS EAU / ABAISSEMENT NIVEAU EAU / RESISTIVITE ELECTRIQUE / ERUPTION / MONT SAINT HELENS / QUALITE EAU / NAPPE EAU / PROSPECTION / FORAGE / LAC ARTIFICIEL / VOLCAN / WASHINGTON / WATER WELLS / DRAWDOWN / RESISTIVITY / ERUPTIONS / MOUNT SAINT HELENS / WATER QUALITY / AQUIFERS / EXPLORATION / DRILLING / RESERVOIRS / VOLCANOES / TOUTLE / SOUTH TOUTLE RIVER / OUTLET CREEK / COWLITZ RIVER / LAHARS / TESTING
02THE TOWN OF TOUTLE, APPROXIMATELY 26 MILES NORTHWEST OF MOUNT ST. HELENS, HAS UTILIZED A SHALLOW, HIGH CAPACITY WELL COMPLETED IN RECENT ALLUVIUM OF THE SOUTH TOUTLE RIVER FOR ITS WATER SUPPLY SINCE 1974. DEBRIS AND MUDFLOW FOLLOWING THE MAY 18, 1980 ERUPTION BURIED THE WELL AND THE NEARBY TREATMENT FACILITY. RECONNAISSANCE FIELD WORK SHOWED INADEQUATE STREAM BASE FLOW AND NO RESERVOIR SITES AS WELL AS POOR INFILTRATION GALLERY SITES ALONG OUTLET CREEK. TWO TEST WELLS WERE DRILLED ON THE SOUTH TOUTLE BRIDGE ABUTMENT NEAR THE OLD WELL. DRAWNDOWN/RECOVERY TESTS SHOWED EITHER WELL CAPABLE OF PRODUCING THE NECESSARY SUSTAINED YIELD OF 200 GPM. TOUTLE RESIDENTS SOON COMPLAINED OF AN OBJECTIONABLE WATER TASTE AND MEDICINAL ODOR. TESTING SHOWED THE PRESENCE OF UP TO 80 MU G/L TOTAL PHENOLS. FIELD LOCATION OF EXISTING WELLS, A RESISTIVITY SURVEY AND SHORT AQUIFER TESTS WERE CONDUCTED ON THE UPPER TERRACE ADJECANT TO TOUTLE. DURING DRAWDOWN/RECOVERY TESTS GROUND WATER WITH PHENOL CONCENTRATIONS OF 12 TO 15 MU G/L WAS RECOVERED. THE HIGH OPERATION AND MAINTENANCE COSTS OF IRON AND PHENOL REMOVAL INDICATE THAT A 15 MILE PIPELINE TO TRANSMIT WATER FROM THE COWLITZ RIVER IS THE BEST WATER ALTERNATIVE.-MODIFIED JOURNAL ABSTRACT.

84-2-0176707 PASCAL 84345299
INFILTRATION OF INCIDENT DRAINWATER FOR THE MAINTENANCE OF NATURAL GROUNDWATER LEVEL. PLANNING AND RESULTS BY REFERENCE TO THE EXAMPLE OF THE PLANNED MUNICH II MAJOR AIRPORT COMPLEX
- INFILTRATION DES EAUX DE DRAINAGE POUR MAINTENIR LE NIVEAU NATUREL DE L'AQUIFERE SOUTERRAIN. PLANIFICATION ET RESULTATS EN SE REFERANT A L'EXEMPLE DU PROJET DU PRINCIPAL AEROPORT MUNICH II -
BLASY (L.)
DVWK BULLETIN; 0174-3422; DEU; Date: 1982; Vol: 1; No: 11; p.: 235-245; Loc: BGR/1983 A 904; Illustrations: ILL.; Langue: Anglais Type: TP, LA
CC: 226.A
DS: NAPPE EAU / GESTION RESSOURCE EAU / ALIMENTATION ARTIFICIELLE / DRAINAGE TERRAIN / ABAISSEMENT NIVEAU EAU / PUITS EAU / INFILTRATION / CREPINE / PLATEAU BAVAROIS / BAVIERE / AQUIFERS / WATER MANAGEMENT / ARTIFICIAL RECHARGE / DRAINAGE / DRAWDOWN / WATER WELLS / INFILTRATION / WELL SCREENS / ALPENVORLAND / BAVARIA

84-2-0165916 PASCAL 84323873
ENGINEERING PROBLEMS RELATED TO THE DEVELOPMENT OF GROUNDWATER SUPPLIES ON CAPE COD, MASSACHUSETTS
DEAN (STEVEN L.); FARQUHAR (OSWALD C.,ED.)
AFF: WHITMAN & HOWARD/HUDSON, MA/USA
GEOTECHNOLOGY IN MASSACHUSETTS; USA; Ed: AMHERST, MA:UNIV. MASS., GRAD. SCH.; Date: 1982; p.: 47-53; 5 REF.; 0-960-4712-00; Illustrations: ILL.; TGEOTECHNOLOGY IN MASSACHUSETTS/1980-03-20/BOSTON, MA; Langue: Anglais Type: TL, SC, LA
CC: 226.A
DS: MASSACHUSETTS / EAU SOUTERRAINE / CAP COD / PUITS EAU / REMBLAIEMENT / DECHARGE DECHET / MASSACHUSETTS / GROUND WATER / CAPE COD / WATER WELLS / LANDFILLS / WASTE DISPOSAL / KETTLE HOLES
02THE IMPORTANCE OF GROUND WATER TO CAPE COD CANNOT BE OVEREMPHASIZED. ALL COMMUNITIES WHICH HAVE PUBLIC WATER SYSTEMS, WITH THE EXCEPTION OF ONE, UTILIZE GROUNDWATER SOURCES EXCLUSIVELY. SIMILARLY, SHALLOW GROUNDWATER WELLS CONSTITUTE THE VAST MAJORITY OF THE INDIVIDUAL PRIVATE WATER SUPPLIES. THE MAINTENANCE OF WATER TABLE LEVELS IS ALSO OF PRIME IMPORTANCE TO THE VERY EXISTENCE OF THE MANY PONDS AND STREAMS AS WELL AS FOR THE PREVENTION OF SALT WATER ENCROACHMENT BENEATH THE CAPE.-BOOK ABSTRACT.

79-8-0032909, 79-2-0032909 PASCAL 79048673
WATER WELLS AND PUMPS. THEIR DESIGN, CONSTRUCTION, OPERATION, AND MAINTENANCE.
SCOTT (V. H.); SCALMANINI (J. C.)
AFF: UNIV. CALIFORROFILAALIFORNIA AGRICULT. EXPERIMENT STN., DAVIS CA, USA
UNIV. CALIFORNIA; USA; Date: 1978; No: 1889; p.: 1-51; 10 REF.; Illustrations: 7; Cote: 3920; Langue: Anglais Type: TP, LA
CC: 890.B.09.B; 226.A.08
DS: OUVRAGE ADDUCTION EAU / CAPTAGE EAU / PUITS EAU / METHODE CALCUL / PROCEDE CONSTRUCTION / ENTRETIEN / POMPAGE / ADDUCTION D'EAU / CAPTAGE / POMPAGE / WATER SUPPLY / WATER CATCHMENT / PUMPING
GUIDES POUR LE CALCUL DES PUITS D'EAU A HAUTE PERFORMANCE. LES PERFORMANCES ECONOMIQUES ET D'EFFICACITE D'UN PUITS DEPEND DE CERTAINS FACTEURS: HYDROLOGIE DE L'EAU SOUTERRAINE, CALCUL PRELIMINAIRE ET FINAL, CONSTRUCTION, COMPLETION ET ESSAIS, EQUIPEMENT DE POMPAGE, ESSAIS DU PUITS ET DES POMPES, MAINTENANCE. INFORMATIONS SUR CES DIFFERENTS FACTEURS.

76-2-0018508 PASCAL 76156577
WATER WELL MANUAL. A PRACTICAL GUIDE FOR LOCATING AND CONSTRUCTING WELLS FOR INDIVIDUAL AND SMALL COMMUNITY WATER SUPPLIES.
GIBSON (U. P.); SINGER (R. D.)
AFF: SCH. PUBL. HEALTH, UNIV. MINNESOTA
BERKELEY; Ed: PREMIER; Date: 1971; p.: (162P.); 1 P. 1/2; Illustrations: 128; Loc: BRGM; Langue: Anglais Type: TL, LM, NC
CC: 226.A.02
DS: TRAITE / PUITS / POMPAGE / ABREUVEMENT / PERIMETRE DE PROTECTION / POLLUTION / MANUEL
MANUEL ORIENTE SUR L'IMPLANTATION, LA CONSTRUCTION, L'EQUIPEMENT ET LA MAINTENANCE DE PETITS PUITS DESTINES A L'USAGE INDIVIDUEL OU A CELUI DE PETITES COMMUNAUTES. LES TECHNIQUES MODERNES DE POMPAGE SONT BIEN DEVELOPPEES ET ILLUSTREES, AINSI QUE LA PROTECTION SANITAIRE DES EAUX SOUTERRAINES

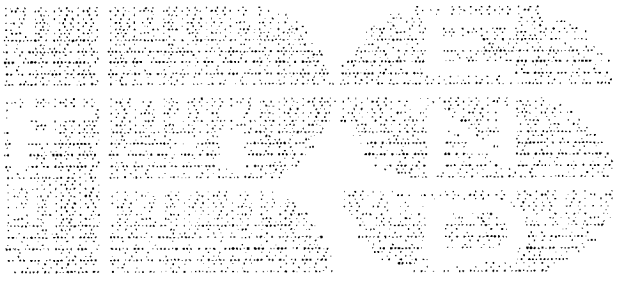
86-2-0277876 PASCAL 86555045
CARACTERISTICAS HIDRODINAMICAS DE MATERIALES CARBONATICOS ALPUJARRIDES EN EL SECTOR NERJA-LA HERRADURA, GRANADA
- CARACTERISTIQUES HYDRODYNAMIQUES DES MATERIAUX CARBONATES DES ALPUJARRIDES DANS LE SECTEUR DE NERJA-LA HERRADURA (GRANADA) -
CASTILLO PEREZ (E. I.); GOLLONET F. DE TRESPA LACIOS (F. J.); DELGADO PASTOR (J.)
AFF: INGEMISA/GRANADA/ESP
SIMPOSIO SOBRE EL AGUA EN ANDALUCIA. 2/1986/GRANADA; ESP; Ed: GRANADA: DEP. HIDROGEOL.; Date: 1986; Vol: 2; p.: 267-276; Resume: FRE ; 3 REF.; Tables: 2; Illustrations: ESQUISSE GEOL.; Cote: IGME; Langue: Espagnol Type: TC, LA
CC: 226.A
DS: *ROCHE CARBONATEE / *ROCHE SEDIMENTAIRE / *SECONDAIRE / *ESPAGNE / *EUROPE / HYDRODYNAMIQUE / NAPPE EAU / SURFACE PIEZOMETRIQUE / ESSAI DEBIT / DEVELOPPEMENT PUITS / PUITS EAU / ACIDIFICATION / CALCAIRE / DOLOMIE / TRIAS / PROVINCE MALAGA / PROVINCE GRANADA / NERJA / LA HERRADURA / *CARBONATE ROCKS / *SEDIMENTARY ROCKS / *MESOZOIC / *SPAIN / *EUROPE / HYDRODYNAMICS / AQUIFERS / WATER TABLE / PUMP TESTS / WELL DEVELOPMENT / WATER WELLS / ACIDIFICATION / LIMESTONE / DOLOSTONE / TRIASSIC / MALAGA PROVINCE / GRANADA PROVINCE

84-2-0376411 PASCAL 84742801
DESARROLLO POR ACIDIFICACION DE POZOS EN ACUIFEROS KARSTICOS DE NAVARRA
- DEVELOPPEMENT DES PUITS DANS LES AQUIFERES KARSTIQUES DE NAVARRE, PAR ACIDIFICATION -
CASTIELLA MURUZABAL (J.); SOLE SEDO (J.); FERNANDEZ DE LARA (A.)
AFF: DIPUTACION FORAL NAVARRA, SERV. GEOL./PAMPLONA/ESP
TECNOLOGIA AGUA; 0211-8173; ESP; Date: 1984; No: 15; p.: 35-41; 5 REF.; Loc: IGME; Tables: 3; Illustrations: TABL.; Langue: Espagnol Type: TP, LA
CC: 226.A
DS: ACIDIFICATION / DEVELOPPEMENT PUITS / PUITS EAU / KARST / NAPPE EAU / CAPTURE COURS EAU / NAVARRE / ACIDIFICATION / WELL DEVELOPMENT / WATER WELLS / KARST / AQUIFERS / STREAM CAPTURE / NAVARRE

85-2-0410766 PASCAL 85819397
STUDY OF THE PHENOMENA AND MECHANISM OF THE PRE-EARTHQUAKE STIMULATION OF OIL AND WATER WELLS
- ETUDE DES PHENOMENES ET DU MECANISME DE LA STIMULATION AVANT UN SEISME DES PUITS D'EAU ET DE PETROLE -
WANG LIU-CHAO; LI SHAN-YIN
EARTHQUAKE PREDICTION. INTERNATIONAL SYMPOSIUM/1979-04-02/PARIS; FRA/JPN/NLD; Ed: PARIS: UNESCO/TOKYO: TERRAPUB/DORDRECHT: D. REIDEL; Date: 1984; p.: 203-213; 13 REF.; Loc: BRGM; Illustrations: ILL.; Cote: D418; Langue: Anglais Type: TC, LA
CC: 225.B.03
DS: *ASIE / CHINE / SEISME / PHENOMENE PRECURSEUR / ETUDE CAS / EAU SOUTERRAINE / VARIATION NIVEAU / *ASIA / CHINA / EARTHQUAKES / PRECURSORS / CASE STUDIES / GROUND WATER / CHANGES OF LEVEL

84-X-0233895 PASCAL 84459011
AGIP EXPERIENCE IN DEEP WATER WELL TESTING
CESARONI (R.); GIACCA (D.); PACCALONI (G.)
AFF: AGIP APA, DRILLING TECHNOLOGY DEP./MILAN/ITA
DEEP OFFSHORE TECHNOLOGY INTERNATIONAL CONFERENCE AND EXHIBITION. 2/1983-10-17/VALETTA; NLD; Ed: AMSTERDAM: DEEP OFFSHORE TECHNOLOGY B.V.; Date: 1983; Vol: I; II.2.A; p.: 67-83; Loc: B18631; Langue: Anglais Type: TC, LA
CC: 230.B.02.B.03.E.1
DS: FORAGE SOUS MARIN / EQUIPEMENT / ESSAI / PUITS EXPLORATION / EAU PROFONDE / ITALIE / SICILE / STIMULATION / FRACTURATION / RESERVOIR / ROCHE / CARBONATE / GRES / METHODE / ESSAI PRODUCTION / ROCHE CARBONATEE / ESSAI PAR TIGES / AGIP / 160 M PROFONDEUR EAU / MATRICE ROCHE / OFFSHORE DRILLING / EQUIPMENT / TEST / EXPLORATION WELL / DEEP WATER / ITALY / SICILIA / STIMULATION / FRACTURING / RESERVOIR / ROCKS / CARBONATES / SANDSTONE / METHOD / PRODUCTION TESTING / CARBONATE ROCK / DRILL STEM TEST
METHODES D'ESSAIS DE PUITS EN MER EMPLOYEES PAR AGIP DANS LES ZONES OFFSHORE ITALIENNES ET SICILIENNES, ESSAIS AUX TIGES, ESSAIS DE PRODUCTION, STIMULATION DE MATRICE ET PAR FRACTURATION, DANS LES INTERVALLES PRODUCTIFS, DE RESERVOIRS CARBONATES ET GRESEUX. DESCRIPTION DE L'EQUIPEMENT EMPLOYE, CONDITIONS OPERATOIRES, DEROULEMENT DES TRAVAUX DANS UNE PROFONDEUR D'EAU DE 160 M ENVIRON. PROBLEMES RENCONTRES

82-2-0150918 PASCAL 82188265
GEOTHERMAL RESERVOIR WELL STIMULATION PROGRAM. TECHNOLOGY TRANSFER. I
- PROGRAMME DE STIMULATION DE PUITS DE RESERVOIR GEOTHERMAL: TRANSFERT DE TECHNOLOGIE. I -
; USA; Ed: SPRINGFIELD: NATIONAL TECH. INF. SERV.; Date: 1980; 134 P.h.t.; 28 CMh.t.; 209 REF.; Loc: BRGM; Illustrations: ILL.; Langue: Anglais Type: TL, LM
CC: 226.B
DS: DONNEE / HYDRODYNAMIQUE / RHEOLOGIE / PERMEABILITE / POROSITE / TEMPERATURE / FRACTURATION / PUITS EAU / RESERVOIR GEOTHERMIQUE / DEVELOPPEMENT / ETATS UNIS / DATA / HYDRODYNAMICS / RHEOLOGY / PERMEABILITY / POROSITY / TEMPERATURE / FRACTURING / WATER WELLS / GEOTHERMAL RESERVOIRS / DEVELOPMENT / UNITED STATES



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76-890-07247 PASCAL 76267615
ELECTROHYDRAULIC STIMULATION OF WATER WELLS
NISSLEY (M. S.)
AFF: CITY LOS ANGELES DEP. WATER POWER, LOS ANGELES, CALIF. 90012
I.E.E.E. TRANS. INDUSTRY APPL.; U.S.A.; Date: 1975; Vol: 11; No: 6; p.: 728-733; 43REF.; Cote: 222H2; Langue: Anglais Type: TP, LA
CC: 890.B.05.B
DS: ADDUCTION EAU / CAPTAGE / PUITS CAPTAGE / REVETEMENT / METAL / ENTARTRAGE / STIMULATION / ARC ELECTRIQUE / SOUS EAU / ENTRETIEN / DEBIT / REVETEMENT METALLIQUE
AFIN D'EVITER L'ENTARTRAGE ET LE BOUCHAGE DES TROUS DU REVETEMENT METALLIQUE DES PUITS DE CAPTAGE ON UTILISE L'EFFET ELECTROHYDRAULIQUE DE STIMULATION. CET EFFET EST PRODUIT PAR UN ARC ELECTRIQUE DE COURTE DUREE, SOUS L'EAU, L'ARC SOUS L'EAU CREE UN CHOC HYDRAULIQUE FORT CAPABLE DE PRODUIRE UN ENLEVEMENT DES INCRUSTATIONS. ON AUGMENTE PAR CETTE METHODE LE DEBIT DES PUITS

87-2-0369471 PASCAL 87737995
DECOLMATAGE DES PUITS ET FORAGES. MANUEL PRATIQUE
DEGALLIER (R.)
AFF: 75 RUE SAINT-DOMINIQUE/PARIS 75007/FRA
HYDROGEOLOGIE; 544299; FRA; Date: 1987; No: 1; p.: 3-25; Resume: ENG ; 25 REF.; Tables: 2; Illustrations: ILL.; Cote: BRGM/F64, CNRS/9919C; Langue: Francais Type: TP, LA
CC: 226.A
DS: PUITS EAU / FORAGE / TECHNOLOGIE / DECOLMATAGE / WATER WELLS / DRILLING / TECHNOLOGY / POZO AGUA / SONDEO / TECNOLOGIA

87-X-0353877 PASCAL 87706819
GROUNDWATER, UN HANDPUMP PROJECT REPORT DISPOSES OF MANY MYTHS: EXPERTS/3ND. AFRICAN WATER TECHNOLOGY CONFERENCE, NAIROBI, KENYA, FEBRUARY 1987
- EAU SOUTERRAINE. UN RAPPORT DE PROJET DE POMPE A MAIN DISPOSE DE BEAUCOUP DE MYTHES. EXTRAIT DE LA 3EME CONFERENCE AFRICAINE SUR LA TECHNOLOGIE DE L'EAU QUI S'EST TENUE A NAIROBI AU KENYA EN FEVRIER 1987 -
WORLD WATER//WORLD WATER; 0140-9050; GBR; Date: 1987; Vol: 10; No: 4 ; p.: 24-30; 4 P.h.t.; TAFRICAN WATER TECHNOLOGY CONFERENCE. 3/1987-02/NAIROBI; Cote: CNRS/17992; Langue: Anglais Type: TP, SC, LM, ME
CC: 295.A.10.A
DS: ADDUCTION EAU / PUITS EAU / POMPAGE / POMPE / COMMANDE MANUELLE / CHOIX / CONCEPTION / FABRICATION / MAINTENANCE / ESSAI LABORATOIRE / CONGRES / AFRIQUE / WATER CONVEYANCE / WATER WELL / PUMPING / PUMP / MANUAL CONTROL / CHOICE / DESIGN / MANUFACTURING / MAINTENANCE / LABORATORY TEST / CONGRESS / AFRICA / NAIROBI / 1987
RESULTATS GLOBAUX D'ESSAIS DE 2700 POMPES DE 70 TYPES DIFFERENTS DANS 17 PAYS. PRINCIPES DE CONCEPTION. FABRICATION LOCALE ET SELECTION DES POMPES. ESSAIS EN LABORATOIRE

87-2-0256783 PASCAL 87512903
O EMPREGO DE FLUIDO DE PERFURACAO LEVENENTE INIBITIVO EMPOCOS DE AGUA SUBTERRANEA
- L'EMPLOI DE FLUIDE DE FORAGE LEGEREMENT INHIBITIF DANS LES PUITS D'EAUX SOUTERRAINES -
SILVA (F. P.); PASSERINI (R. V.)
AFF: INST. PESQUISAS TERNOL./SAO PAULO SP/BRA
CONGRESSO BRASILEIRO DE AGUAS SUBTERRANEAS. 4/1986-11-04/BRASILIA; BRA; Ed: SAO PAULO: ASSOCIACAO BRASILEIRA AGUAS SUBTERRANEAS; Date: 1986; p.: 343-352; Resume: ENG; 6 REF.; Tables: 1; Illustrations: TABL./ILL.; Cote: IGME/CONG49; Langue: Portugais Type: TC, LA
CC: 226.A
DS: PUITS EAU / ARGILE MINERAL / FORAGE / TECHNOLOGIE / WATER WELLS / CLAY MINERALS / DRILLING / TECHNOLOGY / POZO AGUA / ARCILLA MINERAL / SONDEO / TECNOLOGIA

87-2-0131209 PASCAL 87262243
GROUNDWATER RESOURCE DEVELOPMENT
- EVALUATION DES RESSOURCES EN EAU SOUTERRAINE -
HAMILL (LESLIE); BELL (FREDERIC G.)
; GBR; Ed: LONDON: BUTTERWORTHS; Date: 1986; 344 P.h.t.; 23 CMh.t.; DISSEM.; 0-408-01409-1; Tables: 43; Illustrations: ILL.; Cote: BRGM; Langue: Anglais Type: TL, LM
CC: 226.A; 001.E.01.0
DS: TRAITE / RESSOURCE EAU / PROSPECTION / RECHARGE NAPPE / QUALITE EAU / PUITS EAU / ESSAI DEBIT / POLLUTION / MODELE MATHEMATIQUE / GESTION RESSOURCE EAU / EAU SOUTERRAINE / TECHNOLOGIE / TEXTBOOKS / WATER RESOURCES / EXPLORATION / RECHARGE / WATER QUALITY / WATER WELLS / PUMP TESTS / POLLUTION / MATHEMATICAL MODELS / WATER MANAGEMENT / GROUND WATER / TECHNOLOGY / MILKING / PROSPECTING / WATER WELL / MATHEMATICAL MODEL / TRATO / RECURSO AGUA / PROSPECCION / RECARGA / CALIDAD DEL AGUA / POZO AGUA / ENSAYO BOMBEO / CONTAMINACION / MODELO MATEMATICO / GESTION RECURSO AGUA / AGUA SUBTERRANEA / TECNOLOGIA

87-2-0023533 PASCAL 87047037
TECNOLOGIA Y PLIEGOS DE CONDICIONES PARA LA CONSTRUCCION DE POZOS EN EL TERCIARIO DE MADRID
- TECHNOLOGIE ET CAHIER DES CHARGES POUR LA CONSTRUCTION DE PUITS DANS LE TERTIAIRE DE MADRID -
VELILLA CRESPO (J. L.)
AFF: COMPANIA GENERAL DE SONDEOS, S.A./MADRID/ESP
JORNADAS SOBRE LA EXPLOTACION DE AGUAS SUBTERRANEAS EN LA COMUNIDAD DE MADRID/1986/MADRID; ESP; Ed: MADRID: COMUNIDAD DE MADRID; Date: 1986; p.: 219-237; Cote: IGME; Langue: Espagnol Type: TC, LA
CC: 226.A
DS: *ROCHE SEDIMENTAIRE / *ESPAGNE / *EUROPE / TECHNOLOGIE / SONDAGE / PUITS EAU / CAPTAGE EAU / ROCHE CLASTIQUE / MASSIF FILTRANT / CREPINE / TERTIAIRE / PROVINCE MADRID / *SEDIMENTARY ROCKS / *SPAIN / *EUROPE / TECHNOLOGY / BOREHOLES / WATER WELLS / WATER HARNESSING / CLASTIC ROCKS / GRAVEL FILTERS / WELL SCREENS / TERTIARY / MADRID PROVINCE / *ROCA SEDIMENTARIA / *ESPANA / *EUROPA / TECNOLOGIA / POZO SONDEO / POZO AGUA / CAPTACION AGUA / ROCA CLASTICA / EMPAQUETADURA GRAVA / FILTRO / TERCIARIO / PROVINCIA MADRID

86-2-0142936 PASCAL 86285407
GROUND WATER POLLUTION CONTROL
- CONTROLE DE LA POLLUTION DES EAUX SOUTERRAINES -
CANTER (LARRY W.); KNOX (ROBERT C.)
AFF: UNIV. OKLA./NORMAN, OK/USA
; USA; Ed: CHELSEA, MI:LEWIS PUBL.; Date: 1985; 526h.t.; 0-87371-014-2; Tables: 110; Illustrations: ILL.; Langue: Anglais Type: TL, LM
CC: 226.B; 001.E.01.P
DS: POLLUTION / TECHNOLOGIE / PUITS EAU / NAPPE EAU / ETUDE CAS / REAMENAGEMENT / POLLUTION / TECHNOLOGY / WATER WELLS / AQUIFERS / CASE STUDIES / RECLAMATION / WATER WELL / CASE STUDY / CONTAMINACION / TECNOLOGIA

86-2-0081923 PASCAL 86163635
NEW TECHNOLOGY
- LES NOUVELLES TECHNIQUES -
TESSENDORFF (H.)
AFF: BERLIN WATER WORKS/BERLIN/DEU
WATER SUPPLY; 0735-1917; GBR; Date: 1985; Vol: 3; No: 3; p.: 65-93; 6 REF.; Illustrations: ILL.; TINTERNATIONAL WATER SUPPLY ASSOCIATION. ATLANTIC WORKSHOP. 2/1984/NICE; Cote: BRGM; Langue: Anglais Type: TP, SC, LA
CC: 226.A; 001.E.01.0
DS: GESTION RESSOURCE EAU / APPROVISIONNEMENT EAU / QUALITE EAU / ECOLOGIE / PUITS EAU / RECHARGE NAPPE / EAU SOUTERRAINE / TRAITEMENT DONNEE / ORDINATEUR / WATER MANAGEMENT / WATER SUPPLY / WATER QUALITY / ECOLOGY / WATER WELLS / RECHARGE / GROUND WATER / DATA PROCESSING / COMPUTERS / WATER WELL / COMPUTER / CALIDAD DEL AGUA / ECOLOGIA / AGUA SUBTERRANEA / COMPUTADORA

85-2-0040697 PASCAL 85081383
125 JAHRE FILTERROHRE FUER BOHRBRUNNEN
- CONDUITS FILTRES DE 125 ANS POUR LES PUITS D'EAU -
- 125 YEARS FILTER PIPES FOR DRILLED WELLS -
BIESKE (E.)
GAS-WASSERFACH; 0341-0625; DEU; Date: 1984; Vol: 125; No: 7; p.: 305-311; Resume: ENG; Loc: BGR/Z2733; Tables: 1; Illustrations: ILL.; Cote: 381D; Langue: Allemand Type: TP, LA
CC: 226.A
DS: *ALLEMAGNE / *EUROPE / GESTION RESSOURCE EAU / APPROVISIONNEMENT EAU / CREPINE / PUITS EAU / TECHNOLOGIE / HISTORIQUE / CAPTAGE EAU / ALLEMAGNE RFA / *GERMANY / *EUROPE / WATER MANAGEMENT / WATER SUPPLY / WELL SCREENS / WATER WELLS / TECHNOLOGY / HISTORY / WATER HARNESSING / WEST GERMANY

85-2-0012336 PASCAL 85024673
TIEFBAUTECHNISCHE PROBLEME BEI DER MAINUNTERTUNNELUNG FUER DIE S-BAHN RHEIN-MAIN IN FRANKFURT
- PROBLEMES TECHNIQUES DE CONSTRUCTIONS SOUTERRAINES POUR FAIRE PASSER UN TUNNEL POUR LE METRO RHIN-MAIN A FRANCFORT -
- CIVIL ENGINEERING PROBLEMS DURING THE ERRECTION OF THE MAIN RIVER TUNNEL FOR THE RHINE-MAIN METROPOLITAN RAILWAY IN FRANKFURT -
SCHULTZ (E. W.)
AFF: DYCKERHOFF & WIDMANN AG/FRANKFURT/M.1 6000/DEU
WASSER BODEN; 0043-0951; DEU; Date: 1984; Vol: 36; No: 8; p.: 366-372; Resume: ENG; 4 REF.; Loc: BGR/Z127; Illustrations: ILL.; Cote: 10208; Langue: Allemand Type: TP, LA
CC: 226.B
DS: *ROCHE CARBONATEE / *ROCHE SEDIMENTAIRE / *PALEOGENE / *TERTIAIRE / *NEOGENE / *ALLEMAGNE / *EUROPE / *ALLEMAGNE RFA / TUNNEL / VOIE FERREE / OUVRAGE / METHODOLOGIE / FONDATION / CALCAIRE / ROCHE CLASTIQUE MEUBLE / OLIGOCENE / MIOCENE SUP / QUATERNAIRE / PERCEMENT / RABATTEMENT NAPPE / PUITS EAU / FOUILLE GENIE CIVIL / ANCRAGE / TECHNOLOGIE / COUPE GEOLOGIQUE / VALLEE DU HAUT RHIN / RIVIERE MAIN / HESSE / FRANCFORT / *CARBONATE ROCKS / *SEDIMENTARY ROCKS / *PALEOGENE / *TERTIARY / *NEOGENE / *GERMANY / *EUROPE / *WEST GERMANY / TUNNELS / RAILROADS / STRUCTURES / METHODS / FOUNDATIONS / LIMESTONE / CLASTIC SEDIMENTS / OLIGOCENE / UPPER MIOCENE / QUATERNARY / PENETRATION / AQUIFER DRAWDOWN / WATER WELLS / EXCAVATIONS / ANCHORS / TECHNOLOGY / SECTIONS / UPPER RHINE VALLEY / MAIN RIVER / HESSE

84-2-0321205 PASCAL 84632999
ERKUNDUNG UND DIMENSIONIERUNG VON ANLAGEN ZUR WAERMEGEWINNUNG AUS GRUND- UND TIEFENWASSER. GEOHYDRODYNAMISCHE ERKUNDUNG-27
- EXPLORATION ET PROJET POUR DES INSTALLATIONS DE RECUPERATION DE CHALEUR A PARTIR DES EAUX SOUTERRAINES PROFONDES. EXPLORATION GEOHYDRODYNAMIQUE 27 -
- EXPLORATION AND DESIGN OF INSTALLATIONS FOR HEAT RECOVERY FROM GROUND AND DEEP WATERS. GEOHYDRODYNAMIC EXPLORATION-27 -
VOIGT (H. D.); HAEFNER (F.)
Z. ANGEW. GEOL.; 0044-2259; DDR; Date: 1984; Vol: 30; No: 2; p.: 62-68; Resume: RUS/ENG; 5 REF.; Loc: BGR/Z426; Tables: 1; Illustrations: ILL.; Cote: 8051; Langue: Allemand Type: TP, LA
CC: 226.A
DS: ENERGIE GEOTHERMIQUE / EAU SOUTERRAINE / EXPLOITATION / HYDRODYNAMIQUE / SONDAGE / PUITS EAU / POMPE CHALEUR / TECHNOLOGIE / GEOTHERMAL ENERGY / GROUND WATER / EXPLOITATION / HYDRODYNAMICS / BOREHOLES / WATER WELLS / HEAT PUMPS / TECHNOLOGY

84-2-0258549 PASCAL 84508195
APPROPRIATE WELL TECHNOLOGY IN POOR NATIONS
TUCKSON (M.)
AFF: GROUNDWATER CONSULT./WAHROONGA, N.S.W./AUS
AUST. WATER RESOUR. COUNC. CONF. SER.; 0725-4695; AUS; Date: 1983; Vol: 8; p.: 337-346; 38 REF.; Tables: 2; Illustrations: TABL.; T INTERNATIONAL CONFERENCE ON GROUNDWATER AND MAN/1983-12-05/SYDNEY; Langue: Anglais Type: TP, SC, LA
CC: 226.A
DS: PUITS EAU / TECHNOLOGIE / PAYS EN DEVELOPPEMENT / METHODOLOGIE / FORAGE / CREPINE / RESSOURCE EAU / EAU SOUTERRAINE / WATER WELLS / TECHNOLOGY / THIRD WORLD / METHODS / DRILLING / WELL SCREENS / WATER RESOURCES / GROUND WATER / PUMPS

84-2-0258533 PASCAL 84508163
APPROPRIATE TECHNOLOGY FOR UTILIZATION OF GROUNDWATER RESOURCES FOR IRRIGATION DEVELOPMENT IN HARD ROCK AREAS OF INDIA
LIMAYE (S. D.)
AFF: GROUNDWATER INST./POONA/IND
AUST. WATER RESOUR. COUNC. CONF. SER.; 0725-4695; AUS; Date: 1983; Vol: 8; p.: 185-189; 2 REF.; TINTERNATIONAL CONFERENCE ON GROUNDWATER AND MAN/1983-12-05/SYDNEY; Langue: Anglais Type: TP, SC, LA
CC: 226.A
DS: INDE / RESSOURCE EAU / IRRIGATION / ROCHE IGNEE / ROCHE METAMORPHIQUE / UTILISATION SUBSTANCE / NAPPE EAU / TECHNOLOGIE / PUITS EAU / PROSPECTION / INDIA / WATER RESOURCES / IRRIGATION / IGNEOUS ROCKS / METAMORPHIC ROCKS / UTILIZATION / AQUIFERS / TECHNOLOGY / WATER WELLS / EXPLORATION / DEVELOPMENT / DUG WELLS

84-2-0186163 PASCAL 84364211
INTERNATIONAL WATER WELL EXHIBITION; ABSTRACTS OF PAPERS TO BE PRESENTED AT THE GROUND-WATER TECHNOLOGY DIVISION'S EDUCATION SESSION
GROUND WATER; 0017-467X; USA; Date: 1983-08; Vol: 21; No: 4; p.: 514-523; TINTERNATIONAL WATER WELL EXPOSITION; GROUND-WATER TECHNOLOGY DIVISION'S EDUCATION SESSION/1983-09-13/ST. LOUIS, MO; Langue: Anglais Type: TP, SC, LM
CC: 226.A
DS: REUNION / EAU SOUTERRAINE / SYMPOSIA / GROUND WATER

84-2-0123688 PASCAL 84240403
"FORMAL" TRAINING IN GROUND-WATER TECHNOLOGY
SMITH (STU)
AFF: WRIGHT STATE UNIV./CELINA, OH/USA
WATER WELL J.; 0043-1443; USA; Date: 1983-09; Vol: 37; No: 9; p.: 62-63; Langue: Anglais Type: TP, LA
CC: 226.A
DS: ENSEIGNEMENT / TECHNOLOGIE / PUITS EAU / EAU SOUTERRAINE / FORAGE / VIRGINIE / OHIO / MINNESOTA / WASHINGTON / EDUCATION / TECHNOLOGY / WATER WELLS / GROUND WATER / DRILLING / VIRGINIA / OHIO / MINNESOTA / WASHINGTON / J. SARGENT REYNOLDS COMMUNITY COLLEGE / WRIGHT STATE UNIVERSITY / STAPLES AREA VOCATIONAL TECHNICAL INSTITUTE / EDMONDS COMMUNITY COLLEGE / VOCATIONAL SCHOOL

MANTECON GOMEZ (R.); MEDIAVILLA LASO (C.); MARTIN MACHUCA (M.)

84-2-0052432 PASCAL 84102019
RESULTADOS OBTENIDOS POR EL METODO DE PERFORACION DE TALANDROS HORIZONTALES EN EL INTERIOR DE POZOS EN TERRENOS CONSOLIDADOS DE BAJA PERMEABILIDAD
- RESULTATS OBTENUS PAR LA METHODE DE FORAGE DE GALERIES HORIZONTALES, A L'INTERIEUR DE PUITS DANS DES TERRAINS CONSOLIDES DE FAIBLE PERMEABILITE -
MANTECON GOMEZ (R.); MEDIAVILLA LASO (C.); MARTIN MACHUCA (M.)
AFF: CO. GENERAL SONDEOS/MADRID/ESP
SIMPOSIO DE HIDROGEOLOGIA. 3/1983/MADRID; ESP; Ed: MADRID: CO. GENERAL SONDEOS; Date: 1983; p.: 403-412; Loc: IGME; Langue: Espagnol Type: TC, LA
CC: 226.A
DS: PUITS EAU / FORAGE / PERMEABILITE / FRACTURATION / METHODOLOGIE / TECHNOLOGIE / FORAGE HORIZONTAL / WATER WELLS / DRILLING / PERMEABILITY / FRACTURING / METHODS / TECHNOLOGY

84-2-0022946 PASCAL 84044533
SIMPLE TECHNOLOGY OF SHALLOW WELLS
- TECHNOLOGIE SIMPLE DES PUITS PEU PROFONDS -
GONDWE (E. S.)
AFF: UNIV. DAR ES SALAAM, DEP. CIVIL ENGINEERING/DAR ES SALAAM/TZA
WATER INT.//WATER INTERNATIONAL; 0250-8060; INT; Date: 1983; Vol: 8; No: 4; p.: 166-170; 11 REF.; Illustrations: ILL.; Cote: 19442; Langue: Anglais Type: TP, LA
CC: 226.B
DS: PUITS EAU / HYDROGEOLOGIE / WATER WELLS / HYDROGEOLOGY

83-2-0507243 PASCAL 83574963
DESET LET ZAVODU N.P. GEOINDUSTRIA V LIBYI
- DIX ANNEES DE L'ETABLISSEMENT GEOINDUSTRIA EN LIBYE -
WERNER (O.)
AFF: GEOINDUSTRIA/PRAHA/CSK
GEOL. PRUZK.; 0016-772X; CSK; Date: 1979; Vol: 21; No: 7; p.: 208-209; Resume: ENG/GER/RUS; Loc: GFB, BRGM/CS7; Planches: 3; Illustrations: PL.; Cote: 14932; Langue: Tcheque Type: TP, LA
CC: 226.B
DS: COOPERATION INTERNATIONALE / HISTORIQUE / TECHNOLOGIE / FORAGE / PUITS EAU / CAPTAGE EAU / LIBYE / INTERNATIONAL COOPERATION / HISTORY / TECHNOLOGY / DRILLING / WATER WELLS / WATER HARNESSING / LIBYA

83-X-0471714 PASCAL 83534085
ENGINEERING WATER WELLS
- TECHNOLOGIE DES PUITS D'EAU -
CARPENTER (C. H.)
AFF: CENT. UTAH WATER CONSERVANCY DISTRICT/OREM UT 84057/USA
J.-AM. WATER WORKS ASSOC.//JOURNAL-AMERICAN WATER WORKS ASSOCIATION; 0003-150X; USA; Date: 1983; Vol: 75; No: 8; p.: 395-397; 4 REF.; Cote: 3072; Langue: Anglais Type: TP, LA
CC: 892.A.10.B
DS: OUVRAGE ADDUCTION EAU / CAPTAGE EAU / PUITS EAU / TECHNOLOGIE CONSTRUCTION / HYDROGEOLOGIE / WATER SUPPLY WORK / WATER HARNESSING / WATER WELL / CONSTRUCTION TECHNOLOGY / HYDROGEOLOGY
A CAUSE DE L'AUGMENTATION DES COUTS DE L'ENERGIE LES UTILISATEURS DE L'EAU SOUTERRAINE DEVRONT OBTENIR DES PUITS LES PLUS EFFICACES POSSIBLES AU MOYEN DE RECHERCHES HYDROGEOLOGIQUES, DE TROUS D'ESSAIS ET DE CONCEPTION TECHNOLOGIQUE. DES METHODES APPROPRIEES DE DEVELOPPEMENT DE NOUVEAUX PUITS SONT DISCUTEES

82-2-0150918 PASCAL 82188265
GEOTHERMAL RESERVOIR WELL STIMULATION PROGRAM. TECHNOLOGY TRANSFER. I
- PROGRAMME DE STIMULATION DE PUITS DE RESERVOIR GEOTHERMAL: TRANSFERT DE TECHNOLOGIE. I -
; USA; Ed: SPRINGFIELD: NATIONAL TECH. INF. SERV.; Date: 1980; 134 P.h.t.; 28 CMh.t.; 209 REF.; Loc: BRGM; Illustrations: ILL.; Langue: Anglais Type: TL, LM
CC: 226.B
DS: DONNEE / HYDRODYNAMIQUE / RHEOLOGIE / PERMEABILITE / POROSITE / TEMPERATURE / FRACTURATION / PUITS EAU / RESERVOIR GEOTHERMIQUE / DEVELOPPEMENT / ETATS UNIS / DATA / HYDRODYNAMICS / RHEOLOGY / PERMEABILITY / POROSITY / TEMPERATURE / FRACTURING / WATER WELLS / GEOTHERMAL RESERVOIRS / DEVELOPMENT / UNITED STATES

82-2-0104331 PASCAL 82108825
BERICHT UEBER DIE TAETIGKEIT DER BERGBEHOERDEN DES LANDES NORDRHEIN-WESTFALEN IM JAHRE 1980
- REPORT SUR L'ACTIVITE DES AUTORITES MINIERES DU LAND DE RHENANIE-NORD-WESTPHALIE EN 1980 -
BER. TAETIGKEIT BERGBEHOERDEN LANDES NORDRH.-WESTFAL.; DEU; Date: 1980; 76 P.h.t.; 73h.t.; Loc: BGR-Z4369; Tables: 83; Illustrations: TABL./ILL./PORTRAIT; Langue: Allemand Type: TP, LM
CC: 221.B.01
DS: SERVICE GEOLOGIQUE / RAPPORT ACTIVITE / EXPLOITATION / PANORAMA MINIER / CHARBON / COUCHE CHARBON / LIGNITE / EVAPORITE SUBSTANCE / FER SUBSTANCE / METAL NON FERREUX / PRODUCTION / PRODUCTIVITE / TECHNOLOGIE MINIERE / PROSPECTION / UTILISATION TERRAIN / REAMENAGEMENT / EXHAURE MINE / PUITS EAU / RHENANIE WESTPHALIE / SERVICE MINES / EXPLOITATION 1980 / PANORAMA MINIER 1979-1980 / SURVEY ORGANIZATIONS / PROGRESS REPORT / EXPLOITATION / MINERAL RESOURCES / COAL / COAL SEAMS / LIGNITE / EVAPORITE DEPOSITS / IRON ORES / NONFERROUS METALS / PRODUCTION / PRODUCTIVITY / TECHNOLOGY / EXPLORATION / LAND USE / RECLAMATION / MINE DRAINAGE / WATER WELLS / NORTH RHINE-WESTPHALIA

83-X-0471714 PASCAL 83534085
ENGINEERING WATER WELLS
- TECHNOLOGIE DES PUITS D'EAU -
CARPENTER (C. H.)
AFF: CENT. UTAH WATER CONSERVANCY DISTRICT/OREM UT 84057/USA
J.-AM. WATER WORKS ASSOC.//JOURNAL-AMERICAN WATER WORKS ASSOCIATION; 0003-150X; USA; Date: 1983; Vol: 75; No: 8; p.: 395-397; 4 REF.; Cote: 3072; Langue: Anglais Type: TP, LA
CC: 892.A.10.B
DS: OUVRAGE ADDUCTION EAU / CAPTAGE EAU / PUITS EAU / TECHNOLOGIE CONSTRUCTION / HYDROGEOLOGIE / WATER SUPPLY WORK / WATER HARNESSING / WATER WELL / CONSTRUCTION TECHNOLOGY / HYDROGEOLOGY
A CAUSE DE L'AUGMENTATION DES COUTS DE L'ENERGIE LES UTILISATEURS DE L'EAU SOUTERRAINE DEVRONT OBTENIR DES PUITS LES PLUS EFFICACES POSSIBLES AU MOYEN DE RECHERCHES HYDROGEOLOGIQUES, DE TROUS D'ESSAIS ET DE CONCEPTION TECHNOLOGIQUE. DES METHODES APPROPRIEES DE DEVELOPPEMENT DE NOUVEAUX PUITS SONT DISCUTEES

82-2-0150918 PASCAL 82188265
GEOTHERMAL RESERVOIR WELL STIMULATION PROGRAM. TECHNOLOGY TRANSFER. I
- PROGRAMME DE STIMULATION DE PUITS DE RESERVOIR GEOTHERMAL: TRANSFERT DE TECHNOLOGIE. I -
; USA; Ed: SPRINGFIELD: NATIONAL TECH. INF. SERV.; Date: 1980; 134 P.h.t.; 28 CMh.t.; 209 REF.; Loc: BRGM; Illustrations: ILL.; Langue: Anglais Type: TL, LM
CC: 226.B
DS: DONNEE / HYDRODYNAMIQUE / RHEOLOGIE / PERMEABILITE / POROSITE / TEMPERATURE / FRACTURATION / PUITS EAU / RESERVOIR GEOTHERMIQUE / DEVELOPPEMENT / ETATS UNIS / DATA / HYDRODYNAMICS / RHEOLOGY / PERMEABILITY / POROSITY / TEMPERATURE / FRACTURING / WATER WELLS / GEOTHERMAL RESERVOIRS / DEVELOPMENT / UNITED STATES

82-2-0104331 PASCAL 82108825
BERICHT UEBER DIE TAETIGKEIT DER BERGBEHOERDEN DES LANDES NORDRHEIN-WESTFALEN IM JAHRE 1980
- REPORT SUR L'ACTIVITE DES AUTORITES MINIERES DU LAND DE RHENANIE-NORD-WESTPHALIE EN 1980 -
BER. TAETIGKEIT BERGBEHOERDEN LANDES NORDRH.-WESTFAL.; DEU; Date: 1980; 76 P.h.t.; 73h.t.; Loc: BGR-Z4369; Tables: 83; Illustrations: TABL./ILL./PORTRAIT; Langue: Allemand Type: TP, LM
CC: 221.B.01
DS: SERVICE GEOLOGIQUE / RAPPORT ACTIVITE / EXPLOITATION / PANORAMA MINIER / CHARBON / COUCHE CHARBON / LIGNITE / EVAPORITE SUBSTANCE / FER SUBSTANCE / METAL NON FERREUX / PRODUCTION / PRODUCTIVITE / TECHNOLOGIE MINIERE / PROSPECTION / UTILISATION TERRAIN / REAMENAGEMENT / EXHAURE MINE / PUITS EAU / RHENANIE WESTPHALIE / SERVICE MINES / EXPLOITATION 1980 / PANORAMA MINIER 1979-1980 / SURVEY ORGANIZATIONS / PROGRESS REPORT / EXPLOITATION / MINERAL RESOURCES / COAL / COAL SEAMS / LIGNITE / EVAPORITE DEPOSITS / IRON ORES / NONFERROUS METALS / PRODUCTION / PRODUCTIVITY / TECHNOLOGY / EXPLORATION / LAND USE / RECLAMATION / MINE DRAINAGE / WATER WELLS / NORTH RHINE-WESTPHALIA

80-2-0246256 PASCAL 80232607
WATER WELL TECHNOLOGY. FIELD PRINCIPLES OF EXPLORATION DRILLING AND DEVELOPMENT OF GROUND WATER AND OTHER SELECTED MINERALS
CAMPBELL (MICHAEL D.); LEHR (J. H.)
AFF: NATIONAL WATER WELL ASSOCIATION'S RESEARCH FACILITY,COLUMBUS OH,USA
; USA/DEU/GBR; Ed: NEW YORK: MC GRAW HILL/DUSSELDORF: MC GRAW HILL/LONDON: MC GRAW HILL; Date: 1973; XVI-680 P.h.t.; 23 CMh.t.; 156 P.; Illustrations: 283; 0-07-046097-3; Loc: BRGM; Langue: Anglais Type: TL, LM
CC: 226.A.02
DS: MONOGRAPHIE / TECHNOLOGIE HYDROGEOLOGIE / PUITS D'EAU / MONOGRAPH / HYDROGEOLOGICAL TECHNOLOGY / WATER WELL

78-2-0299640 PASCAL 78380263
MANUAL OF WATER WELL CONSTRUCTION PRACTICES.
SPRINGFIELD; Ed: NATL. TECH. INF. SERV.; Date: 1977; p.: 1-157; Illustrations: 18; Loc: BRGM; Langue: Anglais Type: TL, LM, NC
CC: 226.A.02
DS: TECHNOLOGIE HYDROGEOLOGIE / PUITS D'EAU / POMPAGE / PROTECTION / EAU SOUTERRAINE / HYDROGEOLOGICAL TECHNOLOGY / WATER WELL / PUMPING / PROTECTION / GROUNDWATER

78-2-0287428 PASCAL 78366339
POMIAR PRZEPLYWU WOD PODZIEMNYCH W OTWORZE HYDROGEOLOGICZNYM ORAZ KONTROLA STANU TECHNICZNEGO STUDNI.
- MESURE DE L'ECOULEMENT DES EAUX SOUTERRAINES DANS UN PUITS ET CONTROLE DES CONDITIONS TECHNIQUES -
MAKSYMOWICZ (A.)
AFF: CENT. OSRODEK BADAW.-PROJ. GORN. ODKRYWKOWEGO "POLTEGOR" WROC NONLAWIN, WROC NONLAW, POL.
TECH. POSZUKIWAN GEOL.; POLSKA; Date: 1977; Vol: 16; No: 5; p.: 29-31; Resume: RUSSE ANGL.; 4 REF.; Loc: BRGM; Langue: Polonais Type: TP, LA, NC
CC: 226.A.02
DS: METHODOLOGIE / HYDRODYNAMIQUE / EAU SOUTERRAINE / PUITS D'EAU / TECHNOLOGIE HYDROGEOLOGIE / METHODOLOGY / HYDRODYNAMICS / GROUNDWATER / WATER WELL / HYDROGEOLOGICAL TECHNOLOGY

78-7-0245310 PASCAL 78295379
ASSIGNMENT: DRILL AND COMPLETE A "WATER" WELL: DEPTH: 12,000 TO 20,000**(+)FT, PRESSURE: 9000 TO 15,000**(+)LB, TEMPERATURE: 250 TO 350**(+)**(0)F.
BOYD (W. E.); DORFMAN (M. H.)
DRILLG-D.C.W.; U.S.A.; Date: 1978; Vol: 39; No: 5; p.: 30-35 (4P.); Cote: 10420; Langue: Anglais Type: TP, LA
CC: 730.C.05
DS: ENERGIE GEOTHERMIQUE / FORAGE / PUITS PRODUCTION / EQUIPEMENT / TECHNOLOGIE / GOLFE DU MEXIQUE / ETATS UNIS / RESERVOIR SOUS PRESSION / GEOTHERMAL ENERGY / DRILLING / PRODUCING WELL / EQUIPMENT / TECHNOLOGY / GULF OF MEXICO / UNITED STATES
DESCRIPTION DES TECHNIQUES A UTILISER POUR FORER ET EQUIPER DES PUITS DE PRODUCTION DANS LES RESERVOIRS GEOTHERMIQUES SOUS PRESSION DE LA COTE DU GOLFE DU MEXIQUE.

74-2-0012739 PASCAL 74437015
WATER WELL TECHNOLOGY. FIELD PRINCIPLES OF EXPLORATION DRILLING AND DEVELOPMENT OF GROUND WATER AND OTHER SELECTED MINERALS.
CAMPBELL (M. D.); LEHR (J. H.)
AFF: NATL WATER WELL ASSOC. RES. FACIL., COLUMBUS, OHIO
NEW YORK; Ed: MCGRAW-HILL; Date: 1973; p.: (693P.); 151 P.; Illustrations: 242; Loc: BRGM; Langue: Anglais Type: TL, LM, NC
CC: 226.A.02
DS: TRAITE / INSTRUMENTATION / METHODOLOGIE / SONDAGE / COUT / BIBLIOGRAPHIE
CE TRAITE FAIT LE POINT DES DIFFERENTS ASPECTS DU SONDAGE TANT DU POINT DE VUE POLLUTION POSSIBLE DE LA NAPPE, QUE DU POINT DE VUE PROPRIETES DES ROCHES ET DU POINT DE VUE ECONOMIQUE

I.R.S. 6-10 Rue Mario Nikis, 75738 PARIS Cedex 15 Tel: (1) 42 73 72 01 Tlx: 202 746 IRS *Information Retrieval Service*

0160184 Fluidex 85010342 Subfile: X
The use of pumping tests to evaluate a geothermal reservoir - the Triassic sandstones at Marchwood, Southampton.
Price, M. ; Allen, D.J.
Inst. Civ. Engrs. Proc. Part 1, vol.76, Aug. 1984, p.697-711. In: English Coden: Issn: 0307-8353 1984 Avail-from BHRA:

The paper describes the pumping tests at the borehole in Marchwood, Southampton. A preliminary test, using gas lift, was carried out with the drilling rig still on the site, the results indicated that a longer test was justified, and also provided data with which a pump could be specified. The depth of the well, variations in the temperature (and hence density) of the water column, and the lack of observation wells provided an unusual set of conditions for a water well test. The paper discusses these conditions and the methods used to deal with them. The reservoir was shown to have a transmissivity of about 7 m SUP 2/day, with leakage effects and a hydraulic boundary present. (from authors' abstract)

0149863 Fluidex 84041026 Subfile: CH
The importance of well screen.
Mehmert, M.H.
Johnson Div.-UOP Inc.
In: Proc. Am. Water Works Assoc. 1983 Annual Conf., (Las Vegas, U.S.A.: Jun. 5-9, 1983), Denver, U.S.A., Am. Water Works Assoc., 1983, Paper 20-1b, p.597-602. (ISBN 0-89867-294-5) In: English Issn: 0360-814X Isbn: 0-89867-294-5 1983 Avail-from BHRA: NH Section Code(s): C12 ; C6

The major causes of formation damage to water wells are reviewed. The primary causes of this damage are listed. The effects of intake devices on well developments are discussed. Rough cut perforated pipes, factory cut pipes and continuous slot screens are critically examined. A discussion is presented on methods to repair drilling damage and their respective degrees of efficiency. The economic effects of improving well efficiency are illustrated for a typical example. (A.J.)

0144969 Fluidex 84021450 Subfile: CH
Development of groundwater resources.
Arab Water World, vol.7, no.40, Jul.-Aug. 1983, p.93, 91-89. In: English Coden: 1983 Avail-from BHRA: Section Code(s): C25 ; C12

The use of mobile self contained water well drilling rigs in the development of groundwater resources in developing countries is discussed. The aim is to provide potable water from wells and mobile drilling is suggested as the most effective means of well construction. Details of Ingersoll-Rand's range of mobile drilling rigs are given. Other factors involved in well construction (locating the aquifer, geological considerations and well design) are outlined. (S.A.K.)

0144888 Fluidex 84021126 Subfile: CH
Recommended boundary of the hydrogeological intake area of the karstic thermal waters of Eger.
Aujeszky, G.; Bakonyi, S.; Scheuer, G.
Hidrol. Kozl., vol.63, no.8, Aug. 1983, p.344-353. In: Hungarian Coden: HIDRAV Issn: 0018-1323 1983 Avail-from BHRA: Section Code(s): C12

The thermal springs at Eger, North Hungary, field water from a large interconnected karst thermal water aquifer. The intake area is situated in the Bukk mountains and consists of fissured carbonaceous rocks (limestone and dolomite) cropping out to the surface. The springs now emerge on the valley bottom penetrating the gravel sediment and the thermal water originating from the carbonate rocks mixes with the groundwater flowing in the gravel deposit. The water wells, therefore, draw directly on thermal water which is also obtained from the karst rock springs sunk to greater depths. To protect thermal water emerging from the wells, the article describes the delineation of a common protected intake area, divided into internal and external zones. The internal zone would protect against harmful local effects, and the external zone would eliminate adverse effects on field, temperature and medicinal properties of the springs. (from English abstract)

0144489 Fluidex 84019530 Subfile: CH
Downpull/uplift on vertical lift and Tainter gates in closed conduits.
Singamsetti, S.R. ; Sharma, R.L.
Indian Inst. Technol., Kanpur
J. Inst. Engrs. (India) Part CI, vol.63, no.3, Nov. 1982, p.142-149. In: English 1983 Avail-from BHRA: NH Section Code(s): C5; C18

Experiments were conducted to determine the down pull characteristics of a vertical lift gate and two Tainter gates of two different radii of curvature under submerged flow conditions in a closed conduit. The down pull/up lift was obtained from the measurements of piezometric heads on the top and the bottom surfaces of the gates. It was found that the net vertical force on the vertical lift gates is down pull whereas on Tainter gates it is up lift. The parameters affecting the down pull/up lift for both the types of gates are geometric parameters, relative gate opening, and Reynolds number or Froude number depending upon whether the flow is submerged or free. An additional parameter for Tainter gates, the dimensionless gate water well level is discussed in detail. (from authors' abstract)

0144010 Fluidex 84017614 Subfile: CH
Engineering water wells.
Carpenter, C.H.
J. Am. Water Works Assoc., vol.75, no.8, Aug. 1983, p.395-397.
In: English Coden: JAWAA5 Issn: 0003-150X 1983
Avail-from BHRA: Section Code(s): C25

Gives some details of water well construction in Utah, U.S.A. Discusses a recommended method of new well development and considers some design equations, the orifice equation and Jacob's drawdown formula. Notes need for hydrogeologic investigations. (C.J.U.)

0143719 Fluidex 84016450 Subfile: CH
Ground water.
Raghunath, H.M.
New Delhi, India, Wiley Eastern Ltd., 1982, 460p. (ISBN 0-85226-764-9) In: English Isbn: 0-85226-764-9 1982
Avail-from BHRA: NH Section Code(s): C12 ; C25

This book gives an introduction to many aspects of groundwater and its use in rural water supply schemes. Topics covered include hydrometeorology, hydrogeology, aquifer propeties and groundwater flow well hydraulics, groundwater analogue models, sea water intrusion, groundwater geophysics, water well design, drilling and construction, groundwater pollution, artificial recharge and groundwater basin management. (T.R.A.)

Terms: book

0142305 Fluidex 84010794 Subfile: PA
The test pumping of water wells - new code gives guidance on preparation and procedures.
Richards, H.
BSI News, Jun. 1983, p.9-10. In: English Coden: BSINAE
Issn: 0005-3309 1983 Avail-from BHRA: Section Code(s): P10

The code gives guidance on pumping tests which can be applied over a complete range of geological and hydrogeological conditions. (from paper)

Terms: groundwater / aquifer characteristics

0141064 Fluidex 84005830 Subfile: CH
Control and utilization of small scale hydroelectric power.
Thapar, O.D; DuBow, J.B.
Roorkee Univ. ; New York Polytech. Inst.
In: Waterpower '81, Proc. Int. Conf. on Hydropower, (Washington, D.C., U.S.A.: Jun. 22-24, 1981), vol. II, Washington, D.C., U.S.A., U.S. Army Corps. Engrs., 1981, Session 8, p.1066-1077. In: English 1981 Avail-from BHRA: NH Section Code(s): C20

The problems of implementing small hydro schemes in widely dispersed rural populations are discussed. These include the regulation, control and routing of the electrical power generated, the development of site-specific, low, capital cost systems to produce value added commodities and the distribution of power from the hydro source to sites as far as 10 km for water well pumps and cottage industries. The development of an electronic controller and load scheduler to replace mechanical governors and manual switching is described. (T.R.A.)

0141006 Fluidex 84005598 Subfile: CH
Application of hot-wire (-film) flowmeters to water velocity measurements in wells.
Tselents, A.
Imperial Coll. Sci. & Technol., London
J. Hydrol., vol.58, no.3-4, Sep. 1983, p.375-381. In: English Coden: JHYDA7 Issn: 0022-1694 1983 Avail-from BHRA: NH Section Code(s): C16

Practical problems in designing and using the hot-wire (-film) flowmeters for velocity measurements in water wells are discussed. (T.R.A.)

0140940 Fluidex 84005334 Subfile: CH
Regional groundwater flow simulation using a numerical model including aquifer dewatering and recharge estimation.
Senarath, D.C.H.
Birmingham, U.K., Birmingham Univ., Jan. 1981, 408p. (Ph.D. Thesis) In: English 1981 Avail-from BHRA: NH

Terms: finite difference technique / thesis / water well / borehole / aquifer / U.K.

0139504 Fluidex 83076022 Subfile: CH
Geology and water: an introduction to fluid mechanics for geologists.
Chapman, R.E.
The Hague, The Netherlands, Martinus Nijhoff/Dr. W. Junk Publishers B.V., 1981, 244p. (Dev. Appl. Earth Sci. Vol.1) (ISBN 90-247-2455-4)
In: English Isbn: 90-247-2455-4 1981 Avail-from BHRA: NH
Section Code(s): C1

This book is intended to provide a basis for the understanding of the mechanical role of water in geology. Hydrostatic and hydrodynamic behaviour, flow in porous media, aquifers, springs, rivers and pore

Terms: ground water / pipe flow / Darcy's law / Stokes' law / water well / sliding / lubrication / rock / introduction

0139298 Fluidex 83075198 Subfile: FM
Application of hot-wire (film) flowmeters to water velocity measurements in wells.
Tselinkis, A.
J. Hydrol., vol.58, no.1, Sep. 1982, p.376-381. In: English Coden: JHYDA7 Issn: 0022-1694 1982 Avail-from BHRA: NH
Section Code(s): M7

Hot wires have long been used for the measurement of air speeds, where they are particularly suitable for relatively small velocities. Unfortunately, it has not been possible to use them in water with the same precision and ease as in air. One of the main draw-backs of hot wires (films) when they are used in water measurements is that they become unstable because of the contamination of the wire (film) by dissolved gases, dirt and chemicals in the water, and they are very sensitive to ambient temperature fluctuations. The present paper discusses the practical problems in using the hot-wire (film) flowmeter for velocity measurements in water wells. (A)

0138603 Fluidex 83072418 Subfile: CH
Case-studies in groundwater resources evaluation.
Lloyd, J.W.
Oxford, U.K., Oxford Univ. Press, 1981, 211p. (ISBN 0-19-854530-4) In: English Isbn: 0-19-854530-4 1981
Avail-from BHRA: NH

This book aims to provide undergraduate and postgraduate students of hydrogeology with a summary of techniques currently in use for groundwater resources evaluation. Chapters cover initial investigation and drilling, surface geophysical methods in hydrogeology, geophysical logging of water wells, pumping-test analysis, hydrochemical investigations, environmental isotopes in groundwater, assessment of groundwater recharge, modelling groundwater sytems. (T.R.A.)

0137095 Fluidex 83066386 Subfile: PA
How to select a centrifugal pump.
Water Well J., vol.36, no.3, Mar. 1982, p.59-62. In: English
Coden: WWJOA9 Issn: 0043-1443 1982 Avail-from BHRA: NH
Section Code(s): P17

The application and operation of centrifugal pumps to water well drilling is discussed. The importance of pump casing shape, volute or concentric and the selection of the right pumps are considered. Other uses of centrifugal pumps in water wells are suggested. (S.A.K.)

0134217 Fluidex 83054874 Subfile: CH
Predicting depths to the water table in deeply weathered river catchments in Nigeria.
Omorinbola, E.O.
Ife Univ.
J. Inst. Water Engrs. & Sci., vol.36, no.3, Jun. 1982, p.191-204.
In: English Coden: JIWSDI 1982 Avail-from BHRA:
Section Code(s): C12

Predictability of the depth to the water table at specific sites within river catchments is valuable for knowing, in advance of actual operations, the approximate depths needed for water wells, and in deciding when best to sink them. It is particularly important in the Nigerian Basement Complex where the geohydrological characteristics of the weathered mantles constituting the main sources of groundwater are yet to be fully understood. This paper discusses the techniques used to obtain equations for predicting depths to the phreatic surface in three major river catchments in southwestern Nigeria. Two techniques for data collection were used. The first method involved dividing each area into equal sized 2km squares approximately, identifiable with the aid of aerial photographs. The depth of the water table was determined by seismic-refraction within each square. The second method involved the observation of the depth to the well-water surface at a number of wells evenly distributed in the area. (from author's abstract)

0134036 Fluidex 83054150 Subfile: FS
Permeability of grout seals surrounding thermoplastic well casing.
Kurt, C.E.; Johnson, R.C.
Auburn Univ.; Mobil Res. & Dev. Corp.
Ground Water, vol.20, no.4, Jul.-Aug. 1982, p.415-419. In: English Issn: 0017-467X 1982 Avail-from BHRA: NH Section Code(s): S2

To protect vital ground-water sources when a water well is constructed, it is desirable that the longitudinal permeability of the structural system (casing and grout material) be lower than the surrounding formation. Results of an experimental test programme to measure the longitudinal permeability of a grouted thermoplastic (PVC) water well casing system are presented. A neat cement grout, with and without calcium chloride or bentonite admixtures was placed in the annulus of a simulated well, and the effect on permeability evaluated. The impact on permeability of water/cement ratio of the grout mix and the effect of a casing coupling bell joint was also considered in the study. (from authors' abstract)

0124333 Fluidex 83015338 Subfile: X
Electric logging techniques applied to ground water exploration and water wells.
Tanwar, B.S.
Haryana State Minor Irrig., Tubewell Corp.
Irrig. & Power, vol.37, no.2, Apr. 1980, p.233-240. In: English Coden: IRP WA Issn: 0367-9993 1980 Avail-from BHRA:

The conventional single electrode logging device is widely employed in groundwater and water well investigations, which provides considerable qualitative information rapidly and at low expense. This paper deals with the principles of logging equipment, procedure of recording an electric log, field practices, interpretation problems, and advantages of the logging and its limitations. (from paper)

0117698 Fluidex 82072997 Subfile: X
High speed water jets from vertically accelerated rotating cones.
Savic, P. ; Allen, J.D. ; Van Blokland, G.P.
J. Fluid Mech., vol.60, no.4, 1973, p.703-719. In: English Coden: JFLSA7 Issn: 0022-1120 1973 Avail-from BHRA: NH

Water jets are produced by vertically accelerating a rotating cone partially filled with water. It is shown that the acceleration of the parabolic meniscus results in a motion similar to that observed in a shaped explosive charge. (Monroe jet). Acceleration of the cone is effected by means of an inductive electromagnetic accelerating device (conical pinch) whose theory is developed in terms of the WKB approximation. A second order inviscid theory is presented of the motion of the fluid in the cone in terms of the Penney-Price linearization procedure and it is shown that good agreement for the jet head velocity can be achieved for low velocities. At higher velocities, experimental results appear to lag behind theory, probably owing the the dispersal of the jet head through viscous drag with the surrounding atmosphere. The shape of the jet at early times is well represented by first order theory. (A)

Terms: jet cutting

0096657 Fluidex 81076765 Subfile: X
Survey of models to predict the effect of geothermal power development on domestic water supplies and to design pollution monitoring methods.
Pimental, K.D.
Livermore, U.S.A., Calif. Univ. at Livermore, Aug. 17, 1977, 15p. (UCLR-79977) In: English 1977 Avail-from BHRA: Nh

The computer modeling and simulation of ground water solute transport, applicable to the design of pollution surveillance monitoring system is considered. Emphasis is placed on the effects of the development of geothermal power production on water quality of domestic artesian water wells in an area downstream from geothermal wells. (A)

0087484 Fluidex 81040073 Subfile: X
The design and application of large diameter reinforced plastic mortar well casing.
Quellette, H.
Amoco Reinforced Plastics Co.
In : Proc. Thirty-Third Annual Conf. of the Reinforced Plastics/Composites Inst., (Washington, D.C., U.S.A. : Feb. 7-10, 1978), New York, U.S.A., Soc. Plastics Ind. Inc., 1978, Paper 11-B, pp.1-6. In: English 1978 Avail-from BHRA: N

collapse at various well depths. The long term usage of compression-type casing has proven that the product design analysis provides the end user with his anticipated product design life. A special testing programme tension type casing has helped to develop the required joint strengths and wall design parameters for large diameter, deep tension well applications. (A) Since the development of Reinforced Plastic Mortar Pipe significant design and manufacturing features have been incorporated to expand the scope of its applications. One of the major areas of interest has been in the large diameter well casing field with a variety of diversified applications. Typical uses are in potable water wells, irrigation wells, waste disposal wells, observation wells, salt water intake and intrusion wells. Unique design methods have been implemented over a testing period of eight years to produce a casing product with high collapse strengths and reasonable cost to compete with the more conventional products such as carbon and stainless steel, nickel bronze alloys and other reinforced plastics. Compression well casing and the newer locking joint tension well casing have been designed to utilize sand as a filler to provide the required casing wall thickness and necessary ring stiffness to resist

0086605 Fluidex 81036557 Subfile: X
Illinois water well pump installation code. Rules and regulations.
Illinois, U.S.A., Dept. Public Health, Nov. 1973, 13pp. In: English 1970 Avail-from BHRA: NH

SCOPE. The Rules and Regulations hereby prescribed provide minimum standards for installation of water well pumps or equipment employed in withdrawing or obtaining water from a well for any use and includes such seals and safeguards as may be necessary to protect from contamination the water in the well and water being pumped from the well.

0077484 Fluidex 81000072 Subfile: X
Generalised solution to the problems of transient flow of fluid in porous media.
Falade, G.K.
Ibadan Univ.
Int. J. Engng. Sci., vol.17, no.7, 1979, pp.869-878. In: English Coden: IJESAN Issn: 0020-7225 1979 Avail-from BHRA:

The application of Green's function to problems of unsteady fluid flow in porous media is developed. The result indicates that the problem of fluid can be vizualised as being equivalent to that of finding an appropriate source function to describe the physical problem. For cases where the appropriate instantaneous Green's function for the system can be found, the required fluid flow problem is easily solved. The application of this very powerful approach is demonstrated for the case of an oil well producing in a infinite oil reservoir body (the infinite line source case), and that of partially penetrating or restricted-flow entry oil/water well in a confined stratum, (the finite line source system). (A)

0077272 Fluidex 80008484 Subfile: CH
Chicago's TARP solves problems in big way. Part 2.
Dalton, F.E.
Metropolitan Sanit. District Greater Chicago; Harza Engng. Co.
Water & Wastes Engng., vol.16, no.3, Mar.1979, pp.36-38,43 and 44. In: English Coden: WWAEA2 1979 Avail-from BHRA: Section Code(s): C24; C21

Geological and sub-surface exploration aspects of the TARP project are described. The core drilling involved drilling 24 exploratory holes totaling 34,360 lineal feet from which rock cores were selected for laboratory tests. The water well drilling and testing program involved ten water wells with a total drilled depth of 11,806 lineal feet. Twenty pumping tests and two recharge tests were conducted to evaluate the hydrogeologic characteristics of the underground rock formations. Geophysical borehole logging was carried out in 41 boreholes, and results and interpretations were presented. Seismic surveys comprising 281.5 miles of seismic profiles were performed to provide additional data on the configuration of the top of bedrock, the top of Galena Formation and to indicate the location, orientation, and magnitude of faults throughout the greater Chicago area. Limits of accuracy of the seismc surveys precluded indication of faults with vertical displacements less than about 20 feet. (from paper)

Terms: sewerage / system / La Russo, R.S. / Russo, R.S. La

0077090 Fluidex 80007756 Subfile: CH
Two-dimensional mathematical model of circulation in Bombay Harbour.
Thakar, V.S. ; Bhandary, R.S.
Irrig. & Power, vol.36, no.2, Apr. 1979, pp.201-213. In: English
Coden: IRPWAA Issn: 0367-9993 1979 Avail-from BHRA: Section Code(s): C7

Rapid developments have taken place in recent years in the advanced laboratories of the world, in two-dimensional numerical modelling of hydrodynamic and water quality phenomena. The models aim at digital simulation of wide and shallow water bodies, typically estuaries, bays and coastal seas., through depth-averaged equations. The outputs are time-varying hydrodynamic and water quality constituents, such as water levels, component velocities in the horizontal plane salinity, temperature, biological oxygen demand, dissolved oxygen, coliform, etc. In flexibility, accuracy and cost-effectiveness the hydrodynamic numerical model has definite advantages over the physical hydraulic model. In water quality simulation, the numerical model is perhaps the only rational methodology of predictive modelling research. In other fields, the two types of models can play a complementary role. In the present study, tidal circulation in Bombay harbour is investigated by contructing a model using Leendertse's techniques, modified to suit the available computer, generalised and extended to include procedures to analyse further the data generated. The investigation aims at a study of the basic techniques with a view to exploit them further for the Bombay harbour, as well as for other problems. A rather crude mesh is employed. The model yields the water levels and velocity components at two-dimensional grid points, over a tidal cycle. In its present form, the model is not capable of studying moving boundaries, and is limited to a study of the hydrodynamic phenomena. Further developmental efforts need to be made at CWPRS to introduce flooding and drying of banks and behaviour of water quality. Alternative digital techniques for multi-dimensional numerical modelling are also being investigated. (A)

0076330 Fluidex 80004716 Subfile: FP
Applications in a new mobile drilling derrick.
Recknagel, S.
Oleodin. Pneum., vol.20, no.11, Nov.1979, pp.115-118. In: Italian
Issn: 0030-2104 1979 Avail-from BHRA: Section Code(s): E17

The new Gardner-Denver drilling rig is described. It is suitable for water well drilling or for mineral exploration, particularly in difficult conditions such as very pebbly ground or rocky strata of loose material likely to slip into the borehole. For rapid drilling, the rig functions with either the Abex/Denison Gold Cup series 6 hydraulic drive operating above the drill or it may be lowered for conversion into a rotary table. The GD-17W rig develops a maximum force of 13000kg with a maximum drilling speed of 20m/min. The upper drive unit develops a torque of 1000kgm and the speed of rotation is continuously variable up to 106 rpm. In addition to the main hydraulic drive pumps the rig uses Denver M4D vane motor to drive the cooling fan and a two stage Gardner-Denver screw compressor for providing compressed air for rotary air drilling and other tools. The duplex mud pump, supplying 570 l/min at 22 bar and 75 strokes per minute is also actuated by an Abex/Denison Gold Cup series 6 unit, which also drives the hoist. (C.C.B.)

0074723 Fluidex 79049952 Subfile: PA
Water well analyzers make accurate pump tests.
Singh, U.P.
Water Sewage Works, vol.125, no.5, May 1978, pp.64-67. In: English
Coden: WSIWAY 1978 Avail-from BHRA: Section Code(s): P31

Water well analyzers can be used in the field on pump tests, and can record rapid time-drawdown and recovery data to a high degree of accuracy. A packer test was held in Florida in 1977 to determine the transmissivity of an entire 1,100 feet thick confining zone and the procedure and results are described here to give an example of the degree of reliability and accuracy of such tests. (C.W.)

Terms: submersible / test rig / sewage / wastewater / centrifugal pump / Garcia-Bengochea, J.I.

0074011 Fluidex 79047104 Subfile: CH

Groundwater resources investigation near Samorin using modelling method.

Mucha, I. ; Nemethy, P. ; Pospisil, P.

Vodohospod. Cas., vol.27, no.3, 1979, pp.263-280. In: Czech Coden: VOCAAZ Issn: 0042-790X 1979 Avail-from BHRA: Section Code(s): C12

The possibility of using the three-dimensional modelling method in groundwater resources research was verified by modelling the groundwater withdrawal near village Samorin. Simulation of pumping of 600lsSUB-SUBl helped to verify the results of the hydrogeological investigation and to test the various alternatives of the water well system planning. One of them with the pumping amount of 2000lsSUB-SUBl is given as an example. By treating the various alternatives it is possible to find the most suitable solution from the groundwater protection, the groundwater flow directions and the well distribuiton optimization aspects. The model requires data on the space distribution of hydrogeological parameters, filtration heterogeneity, boundary conditions and on all resources of infiltration or drainages. It requires, therefore, a perfect hydrogeological investigation as the results of modelling correspond to the input data quality. (A)

0066640 Fluidex 79017620 Subfile: CH
The role of large diameter wells in water supply schemes.
Dobos, I.
Hidrologai Koezloeny, vol.57, no.8, 1977, pp.355-360. In: Hungarian 1977 Avail-from BHRA: Section Code(s): C25

During the past 10 years several large diameter wells have been constructed with advanced technologies by the Water Exploration and Well Drilling Co., the geological and hydrogeological experiences of which are analysed in two domains. In order to meet the growing water demand at the town of Debrecen the Upper Pannoian formations were re-explored between 1969 and 1973. The 9 large-diameter wells sunk have demonstrated strikingly that in this way the yields can be multiplied over the conventional well designs. This is reflected by the unit yields and the greatest withdrawable water volume alike. Detailed investigations have shown the waterbearing layers, classified formerly as fine grained, to be medium graded with occasional coarse grained layers. At the town of Zalaegerszeg large diameter water wells have been sunk into the coarse grained Pleistocene layer, the top of which is situated less than 70 m depth. Of these the four wells sunk in 1971 have produced especially outstanding results, especially as regards yield, averaging 2600 lit/min. The variations in some chemical components (chlorides, sulphates) and in total hardness of the waters withdrawn from the Pleistocene layers have also been studied on the basis of former and recent data. The high chloride content (170 and 250 mg/lit) may be due to surface pollution. The occasional enrichment of sulphate is attributed to local pehnomena due to geological factors. Thin embeddments of clayex-silty may be leached resulting in higher sulphate contents of the ground water. On the basis of the results obtained thus far great opportunities are opened for improving the water supply in situation in the country by the drilling of additional wells. (A)

Terms: Wells

0064614 Fluidex 79009516 Subfile: CH
Finite element analysis of ground water flow and settlements in aquifers confined by clay.
Runesson, K.; Tagnfors, H.; Wiberg, N.-E.
Chalmers Univ. Technol.
In: Proc. Second Int. Conf. on Finite Elements in Water Resources. (Imperial Coll., U.K.: Jul.1978). Plymouth, U.K., p entech Press, 1978, pp.1.249-1.268. In: English 1978 Avail-from BHRA:

The finite element analysis of the ground water flow in aquifers confined by soft clay and resulting settlements of the ground surface is discussed. As a result of a disturbance of the hydraulic equilibrium in the aquifer transient flow and deformation (consolidation) of the confining clay occur. The analysis is based on the concept of clay as a two phase saturated porous medium with the displacements and the excess pore pressure as primary unknowns. The clay is assumed to be normally consolidated or slightly overconsolidated, thus calling for non-linear constitutive properties of the soil skeleton. An initially anisotropic yield condition of the Critical State type is proposed because in situ stresses are generally anisotropic. A finite element computer program GEOFEM is described which is used for solution of the seepage problem in the aquifer as well as the coupled consolidation problem. (A)

0064158 Fluidex 79007692 Subfile: PA
Well pump aggregates for work at !60 Hz.
Varfolomeev, A.N.; Fel'dshtein, G.L.; Khrushke, I.S.
Chem. & Pet. Engng., vol.13, no.7-8, Jul.-Aug.1977, pp.747. In: English 1977 Avail-from BHRA:

In the planning department of the Moldavgidromash a series of water well pump aggregates has been developed far imp orter countries where the electric grid has a frequency of 60 Hz with voltages of 380 and 440V. (from paper)

Terms: submersible / piping / cables / con / trol

0054544 Fluidex 78009573 Subfile: SL
Parameters and flow regimes for hydraulic transport of coal by pipelines.
Traynis, V.V.
Rockville, U.S.A., Terraspace Inc., Apr.1977, IV + 261pp. (Transl. of the book 'Parametry i Rechimy Gidravlicheskogo Transportirovaniya Uglya Po Truboprovodam', Izdatelstvo Nauka, 1970). In: English 1977
Avail-from BHRA: N

This monograph presents results from experimental and theoretical studies of the parameters and modes of hydraulic transportation of coal through pipes. The author has summarized data from experimental investigations of the transportation of lump and run-of-mine coal in a stream of water, has studied the influence of various parameters on crushing of the coal in main pipelines and on hydroabrasive wear of the pipes. Problems are studied relating to the theory and calculation of various flow modes through pipes of finely dispersed highly concentrated water-coal suspensions, suitable for direct combustion; for the first time, the structural and mechanical properties of these suspensions and conditions of transportation of lump coal are studied. Methods are suggested for calculation of parameters and modes of transportation, as well as the change in screen analysis of the coal in main pipelines; recommendations are given for the selection of effective transportation parameters, minimizing the power of the process. The publication is designed for specialists, researchers, designers, engineering and technical workers of the mining industry, as well as other branches of the economy, interested in the solution of problems of the hydrotransport of solids.(11 tables; 60 illustrations; 147 bibliographic references.) (A)

Terms: book / grinding / crushing / wear / abrasion / suspension / property / slurry / U.S.S.R.

0054249 Fluidex 78008393 Subfile: CH
An investigation on several design criteria for geothermal water distribution networks and storage basins.
Iamandi,C.; Damian,R.; Sandu,L.; Anton,A.; Gheorghiu,D.
Civil Engng.Inst.,
In: Proc.SeventeenthCongress of the International Associati for Hydraulic Research, Hydraulic Engineering for improved Water Management, (Baden-Baden, Fed.Repbl.Germany: Aug. 15-19,1977),vol.4, Subject C-Improved design cr iteria for hydraulic structures, IAHR, 1977, Paper C41, pp.325-332. In: English 1977 Avail-from BHRA: N

The paper deals with several hydraulic criteria that should be observed when designing distribution networks, storage basins and treatment units for geothermal water. The joint influence of the water temperature, gas content and chemical composition on pipes and pumping equipment is studied through field and laboratory experiments. The importances of the pressure regime within the hydraulic system is underlined. A number of measures are proposed in order to avoid some of the damaging effects the geothermal waters have shown to induce in the hydraulic networks. An automatically regulated pressurized degassifier is suggested for the important geothermal water wells, together with its electronic control and measuring systems. (A)

0000000 Fluidex 76009196 Subfile: CH
MATHEMATICAL MODELING OF ALLUVIAL CHANNELS.
CHEN, Y.H.; SIMONS, D.B. (COLORADO STATE UNIV., U.S.A.)
COLORADO STATE UNIV., U.S.A.
PROC. 2ND ANNUAL SYMP. OF WATERWAYS, HARBOURS AND COASTAL ENGNG. DIV. ASCE ON MODELING TECHNIQUES, (MODELING @75' SAN FRANCISCO CALIF.). VOL. 1, PP. 466-83. (SEPTEMBER 3-5, 1975). Section Code(s): C8

FOR STUDY OF THE IMPORTANT ASPECTS OF THE UNSTEADY FLOW PHENOMENA IN ALLUVIAL CHANNELS, A MATHEMATICAL MODEL IS UTILIZED TO REPRESENT THE ORIGINAL HYDRAULIC SYSTEM. THE MODEL IS DEVELOPED BY FORMULATING THE UNSTEADY FLOW OF SEDIMENT-LADEN WATER WITH THE ONE-DIMENSIONAL PARTIAL DIFFERENTIAL EQUATIONS REPRESENTING THE CONSERVATION OF MASS FOR SEDIMENT, THE CONSERVATION OF MASS AND MOMENTUM FOR SEDIMENT-LADEN WATER. THE EFFECTS OF LATERAL WATER AND SEDIMENT INFLOW, THE SEDIMENT MOTION, THE FLUID FRICTION, AND THE IRREGULAR CHANNEL GEOMETRY ARE CONSIDERED. THE SET OF EQUATIONS ARE SOLVED BY A LINEAR-IMPLICIT METHOD USING A DIGITAL COMPUTER. THE MATHEMATICAL MODEL DEVELOPED IS VALUABLE FOR STUDYING VARIOUS TYPES OF UNSTEADY FLOW PROBLEMS IN OPEN CHANNELS SUCH AS THE FLOOD ROUTING OF WATER AND SEDIMENT IN CHANNELS, DEGRADATION AND AGGRADATION NEAR HYDRAULIC STRUCTURES, AND CHANNEL RESPONSE TO DEVELOPMENT. TO TEST THE MATHEMATICAL MODEL TWO PRACTICAL APPLICATIONS ARE ANALYZED. FIRST, A MATHEMATICAL MODEL IS USED TO SIMULATE THE PROPAGATION OF SAND WAVES IN A LABORATORY FLUME. SECOND, A MATHEMATICAL MODEL IS UTILIZED TO STUDY THE GEOMORPHIC CHANGES IN THE UPPER MISSISSIPPI RIVER AND THE ADJACENT LAND. COMPARISONS OF THE SIMULATED FLOWS GENERATED BY THE MATHEMATICAL MODEL COMPARE WELL WITH FIELD MEASURED DATA. (A).

Terms: MATHEMATICAL MODELS / OPEN CHANNELS / SEDIMENT TRANSPORT

0000000 Fluidex 76007316 Subfile: CH

OPTIMAL DESIGN OF WATER WELLS IN UNCONSOLIDATED SEDIMENTS.

DUDGEON, C.R.; KESHAVARZ, M.H.(NEW SOUTH WALES UNIV., AUSTRALIA)
NEW SOUTH WALES UNIV., AUSTRALIA.

PROC. FIFTH AUSTRALASIAN CONFERENCE ON HYDRAULICS AND FLUID MECHANICS. (CANTERBURY UNIV., NEW ZEALAND), VOL. 2, PP. 195-201. (DECEMBER 9-13, 1974). 1974 Section Code(s): C12

OPTIMAL DESIGN OF WELLS IN UNCONSOLIDATED SEDIMENTS REQUIRES INFORMATION ON THE DRAWDOWN-DISCHARGE RELATIONSHIP FOR THE RANGE OF PRACTICAL DESIGNS AND HYDRAULIC CHARACTERISTICS OF AQUIFER MATERIALS MET IN THE FIELD. WELL DIAMETER, DEGREE OF PENETRATION, SCREEN LENGTH, TYPE OF SCREEN AND THE PRESENCE OR ABSENCE OF A GRAVEL PACK ALL INFLUENCE THE DRAWDOWN-DISCHARGE RELATIONSHIP. A RESEARCH PROGRAM FUNDED BY THE AUSTRALIAN WATER RESOURCES COUNCIL HAS LED TO THE DEVELOPMENT OF FINITE ELEMENT COMPUTER PROGRAMS WHICH ALLOW THE DRAWDOWN-DISCHARGE RELATIONSHIP AND OTHER FACTORS SUCHAS THE VARIATION OF APPROACH VELOCITY AT THE WELL BOUNDARY TO BE PREDICTED FOR A MORE COMPREHENSIVE RANGE OF CONDITIONS THAN IT HAS BEEN POSSIBLE TO TREAT IN THE PAST. IN THE WORK DESCRIBED IN THIS PAPER THE HYDRAULIC INFORMATION HAS BEEN COMBINED WITH COST DATA TO DETERMINE THE DESIGN OF A WELL WHICH WOULD PRODUCE WATER AT MINIMUM COST TO IRRIGATE A FARM OF BETWEEN 50 AND 75 ACRES AT A SITE IN SOUTHERN QUEENSLAND, AUSTRALIA. THE PARTICULAR CASE WAS CHOSEN BECAUSE THE AQUIFER MATERIAL WAS SUCH THAT NON-DARCY FLOW WOULD OCCUR NEAR THE WELL AT THE REQUIRED DISCHARGE. (A).

Terms: WATER SUPPLY / WELLS / AQUIFERS / RESEARCH

0000000 Fluidex 75042300
AN APPROXIMATE METHOD FOR THE DETERMINATION OF THE HYDRODYNAMIC COEFFICIENTS OF A SHIP IN CASE OF SWAYING AND YAWING ON SHALLOW WATER.
FOTIJN, H.L.
DELFT UNIV. OF TECHNOL.
DELFT UNIV. OF TECHNOL., THE NETHERLANDS, DEPT. CIV. ENGNG. COMMUNICATIONS ON HYDRAUL., REPORT 75-4, 97PP. (1975) 1975 Section Code(s): X72; X122; X82'2

THE REPORT GIVES INFORMATION ABOUT THE HYDRODYNAMIC COEFFICIENTS OF A BOX-SHAPED SHIP WITH ZERO SPEED OF ADVANCE IN CASE OF PURE SWAYING AND YAWING ON SHALLOW WATER. IN THE HORIZONTAL PLANE A HARMONICALLY OSCILLATING MOTION IS IMPOSED ON THE SHIP; THE HYDRODYNAMIC COEFFICIENTS FOR THE MODES OF MOTION OF THE SHIP ARE DETERMINED FROM THE EXCITING FORCES IN A THEORETICAL AS WELL AS IN AN EXPERIMENTAL WAY. THE ANALYTICAL APPROACH IS BASED ON AN EXISTING THEORY FOR WAVE GENERATORS ADAPTED TO THE PRESENT CASE; USE IS MADE OF THE STRIP THEORY. THE EXPERIMENTS ARE CARRIED OUT IN THE FORM OF FORCED PURE SWAY AND FORCED PURE YAW TESTS WITH ZERO SPEED OF ADVANCE. THE THEORETICAL AND EXPERIMENTAL RESULTS FOR THE HYDRODYNAMIC COEFFICIENTS ARE COMPARED WITH ONE ANOTHER. IT IS FOUND THAT THE SYSTEM SHIP-FLUID FOR SWAYING CAN BE CONSIDERED AS LINEAR IN CASE OF SMALL OSCILLATIONS, AT LEAST FOR THE FREQUENCY RANGE EXAMINED. IN CASE OF VERY SMALL OSCILLATIONS FOR YAWING THE SYSTEM SHIP-FLUID MAY ALSO BE CONSIDERED AS LINEAR. APPLICATIONS OF THE STRIP THEORY WITH NEGLECT OF VISCOUS EFFECTS IS ADEQUATE FOR SWAYING ON SHALLOW WATER IN CASE OF SMALL/MODERATE TO HIGH FREQUENCIES. IN THE FREQUENCY RANGE CONSIDERED THE STRIP THEORY IS NOT SATISFACTORY FOR YAWING ON SHALLOW WATER. (A.)

Terms: HYDRODYNAMIC COEFFICIENTS / STABILITY IN SHIPS / HARMONIC OSCILLATIONS / SWAYING / YAWING / HYDRAULIC MODEL TESTS / STRIP THEORY / THEORETICAL ANALYSIS

0000000 Fluidex 75026220 Subfile: PA
PROCEDURES AND EQUIPMENT FOR PUMPING AND FREE-FLOWING TESTS OF WATER WELLS.
LAWRENCE, C.R. (GEOLOGICAL SURVEY OF VICTORIA, AUSTRALIA)
GEOLOGICAL SURVEY OF VICTORIA, AUSTRALIA.
PROC. INT. SYMP. ON DEVELOPMENT OF GROUND WATER RESOURCES (HELD AT MADRAS, INDIA), VOL.2, PP.III.141 TO III.151. (NOVEMBER 26-29, 1973). 1973 Section Code(s): P30

TESTING OF WATER WELLS STILL PROVIDES THE BEST METHOD OF DETERMINING THE HYDRAULIC COEFFICIENTS OF AQUIFERS AND THEIR CONFINING BEDS, AND DETERMINING THE EFFICIENCY AND CAPACITY OF PRODUCTION WELLS. TO ENSURE THAT DATA OBTAINED FROM TESTS IS ACCURATE AND INTERPRETABLE BY KNOWN ANALYTICAL METHODS IT IS IMPORTANT THAT ACCEPTABLE PROCEDURES BE FOLLOWED AND THAT WATER LEVELS AND DISCHARGE ARE ACCURATELY MEASURED. THIS PAPER BRIEFLY REVIEWS THE PROCEDURES FOR PUMPING AND FLOW TESTS, THE INSTALLATION AND OPERATION OF VARIOUS TYPES OF PUMPS, AND EQUIPMENT FOR MEASURING DISCHARGE AND WATER LEVELS. (A)

Terms: AQUIFERS / HYDRAULIC COEFFICIENTS / WELLS / FLOW MEASUREMENT / LEVEL INDICATORS / PUMPING SYSTEMS / DISCHARGE RATE

0000000 Fluidex 75011668 Subfile: CH
CONTROL OF SEAWATER INTRUSION BY SALTWATER PUMPING - A MATHEMATICAL MODEL
ASHAMALLA, A.F.; HALL, P.L. (JAMES F. MACLAREN LTD., CANADA)
JAMES F. MACLAREN LTD., CANADA
PROC. 1ST CANADIAN HYDRAULICS CONF. (CAN. SOC. CIV. ENG.- ALBERTA UNIV.), ALBERTA UNIV., WAT. RES. CENTRE, PUBL. 4, PP.337-54. (MAY 10-11, 1973) 1973 Section Code(s): C12; C7

A MATHEMATICAL MODEL WAS BUILT TO SIMULATE THE EFFECT OF PUMPING ON SALT WATER INTRUSION IN COASTAL AQUIFERS. THE MODEL CALCULATES THE MOTION OF A SHALLOW INTERFACE IN EITHER A PHREATIC OR CONFINED AQUIFER OF VARYING THICKNESS AND PROPERTIES. ANY PATTERN OF RECHARGE BY NATURAL REPLENISHMENT OR DISCHARGE BY PUMPING AT DIFFERENT LOCATIONS CAN BE SIMULATED. AN IMPLICIT SCHEME IS USED FOR THE SOLUTION OF THE PARTIAL DIFFERENTIAL EQUATIONS, WITH CHANGEABLE SIZE AND TIME INCREMENT. THE MODEL WAS USED FOR THE SOLUTION OF AN INTRUSION PROBLEM AT SHIPPENGAN, NEW BRUNSWICK. THE MOVEMENT OF THE SALT WATER WEDGE ALONG VARIOUS PROFILES WAS COMPUTED IN RESPONSE TO FRESH WATER PUMPING. IN ORDER TO CONTROL THE INTRUSION, A SALT WATER WELL WAS LOCATED IN THE MODEL AT DIFFERENT LOCATIONS, AND THE MOVEMENT OF THE SALT WATER WEDGE WAS PREDICTED FOR DIFFERENT PUMPING RATES. THE BEST LOCATIONS AND PUMPING RATES FOR THE SALT WATER WELLS WERE FOUND FOR THE PREVAILING NATURAL BOUNDARY CONDITIONS AND THE REQUIRED WATER DEMAND. (A)

Terms: AQUIFERS-COASTAL / PUMPING / SALINITY / WELLS / MATHEMATICAL MODELS / FINITE DIFFERENCE TECHNIQUES / COMPUTER PROGRAMS / CANADA / SALT WATER INTRUSION INTO COASTAL AQUIFERS / PUMPING EFFECT SIMULATED BY MATHEMATICAL MODEL / SHALLOW INTERFACE MOTION CALCULATED IN PHREATIC OR CONFINED AQUIFER / RECHARGE AND DISCHARGE PATTERN SIMULATIONS / NONUNIFORM TIME INCREMENTS / INTRUSION PROBLEM AT NEW BRUNSWICK / SALT WATER WELLS CONSTRUCTED / SCHEME FEASIBILITY DETERMINED USING MODEL

0000000 Fluidex 75010936 Subfile: CH

DESIGN AND OPERATION OF THE ARTIFICIAL RECHARGE PLANT AT BAY PARK, NEW YORK. DEEP-WELL ARTIFICIAL-RECHARGE EXPERIMENTS AT BAY PARK LONG ISLAND, NEW YORK

KOCH, E.; GIAIMO, A.A.; SULAM, D.J.
U.S. GEOLOG. SURVEY

U.S. DEPT. OF THE INTERIOR, GEOLOG. SURVEY PROFESSIONAL PAPER 751-B, 14PP. (1973) 1973 Section Code(s): C12; C24

THE BAY PARK ARTIFICIAL-RECHARGE PLANT, IN SOUTHWESTERN NASSAU COUNTY, IS AN EXTENSIVELY INSTRUMENTED FACILITY ADJACENT TO A 60-MILLION GALLON-PER-DAY SEWAGE-TREATMENT PLANT. THE FACILITY WAS CONSTRUCTED TO INJECT RECLAIMED WATER (SEWAGE-PLANT EFFLUENT THAT HAS BEEN GIVEN TERTIARY TREATMENT) INTO A DEEP WELL IN THE MAGOTHY AQUIFER AND TO MONITOR HYDRAULIC AND GEOCHEMICAL EFFECTS OF THAT WATER ON THE AQUIFER, THE MAJOR SOURCE OF WATER FOR NASSAU COUNTY. AN ARRAY OF OBSERVATION WELLS PERMITS MONITORING THOSE EFFECTS AT DISTANCES UP TO 200 FEET FROM THE INJECTION WELL. MAJOR COMPONENTS OF THE FACILITY INCLUDE' (I) A 50,000-GALLON, STORAGE TANK, (II) A VACUUM DEGASIFIER, (III) PUMPING AND CONTROLLING EQUIPMENT FOR MAINTAINING INJECTION EITHER AT A CONSTANT RATE OR UNDER A CONSTANT HEAD, (IV) FLOW-RATE AND WATER-QUALITY MONITORING AND RECORDING EQUIPMENT, (V) A 490 FOOT-DEEP INJECTION WELL, (VI) AN ARRAY OF OBSERVATION WELLS, AND VII) PUMPING EQUIPMENT FOR TESTING AND REDEVELOPING THE INJECTION WELL. EFFLUENT CAN BE INJECTED AT RATES AS MUCH AS 400 GALLONS PER MINUTE AND THE INJECTION WELL CAN BE REDEVELOPED AT RATES AS MUCH AS 1,000 GALLONS PER MINUTE. CASINGS OF THE INJECTION WELL AND MOST OF THE OBSERVATION WELLS ARE MADE OF FIBER-GLASS-REINFORCED EPOXY PIPE. ONE OF THE WELL SCREENS IS MADE OF SLOTTED FIBER-GLASS-REINFORCED EPOXY PIPE; THE OTHERS ARE MADE OF STAINLESS STEEL. ASSOCIATED PIPING AND TANKS ARE MADE EITHER OF POLYVINYL CHLORIDE OR OF STEEL COATED WITH CHEMICALLY STABLE MATERIALS, SUCH AS EPOZY OR COAL-TAR ENAMEL. THESE MATERIALS WERE SELECTED TO MINIMIZE CORROSION OF TANKS, PIPES, AND SCREENS EXPOSED TO RE-CLAIMED WATER OR TO CHEMICAL SOLUTIONS USED IN REDEVELOPMENT OF THE INJECTION WELL. THE CHEMICAL CHARACTER OF THE WATER TO BE INJECTED CAN BE CHANGED BY THE ADDITION OF CHEMICALS AT THE STORAGE TANK@S INLET OR OUTLET AND BY THE DEGASIFICATION PROCESS. AUTOMATIC SENSORS CONTINUOUSLY MONITOR INJECTION WATER, REPUMPED WATER, OR WATER FROM OBSERVATION WELLS FOR TEMPERATURE, TURBIDITY, SPECIFIC CONDUCTANCE, PH, EH, AND DISSOLVED-OXYGEN AND RESIDUAL CHLORINE CONTENTS. IN ADDITION, PERIODIC CALIBRATION OF THE AUTOMATIC SENSORS AS WELL AS SOME CHEMICAL AND BACTERIOLOGICAL ANALYSES CAN BE MADE IN A SMALL LABORATORY AT THE SITE. (A)

Terms: WATER RESOURCES / EFFLUENT DISPOSAL / AQUIFERS / U.S.A. / WELLS / EXPERIMENTAL STUDIES / DESIGN AND OPERATION OF ARTIFIAL RECHARGE PLANT / NASSAU COUNTY / MAGOTHY AQUIFER / OBSERVATION WELLS / CORROSION MINIMISED / VACUUM DEGASIFIER / AUTOMATIC SENSORS MONITOR INJECTION WATER / REPUMPED WATER / BAY PARK / NEW YORK / EXPERIMENTAL RESULTS / RECLAIMED WATER FROM SEWAGE PLANT EFFLUENT

0000000 Fluidex 75006536 Subfile: CH
SIMULTANEOUS PUMPING OF FRESH AND SALT WATER FROM A COASTAL AQUIFER.
VANDENBERG, A. (INLAND WATERS DIRECTORATE, CANADA)
INLAND WATERS DIRECTORATE, CANADA
J. HYDROL., VOL. 24, NO. 1-2, PP.37-43. (JANUARY, 1975) 1975
Section Code(s): C12

WHEN FRESH WATER IS PUMPED FROM AN AQUIFER WHICH IS OPEN TO A RECHARGING SALT-WATER BODY, CARE MUST BE TAKEN TO AVOID THE ENCROACHMENT OF SALT WATER INTO THE WELL. A MEASURE WHICH SOMETIMES MAY BE TAKEN WHEN THERE IS ALSO A DEMAND FOR FILTERED SALT WATER IS TO SUPPLEMENT THE FRESH-WATER WELL, LOCATED BETWEEN THE FRESH-WATER WELL AND THE COAST, AND TO PUMP BOTH WELLS AT COMPARABLE RATES. THIS PAPER ANALYZES THE IDEALIZED CASE WHERE THE AQUIFER IS CONFINED, THIN, HOMOGENEOUS AND ISOTROPIC, SEMI-INFINITE IN AREAL EXTENT, AND BOUNDED ON ONE SIDE BY A STRAIGHT RECHARGE BOUNDARY; IT IS FURTHERMORE ASSUMED THAT THE NONPUMPING PIEZOMETRIC SURFACE OF THE AQUIFER HAS A STEADY, UNIFORM SLOPE TOWARDS THE BOUNDARY. AS A RESULT OF THE ANALYSIS A RELATION IS ESTABLISHED BETWEEN THE DISTANCES FROM EACH OF THE WELLS TO THE BOUNDARY, THE RATIO BETWEEN THE PUMPING RATES OF THE TWO WELLS, AND THE MAXIMUM PUMPING RATE AT WHICH NO SALT WATER IS INDUCED INTO THE FRESH-WATER WELL; THIS RELATION CAN BE USED IN THE SELECTION OF THE OPTIMUM LOCATION OF THE PAIR OF WELLS. (A.)

Terms: AQUIFERS-COASTAL / PUMPING / SALINITY / ANALYSIS-MATHEMATICAL / SIMULTANEOUS PUMPING FROM FRESH AND SALT WATER WELLS / ANALYSIS FOR AQUIFER BOUNDED ON ONE SIDE BY STRAIGHT RECHARGE BOUNDARY / DISTANCES FROM WELLS TO BOUNDARY / PUMPING RATES RATIO / MAXIMUM PUMPING RATE FOR NO SALT WATER TO ENTER FRESHWATER WELL / OPTIMUM WELL LOCATION

0000000 Fluidex 75005076 Subfile: CH

SPACING OF WATER WELLS IN DECCAN TRAPS.

DESHPANDE, B.G. (POONA UNIV., INDIA)
POONA UNIV., INDIA

PROC. INT. SYMP. ON DEVELOPMENT OF GROUND WATER RESOURCES, (COLL. OF ENGNG., MADRAS, INDIA), VOL., 2, SESSION 3, PP.3.165-74. (NOVEMBER 26-29, 1973). 1973 Section Code(s): C12

GROUNDWATER INVESTIGATIONS IN A HARD ROCK AREA ARE BESET WITH MANY UNCERTAINTIES. MUCH OF THE PRESENT EXPLORATION IS BASED ON BROAD PRINCIPLES. DECCAN TRAP BEING AN IMPERVIOUS ROCK THE CHANCES OF SEEPAGE OF WATER IN THE SUB-SURFACE ARE CONTROLLED BY THE FISSURES, JOINTS, INTER-TRAPPEAN SOFT ROCK IF PRESENT, WEATHERED PORTION OF THE TRAP ROCK, GAP BETWEEN TWO SUCCESSIVE FLOWS, ETC. THESE FEATURES ARE TOO BROAD AND OFTEN DO NOT HELP EFFECTIVELY IN SELECTING SITES FOR INDIVIDUAL WELLS. SINCE LATELY, AND PARTICULARLY DURING THE LAST FEW YEARS OF DROUGHT, THERE HAS BEEN A SPURT IN THE ACTIVITY OF SINKING WELLS AND DRILLING TUBE WELLS IN THE COUNTRY. IF ALL THESE WELLS WERE TO BE PROPERLY LOGGED AND TESTED AND THE DATA STUDIED, MUCH LIGHT WILL BE THROWN ON THE BEHAVIOUR OF GROUNDWATER IN THIS ROCK. BUT SUCH DATA IS NOT YET AVAILABLE. GOVERNMENT AGENCIES HAVE PROVIDED LARGE FINANCIAL CREDIT FACILITIES FOR DIGGING NEW WELLS AND FOR RE-VITALISING OLD WELLS. THE STIPULATIONS REQUIRE THAT THE YIELD EXPECTED FROM EACH WELL WILL BE 150 CUBIC METRES PER DAY (IN DECEMBER) FOR NEW WELLS AND 120 CUBIC METRES PER DAY (IN DECEMBER) FOR REVITALISED WELLS. ALSO, NO NEW WELLS SHOULD BE MADE WITHIN 300 M. OF THE EXISTING WELLS. THE RECHARGE OF RAIN WATER TO GROUNDWATER IS TAKEN AT NINE PER-CENT. THESE GUIDE LINES ARE INTENDED TO ENSURE A FULL DEVELOPMENT AND ALSO A FESIBILITY OF ECONOMIC RETURN FROM THE AGRICULTURAL PRODUCE TO REPAY THE LOAN IN THE STIPULATED TIME. NO SPECIFIC DATA IS AVAILABLE TO DETERMINE A RATIONAL SPACING BETWEEN WELLS. SOME EXPERIMENTS WERE CARRIED OUT ON PUMPING OF WELLS AND OBSERVING THE EFFECTS ON ADJOINING WELLS. THESE INDICATE THAT IN TWO WELLS 50 METRES APART, THERE IS NO INTERFERENCE. IT IS, THEREFORE, SUGGESTED THAT THE SAFE SPACING OF WELLS MAY BE ABOUT 150 METRES (500 FT.) (A).

Terms: ROCKS / WELLS / POROUS MEDIA-FLOW THROUGH / GROUNDWATER / SEEPAGE / INDIA / SPACING OF WELLS IN DECCAN TRAP ROCK IN INDIA / PUMPING TESTS / HARD ROCK AREAS

0000000 Fluidex 75005064 Subfile: CH
THEORY AND APPLICATION OF THE SKIN EFFECT CONCEPT TO GROUND WATER WELLS.
STERNBERG, Y.M. (MARYLAND UNIV.)
MARYLAND UNIV., U.S.A.
PROC. INT. SYMP. ON DEVELOPMENT OF GROUND WATER RESOURCES, (COLL. OF ENGNG., MADRAS, INDIA), VOL. 2, SESSION 3, PP.3.23-32. (NOVEMBER 26-29, 1973). DISCUSSSION P.29 1973 Section Code(s): C12

THE CONCEPT OF SKIN EFFECT AND ITS SIGNIFICANCE ON GROUND WATER HYDROLOGY IS DISCUSSED. TWO MATHEMATICAL MODELS TO EVALUATE THE SKIN EFFECT ARE FORMULATED AND SUBSEQUENTLY SOLVED. THE SOLUTIONS FOR THE DRAWDOWN AT THE PUMPED WELL OF THE TWO MODELS SHOW EXCELLENT AGREEMENT. THE SECOND MODEL IS PREFERRED BECAUSE ITS SOLUTION IS SIMPLER TO USE. A TRIAL AND ERROR TECHNIQUE IS RECOMMENDED FOR THE DETERMINATION OF TRANSMISSIBILITY AND THE RADIUS OF THE ZONE WHERE SKIN EFFECT IS PRESENT. (A).

Terms: WELLS / GROUNDWATER / POROUS MEDIA-FLOW THROUGH / PERMEABILITY / DRAWDOWN / ANALYSIS-MATHEMATICAL / CONCEPT OF SKIN EFFECT / SIGNIFICANCE IN GROUNDWATER HYDROLOGY / SKIN EFFECT OBSERVED FROM COMPARISON OF OBSERVED AND THEORETICAL DRAWDOWN CURVES / FORMULATION OF TWO MATHEMATICAL MODELS / SKIN EFFECT EVALUATED FROM PUMPING TEST DATA / SKIN EFFECT IS A RESULT OF DECREASE OF PERMEABILITY IN THE VICINITY OF THE WELL BORE

0000000 Fluidex 75005060 Subfile: CH
POTENTIAL AND FLOW FIELDS FOR MULTIPLE GROUND WATER WELLS IN A CONFINED AQUIFER.
PL
IOWA STATE UNIV., U.S.A.; GOTTINGEN UNIV., GERMAN FED. REPUBL.
PROC. INT. SYMP. ON DEVELOPMENT OF GROUND WATER RESOURCES, (COLL. OF ENGNG., MADRAS, INDIA), VOL. 2, SESSION 3, PP.3.153-64. (NOVEMBER 26-29, 1973 1973 Section Code(s): C12

AN ANALYTICAL METHOD IS USED TO DETERMINE THE WELL DISCHARGE, STREAMLINES AND EQUIPOTENTIALS FOR WELLS LOCATED IN CONFINED AQUIFERS OF ARBITRARY SHAPE. THE WELL DISCHARGE IS FOUND FROM THE POTENTIAL FUNCTION, WHICH IS DERIVED FROM LAPLACE@S EQUATION AND THE BOUNDARY CONDITIONS. A MODIFIED GRAM-SCHMIDT METHOD IS USED TO HELP SATISFY THE BOUNDARY CONDITIONS. THE LATERAL BOUNDARIES OF THE AQUIFER CAN INCLUDE NONCONDUCTING SEGMENTS. DATA FROM THE AMES AQUIFER, AMES, IOWA, PROVIDE A CHECK ON THE METHOD. CALCULATION OF STEADY STATE DRAWDOWN CURVES OF TUBE WELLS IN SEMICONFINED AQUIFERS IS REPORTED. THEORY OF SEEPAGE FLOW TO KANATS (UNDERGROUND WATER TUNNEL SYSTEMS) IS NOTED. THE METHOD OF ANALYSES REPORTED IN THIS PAPER ENABLE CALCULATIONS OF WELL DISCHARGE AND OTHER HYDRAULIC QUANTITIES WHEN AQUIFER CHARACTERISTICS ARE KNOWN. SUCH HYDRAULIC INFORMATION IS BASIC FOR EFFECTIVE DEVELOPMENT OF IRRIGATION WATER, ESPECIALLY IN COUNTRIES WHERE INCREASED AGRICULTURAL PRODUCTION IS ESSENTIAL. (A).

Terms: AQUIFERS / WELLS / POTENTIAL FLOW / FLOW FIELDS / SEEPAGE / GROUNDWATER / DRAWDOWN / POROUS MEDIA-FLOW THROUGH / DISCHARGE COEFFICIENTS / STREAMLINES(FLOW) / ANALYSIS-MATHEMATICAL / U.S.A. / EXPERIMENTAL STUDIES / CONFINED AQUIFERS OF ARBITRARY SHAPE / ANALYTICAL METHOD TO DETERMINE WELL DISCHARGE, STREAMLINES AND EQUIPOTENTIALS FOR WELLS LOCATED IN AQUIFERS OF ARBITRARY SHAPE'DATA FROM AMES AQUIFER IOWA, U.S.A. USED TO CHECK METHOD / THEORY OF SEEPAGE FLOW TO KANATS (UNDERGROUND WATER TUNNEL SYSTEMS) / CALCULATION OF STEADY STATE DRAWDOWN CURVES OF TUBE WELLS IN SEMI-CONFINED AQUIFERS

0000000 Fluidex 75004432 Subfile: CH
APPLICATION OF SEISMIC SHEAR WAVE STUDIES TO THE INVESTIGATION OF AQUIFERS
BENNETT, H. F.
MICHIGAN UNIV., U.S.A.
MICHIGAN STATE UNIV., INST. WATER RES., 65PP. (PB 214 678). Section Code(s): C12; C15

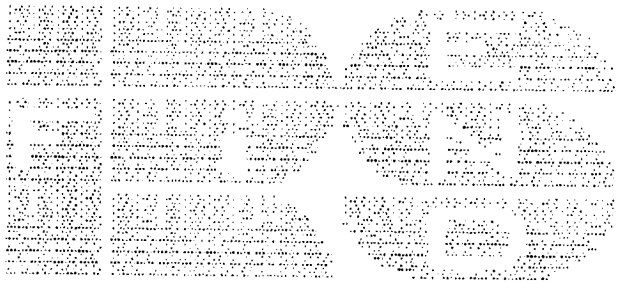
THE GENERAL OBJECTIVE OF THIS PROJECT WAS TO EVALUATE THE POTENTIAL USE OF COMBINED SEISMIC SHEAR WAVE AND COMPRESSIONAL WAVE VELOCITIES FOR NEAR - SURFACE GROUND WATER EXPLORATION. THE MEASUREMENT OF SHEAR (S) WAVE AND COMPRESSIONAL (P) WAVE VELOCITY PERMITS US TO CALCULATE POISSON@S RATIO IN AN ISOTROPIC MATERIAL. AT THE BEGINNING OF THE PROJECT WE FELT THAT THE DIFFERENCE IN POISSON@S RATIO ABOVE AND BELOW WATER TABLE WOULD BE A SENSITIVE PARAMETER IN EVALUATION OF THE POROSITY OF AN AQUIFER AND THERBY ITS STORAGE CAPACITY. IT IS TRUE THAT THE POISSON RATIO WAS FOUND TO BE HIGHER BELOW WATER TABLE IN OUR STUDY AREA BUT THIS WAS DUE TO THE DRASTIC INCREASE IN COMPRESSIONAL WAVE VELOCITY BELOW WATER TABLE. THUS THE INCREASE IN P WAVE VELOCITY AT THE WATER TABLE INTERFACE IS PROBABLY A MORE SENSITIVE PARAMETER FOR EVALUATING AN AQUIFER AND IS MORE EASILY MEASURED. THE FIELD STUDIES WERE CARRIED OUT IN THE UDELL HILLS AREA IN MANISTEE COUNTY MICHIGAN DURING THE SUMMERS OF 1967 AND 1968. THIS AREA WAS SELECTED BECAUSE A GREAT DEAL OF CONTROL IS PROVIDED BY GROUND WATER STUDIES BEING CONDUCTED BY THE FORREST EXPERIMENTAL STATION IN THE LOCAL. A NET OF WATER WELLS PROVIDED US WITH WATER TABLE DEPTHS AND POROSOTIES HAD BEEN DETERMINED OVER MUCH OF THE STUDY AREA. THE DEPTHS TO WATER TABLE RANGED FROM 5 FEET TO 35 FEET AT THE SITES OCCUPIED AND THE POROSITIES WERE GENERALLY AROUND 25PERCENT .

Terms: WAVES, VELOCITIES OF SEISMIC SHEAR WAVES AND COMPRESSIONAL WAVES / SEISMOLOGY / AQUIFERS / POROSITY / U.S.A. / EXPERIMENTAL STUDIES / VELOCITIES OF SEISMIC SHEAR WAVES AND COMPRESSION WAVES / USE OF POISSON@S RATIO FOR ABOVE AND BELOW WATER TABLE AS PARAMETER FOR EVALUATION OF POROSITY OF AN AQUIFER / STUDY OF UDELL HILLS AREA, MICHIGAN, U.S.A.

0000000 Fluidex 74007592 Subfile: CH
THE MIXING CHARACTERISTICS OF SUBMERGED MULTIPLE-PORT DIFFUSERS FOR HEATED EFFLUENTS IN OPEN CHANNEL FLOW.
ARGUE, J.R.; SAYRE, W.W.
IOWA UNIV., U.S.A.
IOWA UNIV., U.S.A., INST. HYDRAUL. RES. REPORT 147, 138 PP. (JULY, 1973). 1973 Section Code(s): C11

THE BEHAVIOUR OF A SET OF HEATED WATER JETS DISCHARGING INTO A SHALLOW, CO-FLOWING ENVIRONMENT WAS CONSIDERED IN A LABORATORY STUDY; THE CONDITIONS EXAMINED IN THE MODEL SIMULATED THE FLOW OF COOLING WATER FROM PROTOTYPE MULTI-PORT DIFFUSER DISCHARGING INTO A RIVER OR OCEAN CURRENT. THE RELATIVE EFFECTS OF JET INTERACTION AND SURFACE DISTORTION WERE CONSIDERED AND THREE ASPECTS OF THIS PROBLEM SINGLED OUT FOR PARTICULAR ATTENTION' FIRSTLY, SOME MEANS (QUANTITATIVE) WHEREBY STRATIFIED FLOW MIGHT BE DISTINGUISHED FROM MIXED FLOW; SECONDLY, THE MANNER IN WHICH MIXING (AS MEASURED BY A COEFFICIENT OF VARIATION) VARIES WITH DISTANCE DOWNSTREAM FROM THE DISCHARGE PORTS; THIRDLY, THE FLOW REGIMES ARISING FROM COMBINED MIXING AND BUOYANCY EFFECTS WHICH CAN BE EXPECTED IN THIS TYPE OF FLOW SYSTEM. APART FROM THE QUANTITIES WHICH DEFINE THE AMBIENT AND JET CHARACTERISTICS, THE PORT SPACING DISTANCE WAS FOUND TO BE THE MOST SIGNIFICANT VARIABLE. THE ENTIRE PROGRAM WAS CONDUCTED USING AN INJECTION ANGLE OF 20 DEGREES. CRITERIA FOR DIFFERENTIATING AMONG WELL-MIXED FLOWS, MODERATELY WELL-MIXED FLOWS AND STRATIFIED FLOWS WERE DETERMINED, TOGETHER WITH THE RELATIONSHIP BETWEEN MIXING AND DISTANCE. A SCHEME FOR CLASSIFYING FLOW REGIMES WAS SUGGESTED AND THE PUBLISHED RESULTS OF OTHER STUDIES BROUGHT TOGETHER WITH THOSE OF THE PRESENT STUDY. SATISFACTORY AGREEMENT IS REPORTED. A PROCEDURE FOR SECONDS SIZINGSECONDS MULTI-PORT DIFFUSER INSTALLATIONS, USING THE RELATIONSHIPS REFERRED TO ABOVE, IS SUGGESTED. (A)

Terms: POLLUTION / THERMAL EFFECTS / JETS / COOLING WATER SYSTEMS / WASTE WATER / RIVERS / OPEN CHANNELS / SEA OUTFALLS / DIFFUSERS - MULTIPLE PORT / FLUMES / STRATIFIED FLOW / MIXING / EXPERIMENTAL STUDIES / MIXING AND BUOYANCY EFFECTS / LABORATORY TESTS / SURFACE DISCHARGE / SUBSURFACE DISCHARGE / FLUME AND HEATED WATER SUPPLY / RECORDING / ANALYSIS / CALIBRATION / MIXED AND STRATIFIED FLOWS / MIXING DISTANCE FOR NON-STRATIFIED FLOWS / FLOW REGIMES / DESIGN OF MULTI-PORT DIFFUSERS



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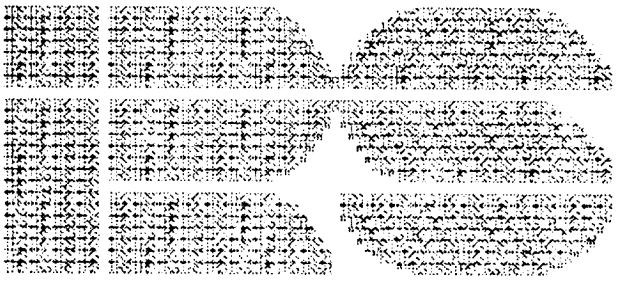

USER 003472 DATE:06/16/88 TIME:10:41:11

SEARCH HISTORY

SET	ITEMS	DESCRIPTION
1	38	WATER(W)WELL
2	297	ACIDIFICATION
3	98	STIMULATION
4	0	1*2
5	0	1*3
6	0	WATER}I{_(W)
7	500	WATER(W)WELL?
8	2806	MAINTENANCE
9	10	7*8
10	0	2*7
11	0	7*3
12	9	TECHNOLOGIE
13	6893	TECHNOLOGY
14	25	13*7

PRINT SUMMARY

NO.	FILE	ACCN/SET	FMT	ITEM-RANGE
1	11	9	4	1-10
2	11	14	4	1-25

SRCH TIME 1.28 PRINT COUNT 35 DESCS.: 11

File(s) searched:

File 245:WATERNET - 71-88/OCT
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Sets selected:

Set	Items	Description
1	0	WELL(W)STIMULATION?
2	20	ACIDI?(F)WELL?
3	215	CARBONATE?
4	4	S3*S2

Prints requested ('*' indicates user print cancellation) :

Date	Time	Description
13dec	04:21EST	PO66: PR S2/5/1-20

Total items to be printed: 20

A DIALOG* SEARCH FROM THE WATERNET DATABASE

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Topic of search: _____

Searcher: _____

Date: _____

The attached report is the result of a search of the WATERNET database using the DIALOG Information Retrieval Service.

WATERNET, produced by the American Water Works Association, provides a comprehensive index of publications relating to drinking water and wastewater. Coverage comprises all American Water Works Association and AWWA Research Foundation published materials, including books, proceedings, journals, newsletters, manuals, and standards. In addition to AWWA/AWWARF publications, a core grouping of North American and international journals on drinking water and wastewater topics are abstracted. Technical reports and studies from water utilities, government agencies, and research groups worldwide are included on a selected basis. Records are indexed using controlled vocabulary from the "AWWA WATERNET Thesaurus."

SAMPLE RECORD

The positions of the key fields are shown in the following sample record.

AN 021365 WQTC8618
TI **Alternate Trapping Materials for Purge and Trap Analysis of Volatile Compounds**
AU Mosesman, Neil H.; Betz, William R.; Corman, Scott D.
CS SUPELCO, Inc., Bellefonte, Pennsylvania
CT Proceedings Water Quality Technology Conference; Advances in Water Analysis and Treatment Portland, Oregon
CY November 16-20, 1986
PY p 245-250, 1987
PU Publ: AWWA
CO BN CODEN: PWQCD2 ISBN: 0-89867-385-2 ISSN: 0164-0755
AV Availability: AWWA
4 references, tables, figures
LA Language: English
DT Document Type: Conf Proc
AB This paper discusses several of the shortcomings of purge and trap techniques, most of which can be traced to the trapping materials (adsorbents). An ideal adsorbent has the capacity to retain the volatile compounds during the purging process; is hydrophobic, so it will not retain the water vapor that is transferred to it during the purging process; is able to release the volatile compounds rapidly during the desorption step; and is free of impurities that may interfere with the chromatographic analysis. The adsorbents currently recommended for purge and trap techniques include porous polymers, silica gel and charcoal, none of which exhibit all of the ideal characteristics. Alternative trapping materials including a carbon molecular sieve and a graphitized carbon black, were evaluated as potential replacements for the existing adsorbents. Results are given.
DE Descriptors: Sampling ; Volatile Organic Chemicals ; Water Quality Monitoring ; Gas Chromatography ; Analysis

Key to Data Fields

AB	Abstract	CT	Conference Title
AN	AWWA Accession Number	CY	Conference Year
AU	Author	DE	Descriptor
AV	Availability	DT	Document Type
BN	Int'l Std. Book Number	LA	Language
CL	Conference Location	PU	Publisher
CO	CODEN	PY	Publication Year
CS	Corporate Source	TI	Title

Data present in record depends on output format requested and type of record.

DIALOG File 245: WATERNET - 71-88/OCT (COPR. AMERICAN WATER WORKS ASSOCIATION 1988)

022614 WRE87098
Comparison of Solvent Extractions and Resin Adsorption for Isolation of Mutagenic Compounds From Chlorinated Drinking Water With High Humus Content
Vartiainen, T. ; Liimatainen, A. ; Jaaskelainen, S. ; Kauranen, P.
National Public Health Institute, Department of Environmental Hygiene and Toxicology, Kuopio, Finland ; University of Kuopio, Department of Chemistry, Kuopio, Finland
Water Research, vol. 21, no. 7, p 773-779, July 1987
Publ: Pergamon Press
CODEN: WATRAG ISSN: 0043-1354
Availability: AWWA
24 references, tables, figures
Language: English
Document Type: Jnl Article
Several methods of liquid-liquid extraction, and XAD resin and Blue-Cotton adsorption were compared for concentrating mutagenic organic compounds from humus-containing drinking water. Mutagenicity was measured by the Ames' test, using strains TA 100 and TA 98 without metabolic activation. Continuous liquid-liquid extraction for 48 h and resin adsorption gave comparable and adequately reproducible results. "Salting out" by sodium chloride improved the yield to some extent. Diethl ether was more effective as extractant than dichloromethane. Two consecutive extractions in Ultra Turrax with salting out were needed to yield the same level of activity as continuous liquid-liquid extraction. Extraction by mechanical mixing as well as adsorption by Blue-Cotton gave inadequate yields. The highest yield for mutagenic compounds was obtained from acid (pH 1 or 2) solution by extraction as well as by resin adsorption. It is concluded that the main mutagens in humus-rich chlorinated drinking water are acidic polar compounds.
Descriptors: Extraction ; Adsorption ; Solvents ; Resins ; Humic Substances ; Mutagenicity

022151 DES62020
Polysulfonamide as a Membrane Material
Shu-Sen, Wang ; Ai-Lian, Ling ; Ling-Ling, Wu ; Yi-Yuan, Ga Shu-Xiu, Liu ; Zhi-Zhou, Wang ; Li-Ming, Sheng ; De-Kuan, Kang
Beijing Polytechnic University, Beijing, China
Desalination: The International Journal on the Science and Technology of Desalting and Water Purification, vol.62, p 221-232, May 1987
Publ: Elsevier Science Publishers B.V.
ISSN: 0011-9164
Availability: AWWA
19 references, tables, figures
Language: English
Polysulfonamide (PSA) can be used in the preparation of reverse osmosis, ultrafiltration and micro-pore-filtration membranes. The membranes made from PSA exhibit high permselectivity, high water flux, and excellent resistance to acid, alkali chlorine and heat. This type of membrane assembled in different modules, is used in the treatment of acidic and alkaline wastewaters as well as in separation or purification processes at higher temperatures.
Descriptors: Reverse Osmosis ; Ultrafiltration ; Microfiltration ; Membranes ; Performance

020726 WRB87004
Predicting Baseflow Alkalinity as an Index to Episodic Stream Acidification and Fish Presence
DeWalle, David R. ; Dinicola, Richard S. ; Sharpe, William E.
Pennsylvania State University, University Park, Pennsylvani United States Geological Survey, Water Resources Division, Tacoma, Washington
Water Resources Bulletin, vol.23, no.1, p 29-35, February 1987
Publ: American Water Resources Association
ISSN: 0043-1370
Availability: AWWA
7 references, tables, figures
Language: English
Document Type: Jnl Article
Regression models to predict baseflow alkalinity from basin hydrogeology were developed and verified for headwater streams on the Laurel Hill anticline in southwestern Pennsylvania. Predicted baseflow alkalinities were then used to estimate sensitivity to acidification and presence of trout (Salvelinus fontinalis) populations for 61 headwater streams. Sensitivity classifications were verified by surveying trout populations. Geologic variables relating to the carbonate rock burial depth, extent of carbonate rock recharge areas, and length of stream channel flowing through effluent carbonate rock outcrops were much more useful in predicting baseflow alkalinity than areal extent of carbonate rocks. Baseflow alkalinity was not well related to status of trout populations on these anticlinal basins, especially on noneffluent basins where bedrock dip exceeded surface slope.
Descriptors: Alkalinity ; Fish ; Streams ; Acidification ; Hydrogeology ; Modeling ; Hydrology ; Acid Rain ; Pennsylvania

020667 WRE87009
Trace Metals and Water Chemistry of Forest Lakes in Northern Sweden
Borg, Hans
The National Environmental Protection Board, Trace Metal Laboratory, Solna, Sweden
Water Research, vol. 21, no. 1, p 65-72, January 1987
Publ: Pergamon Press
CODEN: WATRAG ISSN: 0043-1354
Availability: AWWA
22 references, tables, figures
Language: English
Document Type: Jnl Article
To study the influence of airborne pollutants on water
(cont. next page)

DIALOG File 245: WATERNET - 71-88/OCT (COPR. AMERICAN WATER WORKS ASSOCIATION 1988)

quality, water samples were taken from 59 forest lakes in northern Sweden along a section of about 1000 km in length. Determinations were made of pH, water color, conductivity, major ions, nitrogen and phosphorus, as well as the metals Fe, Mn, Al, Zn, Cu, Pb, Cd, Ni, Cr, Co, As and V. The lake waters were generally soft, with low levels of electrolytes. The pH values increased and the sulphate concentrations decreased from south to north. The lakes in the southern parts of the area showed evidence of increased deposition of acidifying substances, shown by higher Ca + Mg/alkalinity ratio. A geographical distribution pattern was observed from Zn and to some extent also for Pb and Cd, with the highest concentrations in the south. However, pH and water color were of major importance for the distribution of trace metals. Mn, Al and Zn were negatively correlated to pH and Fe, Mn, Al, Pb and As were positively correlated to water color. A multiple regression analysis showed that the distribution of Fe was influenced mainly by water color, Zn mainly by pH, while Mn and Al were influenced both by pH and color. Some of the lakes were sampled both in winter and summer and the concentration of metals was found to be around two-fold higher in winter than in summer.

Descriptors: Trace Metals ; Freshwater ; Lakes ; Acidification ; Water Quality ; Sweden

020590 WST18128

Prolonged Effect of Land Disposal of Human Wastes on Soil Conditions

Saber, M.S.M.

National Research Centre, Soils and Water Use Laboratory, Cairo, Egypt

Water Science and Technology, vol.18, no.7/8, p 371-374, 1986

Publ: Pergamon Press

CODEN: WSTED4 ISSN: 0273-1223

Availability: AWWA

11 references, tables

Language: English

Document Type: Jnl Article

Land disposal of human wastes is a comprehensive issue, where a series of aspects have to be considered. Few, if any, alternatives exist to this technology. No doubt future emphasis will be on sewage farming, which should result in the cultivation of new arid land. This paper addresses the prolonged effect of land disposal of human wastes on soil properties, as well as on the dissemination of enteric pathogens. In order to assess this impact, soil samples were collected from Gabal el Asfar sewage farm in Cairo to represent sandy soils irrigated solely, by surface flooding, with decanted sewage effluent for 0, 2.5, 5, 10, 15, 20, 30, 45 and 60 years. Sewage farming tended to build up the soil microbial population, particularly during the first five years. In all soils, human wastes increased total bacterial counts and promoted the proliferation of the physiological groups. This population would accelerate the oxidation of org[illegible] ma[illegible] t[illegible] ...ila[illegible] nutr[illegible]s. [illegible] so[illegible]lted [illegible] a high increase in nitrogen, phosphorus, micro-nutrients, organic carbon and raised the water holding capacity and exchangeable cations. However, the prolonged use of sewage effluent would disturb the balance of nutrients in soil, as the pH shifted towards acidity. The most interesting observation in the present work is to record that neither soluble salts nor micro-nutrients reached any injurious level. But land disposal of human wastes should be exercised with caution and if it is intended to be applied, salts, pH and nutrient elements should be checked occasionally. From the hygienic point of view, faecal E. coli, which is considered to be an indicator for enteric pathogens, gave positive results in all sewaged soils. Hence, it is recommended, from the sanitary point of view, that no crops which come in contact with sewage effluent should be cultivated in a sewage farm.

Descriptors: Soil ; Wastewater ; Wastes ; Land Disposal ; Agriculture ; Health Effects

020225 EE112058

Clay Liner Compatibility in Waste Disposal Practice

Finno, Richard J. ; Schubert, William R.

Illinois Institute of Technology, Chicago, Illinois ; Waste Management, Inc., Oak Brook, Illinois

Journal of Environmental Engineering, vol.112, no.6, p 1070-1084, December 1986

Publ: American Society of Civil Engineers

CODEN: JOEEDU ISSN: 0733-9372

Availability: AWWA

23 references, tables, figures

Language: English

Document Type: Jnl Article

Waste permeants can affect the value of fluid conductivity of clay soils used as liner material in disposal containment systems in a number of ways. Varying chemical constituents found in permeants encountered in disposal practice may have different effects on the value of fluid conductivity of clay. To provide information concerning field performance, undisturbed samples of natural clay liner material that were exposed to either landfill leachate or acidic wastes in the field were subjected to physical and chemical testing in the laboratory. Index properties and values of fluid conductivity of exposed clay samples, as well as unexposed control samples, were measured. Chemical analysis of both waste permeants and clays were performed to evaluate chemical interactions between the oils and permeants. The results of the testing program indicate that the laboratory values of fluid conductivity of the clay samples did not significantly increase due to field exposure to the various wastes.

Descriptors: Sanitary Landfills ; Liners ; Clays ; Performance ; Testing ; Soil ; Leachate ; Hazardous Wastes ; Permeation

DIALOG File 245: WATERNET - 71-88/OCT (COPR. AMERICAN WATER WORKS ASSOCIATION 1988)

020158 AQUA8645
Rehabilitation of Waterwells in Tunisia (Regeneration de Forages en Tunisie)
Froelich, C.
Deutsche Gesellschaft fur Technische Zusammenarbeit GTZ GmbH, Eschborn, Federal Republic of Germany
Aqua (International Water Supply Association), no.5, p 291-292, 1986
Publ: Pergamon Press
ISSN: 0003-7214
Availability: AWWA
figures
Language: French (English and French summaries)
Document Type: Jnl Article
Incrustation and corrosion problems required 25 percent of the annually drilled waterwells in Tunisia to replace abandoned wells which could not be rehabilitated by conventional methods (e.g. brushing and acidifying). The introduction of modern equipment (high pressure waterjet, balanced chemical treatment and pneumatic pump) resulted in a large number of those wells to be rehabilitated and to regain their initial efficiency at about 15 percent of the cost of a new well. During the pilot phase of this project of technical cooperation between the German Federal Republic and Tunisia (1984/1985) 23 waterwells of depth up to 290 m were rehabilitated with very good results.
Descriptors: Wells ; Rehabilitation ; Corrosion ; Tunisia ; Africa

019631 WRE86149
Organic Indicators of Groundwater Pollution by a Sanitary Landfill
Albaiges, J. ; Casado, F. ; Ventura, F.
Centro de Investigacion y Desarrollo (CSIC), Department of Environmental Chemistry, Barcelona, Spain
Water Research, vol.20, no.9, p 1153-1159, September 1986
Publ: Pergamon Press
CODEN: WATRAG ISSN: 0043-1354
Availability: AWWA
references, tables, figures
Language: English
Document Type: Jnl Article
The organic composition of leachate from the Barcelona sanitary landfill is described. According to the low degree of stabilization of the disposed garbage the acid fraction accounts for 80-90 percent of the total organic extract. More than 50 individual organic components have been identified, indicating catabolic degradation of lipids (e.g. C4-C11 carboxylic acids), proteins (e.g. indole derivatives) and lignins (e.g. p-hydroxyphenyl derivatives) or simply compounds originally present in the refuse that have been washed out by percolating waters (nicotine, caffeine, phthalates). To obtain a monitoring system for the groundwater pollution originated by this landfill leachate, an analytical method is proposed based on the GC-ECD fingerprinting of groundwater acidic extracts after derivatization with PFB bromide. The chromatogram contains carboxylic and phenolic components and the profiles exhibited by waters from several test wells in the downstream edge of the landfill were indicative of the suspected leachate pollution.
Descriptors: Leachate ; Organics ; Sanitary Landfills ; Analysis ; Groundwater ; Water Quality Monitoring ; Carboxylic Acids ; Phenols ; Gas Chromatography ; Barcelona, Spain

019500 WRE86127
pH-Decrease in Nitrifying Biofilms
Szwerinski, H. ; Arvin, E. ; Harremoes, P.
Universitat Stuttgart, Institut fur Siedlungswasserbau, Stuttgart, Germany ; Technical University of Denmark, Department of Environmental Engineering, Lyngby, Denmark
Water Research, vol.20, no.8, p 971-976, August 1986
Publ: Pergamon Press
CODEN: WATRAG ISSN: 0043-1354
Availability: AWWA
references, tables, figures
Language: English
Document Type: Jnl Article
Nitrification is an acidity producing process. It has been shown theoretically that the diffusional resistance to the transport in the biofilm of the inorganic carbon species as affected by the acidity production in a nitrifying biofilm gives rise to a decreased pH in the interior of the biofilm. These theoretical results have been verified on biofilms developed on the surfaces of a rotating drum under well controlled laboratory conditions. The results show clearly the drop in pH as predicted by theory. The phenomenon can give rise to unexpected effects on the performance of nitrifying biofilms, when most of the bacteria work under a much lower pH than the pH measured in the bulk water.
Descriptors: pH ; Nitrification ; Biofilm

018785 WRE86043
Influence of Dissolved Organic Matter on the Lead Determination in Seawater by Anodic Stripping Voltammetry (Influence des Substances Organiques Dissoutes sur le Dosage du Plomb en Milieu Marin par Redissolution Anodique)
Quentel, F. ; Madec, C. ; Courtot-Coupez, J.
Universite de Bretagne Occidentale, Laboratoire de Chimie Analytique, France
Water Research, vol. 20, no. 3, p 325-333, March 1986
Publ: Pergamon Press
CODEN: WATRAG ISSN: 0043-1354
Availability: AWWA
20 references, table, figures
Language: French (English and French summaries)
Document Type: Jnl Article
Lead is usually determined at a pH of 2 in seawater by differential pulse anodic stripping voltammetry. At such a pH however, the peak of lead is not well resolved at the hanging

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DIALOG File 245: WATERNET - 71-88/OCT (COPR. AMERICAN WATER WORKS ASSOCIATION 1988)

mercury drop electrode. Batley and Florence (1976) attribute this phenomenon to the organic matter dissolved in sea water, whereas Acebal and De Luca Rebello (1983) ascribe it to the copper dissolution with oxidation to CuCl(2-). The objective of this work is hence to know: which of these two hypotheses is right and if a hanging mercury drop electrode can be used for the determination of lead in coastal seawaters. In the first section, we have studied the effects of physicochemical (concentration, acidity) and electrochemical (deposition potential) parameters on the stripping voltammetry of lead. The anodic stripping peak at a pH of 2 is highly modified by the presence of an interference peak at nearly the same potential; on the other hand when the sample is irradiated under ultraviolet light this "double wave" disappears to give rise to a well resolved peak. We have shown that the phenomenon was related to the influence of dissolved organic matter. Anodic stripping voltammetry must be used with care because, in some pH conditions, natural organic compounds like humic and fulvic acids give rise to adsorption waves which may cause an increase or a decrease in the peak heights introducing errors on the lead concentration. In the last part, the best experimental conditions to determine lead concentrations have been investigated. They are obtained when the samples are acidified and u.v. irradiated. In these conditions, anodic stripping voltammetry and atomic adsorption spectrophotometry are in good agreement. It appears that if the sample is not treated as proposed, anodic stripping voltammetry at a hanging mercury drop electrode, at pH 2, gives erroneous results in excess for lead dissolved in seawater.

Descriptors: Lead ; Organics ; Seawater

017988 WRE85155

Stability of Dissolved Amino-Acids in Seawater After Chlorine Addition (Comportement des Acides Amines Dissous du Milieu Marin Apres Injection de Chlore)

Madec, Christian ; Trebern, Bernard ; Courtot-Coupez, Jacqueline

Centre National de la Recherche Scientifique, Laboratoire de Chimie Analytique

Water Research, vol. 19, no. 9, p 1171-1178, 1985

Publ: Pergamon Press

CODEN: WATRAG ISSN: 0043-1354

Availability: AWWA

23 references, tables, figures

Language: French (French, English summaries)

Document Type: Jnl Article

Evidence that dissolved organic matter is is one of the most significant sources of chlorine demand of seawaters used in cooling circuits is now well recognized. Nevertheless the specific role of the different kinds of compounds which form this organic material has seldom been studied and even less quantified; this is not surprising as less than twenty percent of the organic substances are identified. In this paper our objective was to define more quantitatively the effect of the diss d and bine ino s i e ox t de

Two main criteria justified the choice of these solutes: the reactivity of chlorine and/or bromine towards amino groups; the role of these nitrogenous compounds in some biological mechanisms. What happens to the halogen added and to the organic species during the first 20 minutes was investigated. The experimental conditions selected (concentrations, salinity, temperature and acidity) are those encountered in practice. The reactivity of the amino-acids towards chlorine is of course influenced by physiochemical properties such as the pH, but is particularly dependent upon the nature of the amino group. Whereas free amino-acids as also combined species (proteins) yield stable halogenocompounds like those produced with aliphatic amines, alpha free amino-acids on the other hand yield unstable haloamines which decompose rapidly. Regarding these results, only the reactivity of the alpha compounds was afterwards studied as they are the largest fraction of the free amino-acids encountered in natural waters. After investigating the role of the side groups in the kinetics and the efficiency of the consumption of the oxidant we examined, by liquid chromatography, the depletion of the nitrogenous species. In each case the high pressure liquid chromatography (HPLC) data relative to changes in the level of the organic compounds agree with those reported for the residual oxidant decay. A few experiments carried out on samples of seawater treated with 1 part per million of chlorine showed that around 5 percent of chlorine which dissipated during the first 3 minutes are consumed by the dissolved free amino-acids, the depletion of which is about 50 percent.

Descriptors: Chlorination ; Seawater ; Amino Acids ; Chromatography

016362 OZ005013

Experiences With Waste Gas Purification Plants Using Ozone as Oxidant

Reither, K.; Rump, H.H.; Schneider, W.

Ozone: Science and Engineering. The Journal of the International Ozone Association, v5 n3, p 183-193, 1983

CODEN: OZSEDS ISSN: 0191-9512

Availability: Pergamon Press, Inc., Fairview Park, Elmsford, New York 10523

7 references, table, figures

Language: English

Document Type: Jnl Article

Many inorganic and organic contaminants in waste air can be treated by means of ozone to obtain subtances with a less dangerous potential. The oxidizing agent can be added to the waste gas in the gaseous phase (but without good effect) as well as in the liquid phase. In the plants described, ozone was injected into the washing liquid. The entire installation can be adjusted to suit the nature and concentration of odorous substances. Depending upon the type and concentration of the odors, the pH value of the ozone solution will be acidic or alkaline. In many cases it is recommended to use a

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DIALOG File 245: WATERNET - 71-88/OCT (COPR. AMERICAN WATER WORKS ASSOCIATION 1988)

two-stage gas washing treatment, the first stage being alkaline-oxidizing and the second stage being acid-oxidizing. Care has to be taken that the absorption column can produce a sufficient interfacial area between the gas and the washing liquid. Before the planning process of a waste air treatment plant, the reaction mechanisms between ozone and the substances to be eliminated have to be known. Experiences in planning and maintaining waste air treatment plants up to some hundreds of thousands of m3/h are reported. Examples are given of purification of waste gases from a rendering plant, a chemical laboratory, a bottle sterilization plant, a metal foundry, a rotary offset printing plant, and a sewage treatment plant.

Descriptors: Air Pollution; Cleaning; Ozone
Subject Codes: 5600; 4242

015115 DES02207
Geothermal Desalting at the East Mesa Test Site
Boegli, W.J.; Suemoto, S.H.; Trompeter, K.M.
Desalination: The International Journal on the Science and Technology of Desalting and Water Purification , v22 n1,2,3, p 77-90, December 1977
ISSN: 0011-9164
Availability: Elsevier Scientific Publishing Company, P.O. Box 211, 1000 AE Amsterdam, The Netherlands
4 references, tables, figures
Language: English
Document Type: Jnl Article
This paper presents the results of over a year's operation at the East Mesa test site located in Holtville, California, which included testing of vertical tube evaporator (VTE) and multistage flash (MSF) distillation and high temperature electrodialysis (HTED) desalting equipment on geothermal fluids. Data presented cover: heat transfer coefficients; tube fouling and scaling; feed, product, and brine composition; cell-pair resistance; current efficiency; membrane fouling; and scale analysis. Both smooth and enhanced heat transfer tubing has been tested in the distillation units with a variety of tube materials. The high-temperature electrodialysis unit utilized previously tested teflon-backed membranes as well as dacron and polypropylene-backed membranes in thin-cell configurations. Pretreatment consisted of polyphosphonate- type threshold addition in the case of distillation and acidification only for electrodialysis. Pretreatment objectives include control of calcium carbonate, silica, and barium sulfate scaling. Test programs for distillation included high- and low-temperature operation for both VTE and MSF. HTED testing included single- and three-stage operation of 140 and 160 F and was comprised of both characterizations and long-term runs. This paper was presented at the International Congress on Desalination and Water Reuse, Tokyo, Japan, November 27-December 3, 1977.

Descriptors: Evaporation; Multistage Flash; Electrodialysis Heat Transfer; Fouling; Scale; Temperature; Membranes

014730 TR000566
Monitoring of Hydraulic Dredging for Lake Restoration
Snow, Phillip D.; Mason, R. Paul; George, Carl J.; Tobiessen, Peter L.
Lake Restoration, Proceedings of a National Conference; EPA-440/5-79-001 Minneapolis, MN
August 22-24, 1978
p 195-204, March 1979
Availability: Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402
6 references, tables, figures
Language: English
Document Type: Tech Rep
U.S. Environmental Protection Agency, Office of Water Planning and Standards
Collins Lake in Scotia, New York is a man-modified, eutrophic, oxbow lake formed by the Mohawk River. The lake is used intensely for swimming, boating, and fishing, serving an area with nearly 100,000 people. Historically, excessive growths of macrophytes and algae occur in the shallow two-thirds of the lake. Excessive nutrient transport, especially phosphate, from the organic sediments into the lake water has caused these problems along with sporadic river flooding. This paper describes the success to date of restoring the lake. Restoration at Collins Lake involves the removal of the organic, nutrient-rich sediments, as well as deepening part of the lake. Also presented in this paper are the results of a two-year continuing investigation which monitored 14 different chemical and physical parameters in the lake. These parameters included: pH; alkalinity; acidity; total hardness; calcium hardness; temperature; dissolved oxygen; total phosphate; and nitrogen. Observations for phytoplankton, zooplankton, aquatic macrophytes, and fishes await completion of the project and a suitable adjustment period.

Descriptors: Lakes; Dredging; Water Quality Monitoring; New York
Subject Codes: 1510; 4100

013035 BK000468
Water in Industry
Parlante, Robert
Handbook of Water Resources and Pollution Control, Harry W. Gehm, Jacob I. Bregman, and Gene V. Beeland, eds.
p 385-428, 1976
ISBN: 0-442-21041-8 LC: 75-29050
Availability: Van Nostrand Reinhold Company, 450 West 33rd Street, New York, NY 10001
7 references, tables, figures
Language: English
Document Type: Book
Industrial use of water involves the reduction, recovery, and reuse of water. This article discusses the basic water treatment processes employed by industry, as well as

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DIALOG File 245: WATERNET - 71-88/OCT (COPR. AMERICAN WATER WORKS ASSOCIATION 1988)

technology applicable to boiler feedwater treatment, recirculating cooling water systems, and ultimate (or ultrapure) water production. Specific topics discussed include: coagulation aids, such as alum, ferrous sulfate, ferric sulfate, alkalis, clays, and polyelectrolytes; coagulant dosages; coagulation equipment; cold lime-soda softening; chemicals for softening, including coagulants, hydrated lime, soda ash, and calcium chloride; aeration and degasification processes and theory; removal of iron, manganese, and hydrogen sulfide; manganese zeolite-potassium permanganate; theory of filtration; types of filters, such as pressure filters, automatic gravity filters, and activated carbon filters; ion exchange softening; basic demineralization by ion exchange; anion and cation exchange resins; boiler scale formation; corrosion prevention and treatment procedures in feedwater boilers, such as dealkalization, deaeration, and condensate softening; acidic and alkaline modes of corrosion treatment for recirculating cooling water systems; and the process for producing ultimate or ultrapure, water. (See also DIALOG AN 0013025 - 0013044)

Descriptors: Industrial Water Use; Wastewater Treatment; Cooling Towers; Coagulation; Softening; Aeration; Filtration; Filters; Ion Exchange; Scale; Corrosion

Subject Codes: 1705; 4220; 4250; 4230; 3510

013015 BK000448

Softening and Recarbonation

Van Leeuwen, J.; Wiechers, H.N.S.

Manual for Water Renovation and Reclamation

p 79-99,

ISBN: 0-7988-1262-1

Availability: AWWA

7 references, table, figures

Language: English

Document Type: Book

National Institute for Water Research, Council for Scientific and Industrial Research; Water Research Commission

This paper discusses the principles of softening by lime clarification and recarbonation, as well as outlining the development of process parameters for softening, design considerations, and equipment requirements. Specific topics discussed include: ionization of water; ionic equilibria of the carbonic system in water containing calcium; Modified Caldwell-Lawrence (MCL) diagrams; the influence of precipitation inhibitors on softening; compilation of temperature, total dissolved solids (TDS) concentration, calcium hardness, pH, and alkalinity or acidity measurements; application of the MCL diagrams to lime softening and to recarbonation; dosing equipment including lime, carbonate, bicarbonate, hydroxide, acid, and carbon dioxide; and reactors, clarifiers, pumps, and pipelines. Example problems are presented and solved utilizing the MCL diagrams for pure system predictions, a biofilter humus tank effluent, an activated sludge plant effluent, and a lime-treated water. (See also DIALOG AN 0013010 - 0013024)

; Republic of South Africa

Subject Codes: 4250

007257 SM150410

Standard Methods For the Examination of Water and Wastewater; Section 410 Chlorine Dioxide

American Water Works Association; APHA; WPCF

p 304-310, 1981

Publ: American Water Works Association; APHA; WPCF

ISBN: 0-89867-091-5 LC: 55-1979

Availability: AWWA

12 references

Language: English

Order No.: 10019

Document Type: Method

Chlorine dioxide, C102, has been widely used as a bleaching agent in the paper and pulp industry. It has received attention as an alternative to chlorine for disinfection of potable water. Chlorine dioxide has been applied to water supplies to combat tastes and odors due to phenolic-type wastes, actinomycetes, and algae, as well as to oxidize soluble iron and manganese to a more easily removable form. It acts as a disinfectant, and some results suggest that it may be stronger than free chlorine or hypochlorite. The difficulties of generation, handling, and storage have limited both application and experimentation. Chlorine dioxide is a deep yellow, volatile, unpleasant-smelling gas that is toxic and under certain conditions may react explosively. It should be handled with care in a vented area. There are several methods of generating C102; for laboratory purposes the acidification of a solution of sodium chlorite followed by suitable scrubbing is the most practical. The following methods of chlorine dioxide determination are described: the iodometric method; the amperometric method; and the tentative DPD method.

Descriptors: Chlorine Dioxide; Chemical and Physical Analyses

Subject Codes: 4530

005998 RFS81099

The Importance of Chromate Speciation and Equilibrium Properties of Ion Exchange Resin for Chromate Recovery from Cooling Tower Blowdown by Ion Exchange

Sengupta, Arup K.; Clifford, Dennis A.

Proceedings Water Reuse Symposium II: Water Reuse in the Future Washington, D.C.

August 23-28, 1981

vol 2, p 1496-1510,

CODEN: PWRSDL ISBN: 0-89867-261-9

Availability: AWWA

3 references, tables, figures

Language: English

Price: A19

(cont. next page)

DIALOG File 245: WATERNET - 71-88/OCT (COPR. AMERICAN WATER WORKS ASSOCIATION 1988)

Document Type: Conf Proc
Both strongly- and weakly-basic anion exchange resins have been used to remove and recover hexavalent chromate from cooling tower blowdown. Strongly-basic resins (both Type I and Type II) have pKa values greater than 13 and hence may operate at acidic as well as neutral pH with essentially no effect on their capacity. Weakly-basic anion exchange resins with tertiary amines as the major functional groups, on the other hand, have comparatively low pKa values (less than 6) and hence can ionize only at low pH values. They are always operated at an acidic pH in order to maximize available exchange capacity. Chromate ions may remain in an aqueous phase in different ionic forms with total chromate concentration and pH dictating which particular chromate species will predominate in accordance with equilibrium reactions presented. In cooling water systems, sulfate is normally the predominant anion and chromate species may be considered as trace components in such systems. Thus, the distribution ratio is dependent only on separation factors and chromate removal capacity is independent of other trace components. This simplifies the design approach for chromate removal systems. The paper also discusses the effect of pH on available exchange capacity and highlights the differences between use of WBA and SBA resins.
Descriptors: Ion Exchange; Cooling Towers

005728 OPF81023
Development and Rehabilitation of Water Wells, Part ii
McNichol, Richard F.;
OpFlow , p 1, 7 , April 1981
Publ: AWWA
CODEN: OPFLDG ISSN: 0149-8029
Availability: AWWA
Language: English
Price: A01
Document Type: Newsletter
The second article in a series on water well development and rehabilitation, this paper discusses chemical and electrochemical corrosion, and incrustation caused by precipitates, soil materials, and iron bacteria. Solutions to these problems include acidization, superchlorination, and screen replacement.
Descriptors: Wells; Operation and Maintenance;
Subject Codes: 3000; 1520;

004711 JAW77243
Corrosion Control by Deposition of CaCO3 Films: Part 1, A Practical Approach for Plant Operators
Merrill, Douglas T. ; Sanks, Robert L. ;
Journal American Water Works Association , p 592-599 , November 1977
Publ: AWWA
CODEN: JAWWA5 ISSN: 0003-150X
Availability: AWWA
Language: English
Document Type: Jnl Article
This article is the first of three presentations conceived to improve the operator's understanding of the process of pipe protection by calcium carbonate precipitation. Basic chemistry, well-conditioned water, water-conditioning diagrams, concentrations, pH, total dissolved solids (TDS), temperature, alkalinity, acidity, horizontal axis, direction vectors, pipe deterioration, and corrosion are discussed.
Descriptors: Corrosion ;
Subject Codes: 3510 ;

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File 117:WATER RESOURCES ABSTRACTS - 68-88/DEC

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8	5	S7-S3

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SAMPLE RECORD

The positions of the key fields are shown in the following sample record.

AN 127158 W78-10051
TI **Hydrological Application of LANDSAT Imagery Used in the Study of the 1973 Indus River Flood, Pakistan**
AU Deutsch, M.; Ruggles, F. H. Jr
CS Geological Survey, Reston, VA. Geography Program; and Geological Survey, Reston, VA. Water Resources Div.
JN SO Water Resources Bulletin, Vol 14, No 2, p 261-274, April 1978. 7 fig, 1 tab, 6 ref.,
PY
JA Journal Announcement: SWRA1121
AB During August and September 1973, the Indus River Valley of Pakistan experienced one of the largest floods on record, resulting in damages to homes, businesses, public works, and crops amounting to millions of rupees. Tremendous areas of lowlands were inundated along the Indus River and major tributaries. Landsat data made it possible to easily measure the extent of flooding, totaling about 20,000 sq km within an area of about 400,000 sq km south from the Punjab to the Arabian Sea. The Indus River data were used to continue experimentation in the development of rapid, accurate, and inexpensive optical techniques of flood mapping by satellite begun in 1973 for the Mississippi River floods. The research work on the Indus River not only resulted in the development of more effective procedures for optical processing of flood data and synoptically depicting flooding, but also provided potentially valuable ancillary information concerning the hydrology of much of the Indus River basin. (Woodward-USGS)
DE Descriptors: *Flood data ; *Remote sensing ; *Satellite(Artificial) ; *Photogrammetry ; *Indus River ; *Pakistan; Flood damage ; LANDSAT
SH Section Heading Codes: 7B .(Resources Data--Data Acquisition); 4A .(Water Quantity Management and Control--Control of Water on the Surface.

Key to Data Fields

AB	Abstract	JN	Journal Name
AN	SWRA Accession Number	PY	Publication Year
AU	Author	SH	Section Heading
CS	Corporate Source	SO	Source
DE	Descriptor	TI	Title
JA	Journal Announcement		

Data present in record depends on output format requested and type of record.

DIALOG File 117: WATER RESOURCES ABSTRACTS - 68-88/DEC

155226 W82-01199
Results of Acidizing Water Wells in Arizona
Hargis, D. R.; McCauley, C. A.
Hargis and Montgomery, Inc., Tucson, AZ.
Water Resources Bulletin, Vol 17, No 3, p 494-497, June, 1981. 2 Fig, 3 Tab, 4 Ref.,
Journal Announcement: SWRA1503
Acidizing is a procedure used to increase production from water wells, and generally consists of placing a nontoxic acid solution in contact with the water bearing formation to dissolve out part of the stratum. Acidizing of sample wells in Arizona was beneficial for wells producing more than 500 gallons per min and marginal for those producing less than that amount. Sample wells for Wellfield No. 1, penetrating the unconfined Coconino Sandstone aquifer, and Wellfield No. 2, penetrating the confined composite Kaibab Limestone-Coconino Sandstone aquifer, were used to collect drawdown data before and after acidizing. Each well was acidized with different amounts of 15% hydrochloric acid according to borehole size and aquifer thickness. Acidizing improved the specific capacity of the Wellfield No. 1 well by 50% at pumping rates of 200-500 gallons per min and of the Wellfield No. 2 well by 100% at pumping rates of 1250-2200 gallons per min. Acidizing reduced the pumping costs in Wellfield No. 1 by 1% at 195 gallons per min to 11% at 500 gallons per min, and in Wellfield No. 2, by 6% at 1250 gallons per min to 11% at 2200 gallons per min. (Cassar-FRC)
Descriptors: *Acidizing ; *Well yield ; *Water yield ; *Arizona ; *Groundwater management; Hydrochloric acid ; Aquifers ; Confined aquifers ; Unconfined aquifers ; Carbonate aquifers ; Well capacity ; Pumping tests ; Costs ; Groundwater mining ; Drawdown ; Arizona ; Water harvesting
Section Heading Codes: 4B .(Water Quantity Management and Control--Groundwater Management)

148271 W81-00683
Five-Year Research Plan
Hasbrouck, S. S.; Uttormark, P. D.
Maine Univ. at Orono. Land and Water Resources Center.
Available from the National Technical Information Service, Springfield, VA 22161 as PB81-138026, Price codes: A03 in paper copy, A01 in microfiche. Report submitted to the Office of Water Research and Technology, October, 1980. 25 p, 3 Tab, 34 Ref.,
Journal Announcement: SWRA1404
This research plan was developed under the auspices of the Maine Land and Water Resources Council, with the Council's Subcommittee on River Basin Planning serving as the primary advisory group. The study was limited to freshwater resources, with emphasis on management-oriented research. Information from 39 interviews and relevant reports led to the identification of five major areas and associated subareas: (1) groundwater management (water quality of private wells; land use loadings to groundwater; long-term and cumulative effects of contamination on groundwater systems); (2) acid precipitation; (3) lake management (conservation and aesthetic protection of developing lakes; protection of 'wilderness' lakes; water quality protection and enhancement); (4) river, stream, and wetlands management (impacts of expanding hydropower; agricultural impacts; impacts of forest spraying; stormwater impacts); and (5) recreational use of Maine's inland waters (public/private conflicts; recreation potential; recreational carrying capacities). Each of these subareas has been evaluated under the categories of (1) problem or situation; (2) what is being done; (3) research needed; and (4) questions to be answered. Groundwater management and acid precipitation were identified as areas of highest research priority. Projected annual fiscal allocations for the cooperative program over the 1982-1986 timescale were also developed. (Zielinski-IPA)
Descriptors: *Research priorities ; *Maine ; *Planning ; *Research and Development ; *Water resources ; *Five-year plans; Groundwater resources ; Acidic water ; Water quality ; Water pollution ; Lakes ; Water wells ; Water pollution effects ; Wetlands ; Recreation ; Recreation facilities ; Rivers ; Water conservation ; Water use ; Water demand ; Legal aspects
Section Heading Codes: 6E .(Water Resources Planning--Water Law and Institutions)

146014 W80-05447
The Corrosive Well Waters of Egypt's Western Desert
Clarke, F. E.
Geological Survey, Reston, VA. Water Resources Div.
Available from Supt. of Documents, GPO, Washington, DC 20402, Price, $2.75. Geological Survey Water-Supply Paper 1757-O, 1979. 55 p, 34 Fig, 6 Tab, 27 Ref.,
Journal Announcement: SWRA1317
The discovery that ground waters of Egypt's Western Desert are highly corrosive is lost in antiquity. Introduction of modern well-drilling techniques and replacement of native wood casing with steel during the 20th century increased corrosion problems and led to an intense search for causes and corrective treatments. Extreme corrosiveness results from combined effects of relatively acidic waters with significant concentrations of destructive sulfide ion; unfavorable ratios of sulfate and chloride to less aggressive ions; mineral equilibria and electrode potential which hinder formation of protective films; relative high chemical reaction rates, because of abnormal temperatures, and high surface velocities related to well design. There is general agreement that conventional corrosion control methods would be ineffective or impracticable. Thus, control must be sought through the use of materials more resistant to corrosion than plain carbon steel where well screens and casings are necessary. Of the alternatives considered, stainless steel appears to be the most promising where high strength and long-term services are required and the alloy's relatively high cost is acceptable. Epoxy resin-bounded fiberglass and wood appear to be practicable, relatively inexpensive alternatives for
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low-strength applications. Other materials such as high strength aluminum have shown sufficient promise to merit their consideration in particular locations and uses. The limited experience with pumping in these desert wells leaves uncertainties concerning the durability of conventional pump designs. (Kosco-USGS)

Descriptors: *Corrosion ; *Water wells ; *Groundwater ; *Water quality ; *Corrosion control ; *Eggypts Western Desert Acidic water ; Chemical degradation ; Well screens ; Well casings

Section Heading Codes: 8G .(Engineering Works--Materials)

139857 W79-09731

Geohydrologic Impacts of Coal Development in the Narragansett Basin, Massachusetts and Rhode Island

Frimpter, M. H.; Maevsky, A.

Geological Survey, Boston, MA. Water Resources Div.

Available from Supt. of Documents, GPO, Washington, DC 20402, Price, $1.60. Geological Survey Water-Supply Paper 2062, 1979. 35 p, 15 fig, 5 tab, 35 ref.,

Journal Announcement: SWRA1222

The hydrologic impacts of possible coal mining in the 900-square-mile Carboniferous Narragansett Basin in southeastern New England are described. Geophysical tests and hydrologic observations were made in thirteen 3-inch-diameter test holes which were 330 to 1,500 feet deep. Fractures and lithology, including graphite and coal, were identified and located from interpretation of geophysical logs. Ground-water levels measured in 1976-77 were less than 15 feet below land surface at all test sites. Specific capacities of the test holes to yield water ranged from 0.01 to 5.7 gallons per minute per foot of drawdown after short (2-5-hour) pumping periods. In a test hole in Halifax, Mass., water levels showing drawdown caused by pumping nearby domestic-supply wells indicate that mine dewatering would reduce yields of private wells tapping bedrock. In test holes near Narragansett Bay, ground water was brackish, and water levels fluctuated with about one-fifth the magnitude of the tide in the bay. These conditions suggest that there is potential for a high rate of mine seepage from the bay. As a result of mining, the iron disulfide minerals, pyrite and marcasite, react with air and water to produce acid water containing iron. However, acid mine water is not expected to be as serious a problem in the Narragansett Basin as it is in the Appalachian coal fields. No marcasite and only small amounts of coarsely crystalline pyrite have been observed in the metamorphosed sediments of the basin. (Woodard-USGS)

Descriptors: *Coal mines ; *Effects ; *Groundwater ; *Hydrogeology ; *Water quality ; *Narragansett Basin; Coal mine wastes ; Path of pollutants ; Acidic water ; Saline water intrusion ; Tidal effects ; Borehole geophysics ; Aquifers ; Water wells ; Well data ; Water yield ; Drawdown ; Water level fluctuations ; Water analysis ; Chemical analysis ; Massachusetts ; Rhode Island

Section Heading Codes: 5B .(Water Quality Management and Protection--Sources of Pollution) 2F Cycle--Groundwater)

130280 W79-00173

Direct Cooling with Ground Water

May, J. A.

Water Well Journal, Vol. 13, No. 9, p 57, September, 1978.,

Journal Announcement: SWRA1201

Surface water is usually too warm for cooling but ground water from domestic water wells is an ideal source. Warm air is cooled by the ground water, and the cooled air is returned to the house. The precise water temperature needed for cooling and dehumidification is determined by the coil size, water flow, air flow, and the amount of cooling desired. Economics and space considerations require a temperature of at least 57F. Higher temperature ground water or oversized air conditioners will cool but not dehumidify the air. Corrosion of heat extractor coils results if the coils are aluminum rather than copper, the ground water is too acidic for copper tubing, or the plumbing is used as a ground for electric appliances. Since there is no compressor the operating costs of ground water cooling is much less than standard vapor-compression air conditioning. However, its efficiency depends upon water temperature, well depth, and air volume. Ground water air conditioning units can be used in conjunction with a standard forced air furnace, heat pump, or solar energy systems. (Purdin-NWWA)

Descriptors: *Groundwater ; *Cooling ; *Airconditioning; Cooling water ; Water wells

Section Heading Codes: 8C .(Engineering Works--Hydraulic Machinery); 8G .(Engineering Works--Materials)

124691 W78-07582

NWWA's Most Requested Statistics

Eberle, C. M.

National Water Well Association, Worthington, OH.

Water Well Journal, Vol. 32, No. 5, p 76, May, 1978.,

Journal Announcement: SWRA1116

The National Water Well Association is frequently called upon to provide figures and statistics on the well industry to a variety of inquirers. Among the most commonly requested figures are the following: (1) Water Wells--approximately 900,000 wells were drilled in 1977, an increase of as much as 20% over 1976. 85% of these wells were domestic, 6% industrial/municipal, and 9% were irrigation wells. The nationwide average depth for domestic wells appears to be around 175 feet. (2) Well costs--average prices for wells; domestic (6-inch casing diameter)--$2500; municipal/industrial --$30,000; irrigation--$8,000. (3) Drillers in business--NWWA estimates that there are 10,200 drilling firms employing 25,000 persons in the U.S. Instead of more people becoming drilling contractors, it seems that existing firms are expanding to handle the growing market. The 1977 drought year resulted in a definite stimulation of water well drilling

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business, forcing many contractors to hire extra help and contemplate purchasing additional equipment. (Eberle-NWWA)
Descriptors: *Water wells ; *Drilling ; *Costs ; *Manpower *Statistics; Depth ; Irrigation wells
Section Heading Codes: 8A .(Engineering Works--Structures); 4B .(Water Quantity Management and Control--Groundwater Management)

114622 W77-10525
Making Water Supply Nitrate Removal Practicable
Sheinker, M.; Codoluto, J. P.
Garden City Park Water District, N.Y.
Public Works, Vol 108, No 6, p 71-73, June, 1977. 1 fig.,
Journal Announcement: SWRA1021
Although removal of nitrates from water has been within the reach of water works technology for quite some time, economic feasibility has been a continual problem. Faced with the dilemma of either abandoning a $300,000 well installation which began producing unacceptable nitrate concentrations or removing the nitrates from the well water, the Garden City Park Water District (Nassau County, New York) opted for the latter. A continuous concurrent ion exchange system was proposed, evaluated, and installed. Alternating between cyclical 'run' and 'pulse' modes, the system first passes raw well water over a synthetic resin exchange medium where denitrification takes place. A regeneration process then strips nitrates from the contacted resin while 'fresh' resin is moed into the exchange area, after which the cycle begins again. Liquid caustic is also added to the system to adjust the somewhat acidic well water to an acceptable pH; disinfection with liquid chlorine is practiced when deemed necessary. Overall, the system has proved effective and dependable, and may perhaps serve as a model for other water supply systems with excessive nitrate problems. (Eberle-NWWA)
Descriptors: *Groundwater ; *Nitrates ; *Denitrification ; *Ion exchange ; *Water supply ; *Water treatment ; *New York; Resins ; Pumping
Section Heading Codes: 5F .(Water Quality Management and Protection--Water Treatment and Quality Alteration); 4B .(Water Quantity Management and Control--Groundwater Management)

110970 W77-06869
How to Deal with Pitting and Corrosion
Water Well Journal, Vol 31, No 3, p 48, March, 1977.,
Journal Announcement: SWRA1014
Pitting due to organic growth and corrosion due to acid well water frequently shorten the life of pumps, drop pipes, jets, bowl assemblies, and cylinders. Pitting results when bacteria and algae attach themselves to metal surfaces, forming minute electrolytic cells and drawing metallic ions from the equipment surfaces into surrounding water. Inexpensive automatic chlorinators help control these organisms and thus prolong pump life. Acid ground waters which can cause rapid corr on a eter tior ent ate stem n ea be detected with a simple pH tester. These acid waters may be neutralized by combining soda ash solution with chlorine solution and feeding the mixture into the well via automatic chlorination equipment. (Eberle-NWWA)
Descriptors: *Corrosion control ; *Pitting(Corrosion) ; *Pumps ; *Chlorination; Jets ; Bacteria algae ; Acidity ; Neutralization ; Water wells ; Water quality control
Section Heading Codes: 8G .(Engineering Works--Materials); 8C .(Engineering Works--Hydraulic Machinery); 5G .(Water Quality Management and Protection--Water Quality Control)

082477 W75-04508
MORE WATER FOR ARID LANDS, PROMISING TECHNOLOGIES AND RESEARCH OPPORTUNITIES
AD HOC PANEL OF THE ADVISORY COMMITTEE ON TECHNOLOGY INNOVATION, BOARD ON SCIENCE AND TECHNOLOGY FOR INTERNATIONAL DEVELOPMENT, COMMISSION ON INTERNATIONAL RELATIONS.
NATIONAL ACADEMY OF SCIENCES, WASHINGTON, D.C. 1974. 153 P, 77 FIG, 16 CHAPTERS, ARABIC, FRENCH, AND SPANISH SUMMARIES.,
Journal Announcement: SWRA0809
ARID LANDS HAVE AN UNDEREXPLOITED AGRICULTURAL POTENTIAL. THIS REPORT PRESENTS A NUMBER OF PROMISING TECHNOLOGIES AND RESEARCH OPPORTUNITIES WHICH MAY PLAY A ROLE IN SUPPLYING NEEDED WATER. TWO APPROACHES ARE CONSIDERED: INCREASING THE SUPPLY OF USABLE WATER, AND REDUCING THE DEMAND FOR WATER. TECHNOLOGIES DISCUSSED INCLUDE: RAINWATER HARVESTING, RUNOFF AGRICULTURE, IRRIGATION WITH SALINE WATER, REUSE OF WATER, WELLS, OTHER SOURCES SUCH AS DESALTING, WEATHER MODIFICATION AND GROUNDWATER MINING, EVAPORATION REDUCTION, SEEPAGE LOSS, TRICKLE IRRIGATION, INNOVATIVE IRRIGATION METHODS, REDUCTION OF PERCOLATION LOSSES, TRANSPIRATION REDUCTION, USE OF MORE WATER-EFFICIENT PLANTS FOR AGRICULTURE, CONTROLLED-ENVIRONMENT AGRICULTURE, AND SOME PROMISING WATER CONSERVATION TECHNIQUES SUCH AS ARTIFICIAL RECHARGE OF GROUNDWATER. (MASTIC-ARIZONA)
Descriptors: *WATER HARVESTING ; *WATER CONSERVATION ; *ARID LANDS ; *IRRIGATION PROGRAMS ; *IRRIGATION EFFICIENCY; RAINFALL STIMULATION ; TRANSPIRATION CONTROL ; EVAPORATION CONTROL ; GROUNDWATER MINING ; ARTIFICIAL RECHARGE ; IRRIGATION ; IRRIGATION WATER ; WATER REUSE ; PERCOLATION ; TECHNOLOGY ; DESALINATION ; RUNOFF ; WELLS ; WATER WELLS ; DUG WELLS ; REMOTE SENSING ; SALINE WATER
Section Heading Codes: 3B .(Water Supply Augmentation and Conservation--Water Yield Improvement); 6D .(Water Resources Planning--Water Demand); 3C .(Water Supply Augmentation and Conservation--Use of Water of Impaired Quality); 4B .(Water Quantity Management and Control--Groundwater Management)

060966 W73-08991
PROJECT WAGON WHEEL TECHNICAL STUDIES REPORT NO. 2
EL PASO NATURAL GAS CO., TEX.
AVAILABLE FROM NTIS, SPRINGFIELD, VA., AS PNE-WW-13; $3.00 IN PAPER COPY, $1.45 MICROFICHE. REPORT PNE-WW-13, OCT. 1972. L. A. ROGERS, EDITOR. 215 P, 75 FIG, 72 TAB, 118 REF.,
(cont. next page)

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Journal Announcement: SWRA0614
ASPECTS OF THE PROPOSED PROJECT (STIMULATION OF NATURAL GAS BY FIVE 100-KILOTON NUCLEAR EXPLOSIONS) ARE EVALUATED IN SEPARATE REPORTS ON EFFECTS OF PREDICTED GROUND MOTION, ENVIRONMENTAL RADIATION, OFF-SITE WATER-WELL AND NATURAL-SPRING DOCUMENTATION, TEMPERATURE OF THE CHIMNEY, INITIAL COMPOSITION OF THE GAS, RELEASE OF RADIOACTIVITY, STRESSES IN THE GAS RESERVOIR, AND ECOLOGY OF THE ENVIRONS. ENVIRONMENTAL-RADIATION MONITORING PROGRAMS AND EQUIPMENT WERE TESTED AND BASE-LINE DATA WERE OBTAINED BY MEASUREMENTS OF SAMPLES OF AIRBORNE PARTICLES, SURFACE WATER, MUNICIPAL AND WELL WATER, PRECIPITATION, MILK, SOIL, URINE, VEGETATION, BOTTOM SEDIMENT, FISH, AND ANIMALS. SIXTY-TWO WATER WELLS AND NATURAL SPRINGS WERE IDENTIFIED WITHIN A 10-MILE RADIUS, 363 WITHIN A 20-MILE RADIUS AND MANY WERE SURVEYED FOR LATER COMPARISON WITH POST-EVENT DATA. NEGLIGIBLE ENVIRONMENTAL IMPACT DUE TO RADIOACTIVITY FROM BURNING OF THE GAS DURING WELL TESTING IS SHOWN. BASE-LINE DATA ON NATIVE VEGETATION WERE PROVIDED BY INSPECTION AT 43 LOCATIONS. SEVERAL VARIETIES OF SAGEBRUSH AND GRASS ARE THE PRINCIPAL VEGETATION IN THE IMMEDIATE AREA. ENVIRONMENTAL EFFECTS FROM FARMING, RANCHING, CONSTRUCTION, AND OTHER ACTIVITIES WERE EVIDENT. (BOPP-ORNL)
Descriptors: *RADIOACTIVITY EFFECTS ; *RADIOECOLOGY ; *NUCLEAR EXPLOSIONS ; *MONITORING; WATER WELLS ; WELL DATA ; TEXAS ; BASELINE STUDIES ; FEASIBILITY STUDIES ; PUBLIC HEALT NATURAL GAS ; SEISMIC PROPERTIES ; SEISMIC WAVES ; WATER POLLUTION EFFECTS ; AIR POLLUTION ; DESERT PLANTS ; SAGEBRUSH ; SEMIARID CLIMATES ; ON-SITE INVESTIGATIONS ; PATH OF POLLUTANTS ; NUCLEAR WASTES ; BIOTA ; RADIOISOTOPES ; ABSORPTION ; HAZARDS
Section Heading Codes: 5B .(Water Quality Management and Protection--Sources of Pollution); 4C .(Water Quantity Management and Control--Effects on Water of Man's Nonwater Activities)

059178 W73-10787
ACIDIZING BOREHOLES
STOW, A. H.; RENNER, L.
JOURNAL OF THE INSTITUTION OF WATER ENGINEERS, VOL 19, NO 8, P 557-572, NOVEMBER, 1965. 1 FIG, 5 APPEND.,
Journal Announcement: SWRA0617
ACID MAY BE USED IN WATER WELL WORK TO (1) REMOVE DEBRIS (FROM DRILLING) FROM TEST-PUMP DISCHARGE; (2) REMOVE SLURRY FROM THE WALLS OF A WELL OR BOREHOLE, AND TO CLEAR FISSURES AT THEIR ENTRY INTO THE WELL OR BOREHOLE; (3) DEVELOP AND INCREASE THE YIELD; (4) REDUCE FRICTION LOSS TO GIVE MORE ECONOMIC PUMPING. THE REACTION OF ACIDS WITH CARBONATES MAY BE USED TO DEVELOP AND TO INCREASE THE YIELD OF BOTH CARBONATES AND SOME (CARBONATE-CEMENTED) SANDSTONES. IN CONSIDERING THE ACIDIZING OF A BOREHOLE, THE FOLLOWING INFORMATION IS REQUIRED: DIMENSIONS OF THE BOREHOLE, DEPTH TO STATIC WATER LEVEL, DEPTH OF GROUTED LINING, DETAILS OF OVERBURDEN, GEOLOGICAL DESCRIPTION OF EXPOSED STRATA, YIELD AND DIRECTION AND VELOCITY OF GROUNDWATER FLOW, POSITIONS OF BOREHOLES WITHIN A 1/2 MILE RADIUS, AND FACILITIES FOR DISPOSAL OF DISCUSSED; VARIOUS ACIDS AND THEIR PROPERTIES ARE GIVEN IN APPENDICES. (CAMPBELL-NWWA)
Descriptors: *ACIDS ; *CARBONATE ROCKS ; *BOREHOLES; WELLS WATER WELLS ; CARBONATES ; SANDSTONES ; PHOSPHORUS COMPOUNDS INHIBITORS ; GROUTING ; CEMENT GROUTING ; LIMESTONE ; DRILLING
Section Heading Codes: 8A .(Engineering Works--Structures)

031086 W71-10418
BLAST-FRACTURING
DYSART, G. R.; SPENCER, A. M.; ANDERSON, A. L.
WESTERN CO., RICHARDSON, TEX.
PUBLISHED BY AMERICAN PETROLEUM INSTITUTE, 300 CORRIGAN TOWER BLDG., DALLAS, TEXAS 75201. DRILLING AND PRODUCTION PRACTICE (1969): COMPLETION OR RE-COMPLETION TREATMENT; P 68-76. 2 TAB, 8 FIG, 19 REF.,
Journal Announcement: SWRA0419
IN DECEMBER 1967, EL PASO NATURAL GAS COMPANY, IN CONJUNCTION WITH THE U.S. GOVERNMENT, DETONATED A THERMONUCLEAR DEVICE UNDERGROUND (PROJECT GASBUGGY) TO CREATE EXTENSIVE FRACTURING IN THE PICTURED CLIFFS FORMATION. THIS FORM OF EXPLOSIVE FRACTURING IS A CONTINUATION OF ONE OF THE FIRST WELL-STIMULATION TECHNIQUES - NITRO SHOOTING. NITRO SHOOTING WAS A DANGEROUS PROCESS IN ALL ASPECTS - STORAGE, HANDLING, AND APPLICATION. IN RECENT YEARS NEW HIGH-ENERGY EXPLOSIVES HAVE BEEN DEVELOPED WHICH ARE SAFE TO HANDLE, TEMPERATURE-INSENSITIVE, AND CAN BE PRODUCED IN VARIOUS PLASTICITES SO THEY CAN BE MADE TO CONFORM TO WELL-BORN OR FRACTURE SURFACES. THESE EXPLOSIVES ARE VERY APPLICABLE TO EXPLOSIVE FRACTURING OF OIL GAS WELLS AND WATER WELLS. RENEWED INTEREST IN EXPLOSIVE FRACTURING HAS COME ABOUT BECAUSE HYDRAULIC FRACTURING IS NOT ALWAYS SUCCESSFUL IN FIELDS WITH UNCONNECTED PERMEABILITY STREAKS. EXPLOSIVE FRACTURING CAN CONNECT THESE STREAKS WITH FLOW CHANNELS; AND THEN, IF DESIRED, THESE STREAKS MAY BE HYDRAULICALLY FRACTURED THROUGH THESE FLOW CHANNELS. EXPERIENCE MAY SHOW CONVENTIONAL HIGH-EXPLOSIVE FRACTURING TO BE MORE CONVENIENT AND LESS COSTLY THAN HYDRAULIC FRACTURING FOR CERTAIN APPLICATIONS AND, IN SOME CASES, THE ONLY WAY A RESERVOIR CAN BE STIMULATED. (CAMPBELL-NWWA)
Descriptors: *AQUIFER CHARACTERISTICS; GROUNDWATER ; OIL INDUSTRY ; ROCK MECHANICS ; ROCK PROPERTIES
Section Heading Codes: 8A .(Engineering Works--Structures); 3B .(Water Supply Augmentation and Conservation--Water Yield Improvement); 8E .(Engineering Works--Rock Mechanics and Geology)

030781 W71-09917
APPLICATIONS OF ACETIC ACID TO WELL COMPLETION, STIMULATION AND RECONDITIONING
HARRIS, F. N.
HALLIBURTON CO., DUNCAN, OKLA.
JOURNAL PETROLEUM TECHNOLOGY, VOL. 13, NO. 7, P. 637-639, JULY 1961, 1 TAB., 2 FIG.,
(cont. next page)

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Journal Announcement: SWRA0418
ACETIC ACID HAS BEEN USED SUCCESSFULLY MANY TIMES IN THE PAST FEW MONTHS, IN VARIOUS TREATING MIXTURES AND IN A NUMBER OF DIFFERENT APPLICATIONS. IT HAS BEEN USED AS (1) A PERFORATING FLUID, (2) A RETARDED ACID WITHOUT VISCOSITY, (3) A TREATMENT FOR REMOVAL OF CARBONATE SCALE IN THE PRESCENCE OF ALUMINUM METAL AT ELEVATED TEMPERATURES, (5) A 'KILL' FLUID FOR WELLS, (6) A WEAK AQUEOUS SOLUTION FOR CARRYING SURFACTANTS TO REMOVE EMULSIONS AND WATER BLOCKS IN THE PRESCENCE OF WATER-SENSITIVE CLAYS, (7) A FIRST-STAGE TREATING FLUID AHEAD OF HYDROCHLORIC ACID FOR A GREATER DRAINAGE PATTERN AND (8) A TRANSITORY TRUE GEL OR EMULSION FOR PLACEMENT OF TEMPORARY BRIDGING AGENTS. (CAMPBELL-NWWA)
Descriptors: *ACIDIZING ; *WATER WELLS; OIL INDUSTRY ; GROUND WATER
Section Heading Codes: 8A .(Engineering Works--Structures); 4B .(Water Quantity Management and Control--Groundwater Management)

030773 W71-09909
SUCCESSFUL ACIDIZING
BIELEK, I. R.
DOWELL, INC., ST. LOUIS, MO.
WATER WELL JOURNAL, VOL. 10, NO. 8, P. 9, 24-26, 29, 7 TAB., 4 REF., AUGUST 1956.,
Journal Announcement: SWRA0418
AS A RESULT OF THE SURVEY THE EFFECTIVENESS OF THE NEW ACIDIZING TECHNIQUES, INCORPORATING BACKWASHING AND SURGING, HAS BEEN ESTABLISHED. THESE TECHNIQUES HAVE PROVED EFFECTIVE FOR USE IN PREVENTING RAPID FALL OF WATER LEVELS AND STEEP DECLINE CURVES RESULTING FROM BLOCKING OF SCREENS AND FLOW CHANNELS BY FORMATION PARTICLES. FOR MAXIMUM SUCCESS IN AN ACIDIZING TREATMENT, ALL PERTINENT DATA SHOULD BE STUDIED AND EVALUATED. THE WELL HISTORY, WATER ANALYSIS, SUBSURFACE LOGS, AND PAST EXPERIENCE ARE VALUABLE GUIDES IN ADAPTING PROVEN TECHNIQUES TO THE INDIVIDUAL WELL. EVEN IF THE TREATMENT FAILS TO PRODUCE THE DESIRED PRODUCTION BOOST SUFFICIENT INFORMATION MAY BE OBTAINED TO FORMULATE A SUCCESSFUL WORKOVER PROGRAM OR PROVE THE WELL ECONOMICALLY DEAD. (CAMPBELL-NWWA)
Descriptors: *ACIDIZING ; *WATER WELLS ; *STIMULATION (WELLS); AQUIFER CHARACTERISTICS ; SCREENS ; SPECIFIC CAPACITY
Section Heading Codes: 8A .(Engineering Works--Structures)

030492 W71-09593
HYDRAULIC TESTING AND SAMPLING OF WATER WELL NUMBER 1, PROJECT WAGON WHEEL, SUBLETTE COUNTY, WYOMING
VOEGELI, PAUL T. SR
GEOLOGICAL SURVEY, DENVER, COLO.
GEOLOGICAL SURVEY OPEN-FILE REPORT, USGS-474-87 (AEC), MARCH 1971. 26 P, 7 FIG, 3 TAB, 2 REF. USAEC AGREEMENT NO AT(29-2)-474.,
Journal Announcement: SWRA0418
THE WAGON WHEEL WATER WELL NO. 1 WAS DRILLED TO OBTAIN HYDRAULIC DATA AND TO PROVIDE A WATER SUPPLY FOR THE DEEP DR NG RAM HE ! OF ECT N WH WH S AIMED AT DETERMINING THE FEASIBILITY OF NUCLEAR STIMULATION OF NATURAL GAS RESERVOIRS. THE WELL WAS TESTED AND WATER SAMPLES WERE COLLECTED BY SWABBING ON AUGUST 1, 1969, AND BY PUMPING ON AUGUST 26, 1969. IN BOTH TESTS THE 760-METER SECTION THROUGH WHICH THE WELL WAS DRILLED WAS TESTED THROUGH 19 GUN-PERFORATED INTERVALS. THE WATER LEVEL IN THE WELL PRIOR TO THE PUMPING TEST WAS 29.9 METERS BELOW LAND SURFACE. DURING THE PUMPING TEST THE WATER LEVEL DECLINED TO 47.7 METERS BELOW LAND-SURFACE DATUM WHILE THE WELL WAS PUMPED AT AN AVERAGE RATE OF 281 CUBIC METERS PER DAY FOR 6 HOURS AND 6 MINUTES. THE TRANSMISSIVITY OF THE AQUIFER IN THE VICINITY OF THE WELL WAS 26 CUBIC METERS PER DAY PER METER AND THE SPECIFIC CAPACITY WAS 16 CUBIC METERS PER DAY PER METER OF DRAWDOWN. (KNAPP-USGS)
Descriptors: *HYDROGEOLOGY ; *AQUIFER CHARACTERISTICS; WATER WELLS ; TRANSMISSIVITY ; SPECIFIC CAPACITY ; ON-SITE TESTS ; WATER YIELD ; WATER LEVELS ; DRAWDOWN ; WATER SUPPLY ; DATA COLLECTIONS ; SAMPLING ; HYDROLOGIC DATA
Section Heading Codes: 4B .(Water Quantity Management and Control--Groundwater Management); 2F .(Water Cycle--Groundwater)

028269 W71-06952
MODERN WATER WELL DRILLING TECHNIQUES IN USE IN THE UNITED KINGDOM
STOW, G. R. S.
STOW AND CO., LTD., HENLEY (ENGLAND).
GROUNDWATER, VOL 1, NO 3, P 3-12, JULY 1963.,
Journal Announcement: SWRA0413
THE PAPER DESCRIBES THE MAIN WATER-WELL DRILLING SYSTEMS USED IN THE UNITED KINGDOM, WITH SOME DETAILS OF THE TOOLS USED AND THE PRINCIPLES OF OPERATION. LIMITATIONS AS REGARDS DIAMETER AND DEPTH FOR VARIOUS SYSTEMS AND THEIR SUITABILITY FOR DRILLING DIFFERENT STRATA ARE DISCUSSED. THE MATERIALS CUSTOMARILY EMPLOYED FOR LINING WELLS AND FOR MAKING SAND SCREENS ARE MENTIONED. THE USUAL METHOD OF MEASURING THE DEFLEXION FROM THE VERTICAL IS OUTLINED. METHODS OF DEVELOPING OR IMPROVING THE YIELDS OF WELLS, AND INSPECTIONS BY TELEVISION CAMERAS ARE DESCRIBED. THERE IS NO UNIVERSAL ECONOMIC DRILLING SYSTEM. PARTICULARLY ON REPETITION WORK IT IS IMPORTANT TO USE THE SYSTEM APPROPRIATE TO THE SITE CONDITIONS. THE MOST INTERESTING DEVELOPMENTS OF LATE HAVE BEEN (1) REVERSED-CIRCULATION ROTARY DRILLING FOR SOFT UNSTABLE SEDIMENTS AND FOR HARD ROCKS AND (2) THE USE OF AIR CIRCULATION INSTEAD OF MUD FOR DRILLING HARD STABLE FORMATIONS AT RELATIVELY SMALL DIAMETERS. DEVELOPMENT OF WELLS BY ACIDIZING AND OTHER MEANS TO IMPROVE THE YIELD IS WORTH MORE CONSIDERATION. MANY OF THE WATER-WELL DRILLING TECHNIQUES ARE APPLICABLE TO AND HAVE BEEN USED FOR BORED PILES AND CAISSONS. (CAMPBELL-NWWA)
Descriptors: *WATER WELLS ; *DRILLING ; *ENGLAND; ROTARY DRILLING ; WELL DEVELOPMENT ; SCREENS ; ACIDS
Section Heading Codes: 8A .(Engineering Works--Structures)

DIALOG File 117: WATER RESOURCES ABSTRACTS - 68-88/DEC

027568 W71-13719
ECONOMIC ASPECTS OF WATER WELL STIMULATION
KOENIG, LOUIS
KOENIG (LOUIS) RESEARCH, INC., SAN ANTONIO, TEX.
JOURNAL OF AMERICAN WATER WORKS ASSOCIATION VOL. 52, NO. 5, P. 631-637, MAY 1960. 3 FIG., 1 REF.,
Journal Announcement: SWRA0424
FROM THE ANALYSIS OF TECHNICAL AND ECONOMIC DATA OF THE SURVEY REPORTED IN THIS ARTICLE, IT IS CONCLUDED THAT WATER WELL STIMULATION HAS SHOWN HIGHLY FAVORABLE RESULTS, NOT ONLY IN ITS TECHNICAL PERFORMANCE, BUT ALSO BY THE ECONOMIC CRITERION CHOSEN. IN THE MAJORITY OF INSTANCES, STIMULATION HAS ADDED SPECIFIC CAPACITY AT A UNIT COST LESS THAN THE UNIT COST OF THE SPECIFIC CAPACITY PRODUCED BY THE ORIGINAL WELL. THE MEDIAN COST OF IMPROVEMENT OF EVEN THE LEAST FAVORABLE METHOD BY THIS ECONOMIC CRITERION OCCURS AT A UNIT COST LESS THAN HALF THE UNIT COST OF THE ORIGINAL SPECIFIC CAPACITY. THIS IS NOT ONLY IMPORTANT IN REGIONS OF EXISTING GROUND WATER EXPLOITATION; IT IS EQUALLY APPLICABLE AND POSSIBLY MUCH MORE IMPORTANT TO THE LARGE AREAS IN WHICH THERE ARE ADEQUATE QUANTITIES OF GROUND WATER CONTAINED IN AQUIFERS OF SUCH LOW PERMEABILITY THAT GROUND WATER PRODUCTION FROM WELLS HAS NOT BEEN ECONOMICAL. WIDER KNOWLEDGE AND APPLICATION OF WATER WELL STIMULATION CAN POTENTIALLY BRING ABOUT A GREATER UTILIZATION OF THIS SEGMENT OF GROUND WATER RESOURCES. BASED ON THESE ANALYSES AND RESULTS, THE AUTHOR RECOMMENDS THAT GROUND WATER WELL STIMULATION BE MUCH MORE WIDELY CONSIDERED AS A TECHNIQUE FOR DEVELOPING GROUND WATER SUPPLIES. SUCH RECOMMENDATIONS SHOULD NOT, HOWEVER, BE MADE WITHOUT A SIMULTANEOUS MENTION OF A NUMBER OF QUITE LEGITIMATE LIMITATIONS TO THE BENEFITS OF WATER WELL STIMULATION. (CAMPBELL-NWWA)
Descriptors: *WATER WELLS ; *AQUIFER CHARACTERISTICS; GROUNDWATER ; SPECIFIC CAPACITY ; WELLS ; OIL INDUSTRY
Section Heading Codes: 4B .(Water Quantity Management and Control--Groundwater Management); 6B .(Water Resources Planning--Evaluation Process)

027560 W71-13710
EFFECTS OF STIMULATION ON WELL OPERATING COSTS AND ITS PERFORMANCE ON OLD AND NEW WELLS
KOENIG, LOUIS
KOENIG (LOUIS) RESEARCH, INC., SAN ANTONIO, TEX.
JOURNAL OF AMERICAN WATER WORKS ASSOCIATION, VOL. 52, NO. 12, P. 1499-1512, DECEMBER, 1960. 3 FIG., 10 TAB., 4 REF.,
Journal Announcement: SWRA0424
THE GENERAL CONCLUSION DRAWN IS THAT WATER WELL STIMULATION IS A SUCCESSFUL MEANS OF REDUCING LIFTING COST AND THAT MONEY SPENT ON WELL TREATMENT SHOWS A COMPARATIVELY HIGH RATE OF RETURN IN REDUCED OPERATING COSTS. IN THIS ARTICLE, IT HAS BEEN DEMONSTRATED THAT WATER WELL STIMULATION IS A TECHNICALLY AND ECONOMICALLY FEASIBLE PRACTICE APPLICABLE TO A WIDE VARIETY OF WELLS AND AQUIFERS. BY MEANS OF STIMULATION, ADDITIONAL PRODUCTION CAN BE OBTAINED FROM EXISTING FACILITIES, THE INVESTMENT COST PER UNIT PRODUCTION CAN BE REDUCED, AND THE ENERGY COST FOR LIFTING CAN LIKEWISE BE REDUCED. THESE CONCLUSIONS APPLY, REGARDLESS OF WHETHER THE WELL IS NEW OR OLD OR HAS BEEN STIMULATED BEFORE. ON THE BASIS OF THESE RESULTS IT IS RECOMMENDED THAT SERIOUS CONSIDERATION BE GIVEN TO THE POSSIBILITIES OF WELL STIMULATION IN EACH CASE BEFORE A NEW WELL IS CONSTRUCTED, BEFORE A PROPOSED WELL FIELD IS ABANDONED AS UNECONOMICAL, BEFORE A NEWLY CONSTRUCTED WELL IS ABANDONED AS BEING TOO LOW IN PRODUCTION, AND BEFORE AN UNSATISFACTORY OLD WELL IS ABANDONED OR SUBJECTED TO DRASTIC RECONSTRUCTION. WATER WELL STIMULATION SHOULD ALSO BE CAREFULLY EVALUATED FOR EXISTING WELL FIELDS WHERE THERE MAY BE A POSSIBILITY OF ADVANTAGEOUSLY PRODUCING THE DESIRED TOTAL PRODUCTION MORE EFFICIENTLY FROM A SMALLER NUMBER OF WELLS, THUS ACHIEVING LOWER CAPITAL INVESTMENT AND MAINTENANCE COSTS. (CAMPBELL-NWWA)
Descriptors: *WATER WELLS ; *AQUIFER CHARACTERISTICS; GROUNDWATER ; WELLS ; SPECIFIC CAPACITY ; INJECTION WELLS
Section Heading Codes: 4B .(Water Quantity Management and Control--Groundwater Management); 3B .(Water Supply Augmentation and Conservation--Water Yield Improvement)

023964 W71-03849
SURVEY AND ANALYSIS OF WELL STIMULATION PERFORMANCE
KOENIG, LOUIS
LOUIS KOENIG-RESEARCH, SAN ANTONIO, TEX.
AMERICAN WATER WORKS ASSOCIATION JOURNAL, VOL 52, NO 3, P 333-350, MARCH 1960.,
Journal Announcement: SWRA0407
THE RESULTS OF A STUDY OF 870 WATER WELL STIMULATION CASES IN 141 COUNTIES OF 24 STATES ARE DISCUSSED. FOR ALL TYPES OF TREATMENT IN ALL TYPES OF FORMATIONS MEDIAN RATIO INDICATES 97% IMPROVEMENT OVER SPECIFIC CAPACITY IMMEDIATELY BEFORE TREATMENT AND 20% IMPROVEMENT OVER ORIGINAL PRODUCTIONS OF WATER WELL. TREATMENT FAILURES AMOUNTED TO 11% WITH SUCCESS BEING GREATER IN CONSOLIDATED FORMATIONS THAN IN UNCONSOLIDATED FORMATION. THE STUDY IS BASED ON THE ASSUMPTION THAT A CLOSE SIMILARITY EXISTS BETWEEN THE TECHNOLOGY OF CRUDE-OIL PRODUCTION AND THE TECHNOLOGY OF GROUNDWATER PRODUCTION. (CAMPBELL-NWWA)
Descriptors: *WATER WELLS ; *WATER YIELD IMPROVEMENT; OIL INDUSTRY ; RECHARGE
Section Heading Codes: 4B .(Water Quantity Management and Control--Groundwater Management)

023963 W71-03848
CEMENTING WATER WELLS
BROWN, B. D.
HALLIBURTON OIL WELL CEMENT CO., HOUSTON, TEX.
PUBLIC WORKS, VOL 90, NO 9, P 99-100, SEPTEMBER 1959. 2 FIG.
,
Journal Announcement: SWRA0407
THIS ARTICLE DISCUSSES THE TECHNIQUES AND MATERIALS WHICH WILL AID IN OBTAINING MAXIMUM CONTROL OF ISOLATING THE PRODUCING ZONES. ISOLATION IS VERY DESIRABLE TO PROTECT WATER-BEARING FORMATIONS FROM CONTAMINATION OF LESS DESIRABLE

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DIALOG File 117: WATER RESOURCES ABSTRACTS - 68-88/DEC

STRATA OR FROM THE SURFACE. THE USE OF CEMENTITIOUS MATERIALS WILL PROVIDE THE MOST EFFECTIVE MEANS OF OBTAINING THIS ISOLATION, WILL PERMIT TECHNIQUES OF STIMULATIONS REQUIRING HYDRAULIC PRESSURE AND FLUIDS, AND WILL HELP TO PROTECT CASING AGAINST CORROSIVE WATERS. THE TYPES OF MATERIALS USED TO CEMENT CASINGS ARE MANY, ALL OF WHICH PERMIT DRY BLENDING OF SEVERAL ADDITIVES TO MEET SPECIFIC WELL CONDITIONS. A NEW TOOL DEVELOPED FOR THE PETROLEUM INDUSTRY INCORPORATES FEASTURES WHICH ARE COMPATIBLE FOR WATER WELL COMPLETIONS. IN OPERATION OF THIS TOOL, A SPECIAL PLUG IS DROPPED FROM THE SURFACE AND, THROUGH APPLICATION OF PUMP PRESSURE, SETS THE SEALING ELEMENT AND OPENS CIRCULATING PORTS. CEMENT MATERIAL IS MIXED AND PUMPED INTO THE CASING, THROUGH THE CIRCULATING PORTS AND ABOVE THE SEALING ELEMENT. THE TOP CEMENTING PLUG SEATS ON A SPECIAL SLEEVE AND THROUGH THE APPLICATION OF PRESSURE CLOSES THE CIRCULATING PORTS. CONTINUED APPLICATION OF PRESSURE SHEARS THE PINS PERMITTING PLUGS AND SLEEVE TO BE PUMPED OUT OF TOOL WHICH THEREBY ELIMINATES A DRILLING-OUT OPERATION. (CAMPBELL-NWWA)

Descriptors: *CEMENTS ; *WATER WELLS; CASINGS ; CONSTRUCTION EQUIPMENT ; TEXAS ; OIL INDUSTRY

Section Heading Codes: 8A .(Engineering Works--Structures); 4B .(Water Quantity Management and Control--Groundwater Management); 8F .(Engineering Works--Concrete)

023271 W71-02989

WHEN NOT TO ACIDIZE

WALKER, W. H.

ILLINOIS STATE WATER SURVEY, URBANA.

GROUNDWATER, VOL 5, NO 2, P 36-40, APRIL 1967. 2 TAB, 4 FIG, 4 REF.,

Journal Announcement: SWRA0406

CONTROLLED STEP AND CONSTANT-RATE PUMPING TESTS USED BY THE ILLINOIS STATE WATER SURVEY TO DETERMINE WELL EFFICIENCIES AND HYDRAULIC CHARACTERISTICS OF AQUIFERS SHOWED THAT ACIDIZING WATER WELLS TO INCREASE YIELD PROVED TO BE UNECONOMICAL METHOD OF WELL DEVELOPMENT OR REHABILITATION IN SOME CASES WHERE AQUIFER PERMEABILITY WAS LOW AND NORMAL OPERATING HEAD GREAT, IN WELLS AFFECTED BY METHANE GAS OR WHERE PRACTICAL SUSTAINED YIELD OF AQUIFER HAD BEEN EXCEEDED. CONTROLLED PUMPING TESTS BEFORE, DURING AND AFTER DEVELOPMENT ARE NECESSARY TO ACCURATELY EVALUATE EFFECTIVENESS OF REHABILITATION METHODS EMPLOYED. GEOLOGIC DEFINITION OF AQUIFERS AND RECORDS OF PUMPAGE AND WATER LEVEL INFORMATION ARE INVALUABLE AIDS. (CAMPBELL-NWWA)

Descriptors: *ACIDS ; *WATER WELLS; ILLINOIS ; AQUIFER CHARACTERISTICS ; TESTING ; HYDRAULICS

Section Heading Codes: 3B .(Water Supply Augmentation and Conservation--Water Yield Improvement)

DIALOG File 117: WATER RESOURCES ABSTRACTS - 68-88/DEC

136126 W79-06019
Here's How Liners Saved Two Problem Wells
Muller, P. H.
Universal Oil Products, Inc., St. Paul, MN. Johnson Div.
Pacific Groundwater Digest, Vol. 1, No. 2, p 47-49, February, 1979.,
Journal Announcement: SWRA1213
Guidelines are provided for sizing liner OD, liner-casing annulus, gravel pack, and pump. Advantages of using continuous slot screens in liners are that extra drawdown is reduced and acidizing will more effectively remove incrustations in areas of hard water. Two case studies of successful use of liners in saving corroded wells and eliminating sand pumping are discussed. Not every well can be saved by a liner, however. In some cases, a badly sanding well will choke off the water so the sand clogs the original perforations. (Purdin-NWWA)
Descriptors: *Water wells ; *Liners; Well casings ; Well screens ; Corrosion ; Sands ; Clogging ; Incrustation
Section Heading Codes: 8C .(Engineering Works--Hydraulic Machinery); 8A .(Engineering Works--Structures)

124072 W78-06963
Sick Wells Require Well Developed Cure
Irrigation Age, Vol. 12, No. 6, p 60-64, March, 1978. 3 tab.
Journal Announcement: SWRA1115
Irrigators can save time and money by keeping accurate records of their wells and by taking remedial measures as soon as they notice decreases in specific capacity. Iron bacteria and mineral incrustation are the two main problems causing decreases in irrigation well yield. The former can be minimized by chlorinating a well in the spring and fall. High-test dry calcium hypochlorite (H-T-H) or common household bleach can be used in quantities which can be calculated from tables in this article. Chlorine is introduced into the well, let stand, surged, then pumped out. After 24 hours, the well is surged and pumped once again. Incrustation is commonly treated wit sulfamic acid. The acidizing procedure is somewhat similar to chlorination, and it is suggested that chlorination both precede and follow an acid treatment. Enlisting the services of a well driller is recommended for treating wells with a decline in specific capacity greater than 20%. (Eberle-NWWA)
Descriptors: *Irrigation ; *Iron bacteria ; *Incrustation ; *Specific capacity; Maintenance ; Rehabilitation ; Chlorination ; Acids ; Water yield ; Water wells
Section Heading Codes: 5G .(Water Quality Management and Protection--Water Quality Control); 4B .(Water Quantity Management and Control--Groundwater Management); 3F .(Water Supply Augmentation and Conservation--Conservation in Agriculture)

102278 W76-11910
MOST JAMAICAN WATER COMES FROM LIMESTONE AQUIFERS
SHRIVASTAVA, G.
NATIONAL WATER AUTHORITY OF JAMAICA (KINGSTON).
THE JOHNSON DRILLERS JOURNAL, VOL. 48, NO. 3, P 12-13, MAY-JUNE, 1976. 1 FIG.,
Journal Announcement: SWRA0922
LIMESTONE AQUIFERS ARE THE MAJOR SOURCE OF WATER IN JAMAICA AND THEIR IMPORTANCE IS INCREASING CONTINUOUSLY WITH THE DEMAND FOR WATER FOR DOMESTIC, AGRICULTURAL AND INDUSTRIAL PURPOSES. THE LAND SURFACE OF THE ISLAND IS NEARLY ENTIRELY UNDERLAIN BY LIMESTONE AND IS PERMIATED BY KARST TOPOGRAPHY. GROUND WATER LEVELS ARE EPHEMERAL IN THE LIMESTONE AQUIFERS. AN INSTANCE OF AN ANNUAL VARIATION OF 240 FEET HAS BEEN OBSERVED. A WELL YIELD OF 2000 GALLONS PER MINUTE WITH MINIMUM DRAWDOWN IS NOT UNUSUAL. THE FLOW IN THE HARD LIMESTONE AQUIFERS IS DUE TO A COMBINATION OF PIPE FLOW, OPEN CHANNEL FLOW AND FLOW THROUGH A POROUS MEDIUM. CONSEQUENTLY, EQUATIONS OF GROUNDWATER HYDRAULICS HAVE LIMITED APPLICATION. AQUIFER MODELS HAVE PROVIDED MORE REASONABLE AQUIFER PERAMETERS FOR LOCAL GROUND-WATER BASINS. WELL SITING HAS BEEN A PROBLEM IN THE HARD LIMESTONE AQUIFERS. WELL ACIDIZING IS USED TO IMPROVE YIELD IN WELLS WHERE BLOCKING OF FISSURES BY FINE PARTICLES IS A PROBLEM. FREEZING OF GROUNDWATER AROUND A WELL SHOWS PROMISE OF INCREASING WELL YIELDS. DUE TO THE GREAT DEPTH OF GROUNDWATER OCCURRENCE AND HIGH DRILLING COST OF DRILLING, THE SEARCH FOR METHODS TO IMPROVE WELL YIELDS CONTINUE. (HEISS-NWWA)
Descriptors: *AQUIFERS ; *LIMESTONE ; *KARST TOPOGRAPHY ; *WATER WELLS; PERMEABILITY ; TRANSMISSIVITY ; MODEL STUDIES ; GROUNDWATER
Section Heading Codes: 4B .(Water Quantity Management and Control--Groundwater Management); 8G .(Engineering Works--Materials)

052033 W73-02420
SECONDARY DEPOSTION OF IRON COMPOUNDS FOLLOWING ACIDIZING TREATMENTS
SMITH, C. F.; CROWE, C. W.; NOLAN, T. J. III
DOW CHEMICAL CO., LOS ANGELES, CALIF. DOWELL DIV.
JOURNAL OF PETROLEUM TECHNOLOGY, VOL 21, NO 9, P 1121-1129, SEPTEMBER, 1969.,
Journal Announcement: SWRA0604
A REVIEW OF THE CHEMISTRY OF IRON IN WELLS BEFORE, DURING AND AFTER ACIDIZING TREATMENTS IS PRESENTED. THE RELATIVE MERITS OF SEQUESTERING AGENTS USED TO PREVENT SECONDARY DEPOSTION FOLLOWING ACID TREATMENTS ARE DISCUSSED. IRON SEQUESTERING AGENTS WERE FOUND GENERALLY NECESSARY IN TREATING FORMATIONS WITH HIGH (0.5 TO 3.5 PERCENT) IRON MINERAL CONTENT. GUIDES FOR THE SELECTION OF SEQUESTERING AGENTS BASED UPON TEMPERATURE, RATIO OF IRON (II) TO IRON (III), BHT, ACID REACTION TIME, IRON SCALE COMPOSTION, AND FORMATION IRON CONTENT ARE GIVEN. (CAMPBELL-NWWA)
Descriptors: *IRON COMPOUNDS ; *SCALING ; *WATER WELLS;

(cont. next page)

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DISSOLVED SOLIDS ; SOLUBILITY ; IONS ; ELECTROCHEMISTRY ; HYDROGEN ION CONCENTRATION ; CHEMICAL PRECIPITATION
Section Heading Codes: 8G .(Engineering Works--Materials)

023282 W71-03000
MATRIX ACIDIZING CORRECTS FORMATION DAMAGE IN SANDSTONES
ROSS, W. M.; PIERSON, N. O.; COULTER, A. W.
DOW CHEMICAL CO., NEW ORLEANS, LA.
PETROLEUM ENGINEER, VOL 35, NO 12, P 64-69, NOVEMBER 1963. 1 TAB, 4 FIG, 3 REF.,
Journal Announcement: SWRA0406
MATRIX ACIDIZING IS A RELATIVELY NEW, BUT FIELD-PROVEN, TECHNIQUE TO CORRECT PRODUCING FORMATION DAMAGE INCURRED WHILE DRILLING OR CEMENTING SANDSTONES. IT IS A RESULT OF TWO SIGNIFICANT MODIFICATIONS IN CONVENTIONAL MUD ACID TREATMENTS TO OVERCOME 'SKIN EFFECTS' AROUND WELL BORE. A GRANULAR SYNTHETIC POLYMER IS DISCUSSED WHICH SWELLS UPON CONTACT WITH ACID AND SERVES AS AN EFFECTIVE FLUID LOSS CONTROL ADDITIVE. ANOTHER PRINCIPAL CHANGE IN MUD ACIDIZING IS IN THE APPLICATION OF CONTROLLED INJECTION PRESSURES. USING THIS APPROACH HAS A REPORTED SUCCESS RATIO OF 78% IN OVER 100 WELLS TREATED. (CAMPBELL-NWWA)
Descriptors: *ACIDS ; *OIL WELLS ; *WATER WELLS; LOUISIANA TESTING ; AQUIFER CHARACTERISTICS ; HYDRAULICS ; DRILLING ; OIL INDUSTRY ; DRILLING FLUIDS
Section Heading Codes: 3B .(Water Supply Augmentation and Conservation--Water Yield Improvement)

File(s) searched:

File 89:GEOREF - 1785-1988/OCT
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Sets selected:

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2	6	WATER(W)WELL?(F)ACIDI?
3	8	S2+S1

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SAMPLE RECORD

The positions of the key fields are shown in the following sample record.

AN 1012344 80-48454

TI **Manganese and copper geochemistry of interstitial fluids from manganese nodule-rich pelagic sediments of the northeastern equatorial Pacific Ocean**
AU Callender, E.; Bowser, C. J.
CS U. S. Geol. Surv., Reston, Va., USA; Univ. Wis., USA
JN PY Am. J. Sci. 280: 10, 1063-1096p., 1980
CO SN CODEN: AJSCAP ISSN: 0002-9599
SF Subfile: B
CP Country of Publ.: United States
DT BL Doc Type: SERIAL Bibliographic Level: ANALYTIC
LA Languages: English
LT LN Latitude: N000000; N200000 Longitude: W1800000; E1400000
DE Descriptors: *Pacific Ocean; *nodules; *manganese; *diagenesis; *metals; *sediments; *copper ; oceanography; geochemistry; pore water ; genesis; secondary structures; sedimentary structures; Equatorial Pacific; Northeast Pacific; remobilization ; solubility; desorption; precipitation
SH Section Headings: 07 .(MARINE GEOLOGY AND OCEANOGRAPHY)

Key to Data Fields

AB	Abstract	JN	Journal Name
AN	GEOREF Accession Number	LA	Language
AU	Author	LN	Longitude
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1555357 88-40092
Should ground water samples from monitoring wells be filtered before laboratory analysis? Yes and no
Trela, John J.
N.J. Dep. Environ. Protec., Trenton, NJ, USA
Proceedings of the Sixth national symposium and exposition on aquifer restoration and ground water monitoring
Cook, Peter L.(prefacer)
U. S. Environ. Prot. Agency, Off. Waste Progr. Enforce, Columbus, OH, USA; National Water Well Association, Dublin, OH, USA
Aquifer restoration and ground water monitoring, Columbus, OH, United States, May 19-22, 1986
Proceedings of the National Symposium on Aquifer Restoration and Ground-Water Monitoring 6, 1986 295-300p.
Country of Publ.: United States
ISSN: 0749-9515
5 REFS.
Subfile: B
Doc Type: SERIAL; CONFERENCE PUBLICATION
Bibliographic Level: ANALYTIC
Languages: English
Descriptors: *ground water; *pollution ; water wells; analysis; sample preparation; monitoring; filtration; acidification; chemical composition; iron; calcium; anion exchange; geochemistry; suspended materials
Section Headings: 21 .(HYDROGEOLOGY AND HYDROLOGY)

1546566 88-34293
Acidification and drinking water; groundwater
von Broemssen, Ulf
Natl. Swed. Environ. Prot. Board, Solna, SWE
Proceedings of an International conference on acidification and its policy implications
Schneider, T.(EDITOR)
Natl. Inst. Public Health and Environ. Hyg., Bilthoven, NLD
International conference on acidification and its policy implications, Amsterdam, Netherlands, May 5, 1986
Studies in Environmental Science (Amsterdam) 30, 1986 251-261p.
Country of Publ.: Netherlands
ISSN: 0166-1116 ISBN: 0-444-42725-2
15 REFS.
Subfile: B
Doc Type: SERIAL; CONFERENCE PUBLICATION
Bibliographic Level: ANALYTIC
Languages: English
illus., 2 tables, sketch maps
Descriptors: *Europe; *ground water ; environmental geology surveys ; pollution; Sweden; Norway; Finland; Denmark; West Germany; Scandinavia; Western Europe; acidification; drinking water; water wells; alkalinity; pH; monitoring; pumping; Germany; Central Europe; northern Europe; acid rain
Section Headings: 22 .(ENGINEERING & ENVIRONMENTAL GEOLOGY) 21 .(HYDROGEOLOGY AND HYDROLOGY)

1488708 87-54468
Use of geophysical logs in conjunction with concentrated acid injection to improve water yields from limestone wells in Tampa, Florida
Waller, P. L.
CH2M Hill Southeast, Tampa, FL, USA
Proceedings of the Focus conference on Southeastern ground water issues
Graves, B. J.(chairperson); Lehr, J. H.(chairperson); Butcher, K.(chairperson)
Natl. Water Well Assoc., Dublin, OH, USA
Focus conference on Southeastern ground water issues, Tampa, FL, United States, Oct. 6-8, 1986
Publ: Water Well J. Publ. Co.
1986 377-388p.
Country of Publ.: United States
1 REFS.
Subfile: B
Doc Type: BOOK; CONFERENCE PUBLICATION
Bibliographic Level: ANALYTIC
Languages: English
illus., 1 table, sect., sketch maps
Descriptors: *Florida; *well-logging; *ground water ; geophysical surveys; surveys; electrical surveys ; resistivit Hillsborough County; Southeastern U.S.; Eastern U.S.; United States; Tampa; water wells; drilling; acidification
Section Headings: 21 .(HYDROGEOLOGY AND HYDROLOGY); 20 .(GEOPHYSICS, APPLIED)

1471815 87-39762
Changes of ground water quality around a well during acid treatment
Wojcik, W.; Wieczysty, A.
Tech. Univ. Krakov, Inst. Sanit. and Environ. Eng., Cracow, POL
Proceedings of the Fifth national symposium on aquifer restoration and ground water monitoring
Anonymous
Fifth national symposium and exposition on aquifer restoration and ground water monitoring, Columbus, OH, United States, May 21-24, 1985
Publ: Natl. Water Well Assoc.
1985 116-131p.
Country of Publ.: United States
4 REFS.
Subfile: B
Doc Type: BOOK; CONFERENCE PUBLICATION
Bibliographic Level: ANALYTIC
Languages: English
illus.
Descriptors: *Poland; *ground water ; environmental geology surveys ; pollution; Central Europe; Europe; water qualit; acidification; water wells; reagents; infiltration; northwestern Poland; pH; pumping; experimental studies

(cont. next page)

DIALOG File 89: GEOREF - 1785-1988/OCT (Copr. American Geological Institute)

Section Headings: 21 .(HYDROGEOLOGY AND HYDROLOGY)

1455873 87-24843
Desarrollo por acidificacion de pozos en acuiferos karsticos de Navarra
Well development in the karstic aquifers of Navarre, by acidification
Castiella Muruzabal, J.; Sole Sedo, J.; Fernandez de Lara, A.
Diputacion Foral Navarra, Serv. Geol., Pamplona, ESP
Tecnologia del Agua 4: 15, 1984 35-41p.
Country of Publ.: Spain
ISSN: 0211-8173
5 REFS.
Subfile: B
Doc Type: SERIAL Bibliographic Level: ANALYTIC
Languages: Spanish
illus., 3 tables
Descriptors: *Spain; *ground water ; hydrogeology; surveys ; acidification; well development; water wells; karst; aquifers; stream capture; Navarra; geomorphology; solution features; fluvial features; Iberian Peninsula; Southern Europe; Europe
Section Headings: 21 .(HYDROGEOLOGY AND HYDROLOGY)

1355206 86-10782
Study of the phenomena and mechanism of the pre-earthquake stimulation of oil and water wells
Wang, L.; Li Shan-yin
Seismol. Bur. Sinkiang Uighur, Sinkiang Uighur, CHN
Earthqauke prediction
Evison, F. F.(chairperson)
Victoria Univ. at Wellington, Wellington, NZL
International symposium on earthquake prediction, Paris, France, April 2-6, 1979
Publ: Terra Sci. Publ. Co.
1984 203-213p.
Country of Publ.: Japan
ISBN: 92-3-101883-3
11 REFS.
Subfile: B
Doc Type: BOOK; CONFERENCE PUBLICATION
Bibliographic Level: ANALYTIC
Languages: English
Note: With discussion, illus.
Descriptors: *China; *seismology; *ground water; *rock mechanics ; earthquakes; surveys; field studies ; predictio; hydraulic fracturing; hydrogeology; epicenters; pore water; case studies; history; water recovery; water wells; stres; Haicheng; Tangshan earthquake 1976; precursors
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Languages: English
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